

How Do Climate Policies Affect Holdings of Green and Brown Firms' Securities?*

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Abstract

We study how climate policies and significant events affect holdings of securities issued by low-carbon (green) and high-carbon (brown) firms. Using security-level data, we show that financial sectors increased their holdings of green firms' securities and reduced their holdings of brown firms' securities following the Paris Climate Agreement and the UN Climate Action Summit. The COVID-19 pandemic had a similar effect, highlighting the role of the carbon risk premium. Conversely, the private non-financial sector increased its holdings of brown firms' securities, indicating a shift of transition risks toward this sector. Lastly, home bias and the environmental performance of holder and issuer countries significantly influence these effects.

Keywords: Climate policies, COVID-19 pandemic, security-level data, difference-in-differences

JEL Codes: G11, G20, Q54

1 Introduction

Climate change has emerged as one of the most pressing challenges of the 21st century, with significant implications for the global economy, society, and the environment. In recent years, policymakers and financial institutions have become increasingly aware of the importance of incorporating environmental concerns into investment decisions, leading to a growing interest in understanding the relationship between environmental policies and financial markets. This paper investigates the impact of climate policies and other significant events, such as the Paris Climate Agreement (COP21), the UN Climate Action Summit 2019, the COVID-19 pandemic,

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and President Trump’s withdrawal from and President Biden’s rejoining of COP21, on holdings of securities issued by low-carbon (green) and high-carbon (brown) firms. By analyzing these events, we aim to contribute to the literature on the effects of environmental policies on financial markets, offering valuable insights for researchers, policymakers, and practitioners alike.

Understanding the impact of climate policies on financial markets is crucial for several reasons. First, it helps inform investors and financial institutions about the potential risks and opportunities associated with investing in environmentally friendly and carbon-intensive firms. This information is particularly relevant in the context of the increasing transition risks for high-carbon companies and the growing reputation risks associated with financing less environmentally friendly firms. Second, examining the response of financial markets to climate policies can provide valuable insights for policymakers seeking to design and implement effective climate regulations. By understanding the market’s reaction to these policies, policymakers can better anticipate potential unintended consequences and design more effective strategies for promoting sustainable investment. Finally, studying the impact of climate policies on financial markets can contribute to the broader literature on the relationship between environmental concerns and economic outcomes, helping inform the debate on the potential trade-offs and synergies between sustainability and economic growth.

To examine the impact of climate policies and other significant events on the securities issued by green and brown firms, we employ a difference-in-differences research design at the firm level. We analyze the differential effects of these events on debt and equity securities, as well as the heterogeneity in the responses of different financial sectors such as banks, investment funds, insurance companies, and pension funds. We also investigate the role of home bias in investors’ portfolios, the impact of the environmental performance of the holder’s and issuer’s country, and the reallocation of transition risks toward the non-financial sector. Our data, obtained from the Securities Holdings Statistics by Sector, encompasses the years 2014 through 2021 and includes securities held by euro area resident sectors.

Our analysis yields several key findings. First, we find that climate policies such as COP21 and the UN summit, have a robust and statistically significant impact on the debt and equity securities held by financial institutions and issued by green and brown firms. We observe that following each event, holdings of low-carbon companies’ securities increased, while those of high-carbon firms’ securities decreased across most financial sectors. We also find that debt securities displayed a stronger reaction than equity securities to both events, with different financial sectors driving the effects in 2016 and 2019. Banks played a significant role following COP21, while non-banking financial institutions, such as investment funds, insurance companies, and pension funds, determined the effect after the UN summit.

Second, we explore how the two climate policy events influenced the securities held by the non-financial sector to analyze a potential shift of transition risks from financial institutions to non-financial ones. We find that the private non-financial sector (non-financial firms and households) responded significantly differently than financial institutions, increasing its holdings of brown firms’ securities, particularly in the form of equities. This suggests that there is a risk-

allocation shift from the financial sector toward the private non-financial sector. In contrast, governments reduced their holdings of brown securities, aligning more closely with the financial sector’s behavior, and indicating their proactive support for the transition to greener industries.

Third, we observe that the COVID-19 pandemic had a significant impact on the securities issued by both green and brown firms and held by financial sectors. Following the initial shock in the first quarter of 2020, holdings of carbon-intensive firms’ securities declined substantially, while holdings of low-carbon firms’ securities increased. This effect was particularly pronounced for investment funds, insurance companies, and pension funds, while banks displayed a different reaction, potentially reflecting differences in their business models or delayed responses to the pandemic.

Fourth, our regional analysis confirms the existence of home bias in investors’ portfolios. Furthermore, the environmental performance of both the holder’s and issuer’s countries, as measured by the Environmental Performance Index by Hsu & Zomer (2014), influences the baseline effects of climate policies on securities holdings. Both these effects are especially pronounced after the UN summit. Notably, after the summit, financial institutions opted to eliminate holdings of foreign brown firms’ securities while increasing their holdings of domestic (home) brown firms’ securities. Concerning environmental performance, the post-summit rise in green equity holdings is primarily driven by financial institutions (holders) and non-financial firms (issuers) from countries with high environmental performance.

Lastly, we examine how President Trump’s withdrawal and President Biden’s rejoining of COP21 influenced the securities of green and brown US firms held by euro area financial sectors. We show that President Trump’s withdrawal led to portfolio re-balancing driven by both within-US and cross-regional shifts. Specifically, the withdrawal boosted the debt market financing of carbon-intensive US industries, while equity financing moved away from this market. In contrast, President Biden’s rejoining had a limited impact on holdings of securities issued by green and brown US firms.

We make several contributions to the literature. First, we contribute to the literature that analyzes the effect of climate-related policy events on the financial sector’s decisions. Our findings support previous research, such as the survey evidence for institutional investors by Krueger *et al.* (2020), which suggests that COP21 increased banks’ awareness of carbon risk. Reghezza *et al.* (2022) show that, following COP21, European banks reallocated credit away from polluting firms, suggesting that green regulatory initiatives in banking can have a significant impact in combating climate change.

Second, our results contribute to the existing literature showing that financial institutions take risks related to climate change and decarbonization of the economy into account. Our analysis aligns with the findings of Ilhan *et al.* (2021), Bolton & Kacperczyk (2021), and Ramelli *et al.* (2021b), among others, who indicate a transition risk premium in equity and options markets, which seems to be more pronounced in times of high public climate change awareness. de Greiff *et al.* (2018) examine syndicated loan data for fossil fuel firms to show that after COP21, banks have begun pricing the risk of stranded fossil fuel reserves. Moreover, Kleimeier

& Viehs (2018) assert that firms that voluntarily disclose their carbon emissions face lower costs of credit compared to non-disclosing firms.

Third, we contribute to the literature on securities holdings themselves, as we provide a description of the evolution of holdings across industries and the different behavior of various financial sectors. The use of confidential Securities Holdings Statistics at the security level is relatively rare in the existing literature. Bekaert & Breckenfelder (2019) describe the (re)distribution of bank risk across asset classes, investor types, and geographic locations. The industrial decomposition of the ECB's holdings is analyzed in Papoutsis *et al.* (2021), who show that the ECB's corporate bond portfolio is tilted more toward brown sectors relative to a market portfolio.

Fourth, our paper also relates to the literature showing that better environmental, social, and governance (ESG) performance improves access to finance. Our findings support the results of the seminal papers by Cheng *et al.* (2014) and El Ghouli *et al.* (2011), among others, who demonstrate a positive relationship between ESG performance and access to finance. Furthermore, our paper offers a comprehensive analysis of the investment behavior of key stakeholders involved in the transition to a low-carbon economy. This analysis builds on previous work that explores stakeholder perspectives and the dynamics of the low-carbon transition (Steg *et al.*, 2014; Geels *et al.*, 2017), the financial implications of climate change (Dietz *et al.*, 2016; Ilhan *et al.*, 2021), the role of the financial sector in supporting the low-carbon transition (Campiglio *et al.*, 2018; Hartzmark & Sussman, 2019), and the integration of ESG factors into investment decisions (Krueger *et al.*, 2020; Engle *et al.*, 2020).

Last but not least, our findings can also be linked to recent developments in the literature on theoretical models of climate finance, such as the work of Pástor *et al.* (2021). This equilibrium model helps explain the impact of sustainable investing on asset pricing and capital reallocation, aligning with our observation that investors shift their funding from carbon-intensive industries to more environmentally friendly industries after climate policy actions.

The remainder of this paper is structured as follows. Section 2 introduces the climate policies and selected major events, along with the hypotheses to be examined. Sections 3 and 4 detail the methodology and data, including the Securities Holdings Statistics, and industry-level and firm-level carbon emissions. Section 5 presents our empirical findings, while Section 6 concludes.

2 Hypotheses

We investigate the impact of two significant climate policy events – the Paris Climate Agreement and the 2019 UN Climate Action Summit – on the securities holdings of euro area financial institutions. In particular, we explore how these events have affected the securities of high-carbon (brown) and low-carbon (green) non-financial firms held by institutions in the four main financial sectors: banks, investment funds, insurance companies, and pension funds. Furthermore, we explore how the two climate policy events influence the securities held by the euro area non-financial sector to analyze a potential shift of transition risks. Additionally, we examine the effects of three other events – the COVID-19 pandemic, President Trump's COP21 with-

drawal, and President Biden’s COP21 rejoining – on the securities held by financial sectors. We aim to understand whether the pandemic disproportionately affected holdings of either green or brown firms’ securities and how the US presidential announcements impacted the regional and industry allocation. The expected effects and estimation window for each event are shown in Table 1. Given the events, we formulate the following hypotheses.

Table 1: Climate Policy Events and COVID-19: Estimation Window and Expected Impact on Financial Sectors’ Securities Holdings

Event	Date	Post=1 from	Firms	Exp. sign
Paris Climate Agreement (COP21)*	Dec 2015	1Q 2016	green brown	+ –
UN Climate Action Summit (Greta Thunberg’s speech)	Sep 2019	3Q 2019	green brown	+ –
COVID-19**	Mar 2020	2Q 2020	green brown	+ –
Trump’s announcement of withdrawal from COP21	Jun 2017	3Q 2017	US green US brown	+/- +/-
Biden’s announcement of rejoining COP21***	Jan 2021	1Q 2021	US green US brown	+ –

Note: We use a time window of ± 2 years around the event. In a sensitivity analysis, we shorten the window to ± 1 year (see Section 5.6). *The Paris Climate Agreement was adopted in December 2015, it was signed in April 2016 and has been effective since November 2016. **Our estimation sample ends in 4Q 2021; hence the time window for the COVID-19 pandemic is seven quarters instead of eight. ***For President Biden’s announcement of rejoining COP21, the estimation window is reduced to 1 year.

Hypothesis 1: *Following COP21 and the 2019 UN Climate Action Summit, financial institutions increased their holdings of green industries’ securities and reduced their holdings of brown industries’ securities.*

Climate change and related policies expose financial institutions to transition risks (Beloni *et al.*, 2022). Carbon-intensive firms face carbon pricing risk and regulatory interventions (Bolton & Kacperczyk, 2021), negatively affecting profitability and market valuation. Studies by Matsumura *et al.* (2014) and Berkman *et al.* (2019) associate higher firm climate risk with lower firm value. Moreover, De Haas & Popov (2019) found that more equity-funded markets have lower per capita emissions, as stock markets seem to reallocate investment toward more carbon-efficient sectors. Drawing on these findings, investors may be motivated to reduce their exposure to brown firms and increase their exposure to green firms. We expect this to occur through both equity and debt securities, with a stronger effect on equity securities, given that they are considered riskier and more sensitive to shocks.

The 2019 UN Climate Action Summit and related global strikes heightened public awareness of climate change and policies.¹ Ramelli *et al.* (2021a) show, by studying the first global climate strike on March 2019, that climate activism affects investors’ behavior and carbon-intensive

¹ The first global strike took place in March 2019. A second followed in May 2019. The third global strike, which coincided with the UN Climate Action Summit, was reportedly the largest climate strike in world history (Barclay & Resnick, 2019).

firms' market value. They report decreased stock prices of brown firms and downgraded longer-term earnings forecasts. Thus, we expect the UN summit to have had a more pronounced impact than COP21 on holdings of green and brown firms' securities, due to greater public pressure and more environmentally responsible investment opportunities.

Hypothesis 2: *Following COP21 and the 2019 UN Climate Action Summit, the private non-financial sector increased its holdings of brown industries' securities, implying a shift of transition risk from the financial sector to the non-financial sector.*

As the financial sector reduces its exposure to brown industries, the non-financial sector could consider potentially undervalued assets or higher short-term returns as an opportunity, leading to an increase in their holdings of brown securities. This risk-allocation shift from the financial sector to the non-financial sector could be driven by various factors, such as differing risk appetites and investment horizons, or the pursuit of short-term gains in the face of long-term climate risks. For example, a growing body of research shows how various factors and behavioral biases affect households' financial participation and risk-taking (Cole *et al.*, 2014; Malmendier & Nagel, 2011; Guiso *et al.*, 2008), as well as investment decisions (Kleffel & Muck, 2022; Agarwal & Mazumder, 2013; Campbell *et al.*, 2011). These differing reactions might also be a reflection of the so-called "dumb money" and "smart money" phenomena, representing, respectively, less- and more-informed investment decisions, which are known to significantly impact financial markets (Evans & Fahlenbrach, 2012).

Hypothesis 3: *The COVID-19 pandemic affected holdings of brown industries' securities disproportionately more than those of non-brown (green and other) industries' securities.*

Carbon-intensive firms face higher risk premiums (Bolton & Kacperczyk, 2021) and increased tail risk associated with climate policy uncertainty (Ilhan *et al.*, 2021). An unexpected shock such as the COVID-19 pandemic could cause governments and investors to reevaluate climate change commitments, increasing uncertainty. Studies show that during the pandemic, sustainable stocks experienced lower volatility (Shields *et al.*, 2021) and higher resilience (Engelhardt *et al.*, 2021; Albuquerque *et al.*, 2020). Investors may prefer sustainable firms in turbulent times due to greater trust (Lins *et al.*, 2017), loyalty (Albuquerque *et al.*, 2020; Broadstock *et al.*, 2021), or a preference for sustainable funds (Hartzmark & Sussman, 2019; Riedl & Smeets, 2017).

Hypothesis 4a: *Financial institutions exhibit a home bias in their portfolio allocation decisions between green and brown industries, with a stronger preference for domestic or eurozone securities.*

Hypothesis 4b: *The shift of securities holdings toward green industries is affected by the environmental performance of both the holder's and issuer's countries, with high-performance countries showing a stronger reallocation than low-performance countries.*

We anticipate that regional variations will significantly influence investors' choices when allocating funds between high- and low-carbon industries following climate policy events. These

variations could be evident in several ways, as illustrated by the two hypotheses H4a and H4b. First, the literature has consistently shown a strong bias in favor of domestic securities in international investment portfolios. The various explanations for this home bias include exchange rate risk, easier access to information about local companies, barriers to international investment, and behavioral factors (Ardalan, 2018). Hence, whether a security is domestic or foreign might also influence investors' allocation choices between green and brown industries. Second, considering the variation in countries' environmental attitudes and their commitment to climate change mitigation (Hsu & Zomer, 2014), the holder's and issuer's country's environmental performance can influence changes in securities holdings of green and brown industries.

Hypothesis 5: *Following President Trump's withdrawal from and President Biden's rejoining of COP21, financial institutions in the eurozone changed their allocation of securities holdings toward US green and brown industries.*

While we assume that holdings of US firms' securities might have changed, the direction of this change is less certain a priori. President Trump's 2016 election and his announcement of the withdrawal from COP21 significantly lowered expectations about US climate change policy. Investors may have viewed the withdrawal as a signal of reduced pressure to implement greener policies in the short term, potentially motivating them to increase their exposure to carbon-intensive US companies. For example, Ramelli *et al.* (2021b) show that carbon-intensive firms' stock prices reacted positively to President Trump's election. Conversely, investors might have interpreted the withdrawal as meaning increased long-term uncertainty about US climate policy, leading to potential additional transition costs and higher reputation risks (Reghezza *et al.*, 2022). In line with this, Ramelli *et al.* (2021b) show that firms with climate-responsible strategies also gained after President Trump's 2016 election, particularly those held by long-term investors. However, the literature pays notably less attention to the impact of President Biden's rejoining of COP21, indicating a research gap.

3 Data

In this paper, we exploit a granular dataset that combines confidential data on securities held by euro area resident sectors with publicly available data on carbon emissions. The Securities Holdings Statistics by Sector (SHS-S) offer quarterly, security-by-security information, categorized by instrument type, holder sector and country, issuer sector and country, and additional classifications.²

We derive carbon emissions data from two sources. Firstly, we use Eurostat's official emissions statistics, which provide aggregate country-level estimates of carbon emissions divided across 64 industries based on the NACE Level 2 classification. Secondly, we supplement our analysis with firm-level carbon emissions data obtained from Refinitiv Eikon. We use the aggregate country-level emissions as our baseline, given that the firm-level data provides limited

² The legal basis for collecting SHS data is established in Regulation ECB/2012/24 and subsequent amendments, complemented by Guideline ECB/2013/7 and its amendments, which detail the procedures for national central banks to report to the ECB. For more information, please visit the ECB's website.

coverage in terms of the number of firms; it primarily encompasses larger firms, with smaller ones often missing.

3.1 Securities Holdings Statistics by Sector

The SHS-S data has been comprehensively collected since the fourth quarter of 2013, covering two main instrument types: equity securities (including investment fund shares) and debt securities. The dataset includes information on securities holdings by investors residing in the euro area and non-resident investors holding euro area securities. Positions for both debt and equity securities are recorded at market value.³

The SHS-S data offers information on various holder (investor) and issuer sectors, including banks, investment funds, insurance companies, pension funds, households, non-financial corporations, and government. In our baseline specification, we investigate a sub-sample of SHS-S comprising euro area financial institutions as holders and non-financial corporations as issuers. Specifically, we differentiate between four financial sectors: banks, investment funds, insurance companies, and pension funds. Due to similarities in their business models, we analyze insurance companies and pension funds collectively. In order to examine the shift of transition risks from the financial to the non-financial sector, we also examine securities held by euro area non-financial corporations, households, and governments in a part of the analysis.

Non-financial firms obtain funds from various sources, including debt and equity securities, as well as bank lending. We examine two of the three main sources of external finance: equity securities and debt securities. In doing so, we complement the existing paper by Reghezza *et al.* (2022), who examine the impact of climate policies on credit extended to carbon-intensive industries. Over the past decade, market funding (via debt and equity instruments) has increased in significance compared to traditional credit. As a result, our analysis covers a substantial portion of firms' financing and the exposure of euro area financial institutions to these firms.

Table 2 provides sample summary statistics for both equity and debt securities, broken down by holder sectors and issuer countries. For equity securities, investment funds hold the majority with 53.4% of total observations, whereas banks and IC&PF account for 17.2% and 29.4%, respectively. In terms of issuer countries, ROTW firms (i.e., firms outside the US and Europe) make up the largest portion at 46.3%, followed by US firms at 26.9% and euro area firms at 21.9%. Banks typically hold a lower average value of a security compared to investment funds and IC&PF. Securities issued by eurozone firms are, on average, the largest in our dataset, surpassing those issued by non-eurozone, US, or ROTW firms. Banks show the highest variability in average security amount, with a similar trend observed for US firms

³Data collection began voluntarily in the first quarter of 2009. However, reporting agencies have only been required to report data since the fourth quarter of 2013. Additionally, some other EU countries collect SHS-S data and report it to the ECB, such as Bulgaria, the Czech Republic, Denmark, Hungary, Poland, and Romania. The market value of debt and equity securities represents the value at which they could be purchased in the markets at the time of valuation (i.e., when the balance sheet is prepared). Moreover, positions for debt securities are also provided in nominal value. The nominal value of a debt security refers to the outstanding amount the debtor owes to the creditor (i.e., the sum of funds initially advanced, plus any subsequent advances and accrued interest, less any repayments).

Table 2: Securities Holdings Over the Period 2014–2021: Summary Statistics

	Equity securities			Debt securities		
	Obs.	Mean	SD	Obs.	Mean	SD
All	4,200,039	13.425	3.249	1,522,531	15.174	2.294
<i>By holder sector</i>						
Banks	721,854	11.064	3.851	221,468	15.047	2.471
Investment funds	2,241,638	14.444	2.783	757,140	15.412	2.233
IC&PF	1,236,547	12.956	2.795	543,923	14.896	2.267
<i>By issuer country</i>						
Euro area firms	921,028	13.933	3.269	524,563	15.520	2.398
EU non-EA firms	206,020	12.901	3.215	74,396	15.241	2.242
US firms	1,127,774	13.449	3.304	547,027	15.004	2.229
ROTW firms	1,945,217	13.226	3.182	376,545	14.927	2.188

Note: The table presents summary statistics of securities holdings by euro area financial institutions issued by non-financial firms worldwide. IC&PF are insurance companies and pension funds. ROTW firms are rest-of-the-world firms.

among issuer countries.

For debt securities, investment funds dominate the financial sector, holding 49.7% of total observations. In comparison, banks and IC&PF account for 14.5% and 35.7%, respectively. When we look at issuer countries, US firms hold the largest share at 35.9%, with euro area firms closely behind at 34.4%. Banks typically hold debt securities of slightly lower average value than investment funds, while IC&PF hold the smallest securities on average. The variability in the average security amount is most pronounced for banks among holder sectors and for euro area firms among issuer countries.

3.2 Carbon Emissions

We use carbon emissions as a measure of carbon risk since financial markets differentiate firms by their carbon intensity (Ilhan *et al.*, 2021; Bolton & Kacperczyk, 2021). Carbon emissions effectively capture how financial markets price transition risks for individual firms and whole industries. As noted, we consider both industry-level and firm-level emissions, each offering its own set of benefits and drawbacks.

Firstly, using industry-level emissions enables us to classify almost all firms in our sample, while firm-level emissions are only available for a portion of them. Moreover, investors can make portfolio allocation decisions concerning a firm’s carbon intensity based on its industry sector (Krueger *et al.*, 2020). This could be due to a lack of reliable data. While firm emissions data coverage is expanding every year, a substantial portion of the data is estimated rather than reported. For example, Refinitiv Eikon states that only half of all companies for which they report carbon emissions provide the data directly, while the other half is estimated using Refinitiv-developed models.

On the other hand, firm-level data offers a more accurate representation of a firm’s carbon intensity, allowing for the identification of intra-industry differences. High industry-level emissions typically imply high emissions for individual companies within the industry. However,

significant dispersion can exist between firms in the same industry, as shown by, for example, ECB/ESRB (2020). Therefore, firm-level emissions should be considered alongside industry-level emissions when analyzing a firm’s carbon intensity. Balancing the pros and cons of both data sources, we employ industry-level classification as our baseline and compare regression results with classifications using firm-level data (reported in the Appendix).

Eurostat reports carbon emissions for all EU countries, broken down by 64 industries (classified by NACE Rev. 2). We use these emissions to create two dummy variables: a green dummy, which equals 1 if the industry is classified as low-carbon and 0 otherwise, and a brown dummy, which equals 1 if the industry is classified as high-carbon and 0 otherwise. We then match our classification (the two dummy variables) with the SHS-S data based on the firm (issuer) sector.

We employ three different measures to classify industries as green or brown: absolute volume of carbon emissions, carbon emissions per capita, and carbon emissions per gross value added. Furthermore, we use two distinct thresholds: a quartile and a quintile of the distribution. Regardless of the combination we choose, the industry classification remains similar (see Table A1 in the Appendix), and switching between these methods does not impact our empirical results. As our baseline, we classify firms as green or brown based on the first and last quartile of the industry-level distribution of carbon emissions per gross value added. In our robustness analysis, we use various classification methods based on both industry-level and firm-level carbon emissions (refer to Section 5.6 for more details). For further information on firm-level emissions, please consult the Appendix (Subsection A.2).

3.3 Holdings of Green and Brown Securities: Descriptive Analysis

In this subsection, we examine the trends in holdings of securities issued by green and brown firms over time, held by various financial sectors.

Figure 1 shows how the volume of securities held by financial institutions in non-financial firms has grown over time. Debt and equity securities holdings are comparable in size, with equity holdings being approximately one-fourth larger. During the analyzed period of 2014 to 2021, the volume of both debt and equity securities holdings nearly doubled. Investment funds hold the largest share of both debt and equity securities, with roughly two-thirds of debt securities and nearly 90% of equity securities.

Regarding the private non-financial sector (Figure 2), the volume of debt securities held by households has decreased steadily over time, while the volume of equity securities held by households has increased, especially since 2020. As for firms and governments, their holdings seem to be fairly stable or slightly increasing over time. Compared to the financial sector, the volume of debt securities held by the non-financial sector is twenty times smaller, while the volume of equity securities is six times smaller.

Figures 3 and 4 compare holdings of green and brown firms’ securities held by the financial and non-financial sectors, respectively. Regarding the composition of securities holdings, both the financial and non-financial sectors predominantly hold green securities (ranging between 35–45% for the financial sector and government, 40–50% for non-financial firms, and 45–50%

Figure 1: Volume of Securities Holdings by Financial Sector: Amounts in EUR Billion

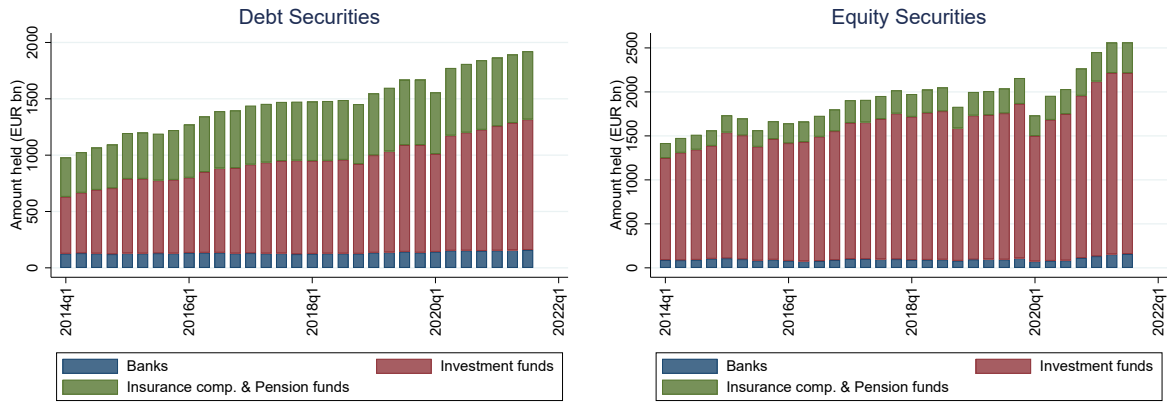
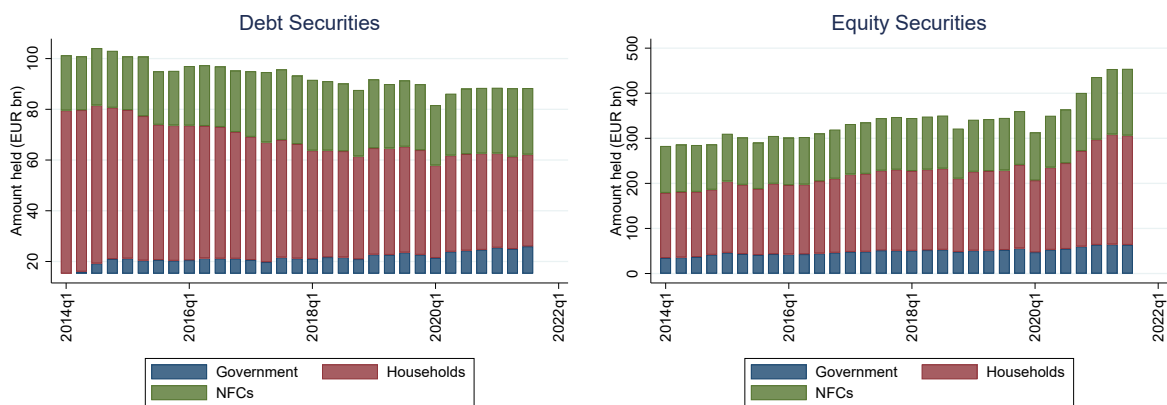


Figure 2: Volume of Securities Holdings by Non-Financial Sector: Amounts in EUR Billion

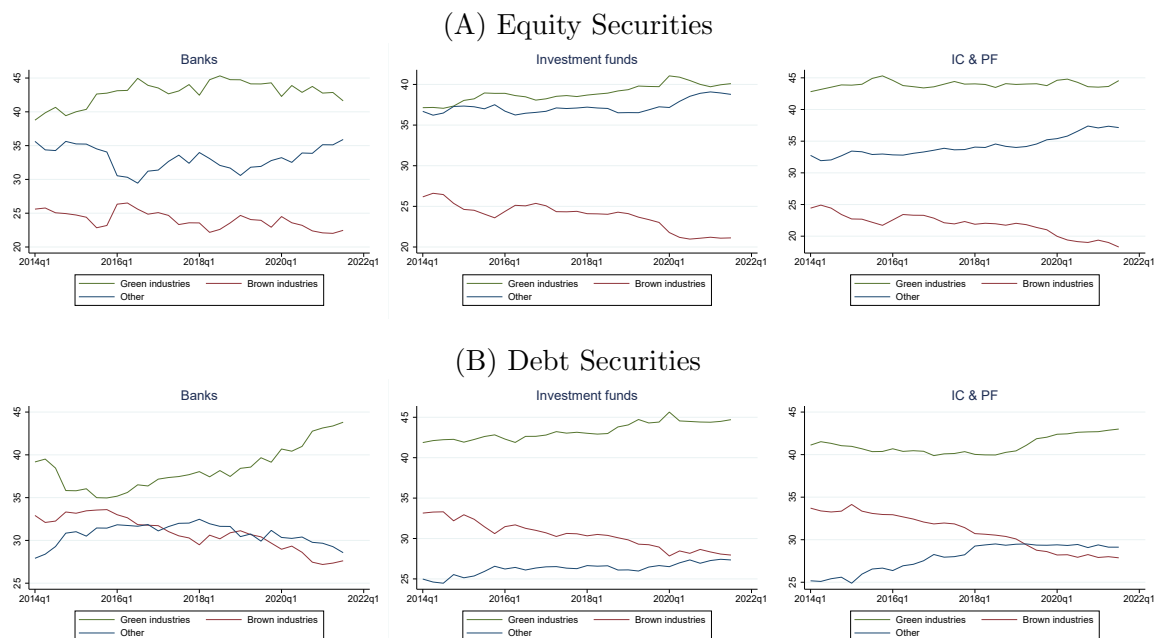


for households, depending on the period and security type). Securities classified as “other” (neither green nor brown) make up the second most held category, followed by the least common category of brown securities. This indicates that even before COP21, there was a lower appetite for holding brown securities compared to green and other securities. Over time, this gap has widened.

The shift from brown securities toward green or other securities is evident across most sectors, both financial and non-financial. In the financial sector, the decrease in the share of brown debt securities is very similar across all financial institutions, banks and non-banks. This decline is generally offset by an increase in the share of both green and other securities. In the non-financial sector (Figure 4), these trends are generally less pronounced but still evident, at least for some categories. Nevertheless, the share of green debt securities held by households and non-financial firms seems to decrease at the expense of other industries, with a stagnant share of brown industries.

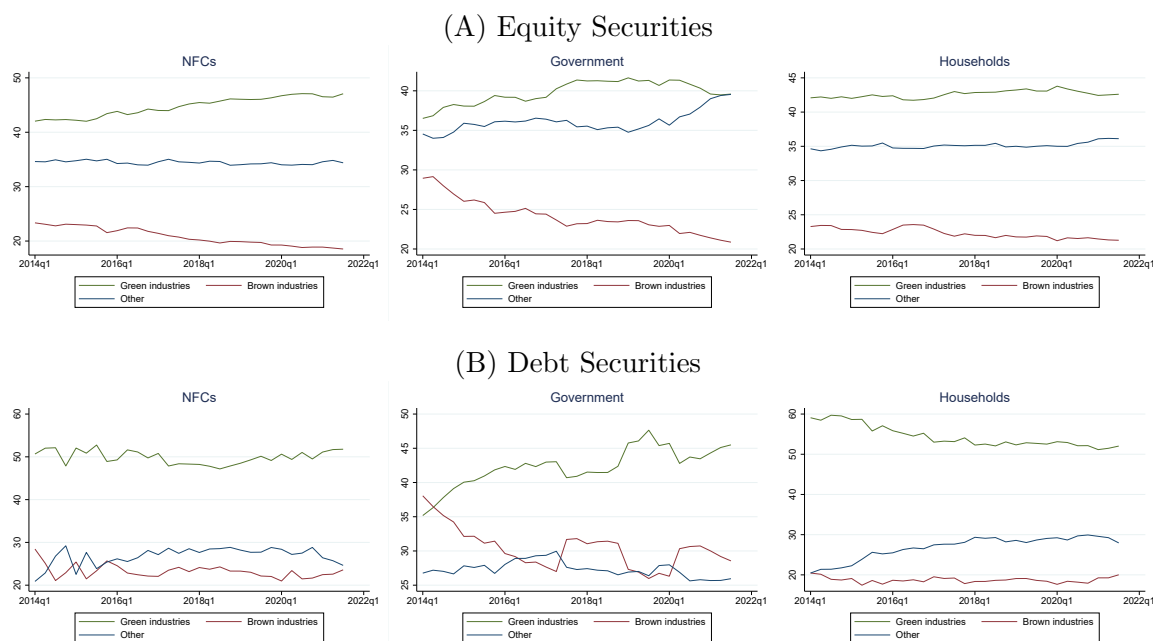
Given the observed trends in brown and green securities holdings, the preference for not financing carbon-intensive industries seems robust. Furthermore, there is no obvious risk reallocation trend from one sector to another on the aggregate level. If climate-related risk migration was occurring as a trend, we would expect an increase in the share of brown securities holdings in some sectors. However, zooming in on specific events and using firm-level data may reveal some hidden aspects of the distributional changes in asset allocation.

Figure 3: Share of Securities Holdings Issued by Green and Brown Firms and Held by Financial Sectors



Note: The y-axis represents the percentage share of green, brown, and other securities in the total amount held by the respective sector.

Figure 4: Share of Securities Holdings Issued by Green and Brown Firms and Held by Non-Financial Sectors



Note: The y-axis represents the percentage share of green, brown, and other securities in the total amount held by the respective sector.

Table 3 offers a detailed view of the effects of COP21, the UN summit, and the COVID-19 pandemic on securities holdings in various holder sectors. It is evident that green securities holdings experienced robust growth in most financial institutions after each event. For example, after COP21, banks saw a 7.1% increase in green debt securities holdings, while investment funds experienced a 12.3% increase and IC&PF a significant 19.7% increase. After the summit, the increases in the three sectors were 15.7%, 16.1%, and 12.0%, respectively. Regarding green equity securities, the changes after all events remained positive for investment funds and IC&PF, while banks seemed to reduce their holdings on aggregate.

On the other hand, brown securities holdings exhibited a different evolution, with relatively stagnant or decreasing holdings in most financial institutions. Notably, the appetite for holding securities of brown industries was lower even before COP21 when compared to green and other industries, as is apparent from a much lower total volume of both debt and equity securities holdings. Over time, this gap has only widened, reinforcing the preference for green or other securities. For instance, after the summit and the COVID-19 pandemic, holdings of brown equity securities dropped on aggregate across all financial institutions.

Regarding the private non-financial sector and government, we observe mixed results after each event and for each security category. The aggregate statistics do not offer a systematic view of changes in asset allocation. Therefore, a detailed empirical analysis is necessary.

Table 3: Securities Holdings by Holder Sector: Amounts in EUR Billion and Percentage Change

(A) Debt Securities

Holder Sector	Total	Paris Climate Agreement			UN Summit			COVID-19		
		Before	After	Change	Before	After	Change	Before	After	Change
Green securities										
Banks	45.69	39.01	41.76	7.1%	44.89	51.92	15.7%	48.12	55.34	15.0%
IF	348.68	274.08	307.79	12.3%	364.67	423.30	16.1%	398.11	448.05	12.5%
IC&PF	204.17	164.54	196.98	19.7%	214.38	240.08	12.0%	229.04	247.24	7.9%
Other FI	34.92	25.13	32.47	29.2%	39.99	43.78	9.5%	45.68	42.50	-7.0%
NFC	12.13	10.95	12.04	10.0%	12.45	12.26	-1.5%	12.52	12.25	-2.1%
Government	9.09	8.29	8.80	6.1%	9.62	10.35	7.6%	10.53	10.44	-0.9%
HH	25.71	31.80	27.86	-12.4%	21.77	20.49	-5.9%	21.86	19.52	-10.7%
CB	38.00	0.75	13.43	-	46.92	77.57	65.3%	49.83	95.04	90.7%
Brown securities										
Banks	36.40	36.81	37.19	1.1%	36.13	37.96	5.1%	37.64	37.64	0.0%
IF	241.25	205.87	226.20	9.9%	248.19	270.45	9.0%	263.00	284.00	8.0%
IC&PF	152.11	135.30	158.12	16.9%	159.50	160.95	0.9%	161.63	163.22	1.0%
Other FI	21.29	17.03	21.43	25.8%	24.18	26.56	9.8%	26.38	26.28	-0.4%
NFC	5.65	5.12	5.43	6.0%	6.07	5.39	-11.1%	5.75	5.36	-6.9%
Government	6.45	6.45	5.93	-8.1%	6.37	6.45	1.2%	6.09	7.05	15.8%
HH	8.80	10.06	9.53	-5.3%	7.82	7.11	-9.1%	7.82	6.83	-12.7%
CB	22.83	1.16	11.02	-	31.89	42.99	34.8%	32.44	48.77	50.3%

(B) Equity Securities

Holder Sector	Total	Paris Climate Agreement			UN Summit			COVID-19		
		Before	After	Change	Before	After	Change	Before	After	Change
Green securities										
Banks	41.26	39.19	36.52	-6.8%	40.73	38.10	-6.4%	43.68	41.10	-5.9%
IF	602.25	525.66	543.13	3.3%	631.78	650.33	2.9%	659.76	683.83	3.6%
IC&PF	103.60	83.00	98.76	19.0%	109.23	114.11	4.5%	115.80	119.07	2.8%
Other FI	32.79	29.17	28.08	-3.7%	33.13	36.34	9.7%	35.06	39.21	11.8%
NFC	50.68	43.91	46.49	5.9%	52.17	53.02	1.6%	53.05	56.22	6.0%
Government	19.09	16.03	16.94	5.7%	20.64	21.28	3.1%	21.35	22.31	4.5%
HH	72.23	61.52	64.62	5.0%	73.70	76.82	4.2%	76.14	83.79	10.1%
Brown securities										
Banks	23.03	22.62	21.40	-5.4%	21.61	20.62	-4.6%	23.52	21.89	-6.9%
IF	364.62	330.32	353.28	6.9%	385.89	356.06	-7.7%	391.49	359.52	-8.2%
IC&PF	50.76	41.63	52.09	25.1%	54.49	52.05	-4.5%	56.78	52.24	-8.0%
Other FI	19.84	18.83	19.39	3.0%	19.61	18.74	-4.4%	19.86	19.71	-0.8%
NFC	23.37	23.29	23.33	0.2%	22.48	21.86	-2.7%	22.63	22.76	0.6%
Government	11.38	10.67	10.70	0.3%	11.75	11.70	-0.5%	12.05	12.07	0.2%
HH	37.60	32.84	35.82	9.1%	37.20	38.41	3.3%	38.45	41.89	8.9%

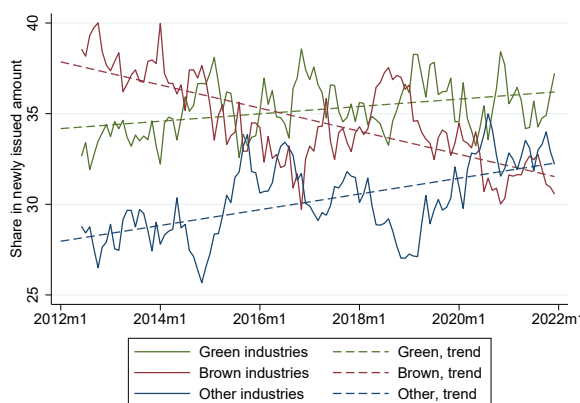
Note: The numbers “Before” and “After” denote the respective sectors’ holdings in EUR billion. These figures are calculated as averages of quarterly amounts spanning two years before or after the specific event. “Change” represents the percentage change in holdings for each sector, calculated by comparing the “Before” and “After” amounts. IF = investment funds; IC&PF = insurance companies and pension funds; Other FI = other financial institutions; NFC = non-financial corporations; HH = households; CB = central banks.

When examining the issuance of new securities, we observe very distinct trends (Figure 5). There is a declining trend in new securities issuance in brown industries, coupled with an upward trend in new securities issuance in green industries. Regarding debt securities, brown new issuance decreases over time, while non-brown (green and other industries) new issuance increases. The shift away from financing brown industries is further evidenced by a rising amount of maturing debt securities, in contrast to a decreasing or stable amount of maturing green and other debt securities. Regarding equity securities, the newly issued volume, measured as the market capitalization at the issue date, increases over time for green industries, while it declines for brown and other industries.

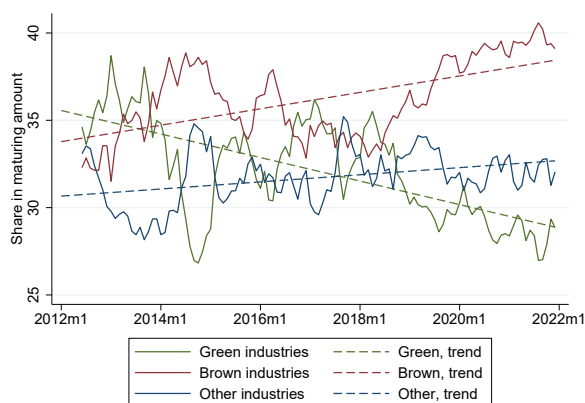
Figure 5: Issuance of New Securities: Percentage Share

(A) Debt Securities

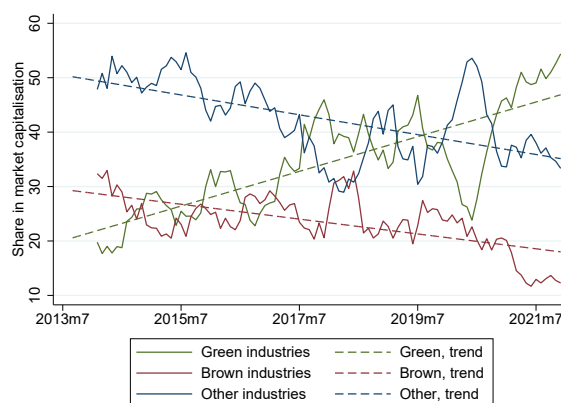
(A1) Amount issued



(A2) Maturing amount



(B) Equities: Market capitalization at the issue date



Note: The figure displays the percentage shares of green, brown, and other industries in the total value of newly issued securities (for which NACE codes are available).

Such pronounced long-term trends may pose concerns for our analysis. To rule out the possibility that changes in holdings of green and brown securities around climate policy events

are driven by observed trends in new issuance, we will address this in our robustness exercises in Section 5.6. Specifically, we will introduce a triple interaction term with a dummy variable equal to one for newly issued securities and examine the significance of this effect. Comparing total securities holdings and newly issued securities enables us to evaluate whether climate policy events lead to significant shifts in investment allocation between green and brown firms, in terms of both the overall market value held and new issuance.

4 Methodology

To assess if euro area financial institutions reallocated their funding toward less or more carbon-intensive firms in response to specific climate policy events, we employ a firm-level difference-in-differences (DiD) regression. Our baseline specifications are as follows:

$$\log(SH_{i,j,t}) = \beta_1^G Green_{i,t} \times Post_t + \beta_2^G Green_{i,t} + \beta_3^G Post_t + \alpha_i + \alpha_t + \alpha_{js} + \alpha_{jc} + \epsilon_{i,j,t} \quad (1)$$

$$\log(SH_{i,j,t}) = \beta_1^B Brown_{i,t} \times Post_t + \beta_2^B Brown_{i,t} + \beta_3^B Post_t + \alpha_i + \alpha_t + \alpha_{js} + \alpha_{jc} + \epsilon_{i,j,t} \quad (2)$$

where $\log(SH_{i,j,t})$ is the natural logarithm of the securities holdings issued by non-financial firm i and held by financial sector j at time (quarter) t . $Green_{i,t}$ and $Brown_{i,t}$ are dummy variables classifying firms into low- and high-carbon. $Post_t$ is a dummy variable which takes the value of 1 two years after the event listed in Table 1 and 0 otherwise. To account for unobservable firm-specific and time factors, we incorporate firm (issuer) fixed effects (α_i) and time fixed effects (α_t). To strengthen the identification further, we also include fixed effects for the financial (holder) sector (α_{js}) and country (α_{jc}). Lastly, to control for systematic differences between the issuers' industries in each country, we introduce issuer's sector*country ($\alpha_{is,ic}$) fixed effects. We use robust standard errors clustered at the firm level.

Our main coefficients of interest, β_1^G and β_1^B , represent the average percentage differences in a financial institution's securities holdings following each climate policy event. Specifically, β_1^G denotes the difference between green and non-green (both brown and other) firms, while β_1^B signifies the difference between brown and non-brown (both green and other) firms after the event.

The DiD estimator relies on several assumptions. First, the treatment assignment must be exogenous to securities holdings, meaning that policy actions should impact financial institutions' securities holdings rather than the reverse. This is a reasonable expectation since none of the examined policy events (COP21, UN summit, Trump's and Biden's announcements) or the COVID-19 pandemic are driven by securities holdings. Climate policy events stem from direct assessments of potential global warming effects on economies and societies, while the COVID-19 pandemic represented an entirely exogenous shock to the financial system. Second, the DiD approach requires the parallel trend assumption to hold. Figure B1 in the appendix illustrates financial institutions' securities holdings for all four groups for two years surrounding each event. The securities holdings for green and non-green firms exhibit similar trends before COP21 and the UN summit, indicating that the parallel trend assumption is satisfied. Like-

wise, the securities holdings for brown and non-brown firms also adhere to the parallel trend assumption.⁴

5 Results

Each table in this section displays the results of the firm-level DiD regression before and after each individual event as listed in Table 1. We differentiate between financial sectors (banks, investment funds, insurance companies, and pension funds) as well as broad asset classes (equity securities and debt securities). Moreover, we report the results with the inclusion of different combinations of fixed effects.

5.1 The Effect of the Paris Climate Agreement and the UN Climate Action Summit

Tables 4–7 present the baseline results of the impact stemming from two climate policy events, COP21 and the UN summit. Both events demonstrate a robust and statistically significant influence on debt and equity securities holdings, which aligns with prior research examining the effects of environmental policies on financial markets. In the two years succeeding each event, holdings of green firms' securities increased, while those of brown firms' securities decreased. This supports our first hypothesis, which suggests higher transition risks for carbon-intensive companies and, consequently, also for financial institutions, and elevated reputation risks linked to continued financing of less environmentally-friendly firms (Bolton & Kacperczyk, 2021; Ilhan *et al.*, 2021).

In terms of magnitude, debt securities displayed a more significant reaction than equity securities to both events. Specifically, in response to COP21, holdings of green firms' debt securities increased by over 6%, while equity securities holdings rose by around 5%. The difference in response to the UN summit was more pronounced, with holdings of green firms' debt and equity securities increasing by 10% and 5%, respectively. Concerning brown firms, the decline in holdings nearly mirrored the increase in the green sector, implying a transfer of funds from brown to green industries. This is in line with the capital reallocation from high- to low-carbon investments observed in other studies (Andersson *et al.*, 2016).

The effect is qualitatively similar across financial sectors, meaning the direction of the effect remains consistent. However, in terms of magnitude and statistical significance, different sectors drove the effect in 2016 and 2019. Banks played a significant role in the first case, while non-banking financial institutions, such as investment funds, insurance companies, and pension funds, determined the effect after the UN summit. The variations in the sectoral reactions can be attributed to multiple factors. In the case of COP21, the primary focus was on higher transition risks, prompting banks to reduce their financing of brown firms. Conversely, the UN summit generated substantial attention and might have been viewed as a stronger signal than COP21. This could have encouraged investment funds, insurance companies, and pension funds

⁴ We see comparable trends across different financial segments and other events examined in this paper; these results are available upon request.

to create specific funds dedicated exclusively to environmentally conscious industries to meet retail demand for green investments.

Table 4: Paris Climate Agreement: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	1.127 (0.923)		2.075** (0.871)		-0.013 (0.498)		0.090 (1.113)	
Green * Post	0.054*** (0.015)	0.046*** (0.015)	0.127*** (0.031)	0.111*** (0.033)	0.041** (0.017)	0.024 (0.017)	-0.016 (0.022)	-0.007 (0.022)
Observations	1,522,932	1,522,932	255,955	255,955	816,251	816,250	449,782	449,782
Adjusted R^2	0.622	0.487	0.698	0.594	0.667	0.330	0.591	0.464
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.238 (0.291)		0.794 (1.073)		0.171 (0.249)		0.264 (0.363)	
Green * Post	0.062** (0.025)	0.061*** (0.023)	0.028 (0.048)	0.062 (0.047)	0.047* (0.028)	0.054** (0.026)	0.049 (0.032)	0.079** (0.032)
Observations	546,764	546,764	72,231	72,231	271,214	271,214	202,818	202,818
Adjusted R^2	0.404	0.253	0.456	0.361	0.627	0.248	0.559	0.310
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Table 5: Paris Climate Agreement: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.039 (0.252)		-0.767 (0.527)		-0.183 (0.376)		0.396* (0.213)	
Brown * Post	-0.046*** (0.017)	-0.026 (0.017)	-0.155*** (0.033)	-0.126*** (0.035)	-0.039* (0.020)	0.001 (0.019)	-0.037 (0.024)	-0.014 (0.025)
Observations	1,522,932	1,522,932	255,955	255,955	816,251	816,249	449,782	449,781
Adjusted R^2	0.622	0.487	0.698	0.593	0.666	0.329	0.591	0.463
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	-0.408 (0.636)		0.050 (0.490)		-0.125 (0.645)		-0.442 (0.727)	
Brown * Post	-0.067*** (0.025)	-0.055** (0.023)	-0.141*** (0.052)	-0.157*** (0.051)	-0.047 (0.029)	-0.005 (0.026)	-0.079** (0.031)	-0.096*** (0.032)
Observations	546,764	546,764	72,231	72,230	271,214	271,214	202,818	202,816
Adjusted R^2	0.404	0.253	0.456	0.357	0.627	0.247	0.559	0.309
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: UN Climate Action Summit: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.324 (0.550)		-0.201 (0.518)		-0.381 (0.535)		-0.479 (0.889)	
Green * Post	0.078*** (0.016)	0.056*** (0.015)	0.039 (0.030)	0.066** (0.033)	0.097*** (0.018)	0.050*** (0.017)	0.093*** (0.020)	0.071*** (0.020)
Observations	1,644,529	1,644,529	236,282	236,282	863,966	863,966	542,817	542,816
Adjusted R^2	0.629	0.483	0.726	0.581	0.663	0.331	0.599	0.480
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.196 (0.514)		0.300 (1.192)		-0.112 (0.336)		0.091 (0.515)	
Green * Post	0.099*** (0.020)	0.092*** (0.019)	0.043 (0.039)	0.049 (0.039)	0.102*** (0.026)	0.070*** (0.023)	0.100*** (0.025)	0.114*** (0.023)
Observations	670,521	670,521	86,518	86,515	314,581	314,579	268,867	268,865
Adjusted R^2	0.423	0.265	0.494	0.413	0.635	0.237	0.563	0.330
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Table 7: UN Climate Action Summit: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.790 (0.590)		0.337 (0.547)		0.889 (0.798)		1.149** (0.492)	
Brown * Post	-0.068*** (0.017)	-0.039** (0.017)	-0.056* (0.033)	-0.044 (0.035)	-0.095*** (0.020)	-0.049** (0.019)	-0.073*** (0.022)	-0.043* (0.022)
Observations	1,644,529	1,644,529	236,282	236,282	863,966	863,966	542,817	542,816
Adjusted R^2	0.629	0.483	0.726	0.581	0.663	0.331	0.599	0.480
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.810 (0.602)		1.627 (1.053)		0.205 (0.652)		0.707 (0.522)	
Brown * Post	-0.092*** (0.020)	-0.070*** (0.019)	-0.008 (0.042)	-0.003 (0.042)	-0.096*** (0.026)	-0.065*** (0.024)	-0.079*** (0.024)	-0.077*** (0.023)
Observations	670,521	670,521	86,518	86,515	314,581	314,579	268,867	268,865
Adjusted R^2	0.423	0.265	0.494	0.413	0.635	0.237	0.563	0.330
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** p < 0.01, ** p < 0.05, * p < 0.1.

5.2 Is There a Reallocation of Transition Risks Towards the Non-Financial Sector?

Tables 8–11 show the results of the same firm-level DiD regression with the holder sector replaced by the private non-financial sector (non-financial companies and households), government, and central banks (the Eurosystem). For the central bank, we estimate the impact of the two climate policy events on its debt securities holdings only. The issuer sector, along with the definitions of green and brown industries, remains unchanged.

In contrast to the financial sector, the private non-financial sector reduced its holdings of green firms' securities and increased its holdings of brown firms' securities following both events. This shift, particularly evident in equities, indicates a transfer of transition risks (and potentially also reputational risks) from the financial sector, which cut back on its brown securities holdings, to the private non-financial sector. The private non-financial sector increased its holdings of carbon-intensive companies' equity by 8% after COP21 and 12% the UN summit and reduced its holdings of low-carbon firms' equity by 3% after COP21 and 5% after the UN summit. In comparison, governments behave more “responsibly” by reducing their brown securities holdings and increasing their green securities holdings, thus aligning more closely with the financial sector's actions. This impact is more pronounced and significant after the UN summit. Central banks, however, show no significant change in their holdings of green and brown industries' securities after the two climate policy events. These findings suggest that the financial sector leads the transition toward financing more sustainable industries, with governments playing a supporting role.

These results support our initial expectations of the differences in risk perception and the various objectives of the financial and non-financial sectors, confirming the second hypothesis. The financial sector, which is more sensitive to risks and public scrutiny, may be more inclined to support environmentally friendly investments to mitigate reputational and transition risks. In contrast, the private non-financial sector might prioritize short-term financial gains over long-term sustainability, leading to continued investments in brown industries. Governments, on the other hand, exhibit a stronger commitment to the low-carbon transition, reflecting their role in shaping and implementing climate policies.

Table 8: Paris Climate Agreement: Green Firms

(A) Equity Securities						
	(1)	(2)	(3)	(4)		
	NFS	NFS	Government	Government		
Green	-0.112 (0.347)		0.557** (0.245)			
Green * Post	-0.031* (0.018)	-0.030* (0.018)	0.075*** (0.027)	0.045 (0.031)		
Observations	1,554,828	1,554,828	151,697	151,697		
Adjusted R^2	0.526	0.415	0.774	0.621		
Firm FE	Y	Y	Y	Y		
Time FE	Y	Y	Y	Y		
Holder Ctry FE	Y		Y	Y		
Firm's Ind. x Iss. Ctry FE		Y		Y		

(B) Debt Securities						
	(1)	(2)	(3)	(4)	(5)	(6)
	NFS	NFS	Government	Government	CB	CB
Green	0.857** (0.428)		0.019 (0.163)			
Green * Post	-0.013 (0.041)	0.017 (0.040)	-0.004 (0.043)	0.004 (0.048)	0.453 (0.276)	0.452 (0.284)
Observations	199,098	199,096	41,697	41,693	3,423	3,423
Adjusted R^2	0.460	0.338	0.701	0.396	0.809	0.799
Firm FE	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
Holder Ctry FE	Y		Y		Y	
Firm's Ind. x Iss. Ctry FE		Y		Y		Y

Table 9: Paris Climate Agreement: Brown Firms

(A) Equity Securities						
	(1)	(2)	(3)	(4)		
	NFS	NFS	Government	Government		
Brown	0.785** (0.385)		0.782*** (0.023)			
Brown * Post	0.076*** (0.020)	0.077*** (0.020)	-0.044 (0.030)	-0.091** (0.037)		
Observations	1,554,828	1,554,828	151,697	151,697		
Adjusted R^2	0.526	0.415	0.774	0.621		
Firm FE	Y	Y	Y	Y		
Time FE	Y	Y	Y	Y		
Holder Ctry FE	Y		Y	Y		
Firm's Ind. x Iss. Ctry FE		Y		Y		

(B) Debt Securities						
	(1)	(2)	(3)	(4)	(5)	(6)
	NFS	NFS	Government	Government	CB	CB
Brown	-0.791 (0.653)		0.335*** (0.081)			
Brown * Post	-0.004 (0.040)	-0.007 (0.037)	0.018 (0.043)	-0.020 (0.049)	0.333 (0.236)	0.334 (0.242)
Observations	199,098	199,096	41,697	41,693	3,423	3,423
Adjusted R^2	0.460	0.338	0.701	0.396	0.808	0.798
Firm FE	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
Holder Ctry FE	Y		Y		Y	
Firm's Ind. x Iss. Ctry FE		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. NFS stands for private non-financial sector (non-financial corporations and households). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 10: UN Climate Action Summit: Green Firms

(A) Equity Securities						
	(1)	(2)	(3)	(4)		
	NFS	NFS	Government	Government		
Green	0.405 (0.294)		-0.152 (0.460)			
Green * Post	-0.041** (0.019)	-0.049*** (0.018)	-0.017 (0.027)	-0.017 (0.030)		
Observations	1,930,469	1,930,469	161,007	161,006		
Adjusted R^2	0.523	0.386	0.761	0.624		
Firm FE	Y	Y	Y	Y		
Time FE	Y	Y	Y	Y		
Holder Ctry FE	Y		Y	Y		
Firm's Ind. x Iss. Ctry FE		Y		Y		

(B) Debt Securities						
	(1)	(2)	(3)	(4)	(5)	(6)
	NFS	NFS	Government	Government	CB	CB
Green	0.496 (0.554)		-0.491 (0.658)			
Green * Post	0.016 (0.032)	0.041 (0.031)	0.069* (0.039)	0.065 (0.043)	0.252 (0.168)	0.264 (0.172)
Observations	231,788	231,787	53,766	53,764	9,589	9,589
Adjusted R^2	0.484	0.373	0.727	0.515	0.973	0.971
Firm FE	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
Holder Ctry FE	Y		Y		Y	
Firm's Ind. x Iss. Ctry FE		Y		Y		Y

Table 11: UN Climate Action Summit: Brown Firms

(A) Equity Securities						
	(1)	(2)	(3)	(4)		
	NFS	NFS	Government	Government		
Brown	-0.089 (0.296)		1.084*** (0.356)			
Brown * Post	0.112*** (0.021)	0.118*** (0.020)	-0.097*** (0.029)	-0.075** (0.032)		
Observations	1,930,469	1,930,469	161,007	161,006		
Adjusted R^2	0.523	0.386	0.761	0.624		
Firm FE	Y	Y	Y	Y		
Time FE	Y	Y	Y	Y		
Holder Ctry FE	Y		Y	Y		
Firm's Ind. x Iss. Ctry FE		Y		Y		

(B) Debt Securities						
	(1)	(2)	(3)	(4)	(5)	(6)
	NFS	NFS	Government	Government	CB	CB
Brown	-0.513 (0.852)		1.147*** (0.380)			
Brown * Post	-0.003 (0.035)	-0.031 (0.035)	-0.067* (0.039)	-0.077* (0.044)	-0.305* (0.180)	-0.292 (0.184)
Observations	231,788	231,787	53,766	53,764	9,589	9,589
Adjusted R^2	0.484	0.373	0.728	0.515	0.973	0.971
Firm FE	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y
Holder Ctry FE	Y		Y		Y	
Firm's Ind. x Iss. Ctry FE		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. NFS stands for private non-financial sector (non-financial corporations and households). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.3 The Effect of the COVID-19 Pandemic

Tables 12 and 13 display the impact of the COVID-19 pandemic on holdings of green and brown industries' securities across financial sectors. Following the COVID-19 shock in 1Q 2020, holdings in carbon-intensive firms, both equity and debt, declined significantly. This effect was predominantly driven by the non-banking financial sector, with investment funds responding more robustly than insurance companies and pension funds. Despite the considerable negative reaction in financial markets, holdings of low-carbon firms increased, which was again primarily driven by non-banks.

Generally, the negative impact on brown holdings was stronger than the positive impact on green holdings. On average, investment funds, insurance companies, and pension funds reduced their brown firm equity holdings by 9–16%, depending on the specification, and increased their green firm holdings by 3–7%. Similarly, brown debt securities holdings dropped by 7–13% on average, while green debt securities holdings increased by 7–11%. Banks' reactions differed from those of non-banks. They reduced their green equity securities holdings while keeping their brown equity and debt securities holdings unchanged. These results support our third hypothesis, which states that the COVID-19 pandemic affected the funding of brown industries disproportionately more than the rest of the economy, aligning with the existing literature on carbon risk premiums.⁵

⁵ Banks' distinct reactions may reflect a different business model compared to other financial institutions, or a delayed response. To test for the latter, we estimate the model with an alternative specification of the COVID-19 post dummy variable, shifted by one quarter to 2Q 2020 (results available upon request). The alternative specification yields qualitatively similar results. As for banks, their holdings of brown debt securities declined, confirming a somewhat delayed response.

Table 12: COVID-19 Pandemic: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.320 (0.394)		0.596 (1.028)		-0.441 (0.446)		-0.592 (0.681)	
Green * Post	0.036** (0.016)	0.009 (0.015)	-0.082*** (0.030)	-0.088*** (0.033)	0.070*** (0.018)	0.032* (0.017)	0.066*** (0.020)	0.039** (0.020)
Observations	1,270,070	1,270,070	182,893	182,893	663,423	663,423	422,307	422,307
Adjusted R^2	0.633	0.490	0.732	0.568	0.671	0.347	0.601	0.478
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.018 (0.632)		-0.233 (1.222)		-0.176 (0.377)		0.153 (0.663)	
Green * Post	0.095*** (0.018)	0.082*** (0.017)	0.076** (0.037)	0.054 (0.037)	0.109*** (0.023)	0.067*** (0.021)	0.094*** (0.022)	0.103*** (0.021)
Observations	538,318	538,318	70,928	70,923	250,977	250,975	215,903	215,903
Adjusted R^2	0.428	0.266	0.507	0.431	0.643	0.234	0.568	0.330
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Table 13: COVID-19 Pandemic: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	1.058*** (0.228)		-1.397*** (0.208)		1.364*** (0.448)		1.501*** (0.068)	
Brown * Post	-0.108*** (0.017)	-0.070*** (0.016)	0.034 (0.032)	0.035 (0.035)	-0.161*** (0.020)	-0.106*** (0.019)	-0.134*** (0.022)	-0.092*** (0.022)
Observations	1,270,070	1,270,070	182,893	182,893	663,423	663,423	422,307	422,307
Adjusted R^2	0.633	0.490	0.732	0.568	0.671	0.347	0.601	0.478
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.708 (0.787)		2.868*** (0.733)		-0.059 (0.713)		0.359 (0.503)	
Brown * Post	-0.101*** (0.019)	-0.093*** (0.018)	-0.060 (0.041)	-0.048 (0.041)	-0.126*** (0.025)	-0.111*** (0.023)	-0.072*** (0.023)	-0.076*** (0.022)
Observations	538,318	538,318	70,928	70,923	250,977	250,975	215,903	215,903
Adjusted R^2	0.428	0.266	0.507	0.431	0.643	0.234	0.568	0.330
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** p < 0.01, ** p < 0.05, * p < 0.1.

5.4 Regional Analysis

5.4.1 Home Bias: Domestic vs. Foreign Securities

To investigate the presence of home bias in investors' decisions on allocating funds to high- or low-carbon firms (*Hypothesis 4a*), we introduce a dummy variable, Home, which equals one if the holder's country is the same as the issuer's country, and zero otherwise. In an alternative specification, we also use a dummy accounting for the entire euro area, EA, which equals one if both the holder and issuer are from the euro area. We then create a triple interaction term with the Post and Green/Brown dummy variables. The full regression results for all specifications are reported in the appendix, while we highlight selected findings here.

First, our results confirm the existence of home bias in investors' portfolios in general (irrespective of the carbon intensity of a firm), particularly for country pairs and less so for the whole euro area. The estimated coefficient on the Home dummy variable is positive and strongly statistically significant across all specifications (Tables B1–B4). Second, the double interaction between the Post and Green/Brown dummy variables remains similar to our baseline results, meaning that, on average, holdings of green firms' securities increase after both climate policy events while those of brown firms' securities decrease, all else equal. As such, this effect cannot be explained by home (or euro area) bias.

Third, we identify a strong and statistically significant effect on the triple interaction term for equity securities after the UN summit (Table 14). The results reveal that holdings of the equity securities of *brown firms* from the eurozone increased by about 2.5% (Brown * Post * EA + Brown * Post; column 2 of part B), while those from non-eurozone countries dropped by about 8.9% after the summit (Brown * Post; the same column), compared to non-brown securities, all else equal. This suggests that the drop in brown holdings after the summit is driven entirely by non-EA firms. This effect is present across all financial institutions. For example, for investment funds, by far the largest securities holders, their exposure to EA brown firms increases by about 1–4%, depending on specification, while their exposure to non-EA brown firms decreases by about 12–18%. We see very similar results if we use the Home dummy instead of the EA dummy.

Regarding holdings of *green firms'* equity (part A of Table 14), the effects are generally less statistically significant, with the triple interaction coefficient being negative. On average, equity securities of eurozone green firms increases less than that to non-eurozone green firms after the summit, relative to non-green firms. This effect is more prevalent among non-banks than banks. For example, the equity securities of green eurozone firms by investment funds increases by 0.5% (Green * Post * EA + Green * Post; column 5 of part A), while that of non-eurozone green firms increases by 13.2% (Green * Post, the same table), compared to non-green securities.

The estimated coefficient on the triple interaction term of the other specifications (after COP21 and for debt securities) reported in the appendix is barely significant, suggesting that home (euro area) bias played a significant role in the reallocation of green and brown equity securities mainly after the UN summit.

Table 14: Eurozone Bias in Equity Securities Holdings – UN Climate Action Summit

(A) Green Firms								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.466		0.258		-0.543		-0.680	
	(0.431)		(0.671)		(0.461)		(0.736)	
EA	0.596		-0.608		0.822		1.272**	
	(0.721)		(0.395)		(0.885)		(0.544)	
Green * Post	0.100***	0.061***	0.004	-0.006	0.132***	0.064***	0.143***	0.111***
	(0.019)	(0.017)	(0.035)	(0.039)	(0.021)	(0.019)	(0.024)	(0.023)
Green * EA	0.110		0.988		-0.230		0.102	
	(0.743)		(1.189)		(0.949)		(0.566)	
Post * EA	-0.194***	-0.210***	-0.131***	-0.191***	-0.182***	-0.222***	-0.142***	-0.169***
	(0.026)	(0.025)	(0.048)	(0.051)	(0.030)	(0.029)	(0.032)	(0.032)
Green * Post * EA	-0.067*	-0.022	0.016	0.078	-0.123***	-0.025	-0.119**	-0.092*
	(0.038)	(0.035)	(0.069)	(0.073)	(0.045)	(0.042)	(0.048)	(0.047)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.484	0.725	0.569	0.662	0.336	0.596	0.476
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Brown Firms								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	1.240***		-0.332		1.448***		1.643***	
	(0.253)		(0.421)		(0.369)		(0.168)	
EA	0.484		0.287		0.384		1.262***	
	(0.380)		(0.817)		(0.366)		(0.384)	
Brown * Post	-0.131***	-0.089***	-0.059*	-0.022	-0.180***	-0.115***	-0.153***	-0.113***
	(0.020)	(0.019)	(0.036)	(0.039)	(0.022)	(0.021)	(0.025)	(0.025)
Brown * EA	0.723*		-1.618*		1.454***		0.123	
	(0.428)		(0.884)		(0.367)		(0.584)	
Post * EA	-0.252***	-0.240***	-0.160***	-0.174***	-0.277***	-0.259***	-0.221***	-0.229***
	(0.021)	(0.020)	(0.039)	(0.040)	(0.024)	(0.023)	(0.027)	(0.026)
Brown * Post * EA	0.149***	0.114**	0.168**	0.104	0.218***	0.129**	0.154***	0.120**
	(0.048)	(0.045)	(0.083)	(0.089)	(0.058)	(0.054)	(0.058)	(0.057)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.484	0.725	0.569	0.662	0.337	0.596	0.476
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.4.2 Environmental Performance of Holder's and Issuer's Country

It is well known that countries differ in their environmental attitudes, but the impact of these differences on institutional investors' decisions is not well understood. Thus, we examine how countries' environmental performance might influence the reallocation of securities holdings between green and brown firms. We use the Environmental Performance Index (EPI) developed by Hsu & Zomer (2014) to categorize countries into high and low environmental performers, with the expectation that high performers will exhibit stronger reallocation and low performers weaker reallocation from brown to green securities. The EPI uses a diverse set of indicators across policy categories, such as air quality, water resources, waste management, and biodiversity, to create a comprehensive picture of a country's environmental performance.

We create a dummy variable, High EPI, which equals one if the holder or issuer resides

in a high-performing country. We rank 19 euro area countries using the EPI, designating the top nine (Finland, Malta, Luxembourg, Slovenia, Austria, the Netherlands, France, Germany, and Estonia) as high performers. We consider the first half of the countries represented on the issuer’s side to be high performers too. Then, we construct a triple interaction term to analyze the differences between the two country groups. The full regression results for all specifications are reported in the appendix, while we highlight selected findings below.

Our results can be summarized in three main points. First, the changes in holdings of green and brown firms’ securities after COP21 and the UN summit cannot be completely explained by the environmental performance of the holder or issuer country. The estimated coefficient on the double interaction between the Post and Green/Brown dummies remains in line with our baseline results. In some instances, however, the significance of the double interaction diminishes, with the direction of the coefficient usually staying the same.

Second, after the climate policy events, the securities held by financial institutions in high-performing countries decreased relative to those held by institutions in low-performing countries, regardless of being green or brown. The estimated coefficient on the double interaction between the Post dummy and the High EPI dummy of the holder country is negative and statistically significant across all specifications. In contrast, holdings of securities issued by firms in high-performing countries increased compared to those in low-performing countries, irrespective of their green or brown status. This finding indicates that following the events, funding was redirected more toward firms located in countries typically viewed as more environmentally conscientious.

Third, the triple interaction effect of the Green/Brown, Post, and High EPI dummies is generally consistent with our expectations, showing that the baseline effects are to some extent driven by the environmental performance of the holder’s and issuer’s country. The effect is stronger after the UN summit than after COP21 and is more significant for investment funds than other financial institutions. In a number of cases, the triple interaction effect “absorbs” the double interaction effect on Green/Brown * Post, making it weaker and less statistically significant. This can be seen in Table 15, which displays some of the more pronounced effects of the High EPI dummy on green firms’ equity holdings after the summit, with other specifications reported in the appendix.

From the holder country’s perspective, holdings of green firms’ equity securities in the portfolios of investment funds from high-performing countries increased by 8-11% after the summit (columns 5 and 6 of part A). This surpasses the baseline results for the full set of countries (5–10%, Table 6). The effect is not significant for investment funds residing in low-performing countries. From the issuer country’s perspective, the increase in holdings of green firms’ equity securities is primarily driven by firms in high-performing countries. All financial institutions, including banks, investment funds, insurance companies, and pension funds, increased their holdings in green firms from high-performing countries by about 3–11% (Green * Post * High EPI + Green * Post; part B), while reducing those from low-performing countries by about 8–21%, compared to non-green securities.

We observe similar patterns in other specifications, but they generally exhibit lower statistical significance. These results suggest that the increase in green equity holdings after the summit is largely driven by firms from countries with high environmental performance, potentially due to increased investor confidence, as well as by investment activities of financial institutions from high-performing countries. In other words, the environmental responsibility of both holder and issuer affects the allocation of funding, in line with our initial hypothesis (*Hypothesis 4b*).

Table 15: The Effect of a Country's Environmental Performance on Holdings of Green Firms' Equity Securities – UN Climate Action Summit

(A) Environmental Performance of Holder Country								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.424		0.311		-0.533		-0.695	
	(0.439)		(0.673)		(0.473)		(0.736)	
High EPI		0.457***		0.749***		0.209***		0.808***
		(0.015)		(0.066)		(0.021)		(0.026)
Green * Post	0.049**	0.002	0.037	-0.031	0.031	-0.034	0.121***	0.071**
	(0.020)	(0.019)	(0.066)	(0.072)	(0.023)	(0.025)	(0.027)	(0.028)
Green * High EPI	-0.020	-0.010	-0.050	-0.118	0.047*	0.001	0.085**	0.038
	(0.025)	(0.024)	(0.097)	(0.101)	(0.028)	(0.035)	(0.039)	(0.044)
Post * High EPI	-0.115***	-0.132***	0.123**	0.153***	-0.069***	-0.121***	-0.142***	-0.181***
	(0.012)	(0.012)	(0.049)	(0.055)	(0.013)	(0.016)	(0.019)	(0.020)
Green * Post * High EPI	0.017	0.050**	-0.050	0.034	0.079***	0.107***	-0.057*	-0.003
	(0.019)	(0.020)	(0.071)	(0.078)	(0.023)	(0.028)	(0.031)	(0.033)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.487	0.725	0.573	0.662	0.337	0.596	0.490
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Environmental Performance of Issuer Country								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.888*		-0.066		-0.413		-0.667	
	(0.539)		(0.747)		(0.477)		(0.728)	
High EPI	0.093		-0.628		0.355		0.106	
	(0.206)		(0.507)		(0.269)		(0.153)	
Green * Post	-0.109***	-0.109***	-0.212***	-0.181**	-0.080*	-0.076*	-0.031	-0.052
	(0.042)	(0.038)	(0.080)	(0.086)	(0.048)	(0.041)	(0.059)	(0.056)
Green * High EPI	0.427		0.361		-0.180			
	(0.450)		(0.491)		(0.270)			
Post * High EPI	-0.085***	-0.057**	-0.166***	-0.112**	-0.015	-0.042*	-0.014	0.052
	(0.024)	(0.023)	(0.048)	(0.050)	(0.027)	(0.025)	(0.035)	(0.034)
Green * Post * High EPI	0.202***	0.168***	0.248***	0.210**	0.194***	0.137***	0.136**	0.128**
	(0.046)	(0.041)	(0.086)	(0.092)	(0.052)	(0.045)	(0.063)	(0.061)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.484	0.725	0.569	0.662	0.336	0.596	0.476
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.5 US Firms: The Effect of President Trump’s Withdrawal and President Biden’s Rejoining of COP21

We next investigate the impact of President Trump’s withdrawal from and President Biden’s rejoining of COP21 on holdings of low- and high-carbon US firms’ securities, in line with *Hypothesis 5*. To examine these effects, we introduce a dummy variable, US, which equals one if the issuer resides in the USA, and create a triple interaction term with the Green/Brown and Post dummies. The regression results are reported in the appendix.

Our results reveal that the estimated effect on the triple interaction term is statistically significant only for President Trump’s withdrawal, suggesting that President Biden’s rejoining has had a limited impact on the market funding of green and brown industries in the US, compared to non-US non-green and non-brown industries, respectively.

Following President Trump’s withdrawal, holdings of debt securities of US brown firms increased by about 3–6% (Brown * Post * US + Brown * Post; part B of Table B18), while those of brown firms outside the US decreased by about 5–8% (Brown * Post; the same table), relative to non-brown firms. This effect was primarily driven by investment funds. In contrast, holdings of debt securities of US green firms decreased on average by 2–4% after the withdrawal, while those of non-US green firms increased by 8–11%, relative to non-green companies. In this instance, the effect was driven by both banks and non-bank financial institutions.

These results suggest that, after the withdrawal, euro area financial institutions shifted their debt financing away from low-carbon US industries and toward carbon-intensive US firms. On the other hand, equity financing displayed the opposite trend, with holdings of equity of US brown firms dropping and those of non-US brown firms growing, relative to non-brown companies. The effects for green equities are, however, much less statistically significant.

Focusing on the reallocation within the US market, we find that debt securities of green US firms decreased after the withdrawal (Green * Post * US + Post * US; part B of Table B17), while those of non-green US firms remained unchanged (Post * US; the same table), compared to the non-US firms. Additionally, debt securities of brown US firms increased after the withdrawal, while those of non-brown US firms decreased. Equity securities went in the opposite direction again.

Overall, we observed portfolio re-balancing effects after President Trump’s withdrawal, driven by both within-US and cross-regional shifts. The withdrawal boosted the debt market financing of carbon-intensive US industries, while equity financing moved away from this market. These contrasting effects on equity and debt securities may be related to the withdrawal’s impact on market performance and the carbon risk premium of US firms.

5.6 Robustness Exercises

We conducted multiple robustness tests for our analysis, with the results upon request. First, we evaluate various additional combinations of fixed effects. For example, we compare estimation results with and without time fixed effects, holder country fixed effects, issuer country fixed effects, and issuer industry fixed effects. In this paper, we only present the two most demanding

specifications. We have identified differences related to the inclusion of holder country or issuer country fixed effects in some instances. Consequently, we tested several hypotheses on regional effects in the previous subsections, including the presence of home bias in investors' portfolios and the environmental performance of individual countries.

Second, we compare different definitions and data sources (industry-level and firm-level emissions) used to create the dummy variables that divide issuers into green and brown firms (see Section 3). These alternative specifications yield similar results to our baseline specification. Using firm-level carbon emissions to classify firms as green and brown, our results remain consistent in terms of direction, magnitude, and statistical significance. Notably, the magnitude of the effects is generally higher, especially for the UN Summit. This change may be driven by the granularity of the firm-level emission data, which may better capture the carbon intensity of individual firms than the aggregate industry-level data, thus isolating the effect better. Nevertheless, the direction of the effects remains consistent, while the significance varies slightly in a limited number of cases.

Third, we explore the distinction between new and old securities by introducing a triple interaction term with a dummy variable equal to one for newly issued securities (those that are no more than one year old). The coefficient on the triple interaction term aligns with our expectations and is mostly not significant, suggesting that the age of a security does not significantly impact our results.

Fourth, we reduce the estimation window surrounding the events from two years to just one year to examine the sensitivity of our results to the window's duration and the speed (or immediacy) of the response in asset allocation by financial institutions and the non-financial sector. The results remain qualitatively similar when considering the shorter window. After COP21, we notice a weaker and less significant response across financial institutions in their securities holdings, although the direction of the change remains the same. Conversely, after the UN Climate Action Summit, we observe a stronger response compared to the results within the two-year window. As for the private non-financial sector, the response also retains its significance and direction. This indicates that the shift of transition risks from the financial sector to the private non-financial sector persists even with a one-year estimation window around climate policy events.

6 Conclusions

This paper has examined the impact of climate policies and other significant events on securities issued by low-carbon and high-carbon firms and held by euro area resident sectors. By employing a difference-in-difference research design, we analyze the differential effects of the Paris Climate Agreement, the 2019 UN Climate Action Summit, the COVID-19 pandemic, and the US's withdrawal and rejoining of COP21.

Our findings reveal that climate policies have a significant impact on the securities issued by green and brown firms and held by financial sectors. Following the Paris Climate Agreement and the UN Climate Action Summit, financial institutions tended to increase their holdings

of securities of green firms and reduce those of brown firms. The COVID-19 pandemic had a similar effect, highlighting the role of the carbon risk premium. Conversely, the private non-financial sector increased its holdings in brown firms, indicating a shift of transition risks toward this sector. Our regional analysis suggests that there is home bias in investors' portfolios and that environmental performance plays a role in driving the baseline effects. Lastly, we find that President Trump's withdrawal from COP21 led to a reallocation of holdings of green and brown US firms' securities in the portfolios of euro area financial institutions.

These findings have important implications for researchers, policymakers, and practitioners. They emphasize the crucial role of climate policies in shaping investments toward a sustainable future and underscore the need for effective policy design and implementation to facilitate the low-carbon transition. Additionally, our results highlight the importance of understanding the dynamics between various financial sectors and their responses to climate policies to address the challenges posed by climate change effectively.

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Online Appendix

A Extensions to Data

A.1 Industry-Level Carbon Emissions from Eurostat

Table A1: Classification of Industries into Green vs. Brown

NACE code	CO ₂ quartile per GVA		CO ₂ quartile by country		CO ₂ quartile (abs)		CO ₂ quartile per capita	
	Green	Brown	Green	Brown	Green	Brown	Green	Brown
A01	0	1	0	1	0	1	0	1
A02	0	0	0	0	0	0	0	0
A03	0	1	0	0	0	0	0	0
B	0	1	0	1	0	1	0	1
C10-C12	0	1	0	1	0	1	0	1
C13-C15	0	0	0	0	0	0	0	0
C16	0	0	0	0	0	0	0	0
C17	0	1	0	0	0	1	0	0
C18	0	0	0	0	0	0	0	0
C19	0	1	0	1	0	1	0	1
C20	0	1	0	1	0	1	0	1
C21	0	0	0	0	1	0	0	0
C22	0	0	0	0	0	0	0	0
C23	0	1	0	1	0	1	0	1
C24	0	1	0	1	0	1	0	1
C25	0	0	0	0	0	0	0	0
C26	0	0	1	0	1	0	1	0
C27	0	0	0	0	1	0	0	0
C28	0	0	0	0	0	0	0	0
C29	0	0	1	0	1	0	1	0
C30	0	0	1	0	1	0	1	0
C31-C32	0	0	0	0	0	0	0	0
C33	0	0	0	0	0	0	0	0
D	0	1	0	1	0	1	0	1
E36	0	1	1	0	0	0	1	0
E37-E39	0	1	0	1	0	1	0	1
F	0	0	0	1	0	1	0	1
G45	0	0	0	0	0	0	0	0
G46	0	0	0	1	0	1	0	1
G47	0	0	0	1	0	0	0	1
H49	0	1	0	1	0	1	0	1
H50	0	1	0	1	0	1	0	1
H51	0	1	0	1	0	1	0	1
H52	0	0	0	0	0	0	0	0
H53	0	0	0	0	0	0	0	0
I	0	0	0	0	0	0	0	0
J58	1	0	1	0	1	0	1	0
J59-J60	1	0	1	0	1	0	1	0
J61	1	0	0	0	0	0	0	0
J62-J63	1	0	0	0	0	0	0	0
K64	1	0	0	0	0	0	0	0
K65	1	0	1	0	1	0	1	0
K66	1	0	1	0	1	0	1	0
L68A	1	0	1	0	1	0	1	0
M69-M70	1	0	0	0	0	0	0	0
M71	1	0	0	0	0	0	0	0
M72	1	0	1	0	1	0	1	0
M73	1	0	1	0	1	0	1	0
M74-M75	0	0	1	0	0	0	0	0
N77	0	0	0	0	0	0	0	0
N78	1	0	1	0	1	0	1	0
N79	0	0	1	0	1	0	1	0
N80-N82	0	0	0	0	0	0	0	0
O	0	0	0	1	0	0	0	1
P	1	0	0	0	0	0	0	0
Q86	1	0	0	0	0	0	0	0
Q87-Q88	0	0	0	0	0	0	0	0
R90-R92	0	0	0	0	0	0	0	0
R93	0	0	0	0	0	0	0	0
S94	0	0	0	0	1	0	0	0
S95	0	0	1	0	1	0	1	0
S96	0	0	0	0	0	0	0	0
T	1	0	1	0	1	0	1	0
U	1	0	1	0	1	0	1	0

Note: An industry is marked as green if is in the first quartile (quintile) of a distribution and brown if it is in the last quartile (quintile) of a distribution for most of the country-year observations.

A.2 Firm-Level Carbon Emissions from Refinitiv Eikon

With respect to the firm-level carbon emissions data provided by Refinitiv Eikon, the coverage, in terms of the number of reporting firms, has been growing considerably each year. As a result, we use the most recent information available (as of 4Q 2021) to match firm-level carbon emissions with the SHS-S dataset, enabling us to pair a higher number of firms.⁶ While the proportion of matched firms might seem relatively small, our analysis highlights that the matched securities holdings represent a significant volume. Matched holdings comprise 81% of equity securities and 63% of debt securities in terms of volume, despite covering only 33% and 29% of firms, respectively. This finding suggests that our research effectively captures a substantial portion of the securities issued by firms with available carbon emissions data, ensuring the robustness and relevance of our analysis.

Table A2 compares the classification of firms based on industry-level and firm-level carbon emissions. The table displays the percentage share of firms classified as green and brown using both methods and the extent of overlap between the two classifications. In the case of perfect overlap, the diagonal numbers would be 25%, 25%, and 50%, reflecting the top and bottom quantiles of the emissions distribution used to classify firms as green or brown. However, some discrepancies between the two methods are observed for both types of securities, as indicated by the non-zero percentages in the off-diagonal cells.

For equity securities, 9% of firms are classified as green by both data sources, while 18% are classified as brown. Similarly, for debt securities, 9% of firms are classified as green by both approaches, and 22.4% as brown. The majority of securities that are classified differently by the two methods end up in the category of other firms (neither green nor brown). Reassuringly, only a very small percentage of firms that have been classified as green by one method are classified as brown by the other, indicating a relatively low level of inconsistency between the two classification approaches.

Table A2: Overlap of Firms Classified as Green and Brown Using Two Types of Data: Percentage Share

Equity securities				
		Classification using industry-level emissions		
		Green	Brown	Other
Classification using firm-level emissions	Green	9.0%	1.0%	4.0%
	Brown	4.2%	18.0%	6.8%
	Other	23.7%	5.8%	27.6%
Debt securities				
		Classification using industry-level emissions		
		Green	Brown	Other
Classification using firm-level emissions	Green	9.0%	0.4%	3.3%
	Brown	4.5%	22.4%	6.7%
	Other	22.6%	5.6%	26.4%

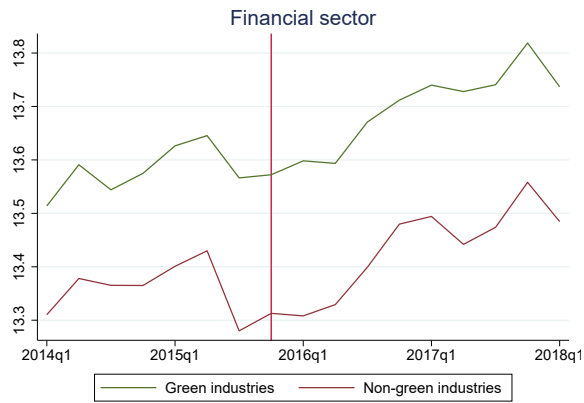
⁶ It is important to note that the historical distribution of the carbon emissions data for individual firms has been relatively stable over time, as has the overall distribution of emissions across the sample. Given this stability, using the latest available data does not pose any issues in our analysis.

A.3 Parallel Trend Assumption

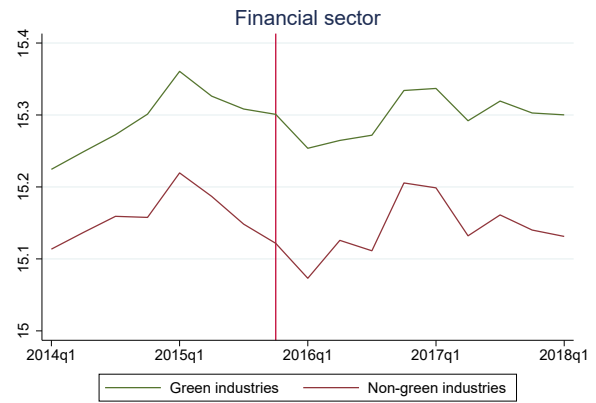
Figure B1: Mean Value of Securities Holdings Across All Financial Institutions

(A) Paris Climate Agreement: Green Firms

(A1) Equity Securities

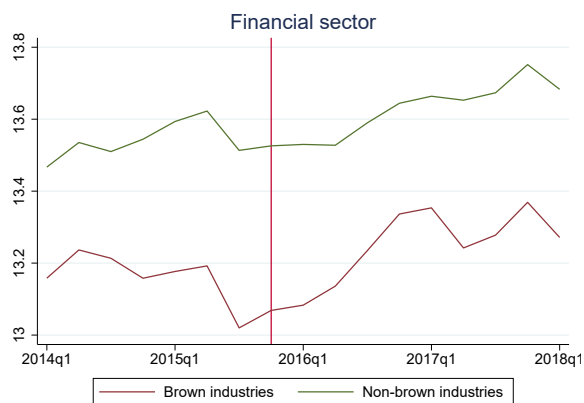


(A2) Debt Securities



(B) Paris Climate Agreement: Brown Firms

(B1) Equity Securities



(B2) Debt Securities

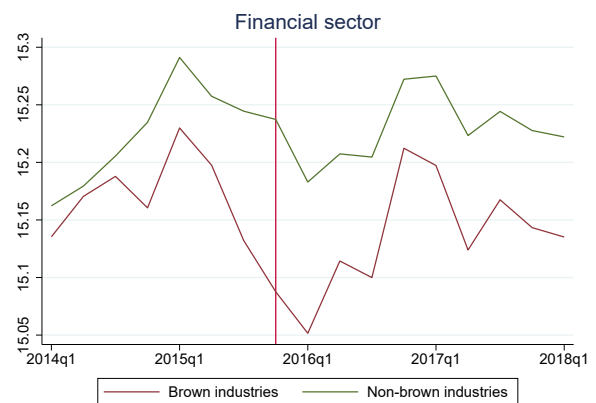
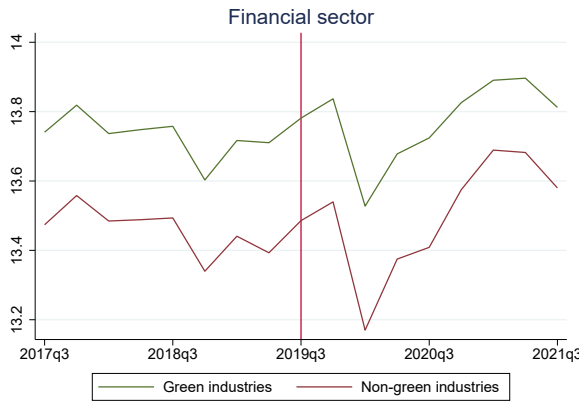


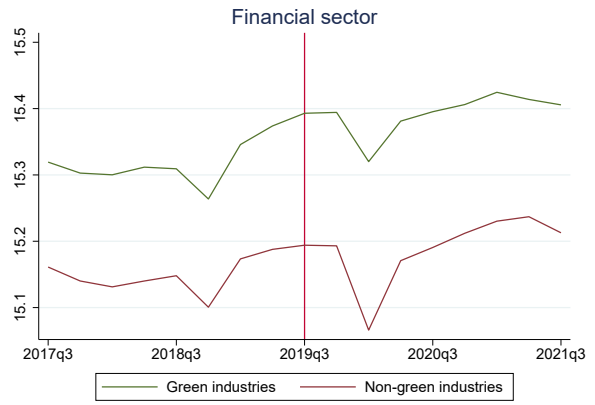
Figure B1 continued.

(C) UN Climate Action Summit: Green Firms

(C1) Equity Securities

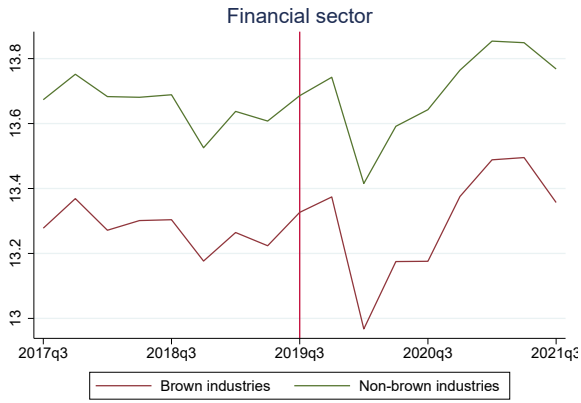


(C2) Debt Securities

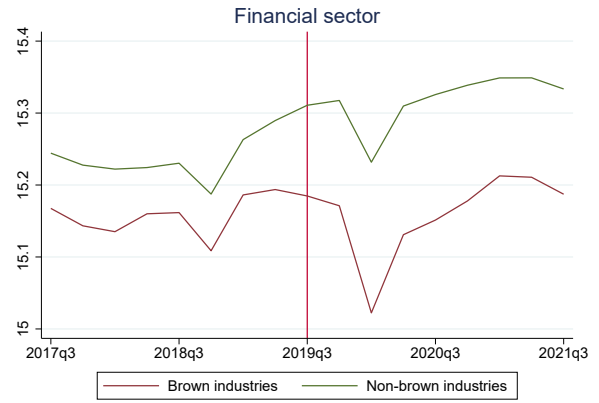


(D) UN Climate Action Summit: Brown Firms

(D1) Equity Securities



(D2) Debt Securities



Note: The y-axis represents the mean of the outcome variable (the logarithm of the amount held).

B Additional Results

B.1 Regional Analysis

Table B1: Home Bias – Paris Climate Agreement: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	1.217 (0.949)		2.267** (0.946)		-0.005 (0.499)		0.169 (1.146)	
Home	2.620*** (0.065)	2.127*** (0.055)	2.996*** (0.105)	3.077*** (0.118)	3.071*** (0.077)	2.203*** (0.061)	2.190*** (0.077)	1.897*** (0.084)
Green * Post	0.059*** (0.016)	0.052*** (0.015)	0.133*** (0.033)	0.116*** (0.035)	0.044** (0.017)	0.026 (0.017)	0.003 (0.022)	0.006 (0.023)
Green * Home	-0.161* (0.093)	-0.064 (0.083)	0.264* (0.153)	0.293* (0.168)	-0.309*** (0.107)	-0.001 (0.088)	-0.011 (0.123)	-0.278* (0.144)
Post * Home	-0.040 (0.033)	0.016 (0.032)	-0.198*** (0.061)	-0.287*** (0.062)	0.060 (0.037)	0.142*** (0.037)	-0.137*** (0.045)	-0.061 (0.047)
Green * Post * Home	-0.004 (0.049)	-0.044 (0.049)	-0.043 (0.087)	-0.019 (0.089)	-0.044 (0.057)	-0.067 (0.056)	-0.059 (0.075)	-0.040 (0.079)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.640	0.500	0.720	0.616	0.691	0.343	0.609	0.477
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.202 (0.293)		0.590 (1.151)		0.146 (0.251)		0.223 (0.367)	
Home	1.957*** (0.071)	1.804*** (0.073)	2.404*** (0.106)	2.369*** (0.113)	2.147*** (0.090)	1.446*** (0.088)	1.410*** (0.093)	1.786*** (0.108)
Green * Post	0.066** (0.026)	0.069*** (0.024)	0.024 (0.055)	0.068 (0.053)	0.045 (0.029)	0.053** (0.026)	0.061* (0.033)	0.098*** (0.033)
Green * Home	-0.260** (0.115)	0.005 (0.114)	-0.044 (0.168)	0.186 (0.176)	-0.443*** (0.134)	0.052 (0.135)	-0.093 (0.146)	0.084 (0.170)
Post * Home	0.045 (0.037)	0.094*** (0.035)	-0.099* (0.057)	-0.051 (0.056)	0.084* (0.050)	0.154*** (0.048)	-0.060 (0.049)	0.122** (0.049)
Green * Post * Home	-0.004 (0.062)	-0.024 (0.061)	0.098 (0.091)	0.057 (0.094)	0.032 (0.077)	-0.002 (0.078)	-0.044 (0.087)	-0.101 (0.090)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.432	0.281	0.523	0.432	0.650	0.261	0.573	0.339
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B2: Home Bias – Paris Climate Agreement: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.038 (0.260)		-0.749 (0.520)		-0.197 (0.383)		0.410* (0.219)	
Home	2.479*** (0.051)	2.057*** (0.046)	3.119*** (0.082)	3.233*** (0.092)	2.866*** (0.057)	2.198*** (0.047)	2.132*** (0.074)	1.674*** (0.082)
Brown * Post	-0.049*** (0.017)	-0.030* (0.017)	-0.165*** (0.034)	-0.141*** (0.036)	-0.037* (0.020)	0.002 (0.019)	-0.055** (0.024)	-0.022 (0.025)
Brown * Home	0.369*** (0.131)	0.214** (0.103)	0.082 (0.212)	-0.050 (0.228)	0.354** (0.163)	0.014 (0.124)	0.283** (0.133)	0.506*** (0.147)
Post * Home	-0.013 (0.027)	0.012 (0.027)	-0.215*** (0.047)	-0.291*** (0.048)	0.068** (0.031)	0.126*** (0.030)	-0.166*** (0.042)	-0.062 (0.044)
Brown * Post * Home	-0.147** (0.062)	-0.073 (0.061)	-0.036 (0.120)	-0.045 (0.123)	-0.155** (0.078)	-0.067 (0.077)	0.005 (0.081)	-0.072 (0.085)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.640	0.500	0.719	0.616	0.691	0.343	0.610	0.477
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	-0.378 (0.633)		0.028 (0.426)		-0.082 (0.647)		-0.434 (0.730)	
Home	1.817*** (0.067)	1.809*** (0.065)	2.378*** (0.100)	2.509*** (0.103)	1.927*** (0.078)	1.493*** (0.076)	1.340*** (0.087)	1.826*** (0.098)
Brown * Post	-0.070*** (0.027)	-0.056** (0.024)	-0.144** (0.058)	-0.160*** (0.057)	-0.046 (0.029)	(0.026)	-0.092*** (0.032)	-0.109*** (0.033)
Brown * Home	0.103 (0.124)	-0.007 (0.130)	0.060 (0.181)	-0.186 (0.192)	0.080 (0.156)	-0.124 (0.161)	0.131 (0.152)	-0.002 (0.187)
Post * Home	0.047 (0.035)	0.096*** (0.035)	-0.065 (0.053)	-0.035 (0.054)	0.105** (0.044)	0.178*** (0.044)	-0.090* (0.050)	0.067 (0.051)
Brown * Post * Home	-0.032 (0.065)	-0.062 (0.064)	-0.023 (0.100)	-0.016 (0.099)	-0.051 (0.088)	-0.082 (0.091)	0.018 (0.089)	0.021 (0.092)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.432	0.281	0.523	0.432	0.650	0.261	0.574	0.339
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B3: Home Bias – UN Climate Action Summit: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.450 (0.442)		0.264 (0.639)		-0.507 (0.474)		-0.720 (0.728)	
Home	2.646*** (0.057)	2.241*** (0.048)	2.685*** (0.115)	2.570*** (0.109)	3.246*** (0.075)	2.546*** (0.052)	2.334*** (0.083)	1.978*** (0.078)
Green * Post	0.067*** (0.017)	0.038** (0.015)	0.014 (0.032)	0.008 (0.035)	0.090*** (0.019)	0.042** (0.017)	0.093*** (0.022)	0.064*** (0.021)
Green * Home	-0.035 (0.083)	-0.116 (0.076)	0.655*** (0.163)	0.226 (0.157)	-0.353*** (0.103)	-0.203*** (0.076)	-0.000 (0.127)	-0.195 (0.135)
Post * Home	-0.250*** (0.033)	-0.272*** (0.031)	-0.215*** (0.059)	-0.230*** (0.060)	-0.253*** (0.038)	-0.300*** (0.037)	-0.204*** (0.050)	-0.233*** (0.050)
Green * Post * Home	-0.028 (0.047)	0.001 (0.045)	-0.024 (0.082)	-0.001 (0.083)	-0.074 (0.058)	-0.041 (0.056)	0.052 (0.076)	0.072 (0.077)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.644	0.495	0.743	0.584	0.685	0.351	0.613	0.489
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.153 (0.568)		0.298 (0.947)		-0.186 (0.345)		0.200 (0.620)	
Home	1.950*** (0.068)	1.898*** (0.065)	2.234*** (0.103)	2.239*** (0.110)	2.319*** (0.091)	1.701*** (0.081)	1.444*** (0.084)	1.916*** (0.093)
Green * Post	0.112*** (0.022)	0.102*** (0.020)	0.082* (0.045)	0.071 (0.046)	0.126*** (0.027)	0.083*** (0.024)	0.101*** (0.026)	0.116*** (0.024)
Green * Home	-0.166 (0.106)	0.023 (0.098)	0.082 (0.162)	0.215 (0.169)	-0.376*** (0.127)	0.033 (0.118)	-0.137 (0.130)	0.020 (0.141)
Post * Home	-0.066** (0.032)	-0.031 (0.032)	-0.033 (0.044)	-0.038 (0.045)	-0.211*** (0.056)	-0.116** (0.053)	-0.101** (0.047)	-0.077* (0.045)
Green * Post * Home	0.032 (0.053)	0.009 (0.052)	-0.086 (0.074)	-0.058 (0.076)	0.085 (0.077)	0.007 (0.075)	0.133* (0.074)	0.134* (0.076)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.448	0.291	0.548	0.477	0.654	0.247	0.577	0.358
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B4: Home Bias – UN Climate Action Summit: Brown Firms

(A) Equity Securities

	(1) All	(2) All	(3) Banks	(4) Banks	(5) IF	(6) IF	(7) IC&PF	(8) IC&PF
Brown	1.258*** (0.228)		-0.297 (0.424)		1.405*** (0.375)		1.700*** (0.089)	
Home	2.633*** (0.046)	2.177*** (0.041)	3.139*** (0.091)	2.732*** (0.085)	3.084*** (0.056)	2.444*** (0.042)	2.330*** (0.075)	1.869*** (0.074)
Brown * Post	-0.093*** (0.018)	-0.057*** (0.017)	-0.037 (0.033)	0.001 (0.036)	-0.138*** (0.021)	-0.084*** (0.020)	-0.111*** (0.023)	-0.073*** (0.023)
Brown * Home	-0.016 (0.116)	0.067 (0.094)	-0.748*** (0.221)	-0.304 (0.217)	-0.014 (0.155)	0.056 (0.101)	0.032 (0.150)	0.130 (0.154)
Post * Home	-0.284*** (0.025)	-0.290*** (0.025)	-0.247*** (0.044)	-0.236*** (0.045)	-0.331*** (0.031)	-0.357*** (0.030)	-0.182*** (0.041)	-0.202*** (0.042)
Brown * Post * Home	0.120* (0.066)	0.103* (0.061)	0.126 (0.113)	0.055 (0.115)	0.262*** (0.078)	0.226*** (0.073)	-0.012 (0.103)	-0.008 (0.100)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.644	0.495	0.743	0.584	0.685	0.351	0.613	0.489
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1) All	(2) All	(3) Banks	(4) Banks	(5) IF	(6) IF	(7) IC&PF	(8) IC&PF
Brown	0.737 (0.674)		1.540* (0.891)		0.009 (0.679)		0.659 (0.535)	
Home	1.885*** (0.063)	1.958*** (0.056)	2.296*** (0.096)	2.432*** (0.097)	2.155*** (0.073)	1.796*** (0.064)	1.367*** (0.078)	1.959*** (0.082)
Brown * Post	-0.120*** (0.022)	-0.099*** (0.020)	-0.049 (0.048)	-0.040 (0.049)	-0.142*** (0.028)	-0.110*** (0.025)	-0.086*** (0.025)	-0.084*** (0.024)
Brown * Home	-0.037 (0.113)	-0.204* (0.110)	-0.100 (0.176)	-0.365* (0.189)	-0.076 (0.157)	-0.369** (0.154)	0.068 (0.136)	-0.137 (0.158)
Post * Home	-0.082*** (0.031)	-0.048 (0.030)	-0.093** (0.043)	-0.079* (0.044)	-0.209*** (0.043)	-0.148*** (0.042)	-0.042 (0.044)	-0.006 (0.045)
Brown * Post * Home	0.102* (0.054)	0.073 (0.053)	0.089 (0.074)	0.062 (0.076)	0.167* (0.097)	0.151 (0.093)	-0.009 (0.080)	-0.044 (0.078)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.448	0.291	0.548	0.477	0.654	0.247	0.577	0.358
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B5: Eurozone Bias – Paris Climate Agreement: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	1.142 (0.928)		2.181** (0.908)		-0.014 (0.500)		0.068 (1.093)	
EA	0.287 (0.216)		1.096*** (0.419)		0.044 (0.273)		0.003 (0.278)	
Green * Post	0.061*** (0.017)	0.058*** (0.017)	0.135*** (0.035)	0.124*** (0.038)	0.046** (0.019)	0.033* (0.019)	0.031 (0.025)	0.035 (0.026)
Green * EA	0.118 (0.280)		0.248 (0.538)		0.078 (0.297)		0.457 (0.709)	
Post * EA	0.042* (0.024)	0.048** (0.023)	-0.039 (0.049)	-0.074 (0.051)	0.120*** (0.028)	0.103*** (0.027)	-0.156*** (0.033)	-0.098*** (0.033)
Green * Post * EA	-0.039 (0.036)	-0.060* (0.035)	-0.007 (0.073)	-0.010 (0.078)	-0.068 (0.042)	-0.078* (0.041)	-0.073 (0.048)	-0.078 (0.049)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.622	0.487	0.699	0.593	0.667	0.329	0.592	0.463
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.281 (0.291)		1.415 (0.973)		0.173 (0.251)		0.276 (0.359)	
EA	-0.040 (0.166)		0.278 (0.178)		-0.205** (0.100)		0.567*** (0.187)	
Green * Post	0.042 (0.033)	0.054* (0.030)	0.039 (0.076)	0.083 (0.073)	0.046 (0.034)	0.056* (0.030)	0.045 (0.046)	0.091** (0.046)
Green * EA	-0.362 (0.258)		-1.506** (0.660)		0.120 (0.225)		-0.668** (0.279)	
Post * EA	0.007 (0.033)	0.028 (0.031)	-0.135** (0.062)	-0.085 (0.062)	-0.022 (0.039)	0.009 (0.038)	-0.128*** (0.039)	0.031 (0.039)
Green * Post * EA	0.040 (0.050)	0.007 (0.047)	0.012 (0.097)	-0.010 (0.095)	0.011 (0.059)	-0.010 (0.057)	0.049 (0.063)	-0.030 (0.064)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.405	0.253	0.456	0.357	0.627	0.247	0.558	0.310
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B6: Eurozone Bias – Paris Climate Agreement: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.033 (0.252)		-0.766 (0.527)		-0.195 (0.375)		0.441** (0.220)	
EA	0.388*** (0.129)		0.913* (0.514)		0.143 (0.131)		0.416 (0.410)	
Brown * Post	-0.038** (0.019)	-0.022 (0.018)	-0.145*** (0.035)	-0.131*** (0.038)	-0.025 (0.022)	0.010 (0.021)	-0.074*** (0.026)	-0.042 (0.028)
Brown * EA	-0.182 (0.349)		0.311 (0.741)		-0.177 (0.401)		-0.810 (0.649)	
Post * EA	0.034* (0.020)	0.027 (0.019)	-0.026 (0.041)	-0.069 (0.043)	0.099*** (0.023)	0.075*** (0.023)	-0.208*** (0.027)	-0.145*** (0.027)
Brown * Post * EA	-0.028 (0.045)	-0.007 (0.044)	-0.065 (0.095)	-0.026 (0.101)	-0.038 (0.055)	-0.015 (0.051)	0.070 (0.058)	0.060 (0.059)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.622	0.487	0.698	0.593	0.667	0.329	0.592	0.463
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	-0.426 (0.636)		-0.171 (0.456)		-0.111 (0.644)		-0.442 (0.706)	
EA	-0.340** (0.171)		-0.611 (0.450)		-0.071 (0.158)		-0.041 (0.187)	
Brown * Post	-0.081** (0.032)	-0.064** (0.029)	-0.257*** (0.075)	-0.256*** (0.075)	-0.065** (0.033)	-0.011 (0.030)	-0.145*** (0.042)	-0.150*** (0.043)
Brown * EA	0.356 (0.232)		0.646 (0.444)		-0.212 (0.204)		0.720*** (0.216)	
Post * EA	0.005 (0.030)	0.019 (0.028)	-0.211*** (0.057)	-0.159*** (0.056)	-0.038 (0.035)	0.003 (0.034)	-0.155*** (0.039)	-0.031 (0.039)
Brown * Post * EA	0.060 (0.053)	0.045 (0.049)	0.191* (0.105)	0.173* (0.103)	0.078 (0.066)	0.037 (0.061)	0.127** (0.063)	0.153** (0.064)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.405	0.253	0.456	0.357	0.627	0.247	0.559	0.310
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B7: Eurozone Bias – UN Climate Action Summit: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.466		0.258		-0.543		-0.680	
	(0.431)		(0.671)		(0.461)		(0.736)	
EA	0.596		-0.608		0.822		1.272**	
	(0.721)		(0.395)		(0.885)		(0.544)	
Green * Post	0.100***	0.061***	0.004	-0.006	0.132***	0.064***	0.143***	0.111***
	(0.019)	(0.017)	(0.035)	(0.039)	(0.021)	(0.019)	(0.024)	(0.023)
Green * EA	0.110		0.988		-0.230		0.102	
	(0.743)		(1.189)		(0.949)		(0.566)	
Post * EA	-0.194***	-0.210***	-0.131***	-0.191***	-0.182***	-0.222***	-0.142***	-0.169***
	(0.026)	(0.025)	(0.048)	(0.051)	(0.030)	(0.029)	(0.032)	(0.032)
Green * Post * EA	-0.067*	-0.022	0.016	0.078	-0.123***	-0.025	-0.119**	-0.092*
	(0.038)	(0.035)	(0.069)	(0.073)	(0.045)	(0.042)	(0.048)	(0.047)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.484	0.725	0.569	0.662	0.336	0.596	0.476
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.168		0.782		-0.187		0.247	
	(0.582)		(0.995)		(0.352)		(0.613)	
EA	0.141		0.067		0.262		0.481***	
	(0.149)		(0.252)		(0.209)		(0.174)	
Green * Post	0.105***	0.086***	0.045	0.016	0.123***	0.078***	0.081**	0.097***
	(0.027)	(0.024)	(0.064)	(0.065)	(0.031)	(0.028)	(0.034)	(0.032)
Green * EA	-0.489		-1.600		-0.131		-1.083***	
	(0.422)		(1.218)		(0.336)		(0.295)	
Post * EA	0.003	-0.012	0.042	-0.025	-0.077*	-0.076*	-0.037	-0.017
	(0.030)	(0.027)	(0.050)	(0.051)	(0.046)	(0.040)	(0.032)	(0.030)
Green * Post * EA	0.007	0.032	0.027	0.079	0.027	0.030	0.058	0.052
	(0.044)	(0.039)	(0.079)	(0.080)	(0.060)	(0.054)	(0.051)	(0.048)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.423	0.264	0.497	0.420	0.632	0.232	0.563	0.329
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B8: Eurozone Bias – UN Climate Action Summit: Brown Firms

(A) Equity Securities

	(1) All	(2) All	(3) Banks	(4) Banks	(5) IF	(6) IF	(7) IC&PF	(8) IC&PF
Brown	1.240*** (0.253)		-0.332 (0.421)		1.448*** (0.369)		1.643*** (0.168)	
EA	0.484 (0.380)		0.287 (0.817)		0.384 (0.366)		1.262*** (0.384)	
Brown * Post	-0.131*** (0.020)	-0.089*** (0.019)	-0.059* (0.036)	-0.022 (0.039)	-0.180*** (0.022)	-0.115*** (0.021)	-0.153*** (0.025)	-0.113*** (0.025)
Brown * EA	0.723* (0.428)		-1.618* (0.884)		1.454*** (0.367)		0.123 (0.584)	
Post * EA	-0.252*** (0.021)	-0.240*** (0.020)	-0.160*** (0.039)	-0.174*** (0.040)	-0.277*** (0.024)	-0.259*** (0.023)	-0.221*** (0.027)	-0.229*** (0.026)
Brown * Post * EA	0.149*** (0.048)	0.114** (0.045)	0.168** (0.083)	0.104 (0.089)	0.218*** (0.058)	0.129** (0.054)	0.154*** (0.058)	0.120** (0.057)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.484	0.725	0.569	0.662	0.337	0.596	0.476
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1) All	(2) All	(3) Banks	(4) Banks	(5) IF	(6) IF	(7) IC&PF	(8) IC&PF
Brown	0.720 (0.666)		2.459** (1.004)		0.024 (0.691)		0.648 (0.524)	
EA	0.135 (0.192)		0.410** (0.166)		0.272* (0.141)		0.379** (0.183)	
Brown * Post	-0.127*** (0.025)	-0.107*** (0.023)	-0.071 (0.065)	-0.073 (0.066)	-0.154*** (0.031)	-0.126*** (0.027)	-0.068** (0.031)	-0.073** (0.030)
Brown * EA	-0.101 (0.306)		-0.910** (0.369)		-0.040 (0.423)		0.051 (0.374)	
Post * EA	-0.011 (0.026)	-0.013 (0.024)	0.021 (0.048)	-0.028 (0.049)	-0.086** (0.036)	-0.087*** (0.032)	0.005 (0.030)	0.019 (0.028)
Brown * Post * EA	0.069 (0.045)	0.064 (0.041)	0.121 (0.081)	0.124 (0.082)	0.085 (0.066)	0.087 (0.061)	-0.042 (0.051)	-0.022 (0.049)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.423	0.264	0.497	0.420	0.632	0.232	0.562	0.329
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B.1.1 Environmental Performance of Holder Countries

Table B9: Environmental Performance of Holder Country – Paris Climate Agreement: Green Firms

(A) Equity Securities								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	1.172 (0.925)		1.979** (0.886)		-0.040 (0.497)		0.102 (1.116)	
High EPI		0.762*** (0.017)		1.067*** (0.088)		0.572*** (0.021)		1.169*** (0.031)
Green * Post	0.045** (0.022)	0.036 (0.022)	0.240** (0.096)	0.271*** (0.097)	0.049** (0.022)	0.038 (0.026)	-0.048 (0.034)	-0.053 (0.035)
Green * High EPI	-0.059* (0.031)	-0.027 (0.031)	0.087 (0.142)	0.083 (0.143)	0.049* (0.029)	0.050 (0.037)	-0.012 (0.046)	-0.065 (0.053)
Post * High EPI	-0.047*** (0.013)	-0.251*** (0.014)	-0.305*** (0.065)	-0.095 (0.061)	-0.066*** (0.014)	-0.262*** (0.017)	-0.122*** (0.024)	-0.340*** (0.026)
Green * Post * High EPI	0.011 (0.023)	0.009 (0.024)	-0.145 (0.100)	-0.183* (0.100)	-0.013 (0.024)	-0.022 (0.029)	0.061 (0.040)	0.054 (0.043)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.622	0.494	0.699	0.599	0.667	0.335	0.592	0.488
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.241 (0.293)		0.609 (1.092)		0.092 (0.254)		0.346 (0.366)	
High EPI		0.819*** (0.025)		- (0.085)		0.714*** (0.034)		1.287*** (0.040)
Green * Post	0.080** (0.035)	0.080** (0.034)	0.106 (0.075)	0.170** (0.078)	0.088** (0.037)	0.111*** (0.041)	0.023 (0.044)	0.015 (0.044)
Green * High EPI	-0.001 (0.041)	0.005 (0.042)	0.284** (0.133)	0.282** (0.131)	0.116*** (0.044)	0.151*** (0.057)	-0.123** (0.058)	-0.267*** (0.062)
Post * High EPI	-0.085*** (0.019)	-0.116*** (0.019)	-0.035 (0.054)	0.087 (0.057)	-0.117*** (0.022)	-0.082*** (0.026)	-0.235*** (0.028)	-0.293*** (0.032)
Green * Post * High EPI	-0.031 (0.033)	-0.029 (0.033)	-0.100 (0.084)	-0.145 (0.089)	-0.060* (0.036)	-0.085* (0.045)	0.035 (0.047)	0.084 (0.052)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.405	0.276	0.457	0.358	0.628	0.268	0.560	0.354
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B10: Environmental Performance of Holder Country – Paris Climate Agreement: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.030 (0.255)		-0.768 (0.536)		-0.123 (0.377)		0.371* (0.215)	
High EPI		0.738*** (0.017)		1.127*** (0.082)		0.582*** (0.020)		1.136*** (0.031)
Brown * Post	-0.065*** (0.023)	-0.015 (0.023)	-0.320*** (0.100)	-0.280*** (0.102)	-0.081*** (0.024)	-0.002 (0.028)	-0.002 (0.037)	0.006 (0.038)
Brown * High EPI	0.017 (0.031)	0.054* (0.031)	0.002 (0.147)	-0.097 (0.155)	-0.095*** (0.030)	0.025 (0.038)	0.055 (0.046)	0.036 (0.054)
Post * High EPI	-0.052*** (0.013)	-0.244*** (0.014)	-0.419*** (0.066)	-0.213*** (0.058)	-0.088*** (0.013)	-0.269*** (0.016)	-0.083*** (0.023)	-0.313*** (0.025)
Brown * Post * High EPI	0.031 (0.024)	-0.013 (0.025)	0.202* (0.103)	0.167 (0.106)	0.065*** (0.025)	0.001 (0.031)	-0.065 (0.044)	-0.029 (0.046)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.622	0.494	0.699	0.599	0.667	0.335	0.592	0.488
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	-0.449 (0.639)		0.210 (0.482)		-0.155 (0.650)		-0.509 (0.735)	
High EPI		0.804*** (0.025)		0.207** (0.081)		0.752*** (0.034)		1.117*** (0.039)
Brown * Post	-0.044 (0.035)	-0.027 (0.033)	-0.203*** (0.076)	-0.230*** (0.080)	-0.026 (0.037)	0.052 (0.040)	-0.047 (0.043)	-0.044 (0.044)
Brown * High EPI	0.051 (0.041)	0.048 (0.041)	-0.242* (0.139)	-0.264* (0.135)	0.034 (0.044)	0.036 (0.058)	0.076 (0.057)	0.202*** (0.064)
Post * High EPI	-0.084*** (0.020)	-0.109*** (0.020)	-0.111** (0.051)	-0.012 (0.054)	-0.125*** (0.021)	-0.079*** (0.027)	-0.203*** (0.028)	-0.236*** (0.031)
Brown * Post * High EPI	-0.036 (0.033)	-0.050 (0.033)	0.080 (0.087)	0.099 (0.092)	-0.031 (0.036)	-0.090** (0.044)	-0.053 (0.046)	-0.070 (0.053)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.405	0.276	0.457	0.358	0.628	0.268	0.559	0.354
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B11: Environmental Performance of Holder Country – UN Climate Action Summit: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.424 (0.439)		0.311 (0.673)		-0.533 (0.473)		-0.695 (0.736)	
High EPI		0.457*** (0.015)		0.749*** (0.066)		0.209*** (0.021)		0.808*** (0.026)
Green * Post	0.049** (0.020)	0.002 (0.019)	0.037 (0.066)	-0.031 (0.072)	0.031 (0.023)	-0.034 (0.025)	0.121*** (0.027)	0.071** (0.028)
Green * High EPI	-0.020 (0.025)	-0.010 (0.024)	-0.050 (0.097)	-0.118 (0.101)	0.047* (0.028)	0.001 (0.035)	0.085** (0.039)	0.038 (0.044)
Post * High EPI	-0.115*** (0.012)	-0.132*** (0.012)	0.123** (0.049)	0.153*** (0.055)	-0.069*** (0.013)	-0.121*** (0.016)	-0.142*** (0.019)	-0.181*** (0.020)
Green * Post * High EPI	0.017 (0.019)	0.050** (0.020)	-0.050 (0.071)	0.034 (0.078)	0.079*** (0.023)	0.107*** (0.028)	-0.057* (0.031)	-0.003 (0.033)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.487	0.725	0.573	0.662	0.337	0.596	0.490
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.152 (0.572)		0.105 (0.983)		-0.265 (0.352)		0.238 (0.613)	
High EPI		0.640*** (0.021)		0.348*** (0.070)		0.520*** (0.031)		0.878*** (0.029)
Green * Post	0.076*** (0.025)	0.076*** (0.023)	0.064 (0.056)	0.073 (0.057)	0.093*** (0.034)	0.064* (0.035)	0.082*** (0.030)	0.090*** (0.030)
Green * High EPI	-0.031 (0.035)	-0.014 (0.035)	0.053 (0.113)	0.007 (0.106)	0.090** (0.042)	0.153*** (0.052)	-0.137*** (0.046)	-0.227*** (0.048)
Post * High EPI	-0.099*** (0.016)	-0.091*** (0.016)	-0.025 (0.048)	-0.003 (0.049)	-0.107*** (0.020)	-0.099*** (0.023)	-0.098*** (0.021)	-0.063*** (0.023)
Green * Post * High EPI	0.054** (0.026)	0.042 (0.026)	0.006 (0.073)	-0.023 (0.074)	0.041 (0.033)	0.026 (0.039)	0.041 (0.034)	0.064* (0.037)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.423	0.278	0.497	0.424	0.632	0.244	0.563	0.357
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B12: Environmental Performance of Holder Country – UN Climate Action Summit: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	1.200*** (0.234)		-0.583 (0.432)		1.416*** (0.367)		1.653*** (0.162)	
High EPI		0.451*** (0.014)		0.669*** (0.057)		0.197*** (0.019)		0.833*** (0.025)
Brown * Post	-0.073*** (0.022)	-0.018 (0.022)	0.099 (0.087)	0.139 (0.097)	-0.112*** (0.025)	-0.037 (0.027)	-0.110*** (0.029)	-0.059** (0.030)
Brown * High EPI	0.028 (0.026)	0.011 (0.026)	0.239** (0.110)	0.127 (0.115)	-0.031 (0.029)	0.048 (0.038)	-0.074* (0.043)	-0.044 (0.048)
Post * High EPI	-0.104*** (0.011)	-0.101*** (0.011)	0.136*** (0.039)	0.204*** (0.043)	-0.034*** (0.013)	-0.067*** (0.015)	-0.166*** (0.017)	-0.172*** (0.019)
Brown * Post * High EPI	-0.017 (0.022)	-0.052** (0.023)	-0.140 (0.092)	-0.156 (0.103)	-0.024 (0.025)	-0.058* (0.030)	0.004 (0.035)	-0.046 (0.037)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.487	0.725	0.573	0.662	0.337	0.596	0.490
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.729 (0.674)		1.734* (1.026)		0.059 (0.689)		0.617 (0.523)	
High EPI		0.644*** (0.021)		0.409*** (0.063)		0.626*** (0.031)		0.725*** (0.029)
Brown * Post	-0.041* (0.025)	-0.036 (0.023)	-0.056 (0.058)	-0.062 (0.059)	-0.065* (0.035)	-0.062* (0.035)	-0.033 (0.030)	-0.019 (0.029)
Brown * High EPI	-0.001 (0.034)	-0.027 (0.034)	-0.181 (0.124)	-0.196* (0.114)	-0.068 (0.042)	-0.151*** (0.053)	0.074 (0.047)	0.202*** (0.048)
Post * High EPI	-0.043*** (0.015)	-0.046*** (0.016)	-0.038 (0.044)	-0.034 (0.045)	-0.062*** (0.019)	-0.070*** (0.023)	-0.053*** (0.020)	0.006 (0.022)
Brown * Post * High EPI	-0.110*** (0.027)	-0.095*** (0.027)	0.051 (0.078)	0.075 (0.080)	-0.090*** (0.034)	-0.057 (0.039)	-0.093** (0.036)	-0.141*** (0.038)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.423	0.278	0.497	0.424	0.632	0.244	0.563	0.356
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** p < 0.01, ** p < 0.05, * p < 0.1.

B.1.2 Environmental Performance of Issuer Countries

Table B13: Environmental Performance of Issuer Country – Paris Climate Agreement: Green Firms

(A) Equity Securities								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.850		1.952**		-0.132		-1.869	
	(0.948)		(0.934)		(0.646)		(1.256)	
High EPI	0.192		0.861		-0.096		-0.411	
	(0.321)		(0.587)		(0.387)		(0.576)	
Green * Post	0.086**	0.082**	0.236***	0.251***	0.034	0.014	-0.028	0.031
	(0.038)	(0.038)	(0.081)	(0.090)	(0.042)	(0.040)	(0.065)	(0.066)
Green * High EPI	0.298		0.136		0.134		1.958***	
	(0.424)		(0.700)		(0.448)		(0.583)	
Post * High EPI	0.192***	0.174***	0.066	-0.028	0.257***	0.227***	-0.016	0.068*
	(0.023)	(0.022)	(0.044)	(0.048)	(0.025)	(0.024)	(0.040)	(0.040)
Green * Post * High EPI	-0.052	-0.055	-0.130	-0.159*	-0.018	-0.012	0.013	-0.044
	(0.042)	(0.041)	(0.088)	(0.097)	(0.046)	(0.044)	(0.069)	(0.070)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.622	0.487	0.698	0.593	0.667	0.329	0.591	0.463
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.396		3.566***		-0.209		1.173	
	(0.944)		(1.105)		(0.613)		(1.250)	
High EPI	-0.730***		0.363		-0.563***		-0.670**	
	(0.204)		(0.245)		(0.128)		(0.336)	
Green * Post	-0.078	-0.040	-0.097	0.041	-0.141	-0.075	-0.058	0.009
	(0.088)	(0.082)	(0.143)	(0.146)	(0.090)	(0.078)	(0.139)	(0.145)
Green * High EPI	-0.162		-2.776***		0.369		-0.912	
	(0.903)		(0.248)		(0.567)		(1.200)	
Post * High EPI	0.107***	0.111***	-0.121	-0.071	0.113**	0.112**	0.224***	0.287***
	(0.040)	(0.037)	(0.088)	(0.090)	(0.048)	(0.044)	(0.055)	(0.061)
Green * Post * High EPI	0.149	0.108	0.139	0.027	0.207**	0.140*	0.109	0.069
	(0.092)	(0.085)	(0.152)	(0.154)	(0.094)	(0.082)	(0.142)	(0.148)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.405	0.253	0.456	0.357	0.628	0.247	0.559	0.309
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B14: Environmental Performance of Issuer Country – Paris Climate Agreement: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.403 (0.486)		-0.471 (0.758)		0.147 (0.609)		2.415*** (0.639)	
High EPI	0.551* (0.297)		1.168* (0.652)		0.185 (0.301)		1.508*** (0.104)	
Brown * Post	0.007 (0.037)	0.033 (0.036)	-0.160** (0.072)	-0.133* (0.078)	0.040 (0.041)	0.085** (0.039)	-0.076 (0.066)	-0.016 (0.067)
Brown * High EPI	-0.371 (0.431)		-0.353 (0.772)		-0.326 (0.492)		-2.023*** (0.603)	
Post * High EPI	0.194*** (0.022)	0.181*** (0.022)	0.023 (0.048)	-0.075 (0.051)	0.277*** (0.025)	0.255*** (0.024)	-0.033 (0.038)	0.051 (0.039)
Brown * Post * High EPI	-0.047 (0.042)	-0.058 (0.041)	0.010 (0.081)	0.001 (0.088)	-0.072 (0.047)	-0.083* (0.044)	0.043 (0.070)	0.006 (0.072)
Observations	1522932	1522932	255955	255955	816251	816249	449782	449781
Adjusted R^2	0.622	0.487	0.698	0.593	0.667	0.329	0.592	0.463
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	-0.551 (0.769)		-0.412 (1.041)		0.215 (0.726)		-1.287 (0.989)	
High EPI	-0.815** (0.323)		-0.289 (0.766)		-0.393* (0.224)		-1.079** (0.475)	
Brown * Post	0.066 (0.070)	0.046 (0.066)	0.053 (0.135)	-0.053 (0.137)	0.110 (0.077)	0.088 (0.069)	0.073 (0.111)	0.024 (0.119)
Brown * High EPI	0.148 (0.434)		0.476 (0.917)		-0.330 (0.338)		0.844 (0.672)	
Post * High EPI	0.214*** (0.059)	0.190*** (0.055)	0.011 (0.105)	-0.031 (0.104)	0.251*** (0.060)	0.202*** (0.051)	0.325*** (0.098)	0.355*** (0.104)
Brown * Post * High EPI	-0.137* (0.076)	-0.102 (0.070)	-0.226 (0.146)	-0.125 (0.148)	-0.166** (0.083)	-0.092 (0.075)	-0.146 (0.116)	-0.108 (0.124)
Observations	546764	546764	72231	72230	271214	271214	202818	202816
Adjusted R^2	0.405	0.253	0.456	0.357	0.628	0.247	0.559	0.309
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** p < 0.01, ** p < 0.05, * p < 0.1.

Table B15: Environmental Performance of Issuer Country – UN Climate Action Summit: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-0.888*		-0.066		-0.413		-0.667	
	(0.539)		(0.747)		(0.477)		(0.728)	
High EPI	0.093		-0.628		0.355		0.106	
	(0.206)		(0.507)		(0.269)		(0.153)	
Green * Post	-0.109***	-0.109***	-0.212***	-0.181**	-0.080*	-0.076*	-0.031	-0.052
	(0.042)	(0.038)	(0.080)	(0.086)	(0.048)	(0.041)	(0.059)	(0.056)
Green * High EPI	0.427		0.361		-0.180			
	(0.450)		(0.491)		(0.270)			
Post * High EPI	-0.085***	-0.057**	-0.166***	-0.112**	-0.015	-0.042*	-0.014	0.052
	(0.024)	(0.023)	(0.048)	(0.050)	(0.027)	(0.025)	(0.035)	(0.034)
Green * Post * High EPI	0.202***	0.168***	0.248***	0.210**	0.194***	0.137***	0.136**	0.128**
	(0.046)	(0.041)	(0.086)	(0.092)	(0.052)	(0.045)	(0.063)	(0.061)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.484	0.725	0.569	0.662	0.336	0.596	0.476
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.110		0.140		-0.061		0.177	
	(0.607)		(0.985)		(0.416)		(0.611)	
High EPI	-0.018		2.135		0.116		0.336	
	(0.207)		(1.401)		(0.230)		(0.296)	
Green * Post	0.125**	0.082	0.105	0.082	0.141**	0.050	0.168**	0.144*
	(0.054)	(0.051)	(0.142)	(0.141)	(0.063)	(0.062)	(0.081)	(0.079)
Green * High EPI	0.024				-0.134			
	(0.207)				(0.230)			
Post * High EPI	0.056*	0.011	0.261***	0.249***	0.007	-0.034	0.109**	0.024
	(0.034)	(0.031)	(0.090)	(0.088)	(0.040)	(0.037)	(0.047)	(0.045)
Green * Post * High EPI	-0.020	0.017	-0.047	-0.030	-0.023	0.032	-0.071	-0.026
	(0.058)	(0.055)	(0.148)	(0.147)	(0.069)	(0.067)	(0.085)	(0.082)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.423	0.264	0.497	0.420	0.632	0.232	0.563	0.328
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B16: Environmental Performance of Issuer Country – UN Climate Action Summit: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	1.326***		0.093		1.625***		1.383***	
	(0.427)		(0.860)		(0.571)		(0.370)	
High EPI	0.080		-0.406		0.334		-0.053	
	(0.313)		(0.616)		(0.305)		(0.293)	
Brown * Post	-0.031	-0.013	-0.016	-0.011	-0.044	-0.025	-0.032	-0.009
	(0.040)	(0.037)	(0.077)	(0.080)	(0.043)	(0.039)	(0.058)	(0.057)
Brown * High EPI	-0.106		-0.416		-0.216		0.240	
	(0.364)		(0.818)		(0.439)		(0.336)	
Post * High EPI	-0.007	0.005	-0.096*	-0.062	0.068**	0.014	0.052	0.112***
	(0.024)	(0.022)	(0.049)	(0.052)	(0.027)	(0.024)	(0.034)	(0.033)
Brown * Post * High EPI	-0.072	-0.047	-0.004	0.031	-0.108**	-0.069	-0.083	-0.064
	(0.045)	(0.041)	(0.085)	(0.089)	(0.049)	(0.045)	(0.063)	(0.062)
Observations	1660239	1660239	239090	239090	869245	869245	550476	550476
Adjusted R^2	0.627	0.484	0.725	0.569	0.662	0.336	0.596	0.476
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.601		-0.354		-0.058		1.416*	
	(0.484)		(2.757)		(0.565)		(0.738)	
High EPI	-0.071		1.249		0.095		0.749*	
	(0.318)		(1.248)		(0.292)		(0.394)	
Brown * Post	-0.087*	-0.062	-0.015	-0.010	-0.110*	-0.071	-0.111	-0.080
	(0.050)	(0.047)	(0.138)	(0.135)	(0.059)	(0.056)	(0.074)	(0.071)
Brown * High EPI	0.148		2.020		0.080		-0.878	
	(0.371)		(2.565)		(0.422)		(0.692)	
Brown * Post	0.048	0.023	0.243***	0.237***	-0.001	-0.017	0.057	0.009
	(0.037)	(0.035)	(0.090)	(0.089)	(0.045)	(0.041)	(0.058)	(0.056)
Brown * Post * High EPI	-0.019	-0.030	0.012	0.011	-0.022	-0.036	0.040	-0.002
	(0.055)	(0.052)	(0.144)	(0.142)	(0.067)	(0.062)	(0.078)	(0.076)
Observations	689376	689376	89685	89681	322751	322749	276413	276412
Adjusted R^2	0.423	0.264	0.497	0.420	0.632	0.232	0.563	0.328
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** p < 0.01, ** p < 0.05, * p < 0.1.

B.2 US Firms: The Effect of President Trump's Withdrawal and President Biden's Rejoining of COP21

Table B17: President Trump's Withdrawal from COP21: Green Firms

(A) Equity Securities								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	1.636 (1.800)		2.092*** (0.049)		0.242*** (0.018)		-0.554*** (0.027)	
US	0.416** (0.212)		0.491 (0.333)		0.797*** (0.192)		0.641*** (0.027)	
Green * Post	0.005 (0.017)	0.003 (0.017)	0.091** (0.040)	0.113** (0.044)	0.003 (0.020)	-0.020 (0.019)	-0.058** (0.023)	-0.043* (0.024)
Green * US	-1.121 (1.881)		-2.669*** (0.370)		0.168 (0.544)		1.848*** (0.668)	
Post * US	0.000 (0.019)	-0.042** (0.019)	-0.241*** (0.041)	-0.078* (0.046)	0.067*** (0.022)	0.011 (0.022)	-0.037 (0.026)	-0.132*** (0.028)
Green * Post * US	0.056* (0.033)	0.036 (0.032)	0.053 (0.068)	-0.020 (0.077)	0.068* (0.038)	0.046 (0.036)	0.079* (0.045)	0.032 (0.048)
Observations	159,1175	159,1175	245,308	245,307	842,337	842,336	502,420	502,420
Adjusted R^2	0.626	0.486	0.710	0.593	0.668	0.329	0.598	0.480
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.088 (0.530)		-0.579 (0.793)		0.108 (0.282)		0.582 (0.826)	
US	-0.386 (0.432)		-0.828 (0.542)		-0.226 (0.449)		-0.486* (0.276)	
Green * Post	0.110*** (0.025)	0.080*** (0.023)	0.160*** (0.048)	0.181*** (0.049)	0.075** (0.032)	0.044 (0.031)	0.126*** (0.029)	0.099*** (0.029)
Green * US	0.552 (0.576)		1.686* (1.014)		0.197 (0.404)		-0.301 (0.812)	
Post * US	0.028 (0.025)	0.003 (0.023)	0.078 (0.066)	-0.046 (0.069)	0.016 (0.030)	-0.010 (0.029)	0.201*** (0.031)	0.131*** (0.030)
Green * Post * US	-0.146*** (0.043)	-0.098** (0.040)	-0.305** (0.127)	-0.239* (0.127)	-0.127** (0.052)	-0.073 (0.049)	-0.107* (0.055)	-0.078 (0.054)
Observations	604,428	604,427	77,685	77,685	290,826	290,825	235,441	235,441
Adjusted R^2	0.414	0.262	0.473	0.380	0.632	0.250	0.559	0.324
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B18: President Trump's Withdrawal from COP21: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	-1.668 (1.799)		-2.130*** (0.045)		-0.272*** (0.014)		0.561*** (0.025)	
US	-1.368 (1.817)		-1.138* (0.581)		0.638* (0.367)		0.975*** (0.065)	
Brown * Post	0.054*** (0.018)	0.069*** (0.017)	-0.055 (0.041)	-0.028 (0.045)	0.066*** (0.021)	0.088*** (0.020)	0.064*** (0.024)	0.075*** (0.025)
Brown * US	1.837 (1.804)		1.593*** (0.487)		0.229 (0.310)		-0.277*** (0.059)	
Post * US	0.052*** (0.018)	-0.005 (0.017)	-0.241*** (0.038)	-0.095** (0.043)	0.132*** (0.021)	0.056*** (0.020)	0.024 (0.025)	-0.099*** (0.026)
Brown * Post * US	-0.129*** (0.036)	-0.091** (0.036)	0.070 (0.075)	0.040 (0.085)	-0.170*** (0.043)	-0.104** (0.043)	-0.128*** (0.047)	-0.075 (0.051)
Observations	1,591,175	1,591,175	245,308	245,307	842,337	842,336	502,420	502,419
Adjusted R^2	0.626	0.486	0.710	0.591	0.668	0.329	0.598	0.478
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	0.591 (0.848)		0.591 (0.766)		0.347 (0.690)		-0.191 (1.193)	
US	0.452 (0.538)		0.093 (0.774)		0.031 (0.437)		-0.590 (0.890)	
Brown * Post	-0.079*** (0.026)	-0.050** (0.025)	-0.154*** (0.050)	-0.156*** (0.051)	-0.032 (0.033)	0.005 (0.032)	-0.082*** (0.032)	-0.065** (0.031)
Brown * US	-1.034 (0.709)		-0.989 (0.756)		-0.348 (0.738)		0.103 (0.981)	
Post * US	-0.065*** (0.025)	-0.070*** (0.023)	-0.043 (0.071)	-0.162** (0.073)	-0.066** (0.031)	-0.069** (0.029)	0.144*** (0.032)	0.080** (0.031)
Brown * Post * US	0.113*** (0.041)	0.109*** (0.039)	0.024 (0.115)	0.073 (0.116)	0.107** (0.051)	0.105** (0.049)	0.032 (0.051)	0.056 (0.050)
Observations	604,428	604,427	77,685	77,683	290,826	290,825	235,441	235,441
Adjusted R^2	0.414	0.261	0.473	0.376	0.632	0.249	0.559	0.322
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B19: President Biden's Rejoining of COP21: Green Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	0.517		-0.595		0.287		-0.619	
	(0.468)		(0.636)		(0.369)		(0.949)	
US	0.135		0.659		0.405		-0.189**	
	(0.192)		(0.730)		(0.261)		(0.078)	
Green * Post	-0.096***	-0.102***	-0.131***	-0.170***	-0.089***	-0.081***	-0.093***	-0.091***
	(0.014)	(0.014)	(0.035)	(0.038)	(0.016)	(0.017)	(0.019)	(0.019)
Green * US	0.095		2.866***		-0.329		1.505***	
	(0.353)		(0.731)		(0.262)		(0.085)	
Post * US	0.077***	0.067***	-0.002	-0.017	0.191***	0.161***	0.009	-0.013
	(0.017)	(0.017)	(0.040)	(0.049)	(0.019)	(0.021)	(0.021)	(0.022)
Green * Post * US	0.030	0.020	0.034	0.061	0.056*	0.027	0.016	-0.001
	(0.027)	(0.028)	(0.064)	(0.078)	(0.031)	(0.033)	(0.035)	(0.035)
Observations	686310	686310	100469	100469	356228	356228	228047	228047
Adjusted R^2	0.642	0.502	0.739	0.553	0.690	0.369	0.602	0.470
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Green	-1.462**		-3.336***		0.876***		0.108	
	(0.730)		(0.084)		(0.028)		(0.723)	
US	-0.212		-0.059		-0.243		-0.291***	
	(0.148)		(0.423)		(0.238)		(0.033)	
Green * Post	0.028*	0.023*	0.117***	0.102***	0.018	0.000	0.029	0.027
	(0.015)	(0.014)	(0.034)	(0.034)	(0.021)	(0.020)	(0.019)	(0.018)
Green * US	1.001		4.879***		-1.439**		0.000	
	(1.223)		(1.562)		(0.575)		(.)	
Post * US	0.002	0.005	-0.137***	-0.117**	-0.023	-0.004	0.088***	0.059***
	(0.016)	(0.015)	(0.051)	(0.052)	(0.021)	(0.021)	(0.020)	(0.020)
Green * Post * US	-0.028	-0.038	-0.049	-0.064	-0.018	-0.017	-0.034	-0.035
	(0.026)	(0.025)	(0.093)	(0.092)	(0.034)	(0.035)	(0.033)	(0.035)
Observations	300973	300973	40128	40127	140037	140037	120280	120280
Adjusted R^2	0.440	0.273	0.533	0.460	0.664	0.241	0.577	0.331
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table B20: President Biden's Rejoining of COP21: Brown Firms

(A) Equity Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	-0.686		-0.399		-0.055***		-1.373***	
	(1.665)		(1.633)		(0.019)		(0.105)	
US	0.210		1.810***		0.334		-0.156	
	(0.168)		(0.643)		(0.215)		(0.103)	
Brown * Post	0.048***	0.061***	0.093**	0.115***	0.036**	0.045**	0.027	0.029
	(0.015)	(0.016)	(0.036)	(0.040)	(0.018)	(0.018)	(0.021)	(0.021)
Brown * US	0.418		-1.868		0.000		1.355***	
	(1.696)		(1.792)		(.)		(0.108)	
Post * US	0.095***	0.080***	0.017	0.009	0.224***	0.180***	0.022	-0.014
	(0.015)	(0.015)	(0.036)	(0.043)	(0.016)	(0.017)	(0.019)	(0.019)
Brown * Post * US	-0.024	-0.016	0.014	0.045	-0.063	-0.044	-0.024	0.016
	(0.036)	(0.037)	(0.077)	(0.093)	(0.042)	(0.045)	(0.042)	(0.044)
Observations	686310	686310	100469	100469	356228	356228	228047	228047
Adjusted R^2	0.642	0.502	0.739	0.553	0.690	0.369	0.602	0.469
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

(B) Debt Securities

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	All	All	Banks	Banks	IF	IF	IC&PF	IC&PF
Brown	2.165***		3.322***		-0.200		0.322	
	(0.430)		(0.084)		(0.647)		(0.578)	
US	-0.159		-0.131		-0.282		-0.270***	
	(0.163)		(0.428)		(0.247)		(0.034)	
Brown * Post	-0.012	-0.004	-0.073*	-0.054	-0.006	0.017	-0.015	-0.008
	(0.017)	(0.015)	(0.038)	(0.037)	(0.023)	(0.022)	(0.021)	(0.021)
Brown * US	-1.464*		1.630***		0.569		0.000	
	(0.838)		(0.134)		(0.746)		(.)	
Post * US	-0.020	-0.018	-0.132***	-0.112**	-0.036*	-0.009	0.051***	0.024
	(0.015)	(0.014)	(0.048)	(0.049)	(0.020)	(0.021)	(0.019)	(0.019)
Brown * Post * US	0.028	0.026	-0.121	-0.116	0.016	-0.003	0.067**	0.065*
	(0.028)	(0.027)	(0.099)	(0.100)	(0.036)	(0.036)	(0.034)	(0.034)
Observations	300973	300973	40128	40125	140037	140037	120280	120280
Adjusted R^2	0.440	0.271	0.533	0.453	0.664	0.237	0.577	0.328
Firm FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y	Y
Holder Sector FE	Y	Y	-	-	-	-	-	-
Holder Ctry FE	Y		Y		Y		Y	
Firm's Ind. x Ctry FE		Y		Y		Y		Y

Note: The table presents estimation results of eq. (1) and (2). Standard errors, reported in parentheses, are clustered at firm level. IF stands for investment funds and IC&PF stands for insurance companies and pension funds. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.