Universidade do Minho
Escola de Economia e Gestão

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STATEMENT OF INTEGRITY

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Resumo

O objetivo desta dissertação é avaliar e comparar, no Reino Unido, o desempenho de fundos mútuos ISR e convencionais, aos níveis agregado e individual. Pretende-se, também, comparar este desempenho em diferentes estados do mercado, nomeadamente períodos de expansão e recessão. O tema deste estudo deriva do crescimento dos fundos ISR e foca-se na averiguação de um eventual sacrifício financeiro em comparação com os fundos convencionais.

A amostra é composta por 30 fundos ISR e 90 fundos convencionais do Reino Unido. O período de análise começa em Janeiro de 2000 e termina em Junho de 2020. Avalia-se o desempenho dos fundos considerando modelos incondicionais e condicionais (Christopherson et al., 1998) e ambas as abordagens são aplicadas ao modelo uni-fator de Jensen (1968), ao modelo de 4 fatores de Carhart (1997), e ao modelo de 6 fatores de Fama e French (2018).

Os resultados obtidos neste estudo variam tendo em conta os diferentes modelos aplicados. No entanto, no geral, os resultados relativos ao desempenho dos fundos mostram que os portfolios de fundos ISR e convencionais apresentam um desempenho inferior ao do mercado, mas, individualmente, a maioria dos fundos apresenta um desempenho neutro. No que concerne às diferenças no desempenho, a generalidade dos resultados indica que os fundos ISR possuem um desempenho relativamente melhor do que o dos fundos convencionais.

Relativamente aos resultados obtidos no que diz respeito ao desempenho dos fundos em diferentes estados do mercado, é possível concluir que os fundos convencionais apresentam uma performance inferior à do mercado em períodos de expansão e que a performance de fundos ISR e convencionais não se altera em períodos de recessão. Também é concluído que, quando os modelos de quatro e seis fatores são aplicados, não existem diferenças estatisticamente significativas entre a performance de fundos ISR e convencionais.

Assim, os resultados sugerem que, no geral, investir em fundos ISR não implica um sacrifício financeiro em comparação com o investimento em fundos convencionais. Os resultados também mostram que os fundos ISR não prejudicam os investidores em períodos de recessão.

Palavras-chave: Avaliação de desempenho, Fundos convencionais, Fundos socialmente responsáveis, Investimento socialmente responsável, Modelos incondicionais e condicionais.

Abstract

The purpose of this dissertation is to evaluate and compare the performance of UK SRI and conventional mutual funds at an aggregate and individual level. In addition, it is also intended to compare the performance of the funds under different market conditions, namely periods of expansion and recession. This study's theme stems from the growth of SRI funds and focuses on ascertaining whether they entail a financial sacrifice, in terms of performance, compared to conventional funds.

The sample is composed of 30 UK SRI funds and 90 UK matching conventional funds. The period for which funds' performance is analyzed starts in January 2000 and ends in June 2020. The performance of the mutual funds is assessed based on unconditional and conditional models (Christopherson et al., 1998), and both approaches are applied to the Jensen (1968) single-factor model, the Carhart (1997) 4-factor model, and the Fama and French (2018) 6-factor model.

The results obtained for this study are mixed, as the models applied lead to different conclusions. However, overall, the results regarding fund performance show that SRI and conventional portfolios underperform the market, but, individually, the majority of funds present neutral performance. As far as differences in performance are concerned, the generality of the results shows that SRI funds present a relatively better performance than conventional funds.

Concerning the results obtained in terms of fund performance under different market conditions, it is possible to conclude that, overall, conventional funds underperform the market in expansion periods and that the performance of SRI and conventional funds does not change in recession periods. Furthermore, applying the four-factor model and the six-factor model, no statistically significant differences are found between the performance of SRI and conventional funds in expansion periods.

Thus, the results suggest that, overall, investing in SRI funds does not imply a financial sacrifice compared to investing in conventional funds. In addition, the results show that SRI funds do not harm investors in turmoil periods since the performance of these funds remains unchanged in downturns.

Keywords: Conventional funds, Performance evaluation, Socially responsible funds, Socially responsible investments, Unconditional and conditional models.

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1. Introduction

The concept of socially responsible investments (SRI) is believed to have emerged with religious traditions, like Christian, Jewish, and Islamic conduct. In the 18th century, the Quakers, who were a group of people who belonged to the Religious Society of Friends, had an essential role regarding the development of the concept of socially responsible investing, which is explained by the fact that they rejected participating in slave, and human and weapons trade in North America. John Wesley, the founder of Methodism, is also a key reference regarding the rise of socially responsible investing. He referred that it was not correct to profit through the harm of other people's well-being. Therefore, John Wesley advised his followers not to participate and not to invest their money in businesses associated with tobacco, alcohol, gambling, and weapons. Companies operating based on these types of industries were considered "sin" companies; therefore, socially responsible investors did not invest in this type of company (Renneboog et al., 2008).

In the 1960s, socially responsible investing showed progress since it was during this period that investors revealed an increasing concern in promoting equality for civil rights, labor issues, and women (Schueth, 2003). Activists saw the fund management industry's growth as a way to influence shareholders to positively impact the companies' behavior, leading them to adopt SRI practices. The apartheid ended in the 1980s, which resulted in part because fund managers avoided investing in companies operating in South Africa since the apartheid policy led to race discrimination (Schueth, 2003; Renneboog et al., 2008). When the incidents of Bhopal, Exxon Valdez, and Chernobyl happened, and when more awareness of global warming and ozone depletion started to emerge, socially responsible investors showed greater concern with the environment's state (Renneboog et al., 2008). Therefore, due to the growing importance of climate change, environmental concerns have become more prominent and one of the main concerns of socially responsible investors (Schueth, 2003; Renneboog et al.,2008).

Although the concept of SRI emerged with religious movements, it has evolved considerably since its appearance and has become a relevant, popular, and common issue for all society since investors and companies have increasingly adopted SRI practices. Since the beginning of this century, there has been considerable growth in responsible measures that SRI investors put into practice to positively impact society and help combat the difficulties and challenges of maintaining sustainability (Viviers & Eccles, 2012).

Socially responsible investing does not have a specific definition. It is commonly referred to as an investment process that reconciles investors' financial concerns with environmental, ethical, and social concerns (Radu and Funaru, 2011). In this case, shareholders consider non-financial criteria in their financial decisions, revealing their awareness regarding Environmental, Social and Governance (ESG) issues. This alertness suggests that shareholders do not intend to sacrifice their ethical values in exchange for profit, aiming to positively impact society and the environment. Renneboog et al. (2008) claim that the number of investors willing to include ethical criteria in their investment decisions is growing. Therefore, with the growing importance and interest given to SRI, the number of SRI mutual funds also faced growth (Bauer et al., 2007). The growth of SRI mutual funds has been more significant than that of conventional mutual funds (Cortez et al., 2009), and SRI funds are the leading instruments in socially responsible investing (Rathner, 2013). As a result, academics have been showing interest in analyzing SRI mutual funds' performance and investigating if this type of investment implies any financial sacrifice. This interest led academics to carry out a comparative analysis between the performance of SRI funds and conventional funds and verify if they present significant differences.

Academics have been investigating the performance of SRI funds under different market conditions, which is a relevant issue since, as Nofsinger and Varna (2014) argue, SRI funds can limit downside risk. In fact, in periods of crisis, companies' SRI practices may help avoid a stock price decrease (Schnietz & Epstein, 2005). In this context, the question focuses on whether SRI can benefit investors in periods of recession.

Although this is still a relatively unexplored issue concerning SRI funds, it is quite relevant. Some studies have been analyzing this issue by comparing the performance of SRI funds with conventional funds and finding out whether the fact that investors invest in SRI funds benefits them in any way during periods of recession (e.g. Nofsinger & Varma, 2014).

The main goal of this dissertation is to evaluate the performance of UK SRI mutual funds and compare it with the performance of conventional funds. In addition, the performance of UK SRI and conventional funds under different market conditions is evaluated. Therefore, this dissertation aims to find if SRI funds provide "protection" to investors in recession periods. Thus, this study will contribute to the literature of SRI funds and seek to fill the gap that still exists regarding their performance under different market conditions.

The performance of SRI and conventional funds is evaluated using a single-factor model, which is the Jensen (1968) single-factor model, and multi-factor models, which are the Carhart (1997) four-

factor model and the Fama and French (2018) six-factor model. These models are applied considering an unconditional approach and a conditional approach, specifically the Christopherson et al. (1998) conditional model. Conditional models are used to provide more robust statistics and better performance estimates since this model allows both risk and performance to vary according to public information variables that explain the economy's state. Furthermore, a dummy variable is included in the Jensen (1968) single-factor model, the Carhart (1997) four-factor model, and the Fama and French (2018) six-factor model. The dummy variable represents periods of recession and periods of expansion, aiming to analyze how variables change during different economic cycles.

The remainder of this dissertation is organized as follows: in chapter 2 the literature is reviewed and discussed; in chapter 3 the methodology used to evaluate the performance of SRI and conventional funds is described; in chapter 4 the data used in this study is described; in chapter 5 the main results obtained are presented and discussed, and in chapter 6 are presented the main conclusions and the limitations faced to implement this study as well as relevant suggestions for future research.

2. Literature Review

Due to the high growth of investors' interest in SRI, there has also been an increase in this subject's research in the financial literature. Several studies analyze the relationship between financial performance and social performance. Moskowitz (1972), who developed the pioneering work on comparative analysis of the relationship between financial and social performance and led other authors to this investigation, finds that SRI are beneficial for companies. The author reached this conclusion because he discovered a positive relationship between corporate social performance and financial performance, which leads to the conclusion that socially responsible companies are considered a good option to invest. The main question that arose with the growing importance of SRI was if the screening process implies a financial sacrifice, which may imply that SRI funds underperform conventional funds. Thus, researchers compare the financial performance of SRI mutual funds with conventional funds in order to verify whether significant differences are observed or not.

This chapter critically reviews the literature that focuses on comparing the performance of SRI and conventional funds. Firstly, the concept of SRI is contextualized, how it became relevant to include socially responsible concerns in investments, and its growing importance. After that, the performance of conventional funds is contextualized. In the following two sections, theoretical support for the performance of SRI funds and their performance throughout different market conditions is presented.

2.1. Socially Responsible Investments

The concept of SRI emerged because of religious movements based, for example, on Christian, Jewish, and Islamic traditions. The Quakers and the Methodists also played an essential role in developing SRI in the 18th century. The Quakers rejected participating in the trade of humans and weapons, and human slavery. John Wesley, the founder of Methodism, condemned the practice of profiting in return for the well-being of people, so he advised his followers to avoid investing in "sin" companies, as tobacco, alcohol, weapons, and gambling companies.

Since the 1960s, several movements encouraged SRI, such as promoting equality for women, civil rights and labor issues, the end of the apartheid in the 1980s, and Bhopal's, Exxon Valdez, and Chernobyl incidents. Some of these movements boosted investors' concerns regarding environmental

conditions, like climate change and global warming. Therefore, environmental issues have become a major concern for socially responsible investors (Schueth, 2003; Renneboog et al., 2008).

SRI have become more relevant since the 1990s, with more investors concerned with investing in socially responsible companies and more companies concerned with making their methods and practices as socially responsible as possible. Since the last few decades, SRI, which are also frequently called ethical investments, have witnessed high and rapid global growth (Viviers & Eccles, 2012). As Hartzmark and Sussman (2019) conclude, investors are concerned with sustainability, since they find that funds with lower ratings have been seeing their flows reduced by around 12$ billion, and the opposite happens for funds with high ratings since these have been seeing their fund flows increase. Similarly, Ammann et al. (2019) find that investors take in consideration the sustainable ratings of mutual funds while allocating their money.

However, despite the notorious growing relevance of SRI, there is no specific definition of the term. As Renneboog et al. (2008) argue, it can be described as an investment process that considers social, environmental, and ethical aspects in investment decisions. Radu and Funaru (2011) give a similar explanation, as they describe SRI as a type of investment process that includes both the financial objectives and the investors' worries related to Environmental, Social and Governance (ESG) issues.

Since the past few decades, shareholders have been increasingly considering non-financial criteria in their decision-making process. This concern shows investors' awareness regarding ESG issues, which means that they intend to positively impact society and the environment since they are unwilling to sacrifice their ethical values in exchange for profit. Therefore, they are assumed not to give as much importance to the financial performance as they give to the non-financial criteria. Instead, they are willing to sacrifice their financial performance to not deviate from their ethical values (Radu & Funaru, 2011). Consequently, investors and other market players started to alert the risk that economic and social well-being run and influence companies to adopt socially responsible criteria in their business decisions. Since investors include some personal and societal values in their investment decisions, Bollen (2007) argues that they may have a multi-attribute utility function which results from the fact that they are not exclusively concerned with the financial performance.

Socially responsible investors consider a screening process to select or exclude companies considering their impact on society by evaluating different criteria that aim to meet SRI standards, considering that these criteria might be related to ESG issues. The screening process can be done by using negative or positive strategies. The negative screening strategy is in the origin of SRI mutual funds,

and it consists in avoiding investing in companies that negatively impact society, like companies operating in the alcohol, tobacco, and gambling industries. This approach may imply that SRI portfolios will face a lack of diversification since investment opportunities are limited, which will lead to inefficient portfolios that will exhibit lower risk-adjusted returns. In fact, Cortez et al. (2012) state that, when using negative screens, SRI funds show underperformance compared to conventional ones. The positive screening strategy consists of investing in companies that positively impact society, like green companies and companies that seek to improve employers' conditions. These screens may include concerns regarding the environment, corporate governance, and human rights protection, among others. In addition, some funds use the best-in-class approach that involves selecting the companies with the best social practices regarding their activity sector, which may mitigate a lack of diversification. Using this approach allows fund managers to choose between a broader range of companies, which will increase the expected return of the funds (Leite & Cortez, 2014). Similarly, Gougler and Utz (2020) state that the best-in-class approach leads to more diversification than negative screening, and this happens because the investment decision includes a higher number of firms and sectors.

Besides the mentioned screening strategies, investors may follow two other strategies to put into practice SRI, which are community investment and shareholder activism (Pérez-Gladish et al., 2013). The community investment approach refers to the investment in disadvantaged communities in the traditional financial system, and shareholder activism refers to motivating corporate practices through ownership.

However, the consideration of social screens in the portfolio selection process is not supported by the classical portfolio theory. Markowitz (1952) argues that the optimal portfolio's construction can be constrained due to supplementary restrictions, suggesting that SRI funds cannot obtain abnormal returns relative to conventional funds. Furthermore, Rudd (1981) claims that including the additional restrictions in the selection process implies additional costs associated with the lack of diversification, suggesting that the risk-adjusted returns will be lower compared to a selection process without social constraints. Nevertheless, according to Freeman (2010), the stakeholder theory defends that shareholders' value increases when all their interests and concerns are included in the portfolio selection process, which suggests that better financial performance may arise.

As a result of the increase of SRI, the growing number of mutual funds created has been notorious, as well as the interest of firms in implementing socially responsible actions (Bauer et al., 2007). Therefore, academics have been interested in comparing the performance of SRI and

conventional funds. Three types of conclusions can be drawn from this analysis. As Hamilton et al. (1993) argue, SRI funds may present returns that do not defer from those of conventional funds; SRI funds may present lower returns relative to conventional funds, which suggests that socially responsible concerns imply financial sacrifice; and SRI funds may present higher returns relative to conventional funds.

Similarly, Rathner (2013) argues that there may be three different hypotheses regarding the results obtained by comparing the performance of SRI and conventional funds. These three hypotheses are the "underperformance hypothesis", the "outperformance hypothesis" and the "no-effect hypothesis". The "underperformance hypothesis" indicates that SRI funds exhibit weaker financial performance compared to conventional funds. This hypothesis may happen essentially because of the implementation of SRI screens that limit diversification. As Renneboog et al. (2008) state, the limitation of diversification may lead to a mean-variance frontier that is shifted to risk-return tradeoffs that are less advantageous than the ones of convention funds. The "outperformance hypothesis" indicates that SRI funds exhibit superior financial performance than conventional funds. This outperformance may be due to the fact that the SRI screening process creates relevant information regarding companies' social performance that would not be possible to obtain without this process, which can help managers select securities from companies that exhibit higher returns. The "no-effect-hypothesis" indicates that "there is no significant difference between the returns of socially responsible and conventional funds" (Rathner, 2013, p.89). This hypothesis suggests that the SRI screening process does not influence financial performance.

As mentioned above, the screening approach may limit the portfolios' diversification and, in turn, it can lead to lower risk-return tradeoffs in the case of SRI funds, since negative screens may lead to limited investment opportunities, which may result in the exclusion of entire industries from portfolios (Humphrey & Lee, 2011). Therefore, these are likely to have weaker performance compared to their conventional peers. Conventional funds may be expected to outperform SRI funds since SRI portfolios have a more limited investment opportunity, which most likely decreases the diversification. So, as Cortez et al. (2012) argue, if the portfolios are internationally diversified, SRI funds may increase their investment opportunity. However, there are several empirical evidence regarding SRI funds exhibiting no statistically significant differences between the performance of the two types of funds (e.g. Cortez et al., 2009; Humphrey & Lee, 2011; Ayadi et al., 2016; Leite & Cortez, 2013), which seems to mean that it is possible to obtain a good financial performance by being socially responsible.

SRI funds carry some effort and resources, despite the benefits that come from practicing socially responsible investing. Since SRI funds hold securities with higher corporate responsibility standards, they frequently imply higher fees than conventional funds (Radu & Funaru, 2011).

Most research presented in the last few years concerning SRI is concentrated on performance, with the main goal of comparing the performance of conventional investments with socially responsible investments. This analysis aims to confirm if the inclusion of personal and societal values in the investment decision carries financial costs and implies any financial sacrifice in the sense that it may affect investors' portfolios' financial performance.

2.2. Performance of Conventional Mutual Funds

The performance of mutual funds is a highly researched topic by academics considering different countries and different market conditions. Analyzing mutual funds' performance, researchers aim to find if they present a similar, better, or worse performance compared to the market.

Otten and Bams (2002) study European mutual funds by analyzing the CAPM-based single index and the Carhart (1997) 4-factor model considering both the conditional and unconditional approaches, concluding that mutual funds outperform the market and can create value to investors. Similarly, Rao et al. (2017) study if Chinese equity funds exhibit outperformance compared to the market through the application of the CAPM and the Carhart (1997) 4-factor model and find that Chinese equity funds outperform the market.

However, Białkowski and Otten (2011) conclude that domestic Polish mutual funds show neutral performance compared to the market, so, on average, these funds do not add value.

Farnsworth et al. (2002), through the evaluation of the discount factor model, conclude that US mutual funds show neutral performance compared to the market. Similarly, but applying conditional and unconditional models, Otten and Bams (2004) also find the mutual funds' neutral performance.

In what concerns mutual fund performance in periods of expansion and recession, Kosowski (2011) analyzes a sample of US mutual funds through a conditional model with varying risk and return and finds that these funds show outperformance in periods of recession and underperformance in periods of expansion. This means that mutual funds' performance is positive and statistically significant in recession periods and is negative and statistically significant in expansion periods. Glode (2011) also

reaches the conclusion that US mutual funds outperform in recession periods and underperform in expansion periods. The author argues that investors' strong demand for actively managed funds may be why active managers achieve a better performance in recession periods.

However, Pástor and Vorsatz (2020) find that US active equity mutual funds underperform the passive benchmarks in the COVID-19 crisis, which is against the hypothesis that states that active mutual funds show evidence of outperformance in recession periods.

2.3. Performance of Socially Responsible Investment Funds

Mutual funds are the leading instruments regarding SRI (Rathner, 2013) and have been increasing substantially (Bauer et al., 2007), which leads to the relevance of investigating if SRI mutual funds present a similar performance relative to their conventional peers.

Most empirical studies performed when this topic became more relevant have reached the same conclusion: the performance of SRI funds and the performance of conventional funds does not show significant differences. In the case of the US market, Reyes and Grieb (1998), Goldreyer and Diltz (1999), Statman (2000), and Bello (2005) reach similar conclusions since they do not find significant differences between the performance of SRI funds and the conventional ones. In the case of UK SRI funds, Luther et al. (1992) and Mallin et al. (1995) find evidence, although weak, that SRI funds outperform conventional funds. These studies also conclude that SRI funds are more exposed to small companies, which shows evidence of a size effect. Therefore, these funds might be able to benefit from higher returns. However, Gregory et al. (1997), using a benchmark that controls the size effect, refute the evidence that SRI funds outperform conventional ones. In the case of European markets, Kreander et al. (2005) also conclude that the performance of SRI and conventional funds is similar.

Utz and Wimmer (2014) reach different results when using two different models. While basing their evaluation using Jensen (1968) single-factor model, they find that US SRI funds underperform conventional funds. However, while basing their evaluation on Sharpe (1966) and Modigliani and Leah (1997) measures, the authors conclude that SRI funds outperform conventional funds.

The majority of the previously mentioned studies use models with only one factor to measure the performance of SRI funds, which are considered and confirmed by the literature as limited since they only use one risk factor (e.g. Bauer et al., 2005; Bauer et al., 2007), which makes them insufficient to evaluate this performance. Therefore, multi-factor models have been included in the performance

evaluation of SRI funds, such as the Fama and French (1993) 3-factor model, the Carhart (1997) 4-factor model, the Fama and French (2015) 5-factor model, and the Fama and French (2018) 6-factor model. These models can be applied considering an unconditional approach or a conditional approach. The conditional approach can be applied considering the methodologies of Ferson and Schadt (1996) and Christopherson et al. (1998). Multi-factor models allow avoiding biased results that arise due to the screening process of SRI funds. Consequently, more recent studies use multi-factor models to evaluate the performance of SRI funds, even though, in some cases, the results that arise from these models are still being compared with the single-factor model.

Several empirical studies show no significant differences between the performance of SRI funds and their conventional peers. Cortez et al. (2009) analyze the performance of 88 mutual funds belonging to seven European markets: British, Swedish, German, Dutch, Norwegian, Swiss, and Belgian. By implementing traditional and conditional measures, the authors find that European SRI funds do not exhibit significant differences compared to conventional funds. Similarly, Humphrey and Lee (2011) perform an analysis regarding Australian SRI funds using the single-factor model and the Carhart (1997) 4-factor model and conclude that investing in SRI funds does not involve a financial sacrifice nor a benefit comparing to investing in conventional funds. Ayadi et al. (2016) analyze and compare Canadian SRI funds and conventional funds' performance by applying conditional models and conclude that there are no significant differences between them, either using gross and net returns. Leite and Cortez (2013) evaluate the performance of French SRI funds by applying both unconditional and conditional models and show that their performance is comparable to their conventional peers, which means that investors who invest in French SRI funds aiming to fulfill their social, ethical, and environmental concerns do not need to sacrifice financial performance.

Some studies show that SRI funds do not present statistically significant differences compared to conventional funds. Cortez et al. (2012) evaluate US and European global SRI funds' performance using unconditional and conditional models. The authors do not find statistically significant differences between the performance of European SRI funds' performance and conventional ones. However, regarding the US and Australian funds, they conclude that there is underperformance. Leite et al. (2018) perform an analysis regarding SRI funds in Sweden by evaluating unconditional and conditional models. The authors find that SRI funds that invest in Sweden and Europe show similar performance relative to their conventional peers, while SRI funds that invest on a global scale tend to underperform the conventional ones, which may be due to global SRI funds managers' poor selectivity abilities. Leite and

Cortez (2014), using conditional models, evaluate the performance of European SRI funds investing internationally in comparison to their conventional peers and find that SRI funds do not present statistically significant differences compared to their conventional peers.

Some studies find that SRI funds outperform conventional funds using multi-factor models, as do Gil-Bazo et al. (2010), who investigate whether SRI funds underperform or outperform conventional funds through the application of the Carhart (1997) 4-factor model. The authors conduct their investigation separating the analysis in SRI funds managed by companies specialized in this type of funds and SRI funds managed by regular companies. They find that SRI funds managed by specialized companies outperform conventional funds, and SRI funds managed by regular companies underperform conventional funds. Similarly, Soler-Domínguez et al. (2020) study the performance of a sample of global SRI mutual funds and find that these funds perform better than funds that present higher exposure to companies related to fossil fuel and carbon industries.

2.4. Performance of Socially Responsible Investment Funds under Different Market Conditions

There is an important and recent aspect related to SRI funds that is less explored, which is the differences in SRI and conventional funds' performance under different market conditions. The main question here is whether socially responsible investors can benefit in periods of recession and expansion. This is a relevant issue during crisis periods since SRI funds may limit downside risk (Nofsinger & Varma, 2014).

According to their prospect theory, Kahneman and Tversky (1979) argue that investors are more sensitive to losses contrasting with gains, which means that the effect of a loss in the total value is higher than a proportional gain. Hirshleifer (2008) states that investors are more concerned about companies' bad practices when the market is facing a turmoil period. Schnietz and Epstein (2005) claim that companies' socially responsible practices may contribute to avoiding a stock price decrease in periods of crisis. In fact, Ferriani and Natoli (2020) find that environmental risks were the main concern during the early stage of the COVID-19 crisis, suggesting that sustainable concerns are seen as a protection in turmoil periods.

Since the last few years, some authors have been studying the performance of SRI funds under different market conditions, and some evaluate and compare the performance of SRI funds and their

conventional peers in expansion and recession periods. Most empirical studies show evidence that SRI funds perform better than conventional funds in periods of recession.

Nofsinger and Varma (2014) compare US SRI funds' performance with their conventional peers using conditional models in periods of crisis and non-crisis. After identifying crisis periods and applying the models, the authors conclude that SRI funds outperform conventional ones in periods of crisis. However, in periods of non-crisis, SRI funds underperform their conventional peers. They also discover that using positive screens is the reason for the outperformance of the SRI funds, suggesting that these funds provide security in crisis periods.

Similarly, Gangi and Trotta (2015) evaluate European SRI funds' performance throughout the financial crisis of 2008 and 2011 to find if the ethical investment comes out as beneficial in the case of turmoil periods. The authors reach the conclusion that SRI funds outperform conventional funds in periods of crisis, claiming that these funds protect investors in these periods.

Nakai et al. (2016) analyze the performance of Japanese SRI funds compared to their conventional peers in the period of the global financial crisis. The authors determine that SRI funds perform better than conventional ones. They find that this might be due to the presence of international funds, and, in addition, this leads the authors to believe that domestic SRI funds may not be enough to meet diversification.

Becchetti et al. (2015) compare SRI and conventional funds' performance throughout the period of 1992-2012. The authors find that SRI funds outperform conventional funds in the 2007 global financial crisis, suggesting that these funds protect investors. However, they do not show evidence that SRI funds outperform their conventional peers during the dot.com crisis, which leads authors to believe that it may be due to the higher exposure to high-tech stocks.

Some empirical studies find no significant differences between SRI funds and their conventional peers in periods of crisis, which goes against the empirical evidence previously presented.

Leite and Cortez (2015) find that French SRI funds have similar risk-adjusted returns to conventional funds in periods of crisis, meaning that they do not give investors some sort of protection in crisis periods. However, SRI funds do not entail a financial sacrifice. In periods of non-crisis, they find that SRI funds underperform conventional funds and suggest that ethics may imply a price that has to be paid by socially responsible investors, which is due to negative screening strategies.

Syed (2017) performs a comparative analysis between UK and French SRI funds and their conventional peers before and throughout the financial crisis. In the period before the crisis, French and UK funds show outperformance relative to the market. The authors find that there are no significant differences in the performance of the two types of funds throughout the crisis period, but they find that SRI funds imply less risk than the UK and French benchmarks.

Similarly, Leite et al. (2018) perform an analysis of Swedish SRI funds by assessing fund managers' abilities and performance throughout different market conditions and show that most funds have similar performance in periods of crisis and periods of non-crisis.

Matallín-Sáez et al. (2019) analyze US SRI funds' performance within three different classifications, in periods of expansion and recession. The authors conclude that SRI funds show a negative and significant performance in periods of expansion and no significant differences in periods of recession. When SRI funds' performance is compared to specific benchmarks, their performance shows an improvement in the case of recession periods.

Several authors choose the periods of expansion and recession in agreement with the National Bureau of Economic Research (NBER) business cycles to implement different market regimes in the performance measures. Both studies regarding conventional funds and SRI funds may use this strategy.

Through the analysis of US mutual funds, Kosowski (2011) concludes that these outperform in periods of recession and underperform in periods of expansion. This analysis is developed using a conditional model with varying risk and return, resorting to NBER business cycles to develop it. By using NBER business cycles, the authors intend to demonstrate that mutual funds' alphas show lower performance in NBER periods of expansion and higher performance in NBER periods of recession. The author states that evaluating how mutual funds perform considering NBER business cycles is not appropriate using unconditional models.

Glode (2011) analyzes US mutual funds' performance and concludes that these outperform in recession periods and underperform in expansion periods. The author uses NBER recessions as a representation of poor market conditions. Therefore, the author develops the funds' excess returns time-series regression considering the risk factors, the NBER recession indicator, and the cross-products between these two.

Nofsinger and Varma (2014), who analyze and compare US SRI funds and their conventional peers' performance, conclude that in periods of crisis SRI funds outperform the conventional ones, and

the opposite happens for periods of non-crisis. To perform this analysis, the authors apply the CAPM, the Fama and French (1993) 3-factor model and the Carhart (1997) 4-factor model by including two dummy variables that distinguish periods of crisis and non-crisis considering NBER classifications.

Areal et al. (2013), who analyze the performance of US mutual funds that include different ethical criteria, conclude that performance estimates vary according to different market conditions. To perform this analysis, besides using a Markov-switching approach of the conditional CAPM, one of the other models the authors use consists in identifying the periods of recession and expansion considering NBER classifications.

Matallín-Sáez et al. (2019) analyze the performance of US SRI funds, within three different classifications, in periods of expansion and recession. To evaluate the performance of SRI funds throughout different business cycles, the authors also use NBER to identify expansion and recession periods. Overall, the authors find that SRI funds underperform conventional funds in expansion periods, and they do not find statistically significant differences in recession periods.

3. Methodology

In this chapter, the methodology used to develop mutual fund performance evaluation is presented. First, unconditional models are presented, and subsequently, conditional models. Finally, the models extended to a dummy variable to evaluate the performance of the SRI funds under different market conditions are presented.

3.1. Mutual Fund Performance Evaluation

3.1.1. Unconditional Models

In order to evaluate fund performance, researchers generally use multi-factor models. However, single-factor models prevailed before the preferred use of multi-factor models. In the 1960s, Jensen (1968) used an approach derived from the Capital Asset Pricing Model (CAPM) to evaluate the risk-adjusted returns. Other models that were initially used include Sharpe (1966) and Treynor (1965) relative measures, which allow sorting mutual funds according to their expected performance.

The Jensen (1968) single-factor model consists of computing the abnormal return relative to the expected return, measured by the obtained Jensen's alpha. The primary purpose of testing Jensen's alpha is to determine if it is statistically different from zero. If so, it leads to the possibility of examining if a fund underperforms or outperforms a market portfolio. When the alpha coefficient is statistically significant, the obtained returns are different from the expected returns. If the obtained alpha is a positive and statistically significant coefficient, there is a superior performance relative to the market. However, when the obtained alpha is a negative and statistically significant coefficient, there is an inferior performance compared to the market.

It is a fact that the Jensen (1968) single-factor model has limitations compared to the multi-factor models, but it remains a very explored model due, in large part, to the fact that it is helpful to measure the exposure of funds to a particular index. Thus, this model's analysis is relevant to assess performance by comparing its results when using the single-factor model and when using multi-factor models and ascertain whether the conventional benchmark has explanatory capacity for SRI funds.

Therefore, the Jensen (1968) single-factor model is one of the models that will be applied to evaluate the performance of SRI and conventional funds.

The following regression represents the Jensen (1968) single-factor model:

$$r_{p,t} = \alpha_p + \beta_{p1,t} r_{m,t} + \varepsilon_{p,t} \quad (1)$$

Where $r_{p,t}$ is the excess return of the portfolio p throughout period t; $r_{m,t}$ is the market's excess return throughout period t; α_p is the abnormal return of portfolio p; β_p is the systematic risk of portfolio p; and $\varepsilon_{p,t}$ is the idiosyncratic return component.

However, the Jensen (1968) single-factor model includes only one risk factor (the market risk), and some studies (e.g. Fama & French, 1993) show that it is relevant to use multi-factor models. Therefore, this model's limitations led to the development of other performance measures that include more than one risk factor. Most academics have used models with multiple factors since they are considered to better evaluate and explain fund performance.

Consequently, in addition to the Jensen (1968) single-factor model, multi-factor models will be applied to evaluate mutual funds' performance. Fama and French (1993) 3-factor model is considered to provide a more accurate explanation of funds' performance than the single-factor model (Bauer et al., 2005) because, in addition to the market's excess return as the proxy for the stock returns' market factor, it incorporates two additional risk factors. One of them is the small minus big (SMB) factor, which aims to focus on the different behaviors of small and big stock returns, so it resembles the size of the returns' risk factor, and the other one is the high minus low (HML) factor, which aims to focus on the different behaviors of high- and low- book-to-market equity firms' returns, so it resembles the book-to-market of the returns' risk factor. A firm's size is linked to profitability because smaller firms usually have lower earnings on assets compared to bigger ones, which is determined when evaluating the book-to-market equity. Size is linked to a common risk factor that may explain the negative size and average return relation when associated with the fact that smaller firms can face extended periods of low earnings than the bigger ones. Firms with a high book-to-market ratio, which implies a low stock price compared to the book value, usually have assets with lower earnings. In the case of firms with a low book-to-market ratio, which implies a high stock price compared to the book value, they tend to have higher earnings. A common risk factor in returns that may explain the positive book-to-market and average return relation is sourced by relative profitability, which is suggested by the book-to-market equity and earnings relation. The authors aim to lessen the variance of firm-specific factors by resembling portfolios for the common risk factors. Therefore, this model diminishes the average pricing errors that come with implementing the single-factor model.

However, the Fama and French (1993) 3-factor model is not able to explain the cross-sectional variation of returns. Consequently, to mitigate this limitation, Carhart (1997) adds a fourth factor to the

Fama and French (1993) 3-factor model. This additional risk factor is called momentum factor (MOM), and it aims to capture the one-year momentum anomaly mentioned by Jegadeesh and Titman (1993). Therefore, the Carhart (1997) 4-factor model is constituted by the following factors: a market factor; the SMB (small minus big) factor, which is the difference in returns between a portfolio of small-cap stocks and one of large-cap stocks; the HML (high minus low) factor, which is the difference in returns between a portfolio of high book-to-market stocks and one of low book-to-market stocks; and the MOM (momentum) factor, which is the return difference between a portfolio of past winners and one of past losers.

Therefore, one of the multi-factor models that is applied is the Carhart (1997) 4-factor model. This model covers the Jensen (1968) single-factor model's misspecification since it includes the risk, size, value, and momentum factors in the performance evaluation. Carhart (1997) finds that the four-factor model improves considerably on the CAPM and the Fama and French (1993) 3-factor model average pricing errors. The Fama and French (1993) 3-factor model improves the CAPM average pricing errors because of the inclusion of the size and book-to-market equity factors, but this model's errors are extremely negative for the loser stock portfolios from last year and extremely positive for the winner stock portfolios from last year. Therefore, the Carhart (1997) 4-factor model has lower average pricing errors compared to the CAPM and the Fama and French (1993) 3-factor model. The momentum factor represents the propensity with which assets with higher past returns keep increasing. On the other hand, it represents the propensity with which assets with lower past returns keep decreasing. Carhart (1997) argues that, because funds are invested in a considerable amount of stocks with higher performance, some funds have a higher exposure to momentum stocks. Therefore, the author concludes that the four factors included in the model allow a better explanation of the returns relative to the Fama and French (1993) 3-factor model due to the momentum factor.

The different risk factors in the Carhart (1997) 4-factor model lead to different conclusions. When the β of the SMB factor is positive (negative), small (large) cap stocks comprise the portfolio in question. When the β of the HML factor is positive (negative), high (low) book-to-market stocks compose the portfolio. When the β of the MOM factor is positive (negative), the portfolio includes stocks with higher (lower) returns of last year.

The following regression represents the Carhart (1997) 4-factor model:

$$r_{p,t} = \alpha_p + \beta_{p1,t} r_{m,t} + \beta_{p2,t} SMB_t + \beta_{p3,t} HML_t + \beta_{p4,t} MOM_t + \varepsilon_{p,t} \quad (2)$$

Where $r_{p,t}$ is the excess return of the portfolio p throughout period t; $r_{m,t}$ is the market's excess return throughout period t; SMB_t (small minus big) is the difference in returns between a portfolio of small cap stocks and one of large cap stocks; HML_t (high minus low) is the difference in returns between a portfolio of high book-to-market stocks and one of low book-to-market stocks; MOM_t is the return difference between a portfolio of past winners and one of past losers; β_1, β_2, β_3 and β_4 are the coefficients associated to each risk factor; and $\varepsilon_{p,t}$ is the idiosyncratic return component.

The other multi-factor model that will be used is the Fama and French (2018) 6-factor model, which results from the combination of the risk factors of the Carhart (1997) 4-factor model with those of the Fama and French (2015) 5-factor model. The Fama and French (2015) 5-factor model extends the Fama and French (1993) 3-factor model to two additional risk factors. One of them is the RMW (robust minus weak) factor, which represents the potential profitability premium and is calculated as the difference between the returns on diversified portfolios of stocks with robust and weak profitability. Companies with higher profitability are likely to outperform the market. The other additional factor is the CMA (conservative minus aggressive) factor, which represents the investment factor and is calculated as the difference between the returns on diversified portfolios of stocks of low and high investment firms. Conservative stocks are likely to outperform aggressive stocks. The inclusion of these additional factors in the Fama and French (1993) 3-factor model is explained by the fact that the three factors are not enough to make a complete evaluation of the expected returns because they do not include all average returns' variation associated with profitability and investment, as it is argued. So, these additional factors allow the improvement of the explanation regarding the investment strategies that managers follow. Therefore, the Fama and French (2018) 6-factor model includes the market, SMB, HML, RMW, CMA, and MOM factors.

The following regression represents the Fama and French (2018) 6-factor model:

$$r_{p,t} = \alpha_p + \beta_{p1,t} r_{m,t} + \beta_{p2,t} SMB_t + \beta_{p3,t} HML_t + \beta_{p4,t} RMW_t + \beta_{p5,t} CMA_t + \beta_{p6,t} MOM_t + \varepsilon_{p,t} \quad (3)$$

Where $r_{p,t}$ is the excess return of the portfolio p throughout period t; $r_{m,t}$ is the market's excess return throughout period t; SMB_t (small minus big) is the difference in returns between a portfolio of small cap stocks and one of large cap stocks; HML_t (high minus low) is the difference in returns between a portfolio of high book-to-market stocks and one of low book-to-market stocks; RMW_t (robust minus weak) is the difference between the returns on diversified portfolios of stocks with robust and weak

profitability; CMA$_t$ (conservative minus aggressive) is the difference between the returns on diversified portfolios of the stocks of low and high investment firms; MOM_t is the return difference between a portfolio of past winners and one of past losers; β_1, β_2, β_3, β_4, β_5 and β_6 are the coefficients associated to each risk factor; and $\varepsilon_{p,t}$ is the idiosyncratic return component.

3.1.2. Conditional Models

The unconditional approach of the Jensen (1968) single-factor model, the Carhart (1997) 4-factor model, and the Fama and French (2018) 6-factor model implies that both the alpha and beta are constant. Therefore, these models may lead to a biased performance evaluation (Christopherson et al., 1998).

Consequently, Ferson and Schadt (1996) and Christopherson et al. (1998) developed conditional models. The Ferson and Schadt (1996) model is partially conditional as it considers the variation of betas, the variation of the risk, by using public information variables. Christopherson et al. (1998) developed a fully conditional model by extending the Ferson and Schadt (1996) since it considers that both risk (betas) and performance (alpha) may vary.

These conditional models are more accurate and adequate than unconditional models to evaluate the risk-adjusted abnormal return performance of funds since they consider the time-varying risk and performance. Therefore, the Christopherson et al. (1998) model will be applied, where both alphas and betas, risk and performance, are a linear function of public information variables.

The following regression represents the Christopherson et al. (1998) model:

$$r_{p,t} = \alpha_p + A_p^{'} z_{t-1} + \beta_{p,t}\lambda_{k,t} + \beta_p^{'}(z_{t-1}\lambda_{k,t}) + \varepsilon_{p,t} \quad (4)$$

Where $r_{p,t}$ is the excess return of the portfolio p throughout period t; $r_{m,t}$ is the market's excess return throughout period t; α_{0p} is the average alpha; β_p is the average beta; $z_{t-1} = Z_{t-1} - E(Z)$ is the vector of deviations of Z_{t-1} from the average values; A'_p is the vector that measures the response of the conditional alpha of the portfolio to the public information variables; β'_p is the vector that measures the response of the conditional beta of the portfolio to the public information variables; and $\varepsilon_{p,t}$ is the idiosyncratic return component.

The following regression represents the Jensen (1968) model extended to the Christopherson et al. (1998) model:

$$r_{p,t} = \alpha_p + A_p' z_{t-1} + \beta_{p1,t} r_{m,t} + \beta_{p1,t}(z_{t-1} r_{m,t}) + \varepsilon_{p,t} \quad (5)$$

The following regression represents the Carhart (1997) 4-factor model extended to the Christopherson et al. (1998) model:

$$r_{p,t} = \alpha_p + A_p' z_{t-1} + \beta_{p1,t} r_{m,t} + \beta_{p1,t}(z_{t-1} r_{m,t}) + \beta_{p2,t} SMB_t + \beta_{p2,t}(z_{t-1} SMB_t) + \beta_{p3,t} HML_t + \beta_{p3,t}(z_{t-1} HML_t) + \beta_{p4,t} MOM_t + \beta_{p4,t}(z_{t-1} MOM_t) + \varepsilon_{p,t} \quad (6)$$

The following regression represents the Fama and French (2018) 6-factor model extended to the Christopherson et al. (1998) model:

$$r_{p,t} = \alpha_p + A_p' z_{t-1} + \beta_{p1,t} r_{m,t} + \beta_{p1,t}(z_{t-1} r_{m,t}) + \beta_{p2,t} SMB_t + \beta_{p2,t}(z_{t-1} SMB_t) + \beta_{p3,t} HML_t + \beta_{p3,t}(z_{t-1} HML_t) + \beta_{p4,t} RMW_t + \beta_{p4,t}(z_{t-1} RMW_t) + \beta_{p5,t} CMA_t + \beta_{p5,t}(z_{t-1} CMA_t) + \beta_{p6,t} MOM_t + \beta_{p6,t}(z_{t-1} MOM_t) + \varepsilon_{p,t} \quad (7)$$

3.1.3. Performance Evaluation under Different Market Conditions

Following Silva and Cortez (2016) and Leite et al. (2018), the comparison of the performance of SRI funds and their conventional peers during different market periods will be implemented by adding a dummy variable in the unconditional models, associated with different market conditions. In these models, D_t is the dummy variable that assumes the value of 1 in periods of recession and 0 in periods of expansion.

The inclusion of the dummy variable allows to analyze if mutual funds' performance changes during different economic cycles. The binary variable allows performance and risk to be conditioned to different time horizons, defined by different economic cycles. The inclusion of the dummy variable depends on the National Bureau of Economic Research (NBER) identification criteria of periods of recession and expansion.

The following regression represents the Jensen (1968) model with recession and expansion alphas and betas:

$$r_{p,t} = \alpha_p + \alpha_{rec,t} D_t + \beta_{p1,t} r_{m,t} + \beta_{p1rec,t} r_{m,t} D_t + \varepsilon_{p,t} \quad (8)$$

The following regression represents the Carhart (1997) 4-factor model with recession and expansion alphas and betas:

$$r_{p,t} = \alpha_p + \alpha_{rec,t}D_t + \beta_{p1,t}r_{m,t} + \beta_{p1rec,t}r_{m,t}D_t + \beta_{p2,t}SMB_t + \beta_{p2rec,t}SMB_tD_t + \beta_{p3,t}HML_t + \beta_{p3rec,t}HML_tD_t + \beta_{p4,t}MOM_t + \beta_{p4rec,t}MOM_tD_t + \varepsilon_{p,t} \quad (9)$$

The following regression represents the Fama and French (2018) 6-factor model with recession and expansion alphas and betas:

$$r_{p,t} = \alpha_p + \alpha_{rec,t}D_t + \beta_{p1,t}r_{m,t} + \beta_{p1rec,t}r_{m,t}D_t + \beta_{p2,t}SMB_t + \beta_{p2rec,t}SMB_tD_t + \beta_{p3,t}HML_t + \beta_{p3rec,t}HML_tD_t + \beta_{p4,t}RMW_t + \beta_{p4rec,t}RMW_tD_t + \beta_{p5,t}CMA_t + \beta_{p5rec,t}CMAD_t + \beta_{p6,t}MOM_t + \beta_{p6rec,t}MOM_tD_t + \varepsilon_{p,t} \quad (10)$$

In these models, α_p represents the performance measure in periods of expansion and $\alpha_p + \alpha_{rec,t}D_t$ represents the performance measure in periods of recession. The alpha with the dummy variable ($\alpha_{rec,t}D_t$) corresponds to the increase or decrease of performance in recession periods, which implies that, if it is statistically significant, the performance in periods of recession and in periods of expansion is significantly different. $\beta_{p1,t} + \beta_{p1rec,t}$, $\beta_{p2,t} + \beta_{p2rec,t}$, $\beta_{p3,t} + \beta_{p3rec,t}$, $\beta_{p4,t} + \beta_{p4rec,t}$, $\beta_{p5,t} + \beta_{p5rec,t}$ and $\beta_{p6,t} + \beta_{p6rec,t}$ represent the coefficients for each factor in periods of recession. $\varepsilon_{p,t}$ is the idiosyncratic return component.

4. Data

In this chapter, it is described how the sample was selected and the sources used to identify and collect the data regarding SRI funds and their matching conventional peers. In addition, the risk factors used and where they were collected, as well as the public information variables used to compute conditional models, are presented. By the end of this chapter, it is explained how and where the periods of recession and expansion were identified, and which ones were identified.

4.1. Mutual Fund Data

The main goal of this dissertation is to evaluate the performance of SRI mutual funds in the UK market and compare it with the performance of matching conventional funds, both in recession and expansion periods.

First and foremost, SRI funds were identified on the Refinitiv Eikon fund screener, from 30-01-2000 to 30-06-2020. Throughout the process of selecting the SRI funds that compose the sample, some requirements were established to identify them. The sample was built according to these requirements that establish the funds must be classified as ethical equity funds, domiciled in the UK, and their geographical focus must be both in Europe and globally.

Not only funds with active status were included. All funds that have existed within the period under study were included in the sample. Therefore, this strategy allows to minimize problems related to survivorship bias. As Brown et al. (1992) conclude, not including funds that were extinguished during the period under review can lead to biased results regarding the study of the performance of mutual funds, as it may lead to the conclusion of an overestimated performance.

After applying the established requirements, the sample included 81 SRI mutual funds. The data regarding funds' returns is the Total Return Index, which was collected from DataStream for each month of the study period. After collecting the data, discrete returns were computed.

The funds considered in the sample were required to have a minimum of 24 monthly observations. Therefore, the funds with less than 24 monthly observations were eliminated from the sample. After this procedure, the sample was reduced to 39 SRI mutual funds.

4.2. Matching Conventional Funds

As previously mentioned, this dissertation aims to compare the performance of SRI funds to their matching conventional funds. Following Nofsinger and Varma (2014), this study was performed using a matching paired analysis. This approach allows the differences between the performance of SRI and conventional funds not to be attributed to the matching criteria established to match SRI funds to their conventional peers (Leite & Cortez, 2014).

To perform the matching paired analysis, some procedures were followed to select the matching conventional funds. A matching conventional portfolio of three conventional funds was selected for each SRI fund of the sample. The conventional funds used in this study were identified on DataStream, and the matching process was performed according to specific criteria, namely type of asset, domicile country, Lipper global classification and the inception date.

Therefore, after collecting the conventional funds, three matching conventional funds were identified for each SRI fund. This selection requires conventional funds to be equity funds, domiciled in the United Kingdom, with the same Lipper global classification as their matching SRI funds, and with an inception date that must be within 12 months of the inception date of the SRI fund that is being matched. However, for some SRI funds of the sample, it was not possible to find three matching conventional funds because of the fund age requirement that calls for the conventional fund to be within 12 months of the inception date of the SRI fund it is matching. Therefore, following Nofsinger and Varma (2014), for conventional funds that do not meet the age criteria, the fund age requirement is extended to within three years.

This matching procedure did not consider the funds' size, which means that SRI funds and conventional funds were not matched on size. This criteria was not included in the matching process because matching on size would imply not matching on other criteria since some funds of comparable size did not have a similar inception date or the same investment universe. Also, it was not possible to match on size because SRI funds that constitute the sample, and many conventional funds that are candidates to match SRI funds, did not have data regarding the funds' Total Net Assets (TNA). Therefore, matching on size would imply a reduced available number of possible conventional funds to match SRI funds. This could imply eliminating a considerable number of SRI funds from the sample due to the impossibility of matching them with conventional funds. Leite and Cortez (2014) also exclude the fund size criteria from the matching process. In fact, some studies, like Gregory et al. (1997), Girard et al.

(2007), and Renneboog et al. (2008), argue that contrary to funds' age, funds' size does not have a meaningful impact on the performance of SRI funds. More recently, Philips et al. (2018) studied the relationship between fund size and mutual fund performance, and they find that there are instrumental variables that affect fund size, but they do not find that these are related to performance, implying there is no relationship between them.

After implementing the matching process, five SRI funds were removed from the original sample of 39 funds because it was not possible to select a minimum of three conventional funds to match these funds. In addition, conventional funds with less than 24 monthly observations were also removed from the sample. Therefore, the final sample includes 30 SRI funds and 90 conventional funds[1].

4.3. Risk factors and Public Information Variables

To estimate the regressions necessary to evaluate fund performance, different risk factors were used: a size factor, which is represented by the small minus big (SMB) factor that is the difference between a portfolio of small caps and a portfolio of large caps; a book-to-market factor, which is represented by the high minus low (HML) factor that is the difference between value stocks and growth stocks; a momentum (MOM) factor, which is the difference between a portfolio of past winners and a portfolio of past losers; a profitability factor, which is represented by the robust minus weak (RMW) factor that is the difference between the returns on diversified portfolios of stocks with robust and weak profitability; and an investment factor, which is represented by the conservative minus aggressive (CMA) factor that is the difference between the returns on diversified portfolios of the stocks of low and high investment firms. All the data regarding the mentioned risk factors was collected from Professor Kenneth R. French's website[2]. The risk-free rate is proxied by the 1-month treasury bill and was also collected from this website. Regarding the market returns, the S&P Global 1200 total return index was used as the market benchmark. The data regarding this index was collected from DataStream.

One of the models used to evaluate mutual fund's performance is the Christopherson et al. (1998) conditional model, which requires public information variables to be applied. Initially, the criteria was set for the sample to include funds that invest in Europe and globally. However, after eliminating the SRI

[1] Appendix 1 shows the list of SRI funds and their matching conventional funds, including their lipper codes, lipper global classification and inception date

[2] https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/

funds that do not have a minimum of 24 monthly observations and those that do not have a minimum of three matching conventional funds, all the funds included in the sample invest globally. Therefore, this dissertation applies global public information variables to compute the conditional models.

Following Cortez et al. (2012), the public information variables included in the Christopherson et al. (1998) conditional model were the short-term rate and the dividend yield of a market index. Considering that all the funds in the sample invest globally, the 3-month US Treasury Bill was used as a proxy for the short-term rate and the dividend yield was based on the FTSE All-World. Data on the 3-month US Tresury Bill was collected from the Federal Reserve website[3], and data on the FTSE All-World was collected from DataStream.

The Wald test was applied to investigate the importance of using conditional models by examining if alphas and betas are time-varying. This means that, using the Wald test, it is possible to test the null hypothesis that the coefficients of the public information variables are equal to zero.

Following Ferson et al. (2003), in order to avoid problems related to spurious regressions due to the high autocorrelations that the series present, the public information variables used were stochastically detrended through the deduction of a 12-month moving average. Furthermore, zero mean values were used to minimize the scale effects reflected in the results (Bernhardt & Jung, 1979).

4.4. Business Cycles

One of the main goals of this study is to analyze the differences between the performance of SRI and conventional funds under different market conditions. In order to identify the economic cycles, the method applied by Nofsinger and Varma (2014) was followed. The authors used the information provided by the National Bureau of Economic Research[4] (NBER), which is an American research organization. This platform identifies high and low periods of American economic activity. Therefore, considering the economic cycles defined by NBER, recession and expansion periods were identified.

This dissertation studies UK mutual funds, which would imply applying the business cycles provided by Centre for Economic Policy Research[5] (CEPR), considering it is an organization that publishes

[3] https://fred.stlouisfed.org/

[4] https://www.nber.org

[5] https://cepr.org/data

economic research regarding European economic activity. However, as previously mentioned, this sample ended only with funds that invest globally, which makes it more appropriate to apply the business cycles provided by NBER, considering they reflect the high and low periods of American economic activity, making them a better proxy for global high and low periods. Also, considering that the total return index and the public information variables used in this dissertation are global, it is more coherent to consider global business cycles.

NBER identifies three periods of recession for the period studied in this dissertation[6]. The first recession identified by NBER is from March 2001 to November 2001, which totals 8 months, and the second recession is from December 2007 to June 2009, which totals 18 months. NBER also shows that another recession started in February 2020. Therefore, from February 2020 until June 2020, which is the end of the period under analysis, there are 4 months of recession. Accordingly, the remaining periods in the sample not referred to as recessionary periods will be treated as expansionary periods.

4.5. Summary Statistics

Table 1 presents the summary statistics for both the SRI and conventional equally weighted portfolios. It also presents the descriptive statistics for the market benchmark (S&P Global 1200) and additional risk factors (SMB, HML, RMW, CMA, MOM). All the descriptive statistics presented in the table are analyzed between January 2000 and June 2020.

Throughout the period under analysis, it was verified that the SRI fund portfolio, the market benchmark, and all additional risk factors, except for the book-to-market factor (HML), present positive mean excess returns. In addition, regarding the conventional funds' portfolio, it presents a negative mean excess return (-0.10601). Therefore, the SRI portfolio shows higher mean excess returns (0.08722) than the conventional portfolio. Both SRI and conventional portfolios present lower mean excess returns and higher standard deviations than the market benchmark. In what concerns standard deviation, the conventional portfolio presents the highest value (5.060013).

Regarding the distribution's symmetry, skewness, the SRI and conventional portfolios are negatively skewed, which implies that their distributions' right tail is smaller than the left tail. Concerning the peak of the distribution, kurtosis, the SMB, HML, RMW, and MOM factors present an excess kurtosis

[6] Appendix 2 shows the start date, end date, and duration of the business cycles identified by National Bureau of Economic Research (NBER)

higher than 3, which means that their distributions have excess kurtosis and implies that they are classified as leptokurtic. The SRI and conventional portfolios, the market benchmark, and the CMA factor present a kurtosis lower than 3, which implies their distributions to be classified as platykurtic.

Table 1 - Descriptive statistics of SRI and conventional funds, market benchmark and risk factors

	Number of Observations	Mean Excess Returns (%)	Standard Deviation (%)	Skewness	Excess Kurtosis	Minimum (%)	Maximum (%)	Jarque-Bera (JB)	P-Value (JB)
SRI Portfolio	246	0.08722	4.80069	-0.75416	2.10371	-22.52064	13.97827	68.681	0.00000
Conventional Portfolio	246	-0.10601	5.06001	-0.72845	1.45076	-21.77422	13.81494	43.329	0.00000
S&P Global 1200	246	0.37620	4.63382	-0.63373	1.56894	-19.35078	14.02348	41.697	0.00000
SMB	246	0.11191	3.09267	0.32865	5.70884	-15.33000	17.62000	338.480	0.00000
HML	246	-0.03756	3.24921	0.03097	3.01943	-14.23000	12.22000	93.488	0.00000
RMW	246	0.26256	2.91003	-0.58853	9.70991	-18.91000	12.87000	980.590	0.00000
CMA	246	0.12077	2.03614	0.83216	2.62679	-7.09000	9.18000	99.118	0.00000
MOM	246	0.08215	5.28931	-34.40000	17.93000	-1.47788	9.36917	989.310	0.00000

This table presents the descriptive statistics of the monthly returns of the SRI and conventional funds equally weighted portfolios. It also presents the same descriptive statistics for the market benchmark and for the additional risk factors used to compute the regressions. The mean excess returns, standard deviation, kurtosis, skewness, minimum and maximum are presented for the period that starts in January 2000 and ends in June 2020. Besides, this tables shows the p-value of the Jarque-Bera test that represents the probability that the observed value of the Jarque-Bera statistic exceeds the value observed for the null hypothesis that defends the existence of a normal distribution. If the value is less than 0.05, the null hypothesis is rejected with a 95% confidence level.

In what concerns the normality test, the Jarque-Bera test is performed. For both portfolios, the market benchmark, and the additional risk factors, the results show that the null hypothesis of normality is rejected at the level of significance of 5%. Therefore, the use of conditional models is supported by the existence of non-normal returns, which is argued by Adcock et al. (2012).

In appendix 3, a table with the same summary statistics for the individual SRI funds is presented. The results lead to similar conclusions compared to the SRI portfolio. All funds, except for 2, have positive mean excess returns. Besides, all funds have negative skewness except for 3, and only 4 have excess kurtosis. Regarding the normality of distributions, only 6 funds follow a normal distribution, which means that, considering the Jarque-Bera test, only 6 funds have a p-value greater than 0.05.

5. Empirical Results

In this chapter, the results regarding the performance evaluation of SRI and conventional funds are presented and discussed. First, the results related to the unconditional models are presented. Next, the outcomes that result from the application of the conditional model, based on the approach of Christopherson et al. (1998). Finally, the results related to the models' application including the dummy variable, which allows the analysis of the performance of SRI and conventional funds under different market conditions. All the mentioned approaches are applied to the Jensen (1968) single-factor model, the Carhart (1997) 4-factor model, and the Fama and French (2018) 6-factor model.

The presented results are obtained for the equally weighted portfolios of SRI and conventional funds. Furthermore, the results for individual SRI and conventional funds are presented, since concentrating the analysis only on the equally weighted portfolios' results may not consider some performance regarding individual funds (Silva & Cortez, 2016). A new portfolio is created to draw conclusions about the differences in performance between SRI and conventional funds. Thus, a portfolio of the differences between both types of funds is created by subtracting the returns of SRI and conventional portfolios.

To correct the standard errors that present heteroscedasticity and autocorrelation, the method of Newey and West (1987) is applied. This implies that the results obtained are robust for heteroscedasticity and autocorrelation.

5.1. Performance Evaluation Using Unconditional Models

5.1.1. Unconditional Jensen (1968) single-factor model

Table 2 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the unconditional Jensen (1968) single-factor model. In appendix 4 and appendix 5, the results for each SRI and conventional fund, respectively, are presented.

The analysis of Table 2 shows that both the SRI and conventional portfolios present negative and statistically significant alpha coefficients at a significance level of 5% and 1%, respectively. This suggests that SRI and conventional funds underperform the market. Furthermore, the positive and statistically significant alpha coefficient of the differences' portfolio indicates that SRI funds have a relatively better

performance compared to conventional funds, since the alpha coefficient of the SRI portfolio is less negative than that of the conventional portfolio. Regarding individual funds' analysis, it is concluded that most SRI and conventional funds present negative alpha coefficients. However, only 10 SRI and 29 conventional funds exhibit statistically significant values at a level of significance of 5%, implying that the majority of both types of funds exhibits neutral performance compared to the market. This means that managers are not able to obtain abnormal returns.

Table 2 - Unconditional Jensen (1968) single-factor model

Portfolios	α_p		β_p		Adj. R^2
SRI (1)	-0.00277	**	0.96887	***	0.87410
N+	8[2]		30[30]		
N-	22[10]		0[0]		
Conventional (2)	-0.00485	***	1.00739	***	0.85050
N+	17[2]		90[90]		
N-	73[29]		0[0]		
Difference (1)-(2)	0.00208	***	-0.03852	**	0.01677

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the unconditional Jensen (1968) single-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%.

In what concerns the systematic risk, and as expected, both SRI and conventional portfolios exhibit statistically significant betas at a level of significance of 1%. The conventional portfolio has the highest beta coefficient, which implies that conventional funds are more exposed to the market, making it riskier to invest in these funds. This difference is statistically significant, so this finding is not in agreement with Renneboog et al. (2008), who conclude that there are no significant differences between SRI and conventional funds' market exposures. However, this conclusion is consistent with Bauer et al. (2005), who find that SRI funds are less exposed to the market than conventional funds. Individually, all SRI funds present positive and statistically significant beta coefficients. It is also possible to observe that 14 SRI and 52 conventional funds exhibit a beta coefficient higher than 1, which means that these funds may contain riskier stocks and are more likely to have higher returns.

Regarding the explanatory power of the Jensen (1968) single-factor model, it is concluded that the adjusted coefficients of determination (Adj. R^2) of the SRI and conventional portfolios are high,

87.41% and 85.05% respectively. This means that the single-factor model explains 87.41% and 85.05% of the variability of SRI and conventional funds' excess returns, respectively. The adjusted coefficient of determination for most SRI and conventional funds is high, meaning that the Jensen (1968) single-factor model also shows high explanatory power regarding fund performance at the individual level.

In summary, applying the unconditional Jensen single-factor model, it is concluded that both the SRI and conventional portfolios underperform the market, and SRI funds perform relatively better than conventional funds. At the individual level, most SRI and conventional funds show neutral performance compared to the market.

5.1.2. Unconditional Carhart (1997) 4-factor model

Table 3 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the unconditional Carhart (1997) 4-factor model, which adds to the previous model the size (SMB), book-to-market (HML) and momentum (MOM) factors. In appendix 6 and appendix 7, the results for each SRI and conventional fund, respectively, are presented.

Table 3 - Unconditional Carhart (1997) 4-factor model

Portfolios	α_p		β_p		β_{SMB}		β_{HML}		β_{MOM}	Adj. R^2
SRI (1)	-0.00310	***	0.95210	***	0.19814	***	-0.13495	***	0.01663	0.89820
N+	6[2]		30[0]		22[12]		5[1]		11[4]	
N-	24[11]		0[0]		8[2]		25[14]		19[4]	
Conventional (2)	-0.00506	***	0.99510	***	0.18186	***	-0.23459	***	0.01494	0.88530
N+	12[0]		90[90]		65[19]		29[3]		36[10]	
N-	78[32]		0[0]		25[3]		61[28]		54[21]	
Difference (1)-(2)	0.00196	***	-0.04300	**	0.01628		0.99638	***	0.00168	0.08679

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the unconditional Carhart (1997) 4-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p), the adjusted coefficient of determination (Adj. R^2) and the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%.

Analyzing Table 3, it is concluded that, compared with the Jensen (1968) single-factor model, the results regarding performance estimates are similar. The alpha coefficients for both SRI and conventional

portfolios present negative and statistically significant values, at a level of significance of 1%, which implies that both portfolios underperform the market. The alpha coefficient of the differences' portfolio shows that SRI funds perform relatively better than conventional funds, since the alpha coefficient of the SRI portfolio is less negative than that of the conventional portfolio. Furthermore, it is concluded that the majority of SRI and conventional funds, at the individual level, presents negative alpha coefficients, although only 11 SRI and 32 conventional funds exhibit statistically significant coefficients at a level of significance of 5%, implying they present neutral performance compared to the market. Therefore, most SRI and conventional funds' managers are not able to obtain abnormal returns compared to the market.

Regarding systematic risk, both SRI and conventional portfolios exhibit statistically significant betas at a level of significance of 1%. The market exposure of both SRI and conventional portfolios is lower using the four-factor model, which Fama and French (1993) attribute to the correlation between this model's additional factors and the market. Similar to the Jensen (1968) single-factor model, the conventional portfolio has the highest beta coefficient, which means that it is more exposed to the market, implying that conventional funds carry more risks to invest. This conclusion is supported by the negative and statistically significant beta coefficient of the portfolio of the differences, which implies that conventional funds have more market exposure than SRI funds. The existence of significant differences between SRI and conventional funds' market exposures continues not to support the evidence of Renneboog et al. (2008) and is still consistent with Bauer et al. (2005). It is concluded that all SRI and conventional funds present positive and statistically significant beta coefficients at the individual level, as in the Jensen (1968) single-factor model. Additionally, there are 16 SRI and 49 conventional funds presenting a beta coefficient higher than 1.

Concerning the size (SMB) factor, both SRI and conventional portfolios present positive and statistically significant values at a level of significance of 1%, which means that SRI and conventional funds have greater exposure to small-cap stocks. This conclusion regarding SRI funds is in agreement with Luther et al. (1992), Mallin et al. (1995), and Bauer et al., 2005, who find that UK SRI funds are more exposed to small companies, showing evidence of the existence of a size effect. Additionally, there are no statistically significant differences between both types of funds regarding their exposure to small-cap stocks. At the individual level, most SRI and conventional funds show positive coefficients, but only 12 and 19, respectively, are statistically significant at a level of significance of 5%.

In what concerns the book-to-market (HML) factor, the results show both the SRI and conventional portfolios exhibit negative and statistically significant coefficients, implying that SRI and conventional

funds have greater exposure to growth stocks comparing to value stocks. SRI funds are more exposed to growth stocks than conventional funds, which is confirmed by the positive and statistically significant coefficient of the portfolio of the differences. Furthermore, there are only 14 SRI and 28 conventional funds that present negative and statistically significant book-to-market coefficients, at a significance level of 5%.

About the momentum factor, it is concluded that its coefficient is positive for both SRI and conventional portfolios, but it is not statistically significant, meaning that it has neutral explanatory power regarding the performance of both SRI and conventional funds. This factor also presents neutral explanatory power for the majority of SRI and conventional funds, 22 and 59 funds respectively.

The adjusted coefficient of determination (Adj R^2) of the Carhart (1997) 4-factor model increases compared to the Jensen (1968) single-factor model for both SRI and conventional portfolios (89.82% and 88.53% respectively). The increase of the R^2 shows that the introduction of the three additional factors (SMB, HML, and MOM) implies a higher explanatory power of the excess returns compared to the single-factor model. This improves the quality of the Carhart (1997) 4-factor model in evaluating fund performance, which is consistent with the statistical significance of the two additional risk factors. At the individual level, most of the SRI and conventional funds exhibit high adjusted R^2 values, suggesting the high explanatory power of the Carhart (1997) 4-factor model.

The conclusions of the Carhart (1997) 4-factor model are similar to the ones of the Jensen (1968) single-factor model regarding fund performance, since both SRI and conventional portfolios underperform the market. Furthermore, at the individual level, the majority of SRI and conventional funds present neutral performance when compared to the market. Regarding the differences between SRI and conventional funds' performance, SRI funds present a relatively better performance compared to conventional funds. Additionally, it is concluded that the explanatory power of the excess returns is higher for the Crahart (1997) 4-factor model than for the single-factor model, which meets the existing literature's conclusions (e.g. Bauer et al., 2005).

5.1.3. Unconditional Fama and French (2018) 6-factor model

Table 4 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the unconditional Fama and French (2018) 6-factor model, which adds to the previous model the profitability (RMW) and

investment (CMA) factors. In appendix 8 and appendix 9, the results for each SRI and conventional fund, respectively, are presented.

Table 4 - Unconditional Fama and French (2918) 6-factor model

Portfolios	α_p		β_p		β_{SMB}		β_{HML}		β_{RMW}		β_{CMA}	β_{MOM}	Adj. R^2
SRI (1)	-0.00275	***	0.94304	***	0.17258	***	-0.10150	**	-0.06233		-0.02062	0.02181	0.89820
N+	6[2]		30[30]		24[11]		4[0]		20[2]		13[1]	15[3]	
N-	24[10]		0[0]		6[1]		26[10]		10[1]		17[2]	15[4]	
Conventional (2)	-0.00377	***	0.96208	***	0.08845	**	-0.11283	**	-0.22771	***	-0.07422	0.03384	0.89400
N+	10[0]		90[89]		67[17]		32[4]		57[11]		28[2]	36[11]	
N-	80[25]		0[0]		23[0]		58[14]		33[3]		62[13]	54[22]	
Difference (1)-(2)	0.00102		-0.01904		0.08414	***	0.01132		0.16538	***	0.05360	-0.01202	0.17430

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the unconditional Fama and French (2018) 6-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p), the adjusted coefficient of determination (Adj. R^2) and the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%.

Comparing the results of the Fama and French (2018) 6-factor model with the previous ones, it is concluded that the SRI and conventional portfolios still present underperformance relative to the market since the alpha coefficient for both portfolios is negative and statistically significant at a level of significance of 1%. At the individual level, there are only 10 SRI and 25 conventional funds presenting negative and statistically significant coefficients at a level of significance of 5%, which means they exhibit neutral performance. Contrary to the previous models, there are no statistically significant differences between SRI funds and conventional funds' performance.

As in the previous models, both SRI and conventional portfolios present positive and statistically significant market beta coefficients at a significance level of 1%. However, using this model, conventional funds do not present higher market exposure compared to SRI funds since the beta coefficient of the differences' portfolio is not statistically significant, which now is in agreement with Renneboog et al. (2008) and is not with the finding of Bauer et al. (2005). Applying the Fama and French (2018) 6-factor model, all SRI and conventional funds show statistically significant beta coefficients at a level of significance of 5%, except for one conventional fund that is statistically significant at a level of significance of 10%. Furthermore, there are 15 SRI and 49 conventional funds that present beta coefficients higher than 1.

The size (SMB) factor is still positive for both portfolios at a significance level of 1% for the SRI portfolio and 5% for the conventional portfolio. This means that SRI and conventional funds are more exposed to small-cap stocks. Most SRI and conventional funds present positive size coefficients at the individual level, but only 11 SRI and 17 conventional funds present statistically significant coefficients, at a significance level of 5%. Unlike the Carhart (1997) 4-factor model, considering the size coefficient for the portfolio of the differences, SRI funds are more exposed to small-cap stocks than conventional funds.

Concerning the book-to-market (HML) factor, both the SRI and conventional portfolios present negative and statistically significant coefficients, as in the Carhart (1997) 4-factor model, implying that both types of funds are more exposed to growth stocks. Accordingly, the majority of SRI and conventional funds exhibit negative book-to-market coefficients, but only 10 and 14 funds, respectively, are statistically significant at a significance level of 5%. However, there are no statistically significant differences between SRI and conventional portfolios using the Fama and French (2918) 6-factor model.

As in the Carhart (1997) 4-factor model, the momentum factor has neutral explanatory power concerning SRI and conventional funds' performance. Accordingly, the majority of SRI and conventional funds present neutral explanatory power.

Regarding the profitability (RMW) and investment (CMA) factors, only the profitability factor shows statistically significant coefficients since the investment factor shows neutral explanatory power for both SRI and conventional portfolios. The profitability coefficient is negative and statistically significant for the conventional portfolio at a significance level of 1%. This implies that conventional funds have greater exposure to stocks with weak profitability. Additionally, the differences' portfolio's profitability factor suggests that SRI funds are more exposed to these stocks than conventional funds. However, the SRI portfolio does not present a statistically significant coefficient. Concerning the individual fund analysis, most SRI and conventional funds do not present statistically significant coefficients regarding both the profitability and investment factors.

The adjusted coefficient of determination (Adj. R^2) of the Fama and French (2018) 6-factor model is slightly higher for the conventional portfolio compared to the Carhart (1997) 4-factor model (89.40%), suggesting that the two additional factors improve the explanatory power of conventional funds' excess returns. However, the explanatory power of the Fama and French (2018) 6-factor model is the same as that of the Carhart (1997) 4-factor model (89.82%). At the individual level, the majority of SRI and conventional funds exhibit high adjusted coefficients of determination, suggesting the high explanatory power of the Fama and French (2018) 6-factor model.

Analyzing the Fama and French (2018) 6-factor model, the conclusions regarding fund performance are similar to those of the Jensen (1968) single-factor model and the Carhart (1997) 4-factor model. It is concluded that the SRI and conventional portfolios underperform the market, and most funds of the SRI and conventional samples show neutral performance compared to the market. Unlike the previous models, there are no significant differences between SRI and conventional funds' performance, which is consistent with some literature findings (e.g. Cortez et al., 2009; Leite and Cortez, 2013). Additionally, the explanatory power of conventional funds' performance is slightly higher using the Fama and French (2018) 6-factor model compared to the Carhart (1997) 4-factor model, suggesting the contribution of the two additional risk factors for the explanatory power of the model.

5.2. Performance Evaluation Using Conditional Models

This chapter presents and discusses the empirical results regarding the conditional approach of Christopherson et al. (1998), which allows alphas and betas to be time-varying. Under this approach, both alphas and betas are a linear function of the public information variables. This dissertation uses two public information variables: the short-term rate (ST) and the dividend yield (DY).

The Wald test is applied to test the null hypothesis that the coefficients of the public information variables are equal to zero.

5.2.1. Conditional Jensen (1968) single-factor model

Table 5 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the fully conditional Jensen (1968) single-factor model. In appendix 10 and appendix 11, the results for each SRI and conventional fund, respectively, are presented.

Analyzing the results of the conditional Jensen (1968) single-factor model, similar conclusions are obtained compared to the unconditional single-factor model. The SRI and conventional portfolios underperform the market. Additionally, considering the differences' portfolio, which presents a positive and statistically significant coefficient at a significance level of 1%, SRI funds show a relatively better performance compared to conventional funds. There are 12 SRI funds and 33 conventional funds with negative and statistically significant alpha coefficients, meaning they underperform the market. Comparing these results with those of the Jensen (1968) single-factor model's unconditional approach,

the number of SRI and conventional funds with negative and statistically significant alpha coefficients increases. Nevertheless, the majority of SRI and conventional funds still exhibit neutral performance.

Table 5 - Conditional Jensen (1968) single-factor model

Portfolios	SRI (1)		N+	N-	Conventional (2)		N+	N-	Difference (1)-(2)	
α_p	-0.00275	**	8[2]	22[12]	-0.00498	***	16[4]	74[33]	0.00223	***
α_{ST}	-0.00035		18[1]	12[4]	-0.00041		55[7]	35[3]	0.00006	
α_{DY}	0.00090		17[4]	13[0]	0.00013		39[4]	51[3]	0.00077	
β_p	0.96816	***	30[30]	0[0]	1.02288	***	90[89]	0[0]	-0.05472	***
β_{p*ST}	-0.00927		11[0]	19[4]	-0.01784		33[2]	57[21]	0.00857	
β_{p*DY}	-0.00598		13[1]	17[1]	-0.11785		39[5]	51[5]	0.11190	**
w_1	0.94290				0.97650					
w_2	0.80580				0.50020					
w_3	0.74150				0.47880					
Adj. R^2	0.87210				0.84910				0.02398	

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the conditional Jensen (1968) single-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the conditional beta coefficients (β_{p*ST}, β_{p*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%. w_1, w_2 and w_3 represent the p-values of the Wald tests regarding the presence of time-varying alphas, time-varying betas and time-varying alphas and betas, respectively.

The alpha coefficients regarding the short-term rate and the dividend yield are not statistically significant, meaning these public information variables have neutral influence in explaining the performance of SRI and conventional funds. The same is concluded for the majority SRI and conventional funds at the individual level. The systematic risk is statistically significant at a significance level of 1% for the SRI and conventional portfolios, but the beta coefficient decreased and increased for the SRI and conventional portfolios, respectively, compared to the unconditional Jensen (1968) single-factor model. As in the unconditional approach of the Jensen (1968) single-factor model, the differences between the SRI and conventional portfolios' market exposure are negative and statistically significant, implying conventional funds are more exposed to the market than SRI funds. At the individual level, and unlike the unconditional Jensen (1968) single-factor model, there is one conventional fund that does not present statistically significant beta coefficient.

Concerning the results of the Wald test applied to conditional alphas and betas, there is no evidence to support the inclusion of public information variables in the Jensen (1968) single-factor model, as the null hypothesis of the coefficients being equal to zero is not rejected. The same is concluded for SRI and conventional funds at the individual level.

In what concerns the adjusted coefficient of determination (Adj. R^2), the explanatory power of the conditional Jensen (1968) single-factor model is slightly lower compared to the unconditional approach of this model. This suggests that the inclusion of public information variables in the Jensen (1968) single-factor model reduces the model's explanatory power. Furthermore, the majority of SRI and conventional funds present high adjusted R^2 values.

In summary, applying the conditional approach to the Jensen (1968) single-factor model, leads to similar conclusions compared to the ones of the unconditional approach regarding funds' performance compared to the market. Therefore, SRI and conventional portfolios underperform the market, and the majority of SRI and conventional funds exhibit neutral performance compared to the market. Additionally, SRI funds perform relatively better compared with conventional funds. Regarding the model's explanatory power, it is concluded that the inclusion of public information variables in the model does not improve the explanatory power for both SRI and conventional portfolios.

5.2.2. Conditional Carhart (1997) 4-factor model

Table 6 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the conditional Carhart (1997) 4-factor model. In appendix 12 and appendix 13, the results for each SRI and conventional fund, respectively, are presented.

The conditional version of the Carhart (1997) 4-factor model shows that, as in the unconditional approach of the model, the SRI and conventional portfolios underperform the market, and SRI funds present a relatively better performance than conventional funds. Individually, most SRI and conventional funds present neutral performance compared to the market, since only 11 SRI and 33 conventional funds present negative and statistically significant alpha coefficients at a significance level of 5%.

As in the conditional Jensen (1968) single-factor model, there is no evidence that SRI and conventional portfolios' performance is explained by the public information variables since the alpha coefficients representing the short-term rate and the dividend yield do not present statistically significant values. The same is concluded for SRI and conventional funds at the individual level, which is reflected

by the majority of SRI and conventional funds presenting short-term rate and dividend yield alpha coefficients that are not statistically significant.

Table 6 - Conditional Carhart (1997) 4-factor model

Portfolios	SRI (1)		N+	N-	Conventional (2)		N+	N-	Difference (1)-(2)	
α_p	-0.00254	**	6[0]	24[11]	-0.00465	***	10[0]	80[33]	0.00211	***
α_{ST}	-0.00118		18[5]	12[0]	-0.00203		60[6]	30[2]	0.00085	
α_{DY}	-0.00093		14[0]	16[1]	-0.00436		28[1]	62[6]	0.00343	
β_p	0.94678	***	30[30]	0[0]	0.99387	***	90[89]	0[0]	-0.04709	**
β_{p*ST}	-0.01092		13[0]	17[6]	0.03351		35[5]	55[18]	-0.04442	
β_{p*DY}	0.06469		18[3]	12[0]	0.01863		42[5]	48[12]	0.04606	
β_{SMB}	0.17678	***	19[10]	11[4]	0.12854	***	62[18]	28[6]	0.04824	*
β_{SMB*ST}	0.22422	***	24[10]	6[0]	0.17073	***	66[23]	24[6]	0.05349	
β_{SMB*DY}	0.05564		11[1]	19[1]	-0.15035		38[2]	52[7]	0.20600	*
β_{HML}	-0.09226	***	3[0]	27[14]	-0.17622	***	24[1]	66[29]	0.08397	***
β_{HML*ST}	0.06289		21[6]	9[2]	0.04825		57[9]	33[8]	0.01465	
β_{HML*DY}	-0.02134		22[4]	8[1]	-0.01149		53[16]	37[5]	-0.00985	
β_{MOM}	0.00427		8[1]	22[9]	0.00650		34[8]	56[26]	-0.00223	
β_{MOM*ST}	0.02266		20[5]	10[1]	0.13425	***	51[14]	39[8]	-0.11159	***
β_{MOM*DY}	0.04714		18[5]	12[3]	0.07179		42[9]	48[5]	-0.02465	
w_1	0.97740				0.42490					
w_2	0.01490	**			0.00151	***				
w_3	0.01591	**			0.05311	*				
Adj. R^2	0.90240				0.89310				0.14280	

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the conditional Carhart (1997) 4-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM), the conditional beta coefficients (β_{p*ST}, β_{p*DY}, β_{SMB*ST}, β_{SMB*DY}, β_{HML*ST}, β_{HML*DY}, β_{MOM*ST}, β_{MOM*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%. w_1, w_2 and w_3 represent the p-values of the Wald tests regarding the presence of time-varying alphas, time-varying betas and time-varying alphas and betas, respectively.

The systematic risk is statistically significant at a level of significance of 1% for the SRI and conventional portfolios, although the portfolios' market exposure decreases using the conditional Carhart (1997) 4-factor model compared to the unconditional approach of the model. Similar to the unconditional approach of the Carhart (1997) 4-factor model, conventional funds present higher exposure to the market compared to SRI funds, and, at the individual level, 19 SRI and 51 conventional funds present beta

coefficients higher than 1. As in the conditional Jensen (1968) single-factor model, there is one conventional fund that does not present a statistically significant beta coefficient.

In what concerns the size and book-to-market risk factors, these are statistically significant for both portfolios, as they are when the unconditional approach of the Carhart (1997) 4-factor model is applied. Therefore, SRI and conventional funds present higher exposure to small-cap and growth stocks, since the size and book-to-market coefficients are positive and negative, respectively, for both portfolios. As in the unconditional Carhart (1997) 4-factor model, SRI funds are more exposed to growth stocks than conventional funds. Additionally, SRI funds are more exposed to small-cap stocks than conventional funds. Regarding the momentum factor, its coefficient is still positive for both portfolios, but there is not statistically significance, meaning that this risk factor has neutral explanatory power. Furthermore, the dividend yield and the short-term rate associated with the size coefficient of the SRI and conventional portfolios and the conventional portfolio's momentum coefficient, respectively, present statistically significant coefficients, meaning that these factors are explained by the public information variables.

Regarding the Wald test, different conclusions are reached compared to the ones of the conditional Jensen (1968) single-factor model. Although there is still no evidence of a statistically significant alpha coefficient, there is evidence of time-varying betas and alphas and betas together since the null hypothesis is rejected for betas and alphas and betas together. Also, the number of SRI and conventional funds with time-varying betas and alphas and betas together increases when compared to the conditional Jensen (1968) single-factor model.

The adjusted coefficient of determination (Adj. R^2) of the SRI and conventional portfolios is higher using the conditional Carhart (1997) 4-factor model (90.24% and 89.31%, respectively) than using the unconditional approach, implying that the inclusion of the lagged public information variables improves the explanatory power of the model. This finding is consistent with previous literature results (e.g. Bauer et al., 2005; Cortez et al., 2009). The adjusted R^2 is also higher in this model compared to the conditional Jensen (1968) single-factor model, demonstrating the additional risk factors' importance.

Therefore, applying the conditional Carhart (1997) 4-factor model, the conclusions concerning funds' performance are similar to the ones of the unconditional approach of the model. The SRI and conventional portfolios underperform the market, and the majority of SRI and conventional funds present neutral performance when compared to the market. Regarding differences between SRI and conventional funds' performance, the conclusion is still that SRI funds perform relatively better than conventional

funds. Additionally, both portfolios' explanatory power improves when introducing public information variables, implying they are important to explain the model.

5.2.3. Conditional Fama and French (2018) 6-factor model

Table 7 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the conditional Fama and French (2018) 6-factor model. In appendix 14 and appendix 15, the results for each SRI and conventional fund, respectively, are presented.

Analyzing the results of the conditional Fama and French (2018) 6-factor model, the conclusions are similar to the ones of the unconditional approach of the model. The SRI and conventional portfolios underperform the market, and the majority of SRI and conventional funds shows neutral performance relative to the market. However, unlike the unconditional approach of the Fama and French (2018) 6-factor model, SRI funds perform relatively better than conventional funds.

The results regarding the alpha coefficients representing the short-term rate and dividend yield indicate that the performance of SRI and conventional portfolios is not explained by lagged public information variables since the coefficients do not present statistically significant values. Accordingly, the same is concluded for individual SRI and conventional funds' performance since most funds do not present statistically significant alpha coefficients.

Regarding the systematic risk, both SRI and conventional portfolios present positive and statistically significant beta coefficients. When comparing to the unconditional approach of the Fama and French (2018) 6-factor model, the market exposure of the SRI and conventional portfolios increases. It is also observed that there are no significant differences between SRI and conventional funds' market exposure. Furthermore, one SRI fund does not present a statistically significant coefficient, and there is one conventional fund with a negative coefficient and three conventional funds that are only statistically significant at a level of significance of 10%.

Table 7 - Conditional Fama and French (2018) 6-factor model

Portfolios	SRI (1)		N+	N-	Conventional (2)		N+	N-	Difference (1)-(2)	
α_p	-0.00280	***	7[1]	23[13]	-0.00428	***	13[1]	77[27]	0.00148	**
α_{ST}	-0.00016		18[2]	12[0]	-0.00162		58[5]	32[4]	0.00146	
α_{DY}	-0.00357		11[0]	19[3]	-0.00573		31[4]	59[11]	0.00216	
β_p	0.95085	***	30[29]	0[0]	0.97832	***	89[86]	1[0]	-0.02747	
β_{p*ST}	-0.00609		16[1]	14[4]	0.04217		37[6]	53[11]	-0.04826	
β_{p*DY}	0.07210		17[2]	13[0]	0.01099		46[9]	44[9]	0.06111	
β_{SMB}	0.14183	***	24[8]	6[0]	0.04555		65[18]	25[1]	0.09628	***
β_{SMB*ST}	0.17437	***	19[4]	11[1]	0.09256		55[16]	35[3]	0.08181	*
β_{SMB*DY}	0.04555		14[2]	16[1]	-0.14007		42[5]	48[11]	0.18562	*
β_{HML}	-0.05545		8[0]	22[8]	-0.05340		32[5]	58[14]	-0.00205	
β_{HML*ST}	0.14535		18[3]	12[2]	0.12655		49[5]	41[11]	0.01880	
β_{HML*DY}	0.05900		13[2]	17[3]	-0.00885		42[7]	48[11]	0.06784	
β_{RMW}	-0.02208		19[3]	11[1]	-0.17830	***	53[14]	37[5]	0.15623	***
β_{RMW*ST}	-0.13499		12[0]	18[4]	-0.16419	*	31[4]	59[8]	0.02920	
β_{RMW*DY}	0.27102		27[9]	3[0]	0.04931		52[12]	38[6]	0.22171	
β_{CMA}	-0.05040		10[4]	20[5]	-0.10048		29[5]	61[22]	0.05007	
β_{CMA*ST}	-0.00844		18[4]	12[4]	0.04882		47[11]	43[7]	-0.05726	
β_{CMA*DY}	0.04324		21[7]	9[1]	0.09478		65[9]	25[5]	-0.05153	
β_{MOM}	-0.00738		12[2]	18[10]	0.01476		34[9]	56[19]	-0.02214	
β_{MOM*ST}	0.03828		13[3]	17[3]	0.11699	**	44[4]	46[7]	-0.07871	**
β_{MOM*DY}	0.04009		18[3]	12[3]	0.03879		47[7]	43[12]	0.00130	
w_1	0.99670				0.76520					
w_2	0.03219	**			0.00325	***				
w_3	0.03345	**			0.09682	*				
Adj. R^2	0.90300				0.89730				0.20420	

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the conditional Fama and French (2018) 6-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM), the conditional beta coefficients (β_{p*ST}, β_{p*DY}, β_{SMB*ST}, β_{SMB*DY}, β_{HML*ST}, β_{HML*DY}, β_{RMW*ST}, β_{RMW*DY}, β_{CMA*ST}, β_{CMA*DY}, β_{MOM*ST}, β_{MOM*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%. w_1, w_2 and w_3 represent the p-values of the Wald tests regarding the presence of time-varying alphas, time-varying betas and time-varying alphas and betas, respectively.

As in this unconditional approach of the Fama and French (2018) 6-factor model, the size factor is positive and statistically significant for the SRI portfolio at a significance level of 1%, implying that SRI funds are more exposed to small-cap stocks. However, the size factor for the conventional portfolio is not statistically significant. Regarding the book-to-market coefficient, no statistically significant values are

found for either portfolio. The profitability factor presents a negative and statistically significant coefficient for the conventional portfolio, implying these funds present higher exposure to stocks with weak profitability. Furthermore, it is observed that SRI funds are more exposed to these stocks than conventional funds. The momentum and investment factors' coefficients still present no statistically significant values for both portfolios, suggesting these factors do not have explanatory power regarding this model. Additionally, the short-term rate presents statistically significant coefficients associated with the size factor regarding SRI funds and associated with the profitability and momentum factors regarding conventional portfolios, meaning that these factors are explained by public information variables.

For the Wald test, the conclusions are similar to the ones of the conditional Carhart (1997) 4-factor model. For the SRI and conventional portfolios, the null hypothesis that betas and alphas and betas together are equal to zero is rejected, meaning there is evidence that these coefficients are time-varying. Furthermore, the number of SRI funds with evidence of time-varying betas and alphas and betas together is higher comparatively to the conditional Carhart (1997) 4-factor model.

The adjusted coefficient of determination (Adj. R^2) of the SRI and conventional portfolios increases using the conditional Fama and French (2018) 6-factor model relative to this model's unconditional approach (90.30% and 89.73%, respectively), which suggests that the lagged information variables' inclusion increases the explanatory power of the Fama and French (2018) 6-factor model compared to the unconditional approach. The explanatory power of the conditional Fama and French (2018) 6-factor model is also higher compared to the conditional Carhart (1997) 4-factor model.

Summarizing, applying the conditional Fama and French (2018) 6-factor model, the same is concluded as in the previous models concerning the performance of the SRI and conventional portfolios. The SRI and conventional portfolios underperform the market, and the majority of funds, at the individual level, exhibit neutral performance compared to the market. Furthermore, SRI funds present a relatively better performance compared with conventional funds. Lastly, it is concluded that the explanatory power of the Fama and French (2018) 6-factor model increases with the introduction of lagged public information variables.

5.3. Performance Evaluation under Different Market Conditions

This chapter presents the empirical results regarding the performance of SRI and conventional funds in different market conditions. This analysis is performed by including a dummy variable in the Jensen (1968) single-factor model, in the Carhart (1997) 4-factor model, and in the Fama and French (2018) single-factor model. The dummy variable distinguishes recession and expansion periods and assumes the value 1 in recession periods and 0 in expansion periods.

The analysis of fund performance under different market conditions is carried out for 14 SRI funds and 42 conventional funds since there are 16 SRI and 48 conventional funds that were formed after 2009, implying they have been existing only for expansionary periods, except for 4 recessionary months that started in February 2020. Therefore, including these funds in the analysis of funds' performance under different market conditions could lead to biased results.

5.3.1. Jensen (1968) single-factor model with a dummy variable

Table 8 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the Jensen (1968) single-factor model with a dummy variable, with the purpose of distinguishing between recession and expansion periods. In appendix 16 and appendix 17, the results for each SRI and conventional fund, respectively, are presented.

The results show that the conventional portfolio presents a negative and statistically significant alpha coefficient at a significance level 10%. This means that conventional funds underperform the market in expansion periods. The results for individual funds show that only 6 conventional funds exhibit statistically significant alpha coefficients, implying that most funds, at the individual level, present neutral performance in expansion periods. Regarding SRI funds, they present neutral performance compared to the market in expansion periods. Both portfolios present alpha coefficients associated with the dummy variable that are not statistically significant, suggesting no significant performance differences in periods of recession. The differences' portfolio is positive and statistically significant at a level of significance of 10%, which indicates that SRI funds present a relatively better performance compared to conventional funds in expansion periods. However, there are no statistically significant differences between both portfolios in periods of recession.

Table 8 - Performance under different market conditions - Jensen (1968) single-factor model

Portfolios	SRI (1)		N+	N-	Conventional (2)		N+	N-	Difference (1)-(2)	
α_p	-0.00146		2[0]	12[6]	-0.00274	*	11[0]	31[6]	0.00128	*
α_D	-0.00056		10[0]	4[1]	-0.00123		14[1]	28[5]	0.00067	
β_p	0.98044	***	14[14]	0[0]	1.01741	***	42[42]	0[0]	-0.03697	*
β_D	0.02095		8[1]	6[0]	0.01418		27[17]	15[0]	0.00677	
Adj. R^2	0.88540				0.84810				0.00999	

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the Jensen (1968) single-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%.

Regarding systematic risk, both portfolios present market exposures, which is in agreement with individual funds' results since all SRI and conventional funds present positive and statistically significant coefficients. No changes are found regarding market exposures in periods of recession for both SRI and conventional portfolios since the betas associated with recession periods do not present statistically significant coefficients. Additionally, it is observed that conventional funds are more exposed to the market than SRI funds in expansion periods.

The adjusted coefficient of determination (Adj. R^2) is high for the SRI and conventional portfolios (88.54% and 84.81%, respectively).

Therefore, applying the Jensen (1968) single-factor model with a dummy variable, the conclusions show that the conventional portfolio underperforms the market in expansion periods, while most individual conventional funds present neutral performance. Additionally, the SRI portfolio and the majority of individual SRI funds present neutral performance compared to the market in expansion periods, and SRI funds perform relatively better than conventional funds in expansion periods. Furthermore, no evidence is found that SRI funds and conventional funds perform differently in expansion and recession periods.

5.3.2. Carhart (1997) 4-factor model with a dummy variable

Table 9 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the Carhart (1997) 4-factor model with a dummy variable, with the purpose of distinguishing between recession and expansion periods. In appendix 18 and appendix 19, the results for each SRI and conventional fund, respectively, are presented.

Table 9 - Performance under different market conditions - Carhart (1997) 4-factor model

Portfolios	SRI (1)		N+	N-	Conventional (2)		N+	N-	Difference (1)-(2)	
α_p	-0.00141		1[0]	13[4]	-0.00242	**	8[0]	34[8]	0.00101	
α_D	-0.00038		8[1]	6[1]	-0.00255		11[1]	31[1]	0.00218	
β_p	0.95822	***	14[14]	0[0]	0.99160	***	42[42]	0[0]	-0.03338	*
β_D	0.08127		14[3]	0[0]	0.06045		37[11]	5[0]	0.02082	
β_{SMB}	0.20221	***	14[13]	0[0]	0.21228	***	39[24]	3[0]	-0.01008	
β_{SMB*D}	-0.27411	***	4[1]	10[3]	-0.31642	**	9[1]	33[8]	0.04231	
β_{HML}	-0.13106	***	1[0]	13[8]	-0.24533	***	7[2]	35[14]	0.11428	***
β_{HML*D}	0.01993		5[0]	9[2]	0.02621		11[0]	31[5]	-0.00628	
β_{MOM}	0.01472		8[1]	6[2]	0.01853		26[5]	16[4]	-0.00381	
β_{MOM*D}	0.00081		9[3]	5[1]	-0.04803		25[4]	17[3]	0.04884	
Adj. R^2	0.90730				0.88690				0.10810	

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the Carhart (2018) 4-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM) associated with expansion and recession periods and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%.

Applying the Carhart (1997) 4-factor model, as in the single-factor model, the conventional portfolio underperforms the market in expansion periods since it presents a negative and statistically significant alpha coefficient, at a level of significance of 5%, and SRI funds present neutral performance compared to the market. However, applying the Carhart (1997) 4-factor model there are no significant differences between the performance of SRI and conventional funds in expansion periods. The majority of SRI and conventional funds exhibit negative but not statistically significant coefficients for expansion periods,

suggesting that they present neutral performance compared to the market. Additionally, no statistically significant differences are found in the performance of SRI and conventional funds in recession periods.

As in the Jensen (1968) single-factor model, both portfolios present market exposures, as is the case of all funds individually, and conventional funds are more exposed to the market in expansion periods than SRI funds.

Regarding the size (SMB) factor, SRI and conventional funds are more exposed to small-cap stocks in periods of expansion, and both SRI and conventional funds' exposure is statistically different in recession periods. Concerning the book-to-market (HML) factor, both SRI and conventional funds present higher exposure to growth stocks in expansion periods. Furthermore, SRI funds present higher exposure to growth stocks than conventional funds in expansion periods.

The adjusted R^2 increases in the Carhart (1997) 4-factor model for the SRI and conventional portfolios (90.73% and 88.69%, respectively) compared to the Jensen (1968) single-factor model, implying that the four-factor model allows a better explanation of funds' excess returns.

The results of the Carhart (1997) 4-factor model show that there are no significant differences in the performance of SRI and conventional funds in recession periods. Additionally, it is concluded that the conventional portfolio underperforms the market in expansion periods, and the majority of SRI and conventional funds present neutral performance.

5.3.3. Fama and French (2018) 6-factor model with a dummy variable

Table 10 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level considering the Fama and French (2018) 6-factor model with a dummy variable, with the purpose of distinguishing between recession and expansion periods. In appendix 20 and appendix 21, the results for each SRI and conventional fund, respectively, are presented.

Unlike the Jensen (1968) single-factor model and the Carhart (1997) 4-factor model, the results of the Fama and French (2018) 6-factor model show that both the SRI and conventional portfolios present neutral performance compared to the market in periods of expansion since they do not exhibit statistically significant alpha coefficients. Furthermore, as in the Carhart (1997) 4-factor model, there are no statistically significant differences between the performance of SRI and conventional funds in expansion

periods, and no significant differences are found regarding the performance of SRI and conventional funds in recession periods.

As in the previous models, the SRI and conventional portfolios are exposed to the market, and no statistically significant differences are found regarding the market exposure of SRI and conventional funds in periods of recession. Additionally, unlike the previous models, there are no statistically significant differences between SRI and conventional funds' market exposure in expansion periods.

Table 10 - Performance under different market conditions - Fama and French (2018) 6-factor model

Portfolios	SRI (1)		N+	N-	Conventional (2)		N+	N-	Difference (1)-(2)	
α_P	-0.00111		1[0]	13[3]	-0.00128		9[0]	33[6]	0.00017	
α_D	-0.00328		3[0]	11[2]	-0.00561		5[0]	37[7]	0.00234	
β_P	0.94766	***	14[14]	0[0]	0.95079	***	42[42]	0[0]	-0.00313	
β_D	0.08417		13[2]	1[0]	0.07672		34[10]	8[0]	0.00745	
β_{SMB}	0.17547	***	14[13]	0[0]	0.09405	**	41[19]	1[0]	0.08141	***
β_{SMB*D}	-0.25140	**	4[1]	10[3]	-0.21488	*	8[1]	34[10]	-0.03652	
β_{HML}	-0.08122		1[0]	13[2]	-0.06853		17[1]	25[8]	-0.01269	
β_{HML*D}	-0.03161		4[0]	10[2]	-0.10507		7[1]	35[8]	0.07347	
β_{RMW}	-0.06302		5[0]	9[1]	-0.26447	***	24[7]	18[3]	0.20146	***
β_{RMW*D}	0.30138	**	13[3]	1[0]	0.45632	***	34[7]	8[0]	-0.15493	
β_{CMA}	-0.04480		7[0]	7[3]	-0.11709		9[2]	33[8]	0.07229	
β_{CMA*D}	-0.13861		5[0]	9[2]	-0.19650		14[4]	28[5]	0.05789	
β_{MOM}	0.02212		7[1]	7[2]	0.04797	*	28[5]	14[3]	-0.02585	
β_{MOM*D}	-0.02315		9[3]	5[1]	-0.08062		21[3]	21[4]	0.05747	*
Adj. R^2	0.90760				0.89640				0.22450	

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The results are obtained by applying the regression of the Fama and French (2018) 6-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM) associated with expansion and recession periods and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*). N+ and N- represent, respectively, the number of individual funds that present positive and negative estimates, and, within brackets, is presented the number of individual funds that have statistically significant estimates at a significance level of 5%.

In what concerns the additional risk factors, SRI and conventional funds are more exposed to small-cap stocks in periods of expansion, and SRI funds present higher exposure to small stocks than

conventional funds. Regarding the book-to-market factor, unlike the Carhart (1997) 4-factor model, both portfolios do not present statistically significant coefficients. Considering the momentum factor, both portfolios do not present statistically significant coefficients, as in the Carhart (1997) 4-factor model. Regarding the profitability (RMW) factor, conventional funds are more exposed to stocks with weak profitability in periods of expansion, and SRI funds present higher exposure to these stocks than conventional funds. Additionally, SRI and conventional funds' exposure to the profitability factor presents statistically significant differences in recession periods. Concerning the investment (CMA) factor, no statistically significant values are found.

The adjusted R^2 slightly increases for both SRI and conventional portfolios (90.76% and 89.64%, respectively) compared with the Carhart (1997) 4-factor model, meaning that the additional risk factors allow a higher explanatory power of excess returns.

In summary, the Fama and French (2018) 6-factor model shows that both portfolios, and the majority of SRI and conventional funds, at the individual level, present neutral performance compared to the market in expansion periods. Furthermore, there are no statistically significant differences in the performance of SRI and conventional funds in recession periods.

5.4. Main Results of Fund Performance

This chapter presents a summary of the results and conclusions regarding fund performance and market exposure.

Table 11 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level, considering unconditional and conditional models of the Jensen (1968) single-factor model, Carhart (1997) 4-factor model and Fama and French (2018) 6-factor model.

In what concerns fund performance, SRI and conventional portfolios underperform the market in all models. Furthermore, with the exception of the unconditional Fama and French 6-factor model, SRI funds perform relatively better than conventional funds, which is consistent with some literature (e.g. Luther et al., 1992; Mallin et al., 1995; Gil-Bazo et al., 2010; Utz & Wimmer, 2014), though the most common conclusions are that SRI and conventional funds perform neutrally or that conventional funds outperform SRI funds.

About the systematic risk, SRI and conventional funds are exposed to the market, and it is found in all models' results, except for the unconditional and conditional Fama and French (2018) 6-factor

model, that conventional funds are more exposed to the market than SRI funds, which is consistent with the finding of Bauer et al. (2005).

Table 11 - Main Results Regarding Funds' Performance

	Unc. Jensen (1968) single-factor model					Unc. Carhart (1997) 4-factor model					Unc. Fama and French (2018) 6-factor model				
Portfolios	**α_p**		**β_p**		**Adj. R^2**	**α_p**		**β_p**		**Adj. R^2**	**α_p**		**β_p**		**Adj. R^2**
SRI (1)	-0.00277	**	0.96887	***	0.87410	-0.00310	***	0.95210	***	0.89820	-0.00275	***	0.94304	***	0.89820
Conventional (2)	-0.00485	***	1.00739	***	0.85050	-0.00506	***	0.99510	***	0.88530	-0.00377	***	0.96208	***	0.89400
Difference (1) - (2)	0.00208	***	-0.03852	**	0.01677	0.00196	***	-0.04300	**	0.08679	0.00102		-0.01904		0.17430
	Cond. Jensen (1968) single-factor model					**Cond. Carhart (1997) 4-factor model**					**Cond. Fama and French (2018) 6-factor model**				
Portfolios	**α_p**		**β_p**		**Adj. R^2**	**α_p**		**β_p**		**Adj. R^2**	**α_p**		**β_p**		**Adj. R^2**
SRI (1)	-0.00275	**	0.96816	***	0.87210	-0.00254	**	0.94678	***	0.90240	-0.00280	***	0.95085	***	0.90300
Conventional (2)	-0.00498	***	1.02288	***	0.84910	-0.00465	***	0.99387	***	0.89310	-0.00428	***	0.97832	***	0.89730
Difference (1) - (2)	0.00223	***	-0.05472	***	0.02398	0.00211	***	-0.04709	**	0.14280	0.00148	**	-0.02747		0.20420

This table exhibits the main results, considering the period between January 2000 and June 2020, for the equally weighted portfolios of SRI and conventional funds and for the portfolios' difference between these two mentioned portfolios. The table presents the performance estimates (α_p), the systematic risk (β_p) and the adjusted coefficient of determination (Adj. R^2) for the Jensen (1968) single factor model, the Carhart (1997) 4-factor model and the Fama and French (2018) 6-factor model. Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Regarding the models' explanatory power, the adjusted coefficient of determination (Adj. R^2) is higher for conditional models compared to unconditional models, except for the Jensen (1968) single-model, which implies higher explanatory power of fund performance, suggesting that including time-varying alphas and betas improves this analysis. The model with the highest adjusted R^2 is the conditional Fama and French (2018) 6-factor model for both SRI (90.90%) and conventional (89.81%) portfolios. Furthermore, all models' explanatory power regarding the performance of SRI funds is higher than conventional funds.

Table 12 presents the results, for the period between January 2000 and June 2020, regarding the performance of SRI and conventional funds at an aggregate level under different market conditions, considering the Jensen (1968) single-factor model, the Carhart (1997) 4-factor model and the Fama and French (2018) 6-factor model.

Mixed results are reached considering the different models applied in what concerns fund performance under different market conditions. It is concluded that conventional funds, as a portfolio, underperform the market in expansion periods, except when the Fama and French (2018) 6-factor model is applied. However, no statistically significant changes are found in their performance in recession

periods. Furthermore, no changes are found regarding the performance of SRI funds in recession periods since the alpha coefficient associated with the dummy variable for all models is not statistically significant. Regarding the differences between SRI and conventional funds' performance in expansion periods, it is concluded that SRI funds perform relatively better than conventional funds in expansion periods when the Jensen (1968) single-factor model is applied.

Table 12 - Main Results Regarding Funds' Performance in Different Market Conditions

	Jensen (1968) single-factor model with a dummy variable						
Portfolios	α_p		β_p		α_D	β_D	**Adj. R^2**
SRI (1)	-0.00146		0.98044	***	-0.00056	0.02095	0.88540
Conventional (2)	-0.00274	*	1.01741	***	-0.00123	0.01418	0.84810
Difference (1) - (2)	0.00128	*	-0.03697	*	0.00067	0.00677	0.00999
	Carhart (1997) 4-factor model with a dummy variable						
Portfolios	α_p		β_p		α_D	β_D	**Adj. R^2**
SRI (1)	-0.00141		0.95822	***	-0.00038	0.08127	0.90730
Conventional (2)	-0.00242	**	0.99160	***	-0.00255	0.06045	0.88690
Difference (1) - (2)	0.00101		-0.03338	*	0.00218	0.02082	0.10810
	Fama and French (2018) 6-factor model with a dummy variable						
Portfolios	α_p		β_p		α_D	β_D	**Adj. R^2**
SRI (1)	-0.00111		0.94766	***	-0.00328	0.08417	0.90760
Conventional (2)	-0.00128		0.95079	***	-0.00561	0.07672	0.89640
Difference (1) - (2)	0.00017		-0.00313		0.00234	0.00745	0.22450

This table exhibits the main results regarding the performance of SRI and conventional funds in different market conditions, considering the period between January 2000 and June 2020, for the equally weighted portfolios of socially responsible and conventional funds and for the portfolios' difference between these two mentioned portfolios. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D) and the adjusted coefficient of determination (Adj. R^2) for the Jensen (1968) single factor model, the Carhart (1997) 4-factor model and the Fama and French (2018) 6-factor model. Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Regarding the systematic risk, it is concluded that SRI and conventional funds are exposed to the market and conventional funds' market exposure is higher than that of SRI funds in expansion periods, except when the Fama and French (2018) 6-factor model is applied.

About the explanatory power of the models, the Fama and French 6-factor model (2018) has the highest adjusted coefficient of determination (Adj. R^2) for SRI (90.76%) and conventional (89.64%) funds, implying that this is the model that better explains fund performance under different market conditions.

6. Conclusion

Investors' awareness regarding Environmental, Social and Governance (ESG) issues has been growing considerably. As such, they have been seeking to include socially responsible screens in their investments. This led to the creation of SRI funds that are becoming increasingly important on a global scale (Bauer et al., 2007). However, several studies suggest that investing in SRI mutual funds carries risks due to the limited number of possible investments (Humphrey & Lee, 2011). Consequently, it is assumed that socially responsible investors are willing to sacrifice their financial performance in order to have a positive environmental and social impact (Radu & Funaru, 2011). For this reason, it is of utmost importance to ascertain the performance results with the inclusion of socially responsible criteria, aiming to conclude whether screening investments improve or worsen performance.

Another critical question regarding SRI funds' performance is whether their performance changes in expansion and recession periods. It is expected to conclude whether SRI funds protect investors in recessionary periods, considering that these funds have less risk in these periods due to their characteristics (Nofsinger and Varma, 2014).

This way, this dissertation aims to evaluate and compare UK SRI and conventional funds' performance. This analysis was executed by applying unconditional and conditional models. Furthermore, this study evaluated and compared the performance of SRI and conventional funds under different market conditions, namely in periods of recession and expansion. The comparative analysis under different market conditions was performed by incorporating a dummy variable in the unconditional models.

Fund performance was evaluated at an aggregate and individual basis using a single-factor model, namely the Jensen (1968) single-factor model, and two multi-factor models, namely the Carhart (1997) 4-factor model and the Fama and French (2018) 6-factor model. These models were applied considering the unconditional and conditional approaches. Furthermore, they were extended to a dummy variable that represents expansion and recession periods, which takes the value 1 in recessionary periods and 0 in expansionary periods. The conditional model was applied considering the fully conditional approach proposed by Christopherson et al. (1998), where risk and performance are a linear function of public information variables. The public information variables used to apply the conditional model were the short-term rate and the dividend yield.

This dissertation's study was conducted for a sample of 30 UK SRI funds and 90 UK matching conventional funds. For each SRI fund, a portfolio of 3 matching conventional funds was selected, and their performance was compared. Furthermore, the performance of both types of funds with the market was compared, for which a conventional benchmark was used, namely the S&P Global 1200 index.

The results regarding the performance of SRI and conventional funds when applying the unconditional models of Jensen (1968), Carhart (1997), and Fama and French (2018) show that SRI and conventional funds as a portfolio underperform the market. However, when funds are evaluated individually, it is concluded that the majority of SRI and conventional funds present neutral performance compared to the market. Concerning the differences in fund performance, it is concluded that, in general, SRI funds perform relatively better than conventional funds, although there are no significant differences when the Fama and French (2018) 6-factor model is applied. The findings regarding differences in performance are consistent with those of Luther et al. (1992) and Mallin et al. (1995), who find that UK SRI funds show a relatively better performance compared to conventional funds, and Gil-Bazo et al. (2010), and Utz and Wimmer (2014) who find the same for US funds.

In what concerns the market exposure, the results for all models show that SRI and conventional funds are exposed to the market. Furthermore, conventional funds are more exposed to the market than SRI funds, except when the Fama and French (2018) 6-factor model is applied, which is consistent with Bauer et al. (2005).

About the size (SMB) factor, the results show that SRI and conventional funds are more exposed to small-cap stocks. This finding concerning SRI funds is consistent with the conclusion of Luther et al. (1992), Mallin et al. (1995), and Bauer et al. (2005), who conclude that UK SRI funds exhibit evidence of the existence of a size effect. Furthermore, when the Fama and French (2018) 6-factor model is applied, SRI funds present higher exposure to small-cap stocks than conventional funds. Regarding the book-to-market (HML) factor, the findings show that SRI and conventional funds present higher exposure to growth stocks. Additionally, it is concluded that SRI funds present higher exposure to growth stocks than conventional funds when the Carhart (1997) 4-factor model is applied. Regarding the profitability (RMW) factor, the results show that conventional funds are more exposed to stocks with weak profitability, and SRI funds are more exposed to these stocks than conventional funds. The momentum (MOM) and the investment (CMA) factors have neutral explanatory power regarding SRI and conventional funds' performance.

In terms of the unconditional models' explanatory power, the results show that the Fama and French (2018) 6-factor model has higher explanatory power than the other models since it shows the highest adjusted coefficient of determination (Adj. R^2) for both SRI and conventional funds.

Regarding conditional models, the conclusions are similar to the ones of unconditional models in what concerns fund performance, since SRI and conventional funds underperform the market, and SRI funds present a relatively better performance compared to conventional funds.

Applying conditional models, the results also show that SRI and conventional funds are exposed to the market, although few exceptions are found with some funds presenting market coefficients that are not statistically significant. Moreover, conventional funds are more exposed to the market than SRI funds, except when the conditional Fama and French (2018) 6-factor model is applied since no statistically significant differences are found in the market exposure of both types of funds.

Regarding the additional risk factors, the results show that SRI and conventional funds are more exposed to small-cap stocks and that SRI funds present higher exposure to these stocks than conventional funds. However, when the conditional Fama and French (2018) 6-factor model is applied, there is no evidence that conventional funds are more exposed to small-cap stocks. Additionally, when the conditional Carhart (1997) 4-factor model is applied, SRI and conventional funds are more exposed to growth stocks and SRI funds exhibit a higher exposure to these stocks than conventional funds. The profitability factor results suggest that conventional funds are more exposed to stocks with weak profitability and that SRI funds present higher exposure to these stocks than conventional funds. Concerning the momentum and investment factors, they present neutral explanatory power.

In what concerns the Wald test, when the Carhart (1997) 4-factor model and the Fama and French (2018) 6-factor model are applied, the results show evidence of time-varying betas and alphas and betas together since the null hypothesis is rejected for betas and alphas and betas together, which supports the inclusion of public information variables.

The results concerning the adjusted coefficient of determination (Adj. R^2) show that all models' explanatory power considering the conditional approach is higher than the unconditional approach, which is consistent with some literature (e.g. Cortez et al., 2009). Additionally, the conditional Fama and French (2018) 6-factor model is the conditional model with the highest explanatory power.

When fund performance is analyzed under expansion and recession periods, the conclusions are different considering the different models applied. The results show that conventional funds underperform

the market in expansion periods, except when the Fama and French (2018) 6-factor model is applied. Furthermore, the results of the Jensen (1968) single-factor model show that SRI funds perform relatively better than conventional funds in expansion periods. Additionally, no statistically significant changes are found in SRI and conventional funds' performance in recession periods.

In summary, the results and findings regarding fund performance are mixed considering the different models applied, implying different conclusions. Overall, it is concluded that SRI and conventional funds as a portfolio underperform the market and that SRI funds perform relatively better than conventional funds. The fact that SRI funds present a relatively better performance compared to conventional funds is consistent with the findings of some of the existing literature (e.g. Luther et al., 1992; Mallin et al., 1995; Gil-Bazo et al., 2010; Utz & Wimmer, 2014). Therefore, according to this study's findings, when the performance of SRI funds is compared with the market, it is possible to affirm that including SRI criteria in the investment process sacrifices investors' financial performance. However, when the performance of SRI funds is compared with conventional funds, it is possible to affirm that including SRI criteria in the investment process benefits investors' financial performance. Regarding fund performance under different market conditions, no significant differences are found between the performance of UK SRI and conventional funds in periods of expansion using the Carhart (1997) 4-factor model and the Fama and French (2018) 6-factor model, which is consistent with some existing literature (e.g. Leite & Cortez, 2015; Syed, 2017). Another conclusion is that the performance of SRI and conventional funds does not change in recession periods. This suggests that UK SRI funds do not harm nor benefit investors in periods of turmoil.

This study's main limitation is related to the fact that it was impossible to match conventional funds to SRI funds considering the funds' size since several funds did not present TNA information. Another limitation throughout this study was the fact that, after eliminating the funds from the sample that did not meet the required minimum number of monthly observations and that did not have matching conventional funds, the sample ended with funds that only invest globally. However, initially the sample was intended to include funds that invest globally and in Europe.

Accordingly, it would be interesting and relevant for further investigation to perform a matched-pair analysis considering UK funds' size. Furthermore, it would be interesting to include in the sample UK funds that invest in Europe in order to compare the performance of UK SRI funds that invest globally and in Europe. Moreover, it would be enticing to analyze UK SRI and conventional funds' performance during the Covid-19 pandemic.

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Appendix 1 – List of socially responsible funds and matched-portfolios

	Fund Type	Lipper RIC	Fund Name	Lipper Global Classification	Inception Date
1	**SRI**	**LP60008719**	EdenTree - Amity International A	Equity Global	13/09/1999
	Conventional	**LP60009122**	CF Lacomp World	Equity Global	20/10/1999
		LP60011715	GAM International Growth and Value Y Acc	Equity Global	01/10/1999
		LP60095970	T. Bailey Growth Z Acc	Equity Global	13/12/1999
2	**SRI**	**LP60008775**	AXA Rosenberg Global R Acc	Equity Global	01/05/1989
	Conventional	**LP60010893**	Invesco Global Equity (UK) Acc	Equity Global	02/10/1989
		LP60011571	LF Adam Worldwide Acc	Equity Global	14/09/1989
		LP60009576	Fidelity Moneybuilder Global Acc	Equity Global	08/02/1988
3	**SRI**	**LP60010597**	ASI Global Ethical Equity A Inc	Equity Global	01/05/1999
	Conventional	**LP60011521**	ASI Global Unconstrained Equity Retail Acc GBP	Equity Global	16/11/1998
		LP60010676	Aberdeen Standard Capital Falcon GBP Acc	Equity Global	13/11/1998
		LP60096957	Ninety One Global Dynamic A Acc GBP	Equity Global	24/02/1998
4	**SRI**	**LP60010747**	Janus Henderson Global Sustainable Equity A Inc	Equity Global	01/08/1991
	Conventional	**LP60008665**	Janus Henderson Global Equity Acc	Equity Global	14/01/1991
		LP60010471	Marlborough Global A Acc	Equity Global	18/05/1992
		LP60008675	Artemis Global Growth R Acc GBP	Equity Global	29/06/1990
5	**SRI**	**LP60011009**	BMO Sustainable Opportunities Global Equity 1 Acc	Equity Global	09/09/1987
	Conventional	**LP60010683**	BNY Mellon Global Equity GBP Inc	Equity Global	01/06/1987
		LP60009513	Janus Henderson MMgr Global Select Acc	Equity Global	10/07/1987
		LP60011271	Aegon Global Equity Acc B	Equity Global	30/10/1987
6	**SRI**	**LP60011472**	St. James's Place Sustainable & Resp Eqty L Acc	Equity Global	06/04/1999
	Conventional	**LP60008886**	Clerical Medical International Managed	Equity Global	01/03/1999
		LP60010670	BNY Mellon 50/50 Global Equity Institutional 2 Acc	Equity Global	15/02/1999
		LP60011291	PUTM Opportunity Acc	Equity Global	12/02/1999
7	**SRI**	**LP60011566**	Stewart Investors WW Leaders Sust. A Acc GBP	Equity Global	30/07/1999
	Conventional	**LP60010529**	BlackRock Global Equity A Inc	Equity Global	31/01/2000
		LP60010212	Jupiter Global Managed Inc	Equity Global	16/02/1998
		LP60010794	Merian Global Equity A Acc	Equity Global	15/07/1998
8	**SRI**	**LP60052206**	Liontrust Sustainable Future Global Growth 2 Acc	Equity Global	19/02/2001
	Conventional	**LP68022080**	DB PWM Maximum Growth Portfolio A Inc	Equity Global	30/04/2001
		LP60066434	Aquarius Acc	Equity Global	20/02/2002
		LP60055551	The Gulland Inc	Equity Global	26/04/2001
9	**SRI**	**LP60066130**	ASI Multi-Manager Ethical Portfolio R Acc	Equity Global	12/02/2002
	Conventional	**LP60081311**	Rathbone Sherwood Inc	Equity Global	20/02/2003

Appendix 1 – List of socially responsible funds and matched-portfolios (continued)

	Fund Type	Lipper RIC	Fund Name	Lipper Global Classification	Inception Date
		LP60069269	Fidelity Inst Select Global Equities Acc	Equity Global	28/02/2002
		LP60070891	Standard Life TM Global Equity Trust	Equity Global	31/05/2002
10	**SRI**	**LP60075884**	Halifax Ethical C Acc	Equity Global	07/01/1994
	Conventional	**LP60010178**	Ninety One Global Strategic Equity A Acc GBP	Equity Global	14/02/1994
		LP60011931	Sarasin Thematic Global Equity A Acc	Equity Global	01/07/1994
		LP60009020	TM STNHG FLM INTRNL B INC	Equity Global	06/07/1994
11	**SRI**	**LP60100350**	Quilter Investors Ethical Equity Fund A GBP	Equity Global	23/09/2005
	Conventional	**LP65140598**	Thesis Ord Acc	Equity Global	15/06/2005
		LP65006244	Baillie Gifford LongTerm Global Growth B Ac	Equity Global	14/09/2005
		LP65006222	BNY Mellon Global Opportunities GBP Inc	Equity Global	01/07/2005
12	**SRI**	**LP65043279**	First Sentier Gbl Property Securities A Acc GBP	Equity Sector Real Est Global	12/09/2006
	Conventional	**LP65036812**	Fidelity Global Property A Acc	Equity Sector Real Est Global	05/09/2006
		LP65053849	JPM Global Property Securities A Acc	Equity Sector Real Est Global	01/09/2006
		LP65021937	SW Multi-Manager Global Real Est Secs A Acc	Equity Sector Real Est Global	01/06/2006
13	**SRI**	**LP65099210**	Schroder Global Climate Change A Inc	Equity Global	28/09/2007
	Conventional	**LP65095536**	BNY Mellon Long-Term Global Equity GBP Inc	Equity Global	28/09/2007
		LP65165200	Baring Themed Equity X GBP Inc	Equity Global	02/07/2007
		LP65090571	The MN Fund	Equity Global	11/09/2007
14	**SRI**	**LP65105216**	Allianz Global EcoTrends A Acc	Equity Global	14/02/2008
	Conventional	**LP68016680**	Schroder QEP Global Active Value A Inc	Equity Global	18/04/2008
		LP65140615	The New Grande Motte Inc	Equity Global	25/04/2008
		LP65111203	St. James's Place Global Smaller Companies Acc	Equity Global	07/04/2008
15	**SRI**	**LP65146043**	Scottish Widows HIFML Ethical 1	Equity Global	24/11/2008
	Conventional	**LP65140764**	Elite LWM East-West Value	Equity Global	01/12/2008
		LP65146058	Scottish Widows HIFML Intl Growth 1	Equity Global	24/11/2008
		LP65155057	Santander Max 100% Shares Portfolio Retail Acc	Equity Global	11/12/2008
16	**SRI**	**LP68013728**	FP WHEB Sustainability A Acc	Equity Global	08/06/2009
	Conventional	**LP68026232**	River and Mercantile Global Opportunities A	Equity Global	08/10/2009
		LP68037787	Sarasin Global Higher Dividend (Stg Hedged) A Acc	Equity Global	12/05/2009
		LP65121695	LF IM Global Strategy A Acc	Equity Global	16/06/2009
17	**SRI**	**LP68094654**	Stewart Investors Worldwide Equity A Acc GBP	Equity Global	09/06/2011
	Conventional	**LP68136435**	FP Octopus Global Growth B Acc	Equity Global	07/11/2011
		LP68107811	Legal & General Global Environmental Enterp R Acc	Equity Global	16/06/2011
		LP68112778	Vanguard LifeStrategy 100% Equity Acc	Equity Global	23/06/2011
18	**SRI**	**LP68104500**	Sarasin Responsible Global Equity A Acc	Equity Global	01/06/2011

Appendix 1 – List of socially responsible funds and matched-portfolios (continued)

	Fund Type	Lipper RIC	Fund Name	Lipper Global Classification	Inception Date
	Conventional	**LP68102346**	MI Metropolis Valuefund A Acc	Equity Global	15/04/2011
		LP68126103	Janus Henderson Diversified Growth A Acc	Equity Global	06/04/2011
		LP68130893	St. James's Place Global Equity Acc	Equity Global	12/09/2011
19	**SRI**	**LP68117482**	EdenTree Amity Global Equity Fd ForCharities A Inc	Equity Global	04/04/2011
	Conventional	**LP68106025**	Artemis Global Select R Acc GBP	Equity Global	16/06/2011
		LP68093659	MGTS Frontier Adventurous R GBP Acc	Equity Global	04/04/2011
		LP68090505	SF Fundamental Energy Acc	Equity Global	01/03/2011
20	**SRI**	**LP68168205**	Stewart Investors WW Sust. B Acc GBP	Equity Global	01/11/2012
	Conventional	**LP68227769**	NFU Mutual Global Growth C Inc	Equity Global	03/12/2012
		LP68169624	Ninety One Global Franchise A Acc GBP	Equity Global	01/10/2012
		LP68215747	TM UBS (UK) - Global Equity C Acc	Equity Global	29/11/2012
21	**SRI**	**LP68225399**	Verus Sustainable Balanced Fund A Inc	Equity Global	02/09/2013
	Conventional	**LP68232389**	DMS Sequel Growth Target Return Strategy B	Equity Global	07/10/2013
		LP68210744	Incisively Global Fund H Inc	Equity Global	07/05/2013
		LP68236977	Sarasin Global Dividend F Acc	Equity Global	05/12/2013
22	**SRI**	**LP68358159**	Baillie Gifford Global Stewardship B Acc	Equity Global	07/12/2015
	Conventional	**LP68348812**	Allianz Best Styles Global AC Equity C Acc	Equity Global	14/12/2015
		LP68380254	Schroder Global Recovery L Acc GBX	Equity Global	30/10/2015
		LP68351536	TM Credit Suisse Growth A Acc	Equity Global	27/11/2015
23	**SRI**	**LP68413634**	TM Rectory Sustainability Inc	Equity Global	10/05/2017
	Conventional	**LP68429185**	ACUMEN Portfolio 7 X Acc GBP	Equity Global	01/06/2017
		LP68436671	HSBC Global Equity Income C Acc	Equity Global	24/05/2017
		LP68407099	T. Rowe Global Focused Growth Equity C Acc	Equity Global	30/05/2017
24	**SRI**	**LP68431411**	Baillie Gifford Positive Change B Acc	Equity Global	04/01/2017
	Conventional	**LP68412857**	T. Rowe Global Technology Equity C9 Acc	Equity Global	27/03/2017
		LP68417268	LF New Institutional World Inc	Equity Global	29/06/2017
		LP68415814	Blackrock ACS 30:70 Gbl Eqty Trk X1 GBP Acc	Equity Global	24/07/2017
25	**SRI**	**LP68447768**	ACS World Low Carbon EQ Tracker X2 Acc	Equity Global	05/12/2017
	Conventional	**LP68444640**	Aviva Investors Global Equity Endurance 6 GBP Acc	Equity Global	19/12/2017
		LP68427383	ACS World Multifactor Equity Tracker X2 GBP Acc	Equity Global	14/11/2017
		LP68418497	AI 50:50 Global Equity Index Pn Acc	Equity Global	23/06/2017
26	**SRI**	**LP68452003**	AI Stewardship International Equity Inst Acc	Equity Global	25/10/2017
	Conventional	**LP68432043**	LF Blue Whale Growth R GBP Acc	Equity Global	11/09/2017
		LP68442157	Royal London Global Equity Select R Acc	Equity Global	10/10/2017
		LP68459339	UBS FTSE RAFI Developed 1000 Index C Acc	Equity Global	17/10/2017
27	**SRI**	**LP68455412**	Legal & General Future WCC Eq Factors Idx R Acc	Equity Global	18/01/2018

Appendix 1 – List of socially responsible funds and matched-portfolios (continued)

	Fund Type	Lipper RIC	Fund Name	Lipper Global Classification	Inception Date
	Conventional	**LP68469398**	Invesco Summit Growth 3 (UK) NT Acc	Equity Global	19/07/2018
		LP68474383	GAM Global Eclectic Equity Ia GBP	Equity Global	26/02/2018
		LP68491108	VT AJ Bell Passive Global Growth I Acc	Equity Global	11/06/2018
28	**SRI**	**LP68466454**	Fundsmith Sustainable Equity I Acc GBP	Equity Global	01/11/2017
	Conventional	**LP68448977**	St. James's Place Global Growth L Acc	Equity Global	06/11/2017
		LP68442165	Royal London Global Equity Diversified R Acc	Equity Global	10/10/2017
		LP68441868	Baillie Gifford UK & Worldwide Equity B Acc	Equity Global	08/09/2017
29	**SRI**	**LP68467743**	BNY Mellon Sustainable Global Equity Inst W Acc	Equity Global	22/01/2018
	Conventional	**LP68508266**	CCM Intelligent Wealth R Inc	Equity Global	30/04/2018
		LP68481123	Threadneedle Global Focus Z Gr Acc GBP	Equity Global	17/04/2018
		LP68473362	Equitile Resilience Feeder C Gross USD	Equity Global	29/02/2016
30	**SRI**	**LP68499809**	Rathbone Global Sustainability I Acc	Equity Global	19/07/2018
	Conventional	**LP68469392**	Invesco Summit Growth 1 (UK) NT Acc	Equity Global	19/07/2018
		LP68415801	BlackRock ACS 50:50 Gl Eq Tr X1 GBP ACC	Equity Global	07/06/2017
		LP68529610	VT Tyndall Global Select A Acc	Equity Global	17/12/2018

This table lists the 30 SRI funds in the sample and their matching conventional funds. For each fund, the Lipper code, the name, the Lipper global classification and the date of the first public offering are presented.

Appendix 2 - Business cycles provided by NBER

Recession/Expansion	Start Date	End Date	Duration (in months)
Expansion	Jan-00	Feb-01	13
Recession	Mar-01	Nov-01	8
Expansion	Dez-01	Nov-07	71
Recession	Dez-07	Jun-09	18
Expansion	Jul-09	Jan-20	60
Recession	Feb-20	Jun-20	4

This table presents the recession and expansion periods used in this study, which are identified by NBER. The end date and start date and the length of the business cycle are presented.

Appendix 3 – Summary statistics of individual socially responsible funds

Funds	Number of Observations	Mean Excess Returns (%)	Standard Deviation (%)	Skewness	Excess Kurtosis	Minimum (%)	Maximum (%)	Jarque-Bera (JB)	P-Value (JB)
1	246	0.33026	4.77891	-0.47919	1.19507	-17.03528	14.54672	24.054	0.00001
2	246	0.18334	4.92926	-0.72701	1.35809	-18.92606	13.74865	40.575	0.00000
3	246	0.19357	5.16070	-0.60875	1.63666	-22.49202	15.08861	42.65	0.00000
4	246	0.29392	5.05020	-0.96090	2.52545	-25.44817	14.30232	103.23	0.00000
5	246	0.16522	4.84828	-0.85511	2.07973	-22.44813	13.80348	74.314	0.00000
6	246	0.23193	5.12533	-0.50946	1.63880	-22.40016	16.14536	38.17	0.00000
7	246	0.39468	5.35199	-0.52842	1.64493	-18.79041	19.73595	39.183	0.00000
8	246	0.42735	4.84195	-0.68625	2.00482	-20.51180	17.99814	81.632	0.00000
9	246	0.33998	5.02057	-1.26949	4.46976	-26.41224	12.80308	305.23	0.00000
10	246	0.53559	4.68605	-0.97672	2.93841	-21.58164	14.41089	169.26	0.00000
11	246	0.35912	5.38156	-0.79218	2.69752	-24.45600	15.32666	123.01	0.00000
12	246	0.31265	5.62146	-0.89323	4.81739	-27.99438	19.18834	467.94	0.00000
13	246	0.30758	6.15626	-0.85173	1.85121	-21.15292	14.33012	31.60	0.00000
14	246	-0.32431	6.84414	-1.40961	5.22400	-32.48678	13.41195	269.5	0.00000
15	246	0.79643	4.56732	-0.40289	0.03205	-10.78241	10.58384	2.7129	0.25760
16	246	0.48844	4.93710	-0.35247	1.26132	-13.56301	17.20284	23.907	0.00001
17	246	0.41952	3.38881	-0.07806	0.77684	-8.09750	11.85051	3.9165	0.14110
18	246	0.59087	4.32259	-0.53018	1.59640	-12.50687	13.96806	42.869	0.00000
19	246	0.34176	4.51235	-0.39019	1.17262	-14.51080	14.53563	15.529	0.00042
20	246	0.70190	3.43228	-0.24644	1.16190	-8.81196	11.67889	14.429	0.00074
21	246	0.04417	3.52427	-0.83504	1.56302	-12.26123	8.80905	41.487	0.00000
22	246	1.54033	6.20765	0.18961	2.70915	-16.64701	23.96712	38.458	0.00000
23	246	0.39641	4.41724	-0.69697	0.76843	-10.77381	10.53665	11.767	0.00279
24	246	2.24302	5.82868	0.03984	3.35365	-14.43174	22.45925	83.087	0.00000
25	246	0.35423	5.70470	-0.37644	0.75188	-13.34594	14.70799	4.6387	0.09834
26	246	0.56235	4.89972	-0.85286	0.67406	-11.22553	10.56822	12.895	0.00159
27	246	-0.12896	5.14382	-0.65739	0.97495	-13.22893	11.73500	8.6045	0.01354
28	246	0.79923	5.15559	-0.19538	0.58014	-9.73925	14.00070	3.4238	0.18050
29	246	0.65534	5.23270	-0.17954	0.84904	-10.84511	14.53233	4.9793	0.08294
30	246	0.60463	6.41271	0.12456	0.14240	-11.65960	16.44214	0.12137	0.94110

This table presents the descriptive statistics of the monthly returns of the SRI mutual funds. The mean excess returns, standard deviation, kurtosis, skewness, minimum and maximum are presented for the period that starts in January 2000 and ends in June 2020. Besides, this tables shows the p-value of the Jarque-Bera test that represents the probability that the observed value of the Jaruqe-Bera statistic exceeds the value observed for the null hypothesis that defends the existence of a normal distribution. If the value is less than 0.05, the null hypothesis is rejected with a 95% confidence level.

Appendix 4 – Individual performance estimates using the unconditional Jensen (1968) single-factor model – SRI funds

Funds	Lipper RIC	α_p		β_p		Adj. R^2
1	LP60008719	-0.00030		0.95644	***	0.85950
2	LP60008775	-0.00201	***	1.02158	***	0.92195
3	LP60010597	-0.00200	**	1.04575	***	0.88121
4	LP60010747	-0.00076		0.98282	***	0.81246
5	LP60011009	-0.00205	**	0.98537	***	0.88649
6	LP60011472	-0.00154		1.02458	***	0.85749
7	LP60011566	0.00043		0.93384	***	0.65231
8	LP60052206	-0.00050		0.97718	***	0.86932
9	LP60066130	-0.00222	**	0.99054	***	0.83640
10	LP60075884	-0.00178	**	0.98681	***	0.86744
11	LP60100350	-0.00261	**	1.09791	***	0.89180
12	LP65043279	-0.00239		1.01962	***	0.73987
13	LP65099210	-0.00139		1.04025	***	0.88122
14	LP65105216	-0.00845	**	1.15213	***	0.80939
15	LP65146043	-0.00219		0.90725	***	0.86265
16	LP68013728	-0.00417	***	1.09461	***	0.84903
17	LP68094654	-0.00107		0.74827	***	0.80074
18	LP68104500	-0.00120		1.00991	***	0.89761
19	LP68117482	-0.00347	***	1.04552	***	0.87449
20	LP68168205	0.00056		0.82980	***	0.80262
21	LP68225399	-0.00462	***	0.84011	***	0.80164
22	LP68358159	0.00578		1.34320	***	0.78378
23	LP68413634	-0.00116		0.92987	***	0.93219
24	LP68431411	0.01461	**	1.14566	***	0.73364
25	LP68447768	-0.00002		1.09875	***	0.94868
26	LP68452003	0.00168		0.96593	***	0.93387
27	LP68455412	-0.00274	*	0.99464	***	0.95382
28	LP68466454	0.00461	*	0.94489	***	0.82737
29	LP68467743	0.00509	***	0.99906	***	0.92898
30	LP68499809	0.00272		1.09437	***	0.89636

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the unconditional Jensen (1968) single-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 5 – Individual performance estimates using the unconditional Jensen (1968) single-factor model – Conventional funds

Funds	Lipper RIC	α_p		β_p		Adj. R^2
1	LP60008665	-0.00338		1.19730	***	0.60492
2	LP60008675	-0.00212		1.14970	***	0.83481
3	LP60008886	-0.00160	*	0.97398	***	0.88861
4	LP60009020	0.00013		0.96771	***	0.83525
5	LP60009122	-0.00249		0.87138	***	0.70201
6	LP60009513	-0.00413		1.00516	***	0.74103
7	LP60009576	-0.00023		0.96956	***	0.87711
8	LP60010178	0.00112		1.01135	***	0.83032
9	LP60010212	-0.00005		0.93525	***	0.78871
10	LP60010471	-0.00172		0.91477	***	0.80551
11	LP60010529	-0.00263	***	1.00144	***	0.88098
12	LP60010670	-0.00082		0.98938	***	0.88111
13	LP60010676	-0.00018		0.96046	***	0.84247
14	LP60010683	-0.00060		1.00575	***	0.86272
15	LP60010794	0.00049		1.02286	***	0.89415
16	LP60010893	-0.00114		1.06051	***	0.88311
17	LP60011271	-0.00293	**	1.08192	***	0.84544
18	LP60011291	-0.00297	**	1.04174	***	0.75425
19	LP60011521	-0.00187	*	1.09528	***	0.85606
20	LP60011571	-0.00062		0.90877	***	0.81782
21	LP60011715	0.00073		0.97801	***	0.78122
22	LP60011931	-0.00137		0.96672	***	0.88447
23	LP60055551	0.00060		0.64860	***	0.64470
24	LP60066434	-0.00143		0.65472	***	0.42475
25	LP60069269	-0.00070		1.01087	***	0.93102
26	LP60070891	-0.00033		1.07678	***	0.88342
27	LP60081311	-0.00118		0.68698	***	0.61158
28	LP60095970	-0.00159		1.02284	***	0.85020
29	LP60096957	-0.00269	**	1.09613	***	0.85687
30	LP65006222	-0.00029		0.98390	***	0.83647
31	LP65006244	0.00124		0.17314	***	0.78115
32	LP65021937	-0.00269		1.00429	***	0.73815
33	LP65036812	-0.00319		1.05105	***	0.73969
34	LP65053849	-0.00632	**	1.22215	***	0.73101
35	LP65090571	-0.00396		0.68272	***	0.57631
36	LP65095536	0.00068		0.86378	***	0.89081
37	LP65111203	-0.00590	***	1.13246	***	0.88418
38	LP65121695	-0.00403	***	1.04543	***	0.89768
39	LP65140598	-0.00073		0.91938	***	0.84701
40	LP65140615	-0.00211	*	0.73562	***	0.74842
41	LP65140764	-0.00337		0.87221	***	0.67293
42	LP65146058	-0.00125		0.94313	***	0.91019
43	LP65155057	-0.00199	***	1.02754	***	0.93080
44	LP65165200	-0.00215		1.08783	***	0.78501
45	LP68016680	-0.00336	***	1.10109	***	0.93213
46	LP68022080	-0.00120		1.01235	***	0.87045
47	LP68026232	-0.00395	**	0.96064	***	0.91286
48	LP68037787	-0.00428	***	1.05577	***	0.83058
49	LP68090505	-0.01323	**	0.98990	***	0.55354
50	LP68093659	-0.00478	***	1.04151	***	0.86538
51	LP68102346	-0.00075		0.86883	***	0.73734
52	LP68106025	-0.00016		0.96608	***	0.90255
53	LP68107811	-0.00842	**	1.20090	***	0.74453
54	LP68112778	-0.00200	***	1.03713	***	0.98707
55	LP68126103	-0.00418	***	0.60550	***	0.73326
56	LP68130893	-0.00388	***	1.08209	***	0.91559
57	LP68136435	-0.00490	***	1.12532	***	0.88116
58	LP68169624	0.00084		0.92525	***	0.80056
59	LP68210744	-0.00393		0.33294	***	0.22085

Appendix 4 – Individual performance estimates using the unconditional Jensen (1968) single-factor model – Conventional funds (continued)

Funds	Lipper RIC	α_p		β_p		Adj. R^2
60	LP68215747	-0.00465	***	1.12317	***	0.91723
61	LP68227769	-0.00675	***	0.25574	***	0.84440
62	LP68232389	-0.00706	***	1.07219	***	0.77331
63	LP68236977	0.00154	***	1.05556	***	0.90415
64	LP68348812	-0.00447	***	1.15718	***	0.93613
65	LP68351536	-0.00777	***	1.00173	***	0.88292
66	LP68380254	-0.00742	*	1.28063	***	0.75781
67	LP68407099	0.00638	*	1.15673	***	0.88811
68	LP68412857	0.00995		1.18646	***	0.68715
69	LP68415801	-0.00361		0.26188	***	0.27630
70	LP68415814	-0.00462	*	1.23767	***	0.92408
71	LP68417268	-0.00166		0.77972	***	0.85725
72	LP68418497	-0.00533	**	1.07304	***	0.91118
73	LP68427383	0.00404	***	1.11684	***	0.94018
74	LP68429185	-0.00567	***	1.16380	***	0.90962
75	LP68432043	0.00742	**	1.12753	***	0.84283
76	LP68436671	-0.00179	*	1.06958	***	0.92692
77	LP68441868	-0.00159		1.31180	***	0.92068
78	LP68442157	0.00149		1.09333	***	0.92885
79	LP68442165	0.00009		1.10752	***	0.94988
80	LP68444640	0.00206		0.99483	***	0.88022
81	LP68448977	0.00182		1.11629	***	0.94325
82	LP68459339	-0.00610	***	1.05919	***	0.95882
83	LP68469392	-0.00402		0.48869	***	0.63521
84	LP68469398	-0.00560	**	0.80249	***	0.87808
85	LP68473362	0.00299		0.92747	***	0.66072
86	LP68474383	-0.00688		0.76206	***	0.67215
87	LP68481123	0.00669	**	1.00177	***	0.83768
88	LP68491108	-0.00454	*	1.08430	***	0.92084
89	LP68508266	-0.01185	***	1.09323	***	0.86258
90	LP68529610	-0.00161		0.95632	***	0.86221

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the unconditional Jensen (1968) single-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance

Appendix 6 – Individual performance estimates using the unconditional Carhart (1997) 4-factor model – SRI funds

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{MOM}		Adj. R^2
1	LP60008719	-0.00043		0.94476	***	0.09161		-0.04923		-0.00019		0.86230
2	LP60008775	-0.00214	***	1.01774	***	0.07254		-0.05624		0.01075		0.92477
3	LP60010597	-0.00199	**	1.01448	***	0.11410	**	-0.09175		-0.03933		0.88764
4	LP60010747	-0.00122		0.96842	***	0.25145	***	-0.18343	***	0.03558		0.85138
5	LP60011009	-0.00220	***	1.00722	***	0.03361		-0.13801	***	0.05016	***	0.89902
6	LP60011472	-0.00166		0.99215	***	0.14542	*	-0.04744		-0.02910		0.86398
7	LP60011566	-0.00075		0.97686	***	0.34755	***	-0.24390	***	0.18950	***	0.75777
8	LP60052206	-0.00103		0.99109	***	0.10911	**	-0.13920	**	0.04627	**	0.87742
9	LP60066130	-0.00270	***	0.97429	***	0.11416	***	-0.17388	*	-0.06102		0.84225
10	LP60075884	-0.00207	**	0.96652	***	0.17197	***	-0.11019	*	-0.00801		0.87376
11	LP60100350	-0.00274	**	1.04325	***	0.25189	***	-0.14667	**	-0.08324	**	0.90545
12	LP65043279	-0.00164		0.95084	***	0.13977		0.06173		-0.08497		0.74771
13	LP65099210	-0.00225		1.07571	***	0.25025	***	-0.43121	***	-0.00460		0.91292
14	LP65105216	-0.01010	***	1.20285	***	0.35122	***	-0.52537	***	0.01519		0.84927
15	LP65146043	-0.00242		0.92524	***	0.08968		-0.12495	**	0.01821		0.86370
16	LP68013728	-0.00425	***	1.03941	***	0.31150	***	-0.27629	***	-0.13654	**	0.87820
17	LP68094654	-0.00180		0.77704	***	-0.10215	*	-0.07420		-0.01076		0.80492
18	LP68104500	-0.00162	*	1.00807	***	0.00875		-0.13481	**	-0.05499		0.89999
19	LP68117482	-0.00281	**	1.01509	***	-0.06829		0.06395		-0.10739	**	0.88001
20	LP68168205	-0.00100		0.86958	***	-0.03320		-0.22029	***	-0.00729		0.83171
21	LP68225399	-0.00412	**	0.77294	***	0.08415		-0.08232		-0.14267	**	0.81123
22	LP68358159	0.00262		1.33175	***	0.26018	***	-0.46722	***	-0.06900		0.82230
23	LP68413634	-0.00357	***	0.96174	***	0.01181		-0.18493	***	-0.03444		0.94130
24	LP68431411	0.00906	**	1.14934	***	0.35237	***	-0.50436	***	-0.05271		0.78095
25	LP68447768	-0.00025		1.11213	***	-0.04982		0.00313		-0.00220		0.94299
26	LP68452003	0.00024		1.05237	***	-0.14468	***	0.00472		-0.00137	**	0.94097
27	LP68455412	-0.00137		1.00373	***	-0.07363		0.10242	**	0.02260		0.95255
28	LP68466454	0.00038		1.04662	***	-0.03330		-0.19675	*	0.10078		0.84457
29	LP68467743	0.00358	**	1.04987	***	-0.10149	**	-0.05714		0.00523		0.92503
30	LP68499809	0.00175		0.95674	***	0.28302	*	-0.24000		-0.20528		0.90381

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the unconditional Carhart (1997) 4-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p), the adjusted coefficient of determination (Adj. R^2) and the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 7 – Individual performance estimates using the unconditional Carhart (1997) 4-factor model – Conventional funds

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{MOM}		Adj. R^2
1	LP60008665	-0.00331	**	1.14978	***	0.40626	***	-0.84935	***	-0.03231		0.78063
2	LP60008675	-0.00249	*	1.17823	***	0.09108		-0.14410		0.08276	*	0.84949
3	LP60008886	-0.00160	*	0.99803	***	0.07504		-0.12845	***	0.07369	***	0.90676
4	LP60009020	-0.00032		0.95907	***	0.16750	***	0.00009		0.03376		0.84593
5	LP60009122	-0.00234		0.87865	***	0.11059		-0.19083	***	0.06357	*	0.71919
6	LP60009513	-0.00466	**	0.95038	***	0.09955		-0.24585	***	-0.19435	***	0.76033
7	LP60009576	-0.00072		0.96797	***	0.18154	***	-0.06566		0.04390		0.89640
8	LP60010178	0.00030		1.04463	***	0.14135	**	0.07965		0.12375	***	0.85167
9	LP60010212	-0.00082		0.95962	***	0.22223	*	-0.12365	*	0.11630	***	0.83349
10	LP60010471	-0.00232	**	0.93042	***	0.17518	***	-0.07037		0.08554	***	0.83015
11	LP60010529	-0.00269	***	1.02645	***	0.01192		-0.10378	**	0.05581	**	0.88829
12	LP60010670	-0.00098		0.99277	***	0.04780		-0.01665		0.02155		0.88136
13	LP60010676	-0.00033		0.96534	***	0.09210	***	-0.16223	***	0.02939		0.85858
14	LP60010683	-0.00076		1.01446	***	0.09405	**	-0.19248	***	0.03654		0.88377
15	LP60010794	0.00017		1.03853	***	0.06156		-0.00569		0.05388	**	0.89755
16	LP60010893	-0.00127		1.02122	***	0.13056	***	0.05544		-0.04235		0.89009
17	LP60011271	-0.00326	***	1.11241	***	0.06518		-0.12843	*	0.07994	***	0.85883
18	LP60011291	-0.00299	**	1.04357	***	0.05311		-0.09577		0.01241		0.75570
19	LP60011521	-0.00189	**	1.07616	***	0.10583	**	-0.13354	***	-0.01767		0.86369
20	LP60011571	-0.00092		0.91278	***	0.08859	*	-0.01177		0.03615		0.82105
21	LP60011715	-0.00026		0.97267	***	0.25700	*	-0.01884		0.05075	**	0.80855
22	LP60011931	-0.00166	**	0.99128	***	0.04278		-0.04765		0.06494	**	0.89063
23	LP60055551	0.00031		0.69133	***	-0.03261		0.00724		0.08098		0.64891
24	LP60066434	-0.00135		0.64546	***	0.02288		-0.17051		-0.05161		0.42441
25	LP60069269	-0.00106	**	1.02362	***	0.05893	*	-0.09019	**	0.02702		0.93405
26	LP60070891	-0.00050		1.08869	***	0.12464	**	-0.17115	*	0.03056		0.89029
27	LP60081311	-0.00139		0.69574	***	-0.04584		-0.10122		-0.04238		0.61184
28	LP60095970	-0.00216	*	1.03190	***	0.07522		-0.18312	*	-0.01322		0.85626
29	LP60096957	-0.00363	***	1.12432	***	0.20370	***	-0.21516	**	0.08970	*	0.87800
30	LP65006222	-0.00145		1.03490	***	0.05920		-0.23753	**	0.06183		0.85756
31	LP65006244	0.00034		1.21034	***	0.26688	***	-0.62790	***	-0.02425		0.83885
32	LP65021937	-0.00176		0.93474	***	0.06255		0.10468		-0.10217	*	0.74823
33	LP65036812	-0.00238		0.97030	***	0.07559		0.04605		-0.14868	**	0.75215
34	LP65053849	-0.00613	*	1.15038	***	0.11855		-0.11324		-0.17908	***	0.73924
35	LP65090571	-0.00414		0.70442	***	-0.06893		-0.25784	**	-0.08538		0.58181
36	LP65095536	-0.00027		0.89562	***	-0.02327		-0.16735	***	-0.01169		0.90018
37	LP65111203	-0.00558	***	1.10269	***	0.06212		0.04493		-0.02196		0.88385
38	LP65121695	-0.00466	***	1.05767	***	0.08580		-0.11733	**	0.04228		0.90270
39	LP65140598	-0.00140		0.93093	***	-0.00765		-0.18702	**	-0.05134		0.85502
40	LP65140615	-0.00312	***	0.79894	***	-0.13636	**	-0.17841	***	0.01038		0.77228
41	LP65140764	-0.00467	**	0.95808	***	-0.04001		-0.33903	***	0.00088		0.68924
42	LP65146058	0.00133		0.97205	***	-0.01507		0.01109		0.05844		0.91060
43	LP65155057	-0.00248	***	1.02312	***	-0.00021		-0.10097	***	-0.06284	**	0.93359
44	LP65165200	-0.00299		1.20638	***	-0.14217		-0.60385	***	-0.01550		0.84058
45	LP68016680	-0.00300	***	1.01988	***	0.05016		-0.00053		-0.15952	***	0.94736
46	LP68022080	-0.00114		0.01077	***	-0.02098		-0.23115	***	-0.11475	**	0.88387
47	LP68026232	-0.00435	**	0.94886	***	0.16176	**	-0.10187		0.01357		0.91719
48	LP68037787	-0.00351	**	1.02836	***	-0.04187		0.01376		-0.14207	**	0.83556
49	LP68090505	-0.10690	**	0.92382	***	0.01211		0.09760		-0.43706	**	0.59920
50	LP68093659	-0.00439	***	1.00730	***	-0.09868	**	-0.03145		-0.17831	***	0.87554
51	LP68102346	0.00005		0.80573	***	-0.04723		-0.04435		-0.23686	**	0.75785
52	LP68106025	0.00113		1.00494	***	-0.05382		-0.10837	**	0.03573		0.90978
53	LP68107811	-0.00616		1.11535	***	0.37374	***	0.07623		-0.15062		0.75726
54	LP68112778	-0.00171	***	1.02248	***	0.01713		0.01785		-0.02486	**	0.98758
55	LP68126103	-0.00385	***	0.56901	***	0.01980		-0.06831		-0.12479	***	0.74073
56	LP68130893	-0.00287	***	1.01550	***	0.05694		-0.04001		-0.15405	***	0.92465
57	LP68136435	-0.00404	**	1.05761	***	0.06867		-0.06749		-0.15336	***	0.88883
58	LP68169624	-0.00101		0.98729	***	-0.19851	***	-0.20103	***	-0.03307		0.83914
59	LP68210744	-0.00178		0.29224	***	0.13916		-0.06155		-0.20046	**	0.23568

Appendix 7 – Individual performance estimates using the unconditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{MOM}		Adj. R^2
60	LP68215747	-0.00354	***	1.05919	***	0.06676		0.01160		-0.12591	***	0.92665
61	LP68227769	-0.00443	**	1.13540	***	-0.02226		0.07639		-0.29769	***	0.88395
62	LP68232389	-0.00437	**	0.95720	***	0.10132		0.17597		-0.15397	**	0.81394
63	LP68236977	-0.00096		1.03734	***	0.02239		0.06259		-0.03232		0.90384
64	LP68348812	-0.00385	***	1.12763	***	0.01728		0.04571		0.03365		0.93492
65	LP68351536	-0.00674	***	0.89937	***	0.07424		0.00030		-0.18124	***	0.90058
66	LP68380254	-0.00340		1.10351	***	-0.08474		0.31801	**	-0.30928	**	0.83016
67	LP68407099	-0.00210		1.16383	***	0.21113	***	-0.41046	***	-0.09296		0.92379
68	LP68412857	0.00106		1.29367	***	0.10955		-0.64577	***	0.07164		0.75037
69	LP68415801	-0.00267		0.20904	**	-0.02851		-0.00696	*	-0.15324	*	0.26128
70	LP68415814	-0.00167		1.15624	***	0.00657		0.13472	*	-0.10321	*	0.93130
71	LP68417268	-0.00130		0.72776	***	0.04598		-0.07244		-0.14015	**	0.85698
72	LP68418497	-0.00143		0.97773	***	0.05050		0.19444	***	-0.06605		0.92888
73	LP68427383	-0.00304	*	1.07411	***	0.08639		0.01572		-0.03024		0.93603
74	LP68429185	-0.00338	*	1.10964	***	0.02682		0.11755		-0.03436		0.90845
75	LP68432043	0.00304		1.21278	***	0.10424		-0.25312	*	0.12486		0.86338
76	LP68436671	-0.00077		1.04259	***	-0.13808	*	0.05036		-0.13493		0.93231
77	LP68441868	-0.00029		1.22558	***	0.24406	***	-0.05220		-0.06531		0.92249
78	LP68442157	0.00119		1.06741	***	0.06054		0.05800		-0.05281		0.92284
79	LP68442165	-0.00046		1.11792	***	-0.05703		-0.01942		-0.02753		0.94501
80	LP68444640	-0.00011		1.03025	***	-0.02362		-0.11191		0.00138		0.87204
81	LP68448977	0.00002		1.14165	***	0.06593		-0.11420		0.03956		0.94403
82	LP68459339	-0.00141	**	0.98406	***	0.00208		0.26862	***	-0.01588		0.98761
82	LP68459339	-0.00141	**	0.98406	***	0.00208		0.26862	***	-0.01588		0.98761
83	LP68469392	0.00106		0.33521	***	0.30881	**	0.08821		-0.03053		0.64152
84	LP68469398	-0.00029		0.65075	***	0.26613	**	0.11711		-0.04469		0.89605
85	LP68473362	-0.00011		1.07161	***	0.32864	***	-0.24512	**	0.40152	***	0.78116
86	LP68474383	-0.00360	***	0.62281	***	-0.06297		0.18435	*	-0.22539	***	0.70874
87	LP68481123	0.00172		1.11441	***	-0.09636		-0.19651	**	0.05157		0.84224
88	LP68491108	-0.00160		0.96526	***	0.13604		0.04524		-0.12117		0.92309
89	LP68508266	-0.01523	***	1.14015	***	0.08235		-0.18671		0.05689		0.86224
90	LP68529610	-0.00166	*	0.96232	***	0.05539		-0.16158	***	0.02032		0.87572

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the unconditional Carhart (1997) 4-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p), the adjusted coefficient of determination (Adj. R^2) and the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 8 – Individual performance estimates using the unconditional Fama and French (2018) 6-factor model – SRI funds

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{RMW}		β_{CMA}		β_{MOM}		Adj. R^2
1	LP60008719	-0.00050		0.94635	***	0.09981		-0.05376		0.01873		-0.00773		-0.00104		0.86122
2	LP60008775	0.00185	***	1.00834	***	0.06673		-0.01409		-0.02126		-0.08458		0.01647		0.92494
3	LP60010597	-0.00181	*	1.00831	***	0.11499	*	-0.06236		-0.00409		-0.06994		-0.03550		0.88716
4	LP60010747	-0.00095		0.96199	***	0.22691	***	-0.16201	*	-0.05765		0.00495		0.03916		0.85074
5	LP60011009	-0.00241	***	1.01065	***	0.06824		-0.14168	**	0.07590		-0.06841		0.04860	**	0.89987
6	LP60011472	-0.00165		0.99554	***	0.99554		-0.07479		-0.06306		0.13351	*	-0.03171		0.86534
7	LP60011566	0.00058		0.94696	***	0.21321	***	-0.15160		-0.31049	***	0.08480		0.20580	***	0.77222
8	LP60052206	-0.00100		0.98874	***	0.11782	**	-0.10996		0.04333		-0.11756	*	0.04304		0.87797
9	LP60066130	-0.00264	***	0.96762	***	0.11605	**	-0.13691		0.03912		-0.12169		-0.05907		0.84137
10	LP60075884	-0.00253	***	0.98607	***	0.19617	***	-0.14993	**	0.12926		0.10444		-0.01334		0.87483
11	LP60100350	-0.00290	**	1.04915	***	0.25781	***	-0.15910	*	0.03568		0.03802		-0.08374	**	0.90452
12	LP65043279	-0.00208		0.96750	***	0.15538		0.02737		0.09811		0.10542		-0.08641		0.74579
13	LP65099210	-0.00156		1.06319	***	0.24528	***	-0.35817	**	-0.02157		-0.23304		0.01050		0.91266
14	LP65105216	-0.01049	***	1.21419	***	0.35915	***	-0.55416	***	0.05914		0.10384		0.00893		0.84618
15	LP65146043	-0.00272		0.93330	***	0.09960		-0.15340		0.05336		0.07895		0.01496		0.86111
16	LP68013728	-0.00387	***	1.02374	***	0.31642	***	-0.15606		0.10284		-0.33717	***	-0.12726	**	0.88394
17	LP68094654	-0.00237	*	0.80892	***	0.00234		-0.15447	**	0.36482	***	0.17007	**	0.01355		0.82937
18	LP68104500	-0.00142		0.98565	***	-0.00222		-0.06738		0.01769		-0.21049	***	-0.05882		0.90142
19	LP68117482	-0.00291	**	1.00791	***	-0.04609		0.09568		0.12699		-0.12045		-0.10243	**	0.88026
20	LP68168205	-0.00107		0.85660	***	0.02878		-0.23273	***	0.24891	***	-0.01803		0.00780		0.83747
21	LP68225399	-0.00396	***	0.72593	***	0.02747		0.01280		-0.13085		-0.33076	*	-0.18879	***	0.82289
22	LP68358159	0.00296		1.28947	***	0.24220	**	-0.40791	**	-0.03841		-0.22152		-0.09762	***	0.81733
23	LP68413634	-0.00355	***	0.96452	***	-0.00156		-0.17880	***	-0.05233		-0.01131		-0.04104		0.93760
24	LP68431411	0.00870	**	1.08439	***	0.41953	***	-0.48237	**	0.43148		-0.17046		-0.02839		0.77869
25	LP68447768	-0.00048		1.09843	***	-0.01013		-0.02149		0.23108		0.01717		0.01674		0.94003

Appendix 8 – Individual performance estimates using the unconditional Fama and French (2018) 6-factor model – SRI funds (continued)

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{RMW}	β_{CMA}		β_{MOM}		Adj. R^2
26	LP68452003	0.00033		1.05028	***	-0.15682	***	0.01635		-0.02391	-0.03438		0.09986	**	0.93636
27	LP68455412	-0.00204		1.00193	***	0.04891		-0.00271		0.29680	0.27008	*	0.05201		0.95684
28	LP68466454	-0.00023		1.04735	***	0.07172		-0.28440	***	0.34413	0.21438		0.14368		0.83975
29	LP68467743	0.00321	**	1.03203	***	-0.04643		-0.09431		0.22573	0.04667		0.01805		0.92044
30	LP68499809	0.00045		0.87519	***	0.32120		-0.27068		0.61236	-0.16714		-0.21210		0.90127

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the unconditional Fama and French (2018) 6-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p), the adjusted coefficient of determination (Adj. R^2) and the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 9 – Individual performance estimates using the unconditional Fama and French (2018) 6-factor model – Conventional funds

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{RMW}		β_{CMA}		β_{MOM}		Adj. R^2
1	LP60008665	0.00073		1.04834	***	0.09105		-0.48556	***	-0.75873	***	-0.14152		0.02527		0.83146
2	LP60008675	-0.00079		1.12987	***	0.00899		0.05391		-0.21878	**	-0.27569	***	0.11131	***	0.85973
3	LP60008886	-0.00124		0.98669	***	0.03832		-0.10073		0.07902		0.01342		0.07862	***	0.90712
4	LP60009020	-0.00117		0.97802	***	0.25426	***	-0.05784		0.20019	***	-0.05864		0.02345		0.85286
5	LP60009122	-0.00180		0.86985	***	0.10876		-0.09646		-0.00715		-0.20835		0.07809	**	0.72026
6	LP60009513	-0.00428	*	0.92967	***	0.09126		-0.16721		-0.01510		-0.24428		-0.18865	***	0.76029
7	LP60009576	-0.00085		0.97212	***	0.16602	***	-0.10383		-0.01931		0.10941		0.03919		0.89675
8	LP60010178	-0.00050		1.06681	***	0.18661	**	-0.00842		0.11629		0.10318		0.11078	***	0.85365
9	LP60010212	-0.00025		0.94742	***	0.15865	*	-0.08917		-0.14507	*	0.06143		0.12281	***	0.83671
10	LP60010471	-0.00193	*	0.91873	***	0.16064	***	-0.02060		-0.04176		-0.08283		0.09253	***	0.82981
11	LP60010529	-0.00316	***	1.03734	***	0.04509		-0.12548		0.10281		-0.03979		0.04872	**	0.88928
12	LP60010670	-0.00153		1.00541	***	0.10118	*	-0.05688		0.12410	*	-0.02546		0.01460		0.88346
13	LP60010676	-0.00037		0.96460	***	0.10941	**	-0.15251	*	0.03557		-0.06090		0.03013		0.85807
14	LP60010683	-0.00072		1.01516	***	0.07643		-0.20211	***	-0.03627		0.06139		0.03583		0.88344
15	LP60010794	-0.00027		1.04828	***	0.10689	**	-0.03524		0.10444	*	-0.03231		0.04858	*	0.89885
16	LP60010893	-0.00142		1.02642	***	0.12912	**	0.03045		0.00202		0.06097		-0.04559		0.88950
17	LP60011271	-0.00326	**	1.11014	***	0.08670		-0.10998		0.04292		-0.09044		0.08169	***	0.85867
18	LP60011291	-0.00293		1.04343	***	0.01830		-0.11055		-0.07139		0.11302		0.01150		0.75551
19	LP60011521	-0.00175		1.07031	***	0.11519	*	-0.10264		0.01398		-0.09222		-0.01391		0.86330
20	LP60011571	-0.00119		0.91775	***	0.12332	*	-0.02263		0.07759		-0.05198		0.03364		0.82121
21	LP60011715	0.00054		0.94872	***	0.16925		0.02397		-0.18297	**	0.07459		0.05931	**	0.81356
22	LP60011931	-0.00140	*	0.98379	***	0.02963		-0.01713		-0.03480		-0.04138		0.06935	***	0.89013
23	LP60055551	-0.00021		0.70523	***	-0.00247		0.00884		0.17324	***	-0.10899		0.06184		0.65528
24	LP60066434	-0.00195		0.67022	***	0.10850		-0.09366		0.30187	*	-0.40638	**	-0.09143		0.45299
25	LP60069269	-0.00129	***	1.03070	***	0.07853	**	-0.08896	**	0.09532		-0.02237		0.02583		0.93456
26	LP60070891	-0.00033		1.08357	***	0.13789	**	-0.12543		0.01392		-0.22164		0.02164		0.89255
27	LP60081311	-0.00108		0.68936	***	-0.07904		-0.12582		-0.15612		0.11877		-0.04093		0.61432
28	LP60095970	-0.00215	*	1.01954	***	0.08095		-0.11319		0.08176		-0.24641	**	-0.01120		0.85875
29	LP60096957	-0.00405	***	1.14169	***	0.22065	***	-0.25170	**	0.10355		0.11476		0.08853	*	0.87811
30	LP65006222	-0.00188		1.04564	***	0.08039		-0.23072	*	0.16351		-0.02929		0.06313		0.85824
31	LP65006244	0.00169		1.16398	***	0.23730	***	-0.52147	***	-0.19761		-0.35825		-0.01349		0.84360
32	LP65021937	-0.00229		0.95324	***	0.08245		0.07175		0.12609		0.09957		-0.10302	*	0.74682
33	LP65036812	-0.00267		0.98394	***	0.08355		0.00238		0.03405		0.13525		-0.15155	**	0.74995
34	LP65053849	-0.00614	*	1.14642	***	0.12689		-0.07335		0.03094		-0.11332		0.17491	***	0.73553
35	LP65090571	-0.00402		0.69872	***	-0.07705		-0.28474		-0.06740		0.06898		-0.08985		0.57144
36	LP65095536	-0.00063		0.90815	***	0.00622		-0.15871	**	0.19249	**	-0.02829		-0.00505		0.90284

Appendix 9 – Individual performance estimates using the unconditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{RMW}		β_{CMA}		β_{MOM}		Adj. R^2
37	LP65111203	-0.00586	***	1.10937	***	0.08688		0.10560		0.23345	**	-0.19089		-0.01248		0.88713
38	LP65121695	-0.00491	***	1.06433	***	0.11778	**	-0.10431	***	0.19365		-0.03981		0.04602		0.90515
39	LP65140598	-0.00123		0.92013	***	-0.01185		-0.14703	*	-0.00444		-0.12960	*	-0.04951		0.85454
40	LP65140615	-0.00354	***	0.81262	***	-0.11625	*	-0.17977	***	0.15681	**	0.00443		0.01204		0.77240
41	LP65140764	-0.00561	**	0.97072	***	0.05686		-0.51376	***	-0.06199		0.44792	*	-0.02501		0.69157
42	LP65146058	-0.00144		0.97898	***	-0.00100		0.03903		0.07615		-0.03896		0.06476		0.90893
43	LP65155057	-0.00235	***	1.01757	***	0.00033		-0.07165		0.01200		-0.08606		-0.05985	**	0.93308
44	LP65165200	-0.00426		1.24869	***	-0.08413		-0.49479	**	0.44176	***	-0.24808		-0.00113		0.84759
45	LP68016680	-0.00347	***	1.03645	***	0.07170		-0.01871		0.14756	**	0.05635		-0.15940	***	0.94850
46	LP68022080	-0.00133		1.01854	***	0.01074		-0.19541	**	0.10317		-0.14041		-0.11463	***	0.88499
47	LP68026232	-0.00420	***	0.94337	***	0.14378	*	-0.09226		-0.05691		-0.03526		0.02934		0.91471
48	LP68037787	-0.00376	**	1.03502	***	-0.00755		0.02396		0.21058	*	-0.05252		-0.13632	**	0.83690
49	LP68090505	-0.00898	**	0.92448	***	0.02400		0.60398	*	0.17196		1.06058	***	-0.39896	***	0.62315
50	LP68093659	-0.00444	***	0.99616	***	-0.08516		0.01089		0.10025		-0.14745		-0.17546	***	0.87560
51	LP68102346	-0.00019		0.79233	***	0.00218		0.01756		0.27401		-0.24002		-0.22577	**	0.76702
52	LP68106025	-0.00127		1.01232	***	-0.02760		-0.12659	**	0.09338	*	0.03640		0.04179		0.90919
53	LP68107811	-0.00582	*	1.03256	***	0.14184		0.44780	*	-0.42530		-0.76649	**	-0.09756		0.77763
54	LP68112778	-0.00164	***	1.01542	***	0.01284		0.03897		0.00194		-0.06516	**	-0.02624	**	0.98767
55	LP68126103	-0.00381	***	0.55539	***	0.01993		-0.02203		0.04666		-0.14911		-0.12510		0.74012
56	LP68130893	-0.00276	***	1.00329	***	0.08275		-0.01659		0.14508		-0.11072		-0.15379	***	0.92579
57	LP68136435	-0.00361	**	1.01511	***	0.04077		0.03814		0.00148		-0.33261	***	-0.16724	***	0.89471
58	LP68169624	-0.00114		0.98244	***	-0.12009	*	-0.23800	***	0.28729	**	0.06152		-0.00886		0.84659
59	LP68210744	-0.00496	**	0.31066	***	0.03263		0.49428	*	-0.00012		-1.31592	***	-0.21190	***	0.38169
60	LP68215747	-0.00343	***	1.02180	***	0.04059		0.09519		-0.00071		-0.30144	***	-0.15092	***	0.93197
61	LP68227769	-0.00437	**	1.22212	***	-0.04451		0.11278		-0.04845		-0.11813		-0.31082	***	0.88216
62	LP68232389	0.00425	**	0.88974	***	0.03861		0.29982	**	0.11628		-0.45177	*	-0.21338	**	0.82525
63	LP68236977	-0.00123		1.01890	***	0.04322		0.04375		0.27465	***	-0.02636		-0.01803		0.90917
64	LP68348812	-0.00388	***	1.11641	***	0.03012		0.04933		0.07275		-0.03168		-0.03264		0.93265
65	LP68351536	-0.00635	***	0.86355	***	0.04823		0.05780		-0.07907		-0.20393		-0.20986	***	0.90155
66	LP68380254	-0.00331		1.05824	***	0.05739		0.35099	**	0.16651		-0.16727		-0.31637	**	0.82601
67	LP68407099	0.00189		1.10554	***	0.23159	***	-0.37893	**	0.30013		-0.23688		-0.09716	*	0.92706
68	LP68412857	0.00174		1.18540	***	0.12441		-0.38922		-0.43862		-0.94085	*	-0.23348	**	0.78088
69	LP68415801	-0.00275		0.24440	***	-0.02089		-0.04392		-0.09574		0.18221		-0.13922		0.23060
70	LP68415814	-0.00176		1.16763	***	0.02524		0.11153	*	0.02340		0.08890		-0.08987		0.92687
71	LP68147268	-0.00134		0.70318	***	0.03790		-0.04682		0.07151		-0.12691		-0.14977	*	0.84974
72	LP68418497	-0.00170		0.99858	***	0.10468		0.13724	***	0.11783		0.19978	**	-0.00300		0.92749
73	LP68427383	-0.00300	*	1.06754	***	0.07798		0.02677		0.01831		-0.04729		-0.03239		0.93084
74	LP68429185	-0.00359		1.12359	***	0.06737		0.07607		0.09458		0.14173		-0.00789		0.90370
75	LP68432043	0.00344		1.17414	***	-0.01367		-0.14795		-0.19528		-0.39163	***	0.05806		0.86321
76	LP68436671	-0.00074		1.00925	***	-0.12475		0.07194	***	0.15608		-0.13413	*	0.13685		0.93097

Appendix 9 – Individual performance estimates using the unconditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	Lipper RIC	α_p		β_p		β_{SMB}		β_{HML}		β_{RMW}	β_{CMA}		β_{MOM}		Adj. R^2
77	LP68441868	-0.00055		1.21028	***	0.25210	**	-0.05400		0.11022	-0.04830		-0.06482		0.91706
78	LP68442157	0.00100		1.06835	***	0.08262		-0.07756		0.06247	0.04949		-0.04436		0.91699
79	LP68442165	-0.00084		1.12167	***	-0.01095		-0.06123		0.11851	0.11142		-0.01017		0.94195
80	LP68444640	-0.00033		0.96854	***	-0.01872		-0.07721		0.44161	-0.27850		0.01571		0.87510
81	LP68448977	0.00022		1.11706	***	0.02291		-0.06325		0.03014	-0.20017	*	0.02679		0.94175
82	LP68459339	-0.00149		0.993776	***	0.02023		0.24760	***	-0.00760	0.08133		-0.01032		0.98706
83	LP68469392	0.00055		0.27614	*	0.24453		0.15335		0.26230	-0.33707	**	-0.04441		0.62179
84	LP68469398	-0.00120		0.59232	***	0.28865		0.09972		0.42916	-0.13109		-0.05005		0.89179
85	LP68473362	-0.00006		1.05641	***	0.31478	***	-0.21332		-0.04977	-0.11389	***	0.38923	***	0.77279
86	LP68474383	-0.00457		0.73154	***	-0.04936		0.06986		-0.41243	0.54931	**	-0.24019	***	0.70995
87	LP68481123	0.00158		1.12952	***	-0.07354		-0.22801	*	-0.01361	0.11569		0.05490		0.82641
88	LP68491108	-0.00266		0.93476	***	0.27792	***	-0.08217		0.44755	0.22823		-0.11070		0.92268
89	LP68508266	-0.01452	***	1.11700	***	-0.01895		-0.07623		0.13444	-0.33041		0.04004		0.85413
90	LP68529610	-0.00141	*	0.95540	***	0.04053		-0.13438	**	-0.03784	-0.02991		0.02436		0.87505

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the unconditional Fama and French (2018) 6-factor model. The table reports the performance estimates (α_p), the systematic risk (β_p), the adjusted coefficient of determination (Adj. R^2) and the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 10 – Individual performance estimates using the conditional Jensen (1968) single-factor model – SRI funds

Funds	Lipper RIC	α_p		α_{ST}		α_{DY}		β_p		β_{p*ST}		β_{p*DY}		Adj. R^2	w_1	w_2	w_3
1	LP60008719	-0.00045		-0.00188		-0.00124		0.97036	***	0.02473		-0.02800		0.85817	0.63035	0.67008	0.78910
2	LP60008775	-0.00206	***	0.00056		-0.00029		1.02707	***	-0.00887		-0.05297		0.92093	0.91053	0.70901	0.92801
3	LP60010597	-0.00205	**	0.00011		0.00346		1.04805	***	0.02742		0.04213		0.87987	0.74367	0.79549	0.86588
4	LP60010747	-0.00090		-0.00051		-0.00310		0.99358	***	0.02469		-0.02632		0.80996	0.86612	0.77346	0.93922
5	LP60011009	-0.00224	**	-0.00055		-0.00001		1.00264	***	0.01475		-0.07232		0.88551	0.94804	0.41397	0.75370
6	LP60011472	-0.00135		0.00116		0.00150		1.00535	***	-0.00154		0.10544		0.85648	0.85545	0.40836	0.68414
7	LP60011566	0.00008		0.00005		-0.00050		0.96475	***	0.03127		-0.13115		0.64899	0.99752	0.43261	0.79089
8	LP60052206	-0.00088		0.00019		0.00063		1.00465	***	0.06055		-0.03609		0.86892	0.98932	0.20295	0.51079
9	LP60066130	-0.00272	***	0.00077		-0.00009		1.02468	***	0.04419		-0.11291		0.83577	0.96274	0.19770	0.50523
10	LP60075884	-0.00186	**	0.00004		0.00270		0.99835	***	-0.03525		-0.09934		0.86589	0.82729	0.51408	0.81550
11	LP60100350	-0.00279	***	0.00169		0.00141		1.10455	***	0.06497		0.05227		0.89057	0.82534	0.55084	0.72999
12	LP65043279	-0.00133		0.00476		-0.01008		0.93806	***	-0.12214	*	0.15885		0.74989	0.11331	0.05433	0.03625
13	LP65099210	-0.00425	**	-0.01071	***	0.00220		1.08803	***	0.06330		0.02164		0.88691	0.02830	0.78875	0.10014
14	LP65105216	-0.00939	***	-0.00878		0.00544		1.16353	***	-0.03386		-0.01943		0.23932	0.23932	0.97537	0.56799
15	LP65146043	-0.00253		0.00083		-0.00655		0.91601	***	0.36002	*	0.18201		0.86701	0.50305	0.05705	0.15849
16	LP68013728	-0.00449	**	0.00085		-0.00343		1.08440	***	-0.15224		0.36492	***	0.85543	0.89860	0.01599	0.05133
17	LP68094654	-0.00101		0.00129		0.01964		0.78148	***	-0.21959	***	-0.32762	**	0.81344	0.20941	0.02555	0.02957
18	LP68104500	-0.00068		-0.00428		-0.00073		1.03400	***	-0.07351		-0.21409		0.89762	0.66425	0.37896	0.40950
19	LP68117482	-0.00452	***	0.00606		-0.00495		1.09134	***	-0.27477	***	-0.28848	*	0.88025	0.47318	0.01477	0.06389
20	LP68168205	0.00185	***	-0.00027		0.02904	***	0.82820	***	-0.10844	*	-0.29404		0.80652	0.18284	0.41275	0.22517
21	LP68225399	-0.00577	***	0.00245		-0.02244		0.84477	***	-0.06532		0.17596		0.79583	0.43995	0.66767	0.77561
22	LP68358159	0.01017	*	-0.02194	**	0.02143		1.26408	***	-0.07750		0.30833		0.81623	0.06552	0.76479	0.01823
23	LP68413634	0.00098		-0.00703	**	0.03699	***	0.91533	***	0.02166		-0.37774		0.94018	0.03052	0.33119	0.09581
24	LP68431411	0.01687	***	-0.01975	**	-0.02516		1.08744	***	-0.24997		0.23147		0.78313	0.11725	0.34030	0.02356
25	LP68447768	-0.00162		0.00324		0.01032		1.06624	***	-0.16481	**	0.14565		0.95358	0.66619	0.12455	0.17425
26	LP68452003	0.00217		-0.00010		0.02039		0.97274	***	-0.02473		-0.33760		0.92739	0.65195	0.61490	0.85430
27	LP68455412	-0.00481	***	0.00777	***	0.01046	***	0.98205	***	-0.24299	***	-0.10582		0.96954	0.06054	0.00307	0.00797
28	LP68466454	0.00351	*	0.00444		0.04486	**	0.90771	***	-0.11607		-0.08357		0.82174	0.39591	0.75096	0.55447
29	LP68467743	0.00345	*	0.00058		0.01211		0.94615	***	-0.09647		0.29056		0.92946	0.86965	0.36570	0.40507
30	LP68499809	-0.00076		-0.00792		0.03898	*	0.97548	***	-0.10252		0.40088		0.91722	0.44201	0.53758	0.09834

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the conditional Jensen (1993) single-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the conditional beta coefficients (β_{p*ST}, β_{p*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 11 – Individual performance estimates using the conditional Jensen (1968) single-factor model – Conventional funds

Funds	Lipper RIC	α_p		α_{ST}		α_{DY}		β_p		β_{p*ST}		β_{p*DY}		Adj. R^2	w_1	w_2	w_3
1	LP60008665	-0.00359		0.00041		0.00741		1.24123	***	-0.16149		-0.51400	**	0.60878	0.80888	0.04544	0.17467
2	LP60008675	-0.00230		0.00649	**	-0.00308		1.15386	***	0.04061		-0.01906		0.83864	0.01331	0.64813	0.04693
3	LP60008886	-0.00191	**	0.00206	*	0.00095		0.99827	***	0.05487		-0.05487		0.88916	0.54563	0.15070	0.29252
4	LP60009020	-0.00010		-0.00306	*	-0.00216		0.98953	***	0.03560		-0.04896		0.83493	0.37075	0.46038	0.47365
5	LP60009122	-0.00276		0.00075		0.00258		0.89697	***	-0.01449		0.15349		0.69771	0.93677	0.48014	0.82416
6	LP60009513	-0.00341	**	0.00318		-0.02148		0.93455	***	-0.16046		0.01847		0.76104	0.00330	0.11249	0.00208
7	LP60009576	-0.00043		-0.00151		-0.00308		0.98044	***	0.03119		-0.00060		0.87548	0.68550	0.72983	0.85924
8	LP60010178	0.00070		0.00103		-0.00495		1.04079	***	0.07456		-0.07028		0.83183	0.47711	0.09474	0.18887
9	LP60010212	-0.00038		0.00193		-0.00530		0.95841	***	0.04597		-0.09030		0.78968	0.32574	0.24531	0.27868
10	LP60010471	-0.00194	*	-0.00068		-0.00270		0.93886	***	-0.01255		-0.16560		0.80544	0.87792	0.19373	0.41907
11	LP60010529	-0.00280	***	-0.00277	**	0.00438		1.01808	***	0.01669		-0.03062		0.88164	0.09228	0.74359	0.25631
12	LP60010670	-0.00094		-0.00061		-0.00013		1.00382	***	-0.01181		-0.10056		0.88012	0.94303	0.41814	0.74015
13	LP60010676	-0.00035		-0.00127		-0.00013		0.98344	***	-0.03242		-0.18040		0.84302	0.81537	0.12931	0.30545
14	LP60010683	-0.00079		-0.00216		-0.00203		1.02965	***	-0.02157		-0.16544		0.86364	0.56535	0.14521	0.23041
15	LP60010794	0.00025		-0.00108		-0.00325		1.04150	***	0.04855		-0.02791		0.89384	0.70349	0.25944	0.51275
16	LP60010893	-0.00123		-0.00097		-0.00159		1.07001	***	0.00054		-0.05157		0.88159	0.87107	0.78011	0.92894
17	LP60011271	-0.00299	**	0.00043		-0.00260		1.08964	***	-0.02722		-0.10294		0.84388	0.83914	0.59285	0.81456
18	LP60011291	-0.00315	**	-0.00006		0.00370		1.05893	***	0.01332		-0.06911		0.75098	0.86061	0.76318	0.93383
19	LP60011521	-0.00167	*	-0.00118		0.00099		1.08372	***	-0.05025		-0.00431		0.85469	0.80934	0.53807	0.78938
20	LP60011571	-0.00097		0.00065		-0.00174		0.93506	***	0.05343		-0.07499		0.81774	0.85527	0.16903	0.42228
21	LP60011715	0.00034		-0.00015		-0.00543		0.99628	***	0.07337		0.00389		0.77961	0.66780	0.40858	0.66395
22	LP60011931	-0.00174	*	0.00044		-0.00264		0.99535	***	0.05539		-0.08626		0.88590	0.72247	0.04260	0.13698
23	LP60055551	0.00010		-0.00122		-0.00811	*	0.68253	***	0.06427		-0.08177		0.64683	0.38063	0.18533	0.25523
24	LP60066434	-0.00147		0.00001		-0.00565		0.63698	***	0.10642		0.19516		0.41761	0.80921	0.50560	0.81336
25	LP60069269	-0.00078		-0.00131		0.00098		1.02345	***	0.02019		-0.02945		0.93038	0.60667	0.58168	0.71790
26	LP60070891	-0.00096		0.00137		0.00069		1.10710	***	0.05995		-0.07549		0.88302	0.88153	0.20528	0.49550
27	LP60081311	-0.00135		0.00169		-0.00661		6.67987	***	-0.00808		-0.00448		0.60752	0.40236	0.99425	0.75811
28	LP60095970	-0.00171	*	0.00008		0.00094		1.04037	***	-0.07111		-0.18249	*	0.84985	0.98476	0.18563	0.47103
29	LP60096957	-0.00327	***	-0.00345		0.00102		1.15766	***	0.07119		-0.19906		0.86325	0.36864	0.00613	0.01505
30	LP65006222	-0.00041		-0.00009		0.00390		1.00077	***	-0.03510		-0.12178		0.83445	0.75130	0.49551	0.76609
31	LP65006244	0.00109		-0.00620		0.00579		1.18963	***	-0.01648		-0.00134		0.77957	0.22278	0.99059	0.55262
32	LP65021937	-0.00134		0.00678		-0.00069		0.91018	***	-0.15193		0.19466		0.75073	0.24779	0.00981	0.01736
33	LP65036812	-0.00138		0.00600		-0.00434		0.92102	***	-0.19084	*	0.30724	**	0.76430	0.22943	0.00021	0.00053
34	LP65053849	-0.00480	*	0.00548		-0.01604	*	1.11584	***	0.10582		0.49546	***	0.74823	0.07134	0.01936	0.01397
35	LP65090571	-0.00608		-0.00366		-0.01190	**	0.74894	***	0.17531		0.00680		0.56995	0.52222	0.40282	0.59396
36	LP65095536	0.00041		-0.00031		0.00791		0.90108	***	0.05964		-0.08423		0.89535	0.12605	0.07837	0.04407

Appendix 11 – Individual performance estimates using the conditional Jensen (1968) single-factor model – Conventional funds (continued)

Funds	Lipper RIC	α_p		α_{ST}		α_{DY}		β_p		β_{p*ST}		β_{p*DY}		Adj. R^2	w_1	w_2	w_3
37	LP65111203	-0.00554	***	0.00155		-0.00166		1.10268	***	-0.08547		0.02062		0.88308	0.84592	0.35813	0.61778
38	LP65121695	-0.00411	**	0.00153		0.00175		1.04286	***	-0.15984	***	0.16509		0.90060	0.90297	0.05725	0.10640
39	LP65140598	-0.00066		0.00222	*	-0.00007		0.91033	***	-0.06286		-0.05697		0.84504	0.66695	0.57640	0.78391
40	LP65140615	-0.00236	**	0.00222		-0.00117		0.74892	***	-0.10029		-0.20543		0.74830	0.79462	0.20379	0.41937
41	LP65140764	-0.00507	**	-0.00510		-0.01146	*	0.95848	***	0.77444	***	0.09882		0.72662	0.48896	0.00014	0.00072
42	LP65146058	-0.00137		0.00222		-0.00179		0.95279	***	0.27432	**	0.11751		0.91211	0.86405	0.08349	0.22080
43	LP65155057	-0.00171	**	-0.00322		0.00396		1.04218	***	0.03319		-0.08629		0.93171	0.25258	0.18194	0.22012
44	LP65165200	-0.00487		-0.01342	*	-0.00351		1.08224	***	-0.12542		-0.09995		0.78712	0.16507	0.68087	0.31508
45	LP68016680	-0.00269	**	-0.00262		0.00649		1.07415	***	-0.09228	*	0.04831		0.93492	0.08603	0.04706	0.04305
46	LP68022080	-0.00107		0.00067		0.00137		1.00932	***	-0.07163		-0.09249		0.86792	0.95497	0.52692	0.86215
47	LP68026232	-0.00979	**	0.06101	*	-0.01270	*	0.90719	***	0.73914		0.19356	***	0.91584	0.10159	0.28489	0.19731
48	LP68037787	-0.00524	**	0.00839		0.00367		1.06734	***	-0.18760	*	-0.04520		0.82894	0.43062	0.33410	0.59256
49	LP68090505	-0.02090	**	0.07437		-0.01732		0.87853	***	0.87687		0.85728	***	0.57250	0.51397	0.04815	0.12779
50	LP68093659	-0.00504	***	0.00396	**	0.01576		1.10286	***	-0.08551		-0.54271	***	0.87014	0.35359	0.02755	0.10174
51	LP68102346	0.00001		-0.00489		0.00482		0.94599	***	0.02283		-0.68970	**	0.74800	0.74021	0.02309	0.08082
52	LP68106025	0.00065		-0.00366		0.01628	**	0.98973	***	0.03391		-0.29203	*	0.90375	0.16835	0.14775	0.26395
53	LP68107811	-0.00310		-0.07815		-0.04161	*	1.75999	***	-5.93575	***	-1.19553	***	0.77680	0.31534	0.08397	0.03626
54	LP68112778	-0.00259	***	0.00368	**	-0.00230		1.04580	***	-0.07485	***	-0.02815		0.98756	0.06144	0.04954	0.09413
55	LP68126103	-0.00420	***	-0.00185		-0.01223		0.63623	***	-0.04364		-0.20383		0.73320	0.51816	0.51409	0.41456
56	LP68130893	-0.00464	***	0.00559	**	0.00370		1.10284	***	-0.21921	***	-0.14288		0.91856	0.41421	0.02587	0.11019
57	LP68136435	-0.00494	***	0.00285		0.01279		1.10331	***	-0.01420		0.30089		0.88105	0.56691	0.55959	0.42354
58	LP68169624	0.00176		0.00317		0.03388	**	0.91141	***	-0.20097	***	-0.04264		0.81610	0.11037	0.17572	0.02643
59	LP68210744	-0.01586		0.10443		-0.05727	**	0.25244		1.70045		0.28843		0.16231	0.57426	0.84725	0.74063
60	LP68215747	-0.00673	***	0.00724	*	-0.01972		1.12561	***	-0.15349	***	0.32881		0.92019	0.09340	0.04035	0.13324
61	LP68227769	-0.00855	***	0.00903	*	-0.00595		1.24690	***	-0.19718	*	0.39981		0.84538	0.42108	0.13799	0.34424
62	LP68232389	-0.01217	***	0.01629	**	-0.06709	*	1.06813	***	-0.41147	***	0.89746		0.81150	0.00218	0.00040	0.00148
63	LP68236977	-0.00289	*	0.00766		0.00522		1.04599	***	-0.19863	***	0.18010		0.91007	0.21071	0.03503	0.07204
64	LP68348812	-0.00590	***	0.00488	*	-0.01022		1.15353	***	0.18957	***	0.15389		0.93934	0.43547	0.04451	0.16860
65	LP68351536	-0.00987	***	0.00740		-0.02003		0.99901	***	-0.15469	**	0.29081		0.88354	0.23181	0.15564	0.38118
66	LP68380254	-0.01231	***	0.02393	***	-0.00473		1.34586	***	-0.43375	***	0.46644		0.77441	0.06348	0.07958	0.10991
67	LP68407099	0.00832	***	-0.01165	*	0.04179		1.08374	***	-0.00527		0.14964		0.90794	0.07619	0.93671	0.04191
68	LP68412857	0.01724	***	-0.02466	**	0.08840	*	1.12841	***	0.25207		-0.53789		0.71199	0.04236	0.38757	0.15283
69	LP68415801	-0.00314		-0.00006		-0.00176		0.28732	***	0.06352		-0.22790		0.20905	0.99841	0.75712	0.90376
70	LP68415814	-0.00658	*	0.00817		-0.00845		1.24198	***	-0.19167	**	0.03514		0.92232	0.40025	0.25248	0.52726
71	LP68417268	-0.00232		-0.00188		-0.01229		0.73741	***	-0.01506		0.59831		0.85651	0.83154	0.28380	0.44562
72	LP68418497	-0.00837	***	0.01188	**	-0.01309		1.07650	***	-0.34416	***	0.01783		0.93251	0.05780	0.00307	0.01479

Appendix 11 – Individual performance estimates using the conditional Jensen (1968) single-factor model – Conventional funds (continued)

Funds	Lipper RIC	α_p		α_{ST}		α_{DY}		β_p		β_{p*ST}		β_{p*DY}		Adj. R^2	w_1	w_2	w_3
73	LP68427383	0.00642	***	0.00653		0.00486		1.07338	***	-0.16559	**	0.43197		0.94917	0.37795	0.05430	0.08874
74	LP68429185	-0.00757	***	0.00698		-0.02222		1.16900	***	-0.09045		0.25477		0.90357	0.41976	0.57333	0.75934
75	LP68432043	0.00624	*	-0.00064		0.02501		1.05546	***	-0.15385		0.39221		0.84776	0.80710	0.43030	0.31330
76	LP68436671	-0.00317		0.00340		0.00277		1.03578	***	-0.16536	**	0.29334		0.93281	0.76544	0.09526	0.16071
77	LP68441868	-0.00337		0.00382		0.00758		1.28047	***	-0.31237	**	0.01795		0.93290	0.79301	0.04022	0.07376
78	LP68442157	-0.00045		0.00521		0.01599	**	1.04339	***	-0.14259		0.38803		0.93737	0.45450	0.13504	0.12092
79	LP68442165	-0.00130		0.00499		0.01684	*	1.08269	***	-0.15827	***	0.05413		0.95435	0.35134	0.15414	0.17276
80	LP68444640	0.00036		0.00205		0.00310		0.95115	***	-0.12380	*	0.37512		0.87530	0.95047	0.39653	0.58436
81	LP68448977	0.00118		-0.00086		0.01850	***	1.07625	***	-0.06236		0.16111		0.94240	0.72217	0.66840	0.48274
82	LP68459339	-0.00779	***	0.00994	***	-0.02603	*	1.09330	***	-0.14465	***	-0.02415		0.96716	0.01331	0.11083	0.04117
83	LP68469392	-0.00520		0.00934		-0.05459		0.46523	***	-0.19640	**	0.66859		0.62644	0.33174	0.21900	0.49832
84	LP68469398	-0.00741	**	0.00859		0.03400		0.76416	***	-0.24905	***	0.51396		0.89177	0.34165	0.06202	0.20459
85	LP68473362	0.00596	**	-0.01161	*	0.01134		0.96185	***	-0.02707		-0.80805	**	0.65359	0.46450	0.48900	0.56794
86	LP68474383	-0.00612		0.00774		-0.01105		0.85365	***	0.08518		-0.58637		0.65959	0.83712	0.68084	0.55214
87	LP68481123	0.00534	***	-0.00325		0.03033		0.93727	***	-0.00841		-0.00841		0.81902	0.80490	0.93549	0.81931
88	LP68491108	-0.00660	***	0.00513		0.01825		1.04026	***	-0.26781	***	-0.02824		0.93275	0.55124	0.10332	0.14174
89	LP68508266	-0.01116	***	0.00130		-0.01567		1.10573	***	0.17224		0.31902		0.84835	0.94449	0.58464	0.78027
90	LP68529610	-0.00168		0.00261		0.00300		0.96252	***	-0.01705		-0.07874		0.86133	0.39941	0.63716	0.65323

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the conditional Jensen (1993) single-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the conditional beta coefficients (β_{p*ST}, β_{p*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 12 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – SRI funds

Funds	1	2	3	4	5	6	7	8	9	10
Lipper RIC	LP60008719	LP60008775	LP60010597	LP60010747	LP60011009	LP60011472	LP60011566	LP60052206	LP60066130	LP60075884
α_p	0.00022	-0.00172 ***	-0.00152	-0.00110	-0.00237 ***	-0.00083	0.00020	-0.00125	-0.00315 ***	-0.00256 ***
α_{p*ST}	-0.00295	-0.00082	-0.00037	-0.00020	-0.00109	-0.00013	-0.00200	0.00105	0.00412 *	0.00312 *
α_{p*DY}	0.00010	-0.00094	0.00320	-0.00704 *	-0.00517	0.00008	-0.00071	-0.00075	-0.00323	0.00125
β_p	0.96133 ***	1.01944 ***	1.02786 ***	0.96729 ***	1.00279 ***	0.97849 ***	0.95919 ***	1.00039 ***	0.99402 ***	0.97266 ***
β_{p*ST}	0.00682	0.00098	0.01851	0.00637	0.00771	-0.02358	0.02354	0.04937	0.04600	-0.06161
β_{p*DY}	-0.08464	0.06671	-0.03694	0.07245	0.10421	0.06943	0.03319	0.02636	0.05114	-0.12324
β_{SMB}	0.08196 *	0.08062	0.09534 *	0.24890 ***	0.03187 *	0.10971 **	0.23401 ***	0.11696 **	0.15171 ***	0.21309 ***
β_{SMB*ST}	0.19487 ***	0.17459 ***	0.12976 **	0.21882 ***	0.13751	0.26198 ***	0.37232 ***	0.02499	-0.05902	-0.06752
β_{SMB*DY}	0.21201	0.05034	-0.06290	-0.00513	0.05496	0.13700	0.11877	-0.01355	-0.22255	0.07611
β_{HML}	-0.03092	-0.02434	-0.08201	-0.15312 ***	-0.10675 ***	-0.01493	-0.13659 *	-0.14174 ***	-0.17615 **	-0.10835 **
β_{HML*ST}	0.03162	0.10528	-0.00096	0.06816	0.04459	-0.00366	-0.03458	-0.00864	0.33474 **	0.18510
β_{HML*DY}	0.17890	0.01639	0.19745	-0.15438	-0.29496	-0.00211	-0.20783	-0.09723	0.13753	0.08248
β_{MOM}	-0.02933	-0.01028	-0.06365	0.01428	0.04946 *	-0.04182	0.19601 ***	0.03275	-0.18185 ***	-0.03933
β_{MOM*ST}	0.01023	0.00535	0.00093	-0.04541	-0.03264	0.00530	0.22693 ***	-0.01559	-0.08671	-0.06244
β_{MOM*DY}	0.86419	0.92845 *	0.88726	0.85492	0.90087	0.86871	0.78540	0.87390	0.85954 *	0.87386
Adj. R^2	0.86419	0.92845	0.88726	0.85492	0.90087	0.86871	0.78540	0.87390	0.85954	0.87386
w_1	0.33400	0.87078	0.76100	0.44549	0.50909	0.99773	0.79027	0.84124	0.25407	0.43797
w_2	0.11842	0.00763	0.37582	0.08506	0.07643	0.03251	0.00001	0.92327	0.00057	0.26886
w_3	0.21204	0.01657	0.51824	0.11100	0.15901	0.05057	0.00003	0.96012	0.00126	0.43023

Appendix 12 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – SRI funds (continued)

Funds	11	12	13	14	15	16	17	18	19	20
Lipper RIC	LP60100350	LP65043279	LP65099210	LP65105216	LP65146043	LP68013728	LP68094654	LP68104500	LP68117482	LP68168205
α_p	-0.00280 **	-0.00186	-0.00493 ***	-0.00791 ***	-0.00188	-0.00679 ***	-0.00344	-0.00241 ***	-0.00450 ***	-0.00105
α_{p*ST}	0.00569 ***	0.00141	-0.00736	0.01386 **	-0.00859	0.01488 **	0.01122	-0.00158	0.00889 *	0.00726
α_{p*DY}	-0.00120	-0.02117 **	-0.00686	0.01394 *	-0.00853 *	-0.00261	0.01999 *	-0.00959	-0.00608	0.02684
β_p	1.03193 ***	0.84910 ***	1.07933 ***	1.14531 ***	0.90491 ***	1.05421 ***	0.84838 ***	1.04184 ***	1.05296 ***	0.88087 ***
β_{p*ST}	0.02925	-0.12381 *	0.05475	-0.36113 *	0.35867	0.01061	-0.27461 **	-0.02836	-0.14957	-0.13116 *
β_{p*DY}	0.11095	0.38208 ***	0.18082	-0.16042	-0.03873	0.06548	-0.15361	-0.17983	-0.25684	-0.29953
β_{SMB}	0.30770 ***	0.08473	0.13758	0.47263 ***	0.02337	0.24400 ***	-0.10700	-0.05810	-0.10713	-0.01983
β_{SMB*ST}	0.05713	0.11641	-0.07512	-0.33983	0.18302	0.22020	-0.00197	0.19142	0.21016	-0.05425
β_{SMB*DY}	0.33358 **	-0.02280	-0.18642	0.17377	-0.16975	-0.22329	-0.83666	-0.76998	-0.13337	-0.28910
β_{HML}	-0.13098 **	0.03246	-0.23569	-0.25545 **	-0.07987	-0.27959 ***	-0.10469	-0.13765 **	-0.00003	-0.24573 ***
β_{HML*ST}	0.23390 *	-0.57831 ***	0.28009	1.03940 ***	-0.67004 **	0.59718 ***	0.41859 ***	0.09870	0.28695	0.16006
β_{HML*DY}	-0.07368	-1.27059 ***	-0.15217	0.45150	0.12159	0.55780 ***	1.11885 *	0.41823	0.69770	0.96241
β_{MOM}	-0.13844 ***	0.01903	-0.02361	-0.01874	-0.09068	-0.24002 ***	-0.02729	-0.11006 **	-0.20864 ***	-0.04152
β_{MOM*ST}	-0.03597	0.00762	-0.10882	-0.05061	-0.50235 **	0.77543 ***	0.11066	0.37514	0.48781 *	0.20251
β_{MOM*DY}	0.91359 ***	0.77727 ***	0.91968	0.85782 *	0.87820 **	0.88696	0.82177	0.90408 **	0.88428	0.83280
Adj. R^2	0.91359	0.77727	0.70872	0.68676	0.66983	0.88696	0.82177	0.90408	0.88428	0.83280
w_1	0.05621	0.02837	0.27303	0.29911	0.40125	0.15157	0.07632	0.69812	0.42013	0.12709
w_2	0.00555	0.00354	0.23682	0.09066	0.02854	0.01695	0.04277	0.13828	0.13833	0.41875
w_3	0.00560	0.00119	0.10962	0.15221	0.04857	0.04190	0.04494	0.17572	0.19813	0.40655

Appendix 12 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – SRI funds (continued)

Funds	21	22	23	24	25	26	27	28	29	30
Lipper RIC	LP68225399	LP68358159	LP68413634	LP68431411	LP68447768	LP68452003	LP68455412	LP68466454	LP68467743	LP68499809
α_p	-0.00511 *	-0.00222	-0.00130	0.00167	-0.00320 *	0.00068	-0.00439 **	-0.00242	0.00018	0.00349
α_{p*ST}	0.00236	0.00977	-0.00131	0.00307	0.00838 **	-0.00125	0.00247	0.01428	0.00733	0.02370 ***
α_{p*DY}	-0.01385	0.02007	0.05022 *	-0.02598	0.03097	0.03138	0.01785	0.06390	0.02286	-0.03166
β_p	0.79829 ***	1.32401 ***	1.03024 ***	1.23118 ***	1.09532 ***	1.10501 ***	1.00903 ***	1.13039 ***	1.03737 ***	1.04407 ***
β_{p*ST}	-0.13143 *	0.11297	-0.05058	-0.25567 **	-0.12698 ***	-0.01899	-0.25926 ***	-0.28118 **	-0.11243	-1.02301 ***
β_{p*DY}	-0.30412	-0.26743	0.33472	-0.09025	0.44306	0.30768	0.25452	2.16973 ***	0.73657 *	2.82771 ***
β_{SMB}	0.02664	0.05471	-0.09918	-0.14836	-0.27079 ***	-0.24186 ***	-0.16220 ***	-0.33448	-0.34280 ***	0.29192 ***
β_{SMB*ST}	0.23104	0.32998	0.22114	0.79708 **	0.38723 **	0.12369	0.06961	0.24281	0.39594 **	1.93383 ***
β_{SMB*DY}	-0.49002	-0.82200	-1.29839	-2.72128	1.41642	-2.09711	-0.70062	0.90769	0.87028	-4.99961 **
β_{HML}	-0.12844	-0.51926 ***	-0.10243	-0.71812 ***	-0.03159	0.05275	0.01237	-0.24446 *	-0.10734	-0.24214 **
β_{HML*ST}	0.07155	1.13725 ***	0.12865	0.58545 **	0.15523	-0.00022	-0.22041	-0.20812	0.11570	0.32719
β_{HML*DY}	1.29498 ***	0.90461	1.20618 ***	1.85239	0.64233 **	0.57094	0.27608	1.22536	0.82762 *	1.09654 *
β_{MOM}	-0.22745 **	-0.36010 **	0.01843	-0.52277 ***	-0.08305	0.13715	-0.00199	0.19534	-0.08659	-0.23909 ***
β_{MOM*ST}	0.14956	1.39880 ***	0.13080	1.45291 ***	0.44132 **	0.14221	0.00171	-0.00572	0.41457 *	0.04958
β_{MOM*DY}	0.80456	0.86024	0.93961	0.88589	0.95332 **	0.92520	0.96031	0.87933 ***	0.92992 ***	0.93656 **
Adj. R^2	0.80456	0.86024	0.93961	0.88589	0.95332	0.92520	0.96031	0.87933	0.92992	0.93656
w_1	0.80553	0.66848	0.25501	0.85949	0.31081	0.71854	0.72862	0.15795	0.54639	0.38554
w_2	0.80767	0.10214	0.55825	0.00278	0.26578	0.94038	0.35815	0.21883	0.36374	0.20893
w_3	0.68059	0.02901	0.54062	0.00130	0.21348	0.91130	0.24798	0.15370	0.38478	0.18177

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the conditional Carhart (1997) 4-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM), the conditional beta coefficients (β_{p*ST}, β_{p*DY}, β_{SMB*ST}, β_{SMB*DY}, β_{HML*ST}, β_{HML*DY}, β_{MOM*ST}, β_{MOM*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds

Funds	1	2	3	4	5	6	7	8	9	10
Lipper RIC	LP60008665	LP60008675	LP60008886	LP60009020	LP60009122	LP60009513	LP60009576	LP60010178	LP60010212	LP60010471
α_p	-0.00322 **	-0.00215 *	-0.00165 *	-0.00083	-0.00209	-0.00530 ***	-0.00089	0.00037	-0.00022	-0.00228 **
α_{p*ST}	-0.00279	0.00330	-0.00038	-0.00147	0.00101	0.00857	-0.00190	0.00111	0.00076	0.00015
α_{p*DY}	0.01218 **	-0.00614	-0.00177	-0.00260	0.00048	-0.03465 ***	-0.00612	-0.00160	-0.00458	-0.00090
β_p	1.16778 ***	1.15588 ***	1.00371 ***	0.96917 ***	0.84162 ***	0.88638 ***	0.96345 ***	1.05498 ***	0.95860 ***	0.93757 ***
β_{p*ST}	0.02525	0.11718 *	0.06276	0.03797	-0.07920	-0.15279	0.02909	-0.00760	0.01379	-0.03131
β_{p*DY}	-0.40386 ***	0.25719	0.05933	-0.01939	0.13790	-0.24297	0.03160	0.05851	0.00417	-0.06735
β_{SMB}	0.26805 **	0.08166	0.06366 *	0.20015 ***	0.19332 ***	0.13342	0.17068 ***	0.17534 ***	0.19677 ***	0.18494 ***
β_{SMB*ST}	0.190216 **	0.19690 **	0.18934 ***	0.01689	0.18381 **	-0.28840	0.16539 ***	0.25696 ***	0.29895 ***	0.08213 *
β_{SMB*DY}	-0.80395 ***	-0.08863	-0.14916	0.34456	-0.00836	-0.12199	0.23007	0.16951	0.05936	0.02173
β_{HML}	-0.72322 ***	-0.07966	-0.07377 ***	0.01112	-0.15430 **	-0.34397 ***	-0.02939	0.10339 *	-0.07685 *	-0.05030
β_{HML*ST}	0.17889	0.22741 *	0.11918	0.06318	0.03036	0.25086	0.06030	0.06101	0.05190	0.02785
β_{HML*DY}	0.39117	0.04799	0.07582	-0.19595	-0.32170	0.23483	-0.15656	-0.25513	-0.03139	-0.10634
β_{MOM}	-0.02329	0.07349	0.05734 **	0.04026	0.03656	-0.28803 ***	0.04882	0.08878 **	0.08624 ***	0.07239 **
β_{MOM*ST}	0.36363 **	0.15284 **	0.03622	-0.01332	-0.05570	-0.10238	-0.01482	-0.12096 **	0.03765	0.00017
β_{MOM*DY}	-0.08276	0.17752 **	-0.00660	0.01545	0.06958	-0.15918	-0.05651	-0.00769	0.04356	0.04689
Adj. R^2	0.81561	0.86504	0.91288	0.84532	0.71646	0.80128	0.89727	0.86162	0.84516	0.82746
w_1	0.38597	0.15303	0.92144	0.79007	0.96115	0.00000	0.38785	0.79926	0.59721	0.98088
w_2	0.00000	0.00352	0.01079	0.41704	0.43119	0.20254	0.17815	-0.00153	0.00485	0.64329
w_3	0.00000	0.00010	0.01112	0.52859	0.59582	0.00003	0.31265	0.00339	0.00258	0.79176

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	11	12	13	14	15	16	17	18	19	20
Lipper RIC	LP60010529	LP60010670	LP60010676	LP60010683	LP60010794	LP60010893	LP60011271	LP60011291	LP60011521	LP60011571
α_p	-0.00263 ***	-0.00086	-0.00045	-0.00055	-0.00012	-0.00160 *	-0.00371 ***	-0.00292 *	-0.00173 *	-0.00088
α_{p*ST}	-0.00344 **	-0.00075	-0.00140	-0.00306 *	-0.00099	-0.00094	0.00067	0.00011	-0.00182	0.00018
α_{p*DY}	0.00149	-0.00065	-0.00403	-0.00596	-0.00436	-0.00443	-0.00961	-0.00031	-0.00666	-0.00196
β_p	1.02630 ***	0.99861 ***	0.96998 ***	1.01759 ***	1.04445 ***	1.03261 ***	1.08810 ***	1.04292 ***	1.05218 ***	0.93366 ***
β_{p*ST}	-0.00419	-0.03455	-0.00908	-0.01055	0.03159	0.00765	-0.03521	-0.47740	-0.05463	0.01446
β_{p*DY}	0.15778	-0.03053	-0.02585	0.02718	0.12788	-0.02369	0.16735	-0.14978	0.14416	-0.10492
β_{SMB}	-0.00185	0.07164	0.09868 ***	0.06496	0.09190 *	0.14004 ***	0.09333 *	0.02049	0.07508	0.12299 **
β_{SMB*ST}	0.13861 *	0.13866 *	0.08272 *	0.15027 **	0.10095 *	0.10246 *	0.13614 **	0.20967 **	0.20530 ***	0.21323 **
β_{SMB*DY}	-0.04332	0.26101	0.06295	-0.13030	0.04849	0.01482	0.22837	0.38955 *	0.08720	0.31914
β_{HML}	-0.06403	-0.00017	-0.13146 ***	-0.15249 ***	0.01017	0.07836	-0.09347 *	-0.07443 **	-0.08915 **	0.00272
β_{HML*ST}	0.03774	0.03995	0.06547	0.00865	0.09068	0.05410	0.09588	-0.13779	-0.00628	0.10084
β_{HML*DY}	-0.23027	-0.14577	-0.16397	-0.18881	-0.21623	-0.18254	-0.54633 *	-0.28811	-0.42545	0.03359
β_{MOM}	0.05944 **	0.00799	0.02536	0.02052	0.04022	-0.05132	0.09564 ***	0.01188	-0.00684	0.00694
β_{MOM*ST}	-0.03072	-0.05063	0.02055	0.03148	-0.07413 *	-0.03774	-0.07116	-0.04276	-0.02845	-0.07469
β_{MOM*DY}	-0.02819	0.03952	0.03886	0.02663	-0.00454	-0.05792	-0.09404	-0.16005	-0.10908	0.00034
Adj. R^2	0.89089	0.88180	0.85806	0.88731	0.90064	0.88989	0.86604	0.75484	0.86676	0.82531
w_1	0.14499	0.93350	0.69489	0.24361	0.63287	0.68105	0.18945	0.99825	0.49131	0.92642
w_2	0.18063	0.21791	0.37372	0.04639	0.03024	0.31139	0.00615	0.35405	0.05633	0.05850
w_3	0.11671	0.37094	0.52280	0.06951	0.07125	0.48144	0.01381	0.51815	0.12086	0.11097

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	21	22	23	24	25	26	27	28	29	30
Lipper RIC	LP60011715	LP60011931	LP60055551	LP60066434	LP60069269	LP60070891	LP60081311	LP60095970	LP60096957	LP65006222
α_p	0.00059	-0.00155 *	0.00060	-0.00121	-0.00153 **	-0.00124	-0.00239	-0.00287 **	-0.00407 ***	-0.00164
α_{p*ST}	-0.00191	-0.00016	-0.00154	0.00009	0.00016	-0.00207	0.00212	0.00172	-0.00020	0.00189
α_{p*DY}	-0.00164	-0.00180	-0.00463	-0.01479	-0.00195	-0.00445	-0.01627 **	-0.00449	-0.00102	-0.00174
β_p	0.98630 ***	1.01449 ***	0.70231 ***	0.60069 ***	1.02343 ***	1.07645 ***	0.67954 ***	1.04002 ***	1.14090 ***	1.01859 ***
β_{p*ST}	0.03986	0.00402	0.01647	0.08432	0.02469	0.01991	0.01863	-0.03636	0.00406	-0.03009
β_{p*DY}	-0.00760	-0.09235	-0.09562	0.32160	0.05141	0.06998	0.10191	-0.01165	-0.02700	0.22127
β_{SMB}	0.21925 ***	0.05997	0.00387	0.04516	0.06615 *	0.13858	-0.06382	0.08548	0.20764 ***	0.04154
β_{SMB*ST}	0.35993 ***	0.17516 ***	0.12514	0.22241	-0.07019	0.13151	0.20375	-0.00271	-0.01184	0.13925
β_{SMB*DY}	0.17505	0.00771	0.36984	0.715144 *	0.10855	0.26563	-0.06949	-0.31451 **	0.15454	-0.19418
β_{HML}	0.02933	-0.04053	-0.02661	-0.12167	-0.06367 **	-0.10940 *	-0.05331	-0.15348 **	-0.18525 ***	-0.13598
β_{HML*ST}	-0.02175	0.06641	0.00153	0.32226	0.09744	0.23509 *	0.44996 **	0.38771 ***	-0.10617	0.37173 **
β_{HML*DY}	0.06005	0.10853	0.07960	-0.20574	-0.16813	-0.20454	0.09514	0.12488	-0.52226 ***	-0.18493
β_{MOM}	-0.00117	0.02913	0.03241	-0.06067	0.03700 *	0.02747	-0.07466	-0.05332	0.07280 **	0.05418
β_{MOM*ST}	0.04262	-0.08225	-0.03626	-0.02104	0.00104	0.03434	0.04162	0.07341	-0.12163 **	0.01816
β_{MOM*DY}	0.12880 **	-0.03125	0.11249	0.07752	-0.01361	0.02581	-0.03753	0.08847	-0.06276	0.02755
Adj. R^2	0.82451	0.89450	0.64604	0.42724	0.93372	0.89355	0.62651	0.86509	0.88280	0.87249
w_1	0.78165	0.92546	0.73318	0.33530	0.84336	0.42475	0.04402	0.51565	0.98453	0.69419
w_2	0.00061	0.02327	0.52811	0.26657	0.38069	0.08766	0.08598	0.00895	0.04000	0.00043
w_3	0.00161	0.04812	0.61147	0.36697	0.53749	0.13758	0.06397	0.02045	0.07314	0.00148

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	31	32	33	34	35	36	37	38	39	40
Lipper RIC	LP65006244	LP65021937	LP65036812	LP65053849	LP65090571	LP65095536	LP65111203	LP65121695	LP65140598	LP65140615
α_p	0.00027	-0.00116	-0.00197	-0.00552 **	-0.00650 *	-0.00097	-0.00501 ***	-0.00571 ***	-0.00150	-0.00250 ***
α_{p*ST}	-0.00122	0.00294	0.00092	0.00374	-0.00484	0.00390	0.00475	0.00581 *	0.00414 *	0.00325
α_{p*DY}	-0.00409	-0.00635	-0.01625 *	-0.02685 *	-0.02170 **	0.00510	0.00029	-0.00101	-0.00640	-0.00180
β_p	1.16582 ***	0.84822 ***	0.84359 ***	1.05482 ***	0.74310 ***	0.92223 ***	1.08117 ***	1.03948 ***	0.90293 ***	0.79686 ***
β_{p*ST}	-0.10618 **	-0.16800 *	-0.19937 **	0.17688 **	0.22318	0.07330	-0.21650 *	-0.00835	-0.06118	-0.24303 **
β_{p*DY}	0.04043	0.20376	0.36294 **	0.68495 ***	0.12298	-0.00508	-0.02826	0.00726	0.12540	-0.22660
β_{SMB}	0.23005 ***	0.01834	0.02034	0.06920	-0.02211	-0.01789	0.08505	0.07220	0.01052	-0.09706 *
β_{SMB*ST}	0.06076	0.18331	0.25715 *	-0.00804	0.21717	-0.20448 **	-0.09448	-0.08946	0.05430	0.28134 *
β_{SMB*DY}	0.28143 ***	-0.02303	0.09771	-0.11940	-0.04762	-0.19453	-0.10286	-0.01935	-0.06140	0.10040
β_{HML}	-0.60958 ***	0.07829	0.02855	-0.15052	-0.19951	-0.14621 ***	0.01884	-0.11524 **	-0.16860 ***	-0.16526 ***
β_{HML*ST}	-0.39638 ***	-0.50792 ***	-0.60684 ***	-0.05287	0.33266	0.11145	0.10108	0.21131	0.19928	0.27919
β_{HML*DY}	-0.74582 ***	-0.72569 ***	-1.08068 ***	-0.50739	0.14782	-0.04903	0.02857	0.18449	-0.13973	0.22470
β_{MOM}	0.04199	0.00206	0.01083	-0.09108	-0.17933 **	-0.02470	-0.08641	-0.02531	-0.09858 **	-0.04132
β_{MOM*ST}	-0.14519 *	0.01806	0.05238	0.22215	0.02583	-0.00694	-0.29597 **	0.40821	-0.06727	-0.10893
β_{MOM*DY}	-0.30789 ***	-0.28288 **	-0.39674 ***	0.01382	0.08205	0.01402	-0.07462	-0.29667 *	0.04095	0.02433
Adj. R^2	0.83495	0.76555	0.79227	0.75641	0.56650	0.90124	0.88626	0.90966	0.86185	0.77992
w_1	0.89021	0.51296	0.12179	0.00241	0.19922	0.48302	0.69456	0.65500	0.07616	0.75337
w_2	0.61522	0.02273	0.00008	0.26330	0.81413	0.34709	0.16096	0.02403	0.05886	0.11978
w_3	0.73169	0.02025	0.00005	0.05021	0.69881	0.33286	0.23849	0.04262	0.05350	0.15020

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	41	42	43	44	45	46	47	48	49	50
Lipper RIC	LP65140764	LP65146058	LP65155057	LP65165200	LP68016680	LP68022080	LP68026232	LP68037787	LP68090505	LP68093659
α_p	-0.00500 *	0.00091	-0.00290 ***	-0.00693 **	-0.00347 ***	-0.00223 **	-0.00785 **	-0.00319 *	-0.01228	-0.00469 ***
α_{p*ST}	0.00079	-0.02317 ***	0.00363 *	-0.01672	0.00222 *	-0.00052	0.03329	0.00193	0.01256	0.00331
α_{p*DY}	-0.01349	-0.00071	0.00261	-0.02286 ***	-0.00057	-0.01162 *	-0.01130 *	0.00828	-0.01096	0.01144
β_p	0.96120 ***	0.93414 ***	1.04301 ***	1.15688 ***	1.01005 ***	0.98723 ***	0.83995 ***	1.08386 ***	1.05642 ***	1.04975 ***
β_{p*ST}	1.02921 **	0.46755 **	0.05528	0.00385	-0.01203	-0.02529	1.78304	-0.27038 **	-1.07366	0.01823
β_{p*DY}	-0.09543	0.04694	-0.11105	0.47921 *	0.09469	-0.03622	0.29042	-0.08418	0.65290 ***	-0.54128 ***
β_{SMB}	-0.07688	-0.07906	0.02275	-0.37085 ***	0.03324	0.00754	-0.14785	-0.10447	-0.28812	-0.06159
β_{SMB*ST}	0.41181	0.49288 **	-0.10983	-0.21253	-0.15689 *	0.16989	1.97681	0.23142	1.55332	-0.07400
β_{SMB*DY}	-0.36376	-0.18495	-0.12432	-0.43741	-0.12910	0.03881	-0.50244 **	-0.67604 ***	0.85555 *	-0.36996
β_{HML}	-0.15501	0.11354	-0.10250 **	-0.39587 ***	0.03407	-0.13210 **	0.57635	0.01603	0.51911	-0.06971
β_{HML*ST}	-0.00426	0.94159 ***	0.18754 *	0.24712	0.07029	0.52886 ***	-6.15818	-0.19913	-2.82234	0.06304
β_{HML*DY}	0.73945	0.20269	0.22117	-0.57528	-0.21678	0.20122	1.39475	1.12513 **	1.83958 *	1.11230 **
β_{MOM}	-0.20698	-0.00378	-0.09835 ***	0.07956	-0.13284 ***	-0.13676 ***	-0.10443	-0.15834 **	-0.10810	-0.22942 ***
β_{MOM*ST}	0.03753	-0.31525 ***	0.09589	0.09880	-0.01059	0.10354	1.36277	0.00956	-2.70233	0.24652 *
β_{MOM*DY}	0.08379	-0.17764 *	0.14206 **	-0.13134	-0.08211 **	0.02008	-0.52707	0.21755	0.70814	-0.15451
Adj. R^2	0.72524	0.91938	0.93336	0.86099	0.94704	0.89633	0.92322	0.83617	0.59233	0.87880
w_1	0.49072	0.18465	0.63998	0.01885	0.79409	0.08158	0.32712	0.75307	0.88370	0.64360
w_2	0.01918	0.02863	0.31332	0.09599	0.36323	0.00438	0.24145	0.26801	0.42054	0.16300
w_3	0.03348	0.06006	0.48686	0.02943	0.52086	0.00556	0.17817	0.41059	0.56044	0.25184

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	51	52	53	54	55	56	57	58	59	60
Lipper RIC	LP68102346	LP68106025	LP68107811	LP68112778	LP68126103	LP68130893	LP68136435	LP68169624	LP68210744	LP68215747
α_p	0.00105	-0.00269 **	-0.00878	-0.00147 ***	-0.00412 **	-0.00347 ***	-0.00427 ***	-0.00016	-0.03960 ***	-0.00445 ***
α_{p*ST}	-0.01042 *	0.00262	0.03697	0.00052	-0.00074	0.00360	0.00372	0.00505	0.37662 ***	0.00237
α_{p*DY}	-0.01301	0.00624	-0.03203 *	-0.00020	0.01540 *	0.00868	0.02132	0.02270 *	-0.05756 *	0.00931
β_p	0.90212 ***	1.04729 ***	1.94937 ***	1.02776 ***	0.60029 ***	1.02158 ***	1.01768 ***	1.04442 ***	0.70648 ***	1.04528 ***
β_{p*ST}	-0.04474	0.10926	-9.76791 ***	-0.08704 ***	-0.05082	-0.05191	0.14719 **	-0.52739 ***	-1.27892	-0.08507
β_{p*DY}	-0.38495	-0.15037	-1.33352 ***	-0.01121	-0.28873	-0.34926 **	-0.55290	0.75423	2.41698 **	-0.21127
β_{SMB}	-0.08706	-0.11295	0.43343	0.02581	0.02671	0.06577	0.04629	-0.31819 ***	1.13130 **	0.05774
β_{SMB*ST}	0.17242	0.17473	-2.46107	-0.03920	-0.03700	-0.17036	0.08709	0.56792 ***	-12.84110 **	-0.01303
β_{SMB*DY}	-1.35863	-1.10436 **	-2.56238 **	-0.01778	-0.24509	-0.54559	-0.14891	0.04952	-1.66988	-0.05546
β_{HML}	-0.06240	-0.08843 *	0.24564	-0.00631	-0.09278 *	-0.06819	-0.06547	-0.16780 ***	0.83809	-0.03527
β_{HML*ST}	-0.28128	0.27055 *	-4.22971	-0.14544 ***	0.07152	0.06106	0.29180 *	-0.28663 *	-3.19686	-0.05538
β_{HML*DY}	0.24743	-0.06428	1.29410	0.25439 *	0.00394 *	0.93056 **	0.84892 *	0.37336	8.88470 ***	0.81271 *
β_{MOM}	-0.26712 **	0.00675	-0.12839	-0.03489 ***	-0.15981 ***	-0.20294 ***	-0.23763 ***	0.03682	-21.18410 ***	-0.19133 ***
β_{MOM*ST}	-0.00861	0.45526 ***	-3.18098	-0.06985 *	0.01338	0.25353 *	0.54207 ***	-0.14008	0.30101	0.15490
β_{MOM*DY}	-0.23386	-0.66337 ***	-0.68897	0.18549 **	-0.21154	-0.50512 *	-0.64939	0.99492	-0.33604	-0.24228
Adj. R^2	0.76822	0.92016	0.79078	0.98862	0.74201	0.93259	0.88759	0.87007	0.26679	0.92810
w_1	0.39912	0.74245	0.48816	0.96867	0.48003	0.57252	0.30417	0.25185	0.47653	0.78070
w_2	0.17442	0.00844	0.17080	0.03758	0.72068	0.00991	0.48525	0.00585	0.33811	0.27371
w_3	0.16277	0.01648	0.10515	0.04836	0.40698	0.02615	0.54343	0.00248	0.41099	0.32395

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	61	62	63	64	65	66	67	68	69	70
Lipper RIC	LP68227769	LP68232389	LP68236977	LP68348812	LP68351536	LP68380254	LP68407099	LP68412857	LP68415801	LP68415814
α_p	-0.06000 **	-0.00770 ***	-0.00085	-0.00768 ***	-0.01014 ***	-0.00881 ***	-0.00066	0.00111	-0.00726	-0.00514
α_{p*ST}	0.00737	0.00628	-0.00014	0.00838 ***	0.00456	0.00761	0.00368	0.00225	0.00549	0.00797
α_{p*DY}	0.00214	-0.04860 **	0.01265	-0.02052	-0.03555	-0.04761	0.00114	0.12476 *	-0.03862	0.00553
β_p	1.15582 ***	0.95036 ***	1.02679 ***	1.05894 ***	0.88669 ***	1.03764 ***	1.18758 ***	0.16841 ***	0.19585 **	1.10726 ***
β_{p*ST}	-0.17566 **	-0.34671 *	-0.18379 ***	-0.02794	0.11960 *	-0.11844	-0.13872 **	0.38947 ***	0.04557	-0.08764
β_{p*DY}	-0.17522	0.31902	0.07425	-0.57446 **	-0.60152	-2.21018 ***	-0.03609	-3.03701 ***	-2.09006 ***	-1.19139 **
β_{SMB}	0.02969	0.12329	-0.06143	0.00760	0.10228	0.22867	0.08600	0.14688	0.05845	-0.04669
β_{SMB*ST}	-0.37319 **	-0.41417 *	0.01539	0.09150	-0.12474	-0.85420 ***	0.24814	0.25713	0.07166	0.27398
β_{SMB*DY}	-0.54874	-0.63599	-0.61774	1.22787	-0.83254	-0.98153	-1.00498	-1.61202	-0.82263	1.08922
β_{HML}	0.06326	0.08481	0.05236	-0.04777	-0.11910 **	0.06776	-0.36619 ***	-0.64558 ***	-0.23304 *	-0.03751
β_{HML*ST}	0.26177	-0.11393	-0.21671	0.22530 **	0.00255	-0.22763	0.31740 *	1.17849 **	0.35157	0.20501
β_{HML*DY}	1.97155 ***	1.71371 **	0.48843	-0.68204	0.44391	-0.82743	-0.14946	3.22559 **	0.19056	0.61696
β_{MOM}	-0.27765 ***	-0.18350	-0.04121	-0.21147 *	-0.30547 ***	-0.46831 ***	-0.12667	-0.38721 *	-0.47443 **	-0.35688
β_{MOM*ST}	0.22822 *	-0.25999	0.48843	-0.68204	0.12199	0.01664	0.32049	1.43899 ***	0.36211	0.51759
β_{MOM*DY}	-0.29265	-0.41443	-0.22090	-0.46824	-1.22510	-2.86386 *	-0.55711	-2.63445	-2.49573	-0.56152
Adj. R^2	0.89140	0.84725	0.90465	0.93947	0.90099	0.84549	0.91454	0.72986	0.17182	0.91612
w_1	0.64896	0.17428	0.81282	0.36440	0.37770	0.49009	0.93201	0.34887	0.74584	0.73714
w_2	0.06212	0.00878	0.37938	0.13518	0.46880	0.14343	0.90617	0.64912	0.80590	0.79011
w_3	0.13048	0.00940	0.40443	0.23109	0.44389	0.17221	0.74365	0.67965	0.75280	0.89814

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	71	72	73	74	75	76	77	78	79	80
Lipper RIC	LP68417268	LP68418497	LP68427383	LP68429185	LP68432043	LP68436671	LP68441868	LP68442157	LP68442165	LP68444640
α_p	-0.00243	-0.00403 *	-0.00827 ***	-0.00609	-0.00440	-0.00373	-0.00526	-0.00287 *	-0.00360 *	-0.00108
α_{p*ST}	0.00240	0.00527	0.01482 ***	0.00315	0.02082 **	0.00432	0.00635	0.01165 ***	0.01019 ***	0.00383
α_{p*DY}	0.04531	-0.00063	0.02256	-0.01068	0.05506	-0.00070	0.00414	0.05347 **	0.02930	0.03743
β_p	0.65417 ***	0.93433 ***	1.05529 ***	1.08642 ***	1.17197 ***	1.07578 ***	1.22121 ***	1.03189 ***	1.12292 ***	1.11708
β_{p*ST}	0.05173	-0.66017 ***	-0.09300	-0.01595	-0.10079	-0.09491 ***	-0.25078 **	-0.12199 **	-0.18155 ***	-0.43366
β_{p*DY}	-0.69370 *	-0.66017 **	-0.31200	-0.60710	0.01969	0.74075 *	-0.64396	-0.40192	0.38547 *	2.40503
β_{SMB}	-0.12091	-0.00084	-0.15512	0.01702	-0.10444	-0.28694 **	0.09799	-0.23779 **	-0.30960 ***	-0.42014
β_{SMB*ST}	0.45661 *	0.15713	0.63394 *	0.00254	0.25729	0.07285	0.10632	0.72174 ***	0.49474 ***	0.54123
β_{SMB*DY}	0.98642	0.63869	0.79404	-0.26940	0.64508	-1.15621	-0.08790	1.02576	1.32987	1.46526
β_{HML}	-0.19840	0.04362	-0.03320	-0.05664	-0.38316 **	0.00738	-0.28191 **	-0.15166 *	-0.08366	-0.14044
β_{HML*ST}	0.33829 ***	-0.15248	0.51099 **	-0.01811	0.65111 **	0.08909	-0.02199	0.34616 *	0.09618	-0.39952
β_{HML*DY}	2.91898 ***	-0.12291	0.65321	0.70015	2.07685 ***	0.53469	0.48494	1.72379 ***	0.60649	1.81786
β_{MOM}	-0.40412 ***	-0.20954 **	-0.22823 ***	-0.21257	-0.05975	-0.17567 **	-0.29374 ***	-0.28562 **	-0.13791	0.09191
β_{MOM*ST}	0.74533 ***	0.21154	0.77512 ***	0.24737	0.85813 ***	0.28406	0.50341 **	0.81963 ***	0.42574 **	-0.29070
β_{MOM*DY}	0.05555	0.14077	-0.14840	-0.78723	0.36471	0.26139	-0.19400	0.19588	1.21244 **	3.55578 *
Adj. R^2	0.89129	0.93391	0.95497	0.87670	0.88598	0.93289	0.92897	0.95641	0.95825	0.89676
w_1	0.40842	0.81014	0.11370	0.95898	0.12449	0.86168	0.83099	0.05762	0.19188	0.66134
w_2	0.06026	0.23967	0.09228	0.98327	0.27330	0.47276	0.29006	0.02056	0.13681	1.39496
w_3	0.09826	0.32527	0.09054	0.99374	0.19931	0.45301	0.32349	0.02002	0.12571	0.19931

Appendix 13 – Individual performance estimates using the conditional Carhart (1997) 4-factor model – Conventional funds (continued)

Funds	81	82	83	84	85	86	87	88	89	90
Lipper RIC	LP68448977	LP68459339	LP68469392	LP68469398	LP68473362	LP68474383	LP68481123	LP68491108	LP68508266	LP68529610
α_p	-0.00210	-0.00207 **	0.00258	-0.00001	-0.00150	0.01043	0.00318	-0.00062	-0.01758 **	-0.00182 *
α_{p*ST}	0.00776	0.00336	-0.01503 *	0.01388 *	0.00027	-0.01821	-0.01561	-0.01526	-0.01199	0.00161
α_{p*DY}	0.06271 *	-0.00667	0.01654	0.03182 *	-0.00263	-0.02749	0.10959	0.05576 *	-0.01196	-0.00296
β_p	1.12834 ***	0.96572 ***	0.26477 ***	0.59414 ***	0.99621 ***	0.53491 ***	1.20874 ***	0.98681 ***	1.19087 ***	0.95690 ***
β_{p*ST}	0.01877	-0.02733 *	-1.13073 ***	-0.81352 **	0.10004	0.28915	-0.47799 **	-0.71622 ***	-0.09223	0.00552
β_{p*DY}	0.10249	-0.26586 *	1.86728	1.26079	-1.78062 **	-2.88434 ***	3.47073 ***	1.16741	0.54131	-0.04186
β_{SMB}	-0.56390	0.09605 ***	0.36890 ***	0.24643 ***	0.21386 *	0.97358 ***	-0.52442 ***	0.04362	-0.10823	0.04324
β_{SMB*ST}	0.13367	-0.20438 ***	0.72399 **	0.54794 ***	0.61618 ***	-1.68290 ***	0.98808 **	0.58574 ***	0.06718	0.10476
β_{SMB*DY}	-0.26980	1.06397 ***	-2.40591	-1.10210 **	1.90889	6.52089	-5.85413 **	-5.24371 *	-4.15573	0.01223
β_{HML}	-0.15919	0.18318 ***	-0.35171 **	-0.16725	-0.32850 ***	0.12414	-0.09403	-0.10115	-0.48107 **	-0.12781 ***
β_{HML*ST}	0.34625 *	-0.04871	-1.51609 ***	-1.10921 **	0.22899	-0.23593	-0.63089	-0.92489 **	-0.84202	0.08585
β_{HML*DY}	2.07373 ***	-0.02609	3.58303 ***	2.58805 ***	-2.10502 ***	-3.96226 *	3.72401 **	2.23266 ***	1.85237 ***	-0.02644
β_{MOM}	-0.03668	-0.03993 ***	-0.15309	-0.11810	0.06357	0.04671	0.19098	-0.12703 ***	-0.11989	0.03166
β_{MOM*ST}	0.52026 **	-0.13213 ***	-1.42387 **	-0.85143	0.99124 ***	-1.12094 **	-0.26464	-0.49339	-0.08388	0.03476
β_{MOM*DY}	0.55300	0.31860 **	1.89904 ***	1.15844 ***	-0.81688	0.40810	2.47523 *	0.16868	-1.14069	-0.08893
Adj. R^2	0.95016	0.98817	0.76877	0.92780	0.81516	0.76339	0.84646	0.95192	0.85380	0.87637
w_1	0.11654	0.65774	0.65408	0.60479	0.99810	0.47450	0.56458	0.55572	0.76879	0.48345
w_2	0.34483	0.40660	0.11527	0.14488	0.04719	0.35120	0.40413	0.14795	0.61488	0.43497
w_3	0.29932	0.39764	0.17063	0.21014	0.08279	0.26278	0.46073	0.13385	0.57694	0.34172

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the conditional Carhart (1997) 4-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM), the conditional beta coefficients (β_{p*ST}, β_{p*DY}, β_{SMB*ST}, β_{SMB*DY}, β_{HML*ST}, β_{HML*DY}, β_{MOM*ST}, β_{MOM*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 14 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – SRI funds

Funds	1	2	3	4	5	6	7	8	9	10
Lipper RIC	LP60008719	LP60008775	LP60010597	LP60010747	LP60011009	LP60011472	LP60011566	LP60052206	LP60066130	LP60075884
α_p	-0.00019	-0.00173 **	-0.00244 **	-0.00099	-0.00268 ***	-0.00190	-0.00017	-0.00130	-0.00324 ***	-0.00303 ***
α_{p*ST}	-0.00183	-0.00046	0.00280	-0.00060	-0.00018	0.00212	-0.00014	0.00124	0.00527 *	0.00381 *
α_{p*DY}	-0.00268	-0.00365	0.00135	-0.01262 **	-0.00563	-0.00223	-0.00173	-0.00603	-0.00676	-0.00155
β_p	0.97077 ***	1.01891 ***	1.03899 ***	0.97112 ***	1.00532 ***	1.00644 ***	0.96095 ***	1.00408 ***	0.98138 ***	0.98953 ***
β_{p*ST}	-0.00938	0.01557	0.02903	0.01801	0.02047	0.00767	0.01992	0.05311	0.06995	-0.07116
β_{p*DY}	-0.06967	0.08590	-0.06271	0.12491	0.10232	0.05621	0.00101	0.05210	0.08972	-0.08808
β_{SMB}	0.07446	0.07765 *	0.05726	0.22121 ***	0.06654	0.05895	0.10392	0.11797 **	0.14037 ***	0.22692 ***
β_{SMB*ST}	0.16030 **	0.15604 **	0.03507	0.19771 **	0.15439 *	0.16563 *	0.23778 *	0.00083	-0.12543	-0.06539
β_{SMB*DY}	0.19691	0.06142	-0.16566	0.06874	0.00379	0.10438	0.08347	0.00234	-0.25349 *	0.10210
β_{HML}	-0.01345	0.03372	-0.04329	-0.10582 *	-0.10813 **	-0.06886	-0.09391	-0.07198	-0.03281	-0.12160 **
β_{HML*ST}	0.12603	0.00831	0.11429	0.07029	-0.03338	0.08661	0.35045 **	-0.07428	0.16409	0.17065
β_{HML*DY}	0.20552	-0.16556	0.34083	-0.19772	-0.33837	0.23422	0.29352	-0.28352	-0.31440	0.00881
β_{RMW}	0.03851	0.01072	0.05144	-0.04539	0.11404 *	0.02184	-0.19378 **	0.00614	0.01780	0.09714
β_{RMW*ST}	-0.12967	-0.03390	-0.35141 ***	0.03047	-0.01513	-0.25542 *	-0.35349 **	-0.03398	-0.10349	-0.05923
β_{RMW*DY}	0.20633	0.17459	0.04541	0.68025 **	0.03917	0.26461	0.21025	0.45936	0.00067	0.20384
β_{CMA}	-0.03259	-0.13344 ***	-0.08762	-0.08076	-0.12344 ***	0.14464 **	0.11212	-0.24186 ***	-0.38050 ***	0.04319
β_{CMA*ST}	-0.06710	0.21080 ***	0.06451	0.04839	0.10524	0.11421	-0.31097	0.10000	0.28095	-0.00509
β_{CMA*DY}	0.37999	0.31756	-0.12619	0.33212	-0.26413	-0.11095	-0.41786	0.56605 **	0.95270 ***	0.36991
β_{MOM}	-0.04537	-0.00232	-0.09675 **	0.01966	0.04300	-0.07528 **	0.16222 ***	0.02959	-0.17209 ***	-0.04020
β_{MOM*ST}	0.05007	-0.02366	0.05688	-0.07416	-0.04225	0.06182	0.30339 **	-0.04453	-0.10430 *	-0.06355
β_{MOM*DY}	0.10054	0.04851	0.06911	-0.13026	-0.06844	0.05423	0.14690	-0.09968	0.11383	-0.00961
Adj. R^2	0.86563	0.92962	0.89286	0.85686	0.90328	0.87327	0.79781	0.87872	0.86483	0.87393
w_1	0.69770	0.67436	0.43832	0.10330	0.47597	0.53098	0.97386	0.35357	0.15391	0.33428
w_2	0.05005	0.00523	0.01332	0.03407	0.04266	0.00833	0.00005	0.26216	0.00017	0.44442
w_3	0.09191	0.01107	0.02665	0.05112	0.08001	0.01442	0.00015	0.36027	0.00031	0.56445

Appendix 14 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – SRI funds (continued)

Funds	11	12	13	14	15	16	17	18	19	20
Lipper RIC	LP60100350	LP65043279	LP65099210	LP65105216	LP65146043	LP68013728	LP68094654	LP68104500	LP68117482	LP68168205
α_p	-0.00269 **	-0.00269	-0.00429 **	-0.00842 ***	-0.00068	-0.00772 ***	-0.00493 ***	-0.00265 **	-0.00496 ***	-0.00269 **
α_{p*ST}	0.00397	0.00007	-0.00842	0.01647	-0.03986 *	0.01543 **	0.01011	-0.00479	0.01133 **	0.00397
α_{p*DY}	-0.00268	-0.02452 **	-0.00645	0.00853	-0.01583 **	-0.01405	-0.00254	-0.01526 *	-0.01011	-0.00268
β_p	1.03358 ***	0.87466 ***	1.07044 ***	1.17134 ***	0.88800 ***	1.08167 ***	0.86605 ***	1.03653 ***	1.04545 ***	1.03358 ***
β_{p*ST}	0.06839	0.00335	0.15392	-0.20407	1.15491 ***	-0.04862	-0.05912	0.04027	-0.13985	0.06839
β_{p*DY}	0.17814	0.50579 ***	0.22518	-0.04400	-0.02196	0.18209 *	0.17055	-0.01198	-0.14023	0.17814
β_{SMB}	0.32935 ***	0.13084 **	0.11357	0.43959 ***	0.08574	0.27891 ***	-0.01355	-0.07675	-0.07337	0.32935 ***
β_{SMB*ST}	0.04033	0.08434	-0.18704	-0.57884	-0.28848	0.16208	-0.17214	0.13765	0.08897	0.04033
β_{SMB*DY}	0.33159 ***	-0.03801	-0.29085	0.10081	-0.05421	-0.07946	-0.97042	-0.45387	-0.14858	0.33159 ***
β_{HML}	-0.07681	0.00738	-0.11743	-0.16297 *	0.08517	-0.19715 ***	-0.17470 **	-0.05362 *	-0.00521	-0.07681
β_{HML*ST}	0.02849	-0.93549 ***	-0.00009	0.59548	-2.36510 **	0.61143	0.25529	-0.27123	0.48317 *	0.02849
β_{HML*DY}	-0.49691 **	-1.76343 ***	-0.64906	-0.26196	-0.30484	-0.24423	0.46891	-0.69631	1.01998	-0.49691 **
β_{RMW}	0.07639	0.22108 *	-0.04046	0.04737	-0.04137	0.14823	0.51827 ***	0.04953	0.16426 *	0.07639
β_{RMW*ST}	0.18620	0.25477	0.20884	0.11936	1.63624	-0.25825	-1.26687 ***	-0.59490 *	-0.46129	0.18620
β_{RMW*DY}	-0.08916	0.01939	-0.33682	0.26410	0.60859 *	0.83308 **	-0.11438	0.64847	0.54027	-0.08916
β_{CMA}	-0.09834	0.08314	-0.27716	-0.14515	-0.12361	-0.21533 **	0.14524 *	-0.20136 *	-0.01289	-0.09834
β_{CMA*ST}	0.36985 *	0.86021 ***	0.51980	1.61189 *	2.41757	-0.22387	0.31996 *	0.45200 **	-0.50861	0.36985 *
β_{CMA*DY}	0.88029 ***	0.96475	0.73786	1.61189 *	1.94880 ***	2.17177	2.30831 **	2.17836 **	-0.36393	0.88029
β_{MOM}	-0.12497 ***	0.03390	-0.02524	-0.01597	-0.07083	-0.19196 ***	0.01885	-0.06127	-0.19284 ***	-0.01888
β_{MOM*ST}	-0.05202	0.01023	-0.16150 *	-0.12199	-0.57409	0.48855 **	-0.15333	0.10700	0.30388	0.02873
β_{MOM*DY}	0.14007 **	-0.38653 ***	-0.20105 ***	0.06927 **	-0.37812 ***	-0.03229	0.25738	-0.46940 **	0.32498	0.09093
Adj. R^2	0.91366	0.77850	0.91905	0.85488	0.89300	0.89283	0.85396	0.90896	0.88050	0.83435
w_1	0.33729	0.02921	0.41174	0.50193	0.03135	0.06332	0.30131	0.36731	0.28302	0.40444
w_2	0.00871	0.00640	0.30547	0.14463	0.00180	0.03030	0.00647	0.06948	0.38141	0.53016
w_3	0.00714	0.00172	0.16745	0.19929	0.00342	0.05853	0.01307	0.09581	0.44626	0.57580

Appendix 14 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – SRI funds (continued)

Funds	21	22	23	24	25	26	27	28	29	30
Lipper RIC	LP68225399	LP68358159	LP68413634	LP68431411	LP68447768	LP68452003	LP68455412	LP68466454	LP68467743	LP68499809
α_p	-0.00521 **	-0.00164	0.00009	0.00458	0.00186	0.00261	-0.00319	0.00308	0.00556	0.00659 **
α_{p*ST}	0.00462	0.01903	-0.00385	0.00283	-0.00052	-0.00734	-0.00053	0.00386	0.00480	0.02664 *
α_{p*DY}	-0.01725	0.04868	0.04698	-0.00258	0.04672 *	0.03042	0.01548	0.06363	0.00986	0.02509
β_p	0.69916 ***	1.25104 ***	0.98643 ***	1.17438 ***	1.09201 ***	1.10759	1.04538 ***	1.19697 ***	0.99678 ***	0.92771 ***
β_{p*ST}	-0.10842	-0.09131	-0.01551	-0.29254 **	-0.12125	0.04001	-0.13165 ***	-0.15674 **	0.13030	-0.93220 **
β_{p*DY}	-1.09495 *	-0.24206	0.08264	-0.27917	0.41743	0.03685	-0.17286	1.89493 ***	-0.52834	2.29202 *
β_{SMB}	-0.07699	0.15702	-0.05778	0.20483	0.01590	-0.23306	0.05444	0.11993	0.22017	0.36391 *
β_{SMB*ST}	0.24998	0.14942	0.08568	0.42001	-0.10163	0.16437	-0.27163	-0.33636	-0.67192 ***	1.87380 **
β_{SMB*DY}	-1.59342	0.96768	-1.19819	-0.58326	1.86153 *	-2.75909	0.60687	-0.70192	2.35932 ***	-9.77972 ***
β_{HML}	-0.07444	-0.50452 ***	-0.03837	-0.62815 ***	0.25462	0.19091	0.02258	0.06372	0.16559	-0.27924 ***
β_{HML*ST}	0.32269	1.85299 **	-0.03485	0.59090	-0.33996	-0.36532	-0.54126 *	-0.91969 *	-0.18377	0.95445 **
β_{HML*DY}	2.37131 ***	2.19114	0.80568	0.57650	-1.90652	-0.72080	-1.73767	-1.95983	-2.75742 ***	8.01378 ***
β_{RMW}	0.04351	-0.21412	0.03630	0.21552	-0.25409	-0.04611	-0.02057	-0.45937	-0.17851	-0.01212
β_{RMW*ST}	-0.27846	0.44082	-0.14697	0.27132	0.10138	0.10453	-0.24246	0.65773	-0.24755	0.03948
β_{RMW*DY}	1.96595 **	1.10488	2.49261 **	4.18437	6.04372 **	1.15402	0.99470	10.52149 ***	10.91084 ***	14.58640 **
β_{CMA}	-0.41245 *	-0.00304	-0.12610	0.05586	-0.00490	-0.15890	0.23578	0.32186 ***	0.12502 ***	0.15192
β_{CMA*ST}	-0.51683 **	-1.65409 **	-0.08261	-0.74844	-0.17709	0.60652	0.48246 **	0.38864	-0.52553 **	-1.91698 ***
β_{CMA*DY}	-4.24339 *	-2.17871	-0.07419	3.79427	4.62275 *	1.38468	5.41934 *	3.96457	5.66675 ***	-16.88369 ***
β_{MOM}	-0.35192 ***	-0.35571 **	0.06155	-0.33606 **	0.24390 *	0.19578	0.09974	0.63820 **	0.29900	-0.18882 **
β_{MOM*ST}	0.15796	1.28190 ***	-0.14674	0.83474	-0.46286	0.04131	-0.23482	-1.07521 **	-0.72535 ***	-0.81937 **
β_{MOM*DY}	-0.86176	1.08846	0.75115	0.50319	1.17572 *	-0.90727	-0.32415	2.17050	0.18766	2.95907 ***
Adj. R^2	0.81792	0.85514	0.92699	0.87655	0.93979	0.89455	0.94996	0.87536	0.93438	0.92816
w_1	0.68782	0.30322	0.44135	0.98174	0.67358	0.79447	0.94517	0.55063	0.86679	0.57775
w_2	0.55400	0.23198	0.79426	0.02482	0.55412	0.99063	0.68521	0.30200	0.31602	0.49583
w_3	0.60638	0.06811	0.75572	0.01417	0.52198	0.98336	0.67025	0.26617	0.35025	0.48704

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the conditional Fama and French (2018) 6-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM), the conditional beta coefficients (β_{p*ST}, β_{p*DY}, β_{SMB*ST}, β_{SMB*DY}, β_{HML*ST}, β_{HML*DY}, β_{RMW*ST}, β_{RMW*DY}, β_{CMA*ST}, β_{CMA*DY}, β_{MOM*ST}, β_{MOM*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds

Funds	1	2	3	4	5	6	7	8	9	10
Lipper RIC	LP60008665	LP60008675	LP60008886	LP60009020	LP60009122	LP60009513	LP60009576	LP60010178	LP60010212	LP60010471
α_p	-0.00056	-0.00128	-0.00157	-0.00146	-0.00169	-0.00553 ***	-0.00105	-0.00027	-0.00083	-0.00238 **
α_{p*ST}	-0.00595	0.00298	-0.00045	-0.00011	0.00003	0.01065	-0.00171	0.00223	0.00304	0.00109
α_{p*DY}	-0.01084 *	-0.00784	-0.00187	-0.00255	0.00265	-0.03895 ***	-0.00613	-0.00234	-0.00590	-0.00319
β_p	1.09905 ***	1.12618 ***	0.99989 ***	0.97828 ***	0.83469 ***	0.88224 ***	0.96741 ***	1.07050 ***	0.96532 ***	0.93229 ***
β_{p*ST}	0.07957	0.12882 **	0.06803	0.01353	-0.07726	-0.15431	0.01225	-0.02042	0.00644	-0.03722
β_{p*DY}	-0.43635 ***	0.26631 *	0.05751	-0.02304	0.12747	-0.25168	0.02545	0.06259	-0.02128	-0.06295
β_{SMB}	0.06110	0.04204	0.05107	0.25589 ***	0.19828 ***	0.12162	0.15011 ***	0.21975 ***	0.11563 *	0.14222 **
β_{SMB*ST}	0.04180	0.16286	0.17778 ***	0.05543	0.20798 ***	-0.28043 *	0.13654 **	0.26846 **	0.19493 **	0.04999
β_{SMB*DY}	-0.62111 ***	-0.06549	-0.14156	0.25540	-0.05256	-0.07807	0.21836	0.12428	-0.00403	-0.01058
β_{HML}	-0.34308 ***	0.11448	-0.04937	-0.04632	-0.01088	-0.23859 ***	-0.03903	0.05268	-0.05063	-0.00433
β_{HML*ST}	-0.10765	0.08964	0.09865	0.18156	0.12456	0.37421	0.14844	0.06997	0.35428 **	0.24499 *
β_{HML*DY}	-0.33655	-0.32829	0.02896	0.01005	-0.37848	0.34261	-0.08227	-0.24836	0.35379	0.19387
β_{RMW}	-0.66950 ***	-0.13945 *	-0.03505	0.18425 ***	-0.00434	0.03082	-0.01810	0.15143 **	-0.07229	-0.04211
β_{RMW*ST}	-0.07636	-0.04978	-0.01304	-0.03464	0.08593	-0.06710	-0.08090	-0.05027	-0.32676 ***	-0.11310
β_{RMW*DY}	-0.70716 **	-0.09558	-0.03432	0.10177	-0.33047	0.57600	-0.04168	0.01822	0.17015	0.43433
β_{CMA}	-0.19536 *	-0.30740 ***	-0.01241	-0.05879	-0.32460 **	-0.30941 **	0.07677	0.00377	0.04201	-0.10490
β_{CMA*ST}	0.76317 ***	0.29257 **	0.06189	-0.27220 **	-0.33047 **	-0.14352	-0.07694	-0.02762	-0.23899 *	-0.27740 *
β_{CMA*DY}	1.21149 ***	0.47197	0.08703	-0.47264	-0.37771	0.02466	0.18235	0.14782	-0.30426	-0.55733
β_{MOM}	0.08473 *	0.10980 ***	0.06318 **	0.00898	0.05337	-0.27876 ***	0.04091	0.06936 *	0.04977	0.05258
β_{MOM*ST}	0.17184 *	0.07204	0.02571	0.04056	-0.07768	-0.09235	0.05288	-0.07877	0.11490 *	0.02064
β_{MOM*DY}	-0.30699 ***	0.05602	-0.02202	0.08092	0.06662	-0.19160	-0.02437	0.02201	0.12401 ***	0.06539
Adj. R^2	0.85890	0.87048	0.91038	0.85104	0.72107	0.80062	0.89632	0.86205	0.85355	0.83208
w_1	0.16586	0.15901	0.92298	0.90901	0.95080	0.00000	0.45185	0.52766	0.16299	0.71947
w_2	0.00000	0.01685	0.09972	0.52856	0.29106	0.32231	0.37268	0.01577	0.00032	0.15383
w_3	0.00000	0.00357	0.11247	0.67800	0.42125	0.00015	0.51669	0.01608	0.00036	0.25401

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	11	12	13	14	15	16	17	18	19	20
Lipper RIC	LP60010529	LP60010670	LP60010676	LP60010683	LP60010794	LP60010893	LP60011271	LP60011291	LP60011521	LP60011571
α_p	-0.00295 ***	-0.00138	-0.00044	-0.00054	-0.00011	-0.00147	-0.00363 ***	-0.00342	-0.00199 *	-0.00145
α_{p*ST}	-0.00276	0.00086	-0.00069	-0.00274	-0.00112	-0.00091	0.00150	0.00169	-0.00058	0.00242
α_{p*DY}	-0.00004	-0.00259	-0.00310	-0.00466	-0.00641	-0.00490	-0.01035	0.00123	-0.00976	-0.00325
β_p	1.03282 ***	1.00641 ***	0.95997 ***	1.01375 ***	1.04558 ***	1.02893 ***	1.07761 ***	1.05129 ***	1.05275 ***	0.93770 ***
β_{p*ST}	0.00510	-0.06199	-0.04957	-0.03270	0.02827	-0.01210	-0.03233	-0.05916	-0.04423	-0.00618
β_{p*DY}	0.16804	-0.02197	-0.03757	0.01330	0.15624	-0.01816	0.16545	-0.18952	0.15759	-0.11563
β_{SMB}	0.02693	0.10363 **	0.10950 ***	0.06592	0.13475 ***	0.13716 ***	0.10727 *	-0.03766	0.07171	0.12640 *
β_{SMB*ST}	0.13742	0.12630	0.09543 *	0.14517 *	0.13389	0.09122	0.12545	0.14036	0.18275 **	0.16949 *
β_{SMB*DY}	-0.06325	0.20352	-0.00257	-0.15800	0.05806	0.02090	0.18920	0.30939	0.05279	0.23287
β_{HML}	-0.03889	0.02529	-0.10085 *	-0.13947 **	0.02881	0.11929 *	0.00125	-0.10854	-0.03484	0.05137
β_{HML*ST}	-0.08532	0.07667	0.24514 **	0.07595	-0.01897	0.07268	-0.02483	0.16866	-0.00386	0.18975
β_{HML*DY}	-0.43805	-0.24350	-0.01776	-0.17788	-0.41941 **	-0.29407	-0.82042 ***	0.21783	-0.43585	0.02479
β_{RMW}	0.10209	0.12708 **	0.03107	-0.00289	0.08874	-0.01996	0.03643	-0.04004	0.05120	0.08536
β_{RMW*ST}	-0.03027	-0.14125	-0.07301	-0.06091	0.07232	-0.04290	-0.08109	-0.24464	-0.09738	-0.23839 *
β_{RMW*DY}	0.00196	-0.01892	-0.10098	-0.23582	0.14361	-0.10612	-0.18371	0.03981	0.31068	-0.09142
β_{CMA}	-0.12873 **	-0.11717	-0.09930	0.00114	-0.12571 ***	-0.03519	-0.22729 ***	0.11025	-0.18253 **	-0.13207
β_{CMA*ST}	0.20771 **	-0.02258	-0.33519 ***	-0.10610	0.10481	-0.01365	0.22756	-0.32405	0.06480	-0.03058
β_{CMA*DY}	0.31328	0.50594	-0.22134	0.12404	0.33914	0.48108	0.31759	-0.81231	-0.08870	0.25802
β_{MOM}	0.05973 **	-0.00850	0.01026	0.01636	0.04757 *	-0.04691	0.10648 ***	-0.02688	-0.01564	-0.01489
β_{MOM*ST}	-0.04363	-0.00598	0.06166	0.05810	-0.09655 **	-0.02798	-0.09888	0.03712	-0.03533	-0.02313
β_{MOM*DY}	-0.06673	0.04413	0.08738	0.05713	-0.06069	-0.07148	-0.14818	-0.03169	-0.14331 *	0.02574
Adj. R^2	0.89193	0.88635	0.86020	0.88560	0.90162	0.88845	0.86739	0.75587	0.86809	0.82858
w_1	0.40808	0.74748	0.85383	0.40101	0.42449	0.66411	0.13637	0.89403	0.28860	0.43238
w_2	0.16504	0.07773	0.15194	0.16190	0.06716	0.48097	0.00660	0.30020	0.03779	0.03289
w_3	0.14671	0.13843	0.23372	0.19546	0.11925	0.62660	0.01169	0.42965	0.07515	0.05026

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	21	22	23	24	25	26	27	28	29	30
Lipper RIC	LP60011715	LP60011931	LP60055551	LP60066434	LP60069269	LP60070891	LP60081311	LP60095970	LP60096957	LP65006222
α_p	0.00007	-0.00156 *	0.00001	-0.00346 *	-0.00184 ***	-0.00159 *	-0.00146	-0.00322 **	-0.00444 ***	-0.00195
α_{p*ST}	-0.00023	0.00058	-0.00108	0.00708 *	0.00126	0.00261	0.00052	0.00299	0.00147	0.00315
α_{p*DY}	-0.00596	-0.00304	-0.01089	-0.01300	-0.00271	0.00940 **	-0.01388 **	-0.00774	0.00075	0.00010
β_p	1.00079 ***	1.00915 ***	0.72350 ***	0.64245 ***	1.02702 ***	1.08530 ***	0.66942 ***	1.02615 ***	1.13706 ***	1.01632 ***
β_{p*ST}	0.04917	0.00585	0.01785	0.04421	0.01382	0.12528	0.00548	-0.00673	0.00907	-0.04025
β_{p*DY}	-0.00592	-0.09450	-0.05648	0.23217	0.05635	0.07988	0.13532	0.01497	0.00246	0.25349
β_{SMB}	0.12655 *	0.03164	0.02282	0.11372	0.07650 **	0.15122 **	-0.08800	0.08093	0.21551 ***	0.07164
β_{SMB*ST}	0.22849 **	0.14231 **	0.11920	0.15453	-0.09330	0.06719	0.16064	-0.04119	-0.05857	0.14399
β_{SMB*DY}	0.16688	-0.01456	0.36326	0.49311 *	0.07714	0.20685	-0.07504	-0.35305 **	0.06608	-0.24467 *
β_{HML}	0.08043	0.01504	-0.02186	-0.16695	-0.04192	-0.04462	-0.02341	-0.01418	-0.14255 *	-0.08700
β_{HML*ST}	0.13117	0.13118	0.06351	0.51033 **	0.07365	0.14003	0.33150	0.24683	-0.24374	0.29197
β_{HML*DY}	0.25184	0.16146	0.13120	0.18024	-0.27056	-0.29582	-0.27503	-0.22636	-0.87513 ***	-0.44572
β_{RMW}	-0.08417	-0.03429	0.12573 *	0.34697 ***	0.06785	-0.00183	-0.18150 *	0.07621	0.10220	0.22693 **
β_{RMW*ST}	-0.30296 **	-0.10372	0.02756	-0.58090 **	-0.15224	0.09090	0.00887	-0.09903	-0.24409	-0.07405
β_{RMW*DY}	0.47285 **	0.11579	0.75523 **	-0.11647	-0.11864	0.40063 *	-0.51789 *	0.01587	-0.67394 **	-0.48171
β_{CMA}	0.02007	-0.09730	-0.19527 **	-0.32473 *	-0.06512	-0.36094 ***	0.11050	-0.41714 ***	-0.07018	-0.13417
β_{CMA*ST}	0.08914	-0.02577	-0.14654	-0.39117	-0.00332	0.35803 *	0.15160	0.24671	0.22385	0.04496
β_{CMA*DY}	0.16530	-0.11006	0.18468	-1.60412 ***	0.19288	0.14959	0.89523 *	0.59858	0.46147	0.18574
β_{MOM}	-0.02331	0.02416	-0.00223	-0.19002 **	0.03431	0.00359	-0.04909	-0.04967	0.07583 **	0.05233
β_{MOM*ST}	0.08212 *	-0.08065	-0.04213	-0.04521	0.00447	0.00302	0.04174	0.05801	-0.10198 *	0.01736
β_{MOM*DY}	0.13563 **	-0.03865	0.06463	0.20204	-0.02572	-0.01445	-0.08416	0.02675	-0.06087	0.04220
Adj. R^2	0.83221	0.89402	0.66131	0.46691	0.93378	0.89804	0.62615	0.87048	0.88354	0.87511
w_1	0.65559	0.72835	0.28171	0.12841	0.58813	0.11797	0.20181	0.24312	0.89860	0.62485
w_2	0.00040	0.03958	0.18417	0.14007	0.49056	0.04989	0.15300	0.00590	0.04740	0.00063
w_3	0.00114	0.07342	0.22030	0.17715	0.63792	0.07380	0.13320	0.01106	0.08281	0.00165

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	31	32	33	34	35	36	37	38	39	40
Lipper RIC	LP65006244	LP65021937	LP65036812	LP65053849	LP65090571	LP65095536	LP65111203	LP65121695	LP65140598	LP65140615
α_p	0.00122	-0.00221	-0.00275	-0.00639 **	-0.00607	-0.00100	-0.00462 ***	-0.00708 ***	-0.00174 *	-0.00366 ***
α_{p*ST}	0.00145	0.00068	-0.00064	0.00326	-0.00060	0.00159	0.00064	0.00779	0.00537 **	0.00588
α_{p*DY}	0.00034	-0.01031	-0.01889 **	-0.02943	-0.02115 ***	0.00417	-0.00188	-0.00900	-0.00719 *	-0.00779 *
β_p	1.12496 ***	0.87659 ***	0.87013 ***	1.07139 ***	0.73557 ***	0.92024 ***	1.07126 ***	1.07392 ***	0.89044 ***	0.81395 ***
β_{p*ST}	-0.09362	-0.03780	-0.09723	0.39986 ***	0.25178 *	0.12054	-0.21247 *	-0.06535	-0.02211	-0.17892
β_{p*DY}	-0.01602	0.34591 **	0.48189 ***	0.79729 ***	0.13630	0.10081	0.10370	0.11491	0.15357	-0.16655
β_{SMB}	0.20328 ***	0.05993	0.04731	0.09073	-0.06284	-0.03066	0.04534	0.13496	0.00455	-0.11924 *
β_{SMB*ST}	0.04740	0.13625	0.18806	-0.15590	0.04149	-0.10511	-0.00670	-0.18164	-0.01407	0.38677 **
β_{SMB*DY}	0.16615	-0.05166	0.06644	-0.23449	-0.13360	-0.29477 **	-0.23922	0.11167	-0.14380	0.05476
β_{HML}	-0.47168 ***	0.05397	-0.05323	-0.11713	-0.10103	-0.08422 *	0.17405 **	-0.14929 **	-0.06942	-0.12146 **
β_{HML*ST}	-0.52187 ***	-0.91787 ***	-1.03822 ***	-0.43432	0.10672	-0.24341	-0.48965 **	0.33885	0.01043	0.13863
β_{HML*DY}	-1.03259 ***	-1.34329 ***	-1.67725 ***	-0.97572	-0.29907	-0.55978 **	-1.02726 **	-0.47518	-0.54860	0.15795
β_{RMW}	-0.18280	0.20012	0.09829	0.15978	-0.06641	0.20117 ***	0.11779	0.12517	0.03260	0.20342 **
β_{RMW*ST}	-0.18748	0.19711	0.09641	0.38008	-0.26905	-0.26044	-0.33568	0.08777	-0.15503	-0.40820 *
β_{RMW*DY}	-0.62236	-0.13372	-0.23666	-0.37592	-0.31027	-0.54294 ***	-0.78214 **	0.41833	-0.35358	0.37374
β_{CMA}	-0.39583 **	0.13435	0.26330	-0.07373	-0.23424	-0.15575 **	-0.33570 **	0.10555	-0.26918 ***	-0.16702
β_{CMA*ST}	0.11316	0.95795 ***	0.87524 ***	1.12858 *	0.32823	0.61056 *	0.79658 **	-0.36404	0.36889 **	0.55889
β_{CMA*DY}	0.10740	1.28273	1.21527	0.76780	0.66641	0.44883	1.71701 ***	1.71955 *	0.63308 *	0.14836
β_{MOM}	0.04344	0.02692	0.01912	-0.10056	-0.15934 *	-0.01460	-0.06901	-0.00989	-0.09426 *	-0.03114
β_{MOM*ST}	-0.15754	0.03722	0.04041	0.19474	0.02830	-0.03221	-0.33251 *	0.29797	-0.06541	-0.03156
β_{MOM*DY}	-0.31051 ***	-0.34802 ***	-0.47487 ***	-0.01383	0.02349	-0.02290	-0.20788	-0.32781 **	0.00414	0.01560
Adj. R^2	0.83734	0.77064	0.79477	0.75038	0.53070	0.90760	0.89519	0.91137	0.86402	0.78683
w_1	0.97562	0.50777	0.12178	0.04525	0.28015	0.71633	0.95128	0.29146	0.07281	0.25285
w_2	0.74957	0.01539	0.00013	0.40981	0.96195	0.11145	0.03935	0.05630	0.03980	0.06232
w_3	0.82177	0.01043	0.00007	0.10823	0.90678	0.12207	0.05247	0.08429	0.03433	0.06965

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	41	42	43	44	45	46	47	48	49	50
Lipper RIC	LP65140764	LP65146058	LP65155057	LP65165200	LP68016680	LP68022080	LP68026232	LP68037787	LP68090505	LP68093659
α_p	-0.00085	0.00333	-0.00174 *	-0.00772 **	-0.00353 ***	-0.00299 ***	-0.00657	-0.00403 **	-0.01883 *	-0.00503 ***
α_{p*ST}	-0.04572	-0.06033 ***	-0.00192	-0.12742	0.00093	0.00059	0.03257	0.00589	0.10622	0.00499
α_{p*DY}	-0.01172	0.00050	0.00289	-0.02182 ***	-0.00082	-0.01605 **	0.00063	0.00854	-0.01219	0.01199
β_p	0.90606 ***	0.89326 ***	1.04301 ***	1.21274 ***	1.01451 ***	1.01446 ***	0.81409 ***	1.09339 ***	1.24633 ***	1.04962 ***
β_{p*ST}	1.90288 ***	1.03863 *	-0.00973	0.24348	-0.02140	0.01504	1.90843	-0.25153 *	-2.68749	-0.08827
β_{p*DY}	-0.00266	0.15975	-0.05276	0.63055 **	0.16187 *	-0.05412	0.14356	-0.07766	0.61438 **	-0.52721 **
β_{SMB}	-0.16974	-0.05680	-0.01294	-0.28013 *	0.04184	0.02269	-0.20873	-0.06317	-0.42740	-0.01375
β_{SMB*ST}	1.36026 **	-0.01923	-0.05271	-0.35499	-0.15810	0.12462	2.42406	0.18540	4.44556	-0.22678
β_{SMB*DY}	-0.56082 **	-0.24291	-0.19754	-0.56098 *	-0.16000	0.04567	-0.76101 **	-0.69135 **	-1.09949	-0.28049
β_{HML}	-0.03898	0.28824 *	-0.01201	-0.21666	0.05210 *	-0.11632 *	0.99696 **	0.00454	1.19849	-0.05535
β_{HML*ST}	-0.99647	-2.84480 **	-0.00942	-0.11715	-0.08698	0.56169 ***	-9.41714 **	0.08932	-3.49160	0.33987
β_{HML*DY}	0.23259	-0.99962 *	-0.26942	-1.21122 **	-0.58275 ***	0.34435	1.95632	1.75191 ***	2.37326	0.97319
β_{RMW}	-0.23086	-0.07248	-0.03328	0.55174 ***	0.10416 *	0.07588	0.16476	0.19821	0.46991	0.06581
β_{RMW*ST}	3.14315 **	0.95384	-0.01259	0.42857	-0.09675	-0.06007	-3.49403	-0.16869	-1.20792	-0.17353
β_{RMW*DY}	0.01246	-0.55445	-0.04666	-0.15457	-0.38102 *	0.53965 *	-0.75982	0.81030 *	1.09030	-0.19458
β_{CMA}	-2.08443	-0.02356	-0.14906 ***	-0.31972	0.01373	-0.21442 **	-0.29201	0.01385	-1.35305	-0.01375
β_{CMA*ST}	-2.08443	1.80431	-0.02468	1.10057 **	0.09541	0.03532	-0.00723	-0.49291	0.08173	-0.79443 ***
β_{CMA*DY}	2.87857	2.74273 ***	1.10243 ***	0.94594	0.66656 ***	-0.13700	-1.47816	-1.14136	-0.43678	1.01592
β_{MOM}	-0.22952 **	0.02010	-0.08875 ***	0.03738	-0.12896 ***	-0.14770 ***	-0.14141	-0.13876 **	-0.15158	-0.21353 ***
β_{MOM*ST}	0.27508	-0.45288	-0.01406	0.02682	-0.01569	0.11383	2.72178 **	-0.07524	-1.88174	0.06641
β_{MOM*DY}	-0.10394	-0.26728 ***	0.01991	-0.11980	-0.11570 **	0.02401	-0.18253	0.26561	0.79596	-0.13110
Adj. R^2	0.73274	0.92808	0.93532	0.86993	0.94828	0.89743	0.91872	0.83149	0.60675	0.87836
w_1	0.21242	0.01513	0.79663	0.09279	0.95083	0.01513	0.83930	0.67121	0.63828	0.59528
w_2	0.02644	0.00287	0.12034	0.05421	0.36797	0.01260	0.39372	0.64565	0.69420	0.23440
w_3	0.03969	0.00608	0.20334	0.03620	0.49937	0.01211	0.30649	0.74513	0.68010	0.31438

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
Lipper RIC	LP68102346	LP68106025	LP68107811	LP68112778	LP68126103	LP68130893	LP68136435	LP68169624	LP68210744	LP68215747
α_p	-0.00110	-0.00344 **	-0.01594 *	-0.00108 **	-0.00400 ***	-0.00453 ***	-0.00271 *	-0.00172	0.01286	-0.00425 ***
α_{p*ST}	-0.00694	0.00473	0.09149	-0.00054	0.00276	0.00217	-0.00056	0.00890 **	0.07390	-0.00128
α_{p*DY}	-0.02920 ***	-0.00035	-0.03010	0.00176	-0.01690 *	-0.00260	0.03616	0.01380 **	0.03273	-0.00757
β_p	0.91246 ***	1.05389 ***	1.96618 ***	1.01820 ***	0.57189 ***	1.03624 ***	0.97180 ***	1.08178 ***	-0.38371	0.99310 ***
β_{p*ST}	0.03839	0.14045	-7.53832 ***	-0.08813 **	-0.02670	0.00099	0.13489 **	-0.52785 ***	11.02511	0.00235
β_{p*DY}	0.04943	-0.00503	-1.02030 **	-0.04601	-0.20231	-0.12596	-0.95181 **	1.10016 ***	0.00479	-0.73581 *
β_{SMB}	-0.01744	-0.07491	-1.00104	0.01148	0.04622	0.09675	-0.03192	-0.21607 ***	2.08590 **	-0.00581
β_{SMB*ST}	0.06774	0.08085	17.78390 **	-0.03864	-0.20564	-0.29097 *	0.28038	0.50239 ***	-20.98819 *	0.02984
β_{SMB*DY}	-0.90594	-0.98542 **	3.45958 **	-0.09658	-0.48879	-0.13378	-0.51321	0.84783 **	1.66392	-0.51027
β_{HML}	-0.00782	-0.12304 **	0.07765	0.01906	-0.10793	-0.04741	0.09904 *	-0.21312 ***	2.64869	0.06937
β_{HML*ST}	-0.25993	0.37882 *	8.61330	-0.19131 ***	0.39640 *	-0.16412	0.09117	-0.17288	-19.94424	-0.29461
β_{HML*DY}	-0.55264	0.01942	2.23554	0.24028	2.14720 ***	-0.22694	0.48565	0.16526	6.39746 *	0.44399
β_{RMW}	0.42812 ***	0.13451	-1.36101 *	-0.01686	0.16588 *	0.12044	-0.02115	0.19249	3.84662	0.11351
β_{RMW*ST}	-0.70348	-0.25333	23.26349 ***	-0.13227	-0.74297 ***	-0.52367 **	0.11991	0.21851	-29.24447 *	-0.53195
β_{RMW*DY}	2.17407 **	0.79912	10.10360 ***	-0.32504	0.55284	0.63518	0.13798	1.89225 **	13.69613	1.28581 **
β_{CMA}	-0.19972	0.07507	-0.66167	-0.06470 **	-0.01247	-0.02776	-0.47014 ***	0.18457 **	-6.57758 *	-0.38092 ***
β_{CMA*ST}	-0.24366	-0.28758	-8.40368	0.05787	-0.77352 ***	0.18818	0.37607 *	0.26433	58.96364	0.36661
β_{CMA*DY}	1.49078	0.02287	0.19157	0.08714	-1.99741 **	2.65970 **	0.07418	0.88753	-9.82216	0.29014
β_{MOM}	0.19482 **	0.02247	-0.17351	-0.03478 ***	-0.15666 ***	-0.15245 ***	-0.25913 ***	0.11555 ***	1.68067 *	-0.22347 ***
β_{MOM*ST}	-0.42987	0.32812 **	0.19159	-0.08868	-0.19564	-0.01367	0.57642 **	-0.29802 *	-20.33069 ***	0.03662
β_{MOM*DY}	0.13279	-0.51257 **	-1.62589	0.16586 **	0.12809	-0.46468 **	-1.00309 **	1.61167 ***	2.13373	-0.69190
Adj. R^2	0.79068	0.91809	0.83510	0.98844	0.74572	0.93734	0.89256	0.87306	0.24028	0.93437
w_1	0.20017	0.73082	0.55666	0.89511	0.43519	0.91538	0.08449	0.27776	0.91237	0.82819
w_2	0.05334	0.03081	0.04197	0.10708	0.49850	0.00442	0.72423	0.01644	0.72303	0.20449
w_3	0.04805	0.05376	0.04004	0.13503	0.31830	0.01043	0.60063	0.01284	0.75189	0.28416

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	61	62	63	64	65	66	67	68	69	70
Lipper RIC	LP68227769	LP68232389	LP68236977	LP68348812	LP68351536	LP68380254	LP68407099	LP68412857	LP68415801	LP68415814
α_p	-0.00611 ***	-0.00716 ***	-0.00151	-0.00810 ***	-0.00877 ***	-0.00744 ***	0.00241	0.00783	-0.00743	-0.00424
α_{p*ST}	0.00737	0.00462	-0.00251	0.00903 **	0.00370	-0.00297	-0.00149	-0.00130	0.00567	0.00628
α_{p*DY}	0.00790	-0.04830 **	0.00857	-0.03049	0.02671	-0.06397	0.04249	0.15817 **	-0.03116	-0.00144
β_p	0.22286 ***	0.88154 ***	1.05511 ***	1.09960 ***	0.79463 ***	1.07043 ***	1.18833 ***	1.22289 ***	0.07243 *	1.04848 ***
β_{p*ST}	-0.29650 ***	-0.31356	-0.15015 ***	-0.08949	-0.05626	-0.07704	-0.25924 **	-0.33262 **	0.41346 **	0.09972
β_{p*DY}	0.39378	-0.31194	0.31797	-0.080515	-1.37382 ***	-2.10568 **	0.14557	-0.33981	-3.69316 ***	-1.97026 ***
β_{SMB}	0.09450	0.00410	-0.00142	0.07247	0.01534	0.17900	0.14844 *	-0.06278	0.45230	0.21051
β_{SMB*ST}	-0.51460 **	-0.38809	0.05450	-0.13146	-0.01539	-0.938332 **	0.41699	0.32052	-0.20151	-0.03283
β_{SMB*DY}	0.65917	-1.48074	-0.13465	1.67371 **	1.62931	-2.24526	1.31716	4.48039 ***	-1.30495	1.04045
β_{HML}	1.22286	0.16604 **	0.09147 *	-0.03236	-0.08704 **	0.22558 **	-0.14401	-0.09673	-0.41405	-0.09040
β_{HML*ST}	0.20029	-0.18351	-0.54502	0.13304	0.12525	-1.01797 **	0.07035	1.00350	0.45355	0.05973
β_{HML*DY}	1.00221	1.95998 *	0.78229	-1.30997	1.56361 **	-2.70958	-2.41273 *	-1.28881	1.26600	0.30338
β_{RMW}	-0.15669	-0.10248	0.17056 **	-0.06841	0.00359	-0.05377	-0.12044	-0.99212 ***	0.98892 **	0.44567 *
β_{RMW*ST}	0.19411	-0.30233	0.07324	0.04739	-0.22811	-0.24501	0.91323 *	0.41984	-0.72484	-0.52409
β_{RMW*DY}	0.22380	1.13773	0.53163	2.12740 ***	-0.19389	1.95360 *	-1.17076	-5.47081 ***	4.37826	3.78034 **
β_{CMA}	0.17198	-0.36848	-0.04164	0.08572	-0.25621	-0.35832	-0.19780	0.69489 **	0.27937	0.14050
β_{CMA*ST}	-0.25923	0.02393	0.51707 **	-0.31670	-0.02801	0.91173 *	0.24147	-1.38743 *	0.13260	0.08534
β_{CMA*DY}	3.44401	-2.12668	3.01921 **	1.47395	-3.32573 **	2.90192	4.58869 **	8.82243	0.43901	1.61975
β_{MOM}	-0.16232 *	-0.27485	0.02772	-0.10090	-0.42010 ***	-0.37152 **	-0.01735	-0.20295	-0.44742	-0.28819
β_{MOM*ST}	-0.49257 **	-0.26853	-0.11501	0.12346	0.33405	-0.39500	0.28626	0.63146	0.23359	0.16243
β_{MOM*DY}	0.48147	-1.04148	0.00065	0.17081	-1.91690	-3.37703 **	0.02348	1.95217 *	-3.89862	-1.22910
Adj. R^2	0.88945	0.84597	0.90764	0.93735	0.89743	0.83528	0.91049	0.81897	0.08220	0.89157
w_1	0.62295	0.25003	0.87784	0.29883	0.62321	0.42483	0.75900	0.15815	0.86069	0.91518
w_2	0.10795	0.05698	0.47532	0.19659	0.55342	0.29573	0.91224	0.27389	0.82712	0.93726
w_3	0.18404	0.08255	0.54724	0.28760	0.60271	0.32028	0.81376	0.21416	0.78524	0.97088

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	71	72	73	74	75	76	77	78	79	80
Lipper RIC	LP68417268	LP68418497	LP68427383	LP68429185	LP68432043	LP68436671	LP68441868	LP68442157	LP68442165	LP68444640
α_p	0.00107	-0.00428	-0.00487	-0.00487	0.00034	-0.00101	-0.00388	-0.00160	-0.00334	0.00924
α_{p*ST}	0.00571	0.00640	0.00871 *	0.00226	0.01442 *	-0.00101	0.00601	0.01277 **	0.01188 ***	-0.01847
α_{p*DY}	0.11717 *	-0.02800	0.03369	0.00273	0.04754	0.00085	-0.04269	0.04843	0.02968	0.09676
β_p	0.60483 ***	0.91692 ***	1.06676 ***	1.03315 ***	1.23515 ***	1.03385 ***	1.16466 ***	0.99007 ***	1.15018 ***	1.09165 ***
β_{p*ST}	0.07020	-0.17849 **	-0.07847	0.22239	0.29043	-0.05227	-0.26529 *	-0.65821	-0.26259 *	-0.24246 *
β_{p*DY}	-1.52062 *	-0.86426	-0.39426	-1.62582	0.65116	0.50958	-0.65381	-0.58468	0.80101	1.23251 **
β_{SMB}	0.74956 ***	0.09004	0.01816	0.51337	-0.02050	-0.11456	0.02825	0.03034	-0.24175	0.05613
β_{SMB*ST}	-0.66800 *	-0.14591	0.44938 ***	-0.43225	0.00011	-0.22461	-0.20359	0.29276	0.31734	0.26521
β_{SMB*DY}	3.71120 *	0.92886	1.46851	0.77451	2.05055	0.19230	-0.77439	2.95200	2.84025 *	-1.11055
β_{HML}	-0.60251 ***	-0.03029	0.16989	-0.14308	-0.03383	0.08960	-0.20554	0.21062	-0.09701	0.58259
β_{HML*ST}	1.60257 ***	-0.18776	0.11186	-0.12962	0.01572	-0.30101	-0.19882	0.30687 *	0.09295	-1.33941 **
β_{HML*DY}	6.27802 ***	0.18182	-1.61306 *	-0.10698	-1.90286	-1.07368	0.07610	0.92776	-0.07185	-2.52290
β_{RMW}	0.25922	0.10236	-0.15697	0.57836	-0.73666 **	0.12497	-0.05611	0.33368	-0.13694	-0.35534 *
β_{RMW*ST}	0.80629 *	-0.59866	0.38881	0.02804	1.01726 *	-0.39671	-0.99268 ***	-0.78001	0.03788	1.60537 **
β_{RMW*DY}	0.34128	3.03716	3.05261	0.02804	4.30091	2.68449 *	3.32198 **	1.92443	-0.14043	12.61617 ***
β_{CMA}	1.00782 ***	0.11769	-0.01570	0.44843	-0.19493 **	-0.04480	-0.35856 ***	0.18845 **	0.14715 **	-0.28332 ***
β_{CMA*ST}	-2.26959 ***	-0.22986	0.25901	0.05252	0.04952	0.04757	-0.44728	-0.41153	-0.31186 *	0.78243 **
β_{CMA*DY}	0.50033	-0.77825	3.73453	3.67594	4.29377	3.82525 *	-1.29722	4.09176	2.18657	4.19841
β_{MOM}	-0.27535	-0.18836	-0.03133	-0.03786	0.19493 **	-0.06550	-0.30686	-0.20333 *	-0.08318	0.69986 *
β_{MOM*ST}	0.66219	-0.12924	0.35234	-0.17130	0.13298	-0.26681	-0.07721	0.30172	0.22583	-1.27167 *
β_{MOM*DY}	0.91103	-0.08737	-0.33498	-1.52941	0.93098	0.51389	0.01861	0.79381	2.02059 ***	1.01594 *
Adj. R^2	0.90636	0.92202	0.93591	0.85651	0.88006	0.92094	0.91319	0.95429	0.94163	0.90768
w_1	0.03498	0.76740	0.53142	0.98475	0.43777	0.99560	0.81250	0.14431	0.35005	0.35733
w_2	0.05179	0.51914	0.46316	0.96655	0.50549	0.74537	0.53957	0.07213	0.52983	0.19941
w_3	0.07514	0.61298	0.42899	0.98059	0.34729	0.72167	0.56630	0.07026	0.51579	0.24787

Appendix 15 – Individual performance estimates using the conditional Fama and French (2018) 6-factor model – Conventional funds (continued)

Funds	81	82	83	84	85	86	87	88	89	90
Lipper RIC	LP68448977	LP68459339	LP68469392	LP68469398	LP68473362	LP68474383	LP68481123	LP68491108	LP68508266	LP68529610
α_p	0.00270	-0.00295 *	-0.00030	-0.00052	-0.00062	0.00890 *	0.01137 ***	0.00392	-0.00826	-0.00174 **
α_{p*ST}	0.00231	0.00335 *	0.01337	0.00722	-0.00466	-0.02863 ***	-0.04176 ***	0.00315	-0.02923 ***	0.00110
α_{p*DY}	0.06088	-0.01271	-0.05386 **	-0.01257 **	0.02321	0.09379 ***	0.23944 ***	0.01722	-0.00401	-0.00442
β_p	1.13043 ***	0.97279 ***	0.10821 *	0.47584 ***	1.11990 ***	0.31237 *	1.32563 ***	0.90292 **	1.13240 ***	0.95842 ***
β_{p*ST}	-0.03790	0.02128	-1.40985 ***	-0.91565 *	-0.20454 **	1.28737 ***	-1.03536 ***	-0.83255	-0.32854	0.01821
β_{p*DY}	0.34501	-0.33483	2.25345 ***	1.12347	-0.53205	-6.50108 ***	5.60305 ***	0.97133	0.73614	-0.02273
β_{SMB}	0.18166	0.11015	0.45297 **	0.40764	0.33287 **	0.48673 *	-0.14739	0.52691 ***	0.46018	0.04567
β_{SMB*ST}	-0.39270 *	-0.23448 ***	1.28051 ***	0.71301	0.48066 **	-0.07131	1.53585 ***	0.18284	-0.24909	0.12132
β_{SMB*DY}	1.00066	0.58974	-5.46626 **	-4.69780 ***	3.81580 ***	2.10816	-9.52852 ***	-6.92022 **	-5.89475	0.04224
β_{HML}	0.12007	0.09378	-1.07071 ***	-0.62603 ***	-0.20093 *	-0.63803 **	0.56879 ***	-0.29333	0.28160	-0.13899 **
β_{HML*ST}	-0.10702	-0.06175 ***	-0.45741	-0.31578	-0.18284	0.74608	-1.40501 ***	-0.45463	-1.64634 ***	0.05988
β_{HML*DY}	-0.82286	0.45413	11.06938 ***	8.02820 **	-5.11476 ***	10.14695 ***	1.56003 *	5.23373	-4.58235	0.00262
β_{RMW}	-0.36929	0.10648	1.03181 ***	0.61784 ***	-0.43889 **	1.83533 ***	-0.74803 ***	-0.00926	0.07113	0.00209
β_{RMW*ST}	0.15070	-0.36899	-2.37872 **	-1.75099	0.57684 *	-2.78004 ***	4.42131 ***	-1.37702	1.75805	0.08535
β_{RMW*DY}	6.01423 ***	-0.42007	0.83405	4.46753	-3.13703 **	-4.96542	8.33635 **	12.35839	8.99108	0.29850
β_{CMA}	-0.04224	0.11590	0.21569 *	0.21785	-0.02523	-0.30920	0.18043 **	0.37492 *	-0.61426	-0.01428
β_{CMA*ST}	-0.37893	0.13802	-1.68117 **	-1.43925 *	0.06093	3.42460 **	-0.15748	-1.86458	-0.14620	0.00635
β_{CMA*DY}	4.27463 *	0.05921	-11.79444 **	-0.38948	8.39501 ***	-35.53288 ***	1.38038	-6.42238	9.53930 *	-0.17416
β_{MOM}	0.26335 **	-0.07641	-0.63170 ***	-0.38724 **	0.23416 *	-0.68403 ***	0.95255 ***	-0.06334	0.55041 *	0.03463
β_{MOM*ST}	-0.43325	-0.11692	-1.61419 ***	-1.25104 **	0.61922 **	0.49481	-1.18775 ***	-1.81065 *	-1.35982 ***	0.01157
β_{MOM*DY}	1.07183 *	0.13121	3.94490 **	2.54713 **	0.39471	2.12333 *	2.60713 ***	1.73129	-3.18094 ***	-0.11675
Adj. R^2	0.94550	0.98606	0.79424	0.88404	0.83592	0.84191	0.86978	0.96273	0.81864	0.87443
w_1	0.40550	0.75108	0.91748	0.98076	0.83307	0.49304	0.23846	0.91808	0.62234	0.52184
w_2	0.53352	0.64432	0.35189	0.57867	0.01932	0.27237	0.33116	0.24800	0.70205	0.60587
w_3	0.43928	0.60202	0.38921	0.63459	0.03048	0.20675	0.35995	0.26791	0.70345	0.54207

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the conditional Fama and French (2018) 6-factor model. The table reports the performance estimates (α_p), the conditional alpha coefficients (α_{ST}, α_{DY}), the systematic risk (β_p), the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM), the conditional beta coefficients (β_{p*ST}, β_{p*DY}, β_{SMB*ST}, β_{SMB*DY}, β_{HML*ST}, β_{HML*DY}, β_{RMW*ST}, β_{RMW*DY}, β_{CMA*ST}, β_{CMA*DY}, β_{MOM*ST}, β_{MOM*DY}) and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 16 – Individual performance estimates using the Jensen (1993) single-factor model with a dummy variable – SRI funds

Funds	Lipper RIC	α_p		α_D		β_p		β_D		Adj. R^2
1	LP60008719	-0.00045		0.00156		0.95177	***	0.01742		0.85851
2	LP60008775	-0.00175	***	-0.00205		1.02163	***	-0.00728		0.92150
3	LP60010597	-0.00198		0.00155		1.02442	***	0.06017		0.88095
4	LP60010747	-0.00097		0.00105		0.99113	***	-0.01767		0.81103
5	LP60011009	-0.00215	***	0.00022		0.99235	***	-0.01717		0.88562
6	LP60011472	-0.00164		0.00237		1.00488	***	0.05883		0.85711
7	LP60011566	0.00061		-0.00215		0.94301	***	-0.03100		0.64974
8	LP60052206	-0.00081		0.00064		0.99749	***	-0.04642		0.86868
9	LP60066130	-0.00251	***	0.00151		0.99868	***	-0.01321		0.83464
10	LP60075884	-0.00172	*	0.00139		0.97018	***	0.04784		0.86668
11	LP60100350	-0.00241	**	-0.00123		1.09416	***	0.00417		0.89062
12	LP65043279	0.00020		-0.00869	**	0.89992	***	0.24123	***	0.75063
13	LP65099210	-0.00386	**	0.01186	*	1.03971	***	0.04824		0.88482
14	LP65105216	-0.00947	***	0.01149	*	1.08774	***	0.17848		0.81281

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the Jensen (1968) single-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 17 – Individual performance estimates using the Jensen (1993) single-factor model with a dummy variable – Conventional funds

Funds	Lipper RIC	α_p		α_D		β_p		β_D		Adj. R^2
1	LP60008665	-0.00474		0.00698		1.24659	***	-0.10230		0.60406
2	LP60008675	-0.00097		-0.00955	***	1.15509	***	-0.04707		0.83658
3	LP60008886	-0.00129		-0.00422	**	0.99806	***	-0.07978		0.88941
4	LP60009020	0.00002		0.00294		0.94205	***	0.07613		0.83532
5	LP60009122	-0.00230		0.00101		0.83860	***	0.08324		0.70007
6	LP60009513	-0.00132		-0.00588		0.83539	***	0.36575	**	0.76399
7	LP60009576	-0.00007		-0.00093		0.96524	***	0.00802		0.87597
8	LP60010178	0.00206		-0.00837	**	1.02304	***	-0.05913		0.83225
9	LP60010212	0.00075		-0.00701	**	0.94333	***	-0.04513		0.78950
10	LP60010471	-0.00123		-0.00229		0.89504	***	0.04271		0.80466
11	LP60010529	-0.00317	***	0.00350		1.01024	***	-0.01009		0.88061
12	LP60010670	-0.00021		-0.00247		0.95966	***	0.06775		0.88152
13	LP60010676	0.00007		-0.00103		0.94810	***	0.02816		0.84142
14	LP60010683	-0.00052		-0.00089		1.00869	***	-0.01062		0.86163
15	LP60010794	0.00081		-0.00274		1.02560	***	-0.01657		0.89363
16	LP60010893	-0.00084		-0.00096		1.04228	***	0.04347		0.88256
17	LP60011271	-0.00195	**	-0.00560		1.05406	***	0.05207		0.84601
18	LP60011291	-0.00268		-0.00038		1.01997	***	0.05644		0.75273
19	LP60011521	-0.00189	*	0.00407		1.04539	***	0.14228		0.85851
20	LP60011571	0.00016		-0.00542		0.89888	***	0.00654		0.81790
21	LP60011715	0.00094		-0.00388		1.00086	***	-0.07689		0.78071
22	LP60011931	-0.00085		-0.00534		0.98147	***	-0.05643		0.88540
23	LP60055551	0.00119		-0.00241		0.62258	***	0.05525		0.64330
24	LP60066434	0.00015		-0.00186		0.53727	***	0.35291	**	0.44638
25	LP60069269	-0.00081		0.00102		1.01158	***	0.00222		0.93040
26	LP60070891	-0.00021		-0.00120		1.07642	***	-0.00400		0.88210
27	LP60081311	-0.00108		-0.00138		0.69028	***	-0.01356		0.60792
28	LP60095970	-0.00148		0.00196		0.99330	***	0.07732		0.84979
29	LP60096957	-0.00340	***	0.00113		1.14456	***	-0.11108		0.85752
30	LP65006222	0.00061		-0.00302		0.94001	***	0.09117		0.83693
31	LP65006244	0.00056		0.00607		1.16623	***	0.04159		0.77904
32	LP65021937	-0.00029		-0.00573		0.86653	***	0.29327	***	0.75233
33	LP65036812	-0.00047		-0.00485		0.87611	***	0.38133	***	0.76168
34	LP65053849	-0.00368		-0.00796		1.09860	***	0.25658	*	0.73712
35	LP65090571	-0.00393		-0.00123		0.69841	***	-0.03667		0.56607
36	LP65095536	-0.00024		0.00482	***	0.90141	***	-0.07640		0.89226
37	LP65111203	-0.00442	***	-0.00554	***	1.06281	***	0.14221	*	0.88728
38	LP65140598	-0.00027		0.00016		0.87906	***	0.09482	**	0.84741
39	LP65140615	-0.00129		-0.00401	*	0.70790	***	0.05047		0.74698
40	LP65165200	-0.00231		0.00716		1.00018	***	0.20894		0.78804
41	LP68016680	-0.00363	***	0.00768		1.05197	***	0.14064	***	0.93611
42	LP68022080	-0.00104		0.00673		0.94485	***	0.18877	**	0.87683

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the Jensen (1968) single-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 18 – Individual performance estimates using the Carhart (1997) 4-factor model with a dummy variable – SRI funds

Funds	Lipper RIC	α_p		α_D		β_p		β_D		β_{SMB}		β_{SMB*D}		β_{HML}		β_{HML*D}		β_{MOM}		β_{MOM*D}		Adj. R^2
1	LP60008719	-0.00043		0.00245		0.93834	***	0.03961		0.11163	**	-0.23346		-0.05787		0.07131		0.00271		-0.02488		0.86166
2	LP60008775	-0.00162	***	-0.00070		1.00097	***	0.08541	**	0.11017	***	-0.18259		0.07987	*	-0.01135		-0.02290		0.08831	**	0.92670
3	LP60010597	-0.00153		0.00275		0.98831	***	0.11467		0.14671	***	-0.33509	**	-0.12550	*	0.16191		-0.05303		0.02688		0.89031
4	LP60010747	-0.00091		0.00022		0.95643	***	0.07454		0.29226	***	-0.23038		-0.16535	***	-0.03647		0.01009		0.05850		0.85161
5	LP60011009	-0.00215	***	0.00116		0.99208	***	0.08902		0.06640	**	-0.16212		-0.09568	***	-0.12570		0.03393		0.04974		0.90099
6	LP60011472	-0.00160		0.00393		0.00000	***	0.09967	**	0.19164	**	-0.45369	**	-0.04125		0.05358		-0.02740		-0.03371		0.86815
7	LP60011566	-0.00061		-0.00158		0.96495	***	0.01797		0.39536	***	-0.51519	**	-0.18257	**	-0.13673		0.23998	***	-0.22037	***	0.77020
8	LP60052206	-0.00090	**	0.00052		0.98870	***	0.02014		0.12121	***	-0.02119		-0.15690	***	0.03541		0.01001		0.07946		0.87589
9	LP60066130	-0.00174	*	-0.00127		0.94704	***	0.11050		0.14159	***	-0.01142		-0.19101	**	-0.04598		-0.21396	***	0.28042	***	0.85205
10	LP60075884	-0.00136		-0.00392		0.92767	***	0.10937	**	0.15307	***	0.36405	***	-0.07590		-0.21097		-0.06547		0.16105	**	0.88057
11	LP60100350	-0.00144		-0.00850	**	1.02412	***	0.02182		0.28116	***	0.01882		-0.15378	**	-0.08968		-0.16304	***	0.10929	*	0.90804
12	LP65043279	0.00040		-0.01619	*	0.88323	***	0.02240		0.13026		0.26019		0.00359		0.03300		0.02352		-0.21573	*	0.76330
13	LP65099210	-0.00387	***	0.01009		1.02739	***	0.15435	**	0.25421	***	-0.06033		-0.18012	**	-0.42742	***	0.02891		-0.01018		0.92214
14	LP65105216	-0.00992	***	0.01030	**	1.07759	***	0.44641	***	0.32722	***	0.20437		-0.21429	**	-0.64957	***	0.06299		0.10393		0.87096

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the Carhart (1997) 4-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), the additional regression coefficients regarding size (SMB), book-to-market (HML) and momentum (MOM) associated with expansion and recession periods, and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 19 – Individual performance estimates using the Carhart (1997) 4-factor model with a dummy variable – Conventional funds

Funds	Lipper RIC	α_p		α_D		β_p		β_D		β_{SMB}		β_{SMB*D}		β_{HML}		β_{HML*D}		β_{MOM}		β_{MOM*D}		Adj. R^2
1	LP60008665	-0.00283	*	-0.00468		1.16682	***	-0.10052		0.42775	***	-0.24269		-0.86765	***	0.09031		-0.01626		-0.12396		0.77940
2	LP60008675	-0.00105		-0.00823	*	1.15320	***	0.04896		0.13502	**	-0.22771		-0.14454		-0.01214		0.05919		0.01772		0.85135
3	LP60008886	-0.00147	*	-0.00122		0.99964	***	-0.01043		0.12319	***	-0.29609		-0.09041	**	-0.11022		0.06166	***	-0.02380		0.90994
4	LP60009020	-0.00057		0.00158		0.93909	***	0.08155		0.17125	***	-0.00953		0.05694		-0.19335		0.04786		-0.01419		0.84742
5	LP60009122	-0.00223		0.00805		0.79127	***	0.32274	**	0.24290	***	-0.59291	**	-0.13412	*	-0.14635		0.01891		0.11963		0.73731
6	LP60009513	-0.00084		-0.01828		0.79478	***	0.29664	**	0.10500		0.32406		-0.25917	***	-0.18983		-0.22120	***	0.06700		0.78304
7	LP60009576	-0.00079		-0.00001		0.96037	***	0.01076		0.21323	***	-0.27646	***	-0.01509		-0.17498	*	0.05779		-0.08145		0.90076
8	LP60010178	0.00108		-0.00350		1.02935	***	0.07773		0.20300	***	-0.29272	*	0.11493	**	-0.10447		0.08461	*	0.07673		0.85664
9	LP60010212	0.00016		-0.00466	*	0.93991	***	0.05796		0.28176	***	-0.41474	**	-0.10609	*	-0.02774		0.10470	***	-0.02949		0.83985
10	LP60010471	-0.00172	*	-0.00018		0.89102	***	0.15252	*	0.21218	***	-0.24072		-0.04771		-0.06259		0.07059	**	0.04548		0.83232
11	LP60010529	-0.00312	***	0.00579	**	1.01651	***	0.08677		0.03698		-0.21767		-0.08298	***	-0.02324		0.05450	**	0.01472		0.88880
12	LP60010670	-0.00031		-0.00122		0.95711	***	0.11211		0.06135	**	-0.11384		-0.02144		0.01180		0.01659		0.02143		0.88115
13	LP60010676	0.00003		-0.00217		0.94000	***	0.09071		0.12781	***	-0.19558	**	-0.09832	*	-0.20920		0.03087		-0.01622		0.86340
14	LP60010683	-0.00028		-0.00001		0.99127	***	0.11008		0.13922	***	-0.27157		-0.17260	***	-0.04234		0.01173		0.05870		0.88594
15	LP60010794	0.00056		-0.00100		1.02088	***	0.09336		0.09184	**	-0.05240		0.02397		-0.11181		0.01586		0.12174	**	0.90022
16	LP60010893	-0.00100		-0.00198		1.01002	***	0.05516		0.16551	***	-0.13820		0.10626	**	-0.16872		-0.05759		0.03134		0.89204
17	LP60011271	-0.00217	**	-0.00578		1.05991	***	0.16029		0.08919	**	-0.00879		-0.07810	**	-0.21997		0.06105	**	0.07491		0.86417
18	LP60011291	-0.00273	***	0.00459		1.00727	***	0.17940		0.13458	**	-0.73584	*	-0.06225		-0.00090		0.01419		-0.05314		0.76783
19	LP60011521	-0.00168	*	0.00418		1.02487	***	0.20071	**	0.12974	***	-0.27989	*	-0.11461	***	-0.02814		-0.00832		-0.00272		0.86690
20	LP60011571	-0.00006		-0.00313		0.89092	***	0.06675		0.12739	***	-0.27639		-0.01559		0.02967		0.02244		0.00411		0.82215
21	LP60011715	-0.00005		-0.00158		0.98575	***	-0.05304		0.31344	***	-0.48287	***	-0.00906		0.00354		0.04231	*	-0.06893		0.81418
22	LP60011931	-0.00099		-0.00169		0.98002	***	0.05794		0.09019	**	-0.29039	**	-0.05160	*	0.03968		0.03419		0.05331		0.89350
23	LP60055551	0.00078		0.00400		0.64429	***	0.16538		0.02337		-0.29609		-0.07063		0.20235		0.06695		0.04245		0.65255
24	LP60066434	0.00020		-0.00462		0.53208	***	0.38885	**	0.04167		-0.13507		-0.08262		-0.44885	**	-0.00873		-0.08842		0.45201
25	LP60069269	-0.00093	**	-0.00315		1.01415	***	0.01211		0.03292		0.30684	***	-0.04963		-0.19677	**	0.02281		0.02268		0.93560
26	LP60070891	-0.00034		-0.00338	***	1.06730	***	0.05480		0.13396	***	-0.05919		-0.04161		-0.46633	***	0.04261		-0.07852	*	0.89681
27	LP60081311	-0.00094		-0.00384		0.67841	***	0.07147		0.02865		-0.54452	***	0.04248		-0.33183	*	-0.00965		-0.13182		0.63367
28	LP60095970	-0.00138		-0.00113		0.98110	***	0.15730	***	0.09406	**	-0.04054		-0.13642		-0.15184		-0.02763		0.05001		0.85699
29	LP60096957	-0.00339	***	-0.00160		1.12492	***	0.01538		0.19922	***	0.14532		-0.18731	**	-0.14172		0.01930		0.13133		0.87889
30	LP65006222	0.00020		-0.00662		0.94933	***	0.22361	***	0.07686		0.09233		-0.15085	***	-0.32284		0.04663		0.05582		0.86793
31	LP65006244	0.00033		0.00251		1.18640	***	0.08594		0.25182	***	0.10313		-0.60525	***	-0.05716		-0.00907		0.01351		0.83369

Appendix 19 – Individual performance estimates using the Carhart (1997) 4-factor model with a dummy variable – SRI funds (continued)

Funds	Lipper RIC	α_p		α_D		β_p		β_D		β_{SMB}		β_{SMB*D}		β_{HML}		β_{HML*D}		β_{MOM}		β_{MOM*D}		Adj. R^2
32	LP65021937	-0.00030		-0.00752		0.86302	***	0.07471		0.06926		-0.02579		-0.02155		0.32595		0.02548		-0.22375	**	0.77261
33	LP65036812	-0.00045		-0.01105		0.87005	***	0.13558		0.09249		-0.03250		0.00424		0.10824		0.04296		-0.33386	***	0.78123
34	LP65053849	-0.00337		-0.01912	*	1.07897	***	0.03097		0.12702		0.21313		-0.16311		0.09194		-0.10717		-0.13087		0.74318
35	LP65090571	-0.00360		-0.00314		0.71208	***	-0.05416		0.03577		-0.32980		-0.22977	*	-0.06607		-0.16228	*	0.03489		0.56370
36	LP65095536	-0.00043		0.00275		0.90779	***	-0.00319		-0.03635		0.18606		-0.16083	***	-0.05415		-0.06840	*	0.14120		0.90162
37	LP65111203	-0.00371		-0.00249		1.01885	***	0.25743	**	0.06815		0.17642		-0.03128		0.03940		-0.14503	**	0.29530	***	0.89254
38	LP65140598	-0.00013		-0.00148		0.86706	***	0.19670	***	0.02180		-0.06462		-0.18066	***	-0.06910		-0.12382	**	0.15881	***	0.86048
39	LP65140615	-0.00176	**	0.00100		0.73117	***	0.23801	**	-0.10059	*	-0.15494		-0.20406	***	0.03156		-0.06283		0.18381	**	0.77722
40	LP65165200	-0.00312		0.01107		1.05691	***	0.38573	***	-0.09140		-0.25528		-0.19700	**	-0.66880	**	0.08829		-0.06802		0.86401
41	LP68016680	-0.00271	***	-0.00228		1.00088	***	0.05957		0.03923		0.15105		0.04471		-0.17230	*	-0.16139	***	0.02550		0.94731
42	LP68022080	-0.00094		0.00239		0.94234	***	0.16830	***	0.00982		-0.17432	**	-0.03430		-0.46054	***	-0.04333		-0.12386	**	0.89579

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK conventional mutual funds. The results are obtained by applying the regression of the Carhart (1997) 4-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), the additional regression coefficients regarding size (SMB) and momentum (MOM) associated with expansion and recession periods, and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).

Appendix 20 – Individual performance estimates using the Fama and French (2018) 6-factor model with a dummy variable – SRI funds

Funds	Lipper RIC	α_p		α_D		β_p		β_D		β_{SMB}		β_{SMB*D}		β_{HML}		β_{HML*D}	
1	LP60008719	-0.00054		-0.00010		0.94234	***	0.02211		0.12279	**	-0.25286	*	-0.07562		0.10129	
2	LP60008775	-0.00133	***	-0.00340		0.99248	***	-0.01803		0.10712	***	-0.19759		0.00993		-0.02372	
3	LP60010597	-0.00142		-0.00192		0.98530	***	0.09502		0.14782	***	-0.34995	**	-0.10203		0.15818	
4	LP60010747	-0.00047		-0.00216		0.94146	***	0.10429		0.25783	***	-0.18406		-0.09105		-0.16286	
5	LP60011009	-0.00219	***	-0.00091		0.99648	***	0.06699		0.11026	**	-0.21753		-0.08175	*	-0.11281	
6	LP60011472	-0.00158		0.00099		0.97033	***	0.11425		0.14496	**	-0.39742	**	-0.06284		0.02498	
7	LP60011566	0.00047		-0.00072		0.92237	***	0.47845		0.22845	***	-0.34874	**	-0.04426		-0.26190	
8	LP60052206	-0.00046		-0.00481	*	0.97906	***	0.03729		0.12808	***	-0.01972		-0.07035		-0.10870	
9	LP60066130	-0.00137		-0.00800		0.93542	***	0.07682		0.13928	***	-0.08340		-0.09995		-0.10183	
10	LP60075884	-0.00158		-0.00302		0.94075	***	0.15148	***	0.18125	***	0.34480	***	-0.09818	**	-0.23871	*
11	LP60100350	-0.00153		-0.01369	***	1.02761	***	-0.02172		0.28861	***	-0.05038		-0.15749		-0.05450	
12	LP65043279	-0.00027		-0.01604	**	0.90586	***	0.01362		0.14671		0.23803		-0.14215		0.16549	
13	LP65099210	-0.00290	*	0.00312		1.02192	***	0.06448		0.23428	**	0.00344		-0.02260		-0.49723	**
14	LP65105216	-0.00983	***	0.00756		1.06919		0.51839	***	0.31067	***	0.19731		-0.24777	**	-0.62152	***

Appendix 20 – Individual performance estimates using the Fama and French (2018) 6-factor model with a dummy variable – SRI funds (continued)

Funds	Lipper RIC	β_{RMW}		β_{RMW*D}		β_{CMA}		β_{CMA*D}		β_{MOM}		β_{MOM*D}		Adj. R^2
1	LP60008719	-0.02531		0.22412		0.01302		-0.25454		-0.00015		-0.03633		0.86087
2	LP60008775	-0.02472		0.26271		-0.10536	*	-0.25087	*	-0.01803		0.07752	***	0.92834
3	LP60010597	-0.00568		0.43266	***	-0.04565		-0.36355	**	-0.05143		0.00055		0.89228
4	LP60010747	-0.08444		0.24565	*	-0.07654		0.13279		0.02037		0.02596		0.85116
5	LP60011009	0.07223		0.13153		-0.10452	**	-0.15238		0.02895		0.04669		0.90243
6	LP60011472	-0.07470		0.32804	***	0.12382	*	-0.14751		-0.02260		-0.06662		0.86932
7	LP60011566	-0.33719	***	0.16301		0.04178		0.05012		0.27323	***	-0.23892	***	0.78188
8	LP60052206	-0.02509		0.45575	*	-0.24205	***	0.10351		0.00046		0.04725		0.88150
9	LP60066130	-0.00418		0.47299	***	-0.22432	**	-0.30145		-0.21477	***	0.24335	***	0.85469
10	LP60075884	0.11044		-0.02282		0.02614		0.34564		-0.07846	*	0.17800	**	0.88096
11	LP60100350	0.03755		0.34527	*	0.00973		-0.46162	**	-0.16315	***	0.07793		0.90832
12	LP65043279	0.07712		0.00907		0.34106	*	-0.27397		0.01778		-0.21310	*	0.76169
13	LP65099210	-0.04523		0.30033		-0.34057	*	-0.39443		0.07091		-0.07670		0.92381
14	LP65105216	-0.07730		0.45995		0.05620		0.10200		0.06512		0.09612		0.86684

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the Fama and French (2018) 6-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM) associated with expansion and recession periods, and the adjusted coefficient of determination (Adj. R^2). and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used

Appendix 21 – Individual performance estimates using the Fama and French (2018) 6-factor model with a dummy variable – Conventional funds

Funds	Lipper RIC	α_p		α_D		β_p		β_D		β_{SMB}		β_{SMB*D}		β_{HML}		β_{HML*D}	
1	LP60008665	-0.00024		0.00129		1.06715	***	-0.13380		0.06229		0.02116		-0.51719	***	0.13758	
2	LP60008675	0.00025		-0.00916		1.11117	***	0.02727		0.05956		-0.19874		0.08654		-0.08238	
3	LP60008886	-0.00133		0.00153		0.99354	***	-0.03330		0.10496	**	-0.30192	*	-0.06915		-0.08719	
4	LP60009020	-0.00086		-0.00046		0.95417	***	0.09887		0.26586	***	-0.07923		0.04551		-0.28083	
5	LP60009122	-0.00148		0.00963	*	0.78966	***	0.34573	***	0.24007		-0.60874	***	0.04626		-0.39963	***
6	LP60009513	-0.00041		-0.01680		0.78139	***	0.33296	**	0.10417		0.34742		-0.13216		-0.33598	
7	LP60009576	-0.00082		-0.00024		0.95793	***	0.03325		0.18875	***	-0.24944	*	-0.03594		-0.20038	
8	LP60010178	0.00057		-0.00804	**	1.04808	***	0.06850		0.26063	***	-0.34045	**	0.03732		-0.09067	
9	LP60010212	0.00078		-0.00928	***	0.91644	***	0.08925		0.19703	***	-0.32196	***	-0.02212		-0.16304	
10	LP60010471	-0.00109		-0.00389		0.87117	***	0.17993	**	0.18241	***	-0.20364		0.06759		-0.22119	
11	LP60010529	-0.00340	***	0.00331		1.02844	***	0.07100		0.07450		-0.25635		-0.09139	*	-0.02732	
12	LP60010670	-0.00052		-0.00762		0.96627	***	0.11349		0.10675	**	-0.14768		-0.04110		-0.04731	
13	LP60010676	0.00045		-0.00553	**	0.92897	***	0.12834	***	0.13767	***	-0.18438	***	-0.00620		-0.39073	***
14	LP60010683	-0.00026		-0.00110		0.98937	***	0.10529		0.12045	***	-0.25703		-0.17844	***	-0.02843	
15	LP60010794	0.00036		-0.00404		1.03042	***	0.06959		0.14389	***	-0.11286		0.00849		-0.08700	
16	LP60010893	-0.00092		-0.00365		1.00728	***	0.06769		0.15649	***	-0.12113		0.11696	**	-0.21643	
17	LP60011271	-0.00193	*	-0.01267	**	1.05285	***	0.12057		0.08480		-0.03444		-0.03054		-0.20466	
18	LP60011291	-0.00188	**	0.00102		0.97913	***	0.36985		0.08014		-0.57021		0.08835		-0.54875	**
19	LP60011521	-0.00129		-0.00015		1.01305	***	0.21587	**	0.12083	**	-0.26622		-0.03662		-0.14581	
20	LP60011571	-0.00008		-0.00947	*	0.89425	***	0.07002		0.16732	***	-0.30775	**	0.00204		-0.05503	
21	LP60011715	0.00063		-0.00324		0.95583	***	-0.00463		0.21940	***	-0.38055	***	0.07098		-0.11257	

Appendix 21 – Individual performance estimates using the Fama and French (2018) 6-factor model with a dummy variable – Conventional funds (continued)

Funds	Lipper RIC	β_{RMW}		β_{RMW*D}		β_{CMA}		β_{CMA*D}		β_{MOM}		β_{MOM*D}		Adj. R^2
1	LP60008665	-0.75375	***	0.09668		0.00285		-0.88848	***	0.06008		-0.06930		0.83271
2	LP60008675	-0.20724	*	0.22627		-0.29472	***	-0.28971		0.08681	***	0.02373		0.86130
3	LP60008886	-0.03665		-0.23363		-0.00640		0.02433		0.06617	**	-0.00636		0.90993
4	LP60009020	0.16935	***	0.01300		-0.14829		0.35349		0.03402		-0.03422		0.85373
5	LP60009122	-0.02736		-0.18225	*	-0.33317	***	0.68623	***	0.03257		0.10308	*	0.74125
6	LP60009513	0.00228		-0.11797		-0.29190	***	0.50848		-0.21511		0.07230		0.78062
7	LP60009576	-0.03220		0.06063		0.07891		0.05074		0.05973	*	-0.09342	*	0.89985
8	LP60010178	0.12611	**	0.31789		0.04114		-0.16813		0.07090	*	0.04640		0.86000
9	LP60010212	-0.17564	**	0.52786	***	-0.00439		-0.09387		0.12260	***	-0.08247		0.84441
10	LP60010471	-0.08961		0.35882		-0.16118		0.10049		0.08329	**	0.00508		0.83428
11	LP60010529	0.08981		0.16020		-0.06263		-0.09184		0.04447		0.00504		0.88950
12	LP60010670	0.08588	*	0.49614	*	-0.04478		-0.13894		0.00889		-0.02753		0.88729
13	LP60010676	-0.01269		0.25457		-0.18907	**	0.31331		0.03640	*	-0.05760	**	0.86619
14	LP60010683	-0.03096		0.13185		0.04448		-0.15326		0.01387		0.05146		0.88454
15	LP60010794	0.09617	*	0.20607		-0.06447		-0.20877		0.00756		0.11152	***	0.90224
16	LP60010893	-0.01926		0.15429		-0.00375		0.02745		-0.05555		0.01209		0.89066
17	LP60011271	-0.02314		0.65625	**	-0.08064		-0.64507		0.06520	**	0.04138		0.87068
18	LP60011291	-0.14428		0.35148		-0.18264	*	1.42753		0.03291		-0.16897	***	0.79132
19	LP60011521	-0.04096		0.39028	***	-0.12914		-0.00804		-0.00127		-0.04213		0.86769
20	LP60011571	0.06416		0.49900	*	-0.10436		-0.10583		0.01828		-0.04457		0.82784
21	LP60011715	-0.18183	***	0.27485	*	0.01291		0.04678		0.06201	*	-0.10004	**	0.81601

Appendix 21 – Individual performance estimates using the Fama and French (2018) 6-factor model with a dummy variable – Conventional funds (continued)

Funds	Lipper RIC	α_p		α_D		β_p		β_D		β_{SMB}		β_{SMB*D}		β_{HML}		β_{HML*D}	
22	LP60011931	-0.00079		-0.00530	*	0.97382	***	0.03881		0.08191		-0.29848	**	-0.01446		0.03806	
23	LP60055551	0.00095		-0.00316		0.64788	***	0.20189	*	0.05476		-0.27678		0.00135		-0.03776	
24	LP60066434	-0.00027		-0.00844		0.57992	***	0.19260		0.15890		-0.19579		-0.01310		-0.42045	
25	LP60069269	-0.00089	*	-0.00739	***	1.01329	***	0.02499		0.04120		0.25033	***	-0.02012		-0.24157	***
26	LP60070891	-0.00005		-0.00395	***	1.07234	***	0.04177		0.15384	***	-0.07590		0.04329	*	-0.54552	***
27	LP60081311	-0.00080		-0.00454		0.67031	***	0.04870		0.00283		-0.52575	**	0.03185		-0.29341	
28	LP60095970	-0.00116		-0.01095	**	0.97164	***	0.08185		0.09692	***	-0.15602		-0.04052		-0.17942	
29	LP60096957	-0.00361	***	-0.00702		1.13409	***	-0.02067		0.21125	***	0.06764		-0.22519	**	-0.08483	
30	LP65006222	-0.00003		-0.01296	*	0.95956	***	0.17052	*	0.10727	*	-0.01472		-0.13020	**	-0.31074	
31	LP65006244	0.00144		-0.00363		1.15495	***	-0.04824		0.20419	**	0.21435		-0.50143	***	-0.04991	
32	LP65021937	-0.00125		-0.00758		0.89159	***	0.05449		0.08451		-0.05264		-0.21603		0.51174	**
33	LP65036812	-0.00115		-0.00770		0.89238	***	0.15260		0.09875		-0.00736		-0.18524		0.26425	
34	LP65053849	-0.00375		-0.01605		1.09373	***	-0.05082		0.15637		0.19855		-0.15052		0.08824	
35	LP65090571	-0.00332		-0.00631		0.71204	***	-0.06415		0.03369		-0.31787		-0.17239		-0.09703	
36	LP65095536	-0.00079		-0.00078		0.92533	***	-0.03713		0.00817		0.03555		-0.12303	**	-0.05685	
37	LP65111203	-0.00394	***	-0.00761	*	1.03155	***	0.19944	**	0.10514		-0.03946		0.02047		0.07916	
38	LP65140598	0.00002		-0.00573	*	0.86165	***	0.13349	**	0.02088		-0.11233	*	-0.13674		-0.05410	
39	LP65140615	-0.00188	**	-0.00432		0.73646	***	0.24515	***	-0.08889		-0.32187	***	-0.20150	**	0.05673	
40	LP65165200	-0.00341		-0.00042		1.10470	***	0.24055	**	0.04137		-0.33012		0.02517		-0.75823	***
41	LP68016680	-0.00296	***	-0.00156		1.01339	***	0.08513		0.07080		0.15145		0.07074		-0.24770	***
42	LP68022080	-0.00087		-0.00020		0.95114	***	0.17475	***	0.04167		-0.20511	***	0.03613		-0.51847	***

Appendix 21 – Individual performance estimates using the Fama and French (2018) 6-factor model with a dummy variable – Conventional funds (continued)

Funds	Lipper RIC	β_{RMW}		β_{RMW*D}		β_{CMA}		β_{CMA*D}		β_{MOM}		β_{MOM*D}		Adj. R^2
22	LP60011931	-0.02658		0.35294	*	-0.05425		-0.33087	*	0.03810		0.03493		0.89500
23	LP60055551	0.07635		0.42373	*	-0.25495	**	0.46640	**	0.03779		0.00082		0.66995
24	LP60066434	0.35710	**	-0.36980		-0.34861	*	-0.51906		-0.11284		-0.00921		0.47295
25	LP60069269	0.01898		0.40537	**	-0.08425		-0.00009		0.01937		0.00104		0.93755
26	LP60070891	0.00443		-0.00049		-0.33972	***	0.28990	**	0.00521		-0.04260		0.90016
27	LP60081311	-0.09269		0.06032		0.04229		-0.25697		-0.00382		-0.14093	*	0.62822
28	LP60095970	0.01717		0.64662	***	-0.25363	***	-0.64411	**	-0.03261		-0.00226		0.86543
29	LP60096957	0.05972		0.39269		0.09828		-0.48138		0.02023		0.09676		0.87936
30	LP65006222	0.15748	**	0.33749		-0.04576		-0.47261		0.04667		0.01664		0.87079
31	LP65006244	-0.23527		0.24021		-0.28195		-0.69925		0.00498		-0.02896		0.83753
32	LP65021937	0.07585		0.04192		0.46879	***	-0.45522		0.02265		-0.22701	*	0.77550
33	LP65036812	0.02248		-0.16221		0.43746	**	-0.08996		0.03428		-0.30940	**	0.78241
34	LP65053849	0.14567		-0.52630		-0.00324		-0.13583		-0.11075		-0.12641		0.73699
35	LP65090571	0.00373		0.20550		-0.12006		-0.08028		-0.14994	*	0.01406		0.53991
36	LP65095536	0.22785	***	0.13626		-0.06903		-0.40850		-0.06351	*	0.12680	*	0.90545
37	LP65111203	0.19053	*	0.31019	*	-0.10417		-0.65127	***	-0.13984	*	0.25375	***	0.89558
38	LP65140598	-0.00123		0.19540	**	-0.10871		-0.47713	***	-0.12427	**	0.13491	**	0.86101
39	LP65140615	0.05942		0.64127	**	-0.00117		-0.32957		-0.06195		0.14221	*	0.78237
40	LP65165200	0.54815	***	0.17034		-0.37420	*	-0.68536		0.05445		-0.07405		0.87672
41	LP68016680	0.16154	**	-0.11292		-0.04717		0.40088	**	-0.15796	***	0.02136		0.94842
42	LP68022080	0.05639		0.18422		-0.21573	**	0.14353		-0.06011		-0.11226	*	0.89615

This table exhibits the regression estimates, considering the period between January 2000 and June 2020, for UK SRI mutual funds. The results are obtained by applying the regression of the Fama and French (2018) 6-factor model with a dummy variable, allowing to distinguish between expansion and recession periods. The dummy variable is represented as D_t, and assumes the value of 0 in periods expansion and the value of 1 in periods of recession. The table reports the performance estimates (α_p), the alpha coefficient associated with recession periods (α_D), the systematic risk (β_p), the beta coefficient associated with recession periods (β_D), the additional regression coefficients regarding size (SMB), book-to-market (HML), profitability (RMW), investment (CMA) and momentum (MOM) associated with expansion and recession periods, and the adjusted coefficient of determination (Adj. R^2). Following Newey and West (1987), standard errors are corrected for heteroscedasticity and autocorrelation. In order to identify the statistical significance of the coefficients, the asterisk is used to represent the level of significance of 1% (***), 5% (**) and 10% (*).