Seeing is believing: The impact of corporate scandal documentaries on stock prices

ABSTRACT

We investigate the behavior of stocks after the launch of Netflix's scandal documentaries on the corresponding firms. We document a significant fall in prices after the release of the documentaries that is not reversed in the weeks following their launch, resulting in an average cumulative abnormal return of -15.34% three months after the event day. We also find a significant increase in stocks' traded volumes and Google Search Volumes for the corresponding firms after the release of the documentaries. Moreover, we report a significant contemporaneous and lagged relation between stocks' returns and traded volumes in the event window that is not seen before the release day. Taken together, these results suggest that the fall in stock prices is driven by individual investors. Our findings have significant implications for corporate misconduct and how market participants price this behavior.

1. Introduction

Ethical investors are driven by a commitment to align financial goals with social and environmental values and prioritize investments in companies with strong ethical practices (Schueth, 2003; Renneboog,et al., 2008). Their motivations reach from the alignment with moral values and the desire for positive societal impact to the intention to gain long-term financial benefits, be it in the form of reduced risks or additional returns (Brzeszczynski and McIntosh, 2014; Borgers and Pownall, 2014; Fauser and Utz, 2021).

When it comes to stock investments, a major strategy of ethical investors is to employ exclusion criteria in the portfolio construction to avoid certain industries or companies conflicting with their values (Davies and Wesep, 2018). Common exclusion criteria target companies in sectors that are controversial or associated with a negative environmental impact (e.g. tobacco, weapons, fossil fuels), but besides that also comprise behavior-related aspects such as poor labor practices, human rights violations or corruption (Bassen et al., 2021). Many investors rely on sustainable investment funds that strictly follow and implement specific exclusion guidelines and objectives for ethical investing. However, many investors additionally also hold the shares of individual companies. (Ding et al., 2018; Bassen et al., 2021).

In the context of corporate scandals, the observed decline in share prices subsequent to the revelation of misconduct (as highlighted by Kittel and Stango, 2014; Ding et al., 2020; Dyck et al., 2023) raises questions about the contributing factors. It remains uncertain whether this decrease can be partially ascribed to the withdrawal of ethical investors. Alternatively, the negative performance may merely mirror an increased perception of risk, anticipating potential future penalties from regulators and policymakers. To shed light on this debate, one avenue for exploration involves examining how stock prices react to documentary portrayals of specific corporate misconduct cases. Given that documentaries inherently rely on well-documented historical facts, it seems unrealistic to attribute significant stock reactions to heightened risk perceptions post-documentary release. Consequently, potential price declines might more consistently be explained by ethical investors divesting in response to the revelation of misconduct, aligning their actions with a moral dissociation from the firms' practices.

This paper is the first to examine the market reaction of stocks to Netflix documentaries dedicated to scandals of the corresponding companies. We observe that after such documentaries are published the stock prices fall over a period of sixty days when measured by the cumulated abnormal return (CAR). As the information revealed by the documentaries is not new to the markets, a CAR of around zero can be expected when following the efficient market hypothesis. Therefore, the fact that there are significantly negative CAR values after the release of scandal documentaries, is an indication that

ethical investors are selling their shares after watching such a documentary, which makes such programs an important means of informing and raising awareness among investors.

A documentary about a corporate scandal presupposes that the scandal has happened some time ago and has already come to the public's attention. Many scandals have a negative impact on a company's share price (Kittel and Stango, 2014; Ding et al., 2020; Dyck et al., 2023). However, according to the market efficiency hypothesis, it can be assumed that the relevant negative information is priced into the share price quite quickly (Jory et al., 2015), in particular at the time of the release of a documentary.

Based on publicly traded firms featured in scandal documentaries on Netflix, we conduct an analysis of twelve films to investigate the influence on stock returns. We define an event window based on the plausible assumption that divestment decisions related to Netflix documentaries occur after viewers have watched them. Cumulative abnormal returns are employed to assess the influence of scandal documentaries on stock returns of the sampled firms. The empirical analysis compares the risk and return of individual stocks before and after the release of the corresponding documentary, revealing a significant decrease in mean returns and Sharpe ratios. When adjusting for idiosyncratic risk, the contrast becomes more pronounced, with the portfolio's performance declining significantly in the event window. Abnormal returns analysis shows negative returns for sampled stocks throughout the event window, becoming statistically significant four weeks after the documentary launch, suggesting a gradual and economically relevant incorporation of scandal information into stock prices driven by uninformed investors.

In line with our argument, if the documented price decline is tied to divestment actions by ethical investors, it is reasonable to hypothesize that this reaction is propelled by individual investors. This supposition is grounded in the idea that retail investors, being less informed, were likely unaware of the company's misbehavior before viewing the documentary. Consistent with this premise, we observe a significant increase in the volume of shares traded in the days following the documentary's release (t-stat = 8.50). This behavior aligns with the patterns seen in Google Search Volumes for the names of the sampled firms (t-stat = 6.67). Additionally, our findings indicate that the volume of shares traded negatively predicts the future change in the price of the sampled firms after the release day, whereas no such relation is identified before the documentary's release. Taken together, these trends lend support to the notion that the decline in prices is indeed influenced by the actions of individual investors.

Due to the small sample size, we conduct several in-depth analyses and robustness checks in order to make sure that the results are not driven by random fluctuations. First, we calculate abnormal volume data and can corroborate that the negative abnormal returns are indeed associated with higher trading volume. Second, we investigate the returns of competitor firms during the corresponding

periods to see that the stocks of peer companies do not exhibit a similar performance. Third, we perform classical robustness checks such as testing for single firm bias and accounting or confounding events to rule out that the results are driven by these two possible effects. Altogether the empirical evidence stands robustly that Netflix documentaries lead to additional trading volume driven by the sell side, which is a strong indication that ethically oriented investors start shunning the share of a company focused by a scandal documentary even though the corresponding information is already known.

This paper's findings contribute to at least three literature streams. Firstly, within the realm of corporate social responsibility, it is well-established that firms embroiled in corporate scandals experience a notable decrease in share prices in the days following the scandal's release (Kittel and Stango, 2014; Jory et al., 2015; Gianetti and Wang, 2016). Existing literature offers two main explanations: a) an increase in risk perception due to potential operational restrictions from regulators and policymakers, resulting in a rational price adjustment of shares (Fauser and Utz, 2021); b) negative screening from ethical investors (Davies and Wesep, 2018; Bassen et al., 2021). While these explanations are not mutually exclusive, our results lend support to the latter, focusing on already well-documented misbehaviors that essentially rule out the risk increase explanation.

Second, the literature on sustainable investing has been reporting different findings towards the effectiveness of negative screening (Humphrey and Tan, 2014; Davies and Wesep, 2018; Ding et al., 2020), a practice that is normally operationalized through boycotts led by institutional investors and NGOs (Ding et al., 2020; Bassen et al, 2021). Our results contribute to this field by suggesting that individual ethical investors can play a crucial role in negative screening motivated by corporate misconduct. Our findings indicate that scandal documentaries could act as significant catalysts for organic boycotts led by individuals.

Lastly, our findings contribute to the growing literature on the role on the relevance of individual investors in financial markets. Recent studies highlight that retail investors are important agents in stock markets, providing liquidity during turbulent periods (Ozik et al., 2021), improving market informativeness (Li and Li, 2021) and enhancing efficiency (Boehmer et al., 2020, Farrel et al., 2022; Welch, 2022). Our results further this strand of literature by indicating that individual ethical investors can also serve as agents that influence and improve companies' behavior.

2. Data and Methodology

2.1 Sample of Documentaries

Our sample is composed of publicly traded firms with scandal documentaries launched by Netflix. Our choice to focus on Netflix is justified by its unique position as the leading firm in the streaming industry, as it is available in over 190 countries, with almost double the number of users compared to Amazon Prime, which is ranked second in this market (Stoll, 2023). Given its prominence, there is anecdotal evidence of the capacity of Netflix's products to influence consumer behavior. For example, after the launch of "*The Queen's Gambit*", one of the most successful original Netflix, series, sales of chess boards on eBay increased by 215 percent (Fazio, 2020). Similarly, eBay registered an increase of 43% in empire line dress and similar Regency-era products (Myers, 2021) after the launch of the "*Bridgerton*" series, Netflix's most watched show in 2021. Given that our aim is to investigate the influence of scandal documentaries on investors' behavior, ultimately affecting the stock returns of related firms, focusing on Netflix shows provides a suitable fit in this respect, based on the reach of this platform.

A natural concern in a study of this nature is to avoid hand-picking events that meet the researchers' ex-ante expectations. To avoid this bias, we stablished the following criteria to filter the Netflix documentaries that make up our sample:

- The documentary focuses on a public traded company, since our goal is to evaluate the impact on firms' stocks prices.
- The documentary addresses a scandal, given that we aim to investigate whether investors penalize the unethical behavior of firms.
- The documentary is novel, as we aim to capture the surprise effect of a broad spectrum of unsophisticated investors who are plausibly unaware of the scandal prior to the launch of the documentary.
- The documentary focuses on firms, rather than on an industry, given that investors must be able to clearly identify the firm behind the unethical behavior so that any hypothetical influence their investment behavior can be gauged.

Employing these criteria, we filter twelve documentaries, which are listed in Table 1. The table also shows the name of the firm featured in the documentary, the launch date, and a brief description of the corresponding scandal.[1] It is important to mention that in two cases (i.e., *Valeant Pharmaceutical* and *Metropolitan Edison*), the documented firm was acquired in the years after the scandal in question. In those cases, we analyze the returns of the acquiring companies, assuming that less informed investors could link the firm involved in the scandal to its purchaser. We regard this as

---

[1]All the documentaries were released globally on the same date. Two of them ("Betting on Zero" and "The Social Dilema") debuted at restricted festivals. For these two events, the release date in the table refers to Netflix platform.

a debatable supposition, but, in the worst scenario, this choice the scandal documentaries do not affect the returns of corresponding stocks, which could weaken our results.

Table 1: Scandal documentaries list

The table lists the scandal documentaries launched by Netflix that meet the criteria described in Subsection 2.1. In addition to the name of the documentary, the table informs the corresponding firm, the release date of the documentary and a brief description of its content. In two of the documentaries, the scandal firms were eventually acquired. In those cases, the list informs the acquiring company. See the corresponding notes for details.

Documentary	Firm	Launch	Description
Betting on Zero	Herbalife	2017-06-21	Investigates the allegation that Herbalife is a pyramid scheme
Dirty Money - 1st Season	Volkswagen	2018-01-26	Hard NOX emission scandal
	HSBC	2018-01-26	Money laundering for the Sinaloa Cartel, Hezbollah and other terrorist organizations
	Bausch Health Companies Inc[1]	2018-01-26	Controversies surrounding drug price hikes and the use of a specialty pharmacy for the distribution of its drugs
Dirty Money - 2nd Season	Wells Fargo	2020-03-11	Former employees detail the ruthless and fraudulent practices that fueled its growth.
	Formosa Plastics Corporation	2020-03-11	Residents of small Texas town Point Comfort were eager to welcome Formosa Plastics — until toxic chemicals began to take a toll on their community.
The Social Dilemma	Facebook	2020-09-01	The dangerous impact of social media on democracy and humanity as a whole
The Social Dilemma	Twitter	2020-09-01	
The Billion Dollar Code	Google	2021-10-07	Google sue for patent infringement on Google Earth
Downfall: The Case Against Boeing	Boeing	2022-02-18	How Boeing's alleged priority of profit over safety could be responsible for two catastrophic accidents
White Hot: The Rise & Fall of Abercrombie & Fitch	Abercrombie & Fitch Co	2022-04-19	The brand was involved in several controversies for being considered discriminatory and exclusionary
Meltdown: Three Mile Island	FirstEnergy Corp.[2]	2022-05-05	Metropolitan Edison accident on Three Mile Island

Notes:

[1]*BHC acquired Valeant Pharmaceuticals*

[2]*First Energy acquired Metropolitan Edison*

2.2 Event-study windows

We employ an event-study design as our empirical approach. In this case, the event window includes the release day (D0) and the following 60 working days (D+60). Even though this can be seen as an arbitrary definition, we advocate that it is based on the plausible assumption that any divestment decision resulting from the documentary could only be made after watching its content, and that most of the audience would consume the show in the days following its release. To substantiate this intuition, we researched the attention paid to the documentaries listed in Table 1 on Google Trends, using their names as the search terminology worldwide. Figure 1 shows the average Google Search Volumes (GSV) during the 60 working days before and after the release day. The chart clearly reveals a spike in online searches on D+1 and D+2 that slowly decreases over the following days. By the end of the event window, the searches remain at a higher level than during the days before the release day.

Figure 1: Google Search Volumes of the scandal documentaries before and after the launch of the documentary

The figure displays the average Google Search Volumes for the names of the scandal documentaries covered by the study. In the chart, D0 is the documentary's release date. The GSV is informed by Google in relative terms, with the largest number of searches peaking at 100.
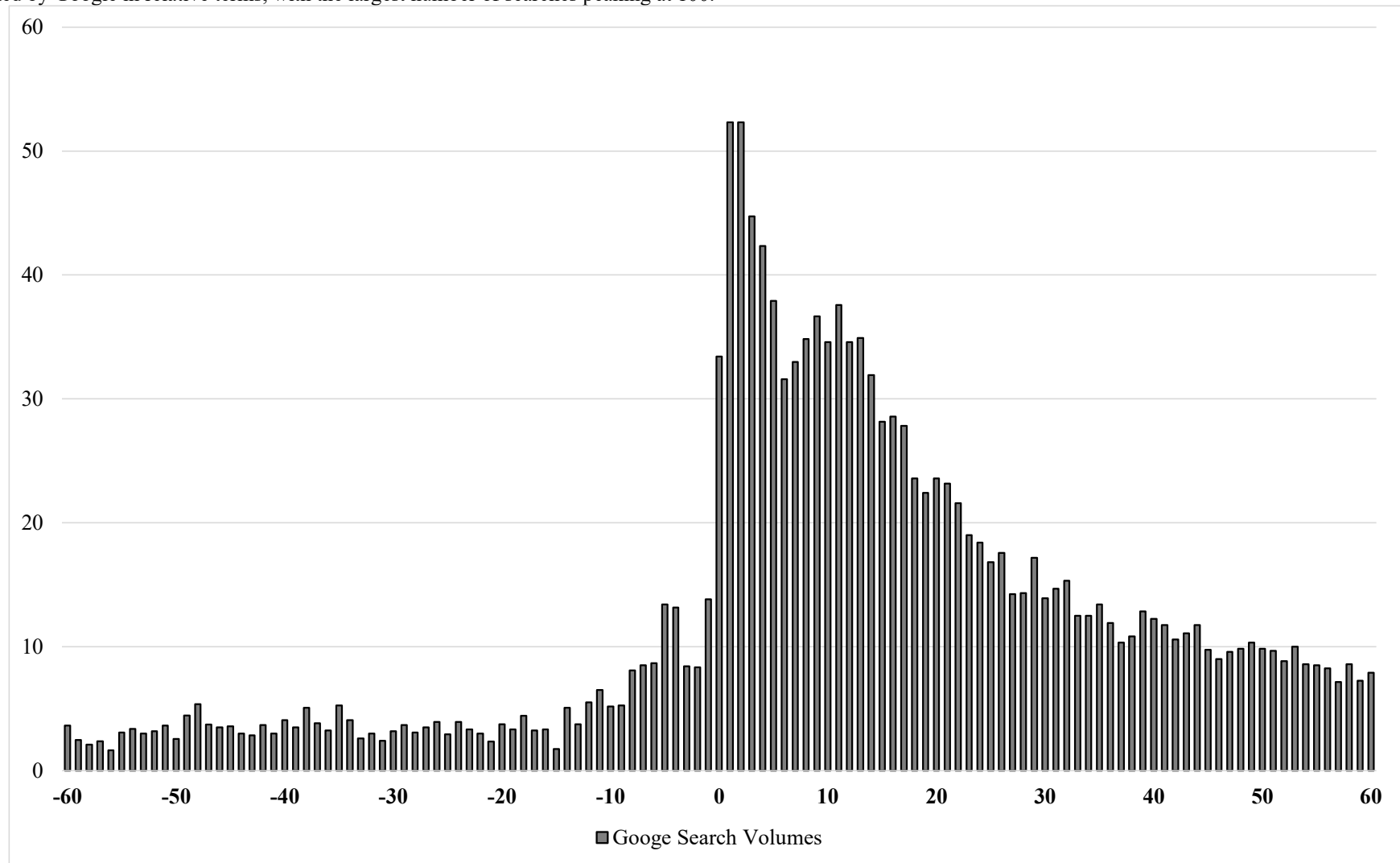
A more attentive reader could observe an increase in the documentaries' GSV during the 10-day period before their release, which could be explained by the press and social media coverage on the documentaries due to their imminent release. Since this coverage would naturally mention the scandal involved in each documentary, as well as the firms in question, it is reasonable to expect some abnormal behavior of the corresponding stocks before a show's release, owing to trades by speculative investors aiming to profit from the "new" information. To address this issue, we also employ alternative event windows, beginning 20 (D-20) and 5 (D-5) working days before the event day and found consistent results, as discussed in the next subsection.

2.3 Abnormal returns

We employ two alternative specifications of abnormal returns ($AR_{i,t}$) that are commonly used in event studies in the field of financial economics (MacKinlay, 1997), as expressed in Equations (1) and (2), aiming to avoid our results being driven by the way we define this variable.

$$AR_{i,t} = R_{i,t} - R_{M,t} \tag{1}$$

$$AR_{i,t} = (R_{i,t} - R_{f,t}) - (\hat{b}_i MRP_t + \hat{s}_i SMB_t + \hat{h}_i HML_t + \hat{r}_i RMW_t + \hat{c}_i CMA_t) \tag{2}$$

where $R_{i,t}$ is the stocks' return on day t, $R_{M,t}$ is the return of the local market index on day t, both calculated using the log-differences of the corresponding prices, $R_{f,t}$ is the local risk-free rate on day t, and MRP, SMB, HML, RMW and CMA are local risk factors in accordance with the Fama-French 5-factors model. The estimates of the risk factors' coefficients were obtained from a window ranging from D-125 to D-21.[2] The data for stocks prices and market indexes were obtained from Yahoo Finance, while the data for local risk factors and risk-free rates were accessed on Kenneth French's website.[3] In the specific case of Volkswagen and Formosa Plastic, the market indexes used were DAX (Germany) and TWSE50 (Taiwan), respectively, whereas the risk factors and risk-free rates for these companies are from Fama-French 5-factors data for Europe and Asia, excluding Japan (ex-Japan), respectively, both of which are also available on French's website.

---

[2] The choice to end the estimates on Day 21 was made to avoid biases with regard to stock returns from speculative investors trading on the rumors concerning the documentaries in the days running up to and following their release, as addressed in the analysis of Figure 1.
[3] See https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

The abnormal returns of each stock i were then accumulated during the event-window, resulting in the cumulative abnormal return (CAR) of the respective stock as:

$$CAR_{i,T} = \sum_{t=s}^{T} AR_{i,D+t} \qquad (3)$$

Here s denotes the relative starting date of the cumulation, i.e. the event date ($s=0$) in the main case or -5 resp. -21 in case of the side specifications, and T the ending date of the cumulation (at most $T=60$).

The average (over all n stocks) of these cumulative abnormal returns $ACAR_T = \frac{1}{n}\sum_{i=1}^{n} CAR_{i,T}$ is used to test the hypothesis. In this case, an ACAR that is statistically negative indicates that the corresponding stocks, on average, were negatively influenced by the launch of the documentary. To test the significance of the results, the t-statistic is calculated following Boehmer et al. (1991) and Mackinlay (1997) as expressed by Equation 4:

$$t_T = \frac{ACAR_T}{\sigma_{AR}} \times \frac{1}{\sqrt{T-s}} \qquad (4)$$

where $ACAR_T$ is the average cumulative abnormal returns of the sampled firms on a given day T of the event window, σ_{AR} is the estimated standard deviation of the average abnormal returns of the sampled firms during the estimation window, and $T-s$ is the number of days in the event window until day T. To enable a better understanding, Figure 2 exhibits the estimation window adopted in the paper, together with the three previously mentioned specifications of the event window.

Figure 2: Estimation window and event window definitions
The figure displays the definitions for the estimation window (D-125 to D-21) and three alternative specifications for the event window used in the analysis of the abnormal returns of the sampled firms. In the figure, the event date (D0) refers to the documentary's release date.
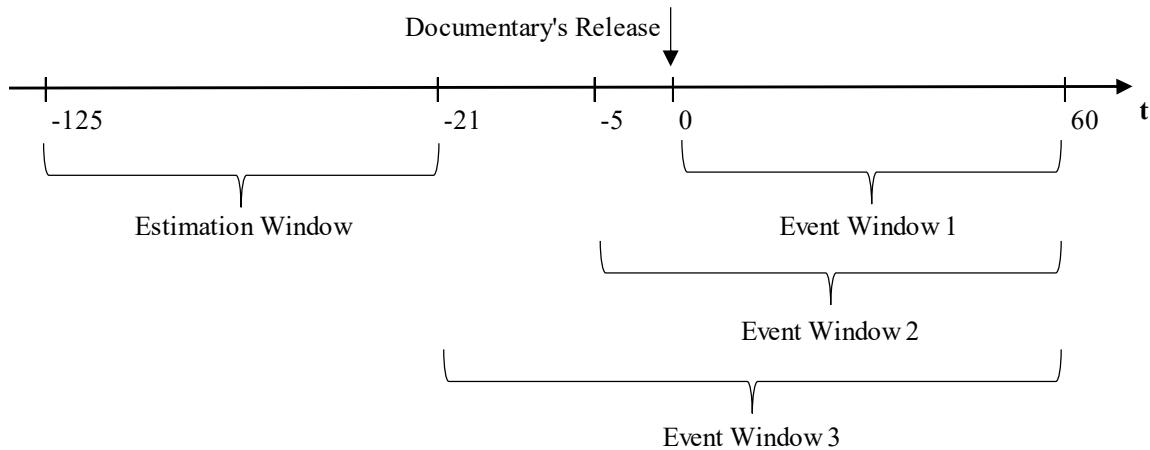
3. Scandal documentaries and stock returns

We begin the empirical analysis by comparing the risk and return of individual stocks during the sixty days before and after the event (post-event window). To this end, Table 2 shows the mean returns, standard deviations, and Sharpe ratios for each stock, as well as for the equally weighted portfolio (last column) during these periods. While during the sixty days before the event only two stocks (Wells Fargo (WFC) and Formosa Plastic (FORM)) exhibit negative mean returns, in the post-event window nine stocks displayed negative returns. In this context, the performance of Abercrombie & Fitch Co (ANF) is particularly striking, with a mean daily return of -1.20%. Since our data sample is small, it might be supposed that our results were driven by this particular stock. To address this concern, we excluded the stock and found that the main results remained observable. Section 6 contains a more detailed discussion of this procedure.

When adjusting stocks' returns to their volatility, the contrast mentioned above is even more striking, since the portfolio's performance declines in the event window, as its mean return is significantly lower than during the days before the release (t-stat = -2.04%).

**Table 2**: Stocks' performance before and after the release

The table shows the mean return, standard deviation, and Sharpe ratio of the sampled firms during the sixty days before and after the event (post-event window), as well as for a hypothetical equally weighted portfolio. The Sharpe ratios were calculated using the local market index as the benchmark. VOW3 is Volkswagen, FB is Facebook, TWTR is Twitter, BHC is Bausch Health Companies, WFC is Wells Fargo, GOOG is Google, FORM is the Formosa Plastics Corporation, BA is Boeing, ANF is Abercrombie & Fitch Co., FE is First Energy, and HLF is Herbalife.

	VOW3	HSBC	FB	TWTR	BHC	WFC	GOOG	FORM	BA	ANF	FE	HLF	**Portfolio**
D-60 to D-1													
Mean	0.29%	0.19%	0.40%	0.25%	0.91%	-0.68%	0.08%	-0.15%	0.03%	0.13%	0.09%	0.38%	**0.17%**
Std Dev	1.68%	0.84%	2.65%	2.49%	4.40%	2.70%	1.23%	1.46%	2.59%	3.87%	1.48%	2.20%	**0.82%**
Sharpe	16.96%	3.69%	9.29%	4.01%	17.08%	-19.73%	6.61%	-5.05%	5.43%	4.12%	10.58%	14.47%	**17.25%**
D0 to D+60													
Mean	-0.11%	-0.13%	-0.10%	0.22%	-0.20%	-0.13%	0.09%	0.00%	-0.79%	-1.20%	-0.14%	-0.08%	**-0.23%**
Std Dev	1.78%	1.16%	2.63%	4.40%	2.93%	6.03%	1.44%	2.45%	3.20%	5.81%	1.45%	1.68%	**1.02%**
Sharpe	-0.84%	-0.39%	-6.13%	3.67%	-2.56%	-5.02%	-4.54%	-3.84%	-21.07%	-17.07%	-4.15%	-7.07%	**-19.23%**

To provide an illustrative view of the behavior of the stock's prices surrounding the event day, Figure 3 shows the cumulative raw returns of a hypothetical equally weighted portfolio composed of the sampled firms during the sixty days before and after the event. There is a clear contrast of the portfolio's performance in both windows. While during the sixty days before the event the stocks exhibit, on average, positive cumulative raw returns, in the event windows, they show a remarkable negative performance resulting in a cumulative raw return of -14% by the end of this window. It is also worth noting that the negative performance accelerates around D+15 only, which is compatible with the notion that the information from the scandal documentaries is smoothly incorporated into stock prices as long as the shows are consumed and processed by investors.

Figure 3: Average Cumulative Returns of stocks before and after the launch of the scandal documentaries

The figure displays the cumulative raw returns of an equally weighted portfolio formed by firms enrolled in scandal documentaries launched by Netflix. The returns are accumulated through sixty days before and after the event (black and gray areas, respectively), where D0 is the documentary's release date.

■ Average Cumulative Returns (D-60 to D-1)   ■ Average Cumulative Returns (D0 to D60)
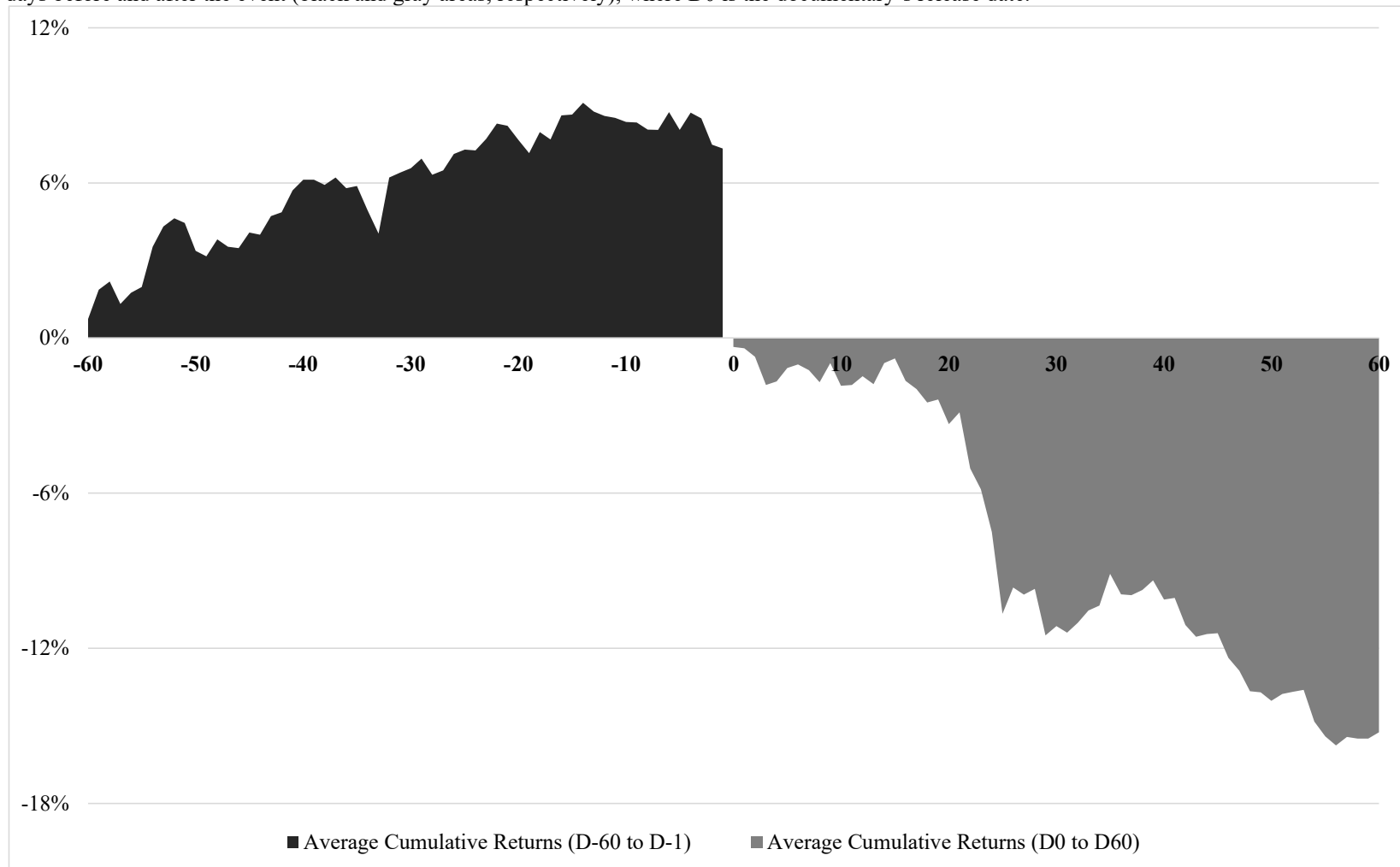
We now move to the analysis of the abnormal returns. Table 3 shows the ACAR for the portfolio for three alternative specifications for the beginning day of the event window (D0; D-5 and D-20). In the table, ACAR1 (ACAR2) refers to abnormal returns calculated using Eq. 1 (Eq. 2). The t-statistics are in italics, below the respective $ACAR_t$. The significant ACARs (95% level) are in bold. For brevity, we only report the ACARs for some days of the event window. The results indicate that the sampled stocks exhibit negative returns during the entire window. Nevertheless, this performance is significant only after four weeks (20 working days), suggesting that the information from the documentaries is smoothly incorporated into stock prices, as long as a growing number of investors watch them. This performance is economically relevant, since for every specification adopted, the negative ACAR by the end of the window is remarkable. For example, in Panel A, based on the abnormal return according to (1), the portfolio accumulates a negative return of -15.34% by the end of the window, which corresponds to a decrease of 50% in annual terms.[4]

---

[4] The annualization of the ACAR is obtained as follows: $(1+0.1534)^{252/60}$

Table 3: Average Cumulative Abnormal Returns of scandal firms

The table shows the Average Cumulative Abnormal Returns (ACAR) of the sampled firms for three event windows starting on D-20, D-5 and D0 (the release date of the documentary). The abnormal returns of ACAR1 and ACAR2 were calculated using the following specifications, respectively:

$$AR_{i,t} = R_{i,t} - R_{M,t} \tag{1}$$

$$AR_{i,t} = (R_{i,t} - R_{f,t}) - (\hat{b}_i MRP_t + \hat{s}_i SMB_t + \hat{h}_i HML_t + \hat{r}_i RMW_t + \hat{c}_i CMA_t) \tag{2}$$

where R_i is the stock's return, R_M is the return of the local market index, R_f is the local risk-free rate, and MRP, SMB, HML, RMW and CMA are the Fama-French 5 risk factors. All the returns were calculated using the log-difference approach. The coefficients of the risk factors were obtained by employing an estimation window ranging from D-125 to D-21. The stock prices and market indexes were obtained from Yahoo Finance, whereas the local risk-free rates and risk factors were obtained from Kenneth French's website. The t-statistics are in italics below the corresponding ACAR and were calculated using Eq. 3, as shown in Subsection 2.2. The numbers in bold mean significance at the 5% level.

Event Day	-20	-15	-10	-5	0	5	10	15	20	25	30	45	60
Panel A: Event window starting on D0													
ACAR1					-0.35%	-1.16%	-1.85%	-0.79%	-3.34%	**-10.67%**	**-11.14%**	**-11.42%**	**-15.34%**
					-0.58	*-0.79*	*-0.93*	*-0.33*	*-1.22*	*-3.49*	*-3.34*	*-2.81*	*-3.26*
ACAR2					0.02%	-0.52%	-1.46%	-0.77%	-3.04%	**-10.51%**	**-10.86%**	**-10.36%**	**-11.94%**
					0.03	*-0.36*	*-0.74*	*-0.32*	*-1.11*	*-3.44*	*-3.26*	*-2.55*	*-2.55*
Panel B: Event window starting on D-5													
ACAR1				-0.70%	-1.77%	-2.57%	-3.27%	-2.21%	-4.76%	**-12.09%**	**-12.56%**	**-12.84%**	**-16.76%**
				-1.17	*-1.20*	*-1.30*	*-1.37*	*-0.81*	*-1.56*	*-3.63*	*-3.49*	*-3.00*	*-3.42*
ACAR2				-0.33%	-1.02%	-1.56%	-2.50%	-1.81%	-4.08%	**-11.55%**	**-11.90%**	**-11.39%**	**-12.97%**
				-0.50	*-0.63*	*-0.71*	*-0.94*	*-0.60*	*-1.21*	*-3.13*	*-3.00*	*-2.41*	*-2.41*
Panel C: Event window starting on D-20													
ACAR1	-0.56%	0.43%	0.15%	-0.16%	-1.23%	-2.04%	-2.73%	-1.68%	-4.22%	**-11.55%**	**-12.02%**	**-12.31%**	**-16.13%**
	-0.94	*0.29*	*0.07*	*-0.07*	*-0.45*	*-0.67*	*-0.82*	*-0.47*	*-1.10*	*-2.84*	*-2.81*	*-2.53*	*-2.99*
ACAR2	-0.68%	-0.07%	0.51%	0.15%	-0.54%	-1.08%	-2.02%	-1.32%	-3.60%	**-11.07%**	**-11.42%**	**-10.91%**	**-12.49%**
	-1.03	*-0.04*	*0.23*	*0.06*	*-0.18*	*-0.32*	*-0.55*	*-0.33*	*-0.85*	*-2.47*	*-2.41*	*-2.03*	*-2.10*

To provide a more detailed view of the ACARs through the event window (in this case, D0 to D+60), Figures 4.1 and 4.2. plot the ACAR employing Eq. (1) and (2), respectively (solid lines), whereas the confidence bands for the 95% level are represented by the dotted lines. As previously mentioned, the sampled stocks, on average, exhibited negative returns throughout the window, leading to a decreasing ACAR that did not rebound even 60 days after the launch of the documentaries. This negative performance, however, began to be statistically significant only after four weeks, providing additional evidence that the content of a documentary is slowly incorporated into prices.

Figure 4: Average Cumulative Abnormal Returns of the sampled firms' stocks in the event window.
The figure displays the ACARs of the sampled firms' stocks during the event window. In Figure 4.1 and Figure 4.2, the abnormal returns are calculated using Eq. (1) and (2), respectively. See Subsection 2.3 for further details. In both figures, the ACARs are represented by the solid lines, while the 95% confidence bands are represented by the dotted lines.
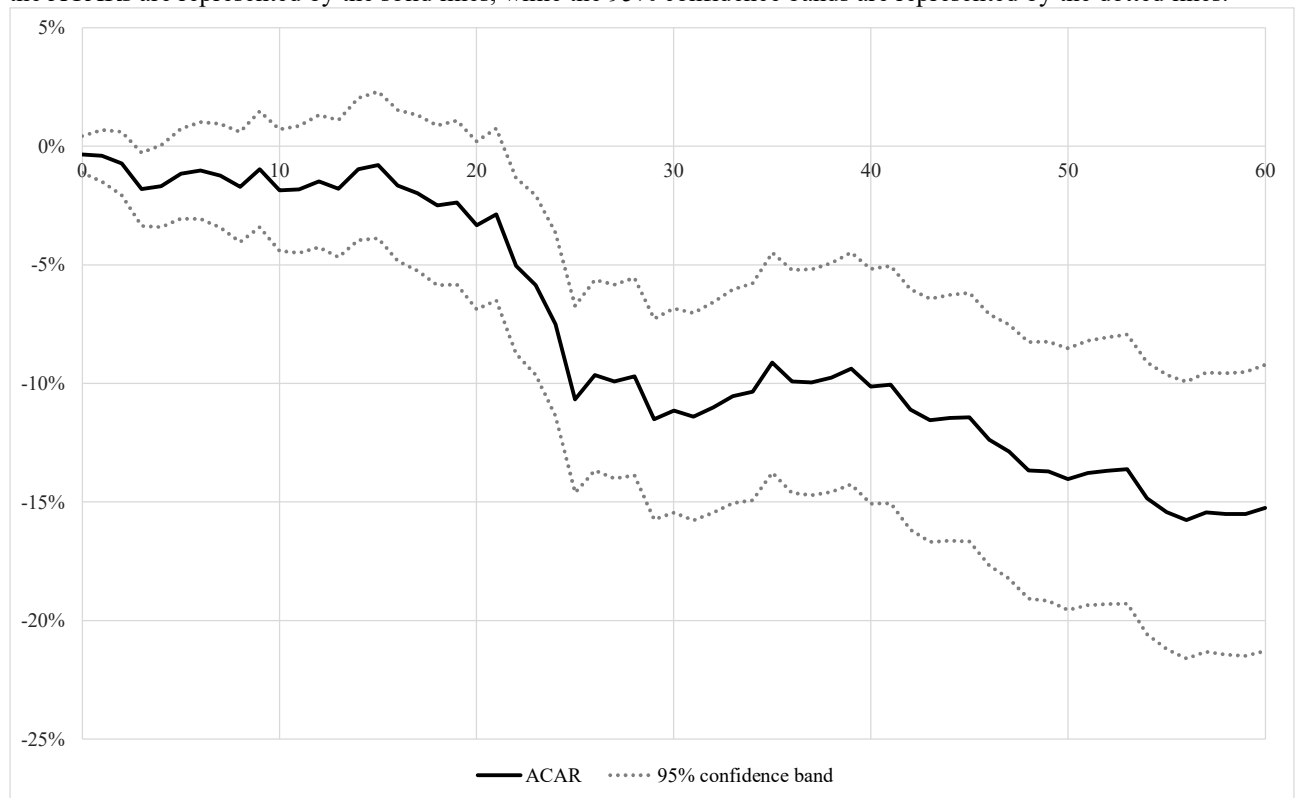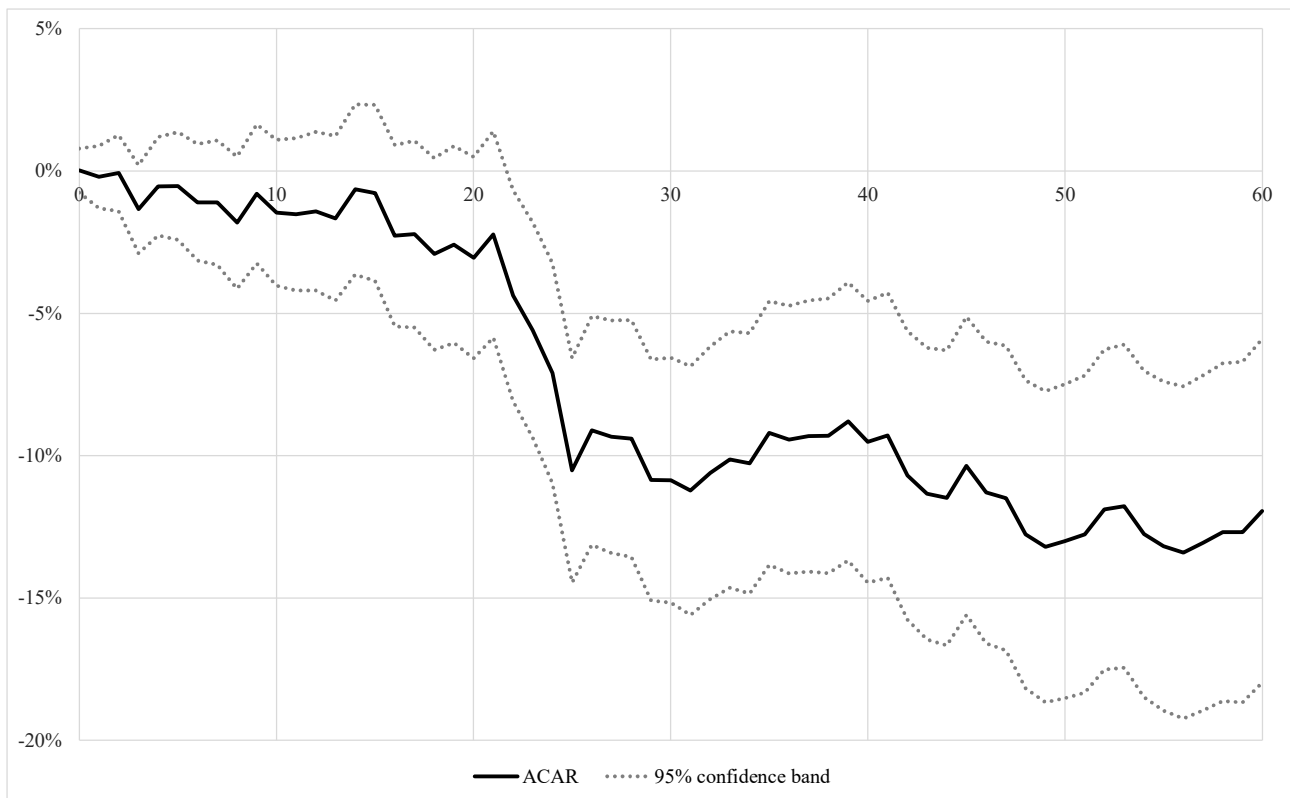

Figure 4.1

Figure 4.2

These findings align with prior research indicating a correlation between firms' misconduct and declines in stock prices (Karpoff et al., 2008; Knittel and Stango, 2014; Ding et al., 2020; Dyck et al., 2023). However, unlike previous studies, our research reveals a gradual integration of the additional reputation loss, which caused by the documentary, into prices. This distinctive behavior could be plausibly attributed to the gradual consumption of scandalous documentary content by Netflix's viewership, resulting in a progressive decline in prices. Moreover, since the documentaries are based on well-known facts and do not introduce new information to the broader market, we posit that this price behavior is driven by uninformed investors. These investors, unaware of the firm's misconduct prior to the documentary, decide to sell the firm's shares after gaining awareness through the featured show. The fact that uninformed investors are more likely to ingress into active investing initiatives (Baber et al., 2022; Long et al., 2023), lends additional support to this explanation, which is further explored in the subsequent section.

4. Uninformed investors and price decreases

As previously mentioned, since documentaries do not reveal new information, we hypothesize that the negative returns during the event window are driven by the sales pressure of uninformed investors who penalize a firm's misbehavior. This assumption is in accordance with the work of Giannetti and Wang (2016), who document how corporate scandals lead to a decrease in local

household market participation due to a newfound mistrust in regional firms. Furthermore, the authors also documented that this selling pressure from retail investors is accompanied by an increase in participation from institutional investors, which is in line with the view that our results are driven by uniformed investors' behavior. To test this hypothesis, as our proxy to the participation of individual investors, we employ the natural logarithm of the number of shares traded on a given day (i.e., stock volume). This assumption is based on the influential paper of Black (1986, p. 530), who argues that "if there is no noise trading, there will be very little trading in individual assets". Since individual investors are commonly seen as noise traders, we advocate that the daily traded volume is a consistent proxy for the presence of these investors in the stock market, as assumed in other classical studies (e.g., Baker and Stein, 2004).

In our first empirical exercise, we compare the traded volume of our sampled stock between the estimation and event windows. Evidently, the volumes vary with the firms' size, precluding a comparison using the raw traded volume. To address this matter, we employ an abnormal volume definition that is given by the ratio between the stock's volume on a given day of the event windows ($vol_{i,t}$), and the average volume during the estimation window ($\overline{vol}(\tau_1, \tau_2)$), as expressed by Equation (5):

$$avol_{i,t} = \frac{vol_{i,t}}{\overline{vol}(\tau_1, \tau_2)} \ . \tag{5}$$

The data for the traded volumes were obtained from Yahoo Finance. When the company is traded in more than one stock exchange (e.g. Volkswagen), we use the volumes of the local stock exchanges (e.g. Frankfurt Stock Exchange for Volkswagen). We then average the individual abnormal volume over the twelve companies to test whether the traded volumes are larger in the event window compared with normal occasions. The results indicate that the volumes are, on average, 17% higher during the event window, and that this difference is statistically representative (t-stat = 8.50 of the two-sample mean-comparison test), clearly demonstrating that the traded volume of the sampled firms increases after the launch of the corresponding documentaries. Since the documentaries do not contain new information, it is implausible to believe that this increase is driven by institutional investors, since they are well informed about the scandal in question. Therefore, we argue that the spike in volume is more likely attributed to individual investors who, upon learning about the unethical behavior exposed in the documentary, trade against the implicated firm. Consequently, it is plausible to assume that less informed investors would be more likely to trade after the launch of the documentaries, justifying the corresponding increase in volume. It could be argued that our abnormal volume definition does not necessarily correspond to an increase in the trades of individual investors.

To address this, in an alternative approach, we downloaded the Google Search Volume (GSV) of the names of the sample firms during both windows, based on the evidence that the GSV of firms' names are a consistent proxy for future individual investors' trades (Castro and Piccoli, 2023). We then average the firms' GSV's and compare the two samples (i.e., sixty days before and after the release date).[5] The results indicate that the online searches on scandal firms after the launch of their documentaries are 15% higher than during normal circumstances (t-stat = 6.67), which strongly supports the view that the increase in abnormal volume is indeed driven by retail investors.

To further explore the volume-return relation, we regress the stock returns on contemporaneous and lagged traded volumes in two different panel models that are similar to Bajzik (2021), but controlling for Fama-French 5 risk factors, as expressed in Equations (6) and (7). The choice to analyze the volume-return relation using these two specifications is justified by the pertinent literature, since a number of studies has explored the influence of past volumes on future returns (e.g., Brennan et al., 1998; Chordia, 2001), while others have investigated the relation during the same time period (e.g., Datar et al., 1998; Epps and Epps, 1976). Since both approaches are employed often (Bajzik, 2021), we address both to avoid the results being driven by model specifications.

$$R_{i,t} = a_i + b_i vol_{i,t} + \emptyset X_t + c_i R_{i,t-1} + \delta_i + \varepsilon_{i,t} \tag{6}$$

$$R_{i,t} = a_i + b_i vol_{i,t-1} + \emptyset X_t + c_i R_{i,t-1} + \delta_i + \varepsilon_{i,t} \ , \tag{7}$$

where $vol_{i,t}$ is the natural logarithm of the total traded volume of stocks i on day t, and X_t is a vector containing the five Fama-French risk factors for the given market, as explained in Subsection 2.2. The lagged return ($R_{i,t-1}$) aims to control for autocorrelation. The parameter δ_i is the unobservable heterogeneity or the firm's unobservable individual effects to control for idiosyncratic characteristics of each firm. Finally, $\varepsilon_{i,t}$ is the random disturbance. To investigate the influence of the documentaries on the volume-return relation, we use Equations (6) and (7) during the sixty days before and after the release separately. The results are shown in Table 4. For brevity, we have omitted the parameters for the risk factors.

---

[5] Google Trends data for a given period are standardized with the largest number of searches peaking at 100. This characteristic makes it possible to average the GSV of different terminologies (e.g., firms' names) even when the absolute number of searches differing from one terminology to another. Consequently, using the average of firms' GSV to compare the online searches before and after the launch of documentaries will not be biased by investors' attention focusing on more prominent firms.

Table 4: Volume-return relation before and after the documentary's release
The table shows the estimates for the relationship between the stock's return R_i and the natural logarithm of its traded volume vol_i using Eq. (5) and (6):

$$R_{i,t} = a_i + b_i vol_{i,t} + \emptyset X_t + c_i R_{i,t-1} + \delta_i + \varepsilon_{i,t} \tag{5}$$
$$R_{i,t} = a_i + b_i vol_{i,t-1} + \emptyset X_t + c_i R_{i,t-1} + \delta_i + \varepsilon_{i,t} \tag{6}$$

where X_t is a vector containing the Fama-French 5 risk factors for the given market, as explained in Subsection 2.2, and whose parameters were omitted in the table for brevity. The left (right) panel shows the estimates for the sixty days before and after the event. The traded volumes were obtained from Yahoo Finance. The R^2 are informed in percentages. ***Significant at the 1%, **5%, and *10% levels.

	D-60 to D-1				D0 to D+60			
	(1)	**(2)**	**(3)**	**(4)**	**(1)**	**(2)**	**(3)**	**(4)**
vol_t	0.0006		0.0031		-0.0132		-0.0099	
	(0.31)		(1.90)*		(-4.45)***		(-4.15)***	
vol_{t-1}		0.0010		0.0007		-0.0095		-0.0086
		(0.53)		(0.44)		(-3.18)***		(-3.65)***
r_{t-1}	0.105	0.105	0.119	0.120	-0.178	-0.168	-0.083	-0.075
	(2.77)***	(2.77)***	(3.57)***	(3.57)***	(-4.83)***	(-4.52)***	(-2.78)***	(-2.55)***
Intercept	-0.008	-0.014	-0.048	-0.010	0.205	0.146	0.153	0.133
	(-0.27)	(-0.48)	(-1.86)*	(-0.40)	(4.40)***	(3.12)***	(4.09)***	(3.59)***
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FF 5 Factors	No	No	Yes	Yes	No	No	Yes	Yes
N	720	720	720	720	732	732	732	732
R^2	1.4	1.3	23.5	24.9	0.3	0.3	31.3	33.0

While there is no relation between volume and returns before the event, after the release of the documentaries we document a significant negative relation among the variables for all specifications, which indicates that the increase in volume is associated with a decrease in stock prices. Given that the traded volume in the event window is significantly higher, the significance of the volume-return relation appears to have been driven by individual investors. This relation is also economically remarkable, since a change of one standard deviation on vol is associated with a contemporaneous decrease of 1.18% (0.0099*1.19) of the stocks' price even when controlling for the Fama-French 5 risk factors (column (3)). It is also worth mentioning that the volume-return relation in the event window remains virtually untouched by the inclusion of the risk factors, which indicates that volume provides additional explanatory power for price changes in the days following the launch of the documentaries.

These findings also contribute to the literature on the economic consequences of trust. Since general trust is plausibly influenced by omitted variables, studying the causal impact of trust on economic variables such as stock price and trading volume is problematic due to endogeneity (Fehr, 2009; Giannetti and Wang, 2016). In this context, Fehr (2009) points out that the most recommended design for examining the economic influence of trust is to investigate whether exogenous shocks to trust lead to changes in economic behavior. Since the launch of scandal documentaries are exogenous shocks to trust for uninformed investors, the fact that we document a significant ex-post change in both volumes and returns makes a novel contribution to this field, reinforcing the view that trust influences economic transactions (Gianneti and Wang, 2016).

5. Scandal documentaries and competitor stocks' performance

Hitherto, the results have indicated that firms that are the subject of scandal documentaries exhibit negative returns after the launch of the show, and that this performance seems to be influenced by retail investors who abnormally trade the corresponding stocks on these occasions. Given that our sample covers only twelve firms, a plausible alternative explanation would involve structural effects that influence some of the industries of the sampled firms, driving the results towards a false positive bias. To address this issue, a natural approach is to investigate the returns of competitor firms during the corresponding periods to see whether the stocks of peer companies exhibit a performance similar to that of our sample firms. The findings of this approach are presented in this subsection.

In this regard, like Knittel and Stango (2014), we define competitor firms as the first three publicly traded companies listed by Yahoo Finance as "similar to" the firm in question at the time of the corresponding documentary's release. Furthermore, for the comparison to remain consistent, we restrict the list to firms traded on the same stock exchange as the corresponding scandal firm. Finally,

when we collected the data, Twitter had already become a privately held company, making it unfeasible to capture similar firms through Yahoo Finance, as it does not inform equivalent firms of private companies. In this case, we considered the same competitors of Facebook, since Twitter is classified as a social media platform along the same lines as Facebook. The list of competitor firms used in this subsection is shown in Appendix A.

In the first empirical analysis, we compare the raw returns of the equally weighted portfolios of scandal and competitor firms in the pre and event windows. The data of the peer firms were also obtained from Yahoo Finance. Whereas in the 60 days before the launch of the documentaries the average returns of both portfolios are statistically equivalent (t-stat = 0.54), in the event window the average performance of the peer firms is significantly superior to that of the scandal firms (t-stat = 2.02), suggesting that the negative performance of the latter is not driven by industry-related factors. To delve deeper into this analysis, we calculate the abnormal returns of competitor firms using Eq. (2) to form an equally weighted portfolio and accumulate its abnormal returns. Figure 5 shows the chart of the ACARs for the competitor portfolio (solid line), together with the 95% level confidence bands (dotted lines). The graph shows that the competitor firms, on average, do not exhibit abnormal returns distinct from zero during the entire event window, which is the expected behavior for a diversified portfolio in an efficient market, providing further support to the view that our results were not driven by industry idiosyncrasies.

Figure 5: Average Cumulative Abnormal Returns of competitor firms in the event window.
The figure displays the ACARs of competitor firms during the event window. These competitor firms were selected based on the top 3 list of similar firms displayed in Yahoo Finance. The full list of firms is shown in Appendix A. The abnormal returns are calculated using Eq. (2). See Subsection 2.3 for further details. The ACARs are represented by the solid line, while the 95% confidence bands are represented by the dotted lines.
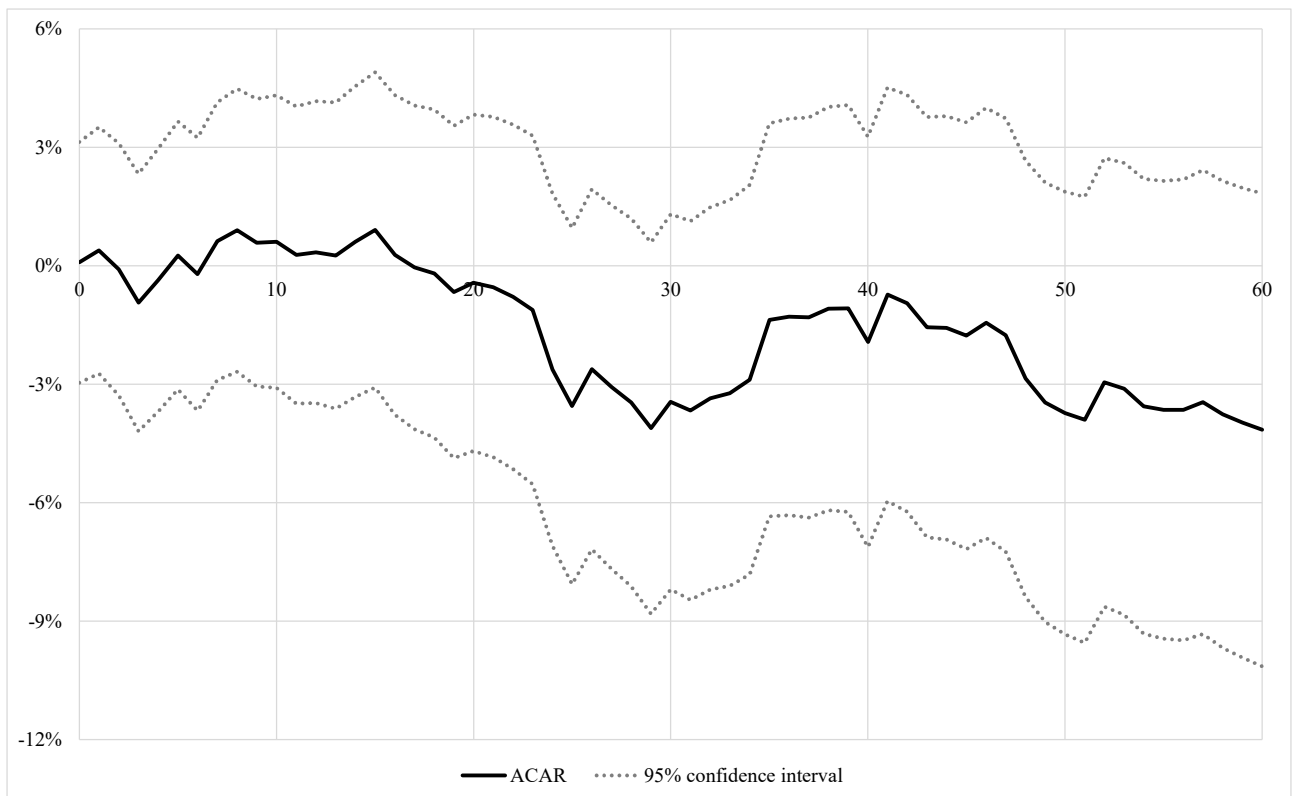
Our second analysis of competitor firms focuses on the volume-return relation. If the negative performance of firms that were the subject of scandal documentaries is driven by individual investors, we would expect a neglectable relation between the volume traded and price changes of competitor firms after the launch of the documentaries, since retail investors would not have the motivation to trade against these companies, as they are not embroiled in a scandal. To test this, we run a panel analysis for the competitor firms using Eq. (5) and (6) during the pre and event windows. The results are shown in Table 5.

Table 5: Volume-return relation of competitor firms

The table shows the estimates for the relationship between the stock's return R_i and the natural logarithm of its traded volume vol_i for competitors of the scandal firms in our sample. These competitor firms were selected based on the top 3 list of similar firms displayed in Yahoo Finance. Appendix A contains the complete list of firms. The relationship was examined using Eq. (5) and (6):

$$R_{i,t} = a_i + b_i vol_{i,t} + \emptyset X_t + c_i R_{i,t-1} + \delta_i + \varepsilon_{i,t} \tag{5}$$
$$R_{i,t} = a_i + b_i vol_{i,t-1} + \emptyset X_t + c_i R_{i,t-1} + \delta_i + \varepsilon_{i,t} \tag{6}$$

where X_t is a vector containing the Fama-French 5 risk factors for the given market, as explained in Subsection 2.2, and whose parameters were omitted from the table for brevity. The left (right) panel shows the estimates for the sixty days before and after the event. The traded volumes were obtained from Yahoo Finance. The R^2 are informed in percentages. ***Significant at the 1%, **5%, and *10% levels.

	D-60 to D-1				D0 to D+60			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
vol_t	-0.0010		0.0018		0.0002		0.0026	
	(-0.90)		(1.98)**		(0.15)		(2.10)**	
vol_{t-1}		-0.0006		0.0001		0.0009		0.0013
		(-0.52)		(0.13)		(0.58)		(1.02)***
r_{t-1}	-0.013	-0.012	0.011	0.009	-0.150	-0.150	-0.074	-0.076
	(-0.56)	(-0.53)	(0.57)	(0.45)	(-6.74)***	(-6.76)***	(-4.16)***	(-4.25)***
Intercept	0.015	0.009	-0.028	-0.002	-0.004	-0.014	-0.040	-0.020
	(0.93)	(0.56)	(-1.96)*	(-0.12)	(-0.15)	(-0.58)	(-2.11)***	(-1.03)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FF 5 Factors	No	No	Yes	Yes	No	No	Yes	Yes
N	1947	1947	1947	1947	2013	2013	2013	2013
R^2	0.0	0.0	22.8	24.6	1.8	2.0	37.2	38.3

As expected, for none of the models we document a significant negative relationship between volume and contemporaneous or future returns. Furthermore, since the coefficients of the pre and event window are not statistically different, we cannot claim that the significant volume-return relation is driven by the launch of the documentaries. Consequently, the findings of the present subsection support the view that firms exhibit negative returns after the launch of related scandal documentaries, and that this performance is driven by the interaction of retail investors.

6. Robustness check

6.1 Single Firm Bias

Since our dataset is limited to twelve firms, a natural concern is whether our results are driven by a single firm, whose documentary could be interpreted as especially scandalous or, by coincidence, launched during a period of particularly poor idiosyncratic performance. To address this, we excluded one company at a time from the original sample and calculated the ACAR of the resulting portfolio using Eq. (2). The results are presented in Table 6, where the first line informs the firm that was excluded from the portfolio.

Table 6: Average Cumulative Abnormal Returns excluding one company at a time from the original sample.

Panel A shows the Average Cumulative Abnormal Returns (ACAR) of the sampled firms excluding one company at a time to investigate whether the results are driven by a single firm. The abnormal returns were calculated using Eq (2):

$$AR_{i,t} = (R_{i,t} - R_{f,t}) - (\hat{b}_i MRP_t + \hat{s}_i SMB_t + \hat{h}_i HML_t + \hat{r}_i RMW_t + \hat{c}_i CMA_t) \qquad (2)$$

Section 2.3 shows a detailed description of the variables used in Eq (2). In the table, the first row informs the firm that was excluded to form the alternative portfolio. The t-statistics are in parenthesis below the corresponding ACAR and were calculated using Eq. 3, as defined in Subsection 2.2. Panel B shows the t-statistics for the mean-comparison test between the abnormal traded volume in the event window and the estimation window. The abnormal volume is defined by Eq (4) as

$$avol_{i,t} = \frac{vol_{i,t}}{\overline{vol}(\tau_1, \tau_2)} \qquad (4)$$

where $vol_{i,t}$ is the traded volume of the stock in the given day t of the event window, and $\overline{vol}(\tau_1, \tau_2)$ is the average traded volume in the estimation window. The traded volumes were obtained from Yahoo Finance. The numbers in bold mean significance at the 5% level.

↓ Day	VOW3	HSBC	FB	TWTR	BHC	WFC	GOOG	FORM	BA	ANF	FE	HLF
Panel A: ACAR												
-5	-0.009	-0.007	-0.009	-0.006	-0.005	-0.007	-0.008	-0.007	-0.004	-0.006	-0.007	-0.009
	(-1.44)	(-1.09)	(-1.47)	(-1.02)	(-0.91)	(-1.05)	(-1.23)	(-1.09)	(-0.64)	(-1.07)	(-1.04)	(-1.44)
0	-0.020	-0.018	-0.019	-0.015	-0.002	-0.014	-0.021	-0.020	-0.015	-0.029	-0.015	-0.024
	(-1.28)	(-1.10)	(-1.24)	(-1.04)	(-0.15)	(-0.91)	(-1.35)	(-1.25)	(-1.01)	(-2.05)	(-0.92)	(-1.58)
5	-0.026	-0.026	-0.024	-0.022	-0.014	-0.024	-0.031	-0.028	-0.021	-0.040	-0.023	-0.030
	(-1.24)	(-1.21)	(-1.15)	(-1.17)	(-0.79)	(-1.13)	(-1.42)	(-1.31)	(-1.01)	(-2.07)	(-1.09)	(-1.46)
10	-0.034	-0.034	-0.029	-0.029	-0.031	-0.030	-0.036	-0.038	-0.010	-0.050	-0.031	-0.040
	(-1.30)	(-1.33)	(-1.17)	(-1.25)	(-1.45)	(-1.19)	(-1.37)	(-1.49)	(-0.40)	(-2.17)	(-1.21)	(-1.59)
15	-0.022	-0.024	-0.014	-0.033	-0.019	-0.013	-0.025	-0.025	-0.003	-0.041	-0.020	-0.028
	(-0.74)	(-0.8)	(-0.49)	(-1.25)	(-0.76)	(-0.45)	(-0.83)	(-0.84)	(-0.10)	(-1.54)	(-0.67)	(-0.97)
20	-0.047	-0.047	-0.041	**-0.053**	-0.043	-0.042	-0.051	-0.053	-0.031	**-0.065**	-0.045	-0.052
	(-1.45)	(-1.43)	(-1.29)	(-1.83)	(-1.58)	(-1.27)	(-1.54)	(-1.62)	(-0.98)	(-2.21)	(-1.35)	(-1.62)
25	**-0.124**	**-0.126**	**-0.120**	**-0.132**	**-0.110**	**-0.116**	**-0.131**	**-0.133**	**-0.110**	**-0.100**	**-0.123**	**-0.128**
	(-3.46)	(-3.48)	(-3.43)	(-4.11)	(-3.70)	(-3.23)	(-3.64)	(-3.70)	(-3.19)	(-3.1)	(-3.42)	(-3.66)
30	**-0.129**	**-0.129**	**-0.127**	**-0.136**	**-0.116**	**-0.119**	**-0.137**	**-0.136**	**-0.117**	**-0.108**	**-0.121**	**-0.133**
	(-3.35)	(-3.31)	(-3.38)	(-3.94)	(-3.62)	(-3.08)	(-3.52)	(-3.52)	(-3.13)	(-3.11)	(-3.11)	(-3.55)
45	**-0.135**	**-0.133**	**-0.133**	**-0.128**	**-0.127**	**-0.118**	**-0.141**	**-0.143**	**-0.113**	**-0.098**	**-0.128**	**-0.144**
	(-2.94)	(-2.88)	(-2.97)	(-3.13)	(-3.33)	(-2.56)	(-3.05)	(-3.10)	(-2.54)	(-2.38)	(-2.78)	(-3.22)
60	**-0.177**	**-0.178**	**-0.173**	**-0.171**	**-0.174**	**-0.161**	**-0.179**	**-0.177**	**-0.131**	**-0.124**	**-0.174**	**-0.178**
	(-3.39)	(-3.38)	(-3.40)	(-3.68)	(-4.03)	(-3.10)	(-3.41)	(-3.38)	(-2.59)	(-2.66)	(-3.32)	(-3.51)
Panel B: Abnormal volume test												
t-stat	8.16	6.59	9.12	10.60	9.77	3.91	8.40	5.75	7.89	9.24	9.08	9.11

The ACARs in Panel A clearly demonstrate that the negative performance of stocks after the launch of the documentary is not driven by a single specific firm, since the same behavior is documented in all the portfolios. The only exception is for the portfolio that excludes Abercrombie & Fitch Co. (ANF), since for this portfolio, we document significant negative ACARs, starting at the beginning of the event window, and not after four weeks. In other words, when Abercrombie & Fitch Co. is excluded from the sample, the results are even more striking with regard to our central hypothesis. Moreover, these results show that the criteria described in Subsection 2.1 for the selection of the documentaries are not designed to meet a prior expectation, since if this were the case, we could have established arbitrary criteria that exclude this firm from the main sample, leading to more striking results.

Regarding the trading volume analysis, Panel B shows the mean-comparison test between traded volumes in the estimation window and after a documentary's launch, employing the same method described at the beginning of Subsection 3.2. Consistently, for all the subsamples we document that the traded volumes during the event window are significantly higher than during the estimation window. Overall, these findings do not indicate that our main results are driven by the peculiar behavior of a specific firm.

6.2 Confounding events

An intrinsic concern with event studies lies in the potential influence of confounding events. This implies that abnormal returns observed during the event window might be attributed to other events occurring in the same period, rather than the primary event of interest. This concern is particularly relevant in our study due to the extended length of our event window and the limited number of firms in our sample. Therefore, it is reasonable to question whether our results might be biased by concurrent competitor events affecting some firms within our event window.

To address this concern, we conduct a thorough search in the Refinitiv database for firm-level events using the "Corporate Events" filter during the event window for each firm in our sample. The detailed list of confounding events is available in Appendix B. To mitigate potential bias from these concurrent events, we consider only abnormal returns before the occurrence of the event in question for each firm. For instance, in the case of Volkswagen, with an Earnings Release on 3/13/2018, we only consider abnormal returns from the release date of its scandal documentary (i.e., 1/26/2018) until 3/12/2018, the day before its confounding event. This process is repeated for all other firms, forming a portfolio immune to confounding event bias, consisting exclusively of abnormal returns that occurred before such events. able 7 presents the ACARs for this alternative portfolio ("before

confounding events") alongside those for the original portfolio for easy comparison. The table excludes ACARs beyond day 40, as only two firms exhibited confounding events after this period.

Table 7: Average Cumulative Abnormal Returns of scandal firms before confounding events

The table shows the Average Cumulative Abnormal Returns (ACAR) of the sampled firms before the occurrence of a confounding event for the given firm (ACAR before confounding events only) together with the ACAR for the original portfolio (ACAR for all event window), aiming to control for abnormal returns provoked by confounding events. These events were obtained from Refinitiv, through the "Corporate Events" filter available in this platform. Appendix B brings a detailed list of these events. The table informs the ACARs only until day 40 because only two firms exhibited confounding events after this period. The numbers in bold mean significance at the 5% level.

Day	0	5	10	15	20	25	30	35	40
Event window starting on D-20									
ACAR for all event window	-1.23%	-2.04%	-2.73%	-1.68%	-4.22%	**-11.55%**	**-12.02%**	**-12.31%**	**-16.13%**
	-0.45	*-0.67*	*-0.82*	*-0.47*	*-1.10*	*-2.84*	*-2.81*	*-2.53*	*-2.99*
ACAR before confounding events only	-1.23%	-2.04%	-2.73%	-1.90%	-4.53%	**-13.07%**	**-13.94%**	**-10.91%**	**-12.15%**
	-0.45	*-0.67*	*-0.82*	*-0.53*	*-1.18*	*-3.22*	*-3.26*	*-2.43*	*-2.60*
Event window starting on D-5									
ACAR for all event window	-1.77%	-2.57%	-3.27%	-2.21%	-4.76%	**-12.09%**	**-12.56%**	**-12.84%**	**-16.76%**
	-1.20	*-1.30*	*-1.37*	*-0.81*	*-1.56*	*-3.63*	*-3.49*	*-3.00*	*-3.42*
ACAR before confounding events only	-1.77%	-2.57%	-3.27%	-2.43%	-5.06%	**-13.60%**	**-14.48%**	**-11.45%**	**-12.69%**
	-1.20	*-1.30*	*-1.37*	*-0.89*	*-1.66*	*-4.08*	*-4.03*	*-2.98*	*-3.12*
Event window starting on D0									
ACAR for all event window	-0.35%	-1.16%	-1.85%	-0.79%	-3.34%	**-10.67%**	**-11.14%**	**-11.42%**	**-15.34%**
	-0.58	*-0.79*	*-0.93*	*-0.33*	*-1.22*	*-3.49*	*-3.34*	*-2.81*	*-3.26*
ACAR before confounding events only	-0.35%	-1.16%	-1.85%	-1.01%	-3.64%	**-12.18%**	**-13.06%**	**-10.03%**	**-11.27%**
	-0.58	*-0.79*	*-0.93*	*-0.42*	*-1.33*	*-3.99*	*-3.92*	*-2.79*	*-2.94*

The fact that the ACARs of the alternative portfolio are very similar to the ones exhibited by the original strongly suggests that our results are not driven by confounding events. It's noteworthy that on some days, the ACARs of the immune portfolio are more pronounced than those of the original portfolio. This can be attributed to concurrent events bringing positive news, resulting in positive ex-post abnormal returns. Consequently, excluding these abnormal returns from the alternative portfolio led to even more negative ACARs. Overall, these results indicate that our findings are not compromised by confounding events.

6.3 Netflix's viewership over time

As previously mentioned, we observe that the abnormal returns of the sampled stocks only turn significantly negative 20 days after the launch of the scandal documentary. To validate the credibility of this pattern, we explore how the viewership of Netflix's shows evolves over time. If the peak in visualizations occurs a few days after the launch, it would be inconsistent with the delayed reaction we document, suggesting a potentially spurious influence of the documentary on stock returns.

To address this, we employed the following approach. On its website (https://www.netflix.com/tudum/top10), Netflix makes available the global weekly hours viewed of the shows that ranked among the Top-10 list at any given week. We downloaded this list and retained only the shows belonging the Top-10 rank for 8 weeks at least. The intuition underlying this procedure is twofold. First, to minimize the survivorship bias from documentaries figuring only a few weeks in this list, since they would distort the viewership peak as the report does not inform the views of a show after it exits the Top-10 rank. Second, to have a viewership window that is consistent with our event window. Regarding this second aspect, one could conjecture that it would be more appropriate to include only shows in the list for 12 weeks at least, since this range would perfectly match with our event window (i.e. 60 working days). The downside of this approach is that it is a rigorous filter that would exclude 98.1% of the shows, compromising the generalization power of the sample. On this regard, it is important to mention that, even though our baseline analysis is based on this 8-weeks filter, we employed alternative filters of weeks in the Top-10 list ranging from 4 to 12 weeks and find very consistent viewership patterns.

Figure 6: Netflix's Top-10 list viewership.
The figure displays total weekly hours viewed (in Billion) of shows that were ranked among the Top-10 list for 8 weeks at least. The data is made available by Netflix at: https://www.netflix.com/tudum/top10.
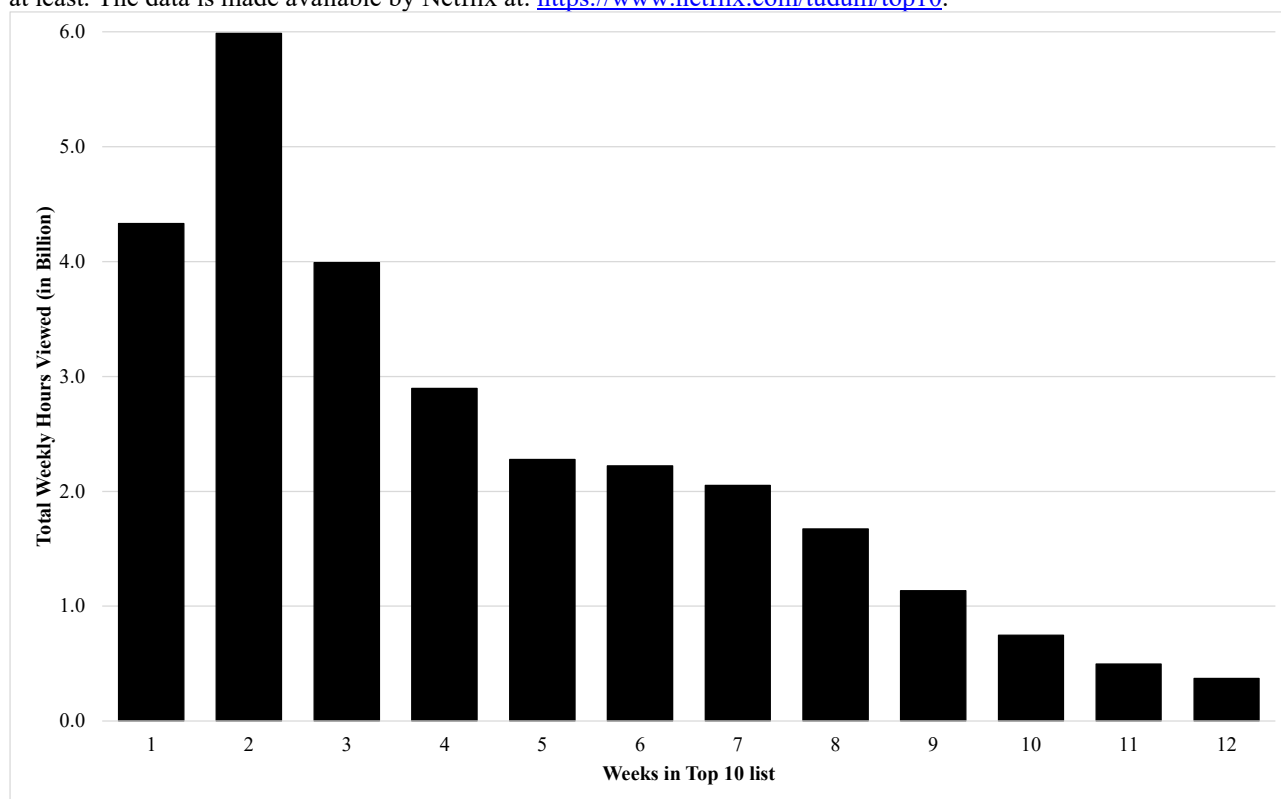

Figure 6 displays the evolution of total viewed hours of the sampled shows, with the peak occurring in week two. However, this does not imply that viewership happens two weeks after the show's release. Instead, it indicates that a show reaches its peak two weeks after entering the Top-10 list. The next step is to determine how many weeks from its release a show takes to enter the Top-10 list. This information is not available in Netflix's report, so we manually searched the release date of every show in the baseline sample and calculated the weeks between the release date and its first appearance in the Top-10 list. The median duration is 1.9 weeks.[6] Based on this approach, we advocate that it is reasonable to assume that a show on Netflix takes, on average, 3.9 weeks (or approximately 20 working days) to reach its viewership peak, what is very consistent with the delayed reaction that we document, if we additionally assume that it takes a few days from viewing the documentary to selling it from the securities account.

While this viewership behavior requires careful interpretation as it's based on a list of top-viewed shows, we find it offers an intriguing insight into how Netflix's viewership behaves over time, sharing similar patterns with the cumulative abnormal returns reported in the paper.

---

[6] We preferred to use the median instead of the mean to avoid the bias from a few shows that take a long time to enter the Top-10 list. To illustrate, the series "Bridgerton" previously mentioned, took 65 weeks to enter this list. Based on that, our understating is that the median better captures the common behavior of a documentary to ingress in the Top-10 list.

7. Conclusion

This study explores the impact of Netflix scandal documentaries on the stock behavior of featured publicly traded firms. Analyzing twelve films, we apply an event study methodology, which reveals a substantial and enduring decrease in stock prices, resulting in an average cumulative abnormal return of -15.34% three months post-release. The findings suggest that the observed price decline is attributed to individual ethical investors, which is supported by increased traded volumes and Google Search Volumes for the relevant firms. The results indicate a significant influence of Netflix scandal documentaries on market participants' pricing of corporate misconduct. The robustness of the results is confirmed through various analyses, including abnormal volume data, examination of competitor firms' returns, and classical robustness checks, providing strong evidence that Netflix documentaries trigger additional trading volume as ethically oriented investors divest from implicated companies despite the fact that the information is already publicly known and tis should be incorporated in the stock prices.

Regarding real world impact of our findings, a crucial takeaway may be the significance of streaming platforms in disseminating information about unethical conduct by organizations to the general public. In tandem with this, our results highlight the pivotal role of individual investors in pricing corporate misconduct—an insight that could be particularly valuable for activists and policymakers concerned with social responsibility issues.

It is essential to note, however, that our evidence should be approached with caution. The study relies on a small sample of documentaries and does not directly observe the motivations of investors selling stocks in the firms implicated in scandals. Therefore, we advocate for future studies with larger datasets and evidence derived from interviews or experiments with investors to provide a more comprehensive understanding of these dynamics.

References

Bajzik, J., 2021. Trading volume and stock returns: A meta-analysis. *International Review of Financial Analysis*, 78, 101923

Baker, M., Stein, J., 2004. Market liquidity as a sentiment indicator. *Journal of Financial Markets*, 7(3), 271-299

Barber, B., Huang, X., Odean, T., Schwarz, C., 2022. Attention-Induced Trading and Returns: Evidence from Robinhood Users. *Journal of Finance,* 77(6), 3141-3190

Bassen, A., Kaspereit, T., Buchholz, D., 2021. The Capital Market Impact of Blackrock's Thermal Coal Divestment Announcement. *Finance Research Letters*, 41, 101874

Black, F., 1986. Noise. *Journal of Finance*, 41(3), 529-543

Boehmer, E., J. Musumeci, and A. Poulsen, 1991. Event study methodology under conditions of event induced variance. *Journal of Financial Economics* 30, 253–72.

Boehmer, E., Jones, C., Zhang, X., Zhang, X., 2021. Tracking retail investor activity. *Journal of Finance*, 76(5), 2249-2305

Borgers, A., Pownall, R., 2014. Attitudes towards socially and environmentally responsible investment. *Journal of Behavioral and Experimental Finance,* 1, 27-44

Brennan, M., Chordia, T., Subrahmanyam, A., 1998. Alternative factor specifications, security characteristics, and the cross-section of expected returns. *Journal of Financial Economics*, 49(3), 345–373

Brzeszczynski, J., McIntosh, G., 2014. Performance of Portfolios Composed of British SRI Stocks. *Journal of Business Ethics,* 120, 335-362

Castro, J., Piccoli, P., 2023. Do online searches actually measure future investor trades? *International Review of Financial Analysis,* 86, 102552

Chordia, T., Subrahmanyam, A., Anshuman, V., 2001. Trading activity and expected stock returns. *Journal of Financial Economics*, 59(1), 3–32

Datar, V., Naik, N., Radcliffe, R., 1998. Liquidity and stock returns: An alternative test. *Journal of Financial Markets*, 1(2), 203–219

Davies, S., Wesep, E., 2018. The unintended consequences of divestment. *Journal of Financial Economics,* 128, 558-575

De Long, J. B., Shleifer, A., Summers, L. H., Waldmann, R. J., 1990. Noise trader risk in financial markets. *Journal of Political Economy*, 98(4), 703-738

Ding, N., Parwada, J., Shen, J., Zhou, S., 2020. When Does a Stock Boycott Work? Evidence from a Clinical Study of the Sudan Divestment Campaign. *Journal of Business Ethics,* 163, 507-527

Dyck, A., Morse, A., Zingales, L., 2023. How pervasive is corporate fraud? Review of Accounting Studies. *In Press*

Eden, L., Miller, S., Khan, S., Weiner, R., Li, D., 2022. The event study in international business research: Opportunities, challenges, and practical solutions. *Journal of International Business Studies*, 53, 803–817

Epps, T., Epps, M., 1976. The stochastic dependence of security price changes and transaction volumes: Implications for the mixture-of-distributions hypothesis. *Econometrica*, 44(2), 305–321

Fama, E., 1965. The behavior of stock-market prices. *Journal of Business*, 38(1), 34–105

Farrell, M., Green, T., Jame, R., Markov, S., 2022. The democratization of investment research and the informativeness of retail investor trading. *Journal of Financial Economics*, 145, 616-641

Fauser, D., Utz, S., 2021. Risk Mitigation of Corporate Social Performance in US Class Action Lawsuits. *Financial Analysts Journal*, 77(2), 43-65

Fazio, M. (2020, Nov 23). 'The Queen's Gambit' Sends Chess Set Sales Soaring. *The New York Times*. https://www.nytimes.com/2020/11/23/arts/television/chess-set-board-sales.html

Fehr, E., 2009, On the economics and biology of trust, *Working paper and Presidential Address to the Annual Congress of the European Economic*

Giannetti, M., Wang, T., 2016. Corporate Scandals and Household Stock Market Participation. *Journal of Finance*, 71(6), 2591-2636

Humphrey, J., Tan, D., 2014. Does it Really Hurt to be Responsible? *Journal of Business Ethics*, 122, 375-386

Jory, S., Ngo, T., Wang, D., Saha, A., 2015. The market response to corporate scandals involving CEOs. *Applied Economics,* 47(17), 1723-1738

Jong, A., Naumovska, I., 2016. A Note on Event Studies in Finance and Management Research. *Review of Finance*, 20(4), 1659-1672

Karpoff, J., Lee, D., Martin, G., 2008. The cost to firms of cooking the books. *Journal of Financial and Quantitative Analysis*, 43, 581–611

Kelley, E., Tetlock, P., 2013. How wise are crowds? Insights from retail orders and stock returns. *Journal of Finance*, 68(3), 1229-1265

Kelley, E., Tetlock, P., 2017. Retail short selling and stock prices. *Review of Financial Studies*, 30(3), 801-834

Knittel, C., Stango, V., 2014. Celebrity Endorsements, Firm Value, and Reputation Risk: Evidence from the Tiger Woods Scandal. *Management Science,* 60(1), 21-37

Li, D., Li, G., 2021. Whose Disagreement Matters? Household Belief Dispersion and Stock Trading Volume. *Review of Finance*, 25(6), 1859-1900

Long, S., Lucey, B., Xie, Y., Yarovaya, L., 2023. "I Just Like the Stock": The Role of Reddit Sentiment in the GameStop Share Rally. *Financial Review*, 58(1), 19-37

Myers, J., (2021, Jan 13). The Power of Netflix on Consumer Behavior. *SPSCommerce.com*. https://www.spscommerce.com/blog/consumer-behavior/

MacKinlay, A., 1997. Event Studies in Economics and Finance. *Journal of Economic Literature,* 35(1), 13-39

Ozik, G., Sadka, R., Shen, S., 2021. Flattening the Illiquidity Curve: Retail Trading during the COVID-19 Lockdown. *Journal of Financial and Quantitative Analysis*, 56(7), 2356-2388

Renneboog, L., Ter Horst, J., Zhang, C., 2008. Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking and Finance*, 32, 1723–1742.

Sánches, J., Sotorrío, L., 2007. The Creation of Value Through Corporate Reputation. *Journal of Business Ethics,* 76, 335-346

Schueth, S. (2003). Socially responsible investing in the United States. *Journal of Business Ethics*, 43, 189–194.

Shleifer, A., Summers, L., 1990. The noise trader approach to finance. *Journal of Economic Perspectives*, 4(2), 19-33

Stoll, J., (2023, May 15). Estimated number of SVOD subscribers worldwide from 2020 to 2028, by service. *Statista*. https://www.statista.com/statistics/1052770/global-svod-subscriber-count-by-platform/

Welch, I., 2022. The Wisdom of the Robinhood Crowd. Journal of Finance, 78(3), 1489-1527

Appendix A

Table A.1: The table shows the list of competitor firms of the sampled companies. These competitor firms were selected based on the top 3 list of similar firms displayed in Yahoo Finance.

Sample Firms	Competitor Firms
Volkswagen	BMW, Bayerische Motoren Werke Aktiengesellschaft
	Porsche Automobil Holding SE
	Mercedes-Benz Group AG
HSBC	Citigroup Inc.
	Bank of America Corporation
	UBS Group AG
Facebook	Snap Inc.
	Pinterest, Inc.
	Baidu, Inc.
Twitter	Snap Inc.
	Pinterest, Inc.
	Baidu, Inc.
Bausch Health Companies Inc.	Teva Pharmaceutical Industries Limited
	Viatris Inc.
	Takeda Pharmaceutical Company Limited
Wells Fargo	Citigroup Inc.
	Bank of America Corporation
	JP Morgan Chase & Co.
Google	Microsoft Corporation
	Apple Inc.
	Meta Platforms, Inc.
Formosa Plastics Corporation	Nan Ya Plastics Corporation
	China Steel Corporation
	Formosa Petrochemical Corporation
The Boeing Company	Airbus SE
	Lockheed Martin Corporation
	Raytheon Technologies Corporation
Abercrombie & Fitch Co.	American Eagle Outfitters, Inc.
	The Gap, Inc.
	Urban Outfitters, Inc.
FirstEnergy Corp.	Exelon Corporation
	American Electric Power Company, Inc.
	Entergy Corporation
Herbalife	USANA Health Sciences, Inc.
	The Hain Celestial Group, Inc.
	Lancaster Colony Corporation

Appendix B

Table B.1: The table shows the list of confounding events that took place during the event window of the corresponding firms. The events were obtained from Refinitiv using the filter "Corporate Events" available in this platform.

Firm	Confounding Event Date	Description
Volkswagen	13/03/2018	Earnings Release
HSBC	20/02/2018	Earnings Release
Facebook	26/10/2020	Stock Split
	29/10/2020	Earnings Release
Twitter	25/09/2020	M&A Deal
	10/26/2020	Stock Split
	29/10/2020	Earnings Release
Bausch Health Companies Inc.	28/02/2018	Earnings Release
	12/03/2018	M&A Deal
Wells Fargo	14/04/2020	Earnings Release
Google	26/10/2021	Earnings Release
	18/11/2021	M&A Deal
Formosa Plastics Corporation	13/05/2020	Earnings Release
The Boeing Company	27/04/2022	Earnings Release
Abercrombie & Fitch Co.	24/05/2022	Earnings Release
FirstEnergy Co.	26/07/2022	Earnings Release
Herbalife	01/08/2017	Earnings Release
	21/08/2017	Shares repurchase