

Mutual Funds' Appetite for Sustainability in European Auto ABS

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Abstract

Using hand-collected data on European auto asset-backed securities, we study how investors price sustainability information in opaque securitized-credit markets. In the absence of a green securitization standard, mutual funds rely on collateral signals that are easy to observe and process. Funds, especially those with green mandates, tilt toward deals that disclose fuel-type information and are backed by more electric vehicles, but do not respond systematically to lower average CO₂ emissions. These signals are also priced. Following the Fit-for-55 announcement, securities with higher electric-vehicle exposure and fuel-type disclosure experience larger spread compression. The effect is larger for securities with greater green-fund ownership, suggesting that investor composition shapes the pricing of transition risk.. The results show that disclosure frictions shape both sustainable investment and the pricing of transition risk in securitization markets.

Keywords: Auto ABS, Car Loans, Zero- or low-emission vehicles, Mutual funds, Securitization, Sustainable Finance

JEL Classification: G11, G18, G20, Q56

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1 Introduction

The European Green Deal emphasizes the importance of the transportation sector, given its substantial contribution to the EU’s greenhouse gas (GHG) emissions. Road transportation accounts for 75% of all emissions from transportation activities. To meet the EU’s ambitious targets—reducing emissions by 55% by 2030 and achieving a 90% reduction by 2050—the shift towards zero-emission vehicles (ZEVs) is essential. This transition implies high upfront capital spending for consumers and corporations across the transportation sector.

Auto asset-backed securities (Auto ABS) facilitate the financing of automobile purchases and leases and therefore potentially play an important role in contributing to the EU’s environmental goals. Auto ABS are standardized debt instruments that securitize pools of auto loans and are primarily sold to institutional investors, including mutual funds. Yet, during our sample period, there is no widely accepted framework for defining a green Auto ABS. This creates an important question: do institutional investors incorporate the sustainability characteristics of securitized auto collateral into their portfolio decisions, and are these characteristics reflected in secondary-market prices when climate-policy risk becomes salient?

In this paper, we study sustainability-aligned and conventional mutual funds’ demand for sustainability information in the European Auto ABS market. We use hand-collected data to construct sustainability metrics from three sources: (i) Auto ABS offering prospectuses, (ii) underlying auto loan and lease information, and (iii) manufacturer-level sustainability measures. These data allow us to measure both the environmental characteristics of the collateral pool and the transparency with which these characteristics are disclosed. We first examine which sustainability metrics investors use in their Auto ABS holdings. We then test whether the same metrics are priced in secondary markets around the announcement of the European Commission’s Fit-for-55 package, a regulatory

shock that made the transition toward zero-emission mobility more salient.

Our findings show that both the sustainability of Auto ABS collateral and the transparency of collateral disclosure matter for mutual fund investment decisions. Green funds hold larger exposures to Auto ABS backed by higher shares of electric vehicles (EVs). Economically, a one percentage point increase in the EV share of the collateral pool is associated with an additional EUR 80 thousand of green mutual fund exposure. We also find that disclosure matters: simply reporting the fuel-type distribution of the collateral pool in the offering prospectus is associated with approximately EUR 870 thousand higher mutual fund exposure per tranche and fund. By contrast, we find no clear preference for collateral pools with lower average CO₂ emissions. These results suggest that, in the absence of a green securitization label, investors rely on sustainability proxies that are informative and relatively inexpensive to process.

We further show that these sustainability signals are priced. Following the Fit-for-55 announcement, Auto ABS with greater EV exposure experience larger secondary-market spread compression, while fuel-type-reporting deals trade at lower spreads. This evidence suggests that EV exposure is a priced transition-risk characteristic and that collateral-level disclosure facilitates the pricing of climate-policy risk in securitization markets. The pricing results complement the holdings analysis: investors not only allocate more capital to transparent and EV-exposed Auto ABS, but also require lower yield compensation for these securities when the regulatory transition risk becomes more salient.

Our results have policy implications for the future design of green Auto ABS. Sustainability-related information on collateral pool composition should be easily accessible through standardized prospectus disclosure, and loan-level data should be reported in a structured format that allows investors to identify fuel type and CO₂ emissions. Such disclosure could reduce information-processing costs, support capital

allocation toward transition-aligned collateral, and improve the pricing of climate-policy risk in securitization markets.

The paper is organized as follows. Section 2 describes the related literature and our contribution. Section 3 provides the institutional and regulatory background. Sections 4 and 5 cover the data and methodology, respectively. Section 6 presents the findings. The last section concludes.

2 Related literature

The literature on sustainable finance is large and diverse.¹ While certain asset classes are in the spotlight of current research, little attention is paid to the nascent topic of green securitization. We fill this gap by studying investor demand for sustainability in the European Auto ABS market.

Agliardi (2022) demonstrates through a theoretical model that securitization of green assets can be an effective approach to managing climate risks. However, the classification of the securitized loans and leases as green is far from trivial. Previous research attempted to address this issue with mixed success and varying degrees of precision. For example, focusing on Italian business loans, Faiella and Lavecchia (2022) construct a loan carbon intensity measure by industry sector. André et al. (2022) explore different approaches for measuring the carbon intensity of European Auto ABS and conclude that the available loan-level information is not suitable for measuring the direct climate impact of these assets. Kontz (2024) estimates the lifetime emissions of securitized vehicles in the U.S. and finds that ESG mutual funds tend to invest more in Auto ABS whose issuers have higher ESG scores, even if those securities finance higher-emissions vehicles. Conversely, we find that in Europe, the composition of both the engine type and CO₂ emissions

¹For a comprehensive review of this topic, see Starks (2023), Giglio et al. (2021), and Billio et al. (2024)

of the collateral pool matter to investors, indicating that climate risks and sustainable regulation have an impact on investment strategies of mutual funds. Focusing on the European market, Beyene et al. (2022) extract automobile fuel type from the car model descriptions to study whether lenders were pricing the brown factor in car loans after the Dieselgate scandal in 2015.² We contribute to this strand of literature by expanding data coverage and introducing sustainability measures at both collateral and manufacturer levels, which allows us to proxy upstream and downstream emissions within the value chain of the collateral pool.

Despite the challenges of labeling assets as green, the market’s overall tendency to invest in sustainable products has been growing (Starks, 2021). Studies document ESG integration into the investment management process by individual investors (Benz et al., 2021), pension plans (Hong & Kacperczyk, 2009), and mutual fund managers (Hartzmark & Sussman, 2019; van Duuren et al., 2015). The reasons for sustainable investing are multifold. Barber et al. (2021) find that investors are willing to accept lower financial returns for non-pecuniary benefits of intentional impact investing, while Krueger et al. (2020) highlight that institutional investors are aware of the financial implications of climate risks for their portfolio firms and that these risks, particularly regulatory risks, already have begun to materialize. We add to this literature by studying the mutual funds’ exposure to green Auto ABS.

Asset-backed securities are known to be opaque and subject to information asymmetries between issuers and investors (Acharya et al., 2009; Pagano & Volpin, 2012). Since the outbreak of the Great Financial Crisis (GFC) in 2008, regulators introduced various disclosure requirements to reduce such asymmetries (Klein et al., 2021; Krahnen & Wilde, 2022; Latino et al., 2025). The main focus of these disclosure

²Note that the Dieselgate is related to the *Governance* pillar of *ESG*. Although it helped in spotlighting sustainability practices in the automobile sector, in this paper, we focus solely on the *Environmental* dimension.

requirements was on the underlying composition of collateral and the credit risk of borrowers. Since the outbreak of the Dieselgate scandal (see, e.g., Aurand et al., 2018), also sustainability-related information came into focus of Auto ABS investors. However, this information is rarely readily available. Asset managers therefore face disclosure processing costs (Blankespoor et al., 2020), which can impact their investment decisions. There are three main sources for obtaining sustainability-related information on auto deals. First, the data can be found in terms of aggregate statistics in the offering prospectuses. Second, a more granular version of this data can be partially extracted at the loan- and lease-level. And third, (a rather indirect version of) sustainability-related information can be obtained from car manufacturer reports. Studies have shown that textual content provided in ABS offering prospectuses matters. It has an impact on asset prices (Debener et al., 2023) and it is studied by asset managers for financial risk mitigation purposes (Zhang et al., 2024). We contribute to this literature by focusing on the sustainability-related content in offering documents. In addition, we further screen about 20 million securitized auto loans and leases, and construct new sustainability proxies, achieving a better coverage than André et al. (2022) or Beyene et al. (2022).³ As a last source of sustainability information, we use manufacturer-level data and therefore provide insights on whether this information is used by investors.⁴

Our secondary market analysis also relates to the literature on the pricing of climate-policy and transition-risk shocks. A growing body of evidence shows that financial markets react to climate regulation when policy announcements change the

³To illustrate, Beyene et al. (2022) analyze a total of 781,033 loan contracts with European banks from 2006 up to 2018.

⁴Whether manufacturer-level information will be used in the future for evaluating the sustainability of Auto ABS is an open question. Industry representatives oppose this approach, as stated in their responses to the joint consultation paper on the principal adverse impact indicators conducted by the European Supervisory Authorities (European Securities and Markets Authority, European Banking Authority, and European Insurance and Occupational Pensions Authority, 2022; European Securities and Markets Authority, European Banking Authority, European Insurance and Occupational Pensions Authority, 2023).

expected costs of carbon-intensive activities. For example, Hengge et al. (2023) use EU carbon-policy events to show that regulatory announcements leading to higher carbon prices reduce stock returns of more emission-intensive firms. More broadly, Eren et al. (2022) review evidence that both physical and transition risks are increasingly reflected in financial market prices. We contribute to this literature by studying the securitized-credit market rather than equities or corporate bonds. Using the Fit-for-55 announcement as a regulatory transition risk shock, we show that Auto ABS backed by higher EV exposure experience stronger secondary-market spread compression. This evidence indicates that climate-policy news is priced not only at the firm level, but also in securities backed by pools of consumer auto loans and leases.

The automotive industry is crucial in determining the sustainability of the global economic system, with car production and usage creating an extensive environmental impact (Nieuwenhuis & Katsifou, 2015; Orsato & Wells, 2007). Studies on greening the auto industry mainly focus on green supply chain management (Caniëls et al., 2013; Koplin et al., 2007; Thun & Müller, 2010), waste reduction, financial performance, and stakeholder pressure (Szász et al., 2021). Our study adds to discussions on external pressure to adopt sustainability strategies and practices, since a green financing mechanism such as a green Auto ABS can generate incentives for both consumers and manufacturers. The former could potentially benefit from the favorable financing conditions for environmentally friendly cars, while the latter could improve the sustainability aspects of their entire production line as well as their product range.

3 Institutional and regulatory background

3.1 The European securitization market

The European securitization market has undergone several regulatory changes in recent years. One of the earlier regulations, implemented in 2009 after the GFC, aimed at reducing risks, ensuring consistent securitization transactions across the EU, and enhancing market transparency and investor protection.⁵ A key requirement was for financial vehicle corporations to report their assets and liabilities at a quarterly frequency to the Eurosystem. Subsequently, the Eurosystem initiated the establishment of the European DataWarehouse (EDW), which is the source of our loan-level data.⁶ In 2013, the regulation was updated, requiring issuers of securitized products to provide more detailed information about the assets involved and the structure of the securitization.⁷ The year 2017 saw the introduction of new due diligence obligations, risk retention rules, and the establishment of a category for simple, transparent, and standardized (STS) securitizations.⁸ An important novelty introduced by this framework was the mandate to disclose data on the environmental impact of securitized assets, where such data is accessible.⁹ The framework underwent further revisions in 2021, with amendments aimed at establishing a securitization framework focusing on sustainability (European Banking Authority, 2022).¹⁰ In parallel, EU climate policy clarified the regulatory trajectory

⁵Refer to Regulation (EC) No. 24/2009.

⁶The EDW was established under [European Central Bank ABS Loan Level Initiative](#) and the Guideline (EU) 2015/510. It serves as the Eurosystem’s designated securitization data repository. EDW is collectively funded and owned by 16 market participants, including major corporations, professional organizations, and banks. As the first centralized data repository in Europe, EDW collects, validates, and provides transparent access to institutionalized and asset class-specific loan-level data for ABS transactions. The asset-level information is reported to EDW using the [data templates](#) from the ECB or the [data templates](#) from the ESMA.

⁷Refer to Regulation (EU) No. 1075/2013.

⁸Refer to Regulation (EU) No. 2017/2402.

⁹The STS framework did not provide a definition of the environmental performance measures, which led to inconsistent reporting practices. The reason for this is that the energy performance certificates for vehicles are inconsistently defined across euro area countries (Hackmann et al., 2024).

¹⁰See Regulation (EU) 2021/557.

for the automobile sector. On July 14, 2021, the European Commission announced the Fit-for-55 package, a set of legislative proposals designed to align EU climate, energy, transport, and taxation policies with the target of reducing net GHG emissions by at least 55% by 2030. Importantly for Auto ABS, the package included a proposal to strengthen CO₂ emission performance standards for new passenger cars and light commercial vehicles. The announcement therefore made the transition toward zero-emission mobility more salient for securities backed by auto loans and leases. We use this announcement as a regulatory transition-risk shock in our secondary-market pricing analysis. In December 2024, the European Green Bond Standard (EUGBS)¹¹ introduced a framework for designating a securitization as green. The regulation adopts a “use of proceeds” (UoP) approach, meaning that the classification of a securitization as green depends on how the funds raised are deployed rather than on the sustainability characteristics of the assets backing the transaction (i.e., a “collateral-based” approach). Specifically, the proceeds must be allocated exclusively to environmentally sustainable projects that are aligned with the EU Taxonomy Regulation. As this study focuses on a period prior to the introduction of the EUGBS, we examine the composition of the collateral, remaining agnostic about the potential impact of the UoP approach on investors’ asset allocations. While the UoP approach represents the most recent development in the securitization market, the regulation foresees regular reassessments—leaving room to introducing the collateral-based approach in the future.¹² Against this backdrop, it is crucial to understand whether the composition of the underlying collateral affects ABS investors’ asset allocation decisions and secondary-market pricing.

3.2 Mutual fund regulation

In this study, we make use of the Sustainable Finance Disclosure Regulation (SFDR)

¹¹Regulation (EU) 2023/2631.

¹²See EUGBS Article 71, paragraphs 7 and 8.

to differentiate between green and conventional funds.¹³ The SFDR aims to enhance transparency in the financial market regarding sustainability. It was proposed in 2018, officially introduced by the EU in 2019 and came into force in March 2021. The SFDR mandates that all financial market participants and financial advisers, both within the EU and those outside the EU who market their products to EU clients, engage in comprehensive sustainability-related disclosures. The information with regard to the promotion of environmental or social characteristics and sustainable investment objectives needs to be disclosed in pre-contractual documents, annual reports, and on the websites of these entities. The SFDR classifies investment funds into three distinct groups based on their approach to sustainability: Article 6 funds that do not integrate any kind of sustainability into the investment process; Article 8 funds that promote environmental or social characteristics; and Article 9 funds that are dedicated to sustainable investment objectives. This classification motivates us to refer to mutual funds labeled as Article 8 and 9 funds as “green” and those labeled as Article 6 as “conventional.”

3.3 Underlying collateral: car labels, fuel type, and CO₂ emissions

Sustainability-related information on the underlying collateral in the European Auto ABS market is a scarce good. There is either a lack of such data or, if available, it is inconsistent across countries. A prominent example of the latter issue is Directive 1999/94/EC, which states that consumers have to be informed about the fuel consumption and CO₂ emissions of new passenger cars. The diverging national implementations of this directive by EU Member States led to considerably different definitions of car labels across countries (Badenhoop & Riedel, 2025; Carrol et al., 2014; Haq & Weiss, 2016).¹⁴ Consequently,

¹³See Regulation (EU) 2019/2088.

¹⁴For example, Austria, Belgium, Denmark, Estonia, France, and Germany UK have implemented an absolute labeling system that categorizes cars based on their specific fuel consumption or CO₂ emissions.

despite the legal requirement to disclose car-label information at the loan level,¹⁵ national car labels provide limited informational value to international investors seeking to assess the sustainability characteristics of underlying collateral pools (Hackmann et al., 2024; Lindner & Riedel, 2025; Panizza et al., 2022).

Notably, other sustainability-related information on the collateral pool, such as a vehicle’s fuel type or CO₂ emissions, can only be obtained indirectly, by matching the vehicle description text with vehicle-related information from other sources (see Section 4.2.3). This is a time-intensive and costly exercise for investors. In this regard, the lowest disclosure processing cost that an investor can achieve is either by (i) contacting the ABS issuer directly and requesting the relevant sustainability data or (ii) studying the offering prospectus. The former source is typically accessed by investors prior to purchasing an Auto ABS on the primary market, with the aim to thoroughly investigate the underlying asset pool. Once the security is issued, investors purchase the data either from a securitization repository or, if the sought-after information is not available or too costly to obtain at the loan-level, they can potentially collect aggregate statistics on the sustainability of the collateral pool from the offering prospectus (see Section 4.2.1).

To summarize, despite the regulators’ efforts to establish a transparent and harmonized securitization framework in Europe, the market is still lagging in terms of sustainability reporting. Therefore, investors with ESG-aligned investment objectives, such as SFDR Article 8 and 9 funds, need to exert (considerable) effort to obtain the desired information. In the next section, we present the data that investors could use to differentiate between greener and less green Auto ABS and describe the sustainability

In contrast, Bulgaria, the Netherlands, Portugal, and Spain use a relative labeling system that incorporates additional parameters such as vehicle segment, weight, or vehicle dimensions. Badenhoop and Riedel (2025) show that the application of a relative instead of an absolute labeling metric can cause substantial discrepancies in the classification of a particular car across Member States. For example, the authors illustrate that the label for a small sports utility vehicle can range from B in Denmark to E in Germany.

¹⁵See Regulation (EU) No. 2017/2402 and the loan-level data template Annex 5, data field AUTL57, “Energy Performance Certificate Value” of the European Securities and Markets Authority (ESMA).

measures used in our holdings and secondary-market pricing analyses.

4 Data and sample construction

4.1 Auto ABS

We focus our analyses on Eurosystem-eligible Auto ABS that were issued between 2004 and 2023. The main advantage of using this set of securities is that for these deals, in contrast to those that are not ECB-eligible, the loan-level data have to be reported to a securitization repository. For all Auto ABS in our sample, we obtain the information at the tranche and deal level from Refinitiv Workspace and EDW.

Table 1 presents the descriptive statistics for 342 Auto ABS (Panel A) and the corresponding 1,160 tranches (Panel B).¹⁶ The average tranche size in our sample is about EUR 279 million, while the average deal has a face value of about EUR 945 million and is comprised of four tranches. About 60% of the deals were issued by captive banks, suggesting that some deals have a high exposure to certain car manufacturers.¹⁷ This is also confirmed by the Herfindahl-Hirschman Index for manufacturer concentration within the deals, which reaches up to 100% in certain instances. The number of prospectus pages ranges from 128 to 399, suggesting that the content and quality of information disclosure vary considerably across deals.

[Table 1 about here]

¹⁶There is some variation in the number of observations across variables due to inconsistencies in data reporting by the data provider. While the sample includes 342 Auto ABS deals, encompassing 1,515 tranches in total, complete information is not available for every tranche on all variables.

¹⁷A captive bank is a financial institution owned by a car manufacturer that functions as its financing arm, working closely with affiliated dealerships. However, not all banks labeled as captive are truly so. Some specialized banks provide white-label captive banking services to manufacturers that lack their own financing operations. This arrangement is particularly common for foreign manufacturers aiming to strengthen presence in a local market. Our captive bank dummy variable accounts for both true and white-label captive banks.

4.2 Sustainability measures

Throughout our sample period, no formal definition of a green Auto ABS was available (Latino et al., 2025). Yet, investors and other stakeholders could perform sustainability assessments of the underlying assets to gauge the “greenness” of the deals (European Banking Authority, 2022). The two main sources of information they could typically rely on were: offering prospectuses and loan-level data that issuers are required to submit to a securitization repository.¹⁸ In the following, we use both sources to identify the sustainability measures that investors could potentially base their investment decisions on.

4.2.1 Prospectus-level measures

Asset-backed securities are complex financial products that are accompanied by a detailed offering prospectus. A typical prospectus contains information on the legal structure of the instrument, the composition of the pool of underlying assets, and their past performance. In the case of Auto ABS, the prospectus usually contains information on the composition of the underlying collateral, which may include the breakdown of assets by vehicle type (new or used), vehicle manufacturer, and vehicle model. Since 2016, some Auto ABS issuers began to also disclose the composition of the collateral pools by CO₂ emissions, engine type, Euro norm standard, and car labels. We manually review all prospectuses and hand-collect sustainability-related information on the underlying vehicles. Of the 342 deals, 15 disclose the collateral distribution by CO₂ emissions, 115 report the composition by engine type, 32 provide information on the distribution of the Euro norm standard, and three report fuel economy- or CO₂-based car

¹⁸In addition to the two sources, large institutional investors are also in direct contact with the issuers before the deal is offered on the market. We do not have access to this exclusive information that is being shared bilaterally. However, from conversations with industry representatives we know that investors typically request information on the composition of the underlying collateral pool, which should be covered by our prospectus- and loan-level data.

labels. The remaining prospectuses do not provide any sustainability-related information, highlighting a substantial gap in the disclosure of environmental metrics across most Auto ABS offerings. Notably, the deals in our sample predominantly securitize passenger vehicles, while caravans, trucks, and motorbikes typically account for less than 1% of the underlying collateral pool.

[Table 2 about here]

Table 2, Panel A, reports the distribution of the collateral by fuel type. Fuel type distribution is disclosed in 34% of all deals. Petrol- and diesel-powered vehicles typically dominate the pool composition with 37.4% and 39.1% (measured as percentage of outstanding discounted balance), respectively. The average share of EVs is about 3.71%. However, over the sample period, we observe an increasing share of EVs in the securitized portfolios, starting with a median of 0% in 2016 and reaching 7% in 2023, as depicted by the green line in Figure 1. Notably, fuel type reporting began in 2016 (solid black circles), following the Dieselgate and the adoption of the Paris Agreement in 2015. From 2022 onward, prospectuses increasingly included CO₂ emissions distributions (hollow diamonds), thereby providing investors with more information on the financed vehicles' environmental impact. We also note that captive banks were the first to report the fuel type distribution in 2016, with non-captive originators following suit in 2018 (see Appendix A.1).

[Figure 1 about here]

4.2.2 Loan-level measures

We use the loan-level data from the EDW to retrieve information on the collateral pool composition that goes beyond what is reported in the offering prospectuses. In fact, prospectus-level and loan-level information is complementary. For instance, at the

loan-level the securitized auto loans and leases are typically not explicitly accompanied with information on the fuel type, Euro norm standard, or the CO₂ emissions of the underlying vehicles. Therefore, a prospectus is a valuable source of information in this respect. However, such vehicle-related information can be *implicitly* encoded in the loan-level data within the string variable reporting the vehicle’s model name.¹⁹ Further, if the vehicle’s registration year is also reported, we can identify the vehicle’s approximate CO₂ emissions. However, there are limits to this approach: if too little or too general information is reported, we cannot identify the vehicle’s fuel type and CO₂ emissions with confidence. To achieve a high coverage of the collateral pool in terms of assigning CO₂ emissions to each loan, we use a multi-step matching procedure. Our CO₂ emissions data for vehicles registered in the EU come from the European Environment Agency (EEA) database (European Environment Agency, 2024). We first utilize all available information (manufacturer, vehicle model, fuel type, year of registration, country of registration) to merge the corresponding CO₂ values from the EEA. Once the granular merging is exhausted, we continue by reducing the number of matching variables and adding (less precise) average CO₂ values. We outline this merging procedure in detail in the Appendix A.2.

Table 2, Panel B, presents the summary statistics on matched CO₂ emissions, extracted fuel type information and their respective coverage rates across the collateral pools (pool coverage).²⁰ The CO₂ emissions for each deal are calculated as the loan-balance-weighted average of the underlying vehicles’ CO₂ estimates. We observe substantial variation in the average emissions financed across deals, ranging from

¹⁹For example, from the model name “VW Golf 2.0 TDI”, we can deduce the engine size and the fuel type (i.e., 2.0 liter turbo diesel engine).

²⁰Pool coverage is defined as the proportion of vehicles within a collateral pool for which relevant sustainability information, such as CO₂ emissions and fuel type, could be successfully identified and matched using vehicle model descriptions. A higher coverage rate indicates greater transparency and data quality at the loan level, while a lower rate suggests limitations in identifying the CO₂ emissions or the share of EVs in the portfolio.

approximately 127 g/km to 204 g/km. This variation reflects differences in the environmental profiles of the financed vehicles. However, the pool coverage rate of approximately 82.4% suggests that vehicle model descriptions are often not detailed enough to reliably extract CO₂ emissions data. Similarly, the average pool coverage of just 20% for fuel type extraction indicates that many vehicle names are too generic to confidently differentiate between petrol, diesel and plug-in hybrid vehicles. Only the distinctive names of EVs allow us to reliably classify vehicles as either EVs or non-EVs.²¹ Moreover, some deals do not report vehicle model information at all, making it impossible to extract the fuel type or merge CO₂ emissions data. As a result, pool coverage itself serves as a meaningful proxy for the transparency of sustainability-related disclosures at the car loan level.

In addition to the vehicle model, the loans and leases are accompanied with the underlying vehicle’s manufacturer name, allowing us to obtain a more efficient breakdown of the collateral pool by manufacturer (rather than manually retrieving it from the offering prospectuses). In the following, we use this information to construct manufacturer-level sustainability proxies.

4.2.3 Manufacturer-level measures

Thus far, the sustainability information presented has focused on vehicles backing the securitized loans. However, since Dieselgate, individual car manufacturers have come under increased scrutiny from media (Crête, 2016), regulators (European Court of Auditors, 2019), and investors (Barth et al., 2022). Hence, to provide a more comprehensive perspective, we extend our dataset to include the environmental impact of each manufacturer. In doing so, we consider not only the downstream emissions generated by vehicle usage but also the upstream emissions associated with vehicle

²¹Figure A2 in Appendix A.2 demonstrates that the EV share derived from loan-level data closely aligns with the EV share reported in the offering prospectuses.

assembly and manufacturing. We obtain manufacturer-level sustainability data from Bloomberg and Refinitiv Workspace, covering the period 2019 to 2023. This dataset includes environmental and ESG scores, GHG emissions, and EU-taxonomy-eligible capital expenditures. To incorporate this information at the deal level, we compute the weighted average of the manufacturer-level sustainability measures (MAS). The weighted average accounts for the varying distribution of manufacturers within each deal’s collateral pool and their respective sustainability characteristics. The formula below illustrates how each manufacturer’s sustainability measure is weighted according to its share the collateral pool:

$$MAS_{k,t} = \sum_{j \in \mathcal{M}_{k,t}} w_{j,t} \times MS_{j,t}, \quad (1)$$

where $\mathcal{M}_{k,t}$ is the set of automobile manufacturers in deal k in year t , $w_{j,t}$ is the weight, and $MS_{j,t}$ is the manufacturer-level sustainability measure. We fix the year t to the deal origination year $t_{k,0}$ and do not update the measure as time progresses. The advantage of this approach is that we take the perspective of an investor who evaluates the sustainability measures of the deal *once*, namely in the year of its origination. This allows us to compare the sustainability of deals that were issued within the same year, but a comparison across years is in this case not sensible (since more recent deals would be typically greener than older ones due to the ongoing improvements in sustainability reporting). The weight, $w_{j,t_{k,0}}$, is defined as the share of the outstanding loan (or lease) amount associated with manufacturer j . Whenever direct manufacturer-level information is not available, we use its parent company’s value as a proxy. The main drawback of this approach is that $MS_{j,t}$ can experience considerable jumps in years around mergers and acquisitions.²² We refer the interested reader to Appendix A.3 for further discussions about the different aggregation approaches and our procedure on dealing with mergers

²²For instance, Opel does not report standalone sustainability measures. Therefore, the next best proxy value is its parent company: General Motors (2014–2016), PSA Group (2017–2020), and Stellantis (2021–2022).

and acquisitions.

Table 2, Panel C, reports the summary statistics of the sustainability proxies at the manufacturer level. We assess manufacturer sustainability across three dimensions: (i) total GHG emissions per vehicle sold, capturing energy efficiency; (ii) ESG and environmental scores from Bloomberg, reflecting overall sustainability performance; and (iii) the share of EU taxonomy-eligible capital expenditure²³, providing a forward-looking measure of alignment with sustainable activities. Except for the latter, we observe a considerable variation of the measures across deals. Notably, the total GHG emissions ratio per vehicle sold in certain deals reaches up to 0.67, while the ESG score does not go beyond 5.6 on a scale from 0 to 10.

4.3 Mutual fund holding data

The quarterly investment fund holdings data come from Morningstar Direct. We screen for funds that have held at least one European Auto ABS during the period Q1 2019 to Q3 2023, yielding a total of 330 funds. The assets held by the funds are classified into cash holdings, equity, bonds, derivatives, and other asset types. Upon a close inspection of the data, we observe that some fund holdings are not accompanied by an identification code, such as ISIN or CUSIP. For all assets that are reported with an identification code (51,745 unique individual financial instruments), we obtain static information from Refinitiv Workspace. The data include information such as asset type, issue date, maturity date, and face value. We further supplement the Auto ABS tranches with prospectus-level, loan-level, and manufacturer-level sustainability information presented in Section 4.2. Finally, we add fund characteristics such as fund’s global category, investment type, domicile, Morningstar ESG score, and SFDR product type. Our funds encompass 16

²³We rely on eligibility rather than alignment due to data coverage limitations. During the sample period, the EU Taxonomy had not yet come into force, and companies were not required to disclose their alignment. In contrast, the eligibility of capital expenditure can be estimated even in the absence of explicit disclosure.

distinct global categories, predominantly leaning towards fixed income, with categories “global fixed income”, “Europe fixed income”, “US fixed income”, and “fixed income miscellaneous” collectively representing 78.1% of the sample. The open-end fund emerges as the predominant investment vehicle, constituting 92.7% of our sample, followed by insurance product funds. Geographically, Europe is the leading domicile for our funds, accounting for 82.4%, with Luxembourg, Ireland, and Spain being the most favored domiciles, while the Euro stands out as the principal base currency for the majority of the funds (60.0%). We identify green funds as those that are aligned with SFDR Article 8 or 9.

In aggregate, we observe that the investment funds hold up to 60% of the outstanding Auto ABS tranches, as reported in Figure 2. The figure further shows that the funds’ aggregate holdings drop with higher tranche face values, implying that the funds either prefer to hold higher-yielding, lower-rated class B or lower tranches, or that class A tranches, which tend to have a lower yield, are more attractive to banks due to their Eurosystem-eligibility. Additionally, funds might also be too small in terms of assets under management or too restricted in terms of their asset allocations to absorb large fractions of the outstanding class A tranches.

[Figure 2 about here]

Table 3 reports summary statistics at the level of the mutual funds (Panel A) and Auto ABS holdings (Panel B). The average fund in the sample has a market value of EUR 1.6 billion and holds about 837 individual assets. About 14% of the funds’ assets under management are invested in various types of ABS, with some funds having ABS exposures of up to 98% in certain quarters. The average share of Auto ABS within the ABS holdings is about 7%, reaching up to 100% in exceptional cases. Within the asset class Auto ABS, we differentiate between those that report a fuel type distribution in their offering prospectuses and those that are not: an average fund holds about 58% of

fuel-type-reporting Auto ABS, while some funds prefer to hold exclusively these relatively more transparent deals. Table 3, Panel B, focuses on the Auto ABS holdings. The average end-of-quarter market value of an Auto ABS holding is about EUR 2.3 million. The exposure to deals that report fuel types in their prospectuses is generally higher compared to those that do not report, with average values of EUR 1.6 million and EUR 0.7 million, respectively. The holdings typically have a coupon rate of 4.2% and an original maturity of 12 years, with 49% of the Auto ABS holdings classified as senior tranches.

[Table 3 about here]

4.4 Secondary-market data and Fit-for-55 policy shock

To complement the mutual fund holdings analysis, we construct a secondary-market dataset that allows us to examine whether sustainability-related collateral characteristics are reflected in Auto ABS prices. Our main secondary-market pricing variable is the mid yield spread over Bunds, denoted by $Spread_{j,t}$, for tranche j on date t . We construct this variable from daily Bloomberg bid and ask prices because Bloomberg yield-to-maturity quotes are not consistently available for the Auto ABS tranches in our sample. For each tranche-date observation, we first compute approximate bid and ask yields to maturity using the standard bond-yield approximation:

$$\hat{Y}_{j,t}^s = 100 \times \frac{C_j + \frac{100 - P_{j,t}^s}{T_{j,t}}}{\frac{100 + P_{j,t}^s}{2}}, \quad s \in \{bid, ask\}, \quad (2)$$

where $P_{j,t}^s$ is the Bloomberg bid or ask price, quoted as a percentage of par, C_j is the annual coupon payment per 100 of face value, and $T_{j,t}$ is the remaining time to maturity in years. We set the face value equal to 100, since secondary-market ABS prices are quoted as a percentage of par. We exclude floating-rate tranches from this calculation

because their coupons reset periodically and the fixed-coupon yield approximation is not appropriate for such instruments. We also drop observations with less than three months to maturity, for which the yield approximation becomes unstable and prices are mechanically affected by pull-to-par dynamics.

We then compute the Bloomberg mid yield as the average of the approximate bid and ask yields:

$$\hat{Y}_{j,t}^{mid} = \frac{\hat{Y}_{j,t}^{bid} + \hat{Y}_{j,t}^{ask}}{2}. \quad (3)$$

To obtain a spread over the risk-free rate, we subtract a maturity-matched German Bund yield. The Bund yield is computed from the daily Nelson-Siegel-Svensson yield-curve parameters provided by the Bundesbank.²⁴

Thus, our dependent variable is an approximate secondary-market yield spread over the maturity-matched German risk-free curve. This measure is motivated by the securitization pricing literature, which commonly relies on ABS yield spreads, secondary-market prices, and bid-ask information to study valuation and market liquidity. For example, Hollifield et al. (2017) use secondary-market transaction prices and bid-ask spreads to study trading networks, intermediation costs, and the pricing of securitized products. In a related disclosure setting, Neilson et al. (2022) examine ABS valuation using ABS yield spreads and show that asset-level transparency affects investors' pricing of securitized products. Our setting differs because directly quoted yield-to-maturity measures are not consistently available for European Auto ABS tranches²⁵ As auto

²⁴Specifically, for each tranche-date observation, we evaluate the German Bund yield curve at the remaining maturity $T_{j,t}$:

$$R_{j,t}^f(T) = \beta_{0,t} + \beta_{1,t} \left(\frac{1 - e^{-T_{j,t}/\tau_{1,t}}}{T_{j,t}/\tau_{1,t}} \right) + \beta_{2,t} \left[\frac{1 - e^{-T_{j,t}/\tau_{1,t}}}{T_{j,t}/\tau_{1,t}} - e^{-T_{j,t}/\tau_{1,t}} \right] + \beta_{3,t} \left[\frac{1 - e^{-T_{j,t}/\tau_{2,t}}}{T_{j,t}/\tau_{2,t}} - e^{-T_{j,t}/\tau_{2,t}} \right]. \quad (4)$$

The mid yield spread over Bunds is then defined as:

$$Spread_{j,t} = \hat{Y}_{j,t}^{mid} - R_{j,t}^f(T). \quad (5)$$

²⁵We collect secondary-market pricing data from FactSet, Bloomberg, and Refinitiv. Among these

ABS tranches are typically amortizing securities, we address concerns related to the approximation by excluding observations close to maturity. In addition, we use the Bloomberg mid price deviation from par as an alternative dependent variable, which does not require approximating yield to maturity from secondary-market prices and test robustness across different time windows.

The dataset contains tranche-level secondary-market observations, including the mid yield spread over Bunds, denoted by $Spread_{j,t}$, for tranche j on date t . We merge these price observations with the deal-level sustainability measures described in Section 4.2, focusing in particular on the electric-vehicle share in the collateral pool.

The main treatment-intensity variable is the electric-vehicle share of deal k , denoted by $EV\ share_k$. We winsorize both $EV\ share_k$ and the secondary-market spread at the 1st and 99th percentiles to reduce the influence of extreme observations.

We use the announcement of the European Commission’s Fit-for-55 package on 14 July 2021 as a regulatory transition-risk shock. The package made the policy trajectory toward zero-emission mobility more concrete and therefore increased the salience of transition risk for securities backed by auto loans and leases. We define $PostFit55_t$ as an indicator equal to one for observations on or after 14 July 2021, and zero otherwise. In addition, we construct a monthly event-time variable, τ_m , which measures the number of months relative to the Fit-for-55 announcement month.

Finally, we construct two variables to study potential mechanisms. First, $Fuel-type-reporting_k$ captures the transparency of sustainability-related information available to investors at low disclosure-processing cost. Second, we construct a green-fund

sources, Bloomberg provides the broadest and most consistent coverage of bid and ask price quotes for the European Auto ABS tranches in our sample. We therefore use Bloomberg as the primary source for the secondary-market pricing analysis.

ownership share at the deal-quarter level:

$$GF\ share_{k,q} = \frac{\sum_{i \in \mathcal{G}} MV_{i,k,q}}{FaceValue_k}, \quad (6)$$

where $\mathcal{G}$ denotes the set of green funds, defined as funds classified under SFDR Articles 8 or 9, $MV_{i,k,q}$ is the market value of deal k held by green fund i in quarter q , and $FaceValue_k$ is the total face value of the deal.

5 Empirical methodology

5.1 Drivers of Auto ABS investments by the mutual fund industry

Investors follow different investment motives. While banks might prefer holding ECB-eligible assets to engage in collateralized borrowing with the ECB (Van Bakkum et al., 2018), insurance companies would be more concerned with the tenor of fixed-income assets due to their duration matching objectives (Domanski et al., 2017; Lombardi & Tullis, 2006). Mutual funds can follow a spectrum of investment motives. Therefore, to better understand the demand for Auto ABS, we begin our analyses by studying the propensity of the mutual fund industry to invest in these securities. We use the following Logistic regression equation:

$$\mathbb{P}(Y_{j,k} = 1 | Z_{j,k}) = \Lambda(\alpha + \beta Z_{j,k}), \quad (7)$$

where the dependent variable, $Y_{j,k}$, is a dummy that equals one if an ABS tranche j of deal k is held by any mutual fund in our sample, and zero otherwise. $\Lambda(\cdot)$ represents the logistic function, Z is a vector of tranche- and deal-specific explanatory variables, and α and β are

the regression estimates. To account for size, we use the natural logarithm of the tranche face value. The proxies for risk are the coupon rate, tranche call-ability, and tranche seniority. Since captive banks might be more informed about the collateral quality, we include a captive bank dummy to account for potential information asymmetries between the investor and the loan originator. The length of a deal’s offering prospectus can have primary market pricing implications. Lengthier prospectuses can be rewarded by investors since they are providing more information about the product (Bourveau et al., 2022) or they can be perceived as a warning signal of a higher default risk (Debener et al., 2023). We therefore include the natural logarithm of prospectus pages as an additional covariate. After the Dieselgate scandal, investors might have become more concerned with the distribution of the collateral pool by fuel type. We account for this by including a fuel type dummy that equals one if a fuel type distribution is provided in the offering prospectus.

Next, we examine ABS as an asset class, exploring the key drivers behind mutual funds’ exposure to ABS, with a particular focus on Auto ABS. The regression model is given as:

$$Y_{i,t} = \alpha + \beta X_{i,t} + \eta_t + \vartheta_i + \epsilon_{i,t} \quad (8)$$

where the dependent variable $Y_{i,t}$ represents different measures of (Auto) ABS exposures by mutual fund i in a given quarter t . $X_{i,t}$ is a vector of time-varying fund-level controls, η_t are year-quarter fixed effects, and ϑ_i are fund fixed effects.

We use three different dependent variables. First, with the proportion of ABS to total assets under management we aim to shed light on the demand of mutual funds for this asset class in general. Second, we calculate the share of Auto ABS as a percentage of ABS held by a fund to study the funds’ preferences for investing in Auto ABS relative to other structured products. Third, we restrict the sample to funds’ exposures to ECB-eligible Auto ABS and calculate the ratio of Auto ABS reporting fuel type

information in their offering prospectuses relative to all Auto ABS held by the fund. A fund’s investment in (Auto) ABS can be driven by various aspects such as investment style and guidelines, experience in investing in structured products, or preferences for certain types of products. To account for investment style and guidelines, we use mutual fund diversification, Morningstar-assigned global category (e.g., aggressive allocation, cautious allocation, global fixed income, Euro money market), investment type, fund base currency, and domicile as controls (Aggarwal et al., 2005; Borgers et al., 2015; Pool et al., 2012). Fund size and age serve as proxies for investment experience, since larger and older funds typically have larger and more experienced investment teams (Chen et al., 2018). Asset liquidity might play an important role in purchase decisions. Therefore, we include fund turnover ratio as a proxy for a fund’s preference for liquid assets. Finally, we differentiate between green and conventional funds to study whether the asset allocation decisions differ between these two types.

5.2 Mutual fund investments in (green) Auto ABS

Our main objective is to understand whether institutional investors take into account sustainability characteristics of Auto ABS in their asset allocation decisions. For this purpose, we focus on the mutual fund holdings and test whether funds with green sustainability objectives invest more in Auto ABS that exhibit higher sustainability metrics. We use the following regression model to estimate asset investments for Auto ABS:

$$\begin{aligned}
Y_{i,j,t} = & \beta_1 (Green\ fund_i \times Green\ asset_j) + \beta_2 Green\ fund_i + \beta_3 Green\ asset_j \\
& + \delta X_{i,t} + \zeta Z_{j,t} + \vartheta_i + \theta_j + \eta_t + \varepsilon_{i,j,t}
\end{aligned} \tag{9}$$

where $Y_{i,j,t}$ is the portfolio weight in an Auto ABS tranche j by mutual fund i in quarter

t ; $Green\ fund_i$ is an indicator variable equal to one if fund i is classified as an SFDR Article 8 or 9 fund, $Green\ asset_j$ represents one of the sustainability measures presented in Section 4.2, $X_{i,t}$ is a vector of time-varying fund controls, $Z_{j,t}$ is a vector of time-varying asset controls, ϑ_i and θ_j are static fund and asset controls, and η_t represents year-quarter fixed effects. The coefficient β_1 is our key estimate, capturing the effect of variation in the greenness of Auto ABS on the portfolio weight by green funds relative to conventional funds.

A mutual fund’s exposure to an Auto ABS can be driven by asset and fund characteristics as well as overall market dynamics. Therefore, we include as asset controls original maturity, the natural logarithm of tranche face value, the coupon rate, the region of risk, and tranche seniority. Original maturity accounts for the different term characteristics of the assets, face value accounts for the liquidity effect in the spirit of Zerbib (2019), coupon rate and tranche seniority serve as proxies for credit risk. We use the same fund controls as for the regression equation (8). Quarter fixed effects are included to account for the time variation of the overall market conditions.

5.3 Secondary-market repricing around Fit-for-55

The previous empirical specifications study whether mutual funds allocate larger portfolio weights to greener and more transparent Auto ABS. We next examine whether the same sustainability-related collateral characteristics are also priced in the secondary market when regulatory news increases the salience of transition risk. Specifically, we exploit the announcement of the European Commission’s Fit-for-55 package on 14 July 2021 as a policy shock that made the transition away from internal combustion engine vehicles more concrete.

Our baseline specification is a difference-in-differences (DiD) model:

$$Spread_{j,t} = \beta_1 (EV\ share_{k(j)} \times Post\ Fit55_t) + \beta_2 Post\ Fit55_t + \alpha_j + \lambda_m + \varepsilon_{j,t}, \quad (10)$$

where $Spread_{j,t}$ is the mid yield spread over Bunds of tranche j on date t , $EV\ share_{k(j)}$ is the electric-vehicle share of the collateral pool of deal k backing tranche j , and $Post\ Fit55_t$ is an indicator equal to one for observations on or after 14 July 2021. α_j are tranche fixed effects, and λ_m are calendar-month fixed effects. Standard errors are clustered at the tranche level.

The coefficient of interest is β_1 . If investors view EV-heavy collateral pools as less exposed to transition risk after the Fit-for-55 announcement, we expect $\beta_1 < 0$. In this case, spreads should compress more for tranches backed by collateral pools with higher EV shares.

We then test whether the repricing of EV exposure depends on sustainability transparency. Let $Fuel-type-reporting_k$ be an indicator equal to one if the offering prospectus reports the fuel-type distribution of the collateral pool. We estimate:

$$\begin{aligned} Spread_{j,t} = & \beta_1 (EV\ share_{k(j)} \times Post\ Fit55_t) \\ & + \beta_2 (EV\ share_{k(j)} \times Fuel-type-reporting_{k(j)} \times Post\ Fit55_t) \\ & + \beta_3 (Fuel-type-reporting_{k(j)} \times Post\ Fit55_t) + \alpha_j + \lambda_m + \varepsilon_{j,t}. \end{aligned} \quad (11)$$

This specification allows us to test whether the post-announcement repricing of EV exposure is stronger for deals that disclose fuel-type information in the prospectus. The coefficient β_2 captures the additional EV-share repricing effect for fuel-reporting deals, while β_3 captures the average post-announcement repricing of fuel-reporting deals independently of the level of EV exposure.

In addition, we examine whether the investor base affects secondary-market repricing.

To do so, we use the green-fund ownership share, $GF\ share_{k,q}$, and estimate:

$$\begin{aligned} Spread_{j,t} = & \beta_1(GF\ share_{k(j),q(d)} \times Post\ Fit55_t) + \beta_2 GF\ share_{k(j),q(d)} \\ & + \beta_3 Post\ Fit55_t + \alpha_j + \lambda_m + \varepsilon_{j,t}. \end{aligned} \quad (12)$$

A negative coefficient on $GF\ share_{k(j),q(d)} \times Post\ Fit55_t$ would indicate that tranches with a larger green-fund investor base experience stronger spread compression after Fit-for-55.

Finally, we estimate a dynamic event-study specification to inspect the timing of the repricing and to assess whether treated and control tranches display differential pre-trends before the policy shock. We collapse the data to the tranche-month level and define τ_m as the number of months relative to the Fit-for-55 announcement month. The reference period is month -1 . We estimate:

$$Spread_{j,m} = \sum_{\tau=-8, \tau \neq -1}^8 \beta_{\tau} (EV\ share_{k(j)} \times \mathbb{1}\{\tau_m = \tau\}) + \alpha_j + \lambda_m + \varepsilon_{j,m}. \quad (13)$$

The coefficients β_{τ} measure the effect of EV exposure on secondary-market spreads in each month relative to the month immediately before the Fit-for-55 announcement. The identifying assumption is that, absent the policy shock, tranches with different EV exposure would have followed parallel spread dynamics around the announcement. Pre-announcement coefficients close to zero support this assumption, while negative post-announcement coefficients indicate that EV-heavy collateral pools experience stronger spread compression after the regulatory shock.

6 Results

6.1 Mutual fund industry’s investments in Auto ABS

The investor base of structured products such as Auto ABS is comprised of financial institutions, insurance companies, pension funds, hedge funds, and mutual funds. Therefore, we begin by studying the factors that influence the likelihood of an Auto ABS deal and its tranches to be held by the mutual fund industry. Out of the 342 Auto ABS deals in our sample, we observe that 151 were held by mutual funds. Table 4 reports the results from the Logit regression presented in equation (7).

[Table 4 about here]

Column 1 in Table 4 presents the results by focusing on general asset characteristics such as face value, coupon rate, original maturity and dummy variables denoting the senior tranche, callability, and whether the securitized loans and leases were originated by a captive bank. The results highlight several key determinants affecting the likelihood of an Auto ABS being held by the mutual fund sector. The negative coefficient on *Captive bank* indicates a general reluctance among mutual funds to hold ABS issued by captive banks, likely due to concerns over concentration risk with respect to a single vehicle manufacturer. Additionally, mutual funds are more likely to purchase tranches with higher face value. The negative coefficient on *Original maturity* suggests a preference for shorter-dated securities, likely due to duration risk concerns. We further extend our analysis by including two transparency indicators: the number of *Prospectus pages* (column 2) and an indicator variable, *Fuel-type-reporting*, equal to 1 if the fuel distribution is presented in the offering prospectus (column 3). The results suggest that deal transparency, concerning both the degree of detail in the pre-contractual documentation and the composition of the collateral pool seem to be the driving forces behind the

investment decision in this asset class. Specifically, the number of prospectus pages is positively associated with the mutual fund industry investing in the deal, suggesting that asset managers value the transparency of the deal before committing to a purchase. Also, the odds of a tranche being held by a mutual fund are 92% ($= \exp(0.650) - 1$) higher for fuel-type-reporting deals. In summary, our findings suggest that more transparent Auto ABS are more likely to be purchased by mutual funds.

6.2 Overall demand for Auto ABS

In the following, we examine what types of mutual funds have a higher exposure to Auto ABS. Focusing on fund-level aggregate asset holdings, we first investigate funds' exposure to ABS in general, and then zoom in on Auto ABS in particular. Table 5 reports the results based on equation (8).

[Table 5 about here]

The first striking observation is that ABS are not popular among funds with low assets under management, long investment experience, and a high degree of diversification. The results in Table 5, column 1, suggest that large funds (potentially with bigger teams of investment analysts) are willing and capable of investing in this complex asset class. Support for this interpretation comes from our finding that less diversified funds—that is, funds that prefer to concentrate their investments in a relatively lower number of assets—tend to have a higher exposure to ABS. Lower diversification means that the asset manager invests more time studying each individual asset prior to purchasing it. The negative coefficient associated with fund age could be linked to the aftermath of the GFC and the lingering memory among senior portfolio managers of the collapse of the ABS market, particularly in the residential mortgage-backed securities (RMBS) segment. A notable observation is that green mutual funds have, on average, a 2.75 percentage

points (pp) lower exposure to ABS as opposed to their non-green counterparts. This is not surprising, as there is neither a clear definition of what “green” would mean nor a labeling or rating system in the context of ABS during our sample period.

The model in column 2 focuses on the proportion Auto ABS to all ABS held by a fund. Our results suggest that diversified funds tend to hold a lower share of Auto ABS. Further, we observe that more experienced asset managers (as proxied by fund age) favor a higher exposure to this asset class. This finding is in line with the historical observation that Auto ABS fared much better than RMBS during the GFC. Auto ABS seem to be equally favored by funds of all sizes, as suggested by the insignificant coefficient. Interestingly, green funds hold on average a higher share of Auto ABS, which can be explained by the next model specification.

The model specification in column 3 further restricts the sample and focuses on the proportion of Auto ABS reporting the fuel type distribution in the offering prospectus to all Auto ABS held by the fund. Our results show a positive and significant coefficient on the *Green fund* dummy, which serves as an explanation for the finding in model 2: green funds’ preference for Auto ABS stems from their tendency to hold a larger share of Auto ABS with fuel type disclosures. We further zoom in on this observation in the next sections. The coefficients of other control variables largely align with our expectations. For example, the tendency of larger funds to opt for such transparent assets suggest that resource availability enhances the integration of environmental scrutiny into investment strategies.

In summary, our findings draw a differentiated picture. The exposure to ABS and Auto ABS can differ considerably across different types of funds. While ABS as an asset class might not be the most sought-after investment type of mutual funds, Auto ABS seem to occupy a special position: they are favored by large funds and green funds, in particular, tend to invest in deals that are more transparent with respect to their collateral

pool composition. In the following sections, we further explore the specific information that green funds prioritize.

6.3 Demand for Auto ABS with sustainability metrics

In the following, we utilize individual asset holdings to study mutual funds' exposure to Auto ABS. Using sustainability-related information at the prospectus-, loan- and manufacturer-level, we test whether mutual funds and, in particular, green funds use these metrics in their asset allocation decisions.

6.3.1 Prospectus-level findings

We begin with prospectus-level sustainability information and define two variables: (i) a dummy variable that equals one if the offering prospectus reports the distribution of the underlying collateral by fuel type and (ii) the share of EVs in the collateral pool at the issuance date. The former variable proxies the transparency of Auto ABS with respect to sustainability-related information. The latter variable measures the actual greenness of the collateral pool. Table 6 reports the results based on regression equation (9).

[Table 6 about here]

The models in columns 1 and 2 demonstrate that mutual funds, in general, exhibit a preference for investing in Auto ABS that offer greater transparency about sustainability information. The presence of the fuel type distribution in the offering prospectus significantly influences investment decisions, indicating the importance of transparency to investors. This is evident from the positive coefficient for *Fuel-type-reporting* in column 1. Specifically, investors tend to hold a 0.109 pp higher portfolio weight when the deal reports the fuel type distribution. Considering that the average Auto ABS tranche has a weight of about 0.29% (or a EUR 2.31 million exposure), this 10.9 basis point increase corresponds

to a substantial additional investment of about EUR 870 thousand ($= 0.109/0.29 \times \text{EUR } 2.31 \text{ million}$) per tranche and fund. In other words, consistent fuel type reporting by Auto ABS issuers could mobilize in aggregate about EUR 1.15 billion ($= \text{EUR } 870 \text{ thousand} \times 330 \text{ mutual funds} \times 4 \text{ tranches per deal}$) of additional funding to finance the green transition. When focusing on green funds, we observe that they hold a relatively lower exposure to individual Auto ABS tranches. A potential explanation for this finding is that green funds are required by SFDR to explain how they consider ESG risks in their investment decisions. Since no established criteria exist for evaluating the greenness of Auto ABS, green funds tend to invest less in these assets. However, as suggested by the results in column 2, green funds exhibit a marked increase in investment in those Auto ABS that report the fuel type distribution, surpassing their non-green counterparts. The estimated coefficient of the interaction term *Green fund* $\times$ *Fuel-type-reporting* indicates that these funds hold 0.135 pp higher exposures to fuel-type-reporting Auto ABS relative to conventional funds. In monetary terms, this translates into a EUR 1.5 million higher exposure to more transparent Auto ABS. The reason for this finding is likely the fact that green funds can utilize the prospectus-level information in explaining their ESG risks according to SFDR requirements.

In Table 6, columns 3 and 4, we focus on the subsample of fuel-type-reporting Auto ABS. We study whether the actual greenness of the deal, as measured by the EV share in the collateral pool, plays a role in asset allocation decisions. As suggested by the coefficient in column 3, the EV share is positively correlated with the mutual funds' decision to invest in the deal, with an average of 0.008 pp increase in the portfolio weight for a 1 pp increase in the EV share, which corresponds to a EUR 64 thousand ($= 0.008/0.29 \times \text{EUR } 2.31 \text{ million}$) higher exposure per 1 pp higher share of electric vehicles in the collateral pool. Model 4 differentiates between green and conventional funds. We observe that green funds are prone to invest more in deals with a higher EV share.

On average, green funds allocate a 1 bp higher weight (or an EUR 80 thousand larger exposure) for a one pp increase in the EV share.²⁶

Our findings are robust with respect to the definition of low-emission vehicles. In an additional exercise, we use the share of both electric and plug-in hybrid vehicles as explanatory variable and obtain qualitatively and quantitatively similar results.²⁷ From these analyses, we can conclude that both transparency and sustainability aspects of Auto ABS deals matter for mutual funds' asset allocation decisions. The prospectus-level information is the least costly to obtain by investors and imposes on the analyst teams the lowest disclosure processing costs. However, since not all deals report the relevant sustainability information in their prospectuses, investors can go one step further and extract the relevant metrics from the loan-level data. In the next sections, we explore to what extent these metrics matter.

6.3.2 Loan-level findings

Investors can access loan-level information from securitization repositories and use it to extract sustainability-related data about the collateral pool. This procedure for retrieving sustainability metrics is much more costly and more prone to estimation imprecision than using the prospectus-level data. However, it can provide a better coverage of deals, since not all issuers report sustainability-related collateral pool information in their offering prospectuses. We use two loan-level sustainability metrics to study asset allocation decisions: (i) the share of EVs in the collateral pools and (ii) the average CO₂ emissions financed by each deal. The results are reported in Tables 7 and 8, respectively.

Table 7 reports the results on the share of EVs in the collateral pool. Model 1 reveals that mutual funds generally exhibit a higher exposure to Auto ABS with a

²⁶Extrapolating this estimate to a 100%-EV-backed deal would translate into a green fund potentially investing an extra EUR 8 million in a tranche.

²⁷The results are available from the authors upon request.

greater share of EVs. This finding aligns with the prospectus-level finding that investors value actual greenness of the collateral, potentially reflecting asset managers' concerns about diversification of the collateral pools and transition risks. In Model 2, we examine whether exposure to Auto ABS deals with a higher share of EVs is greater for green funds compared to conventional ones. The rationale for this analysis is that green funds, aiming to align their asset allocation strategies with their environmental goals, conduct more thorough investigations of the collateral pool and invest more in ABS deals that support the transition toward zero-emission mobility. The results support our hypothesis. While green funds generally invest less in auto deals overall, they tend to have a relatively higher exposure to deals with a larger proportion of EVs, as indicated by the positive and significant coefficient of the interaction term *Green fund* $\times$ *EV share*. In Model 3, the triple interaction estimate indicates that green funds are more likely to invest in Auto ABS with a higher proportion of EVs, provided this information is reported in the prospectus. Similarly, the positive and significant coefficient for the interaction term *Green fund* $\times$ *Fuel-type-reporting* reinforces our finding that green funds actively utilize transparency to satisfy SFDR regulatory requirements while pursuing the environmental goal. The marginally positive and significant *Pool coverage* coefficient throughout all model specifications suggests that investors value transparency with respect to the fuel type composition not only in the offering prospectus but also at the loan level.

[Table 7 about here]

Table 8 extends our analysis by examining the average CO₂ emissions of the collateral pool. Model 1 shows that mutual funds tend to have a lower exposure to Auto ABS that are financing vehicles with high CO₂ emissions. This finding is in line with our previous results regarding EV share preferences, suggesting a consistent pattern among mutual funds. Model 2 reveals that while green funds maintain lower exposure to Auto ABS, they do not show significantly different behavior regarding CO₂ emissions compared

to conventional funds, as suggested by insignificant and very small coefficient of the interaction term *Green fund* $\times$ *CO₂ estimate*. This contrasts with our findings on EV share, where green funds showed stronger preference for higher EV share collateral pool. We interpret these results through two complementary lenses. First, they suggest that green funds prioritize forward-looking transition metrics—such as EV adoption—over current emissions levels in their investment decisions. Second, they indicate a reliance on sustainability proxies that are easier to process.

[Table 8 about here]

To summarize, the loan-level findings are in line with the prospectus-level results and highlight the critical role of transparency in enhancing the attractiveness of sustainable assets. Both transparency with respect to fuel type composition and the actual composition of the collateral pool seem to matter in mutual funds’ asset allocations. However, in the absence of a globally accepted framework for green securitizations, asset managers of green funds use sustainability proxies that are associated with the lowest disclosure processing costs.

6.3.3 Manufacturer-level findings

In the following, we study the role of manufacturer-level information in the investment decisions of asset managers. This analysis relies on the assumption that asset managers are concerned not only with the emissions generated by the vehicle’s use (downstream emissions) but also with the environmental impact associated with its assembly and manufacturing (upstream emissions). To this end, we first focus on the concentration of manufacturers in the underlying collateral pool and second on the sustainability measures at manufacturer level.

Table 9 reports the concentration analysis results based on the Herfindahl-Hirschman Index (HHI) for manufacturer concentration (column 1) and the captive bank dummy

(column 2).²⁸ The negative significant coefficients associated with the *Manufacturer HHI* (-0.057) and *Captive bank* (-0.062) suggest a general aversion among investors toward Auto ABS backed by concentrated manufacturer pools or loans originated by captive banks. This aversion may arise due to different reasons. First, having learned from the Dieselgate scandal, asset managers might prefer a diversified collateral pool in order to have a balanced exposure to different vehicle manufacturers. Second, investors might perceive information asymmetries to be larger for deals issued by captive banks than non-captive banks. However, the positive and significant coefficient (0.072) for the interaction term *Captive bank* $\times$ *Green fund* indicates that green funds have a distinct preference for captive bank-originated ABS, possibly due to their demand for detailed sustainability-related data on the underlying vehicles, which is potentially more easily accessible through the captive bank prior to issuance on the primary market.

[Table 9 about here]

Expanding on the above findings, we next explore how sustainability practices at the level of car manufacturers influence mutual funds' investment decisions. Since the outbreak of Dieselgate and the media's focus on certain manufacturers, investors might have become concerned not only with direct vehicle-related sustainability metrics but also with indirect manufacturer-level measures. Table 10 presents the results for a set of metrics that are intended to capture different aspects of sustainability at the manufacturer level: the environmental score (column 1), EU-taxonomy-eligible capital expenditure share (column 2), ESG score (column 3), and GHG emissions per vehicle sold (column 4).

[Table 10 about here]

²⁸The HHI is calculated by squaring the weights of each car manufacturer within the collateral pool and then summing the resulting values.

Notably, mutual funds display a general indifference for specific manufacturer sustainability information such as Environmental score and GHG emissions per vehicle sold. However, we document a strong interest in the EU-taxonomy-eligible capital expenditure. The results also highlight the differential behavior of green funds. They exhibit a stronger reaction to these metrics, as evidenced by the positive and significant coefficients on the interaction terms between *Green fund* and environmental score (0.035), capex share (2.925), and ESG score (0.055), as well as the negative and significant coefficient on *Green fund* $\times$ *Total GHG ratio per vehicle sold* (-0.491). This implies that green funds weigh these criteria more heavily in their investment decisions compared to conventional funds. In line with the above findings, the negative coefficient on *Manufacturer HHI* throughout all model specifications suggests a general avoidance of manufacturer concentration risk.

Overall, we find evidence that not only direct, sustainability-related information matters but also indirect environmental aspects of the vehicle manufacturers seem play a role in mutual funds' asset allocation decisions. This is an important finding contributing to the ongoing debate on whether manufacturer-level sustainability metrics should be taken into account when defining a green Auto ABS.

6.3.4 Secondary-market repricing around Fit-for-55

Table 11 examines whether the secondary market prices the transition-risk exposure embedded in Auto ABS collateral pools around the Fit-for-55 announcement. All specifications include tranche and month fixed effects, so the estimates absorb time-invariant tranche characteristics and common market-wide movements in spreads.

Column 1 reports the baseline DiD estimate, where treatment intensity is measured by the electric-vehicle share extracted from the loan-level data. The coefficient on *EV share* $\times$ *Post Fit-for-55* is negative and statistically significant. Since EV share

is measured in percentage points and spreads are measured in percentage points, the coefficient of -0.003 implies that a one percentage point higher EV share is associated with an additional spread compression of about 0.3 basis points after the Fit-for-55 announcement. Equivalently, a tranche backed by a collateral pool with a 10 percentage point higher EV share experiences approximately 3 basis points lower secondary-market spreads. This result suggests that, once the regulatory path toward zero-emission mobility became more concrete, investors required lower yields for Auto ABS backed by collateral pools with lower exposure to internal combustion engine vehicles.

Column 2 turns to the role of sustainability transparency. The coefficient on $Fuel\ reporting \times Post\ Fit\text{-}for\text{-}55$ is negative and highly significant, indicating that Auto ABS deals disclosing the fuel-type distribution of the collateral pool experienced lower spreads after the announcement. This finding is central to the paper’s mechanism. In the absence of a widely accepted green Auto ABS label, investors face substantial costs when assessing the environmental characteristics of securitized collateral. Fuel-type reporting in the prospectus reduces these disclosure-processing costs because it allows investors to evaluate the transition profile of the pool without reconstructing fuel type or emissions from loan-level vehicle descriptions. The insignificant coefficient on $Prospectus\ EV\ share \times Fuel\ reporting \times Post\ Fit\text{-}for\text{-}55$ indicates that, in this specification, the market prices the presence of transparent sustainability disclosure rather than the additional marginal variation in the prospectus-based EV share.

Column 3 jointly includes the EV-share interaction, the reporting interaction, and their triple interaction. The coefficient on $EV\ share \times Post\ Fit\text{-}for\text{-}55$ remains negative and statistically significant, while $Reporting \times Post\ Fit\text{-}for\text{-}55$ also remains negative and highly significant. These results point to two complementary channels. First, investors price the transition-risk content of the collateral pool, as captured by the EV share. Second, investors value the availability of sustainability-related collateral information,

as captured by fuel-type reporting. The triple interaction is positive but statistically insignificant, suggesting that the marginal pricing effect of EV exposure is not stronger for reporting deals. This pattern is consistent with the idea that reporting deals may already have incorporated part of the sustainability information before the policy shock. The announcement therefore affects prices through both a transition-risk channel and a transparency channel, but it does not necessarily amplify the marginal sensitivity of spreads to EV shares among reporting deals.

At this point, we ask if investor clientele becomes central to the pricing mechanism. Column 4 shows that the coefficient on *Green fund ownership* $\times$ *Post Fit-for-55* is negative and statistically significant. The estimate of -0.029 implies that, after the announcement, a 10 percentage point higher green-fund ownership share is associated with a 0.29 basis point larger decline in secondary-market spreads. This effect is economically meaningful given the high seniority and low spread levels of European Auto ABS. The results are robust to excluding near-maturity observations, using price deviations from par instead of approximate yield spreads, and varying the event window around the Fit-for-55 announcement (see Appendix A.5 for more details). The result indicates that securities with a stronger green-investor clientele reprice more favorably when climate-policy news increases the salience of transition risk. Thus, green funds are not merely passive holders of transition-aligned collateral. Their presence is associated with stronger price adjustment after a regulatory shock, suggesting that investor clientele shapes how climate-policy information is incorporated into securitized-credit prices.

To corroborate this interpretation, we construct a predetermined measure of green-fund ownership. For each tranche, we identify the last non-missing green-fund ownership observation before the Fit-for-55 announcement and hold this value fixed over the event window. We then interact this pre-announcement ownership measure with the post-announcement indicator. This specification addresses the concern that

contemporaneous green-fund ownership may partly reflect post-announcement trading. Results are reported in Column 5. The coefficient remains negative and statistically significant, indicating that securities already held more intensively by green funds before Fit-for-55 experience stronger spread compression after the announcement.

Figure 3 provides the dynamic counterpart to the baseline difference-in-differences estimate. The figure plots the monthly effect of EV exposure on secondary-market spreads around the Fit-for-55 announcement, using month -1 as the omitted reference period. The pre-announcement coefficients are close to zero and display no clear downward trend. This pattern supports the identifying assumption that tranches with different EV exposure were not already following differential spread dynamics before the policy shock.

[Figure 3 about here]

The coefficients turn negative immediately after the announcement. The largest effect occurs in the first month after Fit-for-55, when a one percentage point higher EV share is associated with a spread compression of slightly more than 0.3 basis points relative to the month before the announcement. The effect then partially reverses but remains negative throughout most of the post-announcement window. This pattern suggests that the announcement triggered a repricing of transition-risk exposure in the secondary market: once the regulatory path toward zero-emission mobility became more salient, investors required lower yields for Auto ABS backed by collateral pools with a higher share of electric vehicles.

7 Discussion

Our findings suggest that both green and conventional mutual funds tend to invest in greener and more transparent Auto ABS. The secondary-market evidence

around Fit-for-55 further shows that these characteristics are not only relevant for portfolio allocation decisions, but are also reflected in prices when transition risk becomes more salient. While green funds' higher exposures are consistent with their sustainability-oriented mandates, the preference of conventional funds for EV-exposed and sustainability-transparent Auto ABS requires further interpretation. We propose three complementary explanations.

First, the Dieselgate scandal may have increased investors' attention to vehicle-level environmental risks. When the U.S. Environmental Protection Agency (EPA) first accused Volkswagen of illegally manipulating NOx emissions in September 2015, several other car manufacturers admitted similar misconduct in the months and years that followed (Mews, 2021).²⁹ At the time, Auto ABS investors were unable to assess the extent to which affected vehicles were included in their collateral pools due to insufficient information on vehicle engines and fuel types at the loan level—a limitation that persists to this day. In response, mutual funds reduced their exposure to Auto ABS in the two years following the initial EPA allegations, as shown in Appendix A.4, Table A2. Our findings suggest that investors may have since sought to mitigate similar information and transition risks by favoring Auto ABS with higher EV shares and more transparent prospectus disclosures.

Second, the debate about the Eurosystem's role in the green transition may have influenced investment choices. Auto ABS represented the second largest asset class purchased and held by the ECB under the asset-backed securities purchase programme (ABSPP) at the end of 2018 (Hammermann et al., 2019). Starting from 2020, the increasing discussion about the integration of climate change into the ECB's monetary policy operations may have affected investors' expectations about the future treatment of green or transition-aligned collateral.³⁰ Since all Auto ABS in our sample are

²⁹For instance, in 2016, Mitsubishi admitted to cheating on fuel economy tests for 25 years.

³⁰The ECB announced in its [press release](#) on 22 September 2020 that it would accept

ECB-eligible, investors may have had incentives to hold greener Auto ABS in anticipation of future collateral policies that incorporate climate-related criteria.

Third, regulatory announcements on the phase-out of internal combustion engine vehicles appear to have affected the pricing of Auto ABS. Earlier policy signals, including clustered announcements in 2017 on the future ban of internal combustion engine vehicles (Meckling & Nahm, 2019) and measures restricting high-emission vehicles in cities (Wappelhorst, 2020), may have already increased investors' attention to transition risk in auto-related assets. The Fit-for-55 announcement provides a sharper test of this mechanism. We find that Auto ABS with higher EV exposure experienced stronger secondary-market spread compression after the announcement. This suggests that investors reassessed the transition-risk profile of the underlying collateral once the regulatory trajectory toward zero-emission mobility became more concrete. In this sense, EV share captures not only a sustainability characteristic, but also a forward-looking measure of collateral resilience to policy-induced transition risk.

The Fit-for-55 results also refine the interpretation of transparency. In the holdings analysis, fuel-type reporting is associated with larger mutual fund exposures, particularly among green funds. In the pricing analysis, fuel-type-reporting deals experience lower secondary-market spreads after Fit-for-55. Taken together, these findings suggest that investors value sustainability transparency because it lowers disclosure-processing costs and facilitates the assessment of transition risk. This is particularly relevant in the Auto ABS market, where no globally accepted green securitization label existed during our sample period and where loan-level sustainability information is costly to reconstruct from vehicle descriptions.

Overall, our findings support calls for improved disclosure requirements at both the prospectus and loan level.

sustainability-linked bonds as collateral.

8 Summary

In this paper, we study how sustainability information affects investment and pricing in the European Auto ABS market. Using hand-collected prospectus and loan-level data, we construct sustainability measures for Auto ABS collateral pools and examine whether mutual funds use this information in portfolio allocation decisions.

We find that investors value both sustainability and transparency. Green funds, despite their lower overall propensity to hold Auto ABS, allocate more capital to deals with fuel-type reporting and higher electric-vehicle exposure. By contrast, we find weaker evidence that funds respond to lower average CO₂ emissions, suggesting that disclosure-processing costs shape which sustainability signals investors use.

We also find that these signals are reflected in secondary-market prices. After the Fit-for-55 announcement, Auto ABS with higher electric-vehicle exposure and fuel-type reporting experience stronger spread compression. Securities with higher green-fund ownership also reprice more favorably, consistent with an investor-clientele channel. We interpret this result cautiously, as green ownership may also capture liquidity, transparency, or other unobserved security characteristics.

Overall, sustainability-oriented investors are associated with both capital allocation toward greener collateral and the pricing of transition risk in secondary markets. Our findings suggest that standardized prospectus- and loan-level disclosure of fuel type and CO₂ emissions could lower information-processing costs and improve the pricing of climate-policy risk in securitized products.

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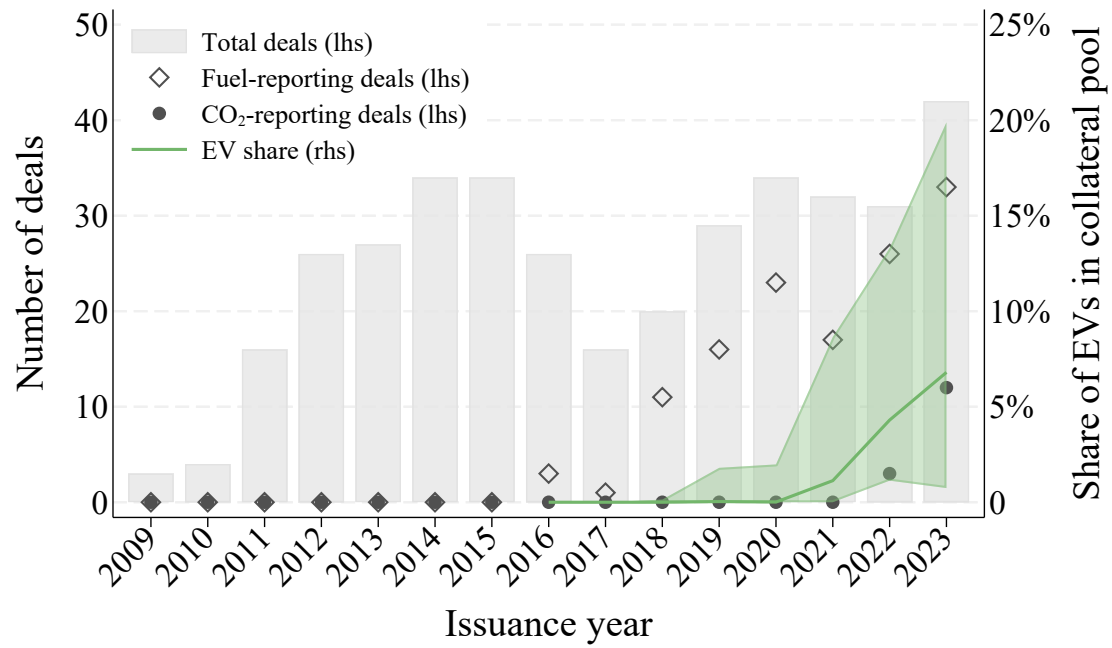
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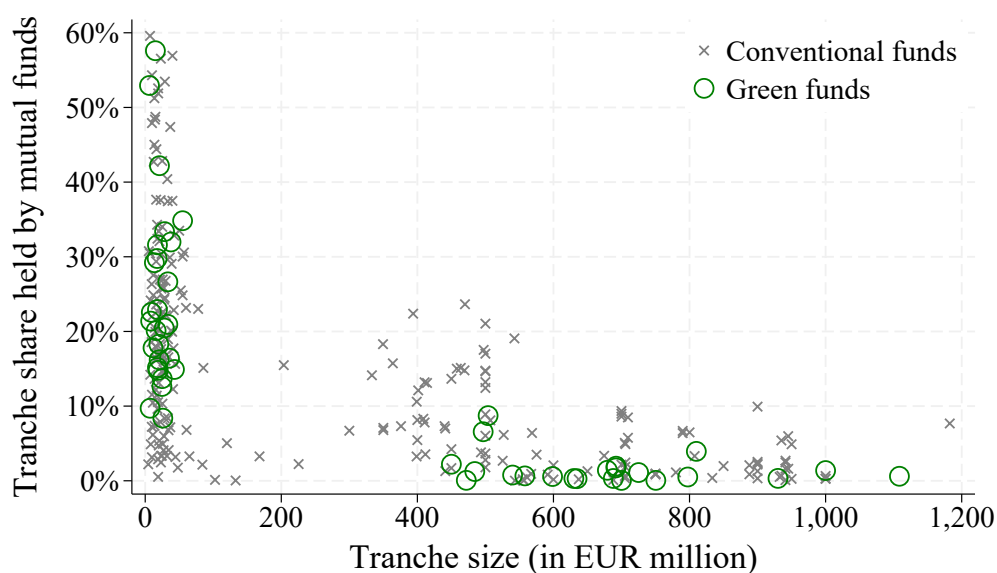
Figures

Figure 1: Prospectus-level Auto ABS characteristics



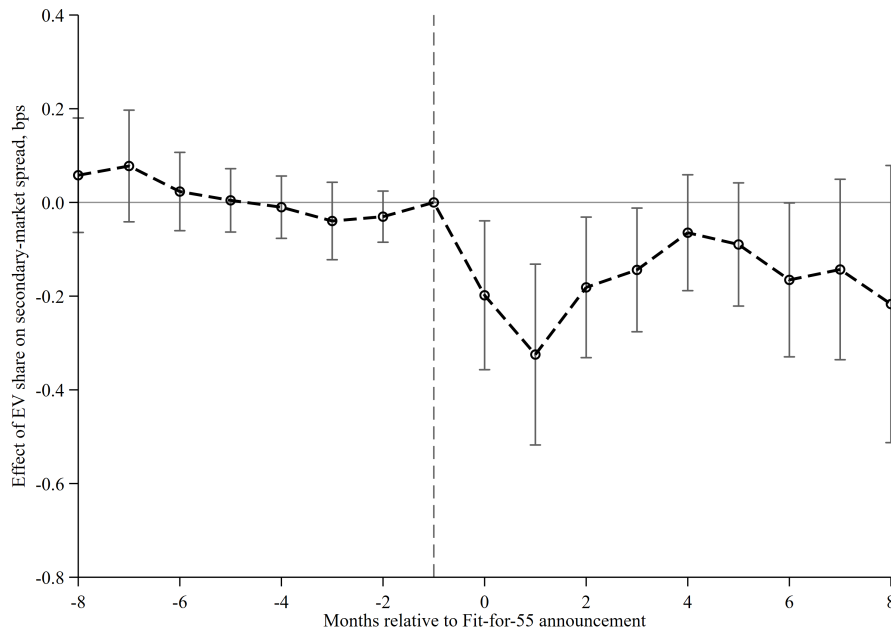
This figure depicts the evolution of the European Auto ABS market over time. The light gray bars (left y-axis) represent the total number of Eurosystem-eligible deals issued in a given year. The hollow diamonds (black circles) count the number of deals disclosing the distribution of the underlying collateral by fuel type (CO₂ emissions) in the offering prospectus. The solid green line (right y-axis) reports the median and the light-green-shaded area represents the 10th/90th percentiles of the electric vehicle share in the collateral pool of fuel-type-reporting Auto ABS. The data come from the European DataWarehouse and the EV share was hand-collected from prospectuses.

Figure 2: Share of outstanding Auto ABS held by mutual funds



This figure reports the exposure of mutual funds to Auto ABS. The x-axis measures the face value of unique Auto ABS tranches (in EUR million). The y-axis measures the average aggregate share of the outstanding tranche amount held by the mutual funds over the period Q4 2019 to Q3 2023. Tranches that were held predominantly by conventional (green) funds are indicated by a gray x (green circle). The data come from Morningstar and Refinitiv Workspace.

Figure 3: Dynamic repricing of EV exposure around Fit-for-55



This figure reports the dynamic effect of EV exposure on secondary-market spreads around the Fit-for-55 announcement. The dependent variable is the monthly average mid yield spread over Bunds. The treatment intensity is the electric-vehicle share in the collateral pool, extracted from the loan-level data. Coefficients are reported in basis points and are estimated relative to month -1 , which is omitted as the reference period. The vertical dashed line marks the reference month. Vertical bars indicate 95% confidence intervals based on tranche-clustered standard errors.

Tables

Table 1: Auto ABS characteristics

Panel A: Deal-level characteristics					
Variable	Mean	SD	p1	p99	Obs
Face value total (EUR million)	944.73	2139.43	131.00	5900.47	342
Coupon rate (weighed average)	1.99	1.96	0.00	6.30	342
Captive bank	0.58	0.49	0.00	1.00	342
Prospectus pages	240.02	55.04	128.00	399.00	342
Herfindahl-Hirschman Index	0.38	0.30	0.04	1.00	324
Number of tranches	4.12	9.69	1.00	32.00	342
Panel B: Tranche-level characteristics					
Face value (EUR million)	278.53	939.07	1.50	1,386.00	1,160
Coupon rate (%)	3.05	3.47	0.00	11.86	1,140
Senior tranche	0.49	0.50	0.00	1.00	1,160
Is callable	0.91	0.29	0.00	1.00	1,094
Original maturity	11.64	4.52	5.75	24.00	1,140

The table presents summary statistics of ABS deal-level (Panel A) and tranche-level characteristics (Panel B). *Face value total (EUR million)* reports the total face value of the issued ABS deal in millions of Euros. *Coupon rate (weighed average)* is the periodic interest rate of the ABS deal weighed by tranche face value. *Captive bank* is an indicator that equals one if the deal is issued by a financial institution that is a subsidiary of a car manufacturing firm. *Prospectus pages* is the number of pages of the deal prospectus document. *Herfindahl-Hirschman Index* indicates the market concentration among the manufacturers backing the deal. *Number of tranches* is the number of tranches within each deal. *Face value (EUR million)* reports the face value of the issued Auto ABS tranche in millions of Euros. *Coupon rate (%)* is the periodic interest rate of the tranche. *Senior tranche* is an indicator that equals one if the tranche is classified as senior in terms of payment priority and risk. *Is callable* is an indicator that equals one if the tranche is callable by the issuer. *Original maturity* is the time period from tranche issuance date to tranche maturity date measured in years. The data come from European DataWarehouse, Bloomberg, and Refinitiv Workspace.

Table 2: Sustainability measures

Panel A: Prospectus-level measures					
Variable	Mean	SD	p1	p99	Obs
Fuel-type-reporting ABS	0.34	0.47	0.00	1.00	342
Fuel type (in %)					
Petrol	37.43	21.59	0.00	79.03	115
Diesel	39.12	21.73	0.00	88.61	115
Electric	3.71	6.68	0.00	25.15	115
Hybrid	6.69	12.68	0.00	56.60	115
Other or NA	13.05	30.55	0.00	100.00	115
Panel B: Loan-level measures					
CO ₂ estimate	161.61	16.49	126.92	204.18	329
Pool coverage (CO ₂ emissions)	82.65	20.46	0.00	99.99	332
Pool coverage (fuel type)	20.74	28.92	0.00	93.67	332
Electric vehicle share	1.03	2.93	0.00	14.53	332
Panel C: Manufacturer-level measures					
Total GHG emission ratio per vehicle sold	0.67	0.12	0.42	0.99	307
EU-taxonomy-eligible capex share	99.11	0.93	95.41	100.00	307
ESG score	3.61	0.81	2.41	5.62	307
Environmental score	2.86	0.87	1.50	5.37	307

The table presents summary statistics of prospectus-level (Panel A), loan-level (Panel B), and manufacturer-level (Panel C) sustainability measures. *Fuel-type-reporting ABS* is an indicator that equals one if the deal reports the fuel type distribution of the underlying collateral in its offering prospectus, and zero otherwise. *Petrol (Diesel, Electric, Hybrid)* measure the portion of the total outstanding balance of loans and leases in the securitization pool related to petrol-powered (diesel-powered, electric, hybrid) vehicles. *Other or NA* measures the portion of the total outstanding balance of loans and leases in the ABS pool related to vehicles powered by other (e.g. LNG, hydrogen) or unknown fuel types. *CO₂ estimate* reports the loan-amount-weighted average of CO₂ emissions in grams per kilometer across all vehicles in the collateral pool of a deal. *Pool coverage (CO₂ emissions)* is the coverage of loans with estimated CO₂ emissions as the percentage of the total loan pool. *Pool coverage (fuel type)* is the coverage of loans with fuel type information as the percentage of the total loan pool. *Total GHG emission ratio per vehicle sold* is the ratio of total greenhouse gas (if unavailable, total CO₂) intensity, calculated as metric tonnes of greenhouse gases emitted per vehicle sold in the most recent reporting period over the emission level of vehicles sold worldwide. *Environmental score* a company's aggregated environmental performance based on Bloomberg's view of financial materiality. *EU taxonomy eligible capex share* is the percentage of capital expenditures for enabling activities that pass EU taxonomy technical screening criteria. *ESG score* evaluates company's aggregated environmental, social and governance performance based on Bloomberg's view of financial materiality. The data come from Bloomberg, European DataWarehouse, and Refinitiv Workspace.

Table 3: Investment fund descriptives

Panel A: Fund characteristics					
Variable	Mean	SD	p1	p99	Obs
Market value fund (million EUR)	1615.54	4909.18	9.52	26637.74	4,903
Fund age (year)	15.56	10.58	1.00	53.25	4,903
No. asset holdings	837.03	1293.10	6.00	6760.00	4,903
Fund turnover ratio	4.30	9.51	0.00	39.39	4,903
ABS (% of fund)	14.08	23.51	0.00	98.11	4,903
Auto ABS (% of ABS)	7.24	17.90	0.00	100.00	4,102
Fuel-type-reporting (% of Auto ABS)	57.56	39.50	0.00	100.00	1,852
ex Sovereign bond share (% of fund)	41.16	27.61	0.00	95.52	4,903
Equity (% of fund)	4.40	12.82	0.00	65.33	4,903
Sovereign bond share (% of fund)	28.18	24.51	0.00	90.01	4,903
Other assets (% of fund)	12.18	22.89	-42.91	100.00	4,903
Panel B: Auto ABS holdings					
Market value (million EUR)	2.31	4.89	0.00	25.70	13,119
Fuel-type-reporting	1.56	4.61	0.00	23.01	13,119
Non-fuel-type-reporting	0.74	2.25	0.00	9.82	13,119
Portfolio weight (% of fund)	0.29	0.49	0.00	2.33	13,119
Fuel-type-reporting	0.16	0.40	0.00	1.97	13,119
Non-fuel-type-reporting	0.13	0.35	0.00	1.85	13,119
Coupon rate	4.27	1.90	0.00	8.00	13,119
Senior tranche	0.49	0.50	0.00	1.00	13,119
Original maturity (years)	11.98	4.40	5.83	23.33	13,100

The table presents summary statistics at the level of mutual funds (Panel A) and Auto ABS holdings (Panel B). *Market value fund (million EUR)* reports the net total market value of a fund's holdings. *No. asset holdings* is end-of-quarter number of individual assets held by a fund. *Fund age (year)* is time period from fund inception date to fund portfolio date measured in years. *Fund turnover ratio* is calculated as the lesser of the total purchases or total sales of assets by the average net asset value in a given quarter. *ABS share (% of fund)* measures the relative proportion of asset-backed securities to total asset holdings of a fund. *Auto ABS share (% of ABS)* measures the relative proportion of Auto ABS to total ABS holdings of a fund. *Fuel-type-reporting (% of Auto ABS)* is the relative proportion of Auto ABS reporting the fuel type distribution in the offering prospectus to total Auto ABS holdings of a fund. *Bond share, ex sovereign (% of fund)* is the relative proportion of bond holdings (excluding sovereign bonds) to total fund holdings. *Equity share (% of fund)* is the relative proportion of equity holdings to total fund holdings. *Sovereign bond share (% of fund)* is the relative proportion of sovereign bond holdings to total fund holdings. *Other asset share (% of fund)* is the relative proportion of all other asset holdings to total fund holdings. All presented ratios are measured at the holdings' market value. Panel B focuses at the funds' Auto ABS holdings. *Market value (million EUR)* measures the market value of an Auto ABS tranche held by a fund in a given quarter. *Portfolio weight (% of fund)* is weight of an Auto ABS tranche held by a fund in a given quarter. *Coupon rate (%)* is the periodic interest rate of an Auto ABS tranche. *Senior tranche* is an indicator that equals one if the tranche is classified as senior in terms of payment priority and risk. *Original maturity (year)* is the time period from asset issuance date to asset maturity date measured in years. The sample period ranges from Q4 2019 to Q3 2023. The data come from Morningstar and Refinitiv Workspace.

Table 4: Determinants of Auto ABS holding likelihood

	Held by mutual fund		
	(1)	(2)	(3)
Fuel-type-reporting			0.650** [0.266]
Prospectus pages		2.921*** [0.720]	2.735*** [0.717]
Captive bank	-1.468*** [0.231]	-1.518*** [0.236]	-1.532*** [0.237]
Face value	0.486*** [0.091]	0.430*** [0.087]	0.420*** [0.087]
Coupon rate	0.026 [0.024]	0.007 [0.032]	0.012 [0.029]
Is callable	0.142 [0.460]	0.342 [0.433]	0.324 [0.428]
Senior tranche	-0.208 [0.325]	0.069 [0.323]	0.135 [0.322]
Original maturity	-2.938*** [0.419]	-3.629*** [0.491]	-3.389*** [0.488]
Observations	889	889	889
Pseudo R-squared	0.251	0.271	0.277
Asset controls	Yes	Yes	Yes

The table presents the Logit regression estimates on the likelihood of an Auto ABS tranche being held by the mutual fund industry. *Fuel-type-reporting* is an indicator equal to one if the deal reports the fuel type distribution of the underlying collateral in its offering prospectus, and zero otherwise. *Prospectus pages* is the natural logarithm of the number of pages of the offering prospectus. *Captive bank* is an indicator equal to one if the underlying auto loans are originated by a captive bank. *Face value* is the natural logarithm of the tranche size (in Euro millions) at issuance. *Coupon rate* is the periodic interest rate of the tranche. *Is callable* is an indicator equal to one if the tranche is callable by the issuer. *Senior tranche* is an indicator equal to one if the tranche is classified as senior in terms of payment priority and risk. *Original maturity* is the natural logarithm of the time period from asset issuance to maturity date, measured in years. Asset controls are the prospectus year and the country of issuance. The sample period spans Q4 2019 to Q3 2023. The data come from European DataWarehouse, Bloomberg, and Refinitiv Workspace. Robust standard errors are reported in square brackets. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Table 5: Mutual fund demand for Auto ABS

	ABS share (% of fund) (1)	Auto ABS share (% of ABS) (2)	Fuel-reporting auto ABS share (% of Auto ABS) (3)
Green fund	-2.751*** [0.378]	4.121*** [0.652]	13.060*** [1.953]
Fund size	0.617*** [0.126]	-0.239 [0.263]	3.235*** [0.822]
Fund age	-1.749*** [0.266]	0.437 [0.409]	8.189*** [1.168]
Diversification	-0.177 [0.170]	-0.819** [0.343]	-4.327*** [1.186]
Fund turnover ratio	0.002 [0.016]	-0.048** [0.023]	0.109 [0.086]
Observations	4,888	4,086	1,847
R-squared	0.795	0.260	0.394
Fund controls	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes
Sample	All holdings	ABS holdings	Auto ABS holdings

The table presents mutual funds' quarterly demand for ABS and Auto ABS. *Green fund* is an indicator that equals one if the fund is aligned with SFDR Articles 8 or 9, and zero otherwise. *Fund size* is the natural logarithm of fund size in millions of Euro at the quarter end. *Fund age* is the natural logarithm of fund age in years at the quarter end. *Diversification* is the natural logarithm of number of assets held by the fund at the quarter end. *Fund turnover ratio* is calculated as the lesser of the total purchases or total sales of assets by the average net asset value in a given quarter. Fund controls include global category, investment type, base currency, and domicile. Quarter fixed effects and fund controls are included where indicated. The sample period spans Q4 2019 to Q3 2023. The data come from Morningstar. Robust standard errors are reported in square brackets. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Table 6: Mutual fund demand for green Auto ABS

	Prospectus-level sustainability measures			
	Portfolio weight			
	(1)	(2)	(3)	(4)
Green fund * Fuel-type-reporting		0.135*** [0.045]		
Fuel-type-reporting	0.109*** [0.029]	0.051* [0.026]		
Green fund * EV share				0.005 [0.005]
EV share			0.008*** [0.002]	0.005* [0.003]
Green fund	-0.086* [0.051]	-0.149*** [0.053]	-0.033 [0.052]	-0.046 [0.052]
Observations	13,093	13,093	6,025	6,025
R-squared	0.462	0.466	0.480	0.481
Asset controls	Yes	Yes	Yes	Yes
Fund controls	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes
Sample	Auto ABS	Auto ABS	Fuel-reporting ABS	Fuel-reporting ABS

The table presents the effects of the fuel-type-reporting status and the EV share on mutual funds' Auto ABS portfolio weights. *Green fund* is an indicator that equals one if the fund is aligned with SFDR Articles 8 or 9, and zero otherwise. *Fuel-type-reporting* is an indicator that equals one if the deal reports the fuel type distribution of the underlying collateral in its offering prospectus, and zero otherwise. *EV share* is the share of electric vehicles (in %) in fuel-type-reporting Auto ABS. Asset controls include original maturity, coupon rate, the natural logarithm of the tranche size in millions of Euro at issuance, and senior tranche status based on payment priority and risk. Fund controls are the natural logarithm of fund size in millions of Euro, the natural logarithm of fund age in years, the natural logarithm of fund diversification, fund turnover ratio, global category, investment type, base currency, and domicile. Quarter fixed effects, asset controls, and fund controls are included where indicated. The sample period spans Q4 2019 to Q3 2023. The data come from Morningstar, Refinitiv Workspace, and European DataWarehouse. Robust standard errors are clustered at mutual fund level. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Table 7: Mutual fund demand for green Auto ABS

Loan-level sustainability measures			
	Portfolio weight		
	(1)	(2)	(3)
Green fund * EV share *			0.046***
Fuel-type-reporting			[0.017]
Green fund * Fuel-type-reporting			0.109***
			[0.041]
Fuel-type-reporting * EV share			-0.038***
			[0.013]
Green fund * EV share		0.007	-0.040**
		[0.008]	[0.016]
Fuel-type-reporting			0.070***
			[0.026]
Green fund		-0.100*	-0.142***
		[0.052]	[0.054]
EV share	0.015***	0.011**	0.048***
	[0.004]	[0.005]	[0.013]
Pool coverage	0.001**	0.001**	0.001***
	[0.000]	[0.000]	[0.000]
Observations	12,711	12,711	12,711
R-squared	0.460	0.466	0.477
Asset controls	Yes	Yes	Yes
Fund controls	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes

The table presents of mutual funds' demand for loan-level sustainability of Auto ABS, measured by the share of electric vehicles. *Green fund* is an indicator that equals one if the fund is aligned with SFDR Articles 8 or 9, and zero otherwise. *EV share* is the share of electric vehicles (in %) in Auto ABS. *Fuel-type-reporting* is an indicator that equals one if the deal reports the fuel type distribution of the underlying collateral in its offering prospectus, and zero otherwise. *Pool coverage* is the coverage of loans with fuel type information as the percentage of the total loan pool. Asset controls include original maturity, coupon rate, the natural logarithm of the ABS tranche size in millions of Euro at issuance, and senior tranche status based on payment priority and risk. Fund controls are the natural logarithm of fund size in millions of Euro, the natural logarithm of fund age in years, the natural logarithm of fund diversification, fund turnover ratio, global category, investment type, base currency, and domicile. Quarter fixed effects, asset controls, and fund controls are included where indicated. The sample period spans Q4 2019 to Q3 2023. The data come from Morningstar, Refinitiv Workspace, and European DataWarehouse. Robust standard errors are clustered at mutual fund level. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Table 8: Mutual fund demand for green Auto ABS

Loan-level sustainability measures			
	Portfolio weight		
	(1)	(2)	(3)
Green fund * Fuel-type-reporting * CO ₂ estimate			-0.006** [0.002]
Green fund * Fuel-type-reporting			0.991** [0.397]
Fuel-type-reporting * CO ₂ estimate			-0.002 [0.002]
Green fund * CO ₂ estimate		0.001 [0.002]	0.003 [0.002]
CO ₂ estimate	-0.003*** [0.001]	-0.003** [0.001]	-0.001 [0.002]
Fuel-type-reporting			0.405 [0.269]
Green fund		-0.210 [0.274]	-0.592* [0.352]
Pool coverage	-0.000 [0.001]	-0.000 [0.001]	-0.001 [0.001]
Observations	12,238	12,238	12,238
R-squared	0.457	0.462	0.475
Fund controls	Yes	Yes	Yes
Asset controls	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes

The table presents results of mutual fund demand for loan-level sustainability of Auto ABS, measured by the CO₂ emissions. *Green fund* is an indicator equal to one if the fund is aligned with SFDR Articles 8 or 9, and zero otherwise. *CO₂ estimate* is the loan-amount weighed average of CO₂ emissions in grams per kilometer across all vehicles in the securitization pool. *Pool coverage* is the coverage of loans with estimated CO₂ emissions as the percentage of the total loan pool. Asset controls include original maturity, coupon rate, the natural logarithm of the ABS tranche size in millions of Euro at issuance, and senior tranche status based on payment priority and risk. Fund controls are the natural logarithm of fund size in millions of Euro, the natural logarithm of fund age in years, the natural logarithm of fund diversification, fund turnover ratio, global category, investment type, base currency, and domicile. Quarter fixed effects, asset controls, and fund controls are included where indicated. The sample period spans Q4 2019 to Q3 2023. The data come from Morningstar, Refinitiv Workspace, and European DataWarehouse. Robust standard errors are clustered at mutual fund level. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Table 9: Manufacturer concentration in Auto ABS

	Portfolio Weight	
	(1)	(2)
Captive bank * Green fund		0.072*** [0.015]
Captive bank		-0.062*** [0.011]
Manufacturer HHI * Green fund	0.039* [0.022]	
Manufacturer HHI	-0.057*** [0.016]	
Green fund	-0.099*** [0.011]	-0.111*** [0.011]
Observations	12,900	12,964
R-squared	0.456	0.457
Fund controls	Yes	Yes
Asset controls	Yes	Yes
Quarter FE	Yes	Yes

The table presents results of mutual funds' preferences for Auto ABS while considering the concentration of vehicle manufacturers within the collateral pool. *Manufacturer HHI* is the Hefindahl-Hirschman index measuring the concentration of vehicle manufacturers in the collateral pool of the deal. *Green fund* is an indicator that equals one if the fund is aligned with SFDR Articles 8 or 9, and zero otherwise. *Captive bank* is an indicator that equals one if the underlying auto loans were originated by a captive bank. Asset controls include original maturity, coupon rate, the natural logarithm of the ABS tranche size in millions of Euro at issuance, and senior tranche status based on payment priority and risk. Fund controls are the natural logarithm of fund size in millions of Euro, the natural logarithm of fund age in years, the natural logarithm of fund diversification, fund turnover ratio, global category, investment type, base currency, and domicile. Quarter fixed effects, asset controls, and fund controls are included where indicated. The sample period spans Q4 2019 to Q3 2023. The data come from Morningstar, Refinitiv Workspace, and European DataWarehouse. Robust standard errors are reported in square brackets. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Table 10: Do mutual funds care about manufacturer-level sustainability?

	Portfolio weight			
	(1)	(2)	(3)	(4)
Green fund*Environmental score	0.035* [0.018]			
Environmental score	0.003 [0.014]			
Green fund*EU-taxonomy-eligible capex		2.931** [1.265]		
EU-taxonomy-eligible capex share		1.386 [0.981]		
Green fund*ESG score			0.055** [0.025]	
ESG score			0.013 [0.021]	
Green fund*Tot. GHG ratio per vhcl sold				-0.491*** [0.187]
Total GHG ratio per vehicle sold				0.058 [0.144]
Manufacturer HHI	-0.053* [0.027]	-0.084*** [0.028]	-0.064** [0.029]	-0.029 [0.024]
Green fund	-0.200*** [0.076]	-2.985** [1.255]	-0.307*** [0.107]	0.238* [0.138]
Observations	12,220	12,220	12,220	12,220
R-squared	0.451	0.453	0.453	0.453
Asset controls	Yes	Yes	Yes	Yes
Fund controls	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes

The table presents results of mutual funds' demand for manufacturer-level sustainability measures of Auto ABS. Green Fund is an indicator equaling one if the fund is aligned with SFDR Articles 8 or 9, and zero otherwise. *Manufacturer HHI* is the Hefindahl-Hirschman index measuring the concentration of vehicle manufacturers in the collateral pool of the deal. *Environmental score* evaluates company's environmental performance. *EU Taxonomy eligible capex share* is the percentage of capital expenditures for enabling activities that pass EU taxonomy technical screening criteria. *ESG score* evaluates company's aggregated environmental, social and governance performance based on Bloomberg's view of financial materiality. *Total GHG ratio per vehicle sold* is ratio of total greenhouse gas (if unavailable, total CO₂) intensity calculated as metric tonnes of greenhouse gases emitted per vehicle sold in the most recent reporting period over the emission level of vehicles sold worldwide. Asset controls include original maturity, coupon rate, the natural logarithm of the ABS tranche size in millions of Euro at issuance, and senior tranche status based on payment priority and risk. Fund controls are the natural logarithm of fund size in millions of Euro, the natural logarithm of fund age in years, the natural logarithm of fund diversification, fund turnover ratio, global category, investment type, base currency, and domicile. Quarter fixed effects, asset controls, and fund controls are included where indicated. The sample period spans Q4 2019 to Q3 2023. The data come from Morningstar, Refinitiv Workspace, and European DataWarehouse. Robust standard errors are clustered at mutual fund level. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Table 11: Secondary-market repricing around Fit-for-55

	Mid yield spread over Bund				
	(1)	(2)	(3)	(4)	(5)
EV share*Post Fit-for-55	-0.003** [0.001]		-0.002* [0.001]		
Prospectus EV share*Fuel-type-reporting*Post Fit-for-55		0.034 [0.023]	0.035 [0.023]		
Fuel-type-reporting*Post Fit-for-55		-0.141*** [0.049]	-0.135*** [0.048]		
Green fund ownership*Post Fit-for-55				-0.029** [0.012]	
Green fund ownership				0.019 [0.011]	
Pre-announcement green fund ownership*Post Fit-for-55					-0.105** [0.044]
Observations	137,465	137,465	137,465	36,601	36,552
R-squared	0.978	0.978	0.978	0.979	0.989
Tranche FE	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes
Clustered SE	Tranche	Tranche	Tranche	Tranche	Tranche

The table presents results on the secondary-market repricing of Auto ABS around the Fit-for-55 announcement. The dependent variable is the mid yield spread over Bunds. *EV share* is the harmonized electric-vehicle share in the collateral pool, measured in percentage points. *Post Fit-for-55* is an indicator equal to one for observations on or after 14 July 2021, and zero otherwise. *Fuel-type-reporting* is an indicator equal to one if the offering prospectus reports the fuel-type distribution of the underlying collateral pool. *Prospectus EV share* is the electric-vehicle share hand-collected from fuel-reporting prospectuses. *Green fund ownership* is the market value held by SFDR Article 8 or 9 funds divided by deal face value. *Pre-announcement green fund ownership* measures green-fund ownership before the Fit-for-55 announcement and is held fixed over the event window. All specifications include tranche and month fixed effects. Robust standard errors are reported in square brackets and clustered as indicated. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Internet Appendix for “Mutual Funds’ Appetite for Sustainability in European Auto ABS”

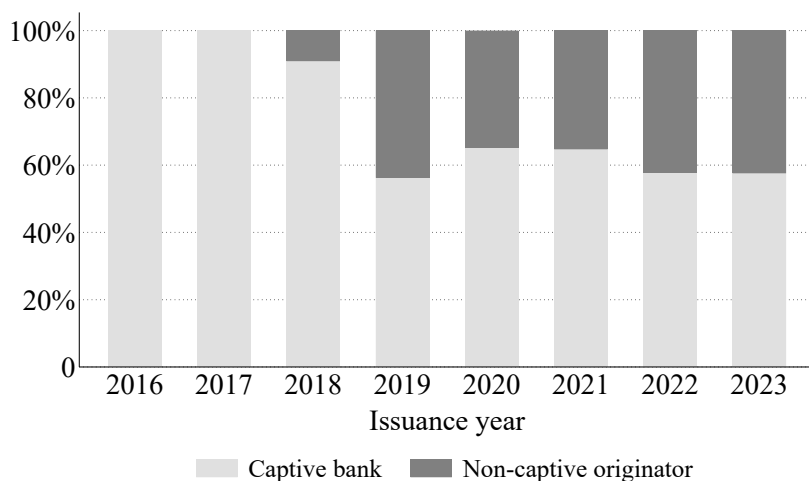
This Internet Appendix contains supplementary materials for the article titled “Mutual Funds’ Appetite for Sustainability in European Auto ABS”.

A Data

A.1 Prospectus-level data

Figure A1 depicts the evolution of fuel-type-reporting deals by originator type. Captive banks were the first to disclose fuel type distributions, starting in 2016. Non-captive loan and lease originators followed suit in 2018. However, captive banks account for approximately 60% of fuel-type-reporting institutions, suggesting they have better access to such data than non-specialized retail banks and other types of originators.

Figure A1: Fuel-reporting by bank type

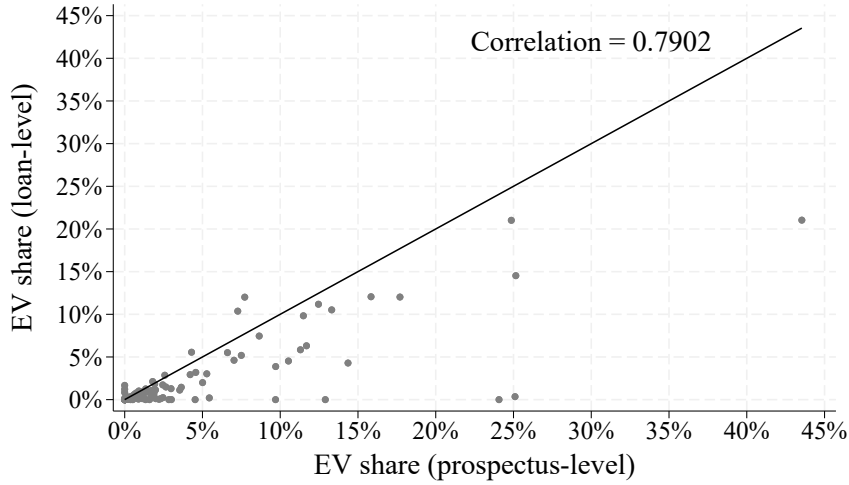


This figure depicts the proportion of issuers that started reporting the fuel type distribution in offering prospectuses from 2016 onward. The data were hand-collected from Auto ABS offering prospectuses.

A.2 Loan-level data

The fuel type and CO₂ emissions data are extracted from the loan-level dataset in two steps. First, we determine fuel type based on vehicle model descriptions that are reported by ABS issuers to the European DataWarehouse. Our method is particularly effective for electric vehicles, as they often have distinctive model names, whereas generic model names make it challenging to distinguish between petrol, diesel, and plug-in hybrid vehicles. Figure A2 illustrates the accuracy for our EV share extraction. Using the true EV share from the offering prospectuses as a benchmark, we plot the corresponding EV share from extracted from the loan-level data. A correlation of 0.79 suggests that our approach is quite accurate. In some cases, we even identify more EVs in the loan-level data than reported in the prospectus, as indicated by dots above the 45-degree line.³¹

Figure A2: Accuracy of fuel type extraction from LLD



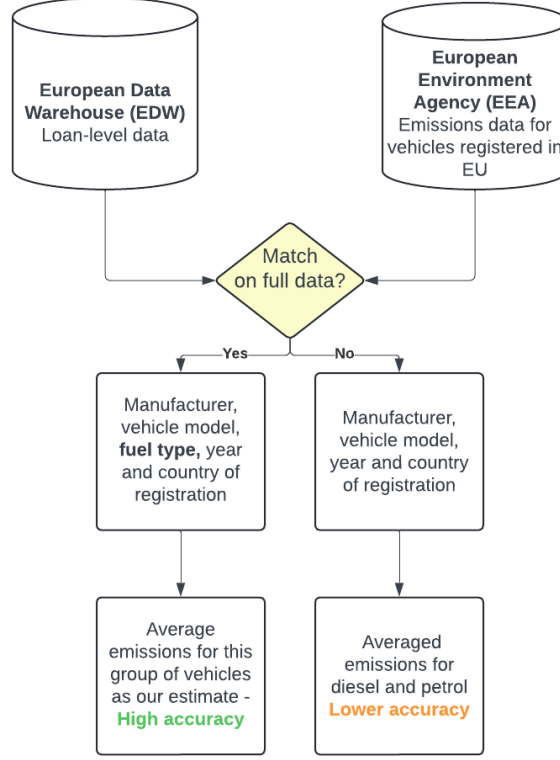
This figure depicts the difference between the electric vehicle share obtained from Auto ABS offering prospectuses (x-axis) and the electric vehicle share manually extracted from the loan-level data using the vehicle model descriptions. The results are based on 115 deals. The data come from the European DataWarehouse.

³¹This discrepancy can occur when the prospectus includes a fuel category such as “Other” or “NA.” The loan-level data can help classify vehicles from these categories more precisely.

In the second step, we supplement the loan-level data with CO₂ emissions. The CO₂ emissions data for new vehicles registered in the EU come from the European Environment Agency (EEA) database (European Environment Agency, 2024). The data for each deal is taken from its first available loan-level submission. We match the two datasets using the variables manufacturer, vehicle model, fuel type, year of registration, and country of registration. We then take the average CO₂ emissions for the vehicle models as our estimate. This match results in a very high accuracy.³²For loans and leases that could not be matched on all data points (such as fuel type), we rely on the remaining available variables - manufacturer, vehicle model, year, and country of registration - and then calculate the average CO₂ emissions for petrol and diesel vehicles. This method results in a lower accuracy approximation compared to the full match approach. Our matching procedure is illustrated in Figure A3.

³²We assess the accuracy of this match by comparing the results of the computed collateral distribution by CO₂ emissions of the vehicles against the emissions data disclosed by four specific deals in their respective offering prospectuses.

Figure A3: Loan-level and emission data



In addition, we prioritize Worldwide Harmonised Light Vehicle Test Procedure (WLTP) estimates from the EEA database for their enhanced real-world representativeness.³³ In the absence of WLTP data, we employ NEDC estimates, applying a conversion factor of 1.2 to align with the newer and stricter WLTP measurements. To accommodate dataset limitations, we apply specific assumptions. Vehicles registered prior to the year 2010 are assigned CO₂ emission value as though they were registered in 2010, the year of the first EEA data records. Similarly, for the same reason, vehicles recorded in EDW as 2024 models—where EEA data is not yet available—we assume a 2023 registration. Finally, in instances where the registration

³³The WLTP is a global standard for more accurately measuring vehicle emissions, fuel consumption, and energy use by reflecting real driving conditions. It replaces the older New European Driving Cycle (NEDC) test, offering a broader range of driving scenarios, higher speeds, and more realistic acceleration and braking patterns to ensure results closely align with on-road performance.

date is missing for older vehicles, we infer the registration year to be three years prior to the loan origination date, aligning with standard vehicle depreciation practices.

A.3 Manufacturer-level data

We assess the sustainability and environmental impact of car manufacturers using ESG scores, greenhouse gas (GHG) emissions, energy efficiency, and the percentage of EU taxonomy-eligible capital expenditures. The rationale for this analysis is that sustainability-informed investors consider not only the downstream emissions associated with Auto ABS but also the emissions generated during the production of the vehicle, referred to as “cradle-to-gate” emissions. In total, our dataset includes 133 different manufacturers of the financed vehicles. However, we consider only 25 manufacturers as they represent a 97.1% share of all securitized securities loans and leases in our sample. Table [A1](#) shows the manufacturers included in the analysis along with the share of securitized loans and leases.

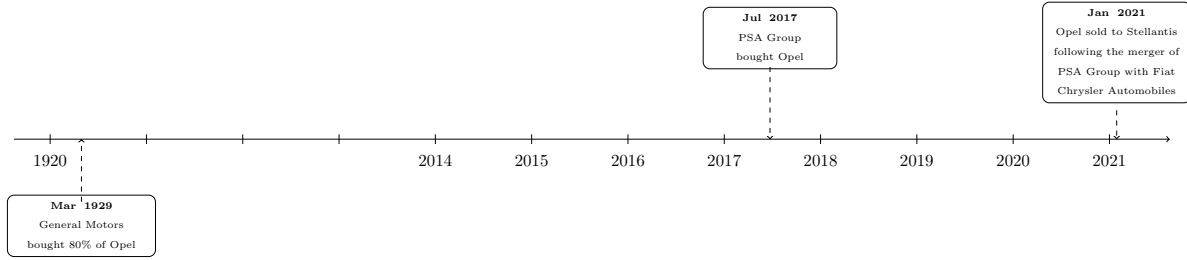
Table A1: Securitized loans and leases - breakdown by manufacturer

	Manufacturer	% of securitized loans and leases
1	Volkswagen	19.9%
2	Renault	9.4%
3	Audi	9.3%
4	Peugeot	7.7%
5	Citroën	5.5%
6	Škoda	5.4%
7	Fiat	4.6%
8	Seat	4.6%
9	Ford	4.6%
10	Opel	4.0%
11	Mercedes	3.7%
12	BMW	3.1%
13	Dacia	3.0%
14	Nissan	2.5%
15	Hyundai	2.1%
16	Kia	1.7%
17	Toyota	1.6%
18	Mazda	0.9%
19	Lancia	0.7%
20	Volvo	0.6%
21	Suzuki	0.5%
22	Mini	0.5%
23	DS	0.4%
24	Alfa Romeo	0.4%
25	Jeep	0.4%
Total		97.1%

The table presents a breakdown of securitized auto loans and leases by vehicle manufacturer. The data cover 339 Auto ABS deals and about 19 million loans originated between 2014 and 2022. The data come from European DataWarehouse.

For these companies we obtain ESG data from Bloomberg. However, processing historical data on car manufacturers is a non-trivial exercise due to the industry’s highly concentrated nature and frequent mergers and acquisitions (M&As), which complicate data consistency and availability. As a matter of fact, during our sample period, there were 27 M&As in the automotive industry. To better visualize, Figure A4 illustrates the M&A of Opel Automobile GmbH from 1929 to 2021. In 1929, General Motors bought an 80% stake of Opel. The company was successively sold in 2017 to PSA and in 2021 became part of Stellantis following the merger between PSA Group with Fiat Chrysler.

Figure A4: Merger and Acquisition timeline of Opel Automobile GmbH



To tackle the problem of data, we stack the different datasets when a company is acquired. In this way, pre-acquisition data is utilized to represent the environmental footprint of the car manufacturer independently, while post-acquisition data is adjusted to mirror the environmental impact of the acquiring parent company. In the case of Opel Automobile GmbH, we consolidated environmental performance data from 2014 to 2017 pertinent to Opel itself. Subsequent to its acquisition, from 2017 to 2021, the environmental data is attributed to the PSA Group. Thereafter, from 2021 onwards, the data corresponds to Stellantis, following its establishment as the parent company.

A.4 Diesel scandal

In the following analysis, we examine asset managers' portfolio allocation decisions following the 2015 Diesel scandal. We restrict the sample period to Q4 2013 to Q4 2017 and define a dummy variable, *Post Dieselgate*, that equals one for Q3 2015 to Q4 2017 and zero otherwise. Table A2 presents the results.

The baseline regression (column 1) shows that mutual funds significantly reduced their exposure to Auto ABS in the wake of the scandal. The manipulation allegations initially centered on Volkswagen, whose financing arm dominates the European securitization market. To account for this, we differentiate between captive and non-captive banks in the second model specification. The interaction term $\text{Post Dieselgate} \times \text{Captive bank}$ is negative and significant, indicating that asset managers divested particularly from Auto ABS issued by captive banks. The rationale behind this is that securitizations issued by captive banks typically exhibit a higher concentration of vehicles from their affiliated manufacturer. In model 3, the coefficient of manufacturer concentration (0.019) remains insignificant, suggesting that this factor did not play a major role in asset managers' investment decisions throughout the period. However, deals with high manufacturer concentration were predominantly sold after the Diesel scandal became public, as indicated by negative and significant interaction term in model 4.

In summary, our results suggest that the mutual fund sector broadly avoided exposures to deals where yet unquantifiable risks related to emissions manipulation were more likely to emerge.

Table A2: Auto ABS investments in the aftermath of the Diesel scandal

	Portfolio weight			
	(1)	(2)	(3)	(4)
Post Dieselgate * Manufacturer HHI				-0.130*** [0.023]
Manufacturer HHI			0.019 [0.014]	0.092*** [0.017]
Post Dieselgate * Captive bank		-0.139*** [0.017]		
Post Dieselgate	-0.129*** [0.010]		-0.130*** [0.010]	
Captive bank		0.081*** [0.011]		
Observations	8,844	8,844	8,844	8,844
R-squared	0.375	0.401	0.375	0.398
Asset controls	Yes	Yes	Yes	Yes
Fund controls	Yes	Yes	Yes	Yes
Quarter FE	No	Yes	No	Yes

The table presents results of mutual funds' preferences for Auto ABS while considering the concentration of vehicle manufacturers within the collateral pool. *Manufacturer HHI* is the Hefindahl-Hirschman index measuring the concentration of vehicle manufacturers in the collateral pool of the deal. *Post Dieselgate* is an indicator equal to one if date is greater or equal to Q3 2015, and zero otherwise. *Captive Bank* is an indicator that equals one if the underlying auto loans were originated by a captive bank. Asset controls include original maturity, coupon rate, the natural logarithm of the ABS tranche size in millions of Euro at issuance, and senior tranche identified in terms of payment priority and risk. Fund controls are the natural logarithm of fund size in millions of Euro, the natural logarithm of fund age in years, the natural logarithm of fund diversification, fund turnover ratio, global category, investment type, base currency, and domicile. Quarter fixed effects, asset controls, and fund controls are included where indicated. The sample period spans Q4 2013 to Q4 2017. The data come from Morningstar, Refinitiv Workspace, and European DataWarehouse. Robust standard errors are reported in square brackets. Statistical significance is denoted by ***, **, and * at the 1%, 5%, and 10% levels, respectively.

A.5 Robustness: Secondary-market repricing around Fit-for-55

Table ?? uses the Bloomberg mid price deviation from par as an alternative dependent variable. This specification does not require converting prices into approximate yields. The signs reverse mechanically relative to spread regressions: securities that experience spread compression should trade at higher prices. Consistent with this interpretation, fuel-type-reporting deals and securities with higher green-fund ownership trade at higher prices after Fit-for-55. The green-ownership coefficient is positive and highly statistically significant, reinforcing the investor-clientele result. The EV-exposure coefficient is positive but not statistically significant, so the price-based specification provides weaker support for the EV channel than the spread-based estimates.

Table ?? examines whether the results depend on the choice of event window. The findings are robust in both narrower (± 12 months) and wider (± 24 months) windows. EV exposure and fuel-type reporting remain associated with lower post-announcement spreads, and green-fund ownership continues to predict stronger spread compression. The magnitude of the green-ownership effect varies across windows, but the sign is stable and the coefficient remains statistically significant. Overall, the robustness tests support the main interpretation: after Fit-for-55, transition-aligned and sustainability-transparent Auto ABS reprice more favorably, with the strongest and most consistent evidence for securities more heavily held by green funds.