

Negative Equity in Auto Lending

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1. Executive Summary

Americans owed more than \$1.6 trillion on auto loans through the fourth quarter of 2023, with more than 100 million active auto finance accounts.¹ Despite the size and prominence of this market, detailed information about the market is limited or non-existent.

In February 2023, the CFPB launched the auto finance data pilot and issued nine market monitoring orders to three banks, three finance companies, and three captive lenders² to provide information about their auto lending portfolios.³ This allowed the CFPB to better understand loan attributes that may result in increased consumer distress.

This report is the first of a series using data from the collection and provides a detailed analysis of financing negative equity, where the trade-in value offered for a consumer's vehicle is less than the outstanding loan balance and the unpaid balance is rolled into the new loan. Including negative equity in financing can place consumers further underwater on their next loan which, for example, may increase the risk of a deficiency balance if the consumer cannot repay the loan.

Key findings from the report include:

1. **More than 10 percent of borrowers financed negative equity from a prior vehicle loan into a new loan.** Between 2018 and 2022, 11.6 percent of all vehicle loans in the dataset included negative equity, 32.1 percent included a positive equity trade-in, and 56.3 percent had no trade-in. The percentage of loans in the dataset that included negative equity ranged from just under 8% in 2022 to just over 17% in 2020. Loans observed in the data had larger loan amounts, larger monthly payments, and higher interest rates than transactions with positive equity or no-trade-ins. For loans in the data in which negative equity was included in financing, the mean negative equity amount was \$5,073 for new vehicle financing transactions and \$3,284 for used vehicle financing transactions. Other reports indicate that the number of transactions that

¹ <https://www.newyorkfed.org/microeconomics/hhdc>. These estimates (which are derived from credit bureau data) do not include auto loans that are not furnished to the credit bureaus; see https://files.consumerfinance.gov/f/documents/cfpb_subprime-auto_data-point_2021-09.pdf.

² Captive lenders are manufacturer-owned finance companies that generally provide below-market interest rate loans to consumers. Some banks also operate as quasi-captive preferred lenders on behalf of certain manufacturers.

³ A sample order can be found in Appendix A.

included negative equity and the average amount of negative equity financed both increased in 2023.

2. **Consumers who financed negative equity from a prior vehicle loan into a new loan were more likely to have their account assigned to repossession within two years.** Consumers who financed negative equity were more than twice as likely to have their account assigned to repossession within two years compared to consumers who had a positive trade-in balance applied and were almost 1.5 times as likely to have their account assigned to repossession within two years than consumers with no trade-in associated with the account.
3. **Consumers who financed negative equity financed larger loans than consumers with a positive equity trade-in, which resulted in average monthly payments 27% higher than consumers with no trade-in and 26% higher than for consumers with a positive trade-in.** Accounts in the dataset in which negative equity was financed had an average amount financed of \$32,316, compared to \$28,244 for accounts with a positive trade in balance and \$26,767 for accounts with no trade-in balance included. This resulted in an average monthly payment for accounts with negative equity included in the financing of \$626 per month, compared to \$496 per month for accounts with a positive trade-in and \$493 per month for accounts with no trade in.
4. **Consumers who financed negative equity had lower credit scores, lower household income, longer loan terms and were more likely to have a co-borrower than consumers with no trade-in or a positive equity trade-in.** The average credit score for consumers who financed negative equity was 704, compared to 752 for accounts with a positive trade-in and 732 for those consumers with no trade-in associated with the account. The average loan term for consumers who financed negative equity was 73 months, compared to 67 months for consumers with no trade-in and 68 months for consumers with a positive equity trade-in.
5. **Consumers who financed negative equity had larger loan-to-value and payment-to-income ratios.** The average loan-to-value ratio for an account with negative equity financed was 119.3 percent, compared to 88.9 percent for accounts with a positive trade-in and 101.6 percent for accounts with no trade-in. The average payment-to-income ratio for consumers that financed negative equity was 9.8%, compared to 8.2% for consumers with no trade-in and 7.7% for consumers with a positive trade-in balance. Higher loan-to-value ratios generally lead to consumers being underwater for longer during the term of their loans than those with lower ratios. Higher payment-to-

income ratios mean that consumers are dedicating a larger amount of their income to auto loan payments, which reduces their ability to weather a financial shock.

6. **Nearly a quarter of consumers financing less expensive vehicles financed negative equity into their loans, compared to nearly 16% of consumers who purchased more expensive vehicles.** In 2020, consumers who financed negative equity connected to the purchase of a vehicle priced at \$50,000 or more financed an average of \$7,402 of negative equity for new vehicles and \$6,250 for used vehicles. All other price tiers in 2020 averaged between \$4,500 and \$6,000 of negative equity for new vehicles and \$2,700 and \$4,500 for used vehicles. Meanwhile, nearly 25 percent of consumers who purchased new vehicles in the \$20,000-\$29,999 price range in 2020 financed negative equity, compared to 15.8 percent of consumers who purchased vehicles that cost more than \$50,000.

7. **The percentage of negative equity financed compared to the prices paid for the vehicle was larger for consumers who financed less expensive vehicles.** The percentage of negative equity compared to the vehicle purchase price was between 23-25 percent for consumers who purchased vehicles priced at \$20,000 or less, compared to 10-14 percent for consumers who purchased vehicles priced above \$40,000.

The auto finance data pilot data indicate that negative equity may lead to worse consumer outcomes, while other data showed the prevalence and amount of negative equity financed rising through 2023.

2. Introduction

After extensive consultation with market participants, fellow regulatory agencies and Federal Reserve officials, market analysts, and consumer researchers and advocates, the CFPB launched the auto finance data pilot⁴ in February 2023. As noted at the launch of the pilot⁵, complete and comprehensive auto lending analyses are nearly impossible because of variations within existing data and the lack of a centralized data source. Of note:

- The variety of lender types in the auto finance market can lead to data gaps. For example, depository institutions are required to submit regular call reports about their activities, while non-depository institutions do not have that same requirement. As such, many datasets are limited in their scope and view.
- The use of different definitions and terms in various data sources leads to data quality issues. For example, data providers may use different credit score cutoff points when defining credit score tiers (superprime, prime, subprime, etc.). When data sets use different thresholds and data buckets, analysis across data sets is exceedingly difficult or, in some cases, impossible.
- Several data sources are proprietary and/or only available to certain market participants, and certain providers will not sell their data to regulatory authorities. Some data sets, even when publicly available, are only useful to individual market participants or small segments of the industry.

Loan Performance Trends. Currently available data fails to provide reliable information on repossessions, including how many days past due a loan typically is before the vehicle is repossessed, how long the consumer has paid on the loan before a repossession, and post-repossession impacts for the borrower and lender. Stakeholders have pointed to a need for more consistent and detailed data on delinquency and default trends, specifically the correlation between delinquency and geography, credit score, and income.

⁴ <https://www.consumerfinance.gov/about-us/blog/our-auto-finance-data-pilot/>

⁵ <https://www.consumerfinance.gov/about-us/blog/our-auto-finance-data-pilot/>

The combined auto finance data pilot dataset includes certain de-identified information for almost 34 million loan originations from 2018 to 2022, including terms, fees, and balances, as well as information on individual servicing events for each loan, if any occurred.⁶

This is the first in a series of reports to provide initial findings from the dataset. In this report, we explore the data related to negative equity included in auto finance transactions to measure overall trends and examine which consumers finance negative equity into the next loan.

⁶ The data elements collected for inclusion in the dataset are identified in the Sample Order at Appendix B. The CFPB is required by statute to take steps to protect the personal information of consumers. This data collection was crafted to ensure that no directly identifiable information— such as name, address, or social security number—was collected.

3. Negative Equity

3.1 Background and Context

Consumers sometimes trade in a vehicle that the consumer currently owns in the process of purchasing and financing another vehicle. In the trade-in process, the consumer sells a car to the auto dealer in connection with the purchase of another vehicle.⁷ If the consumer either owns the trade-in vehicle outright or the value of the trade-in vehicle is greater than the unpaid balance of the existing loan, the consumer often chooses to apply the proceeds from the trade-in as a down payment on the newly purchased vehicle.

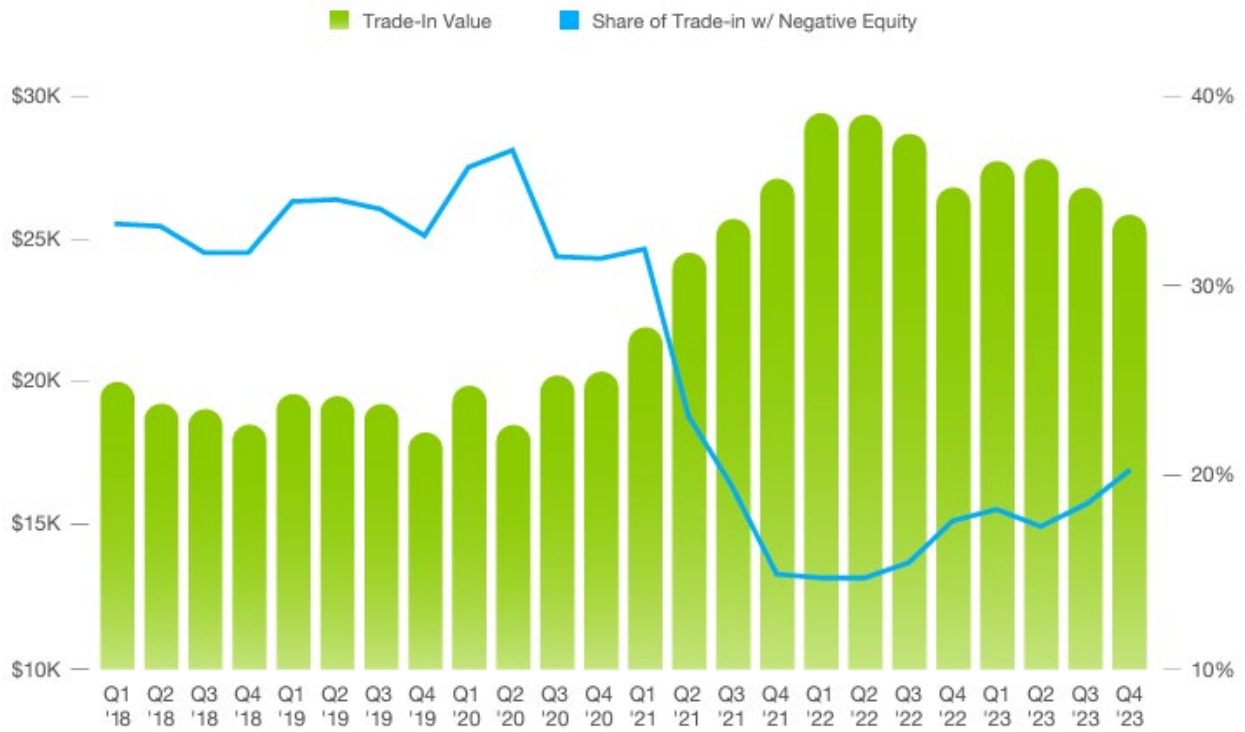
However, in some cases the trade-in value offered is less than the outstanding loan balance on the vehicle. This is referred to as “negative equity.” If the consumer decides to move forward with the transaction, the consumer can either pay off the remaining loan balance using cash on hand, or the negative equity may be included (or “rolled”) in the financing for the vehicle being purchased.

A recent report⁸ indicated that in the fourth quarter of 2023, 20 percent of vehicles traded in were in a negative equity position, an increase from a low point in the first part of 2022. Figure 1 shows the trend followed in that report from 2018 through the end of 2023.

⁷ Dealers may also purchase a car from a consumer without being part of a sales transaction. However, those transactions would not be part of this dataset and as such are not discussed here.

⁸ <https://static.ed.edmunds-media.com/unversioned/img/industry-center/press/lp-promos/2023-q4-edmunds-used-vehicle-report.pdf>

FIGURE 1: TRADE IN VALUES AND THE SHARE OF TRADES WITH NEGATIVE EQUITY



Source: Edmunds

While the data from the auto finance data pilot ends in 2022, that data shows the beginning of the increase in negative equity transactions similar to that shown in Figure 1.

TABLE 1: NUMBER AND PERCENTAGE OF ORIGINATIONS WITH NEGATIVE EQUITY FINANCED BY YEAR

	No Trade-In	Positive Equity Trade-In	Negative Equity Trade-In
2018			
Number of Originations	2,205,623	1,282,237	468,432
Share of Originations	55.8%	32.4%	11.8%
2019			
Number of Originations	2,337,903	1,266,622	550,486
Share of Originations	56.3%	30.5%	13.3%
2020			
Number of Originations	2,493,407	1,363,547	637,999

	No Trade-In	Positive Equity Trade-In	Negative Equity Trade-In
Share of Originations	55.5%	30.3%	17.2%
2021			
Number of Originations	2,763,645	1,672,768	544,661
Share of Originations	55.5%	33.6%	10.9%
2022			
Number of Originations	2,210,480	1,265,014	298,499
Share of Originations	58.6%	33.5%	7.9%
Total			
Number of Originations	12,011,058	6,850,188	2,500,077
Share of Originations	56.2%	32.1%	11.7%

Source: CFPB auto finance data pilot

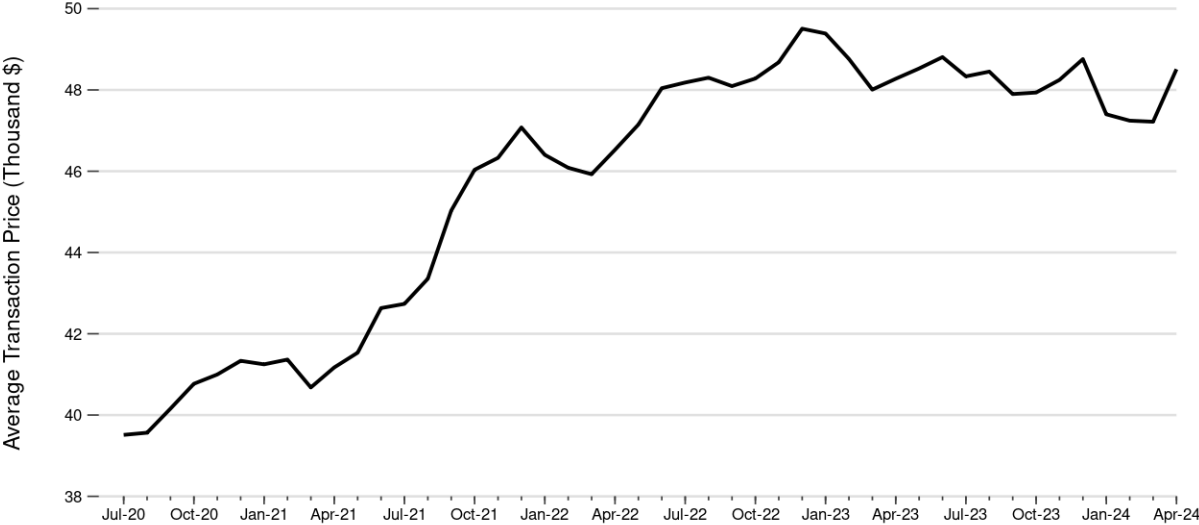
As we see in Table 1, the percentage of originations with negative equity financed grew each year from 2018-2020 and dropped in 2021 and 2022, similar to the trajectory shown in Figure 1. However, publicly available data on negative equity doesn't provide insight into whether that negative equity is equally spread across different consumers, or whether certain consumers are more likely to finance negative equity than others. Further, existing data does not show how financing negative equity may affect consumer outcomes.

Financing negative equity may have a significant financial impact on consumers and could place the consumer in the same or worse negative equity position the next time they finance a vehicle. Further, consumers will pay interest over the life of the new loan on this previous balance for a potentially longer period than the consumer would have under the initial loan. On the other hand, including negative equity in the new financing might allow a consumer to change to a vehicle more appropriate to the consumer's current situation.

New car prices increased rapidly in 2021 in part because of inventory shortages caused by pandemic supply chain interruptions. New car inventories have recently begun to normalize,

and some manufacturers have reduced prices for certain vehicles, which has moderated new car pricing. Figure 2 shows the increase in the average transaction price for new cars over time.⁹

FIGURE 2: AVERAGE NEW CAR TRANSACTION PRICE



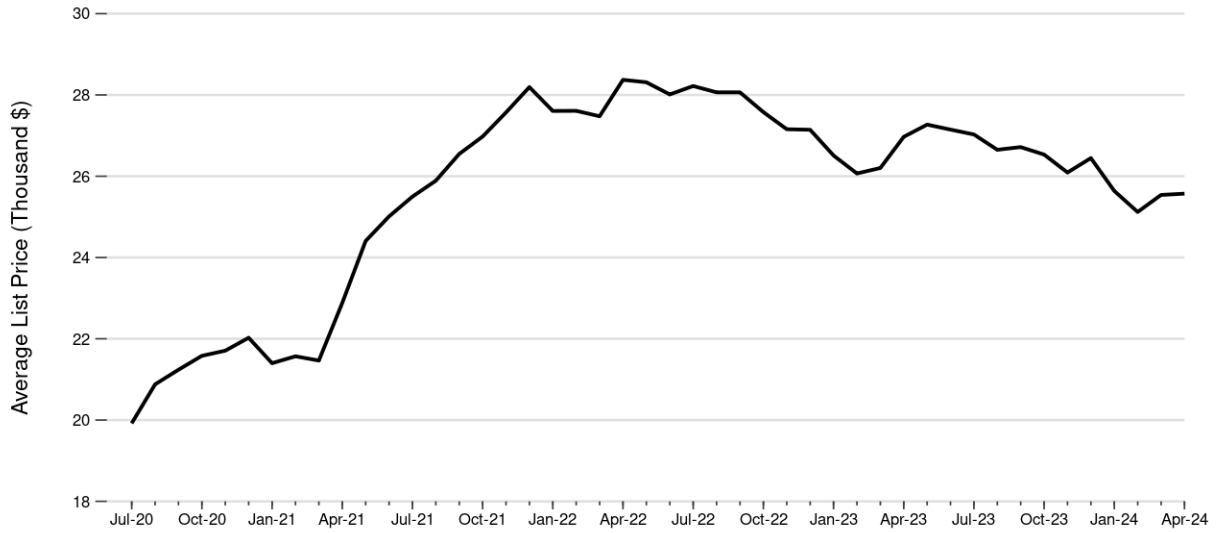
Source: Cox Automotive

Used car prices increased even more rapidly as potential new car buyers bought from the used car market instead. Used car prices have also fallen from their peak in 2022. This dynamic has led to a more rapid depreciation trajectory than normal for consumers that purchased vehicles at the top of the market. Figure 3 shows the average used car listing price over time.¹⁰

⁹ <https://www.coxautoinc.com/market-insights/april-2024-atp-report/>

¹⁰ <https://www.coxautoinc.com/market-insights/used-vehicle-inventory-april-2024/>

FIGURE 3: AVERAGE LISTING PRICE FOR USED CARS

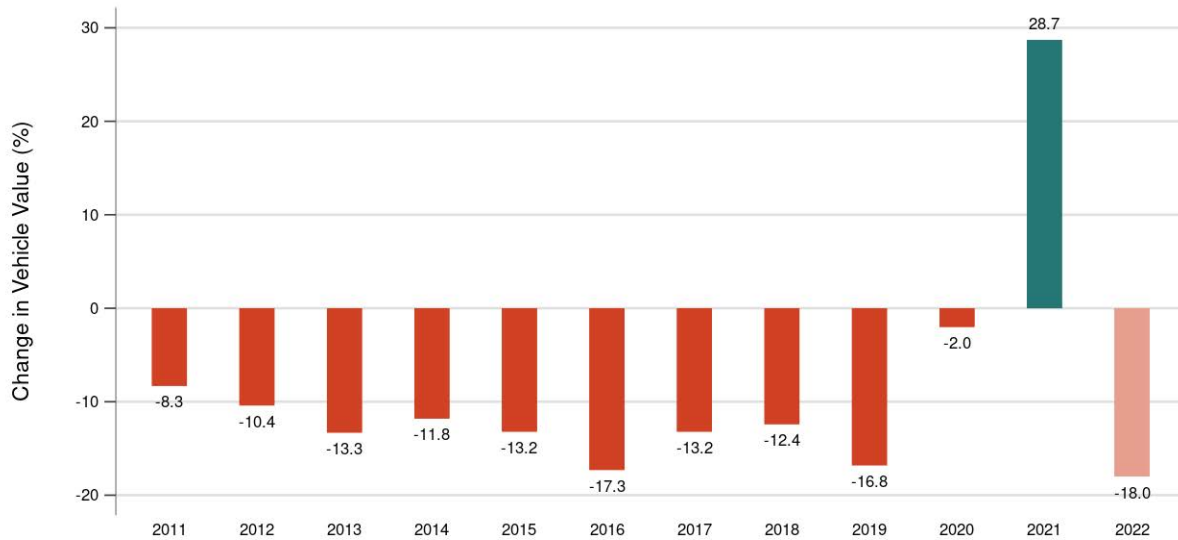


Source: Cox Automotive

While used car prices remain above pre-2020 levels, the rapid increase in prices in 2021 was followed by a period of faster-than-normal depreciation. This means that for consumers who purchased new or used cars at or near the height of the market, the values of their vehicles have declined at a rapid pace. Figure 4 shows the used vehicle depreciation rates for vehicles between 2–6-years of age from 2011-2022.¹¹

¹¹ <https://www.blackbook.com/depreciation-reports/black-book-fitch-ratings-vehicle-depreciation-report-2022/>.

FIGURE 4: USED VEHICLE DEPRECIATION FOR VEHICLES BETWEEN TWO AND SIX YEARS OF AGE, 2011-2022



Source: Black Book and Fitch Ratings

Note: 2022 is currently a forecasted estimate.

Another factor that impacts negative equity is loan amortization. Amortization describes the way in which payments are allocated to the principal balance (the amount borrowed) and the interest owed on the loan. In a simple interest loan, the interest owed over the life of the loan is spread out equally for each loan payment. If a borrower repays the loan early, the lender has to calculate whether it collected too much or not enough interest from the payments made and either provide a refund to the consumer or add the unpaid interest to the payoff amount. For this reason, lenders have largely moved away from simple interest vehicle financing.

Instead, the vast majority of loans are amortizing. In an amortizing loan, while the monthly payment is the same each month, each monthly payment is calibrated to collect the interest owed that month based on a declining loan balance over time. As such, a greater percentage of the monthly payment is applied to interest early in the life of the loan, and as the loan is repaid a greater percentage is applied to the principal at the end. Thus, the principal balance decreases slowly at first and decreases more quickly as the loan moves closer to the end of the loan term.

Since a vehicle is a depreciating asset, the value of the vehicle declines throughout the life of the loan. For new cars, the vehicle value drops sharply the moment the consumer takes ownership of the vehicle, then the depreciation rate slows after the first 2-3 years of ownership. As we see in Figure 4 above, used car depreciation can vary year to year.

The unusual price changes starting in 2020 suggested that a greater share of transactions would include negative equity. The data above show, and the auto finance data pilot data confirm, that

this increase in transactions financing negative equity did in fact occur. The negative equity data within the auto finance data pilot illuminate which groups of consumers are financing negative equity, the potential implications this presents, and a more precise view of potential consumer risk.

3.2 Consumer and Loan Characteristics

Among loans in the auto finance data pilot dataset originated between 2018 and 2022, 32 percent included a trade-in that netted a positive amount that was applied in whole or in part to the transaction, while 12 percent of transactions included negative equity. The remaining 56 percent of loans had no record of a trade-in associated with the transaction. Table 2 shows the key characteristics of each category in the auto finance data pilot dataset.

TABLE 2: CHARACTERISTICS OF CONSUMERS AND LOANS WITH NEGATIVE EQUITY (ALL FIGURES AVERAGES)

	No Trade-In	Positive Equity Trade-In	Negative Equity Trade-In
Vehicle Price	\$28,664	\$35,461	\$32,316
Amount Financed	\$26,767	\$28,244	\$36,805
Total Percent Down	15.9%	25.5%	0.2%
Cash Percent Down	15.5%	10.1%	7.7%
Monthly Payment Amount	\$493	\$496	\$626
Contract Rate	8.0%	6.1%	7.7%
Loan Term	67 months	68 months	73 months
Loan-to-Value Ratio	101.7%	89.1%	119.3%
Payment-to-Income Ratio	8.2%	7.7%	9.8%
Co-Borrower Present	29.3%	30.7%	34.0%
Credit Score	732	752	704
Monthly Household Income	\$8,724	\$9,175	\$8,263
Observations	12,064,996	6,885,752	2,495,383
Percentage of Observations	56%	32%	12%

Source: CFPB auto finance data pilot

Within the auto finance data pilot dataset, the mean negative equity amount was \$5,073 for new vehicle financing transactions and \$3,284 for used vehicle financing transactions.

Consumers who financed negative equity:

- Financed larger loans than consumers with a positive equity trade-in,
- Had significantly higher average monthly payments than consumers with no trade-in or a positive trade-in,
- Paid higher interest rates on average than did consumers with positive equity trade-ins, but less than consumers without a trade-in,
- Had longer loan terms than other consumers, and
- Had lower credit scores, lower household income, and were more likely to have a co-borrower than consumers with no trade-in or a positive equity trade-in.

Consumers who financed negative equity have significantly higher loan-to-value ratios than those who did not have a trade-in or who had a positive trade-in balance. A loan-to-value ratio over 100 percent means that the consumer owes more than the car is worth before the consumer drives the car off the lot. Coupled with the discussion above about depreciation and amortization, the higher loan-to-value ratio for consumers who financed negative equity means that those consumers will owe more on the car than it is worth for much of the life of the loan.

We see from Table 2 that the average loan-to-value ratio for consumers who financed negative equity was 119.3 percent. Table 3 below shows the loan-to-value data in more detail.

TABLE 3: LOAN-TO-VALUE RATIO DETAIL FOR CONSUMERS FINANCING NEGATIVE EQUITY AND COMPARISON TO OTHER CONSUMERS

LTV	No Trade-In	Positive Equity Trade-In	Negative Equity Trade-In
25 th Percentile	87.7%	71.6%	107.7%
Median	103.9%	90.8%	119.6%
75 th Percentile	118.4%	108.1%	131.0%
Mean	101.7%	89.1%	119.3%

Source: CFPB auto finance data pilot

These data show that the LTV ratios for consumers with negative equity ranged higher than consumers in other equity positions at the start of their new loan. While only a quarter of consumers financing negative equity had LTV ratios of 108 percent or lower, 75 percent of consumers with positive equity trade-ins had LTVs below 108 percent.

Of further concern, payment-to-income ratio for consumers who financed negative equity into their loans was larger than that for other consumers in the dataset. Payment-to-income ratio measures the amount of the consumer's monthly payment on their auto loan to their monthly income. A higher payment-to-income ratio indicates a reduction in a consumer's ability to weather a financial shock.

Table 4 provides more detail from the auto finance data pilot dataset on payment-to-income ratio for consumers financing negative equity.

TABLE 4: PAYMENT-TO-INCOME RATIO DETAIL FOR CONSUMERS FINANCING NEGATIVE EQUITY AND COMPARISON TO OTHER CONSUMERS

PTI	No Trade-In	Positive Equity Trade-In	Negative Equity Trade-In
25 th Percentile	4.7%	4.5%	6.6%
Median	7.4%	6.9%	9.4%
75 th Percentile	10.9%	10.2%	12.6%
Mean	8.2%	7.7%	9.8%

Source: CFPB auto finance data pilot

Table 4 shows that the payment-to-income ratio for consumers who financed negative equity ranged from 6.6 percent at the lowest quartile to 12.6 percent at the highest quartile, higher than for other consumers.

This data suggests that financing negative equity for certain consumers could increase the chance of excessive risk-layering, where the financing some consumers receive may have more than one attribute that each lead to increased risk of delinquency or default. Figure 5 provides an indication that this may be the case.

FIGURE 5: PERCENTAGE OF NEW CAR LOANS ASSIGNED TO REPOSSESSION WITHIN TWO YEARS OF ORIGINATION BY TRADE-IN STATUS



Source: CFPB auto finance data pilot

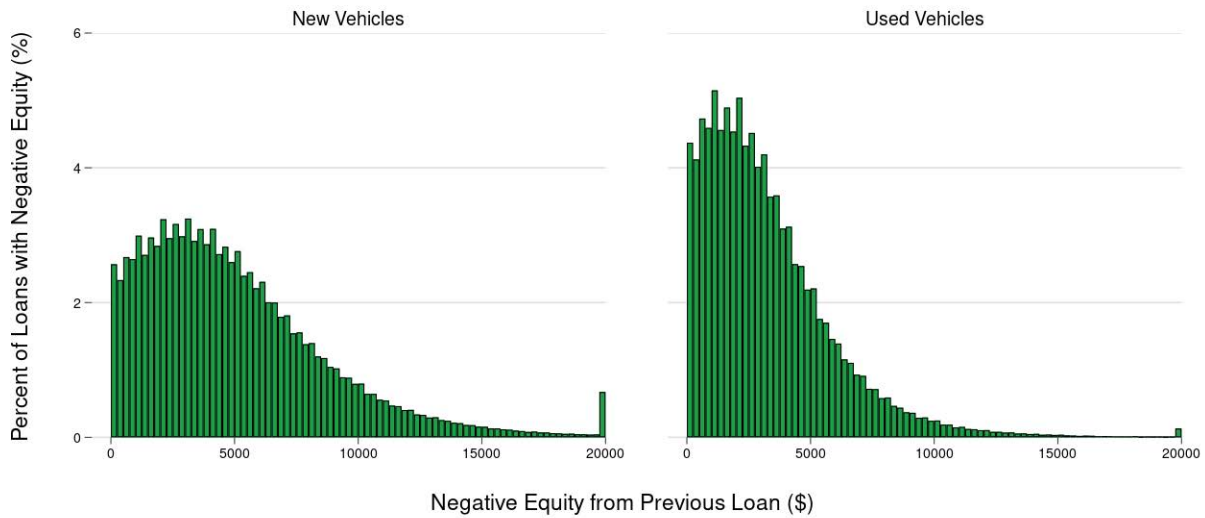
Figure 5 suggests that consumers who finance negative equity were more than twice as likely to have their loan assigned to repossession within two years of the loan's origination than those with positive equity trade-ins, and 1.5 times as likely as consumers with no trade-in associated with the account. In later reports, we will explore other measures of consumer risk and the potential impact of vehicle finance transactions in which multiple risk factors are present.

3.3 Negative Equity Prevalence and Average Amounts

For loans in the auto finance data pilot data in which negative equity was included in financing, the mean negative equity amount was \$5,073 for new vehicle financing transactions and \$3,284

for used vehicle financing transactions. However, there is a substantial amount of variation from loan to loan. Figure 6 shows the distribution of the amount of negative equity for loans where negative equity from a trade-in was included in the amount financed.

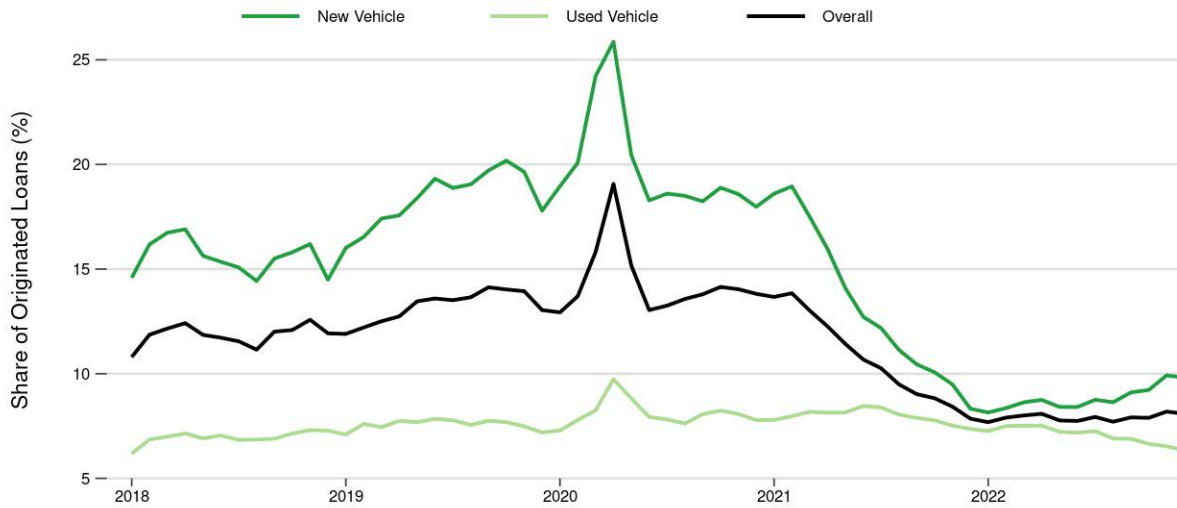
FIGURE 6: DISTRIBUTION OF AMOUNT OF NEGATIVE EQUITY INCLUDED IN FINANCING AMONG THOSE WITH NEGATIVE EQUITY



Source: CFPB auto finance data pilot

The left panel shows the distribution for loans on new vehicles and the right panel shows the distribution for loans on used vehicles. The negative equity rolled into used vehicle financing tends to be smaller than the amounts rolled into new vehicle financing. Additionally, there is a much wider variety of negative equity amounts financed into loans for new vehicles than negative equity financed into loans for used vehicles.

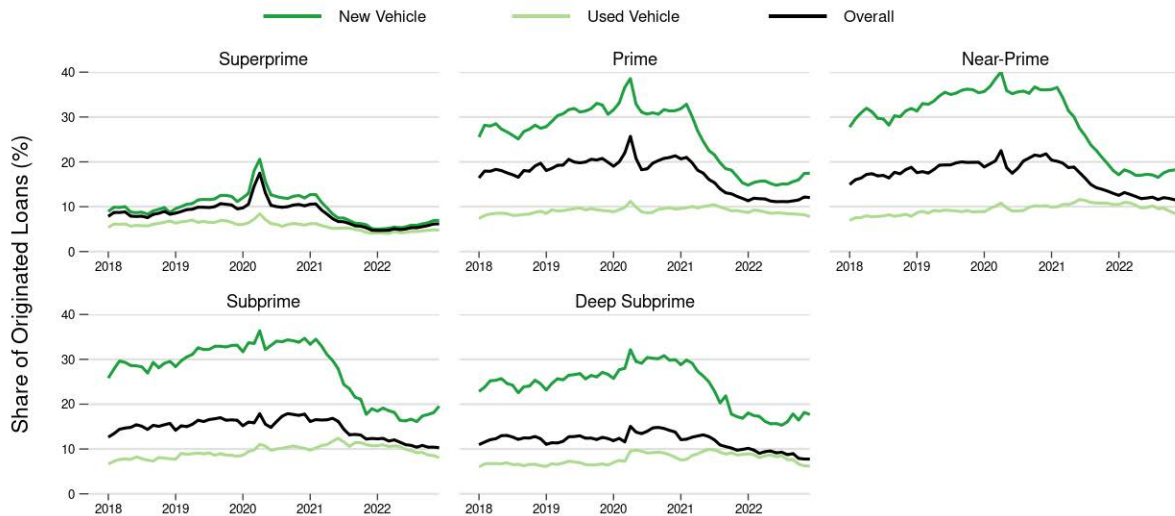
FIGURE 7: SHARE OF LOANS WITH PRIOR LOAN BALANCE (NEGATIVE EQUITY) INCLUDED IN FINANCING OVER TIME



Source: CFPB auto finance data pilot

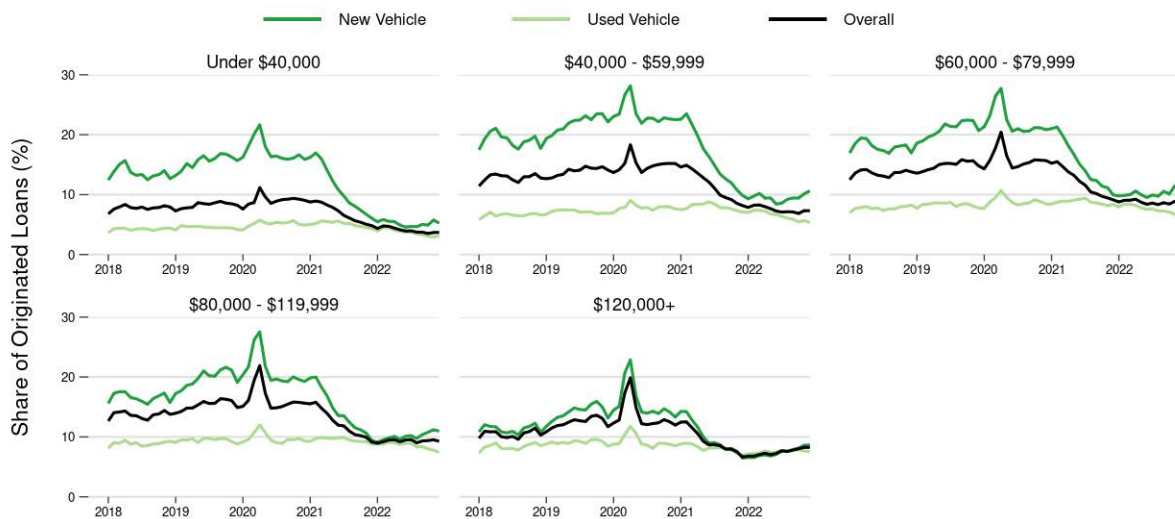
Figure 7 shows the share of originations with negative equity over time between 2018 through 2022. From 2018 through the first quarter of 2021, the share of originations with negative equity had a monthly average of 13.2 percent and a range between 11 percent and 14 percent of originated loans each month, except for a sharp spike from March 2020 through May 2020. Beginning in early 2021, the share of new vehicle purchases with negative equity declined significantly, from 19 percent in February 2021 to 8.3 percent at the end of 2021. The share of used vehicle transactions with negative equity remained roughly constant, and the gap in the share of transactions with negative equity between new car financing and used car financing closed almost completely by the outset of January 2022 before growing over the course of the year.

FIGURE 8: NEGATIVE EQUITY BY CREDIT SCORE BUCKET OVER TIME



Source: CFPB auto finance data pilot

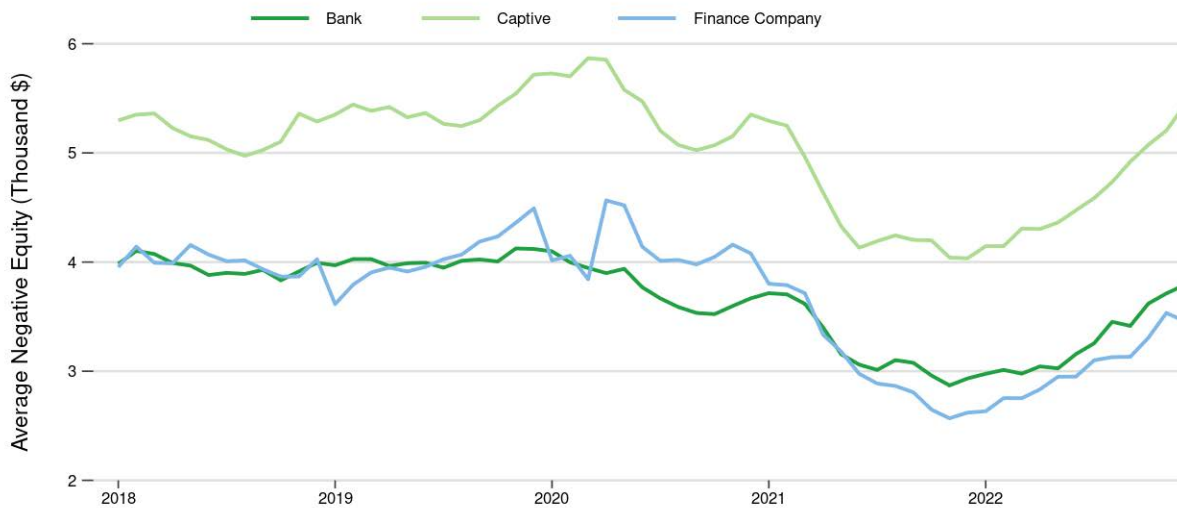
FIGURE 9: NEGATIVE EQUITY BY INCOME BUCKET OVER TIME



Source: CFPB auto finance data pilot

The auto finance data pilot data show broadly similar trends in negative equity across credit score and income groups compared to the overall trend. We note that consumers in the middle-income groups showed a higher incidence of negative equity in new vehicle financing. Higher income and credit score consumers, meanwhile, were consistently less likely to finance negative equity into their loans.

FIGURE 10: AVERAGE NEGATIVE EQUITY BY LENDER TYPE



Source: CFPB auto finance data pilot

In Figure 10, we see that captive lenders in the dataset included the greatest dollar amount of negative equity in financing, while finance companies and banks included similar levels of negative equity. For all three lender types, the decline in the incidence of negative equity in new vehicle financing in 2021 corresponded to a decline in the average amount of negative equity included in financing.

3.4 Negative Equity and Vehicle Price

The auto finance data pilot data show that consumers who financed less expensive vehicles were more likely to include negative equity in financing, and the percentage of negative equity to the total vehicle price was larger. On the other hand, consumers who financed more expensive vehicles financed larger amounts of negative equity,¹²

As seen in Table 5, nearly a quarter of consumers who purchased new vehicles in the \$20,000-\$29,000 price range in 2020 financed negative equity, compared to 15.8 percent of consumers who purchased vehicles that cost more than \$50,000.

¹² When comparing negative equity to total vehicle price, we excluded 655 loans in which the amount of negative equity financed was more than the vehicle price.

TABLE 5: SHARE OF LOANS FOR NEW VEHICLES WITH NEGATIVE EQUITY TO ALL NEW CAR LOANS BY PRICE OF THE VEHICLE

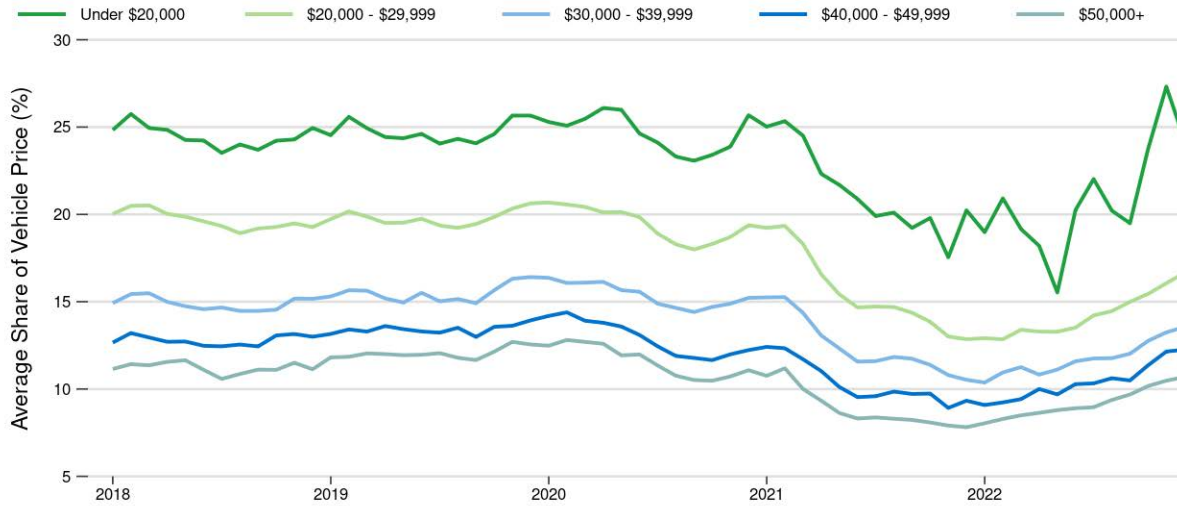
Year	Under \$20,000	\$20,000 - \$29,999	\$30,000 - \$39,999	\$40,000 - \$49,999	\$50,000+
2018	16.5%	19.6%	13.1%	12.1%	10.5%
2019	17.0%	22.1%	16.5%	15.6%	14.0%
2020	18.3%	24.1%	18.3%	16.2%	15.8%
2021	14.2%	18.6%	13.7%	11.4%	9.3%
2022	7.4%	10.8%	9.5%	8.3%	7.2%

Source: CFPB auto finance data pilot

Not only did a higher share of consumers in the dataset that purchased less expensive vehicles finance negative equity, but the amount of negative equity financed was larger for consumers purchasing less expensive vehicles relative to the total vehicle price. Figure 11 shows the percentage of negative equity financed compared to the total vehicle price by income group.¹³

¹³ We note that the population of new vehicles sold for under \$20,000 towards the end of 2021 and throughout all of 2022 is quite low, which resulted in rapidly changing averages from month to month for this category of vehicles. Between 2018 and 2020, 5.6 percent of loans for new vehicles had a price under \$20,000. Between 2021 and 2022, this segment of vehicles represented 2.1 percent and 0.7 percent of loans, respectively.

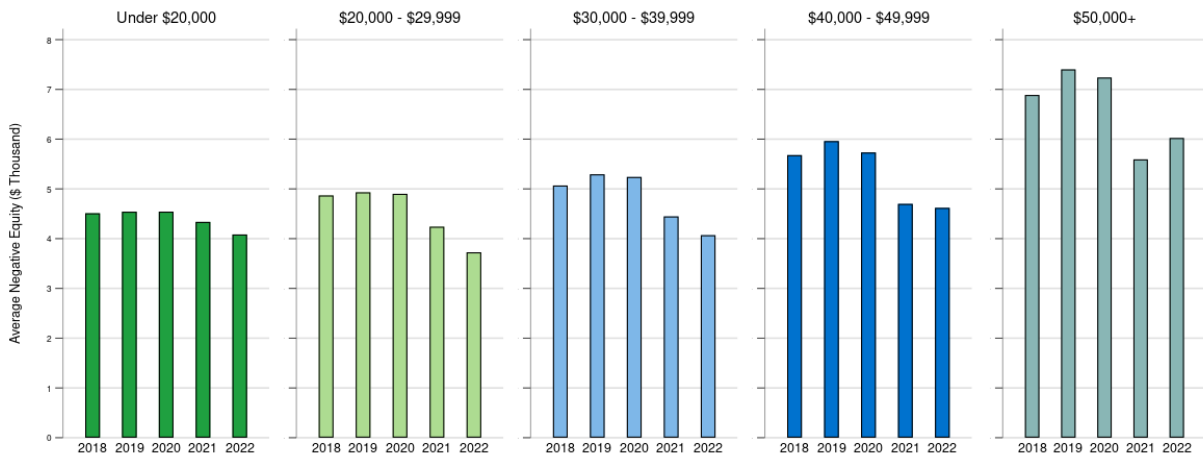
FIGURE 11: NEGATIVE EQUITY AS A PERCENTAGE OF NEW VEHICLE PRICE BY PRICE TIER



Source: CFPB auto finance data pilot

While negative equity represented a larger proportion of the vehicle price for less expensive vehicles, the average amount of negative equity financed was larger for transactions involving more expensive vehicles. Figure 12 shows that consumers including negative equity in the financing of new vehicles priced between \$40,000 and \$49,999 or over \$50,000 financed substantially more negative equity than did consumers purchasing less expensive vehicles.

FIGURE 12: AVERAGE NEGATIVE EQUITY INCLUDED IN NEW VEHICLE FINANCING BY VEHICLE PRICE



Source: CFPB auto finance data pilot

The prevalence of negative equity for used car financing is generally similar across most price levels. Table 6 shows significantly fewer used car financing transactions that included negative equity for vehicles under \$20,000 compared to other price tiers.

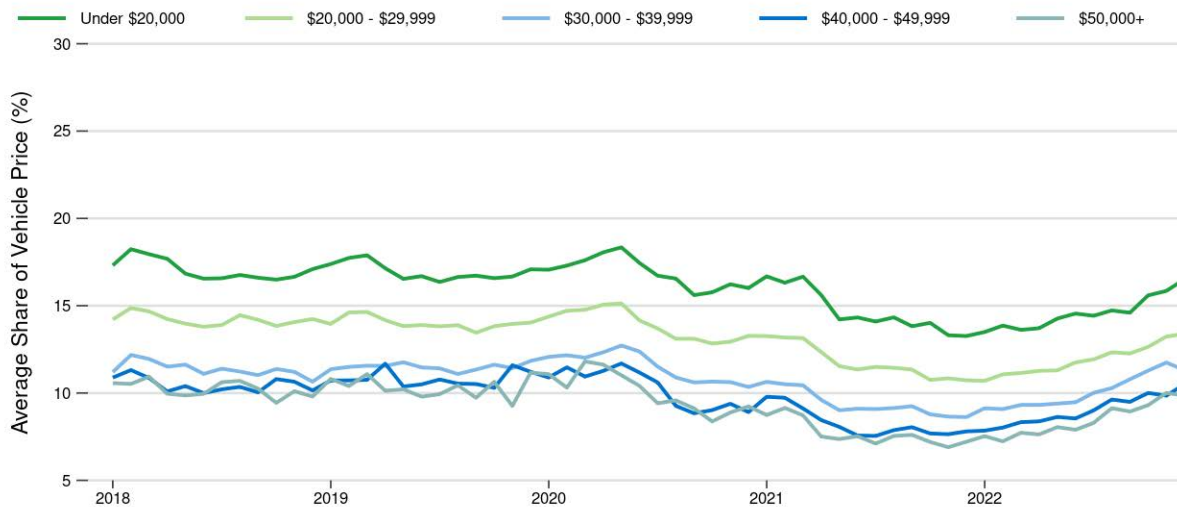
TABLE 6: SHARE OF LOANS FOR USED VEHICLES WITH NEGATIVE EQUITY TO ALL LOANS FOR USED CARS BY PRICE OF THE VEHICLE

Year	Under \$20,000	\$20,000 - \$29,999	\$30,000 - \$39,999	\$40,000 - \$49,999	\$50,000+
2018	4.7%	10.0%	10.6%	10.9%	11.4%
2019	5.1%	10.5%	11.3%	11.9%	12.3%
2020	5.6%	10.5%	11.0%	10.7%	10.5%
2021	5.1%	9.5%	10.1%	9.3%	8.5%
2022	3.4%	7.8%	8.8%	8.4%	8.3%

Source: CFPB auto finance data pilot

While the prevalence of negative equity in the used vehicle market was more evenly distributed across price tiers than in the new vehicle market, Figure 13 shows that, similar to the new vehicle market, the amount of negative equity financed was larger relative to vehicle price for less expensive used vehicles than for more expensive used vehicles.

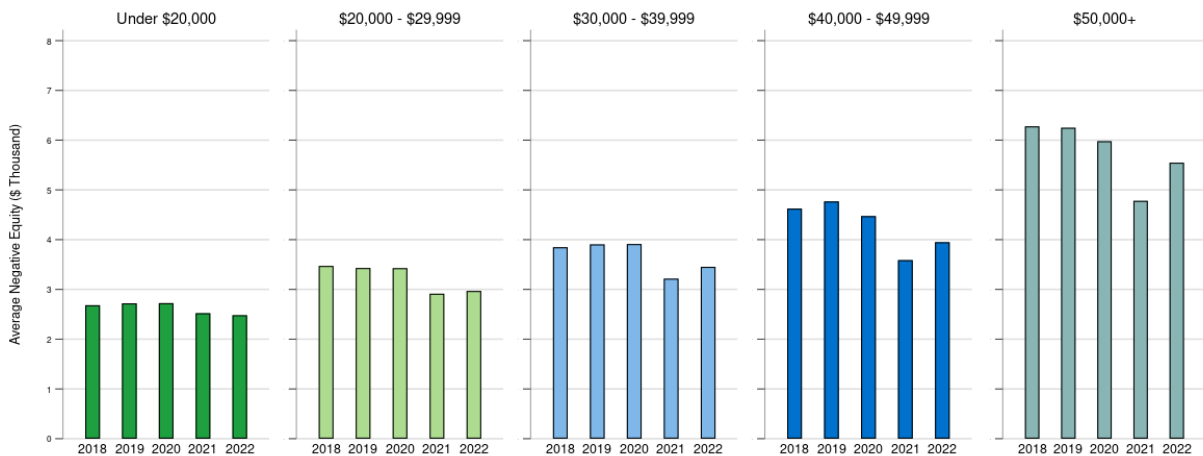
FIGURE 13: NEGATIVE EQUITY AS A PERCENTAGE OF USED VEHICLE PRICE BY PRICE TIER



Source: CFPB auto finance data pilot

Figure 14 shows that in every year of the dataset, the average negative equity included in used vehicle financing for more expensive vehicles was noticeably higher than in loans for less expensive vehicles.

FIGURE 14: AVERAGE NEGATIVE EQUITY INCLUDED IN USED VEHICLE FINANCING BY VEHICLE PRICE



Source: CFPB auto finance data pilot

The decline from 2020 to 2021 in average negative equity financed was more pronounced for consumers purchasing more expensive vehicles. Unlike in the new vehicle financing market, average negative equity increased for nearly every price tier from 2021 to 2022 in the used market. In the new vehicle market this only occurred for consumers purchasing vehicles priced at \$50,000 or more.

The significant increase in car prices post 2020 followed by a drop in prices from their peak may lead to greater levels of negative equity included in financing in the future.

3.5 Conclusion

The auto finance data pilot suggests that consumers who financed negative equity were more likely to have their account assigned to repossession within two years than other consumers. The data further show that consumers with lower incomes and lower credit scores were more likely to finance negative equity into their loans, and that consumers who financed negative equity had higher loan-to-value and payment-to-income ratios. All of the attributes suggest a higher level of consumer risk.

The current auto market and larger economic environment also present unique challenges. As noted above, used car prices are dropping from record high levels at a faster-than-normal pace,

putting more consumers at risk for owing substantially more on their loan than the vehicle is worth. Current data also show that delinquencies are rising in all credit markets, including auto lending.¹⁴ With financing transactions that include negative equity increasing, we may see additional consumer stress, particularly if economic conditions change. With the understanding that consumer outcomes for those who financed negative equity seem to be worse than for those who did not, the CFPB will more closely examine the data on and lender use of this practice.

¹⁴ <https://www.newyorkfed.org/newsevents/news/research/2024/20240514>

APPENDIX A:

Data Overview

The auto finance data pilot includes loans originated or serviced by respondents between January 1, 2018, and December 31, 2022. The full dataset includes certain de-identified information¹⁵ about roughly 33.8 million loans, with combined loan amounts at origination of roughly \$900 billion.

From this full dataset, we filtered out outliers and data that may have skewed the analysis. We excluded loans for those vehicles classified as “exotic” vehicles.¹⁶ We further excluded vehicles with a purchase price over \$1.25 million, as these loans were likely loans secured by collateral other than consumer vehicles. We also excluded loans for borrowers with annual incomes above \$1.5 million, as those loans are not generally reflective of the consumer population.

Additionally, in cases where we could determine the financing was for recreational vehicles (RVs), trailers, commercial vehicles, motorcycles, or other similar non-consumer vehicle products, we excluded those from the data. In the same vein, we excluded loans with lengths greater than 10 years, as this also indicated that the collateral were RVs or other similar non-consumer vehicles.

Finally, we excluded loans in which the data values reported seemed to be incorrect, including accounts in which the vehicle price was \$0 and accounts in which the consumer monthly income reported was less than the reported monthly payment. We also excluded loans scheduled to last less than 3 years as these are atypical of the general universe of auto loans. Net of these exclusions the auto finance data pilot dataset includes 33.2 million loans.

¹⁵ The data elements collected for inclusion in the dataset are identified in the Sample Order at Appendix B. The de-identified dataset does not contain direct consumer identifiers, such as borrower names, addresses, etc.

¹⁶ Experian Velocity[®] provides insights into new and used auto sales and finance trends for auto loan originations. Vehicles in the dataset are identified as exotic, luxury, and non-luxury by using information from Experian Velocity[®], which provides vehicle classifications for each make/model/year combination. Respondents were asked to provide a truncated vehicle identification number (VIN) as part of the auto finance data pilot data collection. In general, the first 11 digits in a VIN for vehicles manufactured since 1981 encode the make, model, and year of manufacture for the vehicle. The last six digits are the serial number for a specific vehicle. Respondents were required to only provide the first 11 digits to ensure that no consumers or their vehicles would be directly identified to the CFPB. The 11-digit VIN prefixes were decoded for make, model, and year using a database provided by the National Highway Safety Administration.

Table 7 shows the number of accounts that open serviced within each year. For any analysis of loan servicing metrics throughout this series of reports, we are using this set of 33.2 million loans.

TABLE 7: OPEN ACCOUNTS BY YEAR, 2018-2022

Year	Open Accounts
2018	14,634,784
2019	16,070,160
2020	17,338,139
2021	18,949,621
2022	18,586,938

Source: CFPB auto finance data pilot

Of these 33.2 million loans, many were originated before 2018. While our data include pre-2018 origination information for loans serviced in 2018 or later, they do not include pre-2018 origination information for loans that were paid in full, prepaid, repossessed, or otherwise terminated before 2018.

Therefore, the data included in this dataset for loans originated prior to 2018 are not fully representative, but rather only representative of accounts that were still open as of January 1, 2018. As such, we limit our analysis focused on loan or vehicle characteristics at origination to the 22.2 million loans in the dataset that were originated between 2018 and 2022. We will use origination data for loans serviced between 2018 and 2022 in reports that focus on servicing-related outcomes and characteristics.

Finally, in our analysis of loan originations, we also excluded refinance transactions as they often have loan terms that can be significantly different than vehicle purchase financing. Excluding loans originated before 2018 and refinance transactions yields a dataset of approximately 21.4 million originations totaling approximately \$600 billion.

Table 8 shows the number of originations in the auto finance data pilot data by year. This set of 21.4 million loans is used in analysis of auto loan origination metrics throughout this series of reports.

TABLE 8: ORIGINATIONS BY YEAR, 2018-2022

Year	Originations
2018	3,956,730
2019	4,155,383
2020	4,495,198
2021	4,981,293
2022	3,774,149

Source: CFPB auto finance data pilot

Table 9 shows the number of loans originated between 2018 and 2022 by type of lender. Banks and captive finance companies each originated a little less than half of the loans in the data, finance companies originated the remainder.

TABLE 9: NUMBER OF ACCOUNTS ORIGINATED 2018-2022 AND PERCENTAGE OF TOTAL BY LENDER TYPE

Lender Type	Number of Accounts	Percentage of Total
Banks	9,257,218	43.34%
Captives	10,337,974	48.39%
Finance Companies	1,766,148	8.27%

Source: CFPB auto finance data pilot

To compare our data to the overall market, Table 10 below provides the market shares of various lender types in Experian Velocity® data from 2018-2022.¹⁷

¹⁷ Experian Velocity® provides insights into new and used auto sales and finance trends for auto loan originations. We use these data to establish benchmark statistics for areas where there is overlap between these data and the auto finance data pilot.

TABLE 10: MARKET SHARE OF DIFFERENT LENDER TYPES FROM EXPERIAN VELOCITY®

Lender Type	Percentage of Market
Bank	33.3%
Credit Union	23.7%
Captive	19.8%
Finance Company	12.4%
BHPH / Other	10.7%

Source: Experian Velocity®

Comparing the share of lender types for the auto finance data pilot in Table 9 and the market-wide share of lender types shown in Table 10, we see that, when compared to the overall market, captives and banks are over-represented in the auto finance data pilot dataset while finance companies are under-represented. Credit unions and Buy-Here-Pay-Here dealerships were not included in the auto finance data pilot dataset.

Table 11 below shows the distribution of credit score types both in the auto finance data pilot data and in Experian Velocity® data from 2018-2022. We use the following methodology to classify loans by credit score. For loans with multiple borrowers, we used the maximum credit score of all borrowers, as the CFPB believes that is generally consistent with how lenders typically underwrite loans with multiple borrowers. We placed loans into one of five categories depending on the consumer’s credit score at origination¹⁸: deep subprime (below 580), subprime (580-619), near prime (620-659), prime (660-719), and superprime (720 or higher).

The table below shows that a majority of loans in the data are in the superprime credit score category, and a large majority (more than 80 percent) have credit scores that are near-prime or higher. The table also shows that the distribution of credit scores in our data is similar to the distribution of credit scores in the overall market despite the differences between the auto finance data pilot dataset and the overall market in the representation of various lender types.

¹⁸ In the orders we asked respondents to provide borrower and co-borrower credit scores and to indicate which credit score provider was used. All respondents reported using FICO scores. However, not every respondent indicated which specific FICO model they used.

TABLE 11: PERCENTAGE OF ALL LOANS BY CREDIT SCORE AT ORIGINATION

Credit Score at Origination	Percentage of Loans (CFPB auto finance data pilot)	Percentage of Loans (Experian Velocity®)
Superprime	53.00%	53.07%
Prime	18.49%	15.04%
Near-Prime	10.96%	11.16%
Subprime	8.03%	10.00%
Deep Subprime	9.52%	10.74%

Source: CFPB auto finance data pilot and Experian Velocity®

Table 12 below shows the distribution of total income across originations in the data. To calculate total income, we added together the incomes of all borrowers associated with the same account. The CFPB believes this is consistent with how lenders typically underwrite loans that include multiple borrowers.

TABLE 12: PERCENTAGE OF TOTAL LOANS BY INCOME AT ORIGINATION

Income at Origination	Percentage of Total Loans
Under \$40,000	13.19%
\$40,000-\$59,999	20.40%
\$60,000-\$79,999	19.88%
\$80,000-\$119,999	22.20%
Over \$120,000	24.33%

Source: CFPB auto finance data pilot

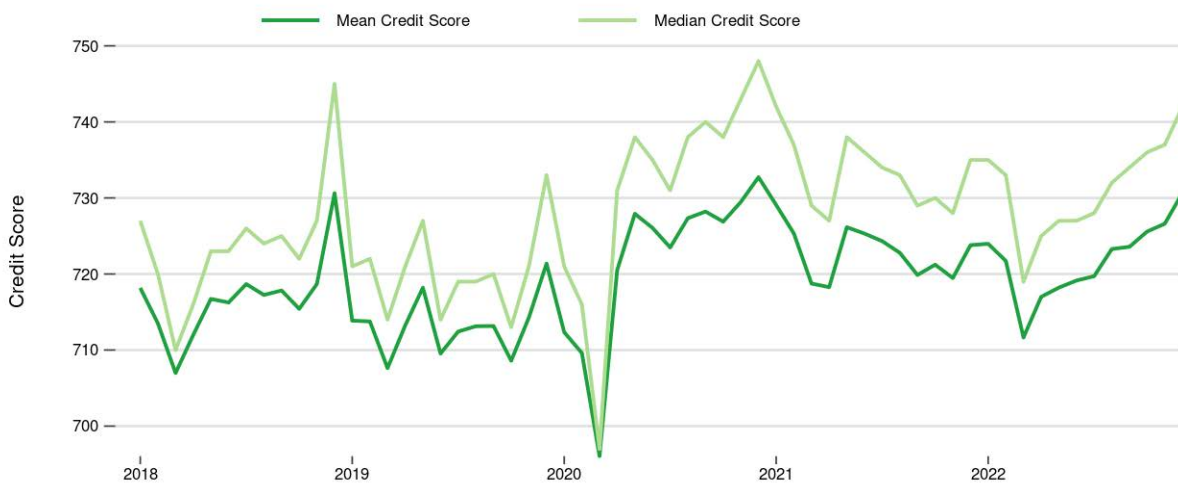
Throughout these reports, we will study trends in the auto market over time. To provide context for this discussion, Figures 15 and 16 below show how borrower credit scores and income have evolved over time. Generally, these figures show that credit scores for the auto finance data pilot data are in line with other sources measuring average credit scores in the auto lending market.¹⁹ Meanwhile, the median income in the auto finance data pilot data trends slightly above median

¹⁹ <https://www.experian.com/automotive/auto-credit-webinar-form>

household income for the United States.²⁰ We note however that, when adjusting income to January 2018 dollars using the Consumer Price Index²¹, both mean and median incomes have remained fairly stable. Throughout this series of reports, we will be using nominal incomes to group auto loans, but we note here that in real terms household incomes for auto loan consumers have generally kept up with inflation.

Both credit scores and incomes have fluctuated over time, but recent auto borrowers generally have higher credit scores and higher income than borrowers before the pandemic.

FIGURE 15: MEAN AND MEDIAN CREDIT SCORES



Source: CFPB auto finance data pilot

²⁰ <https://fred.stlouisfed.org/series/MEHOINUSA646N>

²¹ <https://fred.stlouisfed.org/series/CPIAUCSL#0>

FIGURE 16: MEAN AND MEDIAN HOUSEHOLD INCOMES



Source: CFPB auto finance data pilot

Note: Dashed lines represent mean and median household income using January 2018 dollars.

A discussion of the process the CFPB used to validate the auto finance data pilot dataset and additional summary statistics about the auto finance data pilot dataset can be found in Appendix C.

Because the respondents included in the dataset collect and maintain their data differently, in some cases not all lenders provided information on all variables for all loans. To provide as complete an overview of the auto loan market and our data as we can, in this report we study some metrics even if we did not receive full responses from all respondents. We highlight when data was not provided and, if applicable, the potential implications of those missing data on the analysis.

APPENDIX B:

Sample Order

Section OR: Originations

We are requesting data on originations to better understand how the components of auto loan transactions have changed over time. Given unprecedentedly high vehicle prices, auto loans are a larger obligation for consumers than ever before. This information will complement the market monitoring discussions we have with industry participants and trade groups, fill the significant gaps that currently exist in publicly available datasets, and provide the clarity needed to fulfill our mission as a data-driven agency.

We believe that the information requested in OR-1 is found in standard auto finance agreements or contracts.

OR-1: For all auto loans you originated or serviced during the period from January 1, 2018 through December 31, 2022, please provide the following for each account at the time of origination:

- a. unique ID;
- b. cash price of the vehicle;
- c. sales tax charged;
- d. total down payment,
- e. breakdown of the total down payment into the following categories (please include each of these items in separate columns):
 - (1) gross trade-in allowance (if applicable);
 - (2) pay off made by seller (if applicable);
 - (3) net trade-in (if applicable);
 - (4) cash down payment (if applicable);
 - (5) other down payment (if applicable);
- f. unpaid balance of the cash price after accounting for down payment;
- g. total other charges and amounts paid to others by the consumer;
- h. breakdown of the total other charges and amounts paid to others by the consumer into the following categories (please include each of these items in separate columns):
 - (1) total fees paid to the dealer (do not include down payment amount or fees paid to the dealer for taxes, titling, or other fees ultimately paid to a third party);
 - (2) total fees paid for all add-on products such as GAP, automobile service contracts, and extended warranties; including a breakdown of the following (please include each of these items in separate columns):
 - (a) the price to the consumer of lender-provided GAP (if applicable);
 - (b) the price to the consumer of third-party GAP (if applicable);
 - (c) the price to the consumer of a lender-provided automobile service contract (if applicable);

- (d) the price to the consumer of a third-party automobile service contract (if applicable);
- (e) the price to the consumer of a lender-provided prepaid maintenance plan (if applicable);
- (f) the price to the consumer of a third-party prepaid maintenance plan (if applicable);
- (g) the price to the consumer of a lender-provided extended warranty (if applicable);
- (h) the price to the consumer of a third-party extended warranty (if applicable);
- (i) total price of all other add-on products (if applicable);
- (3) total government fees (this does not include sales tax, but does include any other taxes);
- (4) prior loan or lease balance;
- (5) total of any charges and amounts paid to others not listed above;
 - i. prepaid finance charge;
 - j. amount financed;
 - k. annual percentage rate;
 - l. term of the loan in months;
 - m. whether the loan was direct or indirect;
 - n. buy rate (if applicable);
 - o. dealer markup or reserve, expressed as a difference in interest rate (if applicable);
 - p. contract rate;
 - q. required loan payment (generally, this will be the monthly payment at origination);
 - r. required loan payment frequency (i.e. monthly or biweekly);
 - s. due date of first loan payment;
 - t. whether or not the loan was subvented;
 - u. any money paid by you or the original lender to an automobile dealer;
 - v. loan-to-value ratio; and
 - w. payment-to-income ratio.

We believe that the data requested in OR-2 is standard information on consumers, vehicles, and counterparties.

OR-2: For all loans you originated or serviced between January 1, 2018 and December 31, 2022, please provide the following:

- a. unique ID;
- b. the brand under which the account was originated;
- c. whether the account is for the purchase of an automobile or to refinance an existing loan;
- d. original lender (if account was sold or servicing rights were transferred);
- e. whether the vehicle was deemed new or used at the time of origination;
- f. dealer reference number;
- g. dealer zip code;
- h. date of origination;
- i. truncated VIN;

- j. borrower credit score at origination;
- k. borrower credit score type (sourced from FICO, VantageScore, or similar);
- l. borrower income at origination;
- m. borrower income frequency (annual/monthly)
- n. source of the borrower's income (if applicable or known)
- o. borrower zip code;
- p. borrower military status;
- q. whether the loan had a co-borrower at origination;
- r. co-borrower credit score at origination (if applicable);
- s. co-borrower credit score type (sourced from FICO, VantageScore, or similar, if applicable);
- t. co-borrower income at origination (if applicable);
- u. co-borrower income frequency (annual/monthly, if applicable);
- v. co-borrower zip code (if applicable); and
- w. co-borrower military status (if applicable).

Section SV: Servicing

As with originations, we are also seeking additional clarity into loan servicing and repossession. Our goal with this data collection is to increase our understanding of the auto lending market and to fulfill our statutory market monitoring obligations. Auto loan servicing has seen significant challenges due to the pandemic and continued economic shifts. The use of technology in repossession is also not captured in existing data. This data will fill significant gaps that currently exist in publicly available datasets and will allow us to better understand trends and changes in the marketplace.

We believe the information requested in SV-1, SV-2, and SV-3 is data routinely tracked in servicing information systems.

SV-1: For every account serviced at any point from January 1, 2018, through December 31, 2022, please provide the following information, starting from origination:

- a. unique ID;
- b. the brand under which the account was originated;
- c. if any of the following events occurred, please provide the date(s) of each occurrence:
 - (1) the account was paid in full;
 - (2) the vehicle securing the account was declared a total loss;
 - (3) the consumer filed a bankruptcy petition;
 - (4) the automatic stay in a bankruptcy proceeding was lifted for the loan secured by the vehicle;
 - (5) the loan was discharged in bankruptcy;
 - (6) a reaffirmation agreement for the loan was signed and executed;
 - (7) payments resumed under a confirmed Chapter 13 bankruptcy plan;
 - (8) the bankruptcy petition was terminated for any reason prior to final disposition;
 - (9) the loan balance was charged-off;
 - (10) the account was assigned to repossession or voluntary surrender;

- (11) the account had a completed repossession or voluntary surrender;
- (12) the account was redeemed after a completed repossession or voluntary surrender;
- (13) the consumer requested an accommodation;
- (14) a consumer accommodation request was granted;
- (15) the consumer filed a complaint with you; or
- (16) wrongful repossession.

SV-2: For all accounts serviced between January 1, 2018 and December 31, 2022 and which were assigned to repossession or voluntary surrender at any point during the life of the loan, please provide the following information for each assignment, starting from origination:

- a. unique ID;
- b. unique repossession reference number;
- c. indicate whether the account was assigned as a repossession or as a voluntary surrender;
- d. date the account was assigned to repossession or voluntary surrender;
- e. whether the assignment to repossession or voluntary surrender was cancelled for any reason;
- f. date the assignment to repossession or voluntary surrender was cancelled (if applicable);
- g. number of days past due when account assigned for repossession or voluntary surrender;
- h. the outstanding account balance when the account was assigned for repossession or voluntary surrender;

SV-3: For all accounts serviced between January 1, 2018 and December 31, 2022 and with a completed repossession or voluntary surrender, for each completed repossession or voluntary surrender please provide the following information, starting from origination:

- a. unique ID;
- b. unique repossession reference number;
- c. date the repossession or voluntary surrender was completed;
- d. number of days past due when the repossession or voluntary surrender was completed;
- e. the outstanding account balance when repossession or voluntary surrender was completed;
- f. whether the repossession assignment was issued to a repossession forwarding company (if applicable);
- g. whether the repossession assignment was issued to one repossession agent or to more than one repossession agent, including agents working for repossession forwarding companies or LPR networks (if applicable) [Any accounts you place on a repossession forwarding company hot list must be included in the “more than one” category if the repossession forwarding company allows multiple repossession agents to recover the vehicle based on that hot list];
- h. whether the repossession was completed using LPR or an LPR network (if applicable)

[This question asks if the specific automobile in question was physically recovered through the use of LPR technology. If you place the account with a repossession forwarding company that uses LPR but LPR was not used for this account, do not include it here];

- i. whether repossession was completed with the use of a SIGPS device (if applicable);
- j. if the repossession was completed with the use of a SIGPS device, whether any starter-interrupt functionality was used at any point in the process (if applicable);
- k. date the borrower redeemed the vehicle (if applicable);
- l. amount borrower paid to redeem the vehicle (if applicable);
- m. date on which disposal was completed;
- n. total dollar amount recovered from disposal;
- o. total amount of fees paid to third parties in connection with the repossession or voluntary surrender of the vehicle;
- p. total amount of fees paid to third parties in connection with the disposal of the vehicle;
- q. total amount of fees charged to the borrower in connection with the repossession or voluntary surrender of the vehicle;
- r. total amount of fees charged to the borrower in connection with the disposal of the vehicle;
- s. consumer surplus (enter "0" if no consumer surplus);
- t. deficiency balance (enter "0" if no deficiency balance) and, if applicable:
 - 1) whether the deficiency balance was recovered,
 - 2) whether the deficiency balance was reported to a nationwide consumer reporting agency or agencies,
 - 3) whether an active lien or judgment was attached to the borrower, and/or
 - 4) whether the deficiency balance was uncollected or abandoned;
- u. the total amount of fees charged to the consumer as part of the repossession process;
- v. gross charge-off amount;
- w. date of charge-off;
- x. whether the charge-off was full or partial;
- y. net charge-off amount;
- z. breakdown of the total amount of fees charged to the consumer as part of the recovery process into the following categories (please include each of these items in separate columns):
 - 1) recovery fees,
 - 2) towing charges,
 - 3) storage charges,
 - 4) reconditioning charges,
 - 5) personal property charges,
 - 6) attorney's fees owed,
 - 7) fees paid to third parties to process the repossession,
 - 8) lender fees, and
 - 9) any fees not captured above;
- aa. estimated market value of vehicle as of the date of the repossession or voluntary surrender.

Appendix A: Definitions

For purposes of this Order:

1. “You” or “your” shall mean Respondent Name, its parent companies, wholly or partially owned subsidiaries, joint ventures, affiliates, and all principals, directors, officers, owners, employees, agents, representatives, consultants, attorneys, accountants, independent contractors, and other persons working for or on behalf of the foregoing.
2. “Accounts” or “auto accounts” refers to auto loans.
3. “Auto dealer” or “dealer” refers to any person or resident in the United States or any territory of the United States who is licensed by a State, a territory of the United States, or the District of Columbia to engage in the sale of motor vehicles and takes title to, holds an ownership in, or takes physical custody of motor vehicles.
4. “Auto loans” refer to grants of credit for a consumer’s purchase of an automobile, refinancing of such obligations (and any subsequent refinancing thereof) that are secured by an automobile, or purchases or acquisitions of any of the foregoing obligations.
5. “Automatic stay in a bankruptcy proceeding was lifted” refers to a court ordering that a stay of repossession pursuant to a bankruptcy filing be lifted for the auto loan, whether the order was pursuant to a motion to lift the automatic stay you filed or for any other reason.
6. “Automobile service contract” refers to a financial product designed or marketed to pay for the repairs of the automobile securing an account for a period of time or number of miles.
7. “Buy rate” refers to the minimum interest rate or range of interest rates expressed to the auto dealer, absent any additional discounts or reductions, at which you would agree to finance or purchase a retail installment sales contract from the auto dealer.
8. “Brand” refers to the name under which you offer financing to consumers. For instance, if you originate certain accounts as a “captive” and other accounts as a “finance company,” the term “brand” refers to either the name of the captive lender or the name of the finance company as presented to the consumer.
9. “Confirmed Chapter 13 bankruptcy plan” refers to a repayment plan entered into under a bankruptcy proceeding.
10. “Consumer filed a bankruptcy petition” refers to the date on which a borrower filed a petition for bankruptcy in which a loan you hold is included in the filing.
11. “Consumer surplus” refers to the amount remaining when the total sum of money gained by the sale of an automobile securing an account after repossession or voluntary surrender is greater than the total unpaid balance of the loan.

12. “Contract rate” refers to the interest rate charged to the consumer under the terms of the retail installment sale contract or agreement.
13. “Dealer reference number” refers to an anonymized code for a given dealer that does not change over time and is consistently used across all questions in this order. All answers referring to a given dealer must use the same dealer reference number, regardless of the section of the order in which the request appears. The dealer reference number must be hashed and must not identify the dealer.
14. “Dealer markup” or “dealer reserve” refers to the difference between the buy rate and the contract rate.
15. “Deficiency balance” refers to the total shortfall when the sale of an automobile securing an account after repossession or voluntary surrender is less than the total unpaid balance of the loan.
16. “Direct auto loan” refers to a loan in which you directly originated the automobile loan with a consumer or consumers.
17. “Extended warranty” refers to a financial product designed or marketed to pay for the repairs of the automobile securing an account for a period of time after the expiration of any standard manufacturer warranty, or any similar financial product.
18. “Fees paid to third parties to process the repossession” refers to fees paid to third party providers to process a repossession and are charged to a consumer.
19. “Gross charge-off amount” refers to the total amount charged off against reserves set aside for losses before subtracting any expected recoveries or fees paid to third parties.
20. “Guaranteed Asset Protection” or “GAP” refers to a financial product designed or marketed to cancel or pay off some or all of the remaining balance owed on the account in the event of a total loss of the vehicle securing the loan, or any similar financial product.
21. “Indirect automobile loan” refers to a loan that is assigned to you from or otherwise acquired by you from an auto dealer as defined in 12 U.S.C. §5519(f)(2).
22. “Loan was discharged in bankruptcy” refers to the debtor being fully or partially released from personal liability for a loan under a bankruptcy proceeding.
23. “Loan-to-value ratio” refers to the ratio between the amount financed and the value of the vehicle at the time of origination.
24. “Military status” refers to the borrower or co-borrower’s status as an active-duty member of the armed forces including those on active Guard or active Reserve duty as defined by the Military Lending Act and Servicemembers Civil Relief Act.

25. “Net charge-off amount” refers to the total amount of charge-off against reserves set aside for losses minus the amount of any expected recoveries or fees paid to third parties.
26. “Payment-to-income ratio” refers to the ratio comparing the scheduled monthly payment under the loan to the borrower’s monthly income.
27. “Prepaid maintenance plan” refers to a plan in which the consumer pre-pays for maintenance or service for the vehicle securing the loan.
28. “Reaffirmation agreement for the loan was signed and executed” refers to when an agreement to resume making payments on a loan was signed and executed under a bankruptcy proceeding.
29. “Redemption,” “redeem,” or “redeemed” refers to a situation in which the borrower pays a certain amount to gain the return of their vehicle after the vehicle has been referred to repossession or has been repossessed.
30. “Subvented” refers to an automobile loan in which a subsidy is applied to reduce the interest rate below prevailing market rates.
31. “Term of the loan in months” refers to the length of the loan in months.
32. “Total dollar amount recovered” refers to the total sum of money gained by the sale or other transfer of an automobile securing an account after repossession or voluntary surrender.
33. “Transaction” refers to and includes, but is not limited to:
- any payment, fee, or interest applied to the account balance,
 - any change that affects the account balance or account term length,
 - any change that affects any other aspect of the account.
34. “Truncated VIN” refers to the first 11 digits of the vehicle identification number (VIN) for the vehicle securing the loan or lease. The number provided should not identify the particular vehicle securing the loan or lease.
35. “Unique ID” refers to an anonymized code for a given account that does not change over time and is consistently used across all questions in this order. All answers referring to a given account must use the same unique ID, regardless of the section in which the request for the unique ID appears. The unique ID must be hashed, must not identify the borrower, and must not be the borrower’s account number.

With respect to repossessions and voluntary surrenders:

36. “Assigned to repossession or voluntary surrender” refers to accounts where you initiate any internal processes to physically recover the automobile securing the account for non-payment, whether performed in-house or through a third-party service provider. Once a repossession or voluntary surrender is “completed”, or if it is cancelled, it is no longer considered “assigned.”

37. “Attorney’s fees” refer to fees owed to attorneys in connection with a repossession or voluntary surrender and which are charged to a consumer.
38. “Completed repossession or voluntary surrender” refers to accounts where you physically recover the automobile securing the account for non-payment, whether performed in-house or through a third-party service provider.
39. “Disposal” refers to the sale or other transfer of ownership of a vehicle you obtained through repossession or voluntary surrender.
40. “Individual repossession agent” refers to a third-party service provider which physically executes repossessions or voluntary surrenders on consumer auto accounts.
41. “Lender fees” refer to fees charged by you to the consumer in connection with a repossession or a voluntary surrender.
42. “LPR” or “LPR network” refers to a third-party service provider which compiles location information on consumer automobiles through the use of license plate recognition cameras or devices that collect photos or images of license plates.
43. “Personal property charges” refers to any fees charged to a consumer in connection with the consumer’s personal property that remains in a vehicle following completion of repossession or voluntary surrender, including, but not limited to, storage or maintenance of personal property found in a vehicle that has been repossessed or voluntarily surrendered.
44. “Reconditioning charges” refers to any fees charged to a consumer to repair or clean a vehicle in connection with a repossession or voluntary surrender.
45. “Recovery fees” refers to any fees charged to a consumer for recovery of a vehicle, excluding towing charges.
46. “Repossession” refers to the act of taking or the planned act of taking possession of an automobile securing an auto account due to non-payment and without the express consent of the consumer, with or without a court order.
47. “Repossession forwarding company” refers to a third-party service provider that aggregates past-due accounts and assigns repossessions to individual repossession agents.
48. “Repossession forwarding company hot list” refers to the master list of repossessions available to individual repossession agents working with the company, even if such repossessions are not formally assigned to individual repossession agents.
49. “SIGPS device” refers to a physical device in a consumer’s automobile which is designed to disable the ignition for non-payment, track automobile location, or both.

50. “Storage charges” refers to any fees charged to a consumer for storing a vehicle in connection with a repossession or voluntary surrender.
51. “Towing charges” refers to any fees charged to a consumer for the cost of towing a vehicle in connection with a repossession or voluntary surrender.
52. “Unique repossession reference number” is an anonymized code for each instance in which an account is assigned to repossession or voluntary surrender. This will not change over time, should be used consistently across all questions in this order, and should be different from the unique ID number. All answers referring to a given repossession must use the same unique repossession reference number, regardless of the section of the order in which the request appears. The unique repossession reference number must be hashed, must not identify the borrower, and must not be the borrower’s account number.
53. “Wrongful repossession” refers to a repossession that was carried out despite some action taking place that should be sufficient to stop the repossession, such as a borrower payment having been made or a repayment plan agreed to with the borrower prior to repossession, when the wrong automobile is repossessed, or any other instance in which an automobile was repossessed when it otherwise should not have been repossessed.
54. “Voluntary surrender” refers to the act of taking or the planned act of taking possession of an automobile securing an auto account for non-payment with the consent of the consumer.

APPENDIX C:

Data Validation and Summary Statistics

Validation

We compared the auto finance data pilot data to Experian Velocity[®], analyzing trends within each of the nine recipient's data in both collections.²² We looked at the following list of measures for new and used vehicles overall and separated by credit tiers for originations between 2018 and 2022:

- Share of loans within each credit tier,
- Average amount financed,
- Average monthly payments,
- Average interest rate,
- Average loan term length, and
- Average loan-to-value (LTV) ratio.

Overall, the two data collections aligned quite well. Broadly, with some minimal exceptions, origination measures aligned nearly identically. When the differences were consistent between the datasets, they were more an indication of differences in calculations or definitions than inconsistency in the auto finance data pilot dataset.

Some differences between the auto finance data pilot dataset and Experian Velocity[®] were within consumer segments where a lender was not very active. For the captive finance companies and banks, this would be deep subprime, subprime, and near-prime financing, especially in the used vehicle market. For the finance companies, this would apply to prime and superprime financing, especially in the new vehicle market.

There are two major areas where we notice issues related to these segments. The first one is compositional differences within the lender's data. For example, Velocity[®] data does not appear to include loans where the consumer does not have a credit rating. This can impact each lender's

²² When validating the data, we looked at results for each individual lender. As we cannot release measures by individual lender, we do not show these results, but instead describe our findings.

credit distribution, especially when looking at the finance companies that have a significant amount of loans to unscored consumers. This leads to compositional differences that affect the data, especially for subprime finance companies with a significant share of loans to these consumers.

The second issue is related to volatility of the data within segments that do not have many loans. Since the averages across data sets are similar to each other, despite the volatility in the Velocity® data, we believe these results support the auto finance data pilot’s reliability.

While these issues exist across multiple lenders when looking at their individual data, when the data is combined across lenders, this volatility does not continue to exist on a market level. As such, the CFPB does not consider this to be a major concern and has taken steps in analyzing the auto finance data pilot dataset to take these differences into account.

Dataset Summary Statistics

TABLE 13: MEAN AND MEDIAN CREDIT SCORE, ANNUAL INCOME, APR, AMOUNT FINANCED, AND PAYMENT AMOUNT²³ BY LENDER TYPE

	Bank	Captive	Finance Company
Credit Score			
Mean	709	751	580
Median	705	758	572
Annual Income			
Mean	\$96,741	\$109,868	\$66,091
Median	\$73,428	\$83,592	\$51,996
APR			
Mean	8.1%	5.1%	19.3%
Median	6.4%	4.1%	19.0%

²³ Credit scores shown are the highest credit score amongst all borrowers listed on the loan. Annual incomes shown are combined income of all consumers on the loan. Some lenders provided annual incomes while others provided monthly income. In cases where the lender provided monthly income, we extrapolated these incomes to annual amounts. Annual percentage rate (APR) represents the annualized interest paid as a percentage of the full loan amount. Amount financed is the total amount of the loan. Payment amount is the minimum payment that the consumer must make on their loan each month.

	Bank	Captive	Finance Company
Amount Financed			
Mean	\$27,416	\$30,322	\$20,899
Median	\$25,110	\$27,991	\$19,854
Payment Amount			
Mean	\$487	\$525	\$496
Median	\$455	\$484	\$478
Number of Loans	9,257,218	10,337,974	1,766,148

Source: CFPB auto finance data pilot

TABLE 14: MEAN AND MEDIAN CREDIT SCORE, ANNUAL INCOME, APR, AMOUNT FINANCED, AND PAYMENT AMOUNT BY CREDIT SCORE AT ORIGINATION

	Deep Subprime	Subprime	Near-prime	Prime	Superprime
Credit Score					
Mean	541	600	639	690	797
Median	546	599	638	688	793
Annual Income					
Mean	\$67,828	\$70,202	\$77,239	\$90,301	\$120,601
Median	\$55,200	\$57,828	\$62,166	\$71,844	\$91,800
APR					
Mean	17.6%	14.9%	11.1%	7.1%	3.9%
Median	17.0%	14.4%	10.3%	6.7%	3.9%
Amount Financed					
Mean	\$21,838	\$24,069	\$26,857	\$29,583	\$30,165
Median	\$20,674	\$22,786	\$25,400	\$27,691	\$27,620
Payment Amount					

	Deep Subprime	Subprime	Near-prime	Prime	Superprime
Mean	\$493	\$508	\$510	\$508	\$509
Median	\$477	\$487	\$486	\$475	\$465
Number of Loans	2,008,366	1,694,509	2,311,698	3,900,153	11,178,862

Source: CFPB auto finance data pilot

TABLE 15: MEAN AND MEDIAN CREDIT SCORE, ANNUAL INCOME, APR, AMOUNT FINANCED, AND PAYMENT AMOUNT BY INCOME

	Under \$40,000	\$40,000 - \$59,999	\$60,000 - \$79,999	\$80,000 - \$119,999	\$120,000 and Over
Credit Score					
Mean	670	687	713	733	765
Median	622	683	715	738	774
Annual Income					
Mean	\$32,631	\$49,586	\$68,741	\$96,563	\$209,700
Median	\$33,600	\$49,396	\$69,000	\$96,000	\$162,000
APR					
Mean	11.2%	9.4%	7.7%	6.5%	4.9%
Median	10.0%	7.6%	6.0%	5.14%	4.1%
Amount Financed					
Mean	\$18,980	\$23,939	\$27,357	\$30,436	\$35,751
Median	\$18,299	\$23,261	\$26,282	\$28,869	\$32,716
Payment Amount					
Mean	\$374	\$447	\$490	\$531	\$617
Median	\$369	\$439	\$475	\$507	\$568
Number of Loans	2,813,304	4,351,673	4,240,221	4,734,710	5,190,350

Source: CFPB auto finance data pilot