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Sustainable Finance Disclosure Regulation and Investor Flows:
An Analysis of SFDR Fund Categories in Europe

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Christina Dreer BSc (WU)

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Univ.-Prof. Dipl.-Vw. Thomas Gehrig PhD

Declaration of the Use of AI

Artificial intelligence (AI) tools were used to support the preparation of this thesis. Their use was limited to improving the clarity, grammar, and academic style of written formulations. In addition, AI assisted in coding during the implementation of data processing and statistical analyses in R. All research design decisions, data collection, data analysis, interpretation of results, and conclusions were conducted independently by the author. AI tools were used solely as a supporting instrument and did not generate any substantive research content or analytical findings.

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Abstract

This thesis examines the impact of the Sustainable Finance Disclosure Regulation (SFDR) on investor behaviour, with a particular focus on differences in fund flows across SFDR classifications. Building on signaling theory and investor preference theory, the analysis examines whether the standardized SFDR classifications influence investor allocation decisions and whether ESG scores provide additional explanatory power beyond the regulatory labels. Using a panel dataset of German exchange-traded funds (ETFs) from 2019 to 2025, the study applies a two-way fixed-effects difference-in-differences approach to estimate changes in fund flows following the implementation of SFDR in March 2021. The empirical results show that Article 9 funds experience significantly lower net fund flows relative to Article 6 funds in the baseline specifications, while the estimated effects for Article 8 funds are comparatively smaller and depend on the model specification. After accounting for the Russia–Ukraine war, the baseline SFDR effect for Article 9 funds loses statistical significance, whereas the interaction between Article 9 funds and the war period remains economically meaningful and statistically significant, highlighting the importance of broader macroeconomic and geopolitical developments for investor behaviour. In a second step, the analysis incorporates ESG scores to examine whether sustainability characteristics influence fund flows beyond the SFDR classifications. Although the inclusion of ESG scores changes the magnitude and, in some cases, the direction of individual coefficients, neither the ESG interaction terms nor the post-SFDR ESG effects are statistically significant across the estimated specifications. These findings suggest that investors respond more strongly to the standardized SFDR classifications than to the underlying ESG metrics. Furthermore, the thesis includes a robustness analysis using Swiss funds, which are not subject to SFDR. The comparatively weaker and less consistent results support the interpretation that at least part of the observed changes in fund flows can be attributed to the regulatory framework rather than solely to common international market developments. Overall, the findings provide evidence that SFDR classifications influenced investor allocation decisions, particularly for Article 9 funds relative to Article 6 funds, thereby providing partial support for the theoretical expectation that standardized sustainability signals affect investor behaviour. At the same time, the results indicate that these effects are sensitive to broader market conditions and that ESG scores alone do not consistently explain differences in fund flows.

Zusammenfassung

Diese Masterarbeit untersucht den Einfluss der Sustainable Finance Disclosure Regulation (SFDR) auf das Investorenverhalten, insbesondere auf Unterschiede in den Fondszuflüssen zwischen den verschiedenen SFDR-Klassifizierungen. Aufbauend auf der Signaling-Theorie sowie der Theorie der Investorenpräferenzen wird analysiert, ob die standardisierten SFDR-Klassifizierungen Investitionsentscheidungen beeinflussen und ob ESG-Scores über die regulatorischen Klassifizierungen hinaus zusätzliche Erklärungskraft besitzen. Hierzu wird ein Paneldatensatz deutscher Exchange Traded Funds (ETFs) für den Zeitraum von 2019 bis 2025 verwendet. Mithilfe eines Difference-in-Differences-Ansatzes mit Zwei-Wege-Fixed-Effects werden Veränderungen der Fondszuflüsse nach der Einführung der SFDR im März 2021 untersucht. Die Ergebnisse zeigen, dass Artikel-9-Fonds in den Basisspezifikationen im Vergleich zu Artikel-6-Fonds signifikant geringere Nettofondszuflüsse aufweisen, während die Effekte für Artikel-8-Fonds geringer ausfallen und von der Modellspezifikation abhängen. Nach Berücksichtigung des Russland-Ukraine-Krieges verliert der ursprüngliche SFDR-Effekt für Artikel-9-Fonds seine statistische Signifikanz, was auf die Bedeutung makroökonomischer und geopolitischer Entwicklungen für das Investorenverhalten hinweist. In einem zweiten Schritt werden ESG-Scores in die Analyse einbezogen. Die Ergebnisse zeigen jedoch keine robusten statistischen Zusammenhänge zwischen ESG-Scores und Fondszuflüssen über die SFDR-Klassifizierungen hinaus. Dies deutet darauf hin, dass Investoren stärker auf die standardisierten SFDR-Klassifizierungen als auf die zugrunde liegenden ESG-Kennzahlen reagieren. Ergänzend wird eine Robustheitsanalyse anhand Schweizer Fonds durchgeführt, die nicht der SFDR unterliegen. Die insgesamt schwächeren Ergebnisse stützen die Interpretation, dass zumindest ein Teil der beobachteten Veränderungen der Fondszuflüsse auf den regulatorischen Rahmen der SFDR zurückzuführen ist. Insgesamt liefern die Ergebnisse Evidenz dafür, dass die SFDR-Klassifizierungen die Kapitalallokationsentscheidungen von Investoren beeinflusst haben, insbesondere bei Artikel-9-Fonds im Vergleich zu Artikel-6-Fonds. Damit wird die theoretische Erwartung, dass standardisierte Nachhaltigkeitssignale das Investorenverhalten beeinflussen, teilweise bestätigt. Gleichzeitig zeigen die Ergebnisse, dass diese Effekte von allgemeinen Marktbedingungen beeinflusst werden und ESG-Scores allein Unterschiede in den Fondszuflüssen nicht konsistent erklären können.

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1. Introduction and Motivation

In recent years, sustainable finance has become a central pillar of European financial policy, driven by growing political concerns about climate change, social responsibility, and long-term financial stability. Investors are increasingly interested in sustainable investments options and therefore demand transparency regarding the sustainability characteristics of financial products (Goldman Sachs report, 2022). In response to these developments, the European Union introduced a comprehensive regulatory framework, the "Sustainable Finance Disclosure Regulation" (SFDR), which came into force in March 2021 and fundamentally reshaped how investment funds communicate sustainability information to investors in the European Union (EU). This created a standardized setting of sustainability information to all potential investors. As a result, these characteristics are better comparable across financial products. The Sustainable Finance Disclosure Regulation defines a system of three types of funds based on their sustainability objectives and characteristics. It distinguishes between so-called "Article 6", "Article 8" and "Article 9" funds. By standardizing sustainability disclosures and introducing regulatory fund labels, the SFDR aims to reduce information asymmetries, mitigate greenwashing risks, and enable investors to make more informed allocation decisions. Implicit in this regulatory design is the expectation that clearer and more credible sustainability information may influence investor behaviour and, ultimately, capital flows across fund categories.

The introduction of the SFDR framework was also an important measure to tackle "greenwashing". Greenwashing is a term used when a fund claims to pursue ESG goals but that claim is not supported by its underlying portfolio through strong ESG-related holdings or active support for ESG-related voting (Dumitrescu, Gil-Bazo, & Zhou, 2023). The study also finds that potential greenwashers are more likely to underperform and true ESG-funds attract significantly more inflows than comparable non-ESG-funds. This finding shows once more, how valuable correct information about sustainability related funds is.

Despite the role of the SFDR, it remains an open empirical question whether the introduction of this regulatory framework affected the allocation of investor's capital. While sustainable investments experienced a substantial inflow of capital, the question remains if the introduction of the standardized framework had an actual impact on the capital flows between funds, as opposed to broader market trends, performance dynamics, or changing investor preferences (Goldman Sachs report, 2022).

Since a lack of disclosure and asymmetric information may be perceived as negative by investors, managers will more likely provide ESG-related information, only if the benefits of doing so exceed the costs (Spaans et al., 2024). This leads to less information asymmetries and can influence investors capital allocations. Considering this evidence this research focuses on the influence the SFDR as the signaling source has on investor behaviour, which is proxied by fund flows. Consistent with the literature the results suggest that investors react to ESG-signaling more than to granular ESG-score. In detail this means, that the SFDR labels showed significance across the models, whereas adding the granular ESG scores to the model showed no significant evidence.

Moreover, the initial phase of the implementation was characterized by considerable regulatory uncertainty, especially due to the Covid-19 pandemic, as well as the war between Russia and Ukraine. This thesis examines the impact of the SFDR on investor flows in European equity exchange-traded funds (ETFs). In addition, the thesis investigates whether fund-level sustainability characteristics, as measured by Environmental, Social, and Governance (ESG) scores, play a role in shaping investor behaviour once sustainability disclosures become more standardized. Particular attention is paid to the reclassification period in 2022 and 2023, during which many funds revised their SFDR labels following increased supervisory guidance and the entry into force of SFDR Level 2 requirements.

My motivation to study the impact of the Sustainable Finance Disclosure Regulation (SFDR), particularly on fund flows, stems from my professional experience as an intern in the Austrian Financial Market Authority (FMA). During this time, I worked in the Asset Management department. My responsibilities included the supervision of Austrian funds, climate stress testing and the preparation of a report on greenwashing practices among sustainable Austrian funds. In particular, working on the greenwashing report sparked my interest in understanding how the impact of regulatory frameworks from the European Union can be empirically measured and analyzed. Furthermore, my general curiosity about future-oriented topics led me to the decision to write about the SFDR and its implications on investment funds.

2. Related Literature and Theoretical Framework

This chapter summarizes the key aspects of the academic literature and theoretical frameworks relevant to understanding how sustainability disclosures, ESG metrics, and regulatory interventions affect mutual fund behaviour and investor capital allocation. It situates the analysis at the intersection of sustainable finance, mutual fund performance, and regulatory economics, where information provision and labeling play a central role in shaping market outcomes.

2.1. SFDR Impact

The report from Goldman Sachs (2022) captures a strong inflow of capital towards Article 8 and 9 classified funds. They received nearly four times the cumulative inflow of their non-sustainable counterparts of Article 6 funds since 2019. There was a reclassification period in 2022, where 35 funds were downgraded from Article 9 to Article 8 funds, but 66 Article 8 funds were upgraded to Article 9. The reason for this is the uncertainty of what "sustainable investments" mean.

Allcott et al. (2026) study the impact of the EU's Sustainable Finance Disclosure Regulation (SFDR) on mutual fund flows and portfolio sustainability. Using a difference-in-differences design around the 2021 implementation and subsequent fund reclassification, they find that the regulation had no significant effect on capital flows into Article 8 or Article 9 funds. The authors argue that SFDR disclosures largely provided information that investors already inferred from fund names and existing ESG ratings. This limits the incremental impact of the SFDR classification. Survey and experimental evidence further shows that investors struggle to understand the standard SFDR classifications, but respond strongly when sustainability information is presented in a more intuitive format. The authors therefore redesigned the Article classification in simple wordings as: Article 6 = "Least sustainable disclosure", Article 8 = "Medium sustainable disclosure" and Article 9 = "Most sustainable disclosure". Using these more intuitive labels, they find that investors allocate more capital to the higher sustainable fund categories, suggesting that clearer and more understandable disclosures improve the effectiveness of SFDR classifications in shaping investment decisions.

Academic research further supports the view that regulatory standardization of sustainability disclosures affects fund characteristics and investor behaviour. Becker et al. (2022) find higher sustainability ratings for EU-based funds, after the introduction of the Sustainable Finance Disclosure Regulation. This result shows that the intervention could reallocate capital into more sustainable investments. The stronger the sustainability integration of a fund, the higher the net inflows after the public disclosure of fund labels. This paper shows that the policy intervention of publicly standardizing the sustainability ratings had a significant impact on the financial markets.

2.2. Signaling

Investor behaviour changes through a reduction of information asymmetries, like the SFDR framework. This theory was established by Michael Spence called "Signaling Theory" which explains how individuals or organizations solve the problem of information asymmetry in markets. He would call certain information bundles "signals", which would carry information persistently in equilibrium from seller to buyer. Those signals are important as they help the market participants recognize quality differences. He raised this issue, where high-quality product owners can be distinguished from low-quality product owner through signals. The important idea of Spence was that a signal generates value, not by the underlying quality, but because it communicates that quality (Spence, 2002).

This can be applied to the SFDR framework, which was introduced to reduce information asymmetries across the financial markets, in particular sustainable investment. Some of the already existing literature explains this in terms of the SFDR classifications. Spaans et al. (2024) contribute to the research based on the signaling theory, which suggests less information asymmetries between investors and funds leads to higher capital allocation towards funds which are disclosed as Article 8 and Article 9 funds. This shows evidence that the SFDR classifications function as signals towards investors and also influence their behaviour.

Complementing this regulatory perspective, Dranev et. al (2024) examine if the environmental, social and governance (ESG) ratings have an impact on investment decisions pre-pandemic on US bonds and equity exchange traded funds (ETFs). They measured the attractiveness of these investments in net fund flows. Their results indicate that investors pay attention to ESG-related investments, because on average, ETFs that were associated with ESG criteria attracted additional net assets per month as compared to conventional ETFs. Nevertheless, another result was, that the different

values of ESG scores could not explain the variation in fund flows. So investors care about a simple ESG-signaling instead of detailed ESG scores and their value.

Another study called "Social responsibility and bank resiliency" finds that ESG scores not only convey information, but also act as a signal of banks' riskiness. In particular, ESG scores are associated with a strong stabilizing effect on systemic risk measures (Gehrig et al., 2024). Their results show that ESG scores and riskiness are highly correlated. This gives reasoning that ESG scores could be an influence on fund flows. This will be examined in the second research question of this thesis.

Overall, the existing literature suggests that the introduction of SFDR affects investor behaviour and fund flows.

2.3. Investor Preference Channel

Now, it is established that there is an indication of a changing investor behaviour when it comes to sustainable investments. The question remains why investors are allocating their capital differently. This is incorporated in the "Investor Preference Theory", which refers to a concept that investors have varying subjective priorities, risk tolerances, and risk-return trade-offs when selecting financial portfolios. Portfolio decisions are driven by evolving personal preferences and real-time market conditions. Micro-level evidence suggests that demand for socially responsible investments (SRI) is largely driven by intrinsic social preferences rather than purely financial expectations. Riedl and Smeets (2017) show that investors holding SRI funds expect lower returns and pay higher fees, indicating a willingness to forgo financial performance in order to align investments with their social values and sustainability preferences. SRI's are selected based on the mutual fund provider's official labeling and screening process. The screening excludes "sin" industries (e.g. tobacco, weapons...) and applies selection criteria such as environmental and human rights standards. This implies that regulatory sustainability classifications, such as those introduced under the SFDR, may affect capital flows not only through financial information channels but also through preference-based mechanisms. Those investor decisions regarding socially responsible investments are driven not only by financial considerations but also by social preferences and social signaling motives. Social preferences can be intrinsic but sustainable investments can also be used to communicate socially desirable characteristics to others. These findings imply that investors may actively seek information about the sustainability characteristics of financial products, which influences their investment decisions.

Figure 2.1.: Theoretical framework linking SFDR classifications, signaling effects, investor preferences and fund flows

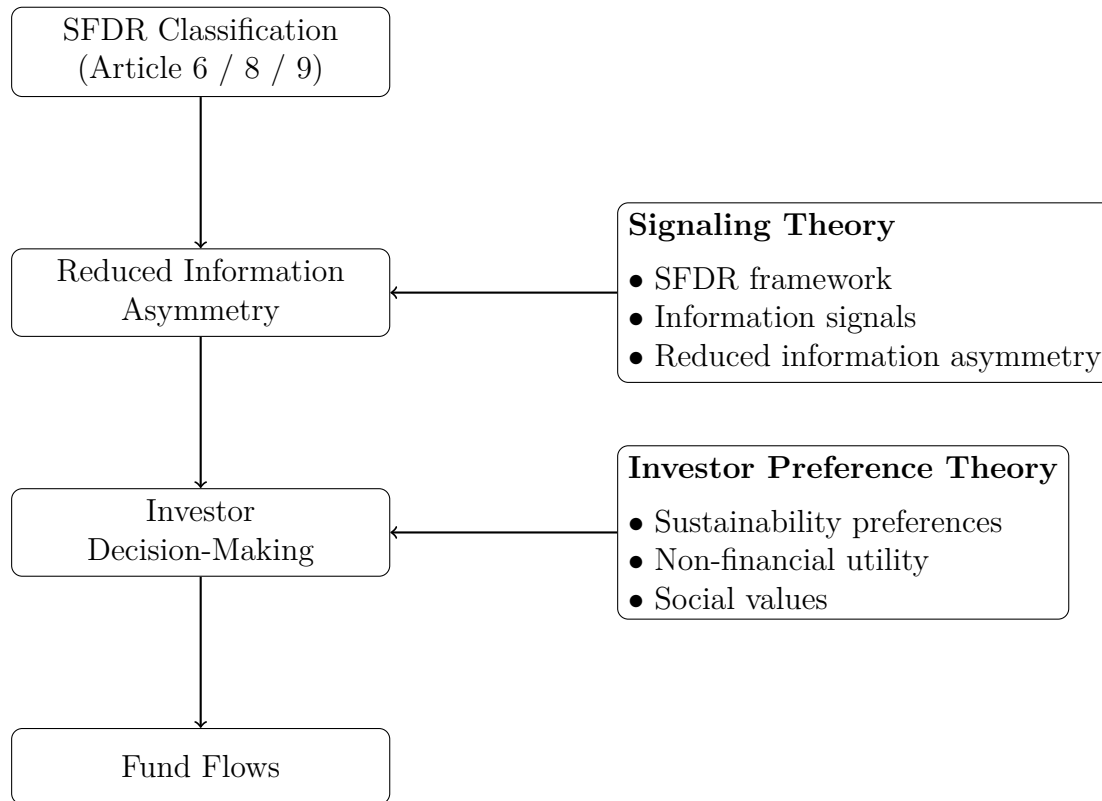


Figure 2.1 shows the underlying theoretical framework and the existing literature, presented in chapter 2, that provide the foundation for the research conducted in this master thesis. Building on these insights, the following section 2.4 presents the research questions and hypotheses that guide the study.

2.4. Research Question and Hypotheses

Building on the theoretical framework and the existing literature presented in the previous sections, this chapter focuses on the research questions and hypotheses that guide the empirical analysis. The research questions address whether the implementation of the Sustainable Finance Disclosure Regulation (SFDR) affected investor fund allocation across different SFDR categories and whether these effects are influenced by the availability of standardized ESG information during the reclassification period.

Research Question 1

Did the implementation of the SFDR in March 2021 affect net fund flows of Article 8 and Article 9 ETFs differently relative to Article 6 ETFs?

Building on the first research question and the theoretical considerations discussed above, **Hypothesis 1** is formulated as follows:

H1: The implementation of the Sustainable Finance Disclosure Regulation (SFDR) leads to higher net fund flows for Article 8 and Article 9 funds relative to Article 6 funds.

Research Question 2

To what extent did the increased availability of standardized ESG information during the 2022–2023 reclassification period influence the relationship between ESG characteristics and fund flows?

To address the second research question, **Hypothesis 2** is formulated as follows:

H2: Funds with stronger ESG characteristics are expected to experience more favorable net fund flows after standardized ESG information becomes available in the reclassification period (2022-2023).

3. Sustainable Finance Disclosure Regulation

The Sustainable Finance Disclosure Regulation is a regulatory framework of the European Union that aims to support financial market participants in their interpretation and comparability of sustainability related issues. There are two main reasons why the SFDR is relevant: First, all financial market participants operating in the EU must comply with it. Second, it provides useful definitions and transparency concerning sustainability factors, sustainable investments, sustainability risk, as well as a list of obligations that financial actors must fulfill on an organizational and product level. In this thesis, the product-level classifications for investment funds are particularly important. Financial entities are required to disclose which SFDR article classification (Article 6, Article 8 or Article 9) each product complies with. Article 6 products are characterized by the complete absence of sustainability goals. They have to provide 'transparency on the integration of sustainability risks', as well as a clear explanation, if they do not consider sustainability risks within their funds. Article 8 and 9 cover funds that take sustainability factors into account. Article 8 requires 'transparency regarding the promotion of environmental or social characteristics in pre-contractual disclosures'. Product managers have to declare what sustainable criteria their fund has to follow, how these criteria are implemented and what methodology is used to measure the outcome of the investments. Article 9 concerns financial products with an explicit sustainability objective. In this case, pre-contractual disclosures must provide transparency on sustainable investments by explaining how the investment contributes to the stated sustainability objective and how this differs from a traditional market objective (Cremasco & Boni, 2024). Although SFDR entered into force in March 2021, the implementation of the Level 2 Regulatory Technical Standards (RTS) on 1 January 2023 marked an important milestone in the regulatory framework. By introducing standardized disclosure templates and harmonized sustainability indicators, the RTS substantially improved the availability and comparability of ESG information for investors. Together with the widespread reclassification of Article 8 and Article 9 funds during 2022–2023, this provides the rationale for focusing the empirical analysis on the period beginning in January 2023 (European Commission, 2022). The overall SFDR's purpose is to provide a fundamental instrument for deepening the actual validity of investors' claims regarding sustainability issues. The standardization supports investors by easier comparability, as well as mitigates asymmetric information about sustainability issues in the financial markets.

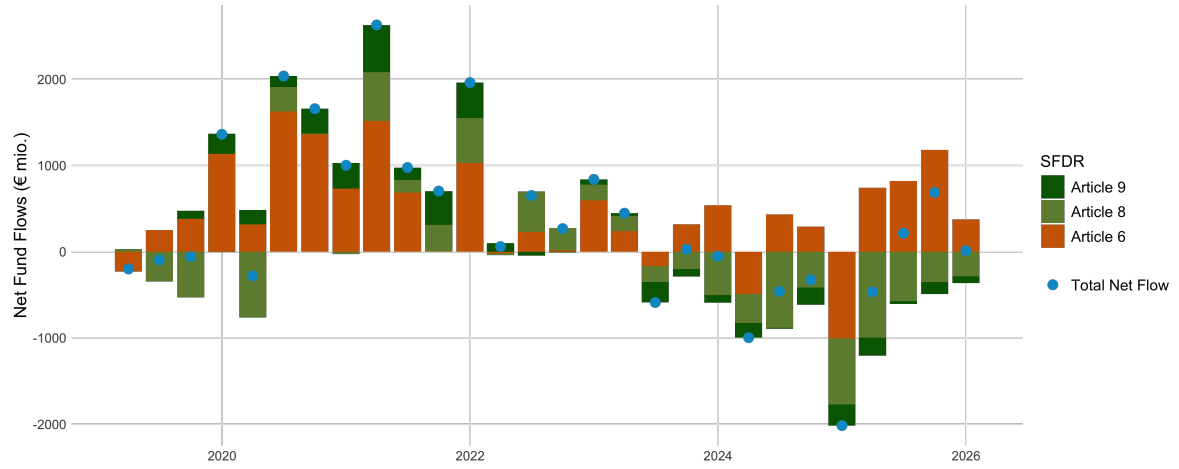
4. Data, Sample, and Variable Construction

This thesis is based on a sample of 345 exchange-traded funds (ETFs) domiciled in Germany, denominated in euros, all of which primarily invest in equities in order to ensure comparability across funds. This thesis studies Germany's fund universe in more detail, as it represents the largest fund market in the European Union with €4.1 trillion in assets under management at the end of 2024, as reported by the Bundesverband Investment und Asset Management (BVI). To provide a benchmark, a control group of 36 equity ETFs domiciled in Switzerland and denominated in euros is included. These Swiss-based ETFs are not subject to the Sustainable Finance Disclosure Regulation (SFDR). The inclusion of this control group allows for a comparison between funds that fall under the SFDR regulatory framework and those that are not subject to its disclosure requirements, thereby helping to isolate the effects associated with SFDR compliance.

A time-series panel dataset covering the period from January 2019 to October 2025 was constructed by using financial information from the Bloomberg database. The model in this thesis uses fund flow as its dependent variable. Fund flows, expressed as percentage share of Net Asset Value (NAV), are only available for Exchange Traded Funds (ETFs) in Bloomberg. Therefore, all funds in the sample are ETFs. All ETFs included in the empirical analysis invest primarily in equities. Fund flows are calculated as the change in outstanding fund shares multiplied by the net asset value and are subsequently normalized by lagged assets under management (AUM) to obtain (percentage) fund flows, allowing for comparability across funds of different sizes.

Figure 4.1 presents aggregate net fund flow in absolute terms (€ mio.) to illustrate capital movements categorized by SFDR. Article 8 funds experience notable net outflows at both the end of 2019 and the beginning of 2020, followed by a recovery in the subsequent period leading into 2021. Article 6 funds display a more stable pattern during this phase and do not exhibit pronounced net outflows. In contrast, the period spanning late 2024 and early 2025 is characterized by substantial net outflows across all SFDR categories, indicating a broad-based withdrawal of capital rather than category-specific dynamics. The pronounced net outflows observed at the end of 2024 and beginning of 2025 likely reflect a combination of elevated interest rates, increased macroeconomic uncertainty, and portfolio reallocations away from equity funds towards lower-risk or liquidity-preserving assets.

Figure 4.1.: Development of Total Net Fund Flows in € mio. by SFDR Category from January 2019–October 2025



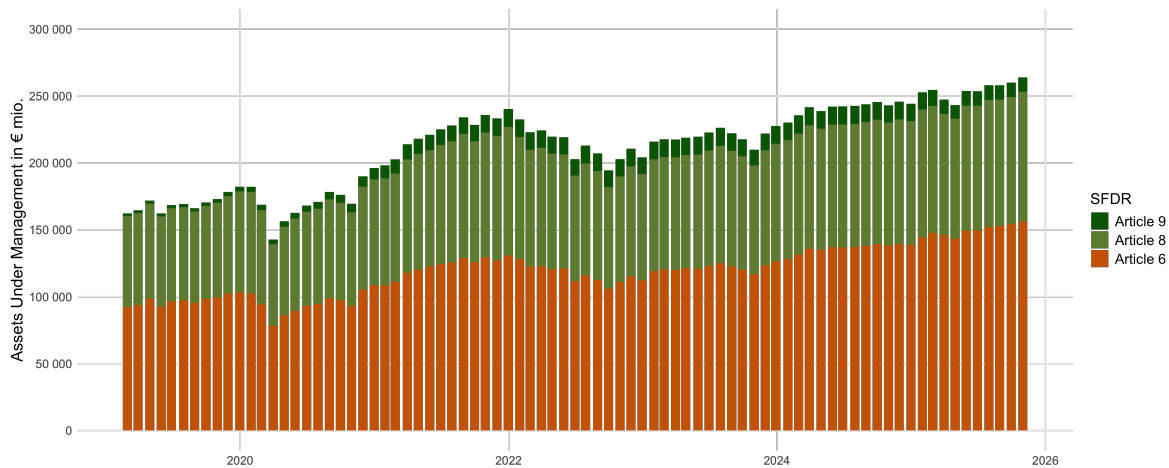
Source: Author's own calculations based on Bloomberg data.

Volatility, total net return, net asset value are control variables for the models. Volatility is a proxy for risk, total net return reflects fund performance, and net asset value accounts for fund size. All financial variables used in this study are obtained from Bloomberg and follow Bloomberg's standard field definitions to ensure consistency and comparability across funds and over time. The primary dependent variable is fund flows, which captures net investor capital movements into and out of a fund. Fund flows are measured on a monthly basis, as the data were retrieved from Bloomberg at a monthly frequency. Accordingly, all empirical analyses are conducted using monthly observations. Bloomberg calculates fund flows for exchange-traded funds as the net value of creation and redemption activity in the primary market. Specifically, fund flows are computed as the change in shares outstanding between two consecutive periods (months) multiplied by the fund's net asset value in the respective period. This measure reflects net investor demand and is currently available only for exchange-traded funds, excluding cross-listed funds.

To account for differences in fund size and to ensure comparability across funds, fund flows are normalized by lagged assets under management. The resulting fund flow rate expresses net flows as a share of total fund assets in the previous period and is widely used in the empirical asset management literature as a measure of relative investor demand (Bollen, 2007). Fund size is measured using fund total assets, which represent the total market value of all assets held by the fund, including both securities and cash positions. These values are reported to Bloomberg from multiple sources, such as fund companies, transfer agents, official disclosures, and third-party data providers, and are reported in the fund's base currency unless otherwise specified.

The net asset value represents the per-share value of a fund and is calculated as the total value of the fund's assets minus its liabilities, divided by the number of shares outstanding. NAV serves as the fundamental pricing benchmark for fund subscriptions and redemptions and reflects the intrinsic value of a single fund share. Market performance and pricing dynamics are controlled for by using the last traded price, which represents the most recent price at which the security was traded on the relevant exchange. Risk is proxied by 30-day volatility, which measures the annualized standard deviation of daily logarithmic returns based on closing prices over the most recent 30 trading days and is expressed in percentage terms. Finally, overall fund performance is captured using the total return index net of dividends, which measures the performance of a security under the assumption that all dividends are reinvested after the deduction of withholding taxes. This index reflects both price appreciation and dividend income providing a comprehensive measure of investor returns under net dividend conventions.

Figure 4.2.: Development of Fund Total Assets in € mio. by SFDR Category from January 2019 - October 2025



Source: Author's own calculations based on Bloomberg data.

Figure 4.2 shows the development of fund total assets for every month beginning from January 2019 to October 2025. Overall, total assets under management exhibit an upward trend over the sample period. In particular, assets managed by Article 9 increase markedly from around 2021, which marks the year of the SFDR introduction. This would suggest at least a temporary shift of capital allocation towards Article 9 funds.

To ensure a comparable fund sample and to mitigate distortions arising from very small or intermittently observed funds, the analysis applies a size-based sample restriction using pre-SFDR information. First, a minimum AUM threshold of €10 million is imposed to exclude very small funds for which normalized flow measures may be

unstable or driven by mechanical denominator effects. Second, to mitigate the influence of outliers in fund size, AUM is capped at the 99th percentile of the distribution, such that exceptionally large funds do not disproportionately affect the empirical analysis. Third, fund flows are expressed as a percentage of lagged assets under management (AUM) to ensure comparability across funds of different sizes. Scaling net flows by AUM allows the analysis to capture relative capital movements rather than absolute inflows or outflows, which would mechanically be larger for bigger funds. To limit the influence of extreme observations, monthly flow rates exceeding $\pm 100\%$ are excluded from the sample. Such extreme values typically arise from mechanical effects such as very small lagged AUM, fund mergers, liquidations, or data reporting irregularities, rather than genuine investor behaviour. Excluding these observations prevents outliers from disproportionately affecting coefficient estimates and improves the robustness and interpretability of the regression results. Finally, for each fund, the median value of total assets under management (AUM) is calculated over the period prior to the introduction of the SFDR (before 28 February 2021), thereby avoiding any contamination from regulatory effects. Only funds with a median pre-SFDR AUM of at least €25 million are retained in the final estimation sample. The resulting fund-specific median AUM is then merged back into the full panel dataset and used as a time-invariant size measure. This procedure ensures that the empirical analysis is conducted on a stable and economically meaningful set of funds that are comparable in size prior to the regulatory intervention.

Table 4.1.: Summary Statistics of Flows by SFDR Category

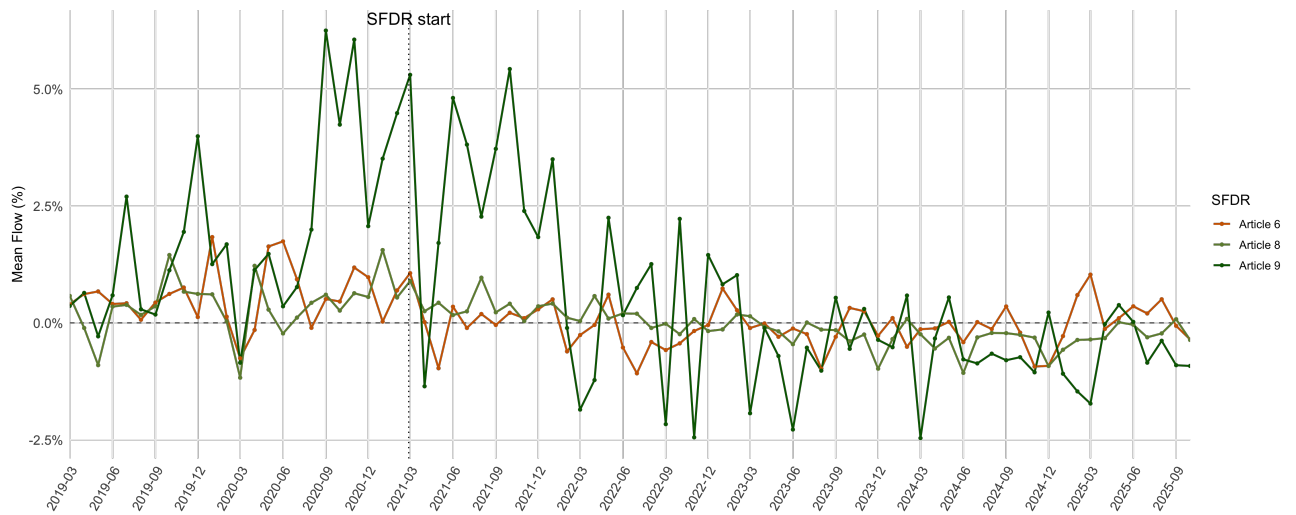
SFDR Category	Funds	Months	Mean Flow (%)	Median	SD	Min	Max
Article 6	204	80	0.127	0.048	0.587	-1.077	1.835
Article 8	123	80	0.058	0.039	0.506	-1.171	1.558
Article 9	18	80	0.763	0.358	2.045	-2.462	6.251

Source: Author's own calculations based on Bloomberg data.

Table 4.1 reports summary statistics for monthly fund flows across SFDR categories. Article 9 funds, while representing a comparatively small share of the sample (18 funds), exhibit substantially higher average fund flow, with 0.763%, than both Article 6 and Article 8 funds. These fund categories show a similar average fund flow. Article 6 funds have an even higher average fund flows with 0.127% than Article 8 flows with an average change of 0.058% over the course of 2019-2025. Funds classified as Article 9 also show a markedly larger standard deviation with 2.045, as well as more extreme minimum (-2.462) and maximum values (6.251), indicating significantly higher variability in fund flows, compared to Article 6 and Article 8 funds. This suggests that investor flows into

Article 9 funds are more volatile, potentially reflecting stronger sensitivity to market conditions, investor sentiment, or changes in sustainability-related information. Overall, Article 9 funds are characterized by both substantially higher average monthly fund flows and markedly greater flow volatility than Article 6 and Article 8 funds, suggesting more pronounced and less stable investor responses over the 2019–2025 period.

Figure 4.3.: Average Fund Flow across all SFDR Fund Categories



Source: Author's own calculations based on Bloomberg data.

Figure 4.3 shows similar observations to table 4.1. Figure 3.1 illustrates the time-series evolution of average monthly change in fund flows by SFDR category. For each month, fund-level flows are aggregated by SFDR classification and averaged across funds, providing a time-series comparison of investor capital movements across regulatory categories. While Article 6 and Article 8 funds exhibit relatively stable flow patterns over the sample period, Article 9 funds display pronounced short-term fluctuations and several sharp spikes, particularly around the introduction of the SFDR in March 2021. This visual evidence highlights the higher temporal volatility of Article 9 fund flows and suggests a stronger sensitivity to regulatory and market developments compared to other SFDR categories. Article 8 funds display moderately positive but more stable flows, while Article 6 funds remain close to zero on average, with some small outliers. Following the SFDR implementation, average change in flows across all categories converge towards lower levels and fluctuate around zero. The observed increase in short-term volatility across all SFDR categories coincides with periods of heightened market stress, most notably during the COVID-19 market shock in early 2020 and the following phases of uncertainty driven by inflationary pressures, monetary policy tightening, and geopolitical tensions from 2022 (Russian invasion of Ukraine) onward. During such episodes, investor behaviour tends to become more reactive, leading to

rapid reallocations, precautionary withdrawals, and temporary liquidity-driven flows that affect funds irrespective of their sustainability classification. Overall Figure 4.3 shows that the pre-treatment period suggests that the three SFDR categories exhibit broadly parallel trends before the introduction of SFDR in March 2021. Although the magnitude of fund flows differs across categories and some monthly deviations are observable, the overall direction of movements is generally similar. The figure does not provide evidence of systematic pre-treatment divergence that would invalidate the parallel trends assumption. This observation is important because the validity of the difference-in-differences approach relies on the assumption that the treatment and control groups followed broadly similar trends prior to the implementation of SFDR. If the pre-treatment trends had systematically diverged, it would have been more difficult to attribute any post-treatment differences in fund flows to the regulation itself.

A key data limitation of this study concerns the availability and delayed timing of ESG information. While the empirical analysis ideally requires consistent ESG scores over the full sample period, comprehensive composite ESG ratings were not available in Bloomberg prior to 2025 in the underlying dataset. Consequently, no aggregate ESG score could be used for the period surrounding the initial implementation of the SFDR in March 2021. For earlier years, only the disaggregated Environmental, Social, and Governance pillar scores were available, with consistent coverage beginning in 2022. This timing mismatch imposes a methodological challenge, as the primary regulatory intervention of interest happened before (March 2021) ESG scores are available in the Bloomberg database. As a result, it is not possible to directly estimate the interaction between SFDR classifications and ESG scores in the immediate post-implementation period. To address this limitation, the empirical strategy is extended by estimating a second model that exploits the fund reclassification phase observed in 2022 and 2023. During this period, there was a widespread reclassification of funds under the SFDR Article 6, 8, and 9 framework and the implementation of the SFDR Level 2 Regulatory Technical Standards (RTS), which introduced standardized sustainability disclosure templates and substantially improved the availability and comparability of ESG information. Consequently, the post-SFDR dummy equals one from January 2023 onwards, as discussed in the *Sustainable Finance Disclosure Regulation* chapter.

Gard (2023) states that "According to Morningstar data, some 40% of funds were shifted by asset managers from Article 9 to Article 8 categorisation in the final three months of 2022." A similar finding as in the Goldman Sachs report regarding SFDR updates from end of 2022. The report also shows a significant downgrading of \$27 billion in AUM from Article 9 to Article 8. This is only across equity and fixed income categories. However, the report also found that \$37 billion in AUM has been upgraded from Article

8 to Article 9 within the first eight months of 2022. Morningstar on the other hand found that €170 billion in AUM, which is 307 funds were downgraded from Article 9 to Article 8 funds in the last quarter of 2022. This has continued until 2023 with €99 billion in AUM being downgraded in the first month of the year. Taken together, these developments underscore that the 2022–2023 reclassification window represents a critical phase in the operationalization of SFDR, during which sustainability claims were reassessed in light of stricter disclosure requirements and improved ESG data. This period therefore provides a suitable setting to examine how ESG characteristics interact with SFDR classifications in shaping investor fund flows once sustainability information becomes observable and comparable (European Commission, 2022). In this extended empirical specification, the available Environmental, Social, and Governance pillar scores are used to construct an aggregate ESG score for the reclassification period, as well as for the periods immediately before and after, enabling an assessment of whether and how ESG quality conditions investor responses to SFDR classifications.

From 1 January 2023, a Commission Delegated Regulation was introduced to complement the EU’s Sustainable Finance Disclosure Regulation (SFDR). While the SFDR itself has been in application since March 2021 to improve transparency on sustainability risks and ESG disclosures by financial market participants, the Delegated Regulation specifies in detail the content, methodology, and presentation of disclosures, including standardized templates for how information should be reported in pre-contractual documents, on websites, and in periodic reports. This standardisation enhances the quality, comparability and usability of sustainability-related disclosures across financial products, and is why this thesis adopts ESG scores from 1 January 2023 as the starting point for the second model (European Commission, 2025).

Table 4.2.: Summary Statistics of Flows and ESG Scores by SFDR Category (Model 2 Sample)

SFDR Category	Funds	Months	Mean Flow (%)	Median	SD	Min	Max
Article 6	168	80	0.102	0.010	0.649	-1.363	2.011
Article 8	108	80	0.033	0.030	0.513	-1.203	1.660
Article 9	17	80	0.820	0.436	2.070	-2.563	6.669

Source: Author’s own calculations based on Bloomberg data.

Table 4.2 shows the sample size for the second model with ESG score for 1 January 2023. There are 293 ETFs in the sample size. Similarly to the sample of the first model, Article 9 experience the highest average fund flow of 0.82% compared to Article 6 and 8 funds, over the period of 2019-2025. The standard deviation also shows high volatility for Article 9 funds as it is significantly higher than for Article 6 and 8 funds. This

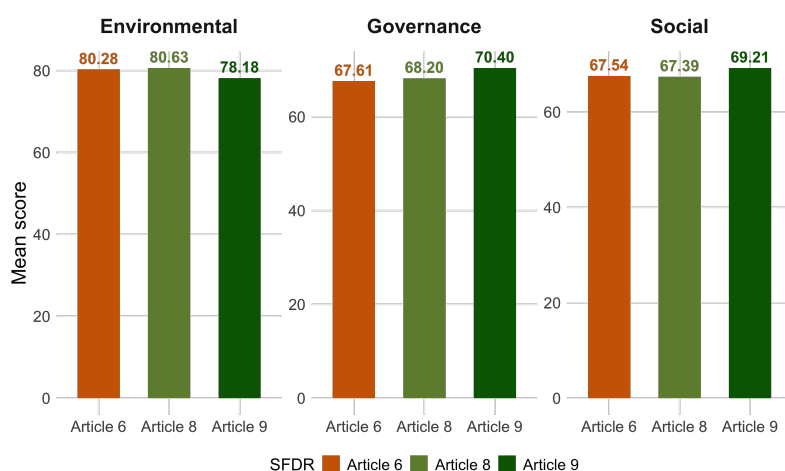
suggests that investor behaviour toward Article 9 funds is more volatile and less stable over time.

For this sample of funds the holdings-based ESG pillar scores provided by Bloomberg measure the sustainability profile of a fund by aggregating the Environmental, Social, and Governance performance of its underlying holdings. The Environmental pillar score reflects how the companies held by the fund rank on environmental aspects such as climate-related risks and resource management relative to their Bloomberg ESG peer groups. The Social pillar score captures the relative performance of the fund's holdings on social factors, including labor practices, human capital, and stakeholder relations. The Governance pillar score assesses the quality of corporate governance among the fund's holdings, such as board structures, oversight mechanisms, and shareholder rights. These three dimensions are combined into an overall ESG pillar score, which summarizes the fund's relative sustainability profile within the covered ESG universe. All scores are calculated as market-value-weighted percentile rankings of the fund's holdings and are reported on a 0–100 scale, where higher values indicate stronger ESG performance.

Figure 4.4 shows the independent ESG pillars, which were used to calculate the overall ESG scores for each fund. The individual pillar scores show that Article 9 funds have on average a lower Environmental score than Article 8 and Article 6 funds. A potential explanation for this could be that Article 9 funds obtain a broader sustainability objective, often balancing all three dimensions instead of focusing on one. A higher environmental score may be comparatively more straightforward for funds, as environmental performance is more directly linked to better observable and sector-specific characteristics. For instance, allocating capital to industries such as renewable energy will increase a fund's environmental rating. In contrast, social and governance dimensions are less transparent and more difficult to assess, as they depend on firm-level practices that are not always fully captured by available data. The overall ESG scores in Figure 4.5 were obtained by adding all three pillar scores by fund and then divide them by 3. This approach is considered appropriate, as there is currently no universally standardized methodology for calculating ESG scores. Figure 4.5 also illustrates the overall ESG score that were used in the second model. As expected Article 9 funds have the highest average ESG scores, but only by a marginal difference to Article 8 and Article 6. This limited dispersion signalizes that the SFDR classifications might not fully translate the economically meaningful differences in the underlying ESG characteristics. One possible explanation could be that there is no standardized calculation of ESG scores and therefore have low meaningful explanation for the SFDR classifications. Moreover, the findings are consistent with the issue that SFDR categories are more signals than strict indicators of sustainability. This lack

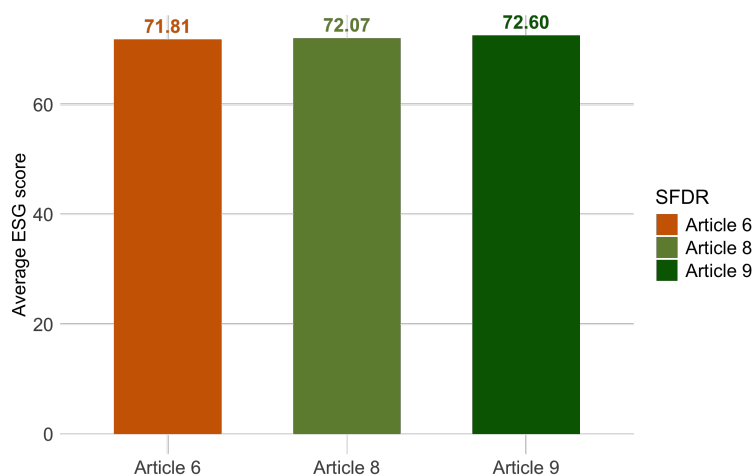
of clear differentiation may also help explain why the empirical analysis finds only weak evidence of systematic investor reallocation across SFDR categories. While this approach improves the empirical coverage of ESG-related effects, it necessarily shifts the focus from the initial SFDR introduction to a later adjustment phase. Accordingly, the results of the ESG interaction model should be interpreted as capturing investor responses during the reclassification and consolidation period of the SFDR framework, rather than as causal effects at the time of the regulation's initial entry into the financial markets. This limitation underscores the broader challenge of aligning regulatory timelines with data availability in empirical sustainable finance research.

Figure 4.4.: ESG pillars Environmental, Social and Governance scores by SFDR categorisation



Source: Based on Bloomberg data.

Figure 4.5.: Total ESG scores calculated by SFDR categorisation



Source: Author's own calculations based on Bloomberg data.

5. Empirical Strategy and Identification

The study employs a quantitative empirical research design to examine the impact of regulatory disclosure requirements on mutual fund flows. The analysis is based on a panel data set with covering investment funds (ETFs) on a monthly basis. The empirical strategy builds on panel econometric methods that allow for both time-invariant fund-specific characteristics and common time effects.

The empirical specification is derived from the theoretical framework presented in Chapter 2. Signaling Theory is operationalized through the SFDR classification and the implementation of the SFDR regulation. The Article 6, Article 8, and Article 9 classifications provide sustainability-related signals to investors, while the post-SFDR period captures the regulatory environment in which these signals became standardized and more prominent. The interaction between the SFDR classification and the post-SFDR dummy therefore measures whether investor allocation decisions changed after these regulatory signals were introduced. Investor Preferences cannot be observed directly in the available dataset. Instead, this thesis adopts a revealed-preference approach by inferring investor sustainability preferences from observed fund allocation decisions. Net fund flows therefore serve as a behavioural proxy for investor preferences. In the extended specification, ESG scores are included as fund-specific sustainability characteristics to examine whether differences in sustainability performance further explain these observed investment decisions.

The analysis employs a two-way fixed effects difference-in-differences model (DiD) that includes both fund-specific and time-specific effects. Fund specific effects control for all time-invariant characteristics of each individual fund. They absorb structural differences across funds that do not change over time but may influence fund flows. These can include asset class, domicile, investment style and more. By including fund fixed effects, the model compares each fund to itself over time, rather than across different funds. This is important in the SFDR setting, where Article 6, 8 and 9 funds differ systematically even before the regulation. Time fixed effects capture shocks and trends that affect all funds simultaneously in a given period. They control for macroeconomic, financial, and regulatory conditions that affect all funds simultaneously, including monetary policy changes, market-wide risks (such as the COVID-19 shock or inflationary periods), and economy-wide regulatory events like the introduction of the SFDR in March 2021. While the common time effect of the SFDR introduction is absorbed by time fixed effects, this does not affect identification. The empirical strategy

exploits cross-sectional differences in funds' exposure to the regulation—captured by interactions between SFDR classifications and the post-implementation period—thereby isolating the differential impact of the SFDR across fund categories.

In addition, a set of control variables is included to account for confounding factors related to fund size, performance, risk, and liquidity. Standard errors are clustered at the fund level to correct for serial correlation and heteroskedasticity.

To identify a causal effect of the regulatory intervention, a difference-in-difference framework with fund- and time-fixed effects was applied. The baseline specification is estimated using two-way fixed effects, accounting for fund-level and time-level unobserved heterogeneity. The model captures the interaction between SFDR categories and the post-SFDR period whether investor flows into Article 8 and Article 9 changed differently after the introduction of the SFDR compared to Article 6 funds. The correct model is shown in Listing 5.1.

5.1. Model 1: Policy Shock 2021

$$\text{Flow}_{it} = \alpha_i + \gamma_t + \beta_1 (\text{SFDR}_i \times \text{PostSFDR}_t) + \varepsilon_{it}, \quad (5.1)$$

$$\text{Flow}_{it} = \alpha_i + \gamma_t + \beta_8 (\text{Article8}_i \times \text{PostSFDR}_t) + \beta_9 (\text{Article9}_i \times \text{PostSFDR}_t) + X'_{it}\delta + \varepsilon_{it}. \quad (5.2)$$

The first empirical model in this thesis is designed to estimate the effect of the SFDR introduction in March 2021 on fund flows. Here, a dummy-variable (PostSFDR_t) was created to determine the pre- and post-effects of the SFDR introduction on fund flows. This model accounts fund-specific effects α_i and time-fixed effects γ_t . Article 6 funds are the baseline and standard errors are ε_{it} . $X'_{it}\delta$ are the control variables used in the Model 1 specification in 5.2 for the pre- and post-sfdr effects. They include the log (NAV), volatility (30 days) and the total net return.

5.2. Model 2: ESG Scores and Post-SFDR Fund Flows

$$\text{Flow}_{it} = \alpha_i + \gamma_t + \beta_8 (\text{Article8}_i \times \text{PostSFDR}_t) \quad (5.3)$$

$$+ \beta_9 (\text{Article9}_i \times \text{PostSFDR}_t) \quad (5.4)$$

$$+ \theta_6 (\text{Article6}_i \times \text{PostSFDR}_t \times \text{ESG}_{it}) \quad (5.5)$$

$$+ \theta_8 (\text{Article8}_i \times \text{PostSFDR}_t \times \text{ESG}_{it}) \quad (5.6)$$

$$+ \theta_9 (\text{Article9}_i \times \text{PostSFDR}_t \times \text{ESG}_{it}) + \varepsilon_{it}. \quad (5.7)$$

The second model used in this study incorporates ESG scores to examine how they influence fund flows once a fund has been classified. This model examines whether ESG scores help explain differences in fund flows during the reclassification period and after the implementation of the SFDR Level 2 Regulatory Technical Standards (RTS), which increased the availability and comparability of standardized sustainability information across all fund categories. As historical ESG scores prior to 2025 were unavailable, the Environmental, Social, and Governance pillar scores were used to estimate the overall ESG scores employed in the second model.

5.3. Accounting for Geopolitical Shocks (War Indicator)

As an additional robustness specification, interaction terms capturing the Russia–Ukraine war are included to assess whether the estimated SFDR effects remain robust after accounting for a major contemporaneous geopolitical shock. The baseline model already includes time fixed effects, which absorb common shocks affecting all funds over time, including the average market-wide impact of the war. The extended specification does not seek to estimate the overall effect of the Russia–Ukraine war itself. Instead, it introduces interaction terms between the SFDR classifications and a war dummy to examine whether Article 8 and Article 9 funds experienced differential changes in fund flows relative to Article 6 funds following the outbreak of the war. The war dummy is defined from March 2022 onwards, corresponding to the onset of Russia’s invasion of Ukraine. By accounting for this major external event, the extended specification assesses whether the estimated effects of the SFDR classification remain robust once broader macroeconomic and geopolitical developments are taken into consideration.

6. Main Findings and Economic Interpretation

This chapter presents the empirical results on how the Sustainable Finance Disclosure Regulation (SFDR) affected investor fund flows and the role of sustainability characteristics in shaping capital allocation. The results are organized in line with the regulatory timeline and the empirical strategy of the thesis, allowing for a step-by-step assessment of investor reactions to SFDR classifications and sustainability information. The analysis starts by examining the introduction of the SFDR in March 2021. Using difference-in-differences models with fund and time fixed effects, the first set of results focuses on how fund flows changed for Article 8 and Article 9 funds relative to Article 6 funds, following the regulation's implementation. This initial specification captures the early market response at a time when sustainability disclosures were still developing and when the interpretation of SFDR categories was not yet fully clear. The results therefore provide insight into whether investors immediately responded to the new sustainability labels or whether uncertainty around the regulation influenced capital flows, particularly for Article 9 funds. In the second step, the analysis extends the baseline models by including control variables for fund performance, risk, and size. Adding these controls helps to assess whether the observed flow effects are driven by SFDR classifications themselves or by underlying financial characteristics that are known to affect investor behaviour. This allows for a clearer evaluation of the robustness of the initial findings and ensures that the estimated effects are not simply reflecting differences in fund fundamentals. The final part of the analysis focuses on the period following the implementation of the SFDR Level 2 Regulatory Technical Standards (RTS) in January 2023. This period coincides with the broader reclassification phase of 2022–2023, during which sustainability disclosures became standardized and many funds were reclassified under the SFDR framework. During this phase, interaction models examine how ESG fund characteristics influence investor flows across SFDR categories. By using ESG scores that are available in this later period, the analysis assesses whether investors increasingly allocate capital based on measurable sustainability attributes rather than on regulatory labels alone. Overall, the results in this chapter provide evidence on how investors responded to the SFDR over time. They show how initial reactions to the regulation differ from behaviour observed once disclosures became more harmonized, allowing for a direct evaluation of the hypotheses developed in this thesis.

6.1. Baseline Effect of SFDR (DiD Estimates)

Table 6.1.: Two-way Fixed Effects DiD Model

Dependent Variable:	flow_pct
Model:	(1)
<i>Variables</i>	
sfdrArticle8 $\times$ post_sfdr	0.350 (0.259)
sfdrArticle9 $\times$ post_sfdr	-2.85** (1.41)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	27,316
Within R ²	0.00214
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. sfdrArticle8_i and sfdrArticle9_i are indicators for SFDR Article 8 and Article 9 funds, respectively. PostSFDR_t is a post-treatment dummy equal to one from March 2021 onward. All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table 6.1 reports estimates from a two-way fixed-effects difference-in-differences model assessing the impact of the Sustainable Finance Disclosure Regulation (SFDR) classifications on monthly fund flows, while controlling for fund- and time-fixed effects. This model answers the question if investor flows changed differentially across SFDR categories after the regulation, independent of fund-specific and market-wide factors. This is the Baseline DiD without control variables. The estimated coefficient of 0.35 implies that Article 8 funds experienced on average a 0.35 percentage points higher monthly net flow relative to Article 6 funds post-SFDR period. The effect has to be interpreted with caution, as the coefficient is not statistically significant. The estimated coefficient for the interaction term of Article 9 classified funds and the post-SFDR introduction dummy variable, implies that Article 9 funds experienced on average a -2.85 percentage points lower monthly net fund flow relative to Article 6 funds, after March 2021. This estimator is significant, which corresponds to the graph of Article 9 funds in figure 4.3 showing massive outflows at the SFDR introduction. To put this in an economical perspective, a fund with €1 billion assets under management would experience approximately €28.5 million lower monthly net inflows compared to Article

6 funds. While this represents a substantial effect at the individual fund level, it should be interpreted with caution. The estimate reflects an average across funds and may be influenced by other market developments and changing investor behaviour.

6.2. Differential Effects under the Ukraine War

Table 6.2.: Fixed Effects DiD Model with War-Dummy

Dependent Variable:	flow_pct
Model:	(1)
<i>Variables</i>	
sfdrArticle8 $\times$ post_sfdr	0.696*** (0.261)
sfdrArticle9 $\times$ post_sfdr	0.184 (1.17)
sfdrArticle8 $\times$ post_war	-0.439** (0.190)
sfdrArticle9 $\times$ post_war	-3.86*** (1.20)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	27,316
Within R ²	0.00429
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. *sfdrArticle8_i* and *sfdrArticle9_i* are indicators for SFDR Article 8 and Article 9 funds, respectively. *PostSFDR_t* is a post-treatment dummy equal to one from March 2021 onward. *PostWar_t* is a post-war (Russia-Ukraine war) dummy equal to one from March 2022 onward. All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table 6.2 shows the results of the Baseline Difference-in-Difference Model with a war dummy. The results indicate that both Article 8 and Article 9 funds experienced statistically significant lower monthly net fund flows relative to Article 6 funds following the start of the Russia–Ukraine war in March 2022. The inclusion of the war dummy materially affects the estimated SFDR coefficients, indicating that failing to control for a major geopolitical shock may bias the estimated regulatory effect. In the specification without the war control, the post-SFDR coefficient for Article 8 funds is not statistically

significant. However, once the war dummy is included, Article 8 funds exhibit a statistically significant relative inflow of approximately 0.70 percentage points per month compared to Article 6 funds ($p < 0.01$). At the same time, the war dummy interactions reveal economically meaningful relative outflows of 0.44 percentage points for Article 8 funds and 3.86 percentage points for Article 9 funds in the post-war period. This suggests that part of the post-SFDR dynamics in the previous model attributed to regulation may, in fact, reflect the differential impact of the Russia–Ukraine war across fund categories. By explicitly controlling for this shock, the regulatory effect can be better isolated and interpreted. Yarovaya & Mirza (2022) confirm that there was significant fund outflows for conflict- and NATO-states. Those outflows were persistent even after the initial attack had already happened. This shows that geopolitical risks can create market uncertainty which has to be included when controlling for effects at the introduction of a new regulatory framework. This shifts the impact on fund flows. What previously has been attributed to the SFDR introduction, was actually war-related capital reallocation dynamics. Because the model includes time fixed effects, the common impact of the Russia–Ukraine war is absorbed by these fixed effects. Therefore, only interaction terms between the war dummy and the SFDR classifications are included, allowing the analysis to estimate whether Article 8 and Article 9 funds experienced differential changes in fund flows relative to Article 6 funds following the outbreak of the war.

6.3. Role of Performance, Risk and Size

Table 6.3.: Two-way Fixed Effects Model with Control Variables

Dependent Variable:	flow_pct
Model:	(1)
<i>Variables</i>	
total_net_return_pct	0.114*** (0.029)
volatility	-0.001 (0.019)
log(NAV)	1.09 (0.683)
sfdrArticle8 $\times$ post_sfdr	0.345 (0.239)
sfdrArticle9 $\times$ post_sfdr	-2.61* (1.38)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	26,972
Within R ²	0.00483
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. *sfdrArticle8_i* and *sfdrArticle9_i* are indicators for SFDR Article 8 and Article 9 funds, respectively. *PostSFDR_t* is a post-treatment dummy equal to one from March 2021 onward. Control variables include total net returns in percent, fund volatility, and the logarithm of net asset value (NAV). All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table 6.3 reports the estimation results of a two-way fixed effects panel model assessing the impact of the introduction of the SFDR on relative fund flows, measured as fund flows scaled by lagged assets under management. The model includes fund-level and time fixed effects and controls for total net returns, volatility, and fund size, proxied by the logarithm of net asset value (NAV). Compared to the model estimators of 6.1, here the results show if the estimated effect of Model 1 is actually robust by including control variables. Standard errors are clustered at the fund level. The coefficients of the interaction terms between SFDR classifications and the post-SFDR period capture the differential change in fund flows for Article 8 and Article 9 funds relative to Article 6 funds after the introduction of the regulation. The estimated coefficient for Article 8 funds is positive (0.345), indicating a 0.35 percentage-point

higher relative fund inflow compared to Article 6 funds after the SFDR implementation. This is statistically insignificant, suggesting that Article 8 funds did not experience a statistically distinguishable change in relative flows compared to Article 6 funds following the SFDR implementation. The coefficient for Article 9 funds is negative (-2.61), which suggests that Article 9 funds experienced, on average, a 2.61 percentage-point lower relative fund flow compared to Article 6 funds in the post-SFDR period. The coefficient remains statistically significant at the 10% level. The estimate is again negative, consistent with Model 1 (Table 6.2), and its magnitude is very similar. This indicates that the negative effect on fund flows for Article 9 funds relative to Article 6 funds persists across model specifications. Regarding the control variables, total net returns are statistically significant determinants of relative fund flows. A one percentage point increase in monthly net returns is associated with an increase in relative fund inflows of approximately 0.11 percentage points. Volatility, and fund size ($\log(\text{NAV})$) do not experience statistically significant effects on relative fund flows. This suggests that, within funds over time, short-term volatility dynamics and size effects do not meaningfully explain variations in investor flows once fixed effects are included. In particular, the significant return coefficient implies that flows are strongly driven by contemporaneous performance in this specification. For both models is the within R^2 very low, which is expected in two-way fixed effects models where a large share of variation is absorbed by fund and time fixed effects. Importantly, this does not undermine the validity of the estimates, as the identification relies on within-fund variation around the regulatory intervention rather than overall explanatory power. Although the SFDR interaction terms remain statistically significant in both models, the weaker significance after adding fund controls suggests that the estimated effects are sensitive to model specification and may partly reflect fund-specific characteristics rather than a purely regulatory response.

To examine whether investor behaviour depends on previous fund performance rather than contemporaneous returns, the model was re-estimated using one-period lagged total net returns. This specification addresses potential simultaneity concerns, as investors are expected to base their investment decisions on information available from the previous period. The results, reported in Appendix Table A.1, remain qualitatively unchanged.

6.4. Role of Performance, Risk and Size during Geopolitical Shocks (War Indicator)

Table 6.4.: Two-way Fixed Effects Model with Control Variables and War-Dummy

Dependent Variable:	flow_pct
Model:	(1)
<i>Variables</i>	
total_net_return_pct	0.114*** (0.029)
volatility	-0.001 (0.019)
log(NAV)	0.957 (0.678)
sfdrArticle8 $\times$ post_sfdr	0.671*** (0.245)
sfdrArticle9 $\times$ post_sfdr	0.375 (1.22)
sfdrArticle8 $\times$ post_war	-0.415** (0.191)
sfdrArticle9 $\times$ post_war	-3.80*** (1.23)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	26,972
Within R ²	0.00703
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. *sfdrArticle8_i* and *sfdrArticle9_i* are indicators for SFDR Article 8 and Article 9 funds, respectively. *PostSFDR_t* is a post-treatment dummy equal to one from March 2021 onward. *PostWar_t* is a post-war (Russia-Ukraine war) dummy equal to one from March 2022 onward. Control variables include total net returns in percent, fund volatility, and the logarithm of net asset value (NAV). All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table 6.4 reports the two-way fixed effects DiD model including control variables and the war dummy, defined consistently with the baseline specification in Table 6.2. The results show that, following the onset of the Russia–Ukraine war, both Article 8 and Article 9 funds experienced statistically significant lower monthly net fund flows relative to Article 6 funds. In particular, the interaction terms with the war dummy indicate a

decrease of 0.42 percentage points for Article 8 funds and a substantially larger decrease of 3.80 percentage points for Article 9 funds. For the post-SFDR interaction terms the results differ from those presented in Table 6.3. The coefficient for Article 8 $\times$ post-SFDR is positive and highly statistically significant, suggesting that Article 8 funds experienced, on average, 0.67 percentage points higher net fund flows compared to Article 6 funds following the implementation of SFDR. In contrast, the interaction coefficient for Article 9 and the post-SFDR dummy is not statistically significant, indicating no robust difference in net fund flows relative to Article 6 funds once control variables and the war dummy are included. This remains in line with the findings in Table 6.2. Regarding the control variables, total net return remains positive and highly statistically significant, implying that higher returns are associated with increased fund inflows, and thus confirming that investors continue to respond strongly to performance. Volatility and fund size ($\log(\text{NAV})$) do not exhibit statistically significant effects in this specification.

An important observation here is that Article 9 funds experience statistical significance and a larger magnitude compared to Article 8 funds relative to Article 6 funds across model specifications without the war dummy. Once the war dummy is included the effect goes to the interaction term of Article 9 funds and the war dummy. While the standalone Article 9 coefficient loses statistical significance, the interaction term remains economically sizeable and statistically significant across model specifications. This suggests that the previously observed differences in fund flows for Article 9 funds may be partly associated with the period following the outbreak of the Russia–Ukraine war rather than with the SFDR classification alone. Although the magnitude of the estimated coefficients varies across specifications, the economic interpretation remains broadly similar. The consistency of the Article 9-related effects across alternative model specifications strengthens confidence in the results and suggests that the observed patterns are not driven by a particular model specification.

6.5. ESG as a Potential Mechanism in the Reclassification Phase

While the baseline specifications identify the introduction of the SFDR in March 2021, the inclusion of ESG pillar scores requires a separate empirical framework. ESG pillar data is only available from October 2022 onward and is therefore not suitable for analyzing the initial policy shock without introducing look-ahead bias. Industry evidence documents substantial reclassification activity during 2022, particularly between Article

8 and Article 9 funds, driven by regulatory uncertainty and evolving supervisory guidance rather than changes in investor preferences. To capture the period in which SFDR classifications became more stable and economically meaningful, the post-SFDR indicator in these models is defined from January 2023 onwards. This timing coincides with the implementation of the SFDR Level 2 Regulatory Technical Standards (RTS), which introduced standardized sustainability disclosure requirements and improved the availability and comparability of ESG information, while also marking the consolidation of fund classifications. Therefore, the January 2023 threshold allows for a economical assessment of investor responses once sustainability labels had become more credible and informative.

Table 6.5.: Two-way Fixed Effects Model with ESG Scores

Dependent Variable: Model:	flow_pct (1)
<i>Variables</i>	
sfdrArticle8 $\times$ post_sfdr_3	-3.51 (2.65)
sfdrArticle9 $\times$ post_sfdr_3	3.68 (24.6)
post_sfdr_3 $\times$ ESG_SCORE_2023	-0.006 (0.025)
sfdrArticle8 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	0.044 (0.036)
sfdrArticle9 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	-0.103 (0.347)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	23,298
Within R ²	0.00438
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. sfdrArticle8_i and sfdrArticle9_i are indicators for SFDR Article 8 and Article 9 funds, respectively. PostSFDR_t is a post-treatment dummy equal to one from January 2023 onward. ESG_SCORE_2023 denotes the holdings-based fund ESG score measured in January 2023. All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table 6.5 shows the model estimation with the ESG Score during the reclassification period in 2022 to 2023. The *post_sfdr* indicator captures the period in which SFDR

reporting requirements became fully applicable and fund reclassifications were largely completed, making this window particularly relevant for assessing whether environmental characteristics gained salience for investor allocation decisions. The positive coefficient on the triple interaction term indicates that, after the reclassification period, Article 8 funds with higher ESG scores experienced a slightly more favorable change in net fund flows relative to Article 6 funds. Quantitatively, a one-unit increase in the ESG score is associated with an additional 0.044 percentage points increase in monthly net fund flows for Article 8 funds relative to Article 6 funds in the post-reclassification period, conditional on fund and time fixed effects. Comparing this with the example already provided for the baseline effect, for an Article 8 fund with €1 billion in assets under management, a one-point higher ESG score would correspond to approximately €440,000 higher monthly net fund flows in the post-SFDR period relative to an Article 6 fund. However, as the estimated coefficient is statistically insignificant, this economic magnitude should be interpreted with caution and does not provide evidence of a systematic effect of ESG scores on fund flows. This implies that the sensitivity of fund flows to ESG scores is higher for Article 8 funds compared to Article 6 funds after the regulatory change. The interaction coefficient between the post-SFDR period and the ESG score for Article 9 funds is also not statistically significant. However, the very large standard error indicates a high degree of estimation uncertainty, suggesting that the effect is estimated imprecisely. This is likely attributable to the relatively small number of Article 9 funds in the sample, which limits the statistical power to detect meaningful effects. A one-unit increase in ESG scores is associated with an 0.103 percentage-point lower monthly net fund flow for Article 9 funds relative to Article 6 funds in the post-reclassification period. This negative coefficient likely reflects that ESG scores are not standardized across providers and are not directly linked to SFDR fund classifications, limiting their informational content for investors even within Article 9 funds. Furthermore, all post-reclassification interaction terms involving the ESG score are statistically insignificant, indicating a less relevant economic effect on fund flows. Table A.2 in the Appendix presents the results of the model from Section 6.5 including a war dummy. Compared with the baseline specification, the estimated coefficients change in magnitude, while none remain statistically significant. This suggests that controlling for the Russia–Ukraine war weakens the observed relationships, indicating that broader geopolitical uncertainty may have influenced fund flows alongside the implementation of the SFDR.

The finding of the missing statistical significance of ESG-related coefficients suggests that ESG scores do not exert an independent effect on investor behaviour beyond the SFDR classification. As Dranev et. al (2024) already found in their paper, that investors react more to ESG-signaling instead of granular ESG scores. This could be

one possible explanation to the non-existing significance of ESG-related coefficients. The regulatory categorization of funds has more impact on the allocation of capital than the detailed ESG scores. Furthermore, limited variation in ESG scores within SFDR categories, combined with potential measurement error, reduces the ability to identify a statistically significant relationship. This may also indicate that investors preferences for sustainability were already reflected, in pre-existing allocations, leaving marginal influence of ESG scores on fund flows.

6.6. SFDR and ESG Interactions with Control Variables

Table 6.6.: Two-way Fixed Effects Model with ESG Scores and Control Variables

Dependent Variable: Model:	flow_pct (1)
<i>Variables</i>	
total_net_return_pct	0.131*** (0.032)
volatility	0.005 (0.021)
log(NAV)	1.04 (0.732)
sfdrArticle8 $\times$ post_sfdr_3	-2.55 (2.66)
sfdrArticle9 $\times$ post_sfdr_3	3.07 (24.2)
post_sfdr_3 $\times$ ESG_SCORE_2023	-0.010 (0.025)
sfdrArticle8 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	0.031 (0.036)
sfdrArticle9 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	-0.091 (0.341)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	23,006
Within R ²	0.00778
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. *sfdrArticle8_i* and *sfdrArticle9_i* are indicators for SFDR Article 8 and Article 9 funds, respectively. *PostSFDR_t* is a post-treatment dummy equal to one from January 2023 onward. *ESG_SCORE_2023* denotes the holdings-based fund ESG score measured in January 2023. Control variables include total net returns, volatility, and the logarithm of net asset value (NAV). All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table 6.6 reports estimates from a two-way fixed effects difference-in-differences model that examines how SFDR fund classifications interact with ESG scores and standard fund characteristics during the 2023 reclassification period with control variables. The triple interaction terms between SFDR categories, the post-period dummy, and ESG scores are likewise statistically insignificant across all fund categories. This suggests that higher ESG scores do not amplify or mitigate investor responses to SFDR classifications during the reclassification period. In other words, investors do not appear to condition their capital allocation decisions on within-category ESG score variation once the standardized disclosure regime is in place. Among the control variables, total net returns exhibit a positive and statistically significant association with fund flows. A one-percentage-point increase in monthly net returns is associated with an average increase of approximately 0.13 percentage points in fund flows, consistent with return-chasing behaviour by investors. In contrast, volatility and fund size ($\log(\text{NAV})$) do not show a statistically significant relationship with flows once fund and time fixed effects are included, suggesting that short-term investor allocation decisions are primarily driven by recent performance rather than risk or size effects in this specification. Overall (Table 6.3 and Table 6.4), the results imply that investor behaviour during the SFDR reclassification period is driven more by conventional performance signals than by ESG score differentials, even within sustainability-labeled fund categories. The low within R^2 is typical for high-frequency fund flow models and reflects substantial idiosyncratic variation in monthly flows rather than a lack of identification. Importantly, the inclusion of fund and time fixed effects ensures that the estimates are identified from within-fund changes over time, isolating the incremental role of ESG information and SFDR classifications. The inclusion of ESG scores reduces the statistical significance of the SFDR interaction terms, suggesting that ESG characteristics capture part of the variation in fund flows that would otherwise be attributed to regulatory classification. This indicates that ESG scores may act as a transmission channel through which SFDR influences investor behaviour. Table A.2. in the Appendix shows the results for the model as in Table 6.5 including a War-dummy and Table A.3. in the Appendix examines the ESG Scores with post-SFDR-, war-dummy and control variables. The estimated coefficients of the control variables remain largely unchanged in both magnitude and statistical significance. Although the direction of the estimated coefficients is consistent with the baseline model, some changes in magnitude are observed. Most notably, the interaction term between the SFDR dummy and Article 9 funds increases substantially but remains statistically insignificant. Overall, the inclusion of the war dummy does not change the main conclusions of the ESG score analysis.

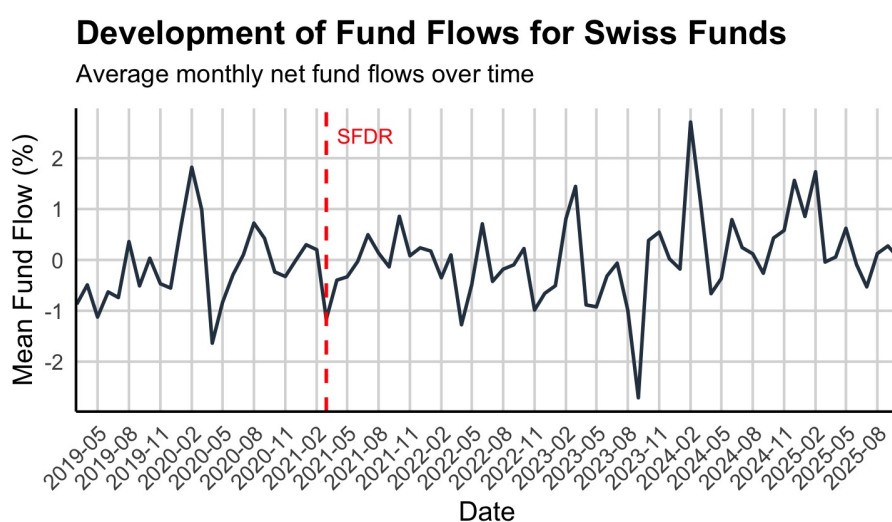
7. Robustness: Non-SFDR Comparison Market (Switzerland)

To ensure the validity of my findings, a robustness check was conducted with a sample of 36 funds registered in Switzerland. These funds are dominated in EUR to provide better comparability. Furthermore, they are not classified under the Sustainable Finance Disclosure Regulation, meaning they are not distributed in the European Union. This offers a better comparison of the fund flows between disclosed and non disclosed funds.

7.1. SFDR and ESG Interactions

For the Swiss robustness sample, only funds denominated in EUR are included to ensure comparability with the main sample of EU-domiciled funds. Using a common currency mitigates distortions arising from exchange rate fluctuations and allows fund flows to be interpreted consistently across groups. Swiss funds are not subject to the Sustainable Finance Disclosure Regulation (SFDR), as the regulation applies exclusively to financial market participants within the European Union. As a result, these funds are not classified into Article 6, 8, or 9 categories and serve as an appropriate external benchmark that is unaffected by the regulatory framework. The resulting sample is relatively small, comprising 36 funds, which reflects both the restriction to EUR-denominated products and the more limited availability of comparable Swiss funds.

Figure 7.1.: Development of Swiss funds



Source: Author's own calculations based on Bloomberg data.

Figure 7.2 presents the development of average monthly net fund flows for Swiss funds, with the introduction of the SFDR in March 2021 indicated by a vertical line. The series shows considerable volatility over time, with no clear trend or persistency in fund flows around the regulatory implementation date. As Swiss funds are not subject to the SFDR, the absence of a structural break supports the interpretation that observed changes in EU fund flows are not driven by common time effects, but are more likely associated with the regulation itself. Nevertheless, the relatively small sample size of Swiss funds warrants caution, as it may limit the ability to detect more subtle effects. Those funds undergo the same selection procedure as the treatment group funds of Germany.

7.2. Model Specification for Robustness Sample

Table 7.1.: Summary Statistics of Swiss Fund Flows

Months	Mean Flow (%)	Median	SD	Min	Max
80	-0.008	-0.022	0.806	-2.71	2.71

Source: Author's own calculations based on Bloomberg data.

Table 7.1 presents summary statistics for monthly fund flows of Swiss funds and complements the graphical analysis in Figure 7.1. The mean flow is close to zero (-0.008%), while the median is slightly negative (-0.022%), indicating no systematic trend in fund flows over time. At the same time, the relatively high standard deviation (0.806) and the wide range between -2.71% and $+2.71\%$ highlight the substantial volatility observed in the data, consistent with the pronounced fluctuations in the time series plot. Together, these findings support the conclusion that Swiss fund flows are primarily driven by short-term dynamics rather than structural breaks, as no clear shift is observed around the introduction of the SFDR in March 2021. Nevertheless, the small sample size warrants a cautious interpretation of these results.

The models in 7.1 and 7.2 are used to estimate the effect of the SFDR classification on Swiss funds.

$$\text{Flow}_{it} = \alpha_i + \gamma_t + \beta_1 \text{post_sfdr}_t + \varepsilon_{it} \quad (7.1)$$

$$\text{Flow}_{it} = \alpha_i + \gamma_t + \beta_1 \text{post_sfdr}_t + \beta_2 \text{Volatility}_{it} + \beta_3 \text{Return}_{it} + \beta_4 \log(\text{NAV}_{it}) + \varepsilon_{it} \quad (7.2)$$

The `post_sfdr` dummy variable stays included, while we don't control for time fixed effects anymore. This gives the model the freedom to examine the policy effect of SFDR on Swiss funds. The estimated post-SFDR coefficient should not be interpreted as a

causal post-regulatory effect, but rather as capturing common post 2021 developments and potential spillover effects of the Sustainable Finance Disclosure Regulation affecting Swiss fund over the analysis period.

Table 7.2.: Fixed-Effect Model For Swiss Funds after SFDR Introduction

Dependent Variable:	flow_pct
Model:	(1)
<i>Variables</i>	
post_sfdr	-0.179 (0.199)
<i>Fixed-effects</i>	
Fund	Yes
<i>Fit statistics</i>	
Observations	2,826
Within R ²	0.00019
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). PostSFDR_{*t*} is a post-treatment dummy equal to one from March 2021 onward. All specifications include fund fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

The post_sfdr dummy variable is retained in the specification, while time fixed effects are excluded. This approach allows the Model in 7.2 to identify the policy impact of the SFDR more directly, as the temporal variation associated with the regulation is no longer absorbed by time fixed effects. Consequently, the estimated coefficient of -0.179 percentage points on post_sfdr captures the overall effect of the regulatory change on Swiss funds, which are not subject to the SFDR framework, thereby providing a clearer assessment of potential spillover.

This specification can be estimated for the Swiss sample, as these funds are not subject to the SFDR regulation. Consequently, the post_sfdr dummy does not represent a treatment indicator, but rather captures a common time shift affecting all funds simultaneously. While this time variation may include indirect or spillover effects of the regulation, it also reflects a broad range of concurrent macroeconomic and financial market developments. Therefore, the coefficient cannot be interpreted as a causal effect of the SFDR. In contrast, in the EU sample, the implementation of SFDR constitutes a common policy shock affecting all funds at the same point in time. In the absence of time fixed effects, the post_sfdr dummy would capture not only the effect of the regulation but also all unobserved common time-varying factors, such as macroeconomic

conditions, post-pandemic recovery dynamics, or geopolitical events. This leads to omitted variable bias, making the estimated coefficient difficult to interpret. Including time fixed effects is therefore essential in the EU sample to isolate the relative impact of the regulation across fund categories.

Table 7.3.: Fixed-Effect Model For Swiss Funds with Control Variables

Dependent Variable:	flow_pct
Model:	(1)
<i>Variables</i>	
post_sfdr	-0.442* (0.246)
volatility	0.026* (0.015)
total_net_return	-0.0001 (0.0006)
log(NAV)	1.56** (0.745)
<i>Fixed-effects</i>	
Fund	Yes
<i>Fit statistics</i>	
Observations	2,826
Within R ²	0.00147
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). PostSFDR_t is a post-treatment dummy equal to one from March 2021 onward. Control variables include total net returns, volatility, and the logarithm of net asset value (NAV). All specifications include fund fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

To further assess the robustness of the results, an extended specification including control variables and time fixed effects is estimated, as can be seen in the Model 7.3. This model provides additional insights into the determinants of fund flows in the Swiss sample. The coefficient on post_sfdr remains weakly significant, suggesting a modest change in fund flows after March 2021. However, like the model specification before, given that Swiss funds are not subject to the SFDR and that the dummy coincides with a range of concurrent macroeconomic and financial developments, this effect cannot be interpreted as causal. Rather, it likely reflects residual time variation not fully captured by the model. Among the control variables, fund volatility exhibits a weakly significant effect, indicating that higher risk is associated with changes in investor flows, consistent with investors adjusting their allocations in response to perceived risk. In contrast, the logarithm of net asset value is statistically significant with a coefficient of 1.56

percentage points at the 5% level, suggesting that larger funds attract larger fund flows, potentially due to scale effects, investor trust, or visibility in the market. Overall, these results highlight that fund-specific characteristics play a more robust role in explaining flow variation than the post-SFDR time indicator in the Swiss sample.

The robustness check using Swiss funds provides useful insights into whether the estimated SFDR effects in the EU sample are driven by the regulation itself or by broader time trends. In the baseline specification without control variables, the `post_sfdr` coefficient is negative but statistically insignificant, suggesting that, in a setting without direct regulatory treatment, there is no clear evidence of a systematic shift in fund flows around the SFDR implementation date. This supports the interpretation that simple time variation alone does not generate strong effects in the absence of additional controls. However, once control variables are included, the `post_sfdr` coefficient becomes weakly significant while remaining negative. This indicates that, after accounting for fund-specific characteristics such as risk (volatility), size ($\log(\text{NAV})$), and performance (total net return), there is some evidence of a modest decline in flows over time even in the non-treated Swiss funds sample. The positive and weakly significant coefficient on volatility suggests that higher-risk funds tend to attract slightly higher inflows. More importantly, the highly significant and positive coefficient on $\log(\text{NAV})$ indicates that larger funds systematically receive higher inflows, pointing to strong scale or reputation effects. In contrast, total net return appears economically negligible and statistically insignificant, implying that past performance does not play a meaningful role in explaining flows in this sample. When compared to the main EU results, an important distinction emerges. In the EU sample, the `post_sfdr` effect is typically interpreted in interaction with SFDR classifications and is more closely tied to regulatory treatment. In contrast, the Swiss results suggest that even in the absence of direct regulation, weak time effects can appear once controls are introduced. This implies that part of the observed post-SFDR dynamics in the EU may reflect broader market developments, such as macroeconomic conditions or shifts in investor behaviour, rather than the regulation alone. Overall, the Swiss robustness check reinforces the importance of controlling for fund characteristics and common shocks when estimating policy effects. While the negative `post_sfdr` coefficient in Switzerland is smaller and less robust than in the EU sample, its presence suggests that caution is warranted when attributing all observed flow changes in the EU exclusively to SFDR. Instead, the results point to a combination of regulatory effects and underlying market-wide dynamics shaping fund flows during the sample period.

8. Limitations

This study is subject to several limitations, primarily related to data availability and sample composition. The empirical analysis relies on data obtained from Bloomberg, which, while comprehensive, exhibits important constraints that limit the scope of the research. For net fund flows only Exchange Traded Funds (ETFs) were available. Investor behaviour, fund management, and the role of sustainability preferences can differ between passively and actively managed investment products. Consequently, the result of this study should not be interpreted to be relevant for mutual funds and the external validity of the conclusions is limited to the ETF market. A key limitation arises from the incomplete availability of ESG data. In particular, consistent ESG scores are not available for the period prior to 2022. Given that the Sustainable Finance Disclosure Regulation (SFDR) came into force in March 2021, this creates a temporal mismatch between the regulatory event and the availability of ESG-related variables. As a result, it is not possible to directly incorporate ESG scores into a single unified model capturing the immediate pre- and post-SFDR period. To address this constraint, the analysis is divided into two separate model specifications. The first is focusing on the overall effect of SFDR classification on fund flows, and another examining the role of ESG scores in a later period when ESG data becomes available. While this approach allows for meaningful insights, it limits the ability to draw fully integrated conclusions regarding the interaction between ESG characteristics and regulatory classification over the entire sample period. In this context, it is important to mention that fund reclassifications did not occur simultaneously across all funds. Therefore, the post-SFDR dummy variable has only limited explanatory power, as it cannot fully capture the staggered timing of these reclassifications. Another important limitation concerns the composition of the fund sample. In particular, Article 9 funds, that are representing the highest sustainability classification under SFDR, are significantly underrepresented, with only 18 observations in the dataset. This relatively small sample size may lead to increased estimation uncertainty, as reflected in higher variance and reduced statistical power. Coefficient estimates for Article 9 funds may be more sensitive to outliers and short-term fluctuations in fund flows. This issue is especially relevant when interpreting econometric results, as the observed effects may not be fully representative of the broader population of highly sustainable funds. Finally, it should be noted that data quality issues, such as missing observations, reporting inconsistencies, and differences in ESG scoring methodologies may further affect the precision of the results. Although several data-cleaning procedures and robustness checks are implemented to mitigate

these concerns, they cannot be entirely eliminated. Overall, while the dataset provides a valuable basis for analyzing the relationship between SFDR classification and fund flows, these limitations should be taken into account when interpreting the results. Future research could benefit from more comprehensive ESG datasets covering longer time horizons, as well as a larger and more balanced sample of funds across SFDR categories.

9. Discussion

This chapter discusses the empirical findings in relation to the research questions, hypotheses, and theoretical framework developed throughout this thesis. The analysis examined whether the implementation of the Sustainable Finance Disclosure Regulation (SFDR) affected the net fund flows of Article 8 and Article 9 funds relative to Article 6 funds and whether ESG scores contributed to explaining investor allocation decisions following the implementation of the regulation. In general, the findings suggest that the SFDR classification framework is associated with changes in investor behaviour. However, the magnitude, direction, and statistical significance of these effects vary across the different model specifications, highlighting the importance of considering both regulatory developments and broader market conditions.

The first research question asked whether the implementation of SFDR in March 2021 affected net fund flows of Article 8 and Article 9 funds relative to Article 6 funds. The baseline specification provides evidence that this was indeed the case. While the estimated effect for Article 8 funds is positive but economically small and statistically insignificant, Article 9 funds experience a negative, economically meaningful, and statistically significant change in net fund flows relative to Article 6 funds following the introduction of SFDR. Although the estimated coefficients are expressed as percentages of assets under management and should therefore be interpreted relative to fund size, their economic implications become substantial for larger funds. For example, a fund with €1 billion in assets under management would experience approximately €28.5 million lower monthly net inflows compared to an otherwise similar Article 6 fund following the implementation of SFDR. This illustrates that even seemingly modest percentage effects can translate into economically meaningful differences in capital allocation. Consequently, investors appear to have reacted considerably more strongly to the highest sustainability classification than to Article 8 funds.

The inclusion of control variables does not materially alter this conclusion. The coefficient for Article 8 funds remains positive, small, and statistically insignificant, whereas the coefficient for Article 9 funds remains negative, of similar magnitude to the baseline

specification, and continues to exhibit weak statistical significance. The stability of these estimates across the baseline models suggests that the observed relationship is not driven by differences in fund performance, risk, or size alone. Consequently, the findings provide **partial support for Hypothesis 1**, which proposed that the implementation of the SFDR would increase net fund flows for Article 8 and Article 9 funds relative to Article 6 funds. Across the baseline specifications, Article 8 funds exhibit consistently positive but economically modest and statistically insignificant coefficients, suggesting that any increase in investor demand following the introduction of the SFDR was limited and cannot be distinguished from random variation. However, once the Russia–Ukraine war is explicitly accounted for, the estimated post-SFDR effect for Article 8 funds becomes positive and statistically significant. This indicates that the geopolitical shock masked part of the regulatory effect in the baseline specification and suggests that the SFDR may indeed have contributed to relatively stronger investor demand for Article 8 funds after controlling for this major external event. By contrast, Article 9 funds do not exhibit the hypothesized increase in fund flows. In the baseline and control specifications, the estimated post-SFDR effects are consistently negative, with the baseline model indicating a statistically significant decline relative to Article 6 funds. When the war interactions are introduced, the post-SFDR coefficient for Article 9 funds becomes positive but statistically insignificant, while the interaction between the war dummy and Article 9 funds is large, negative, and statistically significant. This pattern suggests that the initially negative post-SFDR effect for Article 9 funds is largely absorbed by the adverse impact of the Russia–Ukraine war rather than reflecting the regulatory framework alone. Taken together, these findings indicate that the SFDR appears to have had a more favorable effect on investor allocations toward Article 8 funds than toward Article 9 funds, while the strongest sustainability classification remained considerably more sensitive to adverse market conditions. Overall, the evidence therefore supports Hypothesis 1 only partially, as the expected increase in post-SFDR fund flows is observed primarily for Article 8 funds after accounting for the geopolitical shock, whereas no consistent evidence of higher relative fund flows is found for Article 9 funds.

From a theoretical perspective, these findings are consistent with signaling theory (Spence, 2002). By introducing a standardized sustainability classification, SFDR reduced information asymmetries and provided investors with an easily observable sustainability signal. Rather than relying on complex sustainability disclosures, investors could use the Article 6, Article 8, and Article 9 classifications as simplified indicators when making investment decisions. The substantially stronger reaction observed for Article 9 funds suggests that investors attached particular importance to the category associated with the highest sustainability requirements. At the same time, uncertainty surrounding the interpretation and credibility of newly introduced classifications during

the early implementation phase may also have contributed to changes in investor behaviour.

Nevertheless, the estimated SFDR effects should not be interpreted as purely causal. Although the empirical strategy controls for unobserved fund heterogeneity and common time effects, other contemporaneous events may also have influenced investor decisions during the sample period.

To account for one of the most important external events, the empirical analysis incorporates interaction terms capturing the effects of the Russia–Ukraine war to assess whether the estimated SFDR effects remain robust after accounting for a major contemporaneous geopolitical shock. Since the model includes time fixed effects, the common market-wide impact of the war is absorbed by these fixed effects. Therefore, the interaction terms identify whether Article 8 and Article 9 funds experienced changes in fund flows relative to Article 6 funds following the outbreak of the war.

The inclusion of the war interactions substantially changes the interpretation of the SFDR results. Most notably, the previously negative and statistically significant coefficient for Article 9 funds becomes positive, considerably smaller in magnitude, and statistically insignificant. At the same time, the interaction between Article 9 funds and the war period is negative, economically large, and statistically significant across both specifications including the war interactions. Interestingly, the magnitude of this coefficient is comparable to the negative Article 9 effect observed in the baseline models without the war interaction. This pattern suggests that a considerable part of the variation initially attributed to SFDR may instead reflect broader macroeconomic developments associated with the Russia–Ukraine war.

The results for Article 8 funds reveal a different pattern. Once the war interactions are introduced, the post-SFDR coefficient becomes larger and statistically significant, while the interaction between Article 8 funds and the war period is negative and statistically significant. These findings indicate that the positive effect associated with SFDR for Article 8 funds was partly offset by the subsequent geopolitical shock. In contrast to Article 9 funds, whose estimated SFDR effect largely disappears once the war is considered, Article 8 funds continue to exhibit a positive post-SFDR effect even after accounting for the war. This suggests that the regulatory classification may have affected investor behaviour differently across the two sustainability categories.

Taken together, these findings indicate that the Russia–Ukraine war represented an important competing shock during the sample period. The evidence suggests that broader macroeconomic uncertainty, inflationary pressures, and increased financial market volatility influenced investor allocation decisions alongside the introduction of SFDR. The evidence supports that the investor preference channel becomes weaker once this major external shock is taken into account. Although investors appear to respond

to sustainability classifications, the results indicate that sustainability preferences alone cannot fully explain the observed changes in fund flows.

The second research question examined whether ESG scores contributed to explaining investor allocation decisions in the period following the implementation of the SFDR Level 2 disclosure framework, when sustainability information became more standardized and comparable across funds. To address this question, ESG score interactions were incorporated into the empirical analysis. Overall, the explanatory power of ESG scores is limited. Across both ESG model specifications, neither the interaction terms nor the post-SFDR ESG effect are statistically significant. Although some coefficients change in direction and magnitude relative to the baseline models, these changes remain statistically insignificant and therefore do not provide robust evidence that ESG scores systematically influence investor behaviour after the implementation of SFDR.

Accordingly, the empirical findings **do not support Hypothesis 2**, which proposed that funds with higher ESG scores would experience stronger net fund inflows following the implementation of SFDR. Instead, the results suggest that investors place greater emphasis on the regulatory classifications themselves than on the underlying ESG metrics. Several explanations may account for these findings. First, the Article 6, Article 8, and Article 9 classifications provide a simple and highly visible sustainability signal, whereas ESG scores are considerably more complex and less transparent for many investors. This interpretation is closely aligned with signaling theory, according to which investors frequently rely on observable and easily interpretable signals when making decisions under imperfect information. Second, ESG ratings differ substantially across providers because of methodological differences, potentially reducing their comparability and credibility. Third, the availability of ESG score data only from 2022 onwards considerably shortens the estimation period and reduces the statistical power of the empirical analysis.

This findings are still consistent with Dranev et al. (2024), who find that investors respond to whether an ETF complies with ESG criteria, while differences in the magnitude of ESG scores provide limited explanatory power for fund flows. Similarly, the result for the second research question and hypothesis provides no evidence that the relationship between granular ESG scores and fund flows differs significantly for Article 8 or Article 9 funds relative to Article 6 funds. Together with the results for the first research question, this pattern is consistent with the interpretation that broad and easily observable sustainability classifications may be more relevant for investor allocation decisions than differences in underlying ESG scores.

The control variables provide additional insights into investor behaviour. Total net return remains positive and statistically significant across all model specifications in which it is included, indicating that recent fund performance continues to play an

important role in explaining capital flows. By contrast, volatility remains statistically insignificant throughout the analysis despite minor changes in coefficient direction across specifications. Similarly, fund size, measured by the logarithm of net asset value, consistently exhibits a positive but statistically insignificant relationship with fund flows. While this finding is consistent with the notion that larger funds benefit from greater visibility and investor confidence, the results do not provide sufficient statistical evidence to confirm such an effect within the present sample.

The robustness check using Swiss funds provides an additional perspective on the main findings. Since these funds are not subject to the SFDR framework, they serve as a useful benchmark for distinguishing regulatory effects from broader market developments. In the baseline specification, the post-SFDR coefficient is negative, economically small, and statistically insignificant, suggesting no meaningful change in fund flows following the introduction of SFDR. Once the control variables are included, the post-SFDR coefficient remains negative and economically small but becomes only weakly statistically significant ($p < 0.1$). Compared with the main EU sample, the estimated effect remains substantially smaller and therefore of limited economic relevance. Among the control variables, fund size, measured by the logarithm of net asset value, exhibits a positive and statistically significant relationship with fund flows, indicating that larger Swiss funds generally attracted higher inflows. Volatility shows a positive but economically small coefficient and is only weakly statistically significant, whereas total net return remains economically negligible and statistically insignificant. Overall, the Swiss sample provides only limited evidence of systematic changes in fund flows over the post-SFDR period. Since these funds were not directly affected by the regulation, the comparatively weak and inconsistent findings support the interpretation that at least part of the effects observed for the EU sample can be attributed to the SFDR classification framework rather than to common international market developments alone. Nevertheless, the relatively small number of Swiss funds included in the analysis limits the robustness and generalisability of this comparison.

Overall, the empirical evidence suggests that SFDR influenced investor behaviour primarily through its standardized classification framework rather than through the underlying ESG characteristics of funds. The findings provide partial support for the proposed theoretical framework. In particular, the results are consistent with signaling theory, indicating that investors respond more strongly to simple and standardized sustainability classifications than to detailed ESG information. By contrast, the evidence supporting the investor preference channel is less pronounced once the Russia–Ukraine war is taken into account, demonstrating that sustainability preferences cannot fully explain investor allocation decisions during the sample period. Although several estimated effects are economically meaningful, particularly for Article 9 funds, they

remain sensitive to model specification and broader macroeconomic developments. Consequently, the findings should be interpreted with appropriate caution. Nevertheless, the results suggest that SFDR has contributed to shaping capital allocation decisions by increasing transparency and standardizing sustainability information, while also highlighting the importance of considering external economic shocks when evaluating the effectiveness of sustainable finance regulation.

10. Conclusion

This thesis examined whether the implementation of the Sustainable Finance Disclosure Regulation (SFDR) influenced investor allocation decisions by affecting net fund flows across SFDR classifications. Using a panel dataset of German equity ETFs between 2019 and 2025, the analysis investigated changes in fund flows of Article 8 and Article 9 funds relative to Article 6 funds following the introduction of SFDR. In addition, the study assessed whether ESG scores provide additional explanatory power for investor behaviour beyond the regulatory classifications. Regarding the first research question, the empirical results indicate that the implementation of the SFDR was associated with changes in fund flows across the different SFDR classifications. The baseline models show that Article 9 funds experienced a negative, economically meaningful, and statistically significant change in net fund flows relative to Article 6 funds, whereas the estimated effects for Article 8 funds remained comparatively small and statistically insignificant. Although the estimated coefficients are expressed as percentages of assets under management, their economic implications are substantial for large investment funds. For example, a fund with €1 billion in assets under management would experience approximately €28.5 million lower monthly net inflows than an otherwise comparable Article 6 fund following the implementation of SFDR. Overall, these findings provide partial support for Hypothesis 1. Across all specifications, the estimated post-SFDR effect for Article 8 funds remains positive and becomes statistically significant once the Russia–Ukraine war is explicitly accounted for. This suggests that failing to control for the geopolitical shock may have obscured part of the estimated regulatory effect in the baseline models. In contrast, Article 9 funds do not exhibit the hypothesized increase in fund flows. While the baseline specifications indicate a significant decline in relative fund flows, the post-SFDR effect becomes statistically insignificant after controlling for the war, as the negative impact is largely captured by the interaction between the war dummy and Article 9 funds. This suggests that the initially negative post-SFDR effect reflects not only the implementation of the SFDR but also the substantial influence of the geopolitical shock on investor allocation decisions.

However, the results should be interpreted with appropriate caution. Once the interaction terms capturing the Russia–Ukraine war are incorporated into the analysis, the previously significant Article 9 post-SFDR effect becomes positive, considerably smaller in magnitude, and statistically insignificant. At the same time, the interaction between Article 9 funds and the war period remains negative, economically large, and statistically significant across model specifications. In contrast, Article 8 funds exhibit a positive and statistically significant post-SFDR effect after accounting for the war, while their interaction with the war period is negative and significant. These findings suggest that broader macroeconomic and geopolitical developments influenced investor behaviour alongside the implementation of SFDR. Consequently, part of the variation initially attributed to the regulation may instead reflect changing market conditions during the sample period. The second research question examined whether ESG scores contributed to explaining investor allocation decisions following the implementation of SFDR Level 2 requirements. Although the inclusion of ESG scores changes the magnitude and, in some cases, the direction of individual coefficients, neither the ESG interaction terms nor the post-SFDR and ESG effects are statistically significant across the estimated models. Therefore, the empirical evidence does not support Hypothesis 2. Instead, the findings suggest that investors respond more strongly to the standardized SFDR classifications than to differences in the underlying ESG scores. This result is consistent with signaling theory, which argues that investors rely on simple and observable signals when making decisions under imperfect information. The robustness analysis using Swiss funds further supports the interpretation of the main findings. Since Swiss funds are not directly subject to SFDR, they provide a useful benchmark for distinguishing regulatory effects from broader market developments. Although the estimated post-SFDR effects are generally negative, they remain economically small and are either statistically insignificant or only weakly significant. Compared with the EU sample, the overall evidence is considerably weaker, suggesting that at least part of the observed changes in fund flows can be attributed to the SFDR framework rather than solely to common international market trends. Nevertheless, the relatively small Swiss sample limits the robustness and generalizability of this comparison. In general, this thesis provides evidence that the SFDR classification framework has influenced investor behaviour, particularly with respect to Article 9 funds relative to Article 6 funds. At the same time, the findings indicate that the observed effects are sensitive to broader macroeconomic conditions and cannot be interpreted as purely causal. Furthermore, there is little evidence that ESG scores independently explain investor allocation decisions beyond the regulatory classifications. These results suggest that investors place greater emphasis on standardized sustainability labels than on more detailed sustainability metrics. Overall, the findings are most consistent with

signaling theory. Investors appear to respond more strongly to the standardized SFDR classifications than to the underlying ESG characteristics of funds, suggesting that the regulatory labels themselves serve as an important sustainability signal. By contrast, the evidence supporting the investor preference theory is less conclusive. Once broader macroeconomic developments, particularly the Russia–Ukraine war, are taken into account, sustainability preferences alone do not fully explain the observed changes in fund flows.

Several limitations should be acknowledged. First, the analysis focuses exclusively on German equity ETFs, whereas a substantial part of the existing literature examines actively managed mutual funds. As a consequence, the findings should not be generalized beyond the ETF market without caution. Second, the relatively small number of Article 9 funds limits statistical precision. Third, the staggered timing of fund reclassifications following the implementation of SFDR and the simultaneous occurrence of major external events, most notably the Russia–Ukraine war, complicate the isolation of the regulatory effect despite the robustness analyses conducted. Future research could examine larger international ETF samples, investigate the long-term effects of SFDR as the regulatory framework continues to mature, and explore whether future improvements in ESG reporting standards strengthen the relationship between sustainability information and investor allocation decisions. Such analyses would contribute to a better understanding of how sustainable finance regulation influences capital allocation and whether increasingly standardized ESG information becomes more relevant for investors over time.

A. Additional Tables and Figures

Table A.1.: Two-way Fixed Effects Model with control variables and lagged Total Net Returns

Dependent Variable:	flow_pct
Model:	(1)
<i>Variables</i>	
lag_total_net_return_pct	0.124*** (0.030)
volatility	0.003 (0.018)
log(NAV)	0.973 (0.694)
sfdrArticle8 $\times$ post_sfdr	0.354 (0.236)
sfdrArticle9 $\times$ post_sfdr	-2.76* (1.44)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	26,628
Within R ²	0.00546
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. *sfdrArticle8_i* and *sfdrArticle9_i* are indicators for SFDR Article 8 and Article 9 funds, respectively. *PostSFDR_t* is a post-treatment dummy equal to one from March 2021 onward. Control variables include total net returns, volatility, and the logarithm of net asset value (NAV). All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table A.2.: Two-way Fixed Effects Model with ESG Scores and War-Dummy

Dependent Variable: Model:	flow_pct (1)
<i>Variables</i>	
sfdrArticle8 $\times$ post_sfdr_3	-2.30 (2.17)
sfdrArticle9 $\times$ post_sfdr_3	6.22 (10.8)
sfdrArticle8 $\times$ post_war	-1.59 (3.80)
sfdrArticle9 $\times$ post_war	-2.16 (31.1)
post_sfdr_3 $\times$ ESG_SCORE_2023	-0.013 (0.026)
post_war $\times$ ESG_SCORE_2023	0.008 (0.042)
sfdrArticle8 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	0.022 (0.030)
sfdrArticle9 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	-0.110 (0.154)
sfdrArticle8 $\times$ post_war $\times$ ESG_SCORE_2023	0.029 (0.052)
sfdrArticle9 $\times$ post_war $\times$ ESG_SCORE_2023	-0.007 (0.436)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	23,298
Within R ²	0.00560

Clustered fund standard-errors in parentheses

*Signif. Codes: ***: 0.01, **: 0.05, *: 0.1*

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. *sfdrArticle8_i* and *sfdrArticle9_i* are indicators for SFDR Article 8 and Article 9 funds, respectively. *PostSFDR_t* is a post-treatment dummy equal to one from January 2023 onward. *ESG_SCORE_2023* denotes the holdings-based fund ESG score measured in January 2023. *PostWar_t* is a post-war (Russia-Ukraine war) dummy equal to one from March 2022 onward. All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

Table A.3.: Two-way Fixed Effects Model with ESG Scores, War-Dummy and Control Variables

Dependent Variable: Model:	flow_pct (1)
<i>Variables</i>	
total_net_return_pct	0.130*** (0.032)
volatility	0.005 (0.021)
log(NAV)	1.07 (0.739)
sfdrArticle8 $\times$ post_sfdr_3	-2.17 (2.17)
sfdrArticle9 $\times$ post_sfdr_3	7.14 (10.9)
sfdrArticle8 $\times$ post_war	-0.518 (3.78)
sfdrArticle9 $\times$ post_war	-4.22 (29.8)
post_sfdr_3 $\times$ ESG_SCORE_2023	-0.014 (0.026)
post_war $\times$ ESG_SCORE_2023	0.004 (0.043)
sfdrArticle8 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	0.020 (0.030)
sfdrArticle9 $\times$ post_sfdr_3 $\times$ ESG_SCORE_2023	-0.122 (0.156)
sfdrArticle8 $\times$ post_war $\times$ ESG_SCORE_2023	0.014 (0.051)
sfdrArticle9 $\times$ post_war $\times$ ESG_SCORE_2023	0.024 (0.417)
<i>Fixed-effects</i>	
Fund	Yes
Date	Yes
<i>Fit statistics</i>	
Observations	23,006
Within R ²	0.00891
<i>Clustered fund standard-errors in parentheses</i>	
<i>Signif. Codes: ***: 0.01, **: 0.05, *: 0.1</i>	

Notes: The dependent variable is monthly net fund flow in percent (*flow_pct*). Article 6 funds serve as the reference category. *sfdrArticle8_i* and *sfdrArticle9_i* are indicators for SFDR Article 8 and Article 9 funds, respectively. *PostSFDR_t* is a post-treatment dummy equal to one from January 2023 onward. *ESG_SCORE_2023* denotes the holdings-based fund ESG score measured in January 2023. *PostWar_t* is a post-war (Russia-Ukraine war) dummy equal to one from March 2022 onward. Control variables include total net returns, volatility, and the logarithm of net asset value (NAV). All specifications include fund and time fixed effects. Standard errors are clustered at the fund level and reported in parentheses.

List of Abbreviations

ESG	Environmental, Social, and Governance
DiD	Difference-in-Difference
SFDR	Sustainable Finance Disclosure Regulation
EU	European Union
NAV	Net Asset Value
AUM	Assets Under Management
SRI	Socially Responsible Investments
RTS	Regulatory Technical Standards

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