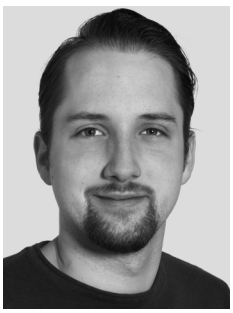
Market reactions to the Swiss "Responsible Business Initiative" (RBI)



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Abstract: This study examines stock-market reactions to the legislative events associated with the Responsible Business Initiative (RBI), a proposed law that would have made Swiss firms legally liable for environmental violations and violations of human rights in their supply chains worldwide. It would have also obliged Swiss firms to implement due diligence and disclose non-financial information. The RBI was rejected in November 2020, since it did not achieve the necessary cantonal majority. We apply event-study analyses on stock-market reactions to examine a sample of 185 Swiss firms that are listed on the Swiss Performance Index (SPI) and would have been affected by the RBI, if it had become law. Our analyses show that market reactions to the legislative events relating to the RBI that were likely to introduce stricter sustainability legislation were negative and significant. Further analyses indicate that this effect is stronger for companies in sustainability-sensitive industries. We found no evidence that the market reacted positively to events that decreased this likelihood.

Keywords: Abnormal Returns, Event Study, Responsible Business Initiative, RBI, Sustainability Regulation, ESG

Analyse von Marktreaktionen zur Konzernverantwortungsinitiative in der Schweiz

Zusammenfassung: Diese Studie untersucht die Reaktionen der Aktienmärkte auf die legislativen Ereignisse im Zusammenhang mit der Konzernverantwortungsinitiative (KVI), einem Gesetzesvorschlag, der Schweizer Unternehmen für Umwelt- und Menschenrechtsverletzungen in ihren weltweiten Lieferketten haftbar gemacht hätte. Sie hätte Schweizer Firmen auch dazu verpflichtet, eine Sorgfaltsprüfung durchzuführen und nichtfinanzielle Informationen offenzulegen. Die KVI wurde im November 2020 knapp abgelehnt, da die notwendige kantonale Mehrheit («Ständemehr») nicht erreicht wurde. Im Rahmen dieser Forschungsarbeit untersuchen wir die Kapitalmarktreaktionen von 185 Schweizer Unternehmen, welche im Swiss Performance Index (SPI) gelistet sind und im Falle einer Annahme der KVI von der Verschärfung der Nachhaltigkeits-Gesetzgebung betroffen gewesen wären. Unsere Analysen zeigen, dass die Marktreaktionen auf die gesetzgeberischen Ereignisse im Zusammenhang mit der KVI, welche die Wahrscheinlichkeit einer Verschärfung der Nachhaltigkeits-Gesetzgebung erhöhen, negativ und signifikant sind. Weitere Analysen zeigen, dass dieser Effekt für Unternehmen in nachhaltigkeitssensiblen Branchen stärker ausfällt. Wir finden hingegen keine Hinweise, dass der Markt positiv auf Ereignisse reagiert, die diese Wahrscheinlichkeit verringern.

Stichwörter: Abnormale Renditen, Event-Studie, Konzernverantwortungsinitiative, Nachhaltigkeits-Gesetzgebung, ESG, KVI

1. Introduction

October 10, 2016 marks a milestone in Swiss politics concerning the corporate disclosure of sustainability-related information. After the successful collection of 120 000 signatures from across Switzerland, the proposed legislation known as the "Responsible Business Initiative" (RBI) was officially submitted for approval. This process culminated in a public vote that took place on November 29, 2020. The RBI essentially stipulated that Swiss firms would become legally liable for any environmental or human rights violations that occurred anywhere along their global supply chains and could be prosecuted in front of Swiss Courts even if being sued for actions abroad. Furthermore the RBI demanded the obligation to implement due diligence and disclose non-financial information. In the popular vote of November 29, 2020, the RBI was rejected. This triggered the enactment of an indirect counterproposal that had been previously passed by the Swiss Parliament and mandates that all large Swiss firms (with more than 500 full-time equivalent) disclose non-financial information. For certain categories of firms, the counterproposal also mandates due diligence with regard to conflict minerals and child labor.[1] The entire—and controversial—legislative process has spanned over four years, and included the elaboration of several counter proposals and a change of opinion of the Federal Council. The counterproposal became effective on January 1, 2023; for the first time, Swiss firms are mandated to provide information on sustainability for reporting year 2023.[2]

We are interested in exploring how the capital market perceived the anticipated changes, which, if the RBI had become law, would have resulted in stricter regulations on sustainability for Swiss firms in general and on sustainability disclosure, due diligence and liability in particular. Thereby, we also analyze the market reactions to the introduction of sustainability disclosure rules by means of the adopted counterproposal. To that aim, we examine market reactions to six of the legislative events that are associated with the RBI. We focus on market reactions in particular for several reasons. First, market reactions reflect how shareholders assessed the impact that the new regulations would have had on a firm's value, given that the RBI would have created significant costs and risks for Swiss firms. Second, the investment community is an influential stakeholder that has prominently announced to promote stricter sustainability measures.[3] Third, investors are the "primary audience" (*Grewal et al.*, 2019, 2) of disclosed non-financial corporate information.

1 The counterproposal on sustainability reporting is in line with the European Union's Non-Financial Reporting Directive (NFRD), which was adopted in 2014 and mandates the disclosure of sustainability information for large, public-interest EU firms with more than 500 employees. The clauses regarding due diligence are similarly in line with the EU Conflict Minerals Regulation (CMR) and apply to all firms headquartered in Switzerland that import tin, tungsten, tantalum or gold.

2 Apart from that, the Swiss Financial Market Supervisory Authority (FINMA) requires the five most significant financial institutions to disclose their climate-related financial risks in accordance with the Task Force on Climate-related Financial Disclosures TCFD recommendations from 2022 onwards (https://www.finma.ch/en/documentation/dossier/dossier-sustainable-finance/transparency-about-climate-related-risks/).

3 A prominent example is the 2021 letter to the CEOs by Larry Fink, Chairman and CEO of BlackRock, see *Fink* (2021).

Recently, *Grewal et al.* (2019) documented significant negative and abnormal returns, which occurred close to regulatory events associated with the adoption of the EU's NFRD. The NFRD makes the disclosure of sustainability-related information generally mandatory for EU firms. The authors found that the negative market reaction was particularly prominent in the case of firms whose performance and disclosure with regard to sustainability were weak. Overall, the literature does not distinguish between events increasing the likelihood and events decreasing the likelihood of stricter regulation regarding non-financial disclosure. Such a distinction is important, as it allows us to draw conclusions about the real impact that the prospect and adoption of stricter sustainability measures has on firm value. In particular, the inclusion of positive and negative events allows us to measure the total firm value impact of legislative processes as well as the prospected value impact of even stricter legislative proposals which are not introduced into law.

In that respect, studying the course of the controversial legislative process associated with the RBI, which involved debating and submitting for further assessment several proposals and counterproposals, presents a unique opportunity for researching this question.

Following the empirical work of *Brown/Warner* (1985), *Blacconiere/Patten* (1994), *Krüger* (2015), *Hombach/Sellhorn* (2018), *Grewal et al.* (2019) and *Hummel et al.* (2020), we conducted an event study to extract and analyze market reactions to six key legislative events, selected from among 25 legislative events associated with the RBI. We slightly modified the event-study methodology to consider the conglomerate structure of the sample firms and estimate the counterfactual more precisely. In line with the findings of *Blacconiere/Patten* (1994), *Krüger* (2015), *Hombach/Sellhorn* (2018), *Grewal et al.* (2019) and *Hummel et al.* (2020) we expect that the market reacted negatively to the legislative events associated with the RBI. Our results reveal that the legislative events associated with the RBI had, on average, a negative impact on the value of firms within its scope. They also show that the market reacted negatively to all legislative events that increased the likelihood of stricter legislation on sustainability being introduced. We found no evidence that legislative events decreasing this likelihood had a positive impact on the value of affected firms.

The paper contributes to the literature in the following ways. First, it provides empirical evidence on the implications of imposing legal obligations with regard to sustainability for the affected firms' value. Regulators typically argue that imposing such obligations increases capital market efficiency (*European Parliament*, 2014, 23). Our results, however, show that, on the whole, capital markets reacted negatively in anticipation of the adoption of such regulations. Second, our paper shows that the impact of the key legislative events on the value of firms in sustainability-sensitive industries was particularly strong. Third, our results show no significant value impact of legislative events decreasing the likelihood of the adoption of stricter sustainability legislation and, thus, no moderation of previous legislative decisions increasing the likelihood of such regulation.

The paper is structured as follows. In the next section, we present the regulatory background and the legislative events associated with the RBI. In Section 3 we develop our hypotheses against the background of the related theory and literature. In Section 4 we present our methodology, in Section 5 we outline our results and in Section 6 we conclude the paper with a discussion of our findings and their implications.

2. The "Responsible Business Initiative"

In Switzerland, sustainability has been attracting increasing attention over the last 10 years. The increasing emphasis on sustainability in the domain of business is evident in the comparative law report published by the Swiss Federal Council in 2014. This report identified what measures other countries had taken or were planning to take to increase the legal obligations of firms to operate sustainably. These measures included making due diligence about human rights and sustainability issues mandatory and extending a firm's due diligence obligations to its subsidiaries and suppliers abroad. The report was discussed in the Swiss parliament with respect to the necessity of new sustainability legislation that would extend a firm's liability to its subsidiaries and make due diligence with regard to human rights mandatory. However, the Swiss parliament narrowly decided against the necessity for new sustainability legislation (*Bueno*, 2019, 8).

In response to this decision, a broad coalition was formed to present a concrete legal framework for matters relating to sustainable business: the Swiss Coalition for Corporate Justice. This lobbying group comprised more than eighty non-governmental organizations (NGOs). On October 10, 2016, the Coalition officially submitted the RBI to the Swiss Parliament.[4] The initiative proposed the following changes to the Swiss Constitution:

1. Every Swiss firm must conduct due diligence, both for its own actions and those of any firms in its supply chain. Due diligence must assess each firm's "real and potential impacts on internationally recognized human rights and the environment standards" and define appropriate action to prevent or stop any violations of those standards (*Bueno*, 2019, 12).
2. The disclosure of non-financial information must become mandatory for every Swiss firm.
3. Every Swiss firm must become globally liable for any environmental or human rights violations, including those committed by firms in its supply chain. This clause shall "apply in practice before Swiss courts" (Bueno, 2019, 15).

In the proposed RBI, the scope of the due diligence was not conclusively clarified but ought to take into account "the need of small and medium-sized companies that have limited risks of this kind" (*Bueno*, 2019, 12). This meant that while due diligence would become mandatory for all large Swiss firms, the legislator would be able to grant exceptions to small and medium-sized companies (SMEs) after its passage. The Coalition, however, made clear that if the RBI became law, the application area, due diligence requirements and worldwide liability would go "beyond mandatory disclosure and due diligence laws" (*Bueno*, 2019, 23) and therefore beyond the regulations of most countries in the European

4 The RBI constitutes a so called "Volksinitiative" (i.e., a popular initiative) according to the Swiss Constitution. An initiative that is supported by at least 100 000 citizens forces a legislative decision upon whether the Constitution should be amended in line with the initiative. Every amendment to the Constitution as well as the rejection of an Volksinitiative by the parliament triggers a popular vote, i.e., a referendum. The parliament can decide to support the initiative or reject it. In the latter case, it may submit a counterproposal to the original initiative. The counterproposal, if it is made, can be direct (i.e. a different amendment to the constitution) or indirect. Direct counterproposals are put to vote together with the original initiative. In case the initiative is rejected in the referendum, the indirect counterproposal becomes automatically legally binding after a specified period (Art. 138–141 BV).

Union (EU).[5] The EU NFRD, which was passed in 2014 and had to be transposed by member states by December 6, 2016, is considerably less restrictive as it requires the companies within its scope to produce an annual non-financial statement but contains no provisions for due diligence or liability (*European Comission*, 2013).

The formal acceptance of the RBI by the Swiss parliament started the legislative process that lasted four years and eventually resulted in the public vote on November 29, 2020. The process became highly controversial. While some parties tried to weaken the proposal by elaborating a much less restrictive counterproposal, others lobbied for an entire rejection of the RBI. The National Council, specifically the middle and left-wing majority in the National Council, tried to achieve consensus through a far-reaching counterproposal that would persuade the representatives of the RBI to withdraw the initiative. The Council of States and the Federal Council, dominated by the Free Democratic Party and right-wing parties, however, rejected the RBI without counterproposal in the beginning of the legislative process. In August 2018, they changed their strategy and the Federal Council initiated the elaboration of a much-weakened indirect counterproposal. This opinion change and the differing majorities in the two chambers of Swiss parliament lead to a unique legislative process with political turnarounds and votes decided by tight margins. In the final event in this process—the referendum of November 2020—Switzerland voted against the RBI.[6]

3. Literature, Theory and Hypotheses

3.1 Prior Literature

Empirical evidence on how markets react to legislative events related to sustainability is scarce. Only *Grewal et al.* (2019) and *Hombach/Sellhorn* (2018) have used a setting similar to ours to investigate the actual effect of such regulatory processes on the value of the affected firms. *Grewal et al.* (2019) analyzed market reactions to the EU NFRD from the beginning of the process in 2011 until the directive was passed in 2014. The authors found that, on the whole, market reactions were negative. Specifically, they found that among the firms in their sample, high sustainability-related performance and disclosure were positively correlated with market returns and mitigated negative market reactions (*Grewal et al.*, 2019, 26-27). In their study, *Hombach/Sellhorn* (2018) examined market reactions to several regulatory events associated with the United States Securities and Exchange Commission (SEC) rules on the disclosure of extraction payments. The authors found that the market reacted negatively to twelve regulatory events and that these effects were stronger in the case of firms that were under higher public scrutiny.

Other studies have examined market reactions to different types of sustainability-related events, such as oil spills, chemical leaks and similar occurrences with significant negative impact on humans or the environment (e.g. *Blacconiere/Patten*, 1994, *Krüger*, 2015, *Helfin/Wallace*, 2017, *Hummel et al.*, 2020). *Hummel et al.* (2020) examined mar-

5 To the best of our knowledge, only France, the Netherlands and Germany currently have such legislations in place. See "Loi relativ au devoir de vigilance 2017" ("French Corporate Duty of Vigilance Law") in France, the "Dutch Child Labour Due Diligence Proposal" in the Netherlands and the Supply Chain Due Diligence Act in Germany (Lieferkettengesetz).

6 For an initiative to pass, a majority of both the popular vote and cantonal vote is needed. While the RBI successfully achieved a popular majority, it failed to achieve the cantonal majority and was thus rejected.

ket reactions to firm-specific, negative environmental and social events. Using a sample of 920 negative social and environmental events listed in the RepRisk database, the authors found that market reactions to these events were significantly negative. They also found that these reactions were stronger close to the event date but became gradually weaker. Furthermore, the observed negative market reactions were not as strong in the case of firms with a high-quality sustainability disclosure published before the event in question. This finding indicates that sustainability disclosure can help prevent or at least mitigate negative market reactions triggered by negative sustainability events (*Hummel et al.*, 2020). *Krüger* (2015) also examined market reactions to firm-specific sustainability events, including both negative and positive events. He found that, overall, market reactions were strongly negative to negative sustainability-related events and weakly negative to positive sustainability events. His results indicate that market reactions to positive sustainability events are more favorable if agency problems are less likely.

Another group of studies focus on intra-industry market reactions to firms that are not directly involved in sustainability-related events that affect the entire industry in question. *Helfin/Wallace* (2017) examined the BP oil spill in the Gulf of Mexico in 2010, which is known as the "Deepwater Horizon" spill and released an estimated 780,000 m^3 of crude oil into the sea, and found that oil and gas firms experienced negative cumulative abnormal returns (CARs) following the spill. Similarly, *Blacconiere/Patten* (1994) analyzed the 1984 Bhopal disaster in India, which was caused by a chemical leak, killing directly over 2 200 people and causing over 500 000 injuries according to some sources. The authors found that firms with stronger environmental disclosure before the event experienced less negative market reactions. Taken together, prior empirical studies show that, overall, markets tend to react negatively to both negative and positive sustainability-related events and that the market reaction varies depending on the firms' prior sustainability performance, disclosure or public scrutiny.

3.2 Theory and Hypotheses Development

According to *Fama* (1965) the markets are efficient and reflect an updated value assessment of firms in respect to the accessible information. Thus, share price changes reflect the updated value assessment due to additional information. On that basis and in our context, changes in the stock market's response that can be attributed to the legislative process concerning the RBI will reflect changes in the way shareholders assess the incremental value of a firm due to updated information on the likelihood of stricter ESG legislation. To elaborate our hypothesis, we first need to estimate the trade-offs (i.e., the cost vs the benefit) that firms affected by the RBI would have had to face as a result, if the initiative had become law.

The RBI entailed three key and value-relevant obligations that firms under its scope would have had to comply with: mandatory non-financial disclosure, mandatory due diligence, and worldwide liability, also for the actions of firms along a Swiss firm's global supply chain. These three aspects of the RBI have to be taken into account when assessing its implications for firm value. Regarding *voluntary* sustainability disclosure, economic theory posits that firms voluntarily provide non-financial information as long as the benefits exceed the costs (*Christensen et al.*, 2019). This is indeed the case in Switzerland, where in 2017 the majority, i.e., 76 %, of the 110 largest companies published voluntarily a non-financial report (*Müller/Veser*, 2020, 307). When sustainability disclosure becomes

mandatory, however, these positive effects are ex ante not present. First, mandatory disclosure carries additional costs for companies, both direct and indirect. Second, changing the status of sustainability disclosure from voluntary to mandatory is likely to negatively affect the value of firms that had previously withheld information and are obliged to disclose after the change. Regarding mandatory due diligence and extended liability, both carry costs and litigation risks for the affected firms and are therefore likely to have negative effects on their value. Against this background, we formulate our first hypothesis:

H1: Legislative events related to the RBI affected negatively the stock price of Swiss firms relative to a control index.

According to *Fama* (1965), shareholders value a firm on the basis of the information available at a certain moment. Following that reasoning, we argue that the abnormal market reactions to the key legislative events associated with the RBI reflect a change in the shareholders' assessment of the likelihood that the respective firms would be subject to stricter regulation on sustainability. In other words, the shareholders implicitly applied a conditional probability calculus (*Bayes*, 1763) to assess this likelihood:

$$P(A \mid B) = \frac{P(B \mid A) \times P(A)}{P(B)} \tag{1}$$

In the context of our event study analysis, in equation (1) A reflects the expected adoption of stricter sustainability measures, B reflects the different key legislative events and $\frac{P(B|A)}{P(B)}$ the ratio of the probability of event B occurring in the presence of stricter measures and the general probability of event B occurring. Multiplying $\frac{P(B|A)}{P(B)}$ with $P(A)$, i.e., with the overall probability of stricter sustainability measures being adopted yields the conditional probability $P(A \mid B)$, which reflects the probability that stricter sustainability regulation will be adopted if event B occurs. Accordingly, if events B influence the RBI legislative process materially, we can assume that they will also influence the shareholder's conditional assessment of probability $P(A \mid B)$.

From the theories of *Bayes* (1763) and *Fama* (1965), we infer that market reactions reflect the difference between perceptions of a firm's value (a) based on available information and (b) when certain conditions apply. With regard to our concrete analysis, if the methodology is empirically valid, the abnormal market reaction should reflect how observers interpreted a particular legislative event B, updated their information and adjusted accordingly their estimates of the probability that stricter and mandatory measures on sustainability would be introduced and would affect firm value: Here, the estimated impact of the adjusted conditional probability on a firm's value is the product of the adjusted conditional probability $P(A \mid B_t) - P(A \mid B_{t-1})$ and the impact on firm value $E(V)$ that the adoption of the RBI was expected to have: $(P(A \mid B_t) - P(A \mid B_{t-1})) * E(V)$. This suggests that the key legislative events associated with the RBI should not be treated in isolation but comparatively, as every event changed the information available to observers. This leads us to hypotheses H2 and H3:

H2: Legislative events related to the RBI that were expected to increase the likelihood of stricter sustainability regulations affected negatively the stock price of Swiss firms relative to a control index.

H3: Legislative events related to the RBI that were expected to decrease the likelihood of stricter sustainability regulations affected positively the stock price of Swiss firms relative to a control index.

Following the theoretical reasoning of *Fama* (1965), we assume that, in our context, shareholders assessed the likelihood of stricter sustainability regulation being introduced and therefore considered rationally the potential impact of the RBI on firm value. However, the real impact of such events also depends on the expected financial and non-financial consequences of the respective legislative change. To price the effects of such a change, the shareholders assess the impact of the new measures on firm value. In our case, as the RBI aimed to make Swiss firms globally liable for their own and their supply chain's operations and to mandate due diligence, differences in the impact of the RBI on firm value reflect differences in firm-specific risks. Following *Yoon et al.* (2018) and *Cho/Patten* (2007), we argue that sustainability-sensitive sectors face higher risks associated with liability. We therefore expect to find that the stock-market's reactions to the legislative events under study were stronger in sustainability-sensitive sectors:

H4: Stock-market reactions to events that increased the likelihood of stricter sustainability regulations were more negative for the sample of Swiss firms in sustainability-sensitive sectors relative to the control index.

H5: Stock-market reactions to events that decreased the likelihood of stricter sustainability regulations were more positive for the sample of Swiss firms in sustainability-sensitive sectors relative to the control index.

4. Research Design

4.1 Methodology

We applied the event-study methodology that is based on the research of *Brown/Warner* (1985, 6-8). To account for cross-sectional and event-induced variance, we used adjusted hypothesis-testing, following the recommendations of *Boehmer et al.* (1991, 269-271) and the modifications by *Kolari/Pynnönen* (2010, 4003-4023). To analyze the selected events, we applied the efficient market hypothesis outlined by *Fama* (1970, 388), according to which stock-market prices fully reflect all available information at "any point in time." According to that hypothesis, a firm's market value reflects the assessment of that firm's intrinsic value, based on the available information. According to (*Fama*, 1965, 39), the "full effects of new information on intrinsic values will be reflected nearly instantaneously in actual prices." In other words, stock markets react to new information because it reflects changes in a firm's intrinsic value. In our study, this means that examining how markets reacted to legislative events that would have affected firms within the scope of the RBI allows us to assess the impact of introducing stricter sustainability regulations on those firms' value.

Following *Brown/Warner* (1985, 6-8), to model the counterfactual we need to run an Ordinary Least Squares (OLS) regression for the treated firms over a total observation period of 100 trading days prior to the focal event. We therefore regressed the daily stock market returns $R_{i,t}$ of the treated firms i on the daily stock market returns $R_{m,t}$ of a reference market index m. We based the return measure on the total return index according to the date we accessed the Thomson Reuters database.

The total return index reflects the daily growth of a share's value on the assumption that dividends are reinvested immediately at the closing price. This helps avoid biased empirical inferences due to dividend payments. Given the empirical insight that a "significant part of the international structure of country correlations can be explained by the industry compositions of the national stock market indices" (*Roll*, 1992, 38), we modified the equation that *Brown/Warner* (1985, 6-8) used to prevent possible biases due to industry composition and cross-correlations. Following this approach, we constructed a multi-factorial model, where we regressed the daily stock market returns $R_{i,t}$ of each firm i within the scope of the RBI on the daily stock returns of equally weighted control sector indices[7] $R_{s,t}$ for each sector s to estimate the model parameters α_i and $\beta_{1,i}$ to $\beta_{10,i}$, where $\varepsilon_{i,t}$ equals the error term of firm i on day t:

$$R_{i,t} = \alpha_i + \beta_{s,i} \times R_{s,t} + \varepsilon_{i,t} \quad (2)$$

where $s \in 1, \ldots, 10$.

The parameters $\beta_{1,i}$ to $\beta_{10,i}$ represent the correlation in return development of the treated firm and the reference sector indices. Using the model parameters α_i and $\beta_{s,i}$, we can estimate the counterfactual CF for each firm i and trading day t[8]. Following *Brown/Warner* (1985, 8), we can then calculate the abnormal return[9] $AR_{i,t}$, which reflects the impact of the new information on the firm's market value,[10] by subtracting the counterfactual from the respective stock market performance.[11] The cumulative average abnormal return (CAAR) of the respective event e, i.e. $CAAR_e$, is calculated by summing up all abnormal returns of the same day into an equally weighted index, averaging it by the total number of firms n[12] and summing up the calculated average abnormal returns AAR_t for all event days.[13] Finally, we summed up and averaged the $CAAR_e$ of all events to calculate the total cumulative average abnormal return, i.e. $TCAAR$, which reflects the overall abnormal market reaction that can be attributed to the legislative process associated with the RBI.[14]

Following *Krüger* (2015) and *Hummel et al.* (2020), we focus on a three-day event window in our analyses. The rationale here is that amplifying the event window increases the likelihood of competing events occurring and could therefore influence the interpretation of the result. Also, in our empirical setting we do not expect that the legislative events we consider could have triggered early or late spillovers beyond one day before or after each event. We base this assumption on the fact that each of these events involved an unexpected political opinion change or a vote that was too narrow to allow insider forecasts of the outcome several days before the event and whose result was published by

7 Control sector indices are derived based on a control group and according to the sector classifications of the Global Industry Classification Standard (GICS).

8 $CF_{i,t} = \hat{\alpha}_i + \hat{B}_{s,i} \times R_{s,t}$.

9 In the academic literature (i.e. *Hummel et al.*, 2020, 9) the "excess return" AR, as used by Brown and Warner, is often called "abnormal return." In fact, this is the more accurate term as the actual return does not necessarily exceed the counterfactual. For that reason, in this study we apply this nomenclature.

10 Under the assumption that there is no significant omitted variable bias.

11 $AR_{i,t} = R_{i,t} - CF_{i,t}$.

12 $AAR_{i,t} = \frac{\sum_{i=1}^{n} AR_{i,t}}{n}$.

13 $CAAR_e = AAR_{t-1} + AAR_t + AAR_{t+1}$.

14 $TCAAR = \sum_e CAAR_e$.

the parliament within minutes after it had been decided. For those reasons, early spillovers caused by insider information are of limited concern in this event study.

In the t-test we performed on the AAR_t, $CAAR_e$ and $TCAAR$ we had to take into account cross-sectional correlations as well as event-induced volatility, which might produce inter-temporal and contemporaneous correlations between the residuals. Following the research of *Boehmer et al.* (1991, 269-271) and *Kolari/Pynnönen* (2010, 4003), we applied an adjusted BMP-test.[15] In contrast to the frequently applied adjusted Patell-test, the adjusted BMP-test is "robust to both variance changes and cross-correlation" (*Kolari/Pynnönen*, 2010, 4023).

4.2 Selection of the Legislative Events

Table 1 provides an overview of the 25 legislative events associated with the RBI. We analyzed these events based on a probability assessment in line with equation (1). Accordingly, the events are included in the event study when considered material for the likelihood of stricter sustainability legislation. We excluded events that confirmed previous events (A) and events associated with abnormal market volatility due to the COVID-19 pandemic (E). The six key events that, in our estimate, increased (C) or decreased (D) significantly the likelihood that stricter sustainability legislation would be introduced are: (1) the submission of the RBI to the Swiss parliament, (2) the passage of the first counterproposal by the National Council, (3) the rejection of that counterproposal by the Council of States, (4) the announcement of the Federal Council to elaborate a counterproposal and consequently the reversal of the earlier decision to propose a rejection of the RBI without counterproposal, (5) the adoption of a much weakened counterproposal as proposed by the Federal Council and elaborated by the Council of States without liability regulations by the National Council and (6) the popular vote; i.e., the referendum where the RBI was rejected.

Table 1: Key events of the RBI's legislative process

Date	Event	Include (I) / Exclude (E)	Criteria for inclusion / exclusion
October 10, 2016	**The RBI is submitted to the Swiss parliament.**	**I**	**C**
September 15, 2017	The Federal Council recommends that the parliament rejects the RBI without a counterproposal.	E	B
November 13, 2017	The Legal Affairs Committee of the Council of States votes for the elaboration of an indirect counterproposal.	E	B
December 11, 2017	The Legal Affairs Committee of the National Council votes to reject the elaboration of an indirect counterproposal.	E	B
January 16, 2018	The Legal Affairs Committee of the Council of States votes to wait for further decision until the National Council decides upon the revision of the law on companies limited by shares, in order to be optionally able to include an indirect counterproposal to the RBI into the revision.	E	B

15 For further specifications on the adjusted BMP-test, see *Kolari/Pynnönen* (2010, 4002-4003).

Date	Event	Include (I) / Exclude (E)	Criteria for inclusion / exclusion
May 4, 2018	The Legal Affairs Committee of the National Council prepares an indirect counterproposal to the RBI as part of the revision of the law on companies limited by shares.	E	B
June 11, 2018	The Swiss Coalition for Corporate Justice announces the withdrawal of the RBI, provided that the counterproposal is approved.	E	B
June 14, 2018	**The National Council passes the counterproposal.**	**I**	**C**
October 17, 2018	The Legal Affairs Committee of the Council of States votes for the elaboration of a counterproposal as suggested by the Nacional Council.	E	B
February 19, 2019	The Legal Affairs Committee of the Council of States weakens RBI by adding subsidiary jurisdiction of Swiss Courts, which lowers the possibilities to sue liability issues in Swiss Courts.	E	B
March 12, 2019	**The Council of States rejects the counterproposal.**	**I**	**D**
April 5, 2019	The Legal Affairs Committee of the National Council again approves the counterproposal.	E	A
June 13, 2019	The National Council again passes the counterproposal.	E	A
August 14, 2019	**Federal Council opinion change: Contrary to previous decision the Federal Council announces the elaboration of a counterproposal with mandatory sustainability disclosure for large firms in accordance with the EU NFRD.**	**I**	**C**
September 3, 2019	The Legal Affairs Committee of the Council of States weakens the counterproposal to the RBI by increasing judiciary hurdles and, accordingly, the enforceability of liability issues.	E	B
September 10, 2019	The Swiss Coalition for Corporate Justice announces again its readiness to withdraw the RBI, provided that one of the elaborated counterproposals is approved either by the National Council or the Council of States.	E	A
September 26, 2019	Despite public and political outrage, the Council of States complies with the request to postpone the debate on the RBI in order to consider the Federal Council's counterproposal in the deliberations.	E	B
December 18, 2019	The Council of States rejects the counterproposal of the National Council and approves a much weakened counterproposal without mandatory liability as introduced by the Federal Council.	E	A
March 4, 2020	The National Council insists on a counterproposal with stricter liability provisions.	E	E
March 09, 2020	The Council of States again insists on a counterproposal without stricter liability provisions.	E	E
March 11, 2020	The National Council again votes for a counterproposal including stricter liability provisions.	E	E
June 8, 2020	**The National Council approves the counterproposal without liability and due diligence regulations, as proposed by the Conciliation Committee of the National Council and the Council of States.**	**I**	**C**

Date	Event	Include (I) / Exclude (E)	Criteria for inclusion / exclusion
June 9, 2020	The Council of States approves the counterproposal without liability and due diligence regulations, as proposed by the Conciliation Committee of the National Council and the Council of States.	E	A
June 19, 2020	The National Council and the Council of States approve the counterproposal of the Conciliation Committee without liability and due diligence regulations in the final vote.	E	A
November 29, 2020	**Popular vote (with indirect counterproposal) on the RBI. The RBI is rejected.**	**I**	**D**

This table shows all key events of the legislative process relating to the RBI, sorted by date. It also indicates whether each event was included in or excluded from the event-study analysis and the criteria we applied for exclusion or inclusion, as listed below:

A Confirms a prior event (adds no new significant information).
B Assessed to have non-material influence on the likelihood of stricter sustainability legislation.
C Assessed to have material influence on and increasing the likelihood of stricter sustainability legislation.
D Assessed to have material influence on and decreasing the likelihood of stricter sustainability legislation.
E Dropped due to increased market volatility in relation with the coronavirus pandemic.

The submission of the RBI to the Swiss parliament is considered to increase the likelihood of stricter sustainability legislation as a new piece of legislation is introduced into the political process. Similarly, the passage of a wide-reaching counter proposal by the National Council in June 14, 2018, the elaboration of a weakened counterproposal by the Federal Council in August 14, 2019 as well the passage of this proposal in the National Council in June 8, 2020 are classified with the rationale C; to increase the likelihood of stricter sustainability legislation. We argue for a higher likelihood of stricter sustainability legislation in these cases due to the existence of counterproposals.[16] Conversely, the rejection of the wide-reaching counter proposal in March 12, 2019 reverses the process triggered on June 14, 2018 and is accordingly considered to lower this likelihood. The last event of this legislative process, the popular vote on November 29, 2020 is considered to lower the probability of stricter sustainability legislation given that the RBI was rejected.

4.3 Sample

Our sample includes firms listed in the SPI and a control group of firms listed in the Russell 3000 Index, the most comprehensive indices in Switzerland and the US. Both indices cover a broad range of firms including large cap, mid cap and small cap companies, thereby allowing for sector-specific analyses.[17] The last daily return we consider is dated December 31, 2020.

We need a control group to construct our counterfactual and eventually to calculate the abnormal returns. We used US firms, rather than EU firms, as a control group because there were no sustainability-related regulatory events in the US across our sample period that might have confounded our results. In contrast, EU firms were affected by the imple-

16 Counterproposals "automatically" come into effect when an initiative is rejected.
17 Specifically, the Russel 3000 index covers approximately 98 percent of US stock market capitalization.

mentation of the NFRD during the observation period. This made it difficult to assume that the relationship between daily stock market returns of European and Swiss firms was constant before the RBI legislative process began. A constant relationship between the treatment and control group is a prerequisite for a valid counterfactual, given that the parameters in equation 2 are based on the daily stock market returns of an equally weighted index of US firms. In section 5.3, we test the robustness of our results with regard to the sample construction. Specifically, we use propensity-score matching to construct a matched control group of US firms based on firm size, firm value and sector affiliation.

Table 2: Sample selection and description

Panel A: Sample selection procedure

	Swiss Firms	US Firms	Observations
Initial sample population	212	2,989	4,017,255
Less firms with at least one missing daily market return observation	-27	-520	-556,439
= final sample	**185**	**2,469**	**3,460,816**

Panel B: Sample description by industry

Industry Code	Industry Name	Swiss Firms	US Firms
10	Energy	0	92
15	Materials	10	109
20	Industrials	47	353
25	Consumer discretionary	12	282
30	Consumer staples	12	99
35	Healthcare	23	403
40	Financials	43	491
45	Information technology	14	315
50	Communication services	5	94
55	Utilities	3	69
60	Real estate	16	162

Panel A shows the summary statistics of the firms in the treatment and control samples used in the event-study analysis. Panel B shows the summary statistics of the firms in the treatment and control samples categorized by sector.

The initial sample we derived from the SPI and the Russel 3000 Index contained daily firm observations for a total of 3 201 firms covering the period from January 4, 2016 to August 28, 2020. To refine our sample and safeguard the empirical validity of our analysis, we excluded all firms for which we did not have a complete set of daily observations. We summarize the sample-selection process in Panel A of Table 2. The final sample contains 3 460 816 observations of the daily stock-market returns of 185 Swiss (i.e., the treatment group) and 2 469 US (i.e., the control group) firms.

Panel B of Table 2 shows the sample distribution by sector. In several sectors there are very few or even no treatment firms. Nevertheless, we still included the sector parameters in equation 3.3 and the respective control firms in the regression, because many firms in

the treatment group are, in fact, conglomerates operating in several sectors[18]. However, the sector parameters we consider here contain enough information to allow us to model the counterfactual more precisely, even in sectors with no treatment firms.

Like *Yoon et al.* (2018), we identified which sectors are sustainability-sensitive in order to analyze the impact of the RBI on the value of firms operating in such sectors, compared to firms in less sensitive sectors. Our methodology is based on *Kamminga* (2016), who identified sustainability-sensitive sectors by analyzing the number of civil society reports transmitted to the company response database of the Business & Human Rights Resource in 2014 (*Kolari/Pynnönen*, 2010, 4023). The Center's classification system takes into account actual firm structures and is based on recent data.

The findings of *Kamminga* (2016) indicate that the comparative share of civil society reports transmitted per sector has remained more or less constant since 2008. Consequently, we can use the data collected from these reports to derive a stable proxy that allows us to identify sustainability-sensitive sectors. We consider the following sectors to be particularly exposed to sustainability issues: *materials and industrials*, *information technology* and *consumer discretionary* as these sectors are responsible for 35 %, 16 % and 15 % of the total number of transmitted reports.[19] We subsequently added to this list the sector *consumer staples*, as Swiss firms are responsible for 60 % of the global coffee trade and for a large share of the global cocoa trade (*Lannen et al.*, 2016), both of which are associated with human rights violations (Factsheet IV RBI, 2019). We furthermore included the *financial sector*, whose mediating role in the economy has an enormous impact on sustainable business. We do not regard the *utilities*, *real estate*, *healthcare* and *communications services* sectors as sustainability-sensitive with respect to the consequences of the RBI.

5. Results

5.1 Descriptive Statistics

Table 3 displays the summary statistics of the data used in the regression analysis, ordered by country and sector. The mean daily total return index shows the average daily returns by sector and country for the 1 304 trading days between January 4, 2016 and December 31, 2020, which is our period of coverage. Averaging the mean daily total return indices for Swiss firms and for US firms across all sectors (see Table 3) yields a daily mean return of 0.0004 for Swiss and 0.0008 for US firms. This indicates that the US firms experienced, on average, nearly double the increase in daily returns that Swiss firms experienced. This is in line with the pattern we observe on the basis of the data derived from the SPI and the Russel 3000 Index, from which we drew our sample. Multiplying the number of trading days we used in our analysis with the mean daily total returns per country, we identify an average stock-market increase of 52 % for Swiss and 104 % for US firms which coincides with the increase of the SPI and Russel 3000 indices in the observation period and demonstrates the validity of the data on daily returns.

18 We should note that the GICS sector classification can only identify the primary sector in which a firm operates; consequently, it is not possible to use this classification to identify the sectors in which conglomerates are active.

19 *Figure 1* in the Appendix provides an overview of the distribution of transmitted civil society reports per sector.

5.2 Hypotheses Testing

Panel A of Table 4 presents the total CAARs for the aggregated events over three-day [-1,1], seven-day [-3,3] and eleven-day [-5,5] windows. Across all sectors, the total CAARs are significantly negative both over the three-day and the seven-day windows. The total CAARs are also negative, but not significant, over the eleven-day window. These results show that the legislative process associated with the RBI had an average negative impact of -0.82 % on the value of firms within the RBI's scope, supporting the hypothesis that the cost–benefit ratio for these firms was negative. Considering that each key event in the RBI legislative process has a cumulative average abnormal return of -0.82 %, the total cumulative abnormal return (TCAR) for the entire process, spanning all six key legislative events, equals -4.92 %. This suggests that the RBI, as a potential package

Table 3: Summary statistics

Industry Code	Country	Mean Daily Total Return Index	Std. Dev.	Min.	Max.	Obs.
15	Swiss	0.0006	0.0110	-0.1041	0.0762	1304
20	Swiss	0.0004	0.0089	-0.0810	0.0562	1304
25	Swiss	0.0002	0.0119	-0.1521	0.0934	1304
30	Swiss	0.0002	0.0080	-0.0775	0.0397	1304
35	Swiss	0.0003	0.0100	-0.0825	0.0579	1304
40	Swiss	0.0004	0.0074	-0.0764	0.0667	1304
45	Swiss	0.0006	0.0121	-0.0999	0.0578	1304
50	Swiss	-0.0001	0.0098	-0.0769	0.0592	1304
55	Swiss	0.0008	0.0113	-0.0956	0.0664	1304
60	Swiss	0.0005	0.0064	-0.0452	0.0336	1304
All	**Swiss**	**0.0004**	**0.0064**	**-0.0704**	**0.0462**	**1304**
10	US	0.0004	0.0251	-0.2535	0.2183	1304
15	US	0.0008	0.0168	-0.1136	0.1032	1304
20	US	0.0008	0.0159	-0.1242	0.1100	1304
25	US	0.0009	0.0171	-0.1730	0.1499	1304
30	US	0.0006	0.0108	-0.1019	0.0836	1304
35	US	0.0011	0.0154	-0.1396	0.0916	1304
40	US	0.0006	0.0159	-0.1400	0.0935	1304
45	US	0.0011	0.0151	-0.1273	0.1045	1304
50	US	0.0006	0.0143	-0.1250	0.1014	1304
55	US	0.0006	0.0130	-0.1213	0.1444	1304
60	US	0.0009	0.0218	-0.1911	0.5187	1304
All	**US**	**0.0008**	**0.0137**	**-0.1316**	**0.0982**	**1304**

Table 3 shows the summary statistics of the daily return data used for calculating the abnormal returns.

Table 4: Aggregate TCAARs for all six legislative events studied

Industry Code	Industry Name	TCAAR[-1,1]	TCAAR[-3,3]	TCAAR[-5,5]
Panel A: Total CAARs for all events and three event windows				
-	Total of all industries	-0.82%**	-0.94%*	-0.63%
		(0.0400)	(0.0533)	(0.1551)
Panel B: TCAARs by industry				
15	Materials	-0.68%	-1.68%**	-1.08%*
		(0.3258)	(0.0438)	(0.0852)
20	Industrials	-1.01%*	-1.44%**	-0.94%*
		(0.0680)	(0.0268)	(0.0975)
25	Consumer discretionary	-0.43%	-0.46%	-0.29 %
		(0.3068)	(0.3500)	(0.5364)
30	Consumer staples	-0.80%*	-0.84%*	-0.93%*
		(0.0544)	(0.0729)	(0.0676)
35	Healthcare	-0.79%	-0.56%	-0.79 %
		(0.2661)	(0.4012)	(0.3120)
40	Financials	-0.70%**	-0.81%*	-0.21%
		(0.0358)	(0.0794)	(0.3814)
45	Information technology	-1.37%**	-1.69%*	-1.69 %
		(0.0270)	(0.0516)	(0.1162)
50	Communication services	-0.61%	-0.57%	-0.52 %
		(0.2047)	(0.2705)	(0.3917)
55	Utilities	-0.70%	-1.77%*	-0.45%
		(0.1232)	(0.0665)	(0.4444)
60	Real estate	-0.39%	-0.66%	0.58 %
		(0.3092)	(0.3914)	(0.9713)

Table 4 shows the aggregated results of the event study on six key event dates and with three event windows specified. We used the test of *Boehmer et al.* (1991), with the adjustments made by *Kolari and Pynnönen* (2010). The p-values are presented in parentheses, while *, ** and *** indicate a 0.10, 0.05 and 0.01 level of significance respectively. Panel A displays the results for all industries, Panel B displays the results by industry.

of legislative measures, led, on average, to significant losses in the value of Swiss firms within its prospective scope, even though the counterproposal that was eventually passed is considerably less strict.

This finding is similar in significance to the findings of *Grewal et al.* (2018), who calculated an average market reaction of -0.79 % to firms that are affected by the NFRD. In comparison, the effect of the RBI is more pronounced and reflects stronger market reactions to the affected firms. Our finding is also consistent with those of *Krüger* (2015) and *Hummel et al.* (2020),

who documented negative market reactions to critical sustainability-related events. Taken together, our results thus show that shareholders evaluated negatively the key legislative events associated with the RBI, lending support to our first hypothesis, H1.

Next, we examined our results by sector to check for sector-specific differences in the reactions of equity holders and in the size of the market reactions and to compare our results with those of *Grewal et al.* (2019). The results of this analysis are displayed in Panel B of Table 4. All sector-specific *TCAARs* are negative and in the case of the *information technology*, *consumer staples, financials* and *industrials sectors*, the results are statistically significant.[20] In the first case, this is due to the large exposure of information technology producers to sustainability and liability risks in their supply chain; in the second case, the result can be explained by the elaborate rules applying to the Swiss consumer staples sector, mainly due to the issues surrounding the cocoa and coffee trade; in the third and fourth case the significant results might reflect the exposure of Swiss banks as well as Swiss companies in the industrial sector to sustainability issues. These peculiarities have been documented by the RBI committee (Factsheet IV RBI, 2019) and are also reflected in the findings of *Lannen et al.* (2016). When we sum up the impact of all six key legislative events considered here, we see that the information technology sector experienced the most substantial average abnormal returns of all sectors, with a TCAAR of -1.37 % and a cumulated value loss of -8.22 % (TCAR). All four sectors for which the TCAAR results are statistically significant, i.e., information technology, consumer staples, financials and industrials, are sustainability-sensitive. We found no statistically significant results in the case of the materials sector, however, although it is also sustainability-sensitive.

Table 5: The CAARs for each of the six legislative events

Event date	Rationale	Expectation	CAARe[-1,1]	CAARe[-3,3]	CAARe[-5,5]
October 10, 2016	C	-	-0.78% (0.3065)	-1.37% (0.2334)	-0.12% (0.6709)
June 14, 2018	C	-	-0.53% (0.4489)	-1.95%* (0.0876)	-2.63%* (0.0967)
March 12, 2019	D	+	0.41% (0.7765)	-0.94% (0.5952)	-0.07% (0.9994)
August 14, 2019	C	-	-1.83%* (0.0931)	-0.77% (0.7125)	0.63% (0.7261)
June 8, 2020	C	-	-2.45%** (0.0268)	-1.80% (0.1831)	-1.14% (0.3137)
November 29, 2020	D	+	0.46% (0.7338)	1.36% (0.5785)	-0.29% (0.5360)

Table 5 shows the results of the event study for the six key events assessed separately with three event windows specified. We used the test of *Boehmer et al.* (1991), with the adjustments made by *Kolari and Pynnönen* (2010). The p-values are presented in parentheses, while *, ** and *** indicate a 0.10, 0.05 and 0.01 level of significance respectively.

20 However, the results by sector have to be treated with caution, given that the number of firms in the treatment group is limited, as Table 2 shows.

Table 5 displays the CAARs for each of the six key legislative events separately. Again, we examined the three-day, seven-day and eleven-day windows. Four of the six key legislative events are classified as "C," which means that they were perceived as likely to lead to the adoption of stricter sustainability legislation. The remaining events are classified as "D," which means that they were perceived as unlikely to lead to stricter laws on sustainability.

The results reflect the different reactions of the market participants to the key legislative events we consider, which is consistent with our expectations. The events that were expected to lead to stricter sustainability regulation are associated with negative CAARs, whereas the events that decreased the likelihood of stricter regulation are associated with positive CAARs. However, the CAARs are statistically significant in the case of only two of the six legislative events; namely, the announcement of the counterproposal by the Federal Council on August 14, 2019 and the approval of the counterproposal by the National Council on June 8, 2020. These results partly support hypothesis H2, which posits that markets react negatively to events that increase the likelihood of stricter sustainability regulation. They do not support hypothesis H3, however, which posits that markets react positively to events that decrease this likelihood.

To further investigate hypotheses H2 and H4, we separately analyzed the "positive" and "negative" events. Panel A of Table 6 presents the TCAARs for all legislative events classified as negative. The overall TCAAR is -1.40 % and therefore more pronounced than the overall TCAAR of all six legislative events. The results are statistically significant at the 1 % level, providing further support for hypothesis H2.

Table 6: Aggregate TCAARs for all key legislative events classified as negative

Industry Code	Industry Name	TCAAR[-1,1]	TCAAR[-3,3]	TCAAR[-5,5]
Panel A: TCAARs for all key legislative events classified as negative				
-	Total of all industries	-1.40%*** (0.0028)	-1.47%** (0.0167)	-0.80% (0.1536)
Panel B TCAARs by industry				
15	Materials	-2.02%*** (0.0014)	-2.73%*** (0.0011)	-1.40%** (0.0310)
20	Industrials	-1.94%*** (0.0009)	-2.10%*** (0.0095)	-1.32%* (0.0879)
25	Consumer discretionary	-0.46% (0.3979)	-0.68% (0.4036)	-0.12 % (0.7145)
30	Consumer staples	-1.37%** (0.0155)	-1.44%** (0.0180)	-1.58%* (0.0577)
35	Healthcare	-1.36%** (0.0325)	-1.21%* (0.0886)	-0.76 % (0.4241)
40	Financials	-1.00%** (0.0250)	-1.03%* (0.0755)	-0.04% (0.4354)
45	Information technology	-2.13%*** (0.0023)	-2.43%*** (0.0047)	-2.18 %* (0.0636)
50	Communication services	-0.78% (0.1113)	-0.39% (0.2024)	-0.48 % (0.3350)

Industry Code	Industry Name	TCAAR[-1,1]	TCAAR[-3,3]	TCAAR[-5,5]
55	Utilities	-0.57% (0.2712)	-1.14% (0.2372)	-0.36% (0.5210)
60	Real estate	-0.97%** (0.0197)	-0.54% (0.2089)	0.05 % (0.7776)

Table 6 presents the results from the event study on four negatively classified event dates, with three event windows specified. We used the test of *Boehmer et al.* (1991), with the adjustments made by *Kolari and Pynnönen* (2010). The p-values are presented in parentheses, while *, ** and *** indicate a 0.10, 0.05 and 0.01 level of significance respectively. Panel A displays the results for all industries, Panel B displays the results by industry.

Panel B displays the TCAARs for the "negative" RBI events by sector. The results for all firms in sustainability-sensitive sectors, except for the consumer discretionary sector, are statistically significant. In line with H4, the materials, industrials and information technology sectors show the most negative TCAARs, with values between -1.94 % and -2.13 %. These results are also in line with the analysis of *Kamminga* (2016), who identified these three sectors as particularly exposed to sustainability-related violations. The consumer staples sector shows a TCAAR of -1.37 %, the fourth highest negative impact on firm value. This result reflects the peculiarities of this sector in Switzerland. The same applies to the financial sector, which shows a statistically significant TCAAR of 1 %. Only the results for the consumer discretionary sector, where the TCAAR is statistically insignificant, and for the healthcare sector, where the TCAAR of -1.36 % is highly significant, are against our expectations and thus do not support H4. Considering that five of the six sectors with a TCAAR over 1.0 % and all sectors with a TCAAR over 1.5 % are sustainability-sensitive, the overall empirical results confirm H4, providing evidence for a negative relationship between the degree to which a sector is sustainability-sensitive and the impact the RBI had on the value of firms in that sector.

Table 7: Aggregate TCAARs for all key legislative events classified as positive

Industry Code	Industry Name	TCAAR[-1,1]	TCAAR[-3,3]	TCAAR[-5,5]
Panel A: TCAARs for all legislative events classified as positive				
-	Total of all industries	0.58% (0.6463)	0.36% (0.9620)	-0.03% (0.6644)
Panel B: TCAARs by industry				
15	Materials	2.41% (0.1384)	0.81% (0.8914)	-0.03% (0.7061)
20	Industrials	1.15% (0.4574)	0.18% (0.7356)	0.10% (0.6848)
25	Consumer discretionary	-0.21% (0.6303)	0.14% (0.7312)	-0.47 % (0.6432)
30	Consumer staples	0.63% (0.9230)	0.65% (0.9555)	0.64% (0.6029)
35	Healthcare	0.53% (0.5007)	0.93% (0.5724)	0.67 % (0.5606)

Industry Code	Industry Name	TCAAR[-1,1]	TCAAR[-3,3]	TCAAR[-5,5]
40	Financials	0.25% (0.8239)	-0.04% (0.7037)	-0.23% (0.7090)
45	Information technology	0.38% (0.4390)	0.00% (0.9161)	-0.48 % (0.8160)
50	Communication services	-0.49% (0.8326)	-1.15% (0.7794)	-0.82% (0.7905)
55	Utilities	0.04% (0.8414)	0.37% (0.9161)	2.48% (0.3436)
60	Real estate	-0.13% (0.8455)	1.51% (0.3035)	0.92 % (0.9480)

Table 7 presents the results of the event study on two key event dates, with three event windows specified. We used the test of *Boehmer et al.* (1991), with the adjustments made by *Kolari and Pynnönen* (2010). The p-values are presented in parentheses, while *, ** and *** indicate a 0.10, 0.05 and 0.01 level of significance respectively. Panel A displays the results for all industries, Panel B displays the results by industry.

Panel A of table 7 displays the TCAARs associated with the two "positive" legislative events, which we examined to further investigate hypothesis H3. We see that these TCAARs are positive, and therefore in line with hypothesis H3, but not significant. Panel B of Table 7 shows the TCAARs by sector. It is obvious that in all sustainability-sensitive sectors, except the consumer discretionary sector, the TCAARs are positive. The table also shows that firms in the materials and industrials sectors have the most substantive TCAARs, which is in line with the findings of *Kamminga* (2016). However, none of the sector TCAARs are statistically significant and our findings thus do not support hypothesis H5. This finding is similar to those of *Krüger* (2015), whose analysis shows that market reactions to positive sustainability events tend to be less negative compared to negative events.

The results displayed in Panel B of tables 4, 6 and 7 are remarkable with regard to the materials sector, which is classified as particularly sustainability-sensitive. The analysis of all six legislative events yields a TCAAR equal to -0.68 %, which is not statistically significant and the third lowest TCAAR in all sectors (Panel B, Table 4). The absence of statistical significance suggests that the prospective RBI did not affect the value of firms in this sector. When we look at the negative events shown in Panel B of Table 6, however, we see that the abnormal return in that sector is highly statistically significant at -2.02 %, which is the second most substantial TCAAR in all sectors. To explain these contrasting results, we analyzed the two positive legislative events shown in Panel B of Table 7. Here we see that the materials sector exhibits by far the highest TCAAR, even though it is statistically not significant. This analysis suggests that the latter result is driven by the high exposure of the mining industry in particular to worldwide liability measures. Shareholders presumably priced firms in this industry taking into account the likelihood that these firms would come under stricter legislation and this, in turn, triggered the respective market reactions to the negative and positive key legislative events. This result underlines the importance of considering all key legislative events in order to measure the impact of legislative change on firm value. It also indicates that worldwide liability would have had a particularly negative impact on the value of firms in exposed industries.

5.3 Robustness

One may argue that our results might be biased due to the construction of our control group. These firms may substantially differ from our treated firms with regard to fundamental firm characteristics. We therefore tested the robustness of our main findings using an alternative control group. We constructed this control group using propensity score matching. Specifically, we matched data from 2015 on firm size, Tobin's Q and sector affiliation to construct a control group of US firms comparable to the sample of Swiss firms. For each Swiss firm, we selected the nearest neighbor using a caliper size of 0.1 and 1:1 nearest-neighbor matching. Using this control group, we then calculated the total CAARs as well as the event CAARe based on the methodology outlined in section 4.1 and re-ran our main analyses.

Table 8: Robustness – Aggregate CAARS and TCAARs for all six legislative events studied

Industry Code	Industry Name		TCAAR[-1,1]	TCAAR[-3,3]	TCAAR[-5,5]
Panel A: Total CAARs for all events and three event windows					
-	Total of all industries		-0.68% (0.1480)	-0.99%* (0.0824)	-0.84% (0.1280)
Panel B: The CAARs for each of the six legislative events and three event windows					
Event date	**Rationale**	**Expectation**	**CAARe [-1,1]**	**CAARe[-3,3]**	**CAARe[-5,5]**
October 10, 2016	C	-	-0.31% (0.6347)	-0.86% (0.3962)	0.47% (0.9854)
June 14, 2018	C	-	-0.34% (0.6239)	-1.51% (0.2120)	-2.94%* (0.0930)
March 12, 2019	D	+	0.61% (0.6584)	-0.64% (0.7519)	-0.29% (0.9119)
August 14, 2019	C	-	-2.30%* (0.0576)	-1.43% (0.4715)	0.24% (0.8917)
June 8, 2020	C	-	-2.24%* (0.0715)	-2.66% (0.1015)	-2.39% (0.1530)
November 29, 2020	D	+	0.83% (0.5739)	1.48% (0.5946)	0.11% (0.6732)

Table 8 shows the aggregated results of the event study on six key event dates and with three event windows specified for a sample of firms listed in the SPI and a matched control group of US firms. We used the test of *Boehmer et al.* (1991), with the adjustments made by *Kolari and Pynnönen* (2010). The p-values are presented in parentheses, while *, ** and *** indicate a 0.10, 0.05 and 0.01 level of significance respectively. Panel A displays the results for all events, Panel B displays the results for the six legislative events separately.

Table 8 displays the results. Panel A presents the results for the testing of hypothesis H1. These results are similar to our main findings thereby revealing negative market reactions to the events associated with the RBI. However, compared to our main findings, the market reactions are only significant for the 7-days event window. Panel B presents the results regarding hypotheses H2 and H3. Again, we obtain similar findings compared to our baseline specification. Specifically, we obtain significantly negative market reactions

for the events on June 14, 2018, August 14, 2019 and June 8, 2020 thereby supporting hypothesis H2, i.e. negative market reactions to events that increase the likelihood of stricter sustainability regulation.[21] Similar to our main findings, we do not find evidence in support of hypothesis H3.

Taken together, results from these additional analyses are consistent with our main findings thereby supporting their robustness.

6. Conclusion

This paper examines the market reactions to six key events in the legislative process associated with the RBI, which took place in the period 2016–2020 in Switzerland. The RBI was initiated in October 2016 and proposed a set of sustainability regulations for Swiss firms that were stricter than those in force at the time. In line with prior research (e.g. *Hombach/Sellhorn*, 2018, *Grewal et al.*, 2019), we expected to find that the market reacted negatively to the legislative events associated with the RBI and that its negative reactions reflected how the equity holders of Swiss firms assessed the prospective cost–benefit ratio, if the RBI became law. We furthermore expected to find that legislative events that increased the likelihood of more severe measures being introduced had a negative impact on the value of Swiss firms, whereas events that decreased this likelihood had a positive impact. Finally, we anticipated that all such events had a stronger impact on the value of firms in sustainability-sensitive sectors.

To test our hypotheses, we conducted an event-study and calculated the CAARs of 185 Swiss firms, which reflect their abnormal returns. As a control group, we used 2 469 US firms. To conduct further analysis, we classified the treatment firms into sustainability-sensitive and non-sensitive, based on an analysis of civil society reports transmitted to the company response database of the Business & Human Rights Resource in 2014 (*Kolari/Pynnönen*, 2010, 4023) and taking into account the peculiarities of the Swiss market. Our results show that, on average, the legislative process associated with the RBI had a significantly negative impact on firm value of 4.92 percent (TCAR). We also examined separately the legislative events that increased and those that decreased the likelihood of stricter sustainability regulation. We expected to find that the market reacted negatively to events that increased this likelihood and positively to events that decreased it. Our results are only partly in line with our expectations. Specifically, while we did find that the market reacted negatively to events that increased the likelihood of stricter sustainability regulation, we did not find any statistically significant market reactions to events that decreased this likelihood. These findings are robust to alternative sample specifications based on propensity-score matching.

Overall, the study shows that the equity holders of Swiss firms expected the costs that would result from the implementation of the RBI to outweigh the benefits. More generally, our results support concerns about the political costs of such reporting mandates. Our findings do not support the calls of investors for more transparent sustainability disclosure (*Fink*, 2021). In addition, the study shows that the RBI led to a more substantial loss of firm value than what *Grewal et al.* (2019) calculated. This difference might stem from

21 Note that regarding the legislative event on June 14, 2018, the negative market reactions are no longer significant for the 7-days event window.

potentially higher costs of the liability and due diligence requirements of the RBI which were in addition to the mere disclosure requirements imposed by the NFRD.

Our analysis also indicates that the impact of higher exposure to negative legislative events relating to sustainability cannot be completely reversed by positive events. This finding is in line with those of *Krüger* (2015), who detected weakly negative market reactions to positive sustainability events. Lastly, the results of our analysis on the materials sector suggest that in industries that are highly sensitive to sustainability issues, making firms globally liable for relevant violations has a strong negative impact on their value.

As always, this paper too is subject to several limitations, which, however, also provide opportunities for further research. First, our analysis focuses on instantaneous capital-market reactions. Based on the efficient market hypothesis, we argue that capital markets reflect the intrinsic value of firms. However, there is also criticism on this hypothesis. Relaxing this assumption would mean that we are particularly capturing short-term reactions of the capital-markets whereas long-term firm-value consequences might not yet be appropriately reflected in the share prices. Second, the events that this paper examines are tied to the Swiss political voting system, which is unique in various respects. Due to the peculiarities of the Swiss voting system and of the Swiss economy, the findings of this paper are not directly transferable to other economies.

More generally, the developments in Switzerland with regard to sustainability reporting mandates are substantially lacking behind the developments in the European Union. While the indirect counter-proposal, which closely follows the reporting requirements of the EU NFRD, firstly applies to the financial year 2023, the sustainability reporting requirements in the European Union are constantly increasing. For instance, with the adoption of the EU Taxonomy regulation, firms in the scope of the NFRD have to report from financial years 2021 onwards the percentage of turnover, capex and opex that relates to environmentally sustainable business activities. Furthermore, the EU is currently revising the NFRD (proposal for a new Corporate Sustainability Reporting Directive, CSRD, COM (2021) 189 final) to extend the scope of firms subject to the reporting mandate and introduce more detailed reporting requirements including sustainability reporting standards (*Hummel/Jobst*, 2022). Considering the long process until the adoption of a Swiss sustainability reporting mandate, it is unlikely that Switzerland will update and align the reporting requirements with the EU CSRD in the near future.

Appendix

Figure 1: Civil society reports transmitted to the Business & Human Rights Resource Center per sector

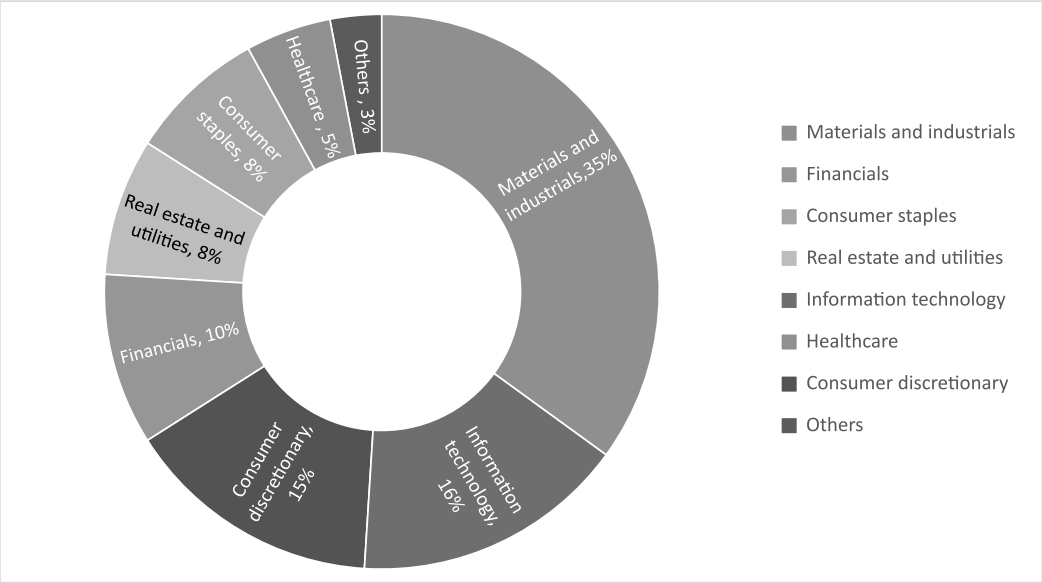

Figure based on Kamminga (2016, 100) and the Business & Human Rights Resource Center (2015)

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