

SFDR Funds Performance Differences – Fixed Income and Equity Funds

*Michal Vyletelka*¹

Abstract

This study examines whether the SFDR (Sustainable Finance Disclosure Regulation) regulation provides economically meaningful difference among EU mutual funds in respect to its net performance across equity and fixed income asset classes. The results on a sample of over 7 000 mutual funds indicate that while Article 8 and Article 9 funds often exhibit superior raw returns and attract stronger investor inflows these advantages largely dissolves when traditional risk factors such as value, momentum, or default probability are accounted for. Overall, the findings suggest that SFDR classifications carry meaningful sustainability signals, yet do not systematically reflect the superior performance.

Keywords:

Sustainable finance, sfdr, esg funds, mutual fund performance

JEL classification: G11, G12

¹ Prague University of Economics and Business, Faculty of Finance and Accounting, Prague, Czech Republic, Email: vyln00@vse.cz; ORCID: <https://orcid.org/0000-0003-3768-1631>

1. Introduction

The rising trend of sustainable collective investing in Europe has also introduced uncertainties about the actual environmental impact of ESG funds' investments and raised potential consumer risks of greenwashing. To mitigate these uncertainties, several regulatory acts have been adopted at the EU level, namely the CSRD, NFRD, and SFDR. From an investment perspective, the SFDR has become the central EU framework for classifying investment funds by their sustainability ambitions. Despite regulatory challenges in implementing the SFDR regulation, Article 8 and Article 9 funds have attracted growing attention from both institutional and retail investors. This is reflected in the continuing rise in AuM in both categories. Since the introduction of the SFDR, AuM in Article 8 funds have expanded from EUR 3.76 trillion in Q1 2021 to EUR 9.14 trillion (51% of the total market) at end-2024. Article 9 funds reached EUR 353 billion by end-2024, despite their market share remaining virtually unchanged at 2% since 2022, as their net sales slowed (EFAMA, 2025). This dynamic has sparked academic interest in understanding whether the SFDR classification provides meaningful differentiation.

The empirical evidence demonstrates significant financial and non-financial differences between SFDR funds across multiple dimensions. From a non-material perspective, the SFDR categorization proves to be meaningful, while Article 9 funds experience higher ESG ratings, lower carbon-intensity and stronger emphasis on climate change actions (Cremasco and Boni, 2022). Furthermore, Article 9 equity funds exhibit significantly lower greenwashing indices and stronger alignment with third-party sustainability labels, while their fixed income equivalents display weaker sustainability signals and less robust label alignment (Abouarab et al., 2025). Article 8 and Article 9 funds also experience significantly higher investor flows, receiving 96 basis points higher annualized flows than Article 6 funds (Spaans et al., 2024).

However, the performance benefits are not uniform across SFDR categories. Article 9 funds consistently outperform both sustainability and financial metrics, while Article 8 funds do not generate significantly different risk-adjusted performance from conventional funds (Cosma et al., 2023).

Article 9 equity funds achieve higher returns and net inflows than Article 8 and conventional funds (Ferriani, 2023; Cremasco and Boni, 2022). However, the sustainability of this outperformance is uncertain. Studies indicate that Article 9 funds' outperformance during crisis periods is not persistent and that performance advantages fade during stable market conditions (Cosma et al., 2023). Despite performance volatility, these funds are attributed to additional administrative burden, reflected in higher management fees for Article 9 funds (Cremasco and Boni, 2022). The evidence for the distinction between Article 8 equity funds is less compelling. Research shows they do not outperform conventional funds and fail to

demonstrate significant reductions in greenwashing (Cosma et al., 2023; Abouarab et al., 2025). This pattern suggests that Article 8 classification does not provide a strong sustainability signal in equity markets.

The fixed income markets present a slightly different picture. The research indicates that SFDR categories are less predictive of sustainability outcomes or performance differentiation in fixed income than in equity (Brito-Ramos et al., 2023). Studies show limited evidence of outperformance or reduction in greenwashing among Article 8 and 9 fixed-income funds, as well as lower to no differences in carbon intensity (Brito-Ramos et al., 2023).

Another important dimension of SFDR implementation is downgrading patterns. Recent research shows that downgrades from Article 9 to Article 8 are often associated with negative fund flows and heightened sustainability risk, particularly for equity funds (Nishi et al., 2025; Scheitza & Busch, 2023). Moreover, the risk of greenwashing and the ambiguity of sustainability claims remain central concerns, with evidence suggesting that regional and fixed-income funds are especially prone to weaker or inconsistent sustainability signals (Brito-Ramos et al., 2023; Lambillon & Chesney, 2023).

Building on this evidence, this study examines whether systematic differences exist between equity and fixed-income funds across SFDR categories namely with regards to its net performance. Namely, in line with the evidence, I hypothesize that Article 9 funds would attract superior returns in comparison to Article 8 and Article 9 funds, to reflect higher investment sentiment.

2. Data

For the purpose of this analysis, monthly data from 2016-2024 for European fixed income (FI) and equity UCITS funds were obtained through Bloomberg database. Only actively managed funds based within EU were included. The final sample consists of 2,844 FI and 3,928 equity funds, across all strategies and region-focus classes. The SFDR category for each fund has been added to the sample according to the fund's status as of the end of 2024.

The two-panel Table 1 shows the distribution of FI funds by investment strategy and SFDR classification. The most common strategies across all SFDR categories are *Aggregate* and *Corporate* (Panel A), with Article 8 funds having the highest count in both. Interestingly, *Aggregate* strategies are almost evenly split between Article 6 and 8, while *Corporate* strategies tend toward Article 8. This indicates a potential preference for exposure to the corporate sector. Article 9 funds maintain a minor share (5%) across all strategies, due to the more stringent conditions for this type of fund.

The majority of funds have a global or multi-regional focus (Panel B), suggesting that, similarly to conventional funds, ESG-oriented funds prefer broader

diversification. Europe stands out as the dominant single-continent region, especially under Article 8, which aligns with the EU's regulatory leadership on sustainable finance.

Table 1: Frequency distribution of fixed income UCITS funds sample by strategy (left panel) and region focus (right panel)

Strategy	Art 6	Art 8	Art 9	Total
Aggregate	797	844	72	1,713
Asset Backed	12	16	0	28
Bank Loans	17	6	1	24
Convertible	26	64	0	90
Corporate	159	333	42	534
Government	127	76	8	211
Inflation Protected	18	30	0	48
Mortgage-Backed	3	9	0	12
Municipals	0	1	0	1
N.A.	106	70	6	182
Preferred	0	1	0	1
Total	1,265	1,45	129	2,844

Region	Art 6	Art 8	Art 9	Total
Asia	37	41	0	78
Europe	252	333	19	604
Global	669	780	89	1,538
North America	48	79	4	131
Other	257	211	16	484
South America	2	6	1	9
Total	1,26	1,45	129	2,844

Source: author's own processings

The frequency distribution of equity funds (Table 2) by SFDR category shows that most funds concentrate on *Blend* and *Growth* strategies, with Article 8 funds dominating both segments. Specifically, Article 8 accounts for 57% in both *the Blend* and *Growth* categories. Similarly to the fixed income class, Article 9 funds are few across all strategies and account for 7% of all funds.

From the perspective of a regional focus, globally focused funds again dominate (44% of all funds), across all SFDR categories. The second-largest category is the Europe-focused class, which accounts for a 28% share of all funds. Some funds remain uncategorized regionally, particularly in Article 6 and 8. Surprisingly, the sample tends to be slightly biased towards Asia-focused funds (446) rather than to North America region (330), which may be due to the diversification demand of EU investors.

Table 2: Frequency distribution of equity UCITS funds sample by strategy (left panel) and region focus (right panel)

Strategy	Art 6	Art 8	Art 9	Total	Continent	Art 6	Art 8	Art 9	Total
Aggressive Allocation	1	0	0	1	Africa	3	2	0	5
Blend	926	1,509	200	2,635	Asia	163	272	11	446
Growth	250	423	56	729	Europe	388	537	58	983
Long Short	1	0	0	1	Global	588	957	176	1721
Market Neutral	0	1	0	1	North America	122	196	12	330
Moderate Allocation	1	0	0	1	Other	135	178	9	322
NA	75	83	6	164	South America	15	5	1	21
Value	160	231	5	396	Total	1,414	2,247	267	3,928
Total	1,414	2,247	267	3,928					

Source: author's own processings

3. Descriptives

Furthermore, for both categories, the expense ratio, inception date of the fund, its monthly closing prices, and beta indicators were gathered. For FI funds, the rating and maturity categories have been obtained and ranked accordingly. For rating category, Bloomberg sorts of FI funds into three groups (focus on Investment Grade A or higher, Investment grade BB or higher, High/Yield assets). For maturity focus, Bloomberg categorises funds into a total of 6 categories, ranging from short-term focus (under 1 year) to long-term focus (>10 years). Both categories have been ranked from lowest to highest according to the risk level of the category in ascending order.

For equity funds, the proxies for traditional Fama-French risk factors, namely the average P/B ratio, average market capitalization (in EUR millions), and average Dividend Yield, were obtained from the database.

Based on the descriptive statistics of EU FI UCITS funds (Table 3), several distinct patterns emerge across the SFDR classification categories. Performance characteristics reveal interesting divergences across fund categories. Article 8 funds demonstrate the strongest 10-year total returns with a mean of 17.5% compared to 14.3% for Article 6 and 15.0% for Article 9 funds. However, Article 8 funds also exhibit higher volatility as evidenced by their standard deviation of 18.6%, while Article 9 funds show the most consistent performance with the lowest volatility. The beta coefficients across all categories cluster around 0.85-0.90, indicating similar

systematic risk exposure to the broader fixed-income market, although Article 9 funds display a tighter beta distribution range.

A particularly relevant dimension is expense ratio. In this characteristic, clear differences between SFDR categories are to be seen: In contrast to Scheitza & Busch (2024), Article 6 funds exhibit the highest average expense ratio at 0.88%, with Article 8 funds showing costs lower by 6 basis points and Article 9 funds lower by 19 basis points. This finding suggests that funds classified under Articles 8 and 9, despite often engaging in more complex ESG screening and impact alignment, may be operated more efficiently, for example, by less intensive trading or by being subject to competitive fee pressure in the ESG segment. It also raises the hypothesis that fulfilling the SFDR disclosures conditions may not be as cost-intensive in practice as often presumed.

Table 3: Quantitative descriptive statistics of fixed income UCITS sample

	SFDR Classification	N	Missing	Mean	Median	SD	Minimum	Maximum
Tot Ret 10Y	Article 6	745	520	14.273	11.400	25.104	-99.87400	194.14
	Article 8	825	625	17.540	13.924	18.613	-98.64700	107.30
	Article 9	30	99	14.979	10.823	15.867	-5.76200	54.46
Beta 3Y	Article 6	457	808	0.855	0.933	0.581	-2.11000	5.14
	Article 8	641	809	0.898	0.956	0.599	-2.47600	5.38
	Article 9	51	78	0.901	0.975	0.479	-0.44100	2.21
Expense Ratio	Article 6	1006	259	0.883	0.820	0.555	0.00000	4.00
	Article 8	1255	195	0.823	0.760	0.468	0.00000	2.72
	Article 9	108	21	0.694	0.630	0.470	0.00700	2.62
Avg Market Cap (mil)	Article 6	80	1185	47511.800	1151.724	121826.152	0.00000	743648.31
	Article 8	87	1363	54937.505	1967.718	145146.913	0.00000	881327.31
	Article 9	4	125	53941.865	8752.377	96306.676	350.00100	197912.70

Note: author's own processings

Equity funds under SFDR also exhibit some clear differences in investment approach and characteristics. Article 8 funds exhibit higher total cumulative performance, but also higher volatility. Paradoxically, Article 9 funds account for the lowest profitability among all categories, despite having higher volatility than Article 6 funds. One possible explanation lies in the trade-off between ambition and financial return, which limits the investable universe. This could be supported by the fact that Article 9 funds invest in smaller, and thus more volatile, companies.

From a valuation point of view, it can be seen that Article 9 funds exhibit the highest valuations across all observable metrics (P/S, P/B, and P/E ratios), in line with the

Pástor et al. (2021) hypothesis that investments in environmentally conscious companies serve as a climate risk hedge.

Table 4: Quantitative descriptive statistics of equity UCITS sample

	SFDR Classification	N	Missing	Mean	Median	SD	Minimum	Maximum
Tot Ret 10Y	Article 6	948	466	77.115	64.984	61.694	-90.57800	435.66
	Article 8	1297	950	161.553	70.275	2830.526	-35.87200	101997.14
	Article 9	110	157	63.863	57.326	39.893	-54.04400	205.01
Beta 3Y	Article 6	823	591	0.921	0.932	0.663	-1.94100	18.49
	Article 8	1506	741	1.335	0.968	15.043	-3.16000	584.69
	Article 9	163	104	0.981	0.995	0.355	-2.98100	1.73
Expense Ratio	Article 6	1102	312	1.533	1.580	0.768	0.00000	5.00
	Article 8	1933	314	1.414	1.580	0.664	0.00000	5.09
	Article 9	206	61	1.425	1.572	0.627	0.00700	3.90
Avg Market Cap (mil)	Article 6	1329	85	305501.560	90238.758	912668.727	4.41500	1.05e+7
	Article 8	2160	87	533011.132	114474.500	3.93e+6	0.00200	1.52e+8
	Article 9	254	13	271409.277	98559.625	691212.560	522.66000	9.40e+6
Avg Price/Sales	Article 6	1336	78	2.019	1.637	1.511	0.00000	17.12
	Article 8	2169	78	2.309	1.887	1.477	0.00000	13.83
	Article 9	254	13	2.419	2.115	1.355	0.56100	10.57
Avg Price/Book Ratio	Article 6	1334	80	2.756	2.229	1.756	0.00000	12.26
	Article 8	2163	84	3.198	2.590	2.236	0.00000	56.07
	Article 9	254	13	3.393	3.153	1.600	0.53700	11.48
Avg Price/Earnings	Article 6	1284	130	24.156	20.139	25.458	0.00000	498.26
	Article 8	2127	120	24.430	20.826	20.690	0.00000	446.85
	Article 9	242	25	29.363	25.457	22.143	5.03500	271.68

Note: author's own processings

Lastly, in contrast with fixed income funds, expense ratios display a more mixed picture, where Article 9 funds interestingly carry higher expense ratio than Article 8 funds, raising a hypothesis that investors are willing to pay extra costs even for funds pursuing environmentally conscious strategies.

4. Performance differences across SFDR categories

In order to perform an analysis of the gross performance differences of funds by SFDR category, the monthly, quarterly, and yearly returns have been calculated from their monthly closing prices data in both asset classes. For the calculation of the Sharpe ratio, the annual rate of a 1-year German Bund has been added into the

calculation as a risk-free asset. The average annual return, volatility and Sharpe ratio for fixed income funds could be observed on Table 5.

Table 4: Portfolio Characteristics of FI funds by Year and SFDR Classification

	Return			Volatility			Sharpe Ratio			N		
	Art 6	Art 8	Art 9	Art 6	Art 8	Art 9	Art 6	Art 8	Art 9	Art 6	Art 8	Art 9
2016	4.54	4.42	3.56	5.58	4.28	3.90	0.89	1.13	1.02	770	856	34
2017	2.33	2.81	1.56	3.16	2.28	2.43	0.98	1.57	0.95	833	919	40
2018	-3.10	-3.42	-1.78	3.95	3.47	2.54	-0.60	-0.78	-0.41	913	984	48
2019	4.93	4.89	4.71	4.22	3.62	3.29	1.28	1.48	1.58	975	1,059	56
2020	1.59	2.62	1.86	11.00	10.36	8.49	0.20	0.31	0.29	1,047	1,135	65
2021	-0.76	-0.47	-1.12	4.23	2.81	2.65	0.00	0.10	-0.14	1,138	1,200	74
2022	-11.44	-10.14	-11.94	11.48	8.76	9.14	-0.96	-1.11	-1.26	1,184	1,290	96
2023	3.04	3.86	4.22	6.66	5.70	5.70	0.02	0.17	0.23	1,219	1,366	115
2024	2.92	3.71	3.03	4.26	3.64	3.87	-0.16	0.03	-0.15	1,260	1,431	125
Total	0.33	0.81	0.33	5.48	4.42	4.14	0.18	0.32	0.23	1,260	1,431	125

Note: author's own processings

Article 8 funds consistently demonstrate superior risk-adjusted performance, recording the highest average Sharpe ratio (0.32) and returns (0.81%) throughout the study period. Article 6 funds, as previously illustrated in Table 3, exhibit slightly lower volatility but also generate weaker overall returns. Article 9 funds display both reduced volatility and performance, particularly before 2020, although they occasionally outperform during market expansion phases such as 2019. While 2022 represented a challenging period across all categories, characterized by sharply negative returns and diminished Sharpe ratios, the long-term trend indicates that ESG-linked strategies have not underperformed relative to conventional approaches.

To examine the statistical significance of Article 8 funds' outperformance, regression models were constructed incorporating Rating, Maturity, and Market Return as control variables. Both market returns and lagged fund flow variables were adjusted to correspond with the return window of each regression model. To ensure model robustness, the dependent variable was estimated across monthly (M), quarterly (Q), and annual (Y) timeframes.

Table 5: Summary of OLS regression models for fixed income UCITS performance

	M	Q	Y
[Intercept]	-0.223* (0.093)	-0.770*** (0.138)	-3.868*** (0.194)
Market return	0.571*** (0.008)	0.563*** (0.007)	0.620*** (0.005)
SFDR Article 8	0.050 (0.036)	0.127* (0.053)	0.282*** (0.074)
SFDR Article 9	-0.019 (0.077)	-0.066 (0.115)	-0.326* (0.166)
Expense Ratio	-0.024 (0.035)	-0.079 (0.052)	-0.459*** (0.073)
Rating Class	0.120*** (0.029)	0.378*** (0.043)	1.702*** (0.061)
Maturity Class	-0.014 (0.019)	-0.020 (0.028)	0.052 (0.040)
Lag (Fund flows)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Num.Obs.	55182	54309	50164
R2	0.081	0.109	0.272

*Note: The response variable is a fund return on a monthly (M), quarterly (Q) and yearly (Y) basis, expressed in percentage points. The explanatory variables consist of corresponding market return (Global Aggregate Bond Index ETF; ticker: AGGG) dummy factor variables signifying attribution to Article 8 and Article 9 funds category, expense ratio, rating and maturity class of a fund. The first value in the cell corresponds to the value of beta coefficient for a given variable, the value in brackets below represents the standard error of the coefficient. Star symbols *, **, *** highlight statistical significance on a 5%, 1% and 0.1% level.*

From constructed regression models, it can be seen that although the SFDR category is still an important variable, specifically for longer-term returns, its significance is less obvious than predicted from Table 6, and returns are more attributable to the average rating of a fund's assets. In the short term (monthly), fund returns are predominantly driven by broader market movements, with little distinction between SFDR categories. This suggests that sustainability-related strategy does not impact immediate performance in bond markets.

Over longer periods, more apparent differences emerge between the SFDR categories. Article 8 funds show stronger long-term results, probably due to the fact, lower environmental risks are not fully acknowledged in the rating Article 9 funds,

on the other hand, tend to perform slightly worse over time. This may be explained by their stricter rules, which limit diversification and reduce the range of bonds they can buy.

4.1 Equity funds

Annual portfolio characteristics of equity funds across SFDR categories show broadly similar risk-return profiles, though subtle distinctions emerge over time. Article 9 funds report the highest average return over the whole period (6.7%), followed closely by Article 8 (6.3%) and Article 6 (5.7%). Despite Article 9's slightly higher volatility (14.7% vs. 14.4% for Article 6), their risk-adjusted returns as measured by the Sharpe ratio remain comparable to other categories. This suggests that stronger ESG mandates do not lead to disproportionate risk-taking and may even support robust returns in supportive market conditions. Year-by-year data further show that Article 8 funds outperformed Article 6 funds in return and Sharpe ratio during most growth periods, while Article 9 funds saw notable outperformance in 2020 — likely benefiting from ESG-aligned themes during the pandemic rebound.

Table 1: Portfolio Characteristics of equity funds by Year and SFDR Classification

	Return			Volatility			Sharpe Ratio			N		
	Art 6	Art 8	Art 9	Art 6	Art 8	Art 9	Art 6	Art 8	Art 9	Art 6	Art 8	Art 9
2016	15.27	12.69	12.14	11.97	11.86	10.50	1.31	1.11	1.20	969	1,330	114
2017	13.62	16.62	12.53	7.37	7.33	7.73	1.95	2.37	1.72	1,022	1,408	117
2018	-14.56	-14.64	-12.84	14.26	14.38	13.51	-0.97	-0.97	-0.90	1,085	1,508	125
2019	13.64	16.26	17.68	12.48	12.63	13.79	1.13	1.33	1.32	1,170	1,639	142
2020	8.75	12.78	19.07	27.45	26.45	25.21	0.34	0.51	0.78	1,241	1,774	154
2021	15.30	16.09	17.20	10.88	11.20	11.39	1.48	1.50	1.58	1,297	1,923	178
2022	-10.82	-12.95	-11.03	19.78	21.14	22.81	-0.52	-0.59	-0.46	1,358	2,053	217
2023	5.30	5.83	4.50	13.99	14.81	16.11	0.17	0.20	0.10	1,383	2,159	253
2024	10.00	10.20	7.14	11.28	11.17	11.51	0.57	0.59	0.31	1,404	2,218	263
Total	5.70	6.30	6.74	14.38	14.55	14.73	0.61	0.65	0.63	1,404	2,218	263

Note: author's own processings

The regression analysis for the equity funds sample (Table 8) indicates that the general market trend is the principal driver of equity fund performance, and the influence increases with greater trading windows. When controlled for traditional risk factors, SFDR categories matter. Still, in exactly the opposite manner: Article 8 funds perform comparably on shorter time frames, but underperform on longer

time frames, while Article 9 funds underperform consistently, most probably due to stricter ESG regulations limiting the fund's ability to spread risk and access sectors with higher returns.

Table 2: Summary of OLS regression models for equity UCITS performance

	M	Q	Y
(Intercept)	0.582*** (0.032)	0.178*** (0.048)	-2.169*** (0.095)
Market return	-8.123*** (0.237)	52.703*** (0.222)	82.148*** (0.212)
SFDR Article 8	-0.011 (0.021)	-0.044 (0.032)	-0.147* (0.061)
SFDR Article 9	-0.059 (0.045)	-0.204** (0.067)	-0.672*** (0.130)
Expense Ratio	-0.109*** (0.015)	-0.275*** (0.022)	-1.148*** (0.042)
Avg Market Cap	0.012* (0.005)	0.032*** (0.008)	0.143*** (0.016)
Avg Dvd Yield	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Avg PB Ratio	0.070*** (0.005)	0.195*** (0.007)	0.827*** (0.014)
Lag (Fund flows)	-0.024*** (0.004)	0.072*** (0.005)	0.299*** (0.010)
Num.Obs.	244054	239687	217923
R2	0.066	0.194	0.417

*Note: The response variable is a fund return on a monthly (M), quarterly (Q) and yearly (Y) basis, expressed in percentage points. The explanatory variables consist of corresponding market return (MSCI World Index ETF; Ticker: IWDA), dummy factor variables signifying attribution to Article 8 and Article 9 funds category, expense ratio, average market capitalization in EUR millions, average dividend yield, and average P/B ratio of a fund. The first value in the cell corresponds to the value of beta coefficient for a given variable, the value in brackets below represents the standard error of the coefficient. Star symbols *, **, *** highlight statistical significance on a 5%, 1% and 0.1% level.*

Traditional risk factors matter as well. Funds with high costs typically provide lower returns, confirming the fee vs. performance relationship; larger funds usually do better, confirming the size factor. Value factor (i.e., P/B ratio) is associated with better performance, and past inflows seem to predict future performance, indicating momentum is at play. Dividend yield does not add any explanatory power. As demonstrated by the increasing coefficients of determination for larger windows of time, the model explains fund behavior better for longer time frames, meaning that structural and classification differences become stronger with time. The exhibited negative impact of Article 8 and 9 funds classification do not support the theory of superior performance occurring from stronger ESG mandates, showing that potentially stronger sustainability attachment could limit performance.

5. Conclusion

This study examined whether funds classifications under the SFDR carry meaningful differences related to their performance for equity and fixed income class. Based on the performed analyses in the fixed income asset class, it could be concluded that although Article 8 and Article 9 indeed outperform conventional funds in terms of gross performance and Sharpe Ratio, when controlling for traditional risk factors for Article 8 funds, the difference is attributed to differences in average rating of bond portfolios and as such do not differ from standard funds. Article 9 funds after controlling even tend to underperform, particularly over longer time horizons. The same holds for equity funds, as the main explanatory factors for the outperformance of Article 8 and Article 9 funds are value and momentum factors. These results are thus in contrast to the initial hypothesis that stronger sustainability fund mandates lead to fund outperformance.

This study carries several notable limitations. First, the relatively short period since SFDR's enactment has constrained the analysis of long-term performance dynamics. Second, ongoing category shifts and persistent greenwashing concerns, even following SFDR implementation, complicate future comparative analyses, as fund characteristics will vary depending on the sustainability criteria applied. Additionally, the regression models, particularly those explaining expense ratios, demonstrated moderate explanatory power, suggesting that additional unobserved variables may influence the relationships examined. Lastly, the final sentiment analysis done in this study was based on a relatively simple level, employing general indices rather than language models. More advanced models would utilize natural language processing (NLP) models such as BERT, FinBERT, RoBERTa or GPT-type classifiers to comprehend the context, and sentiment from large amounts of text. However, employing these models would require extensive private data, which would not be cost-effective for this type of study.

From the analysis above, future work could be developed in several important ways. A deeper study of fund level sustainability metrics beyond regulatory definitions, adding potential market labels and integrating market data with qualitative funds' changes in time could be beneficial for further analyses of contributing factors distinguishing various types of SFDR classifications.

References

Abouarab, R., Mishra, T., & Wolfe, S. (2025). Does the EU sustainable finance disclosure regulation mitigate greenwashing? *The European Journal of Finance*, 31(8), 957–989.

Brito-Ramos, S., Cortez, M. C., & Silva, F. (2024). Do sustainability signals diverge? An analysis of labeling schemes for socially responsible investments. *Business & Society*, 63(6), 1380–1425.

Cosma, S., Cucurachi, P., Gentile, V., & Rimo, G. (2024). Sustainable finance disclosure regulation insights: Unveiling socially responsible funds performance during COVID-19 pandemic and Russia–Ukraine war. *Business Strategy and the Environment*, 33(4), 3242–3257.

Cremasco, C., & Boni, L. (2024). Is the European Union (EU) Sustainable Finance Disclosure Regulation (SFDR) effective in shaping sustainability objectives? An analysis of investment funds' behaviour. *Journal of Sustainable Finance & Investment*, 14(4), 1018–1036.

EFAMA. (2025). *The SFDR fund market*. European Fund and Asset Management Association. <https://www.efama.org/sites/default/files/files/market-insights-21-the-sfdr-fund-market.pdf>

Ferriani, F. (2024). The importance of labels for sustainable investments: SFDR versus Morningstar globes. *Applied Economics Letters*, 31(18), 1813–1819.

Lambillon, A. P., & Chesney, M. (2023). How green is 'dark green'? An analysis of SFDR Article 9 funds. [Publication details not provided.]

Nishi, H., Peabody, S. D., Sherrill, E., & Upton, K. (2024). *Shades of green: The effect of SFDR downgrades on fund flows and sustainability risk*. SSRN. <https://ssrn.com/abstract=4814593>

Scheitza, L., Busch, T., & Metzler, J. (2023). The impact of impact funds—A global analysis of funds with impact-claim. *Journal of Financial Transformation*.

Scheitza, L., & Busch, T. (2024). SFDR Article 9: Is it all about impact? *Finance Research Letters*, 62, 105179.

Spaans, L., Derwall, J., Huij, J., & Koedijk, K. (2024). *Sustainable Finance Disclosure Regulation: Voluntary signaling or mandatory disclosure?* SSRN.
<https://ssrn.com/abstract=4722820>