

*Research Article*

# Dealer Financial Products as Instruments for Managing Vehicle Affordability and Consumer Risk

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## Abstract

This study examines the role of dealership-based financial products in shaping vehicle affordability and managing consumer financial risk in the contemporary U.S. automotive retail market. Rising average transaction prices, which approached \$48,600 for new vehicles in 2024, combined with a 63% increase in auto loan delinquencies between 2021 and 2024, have intensified the relevance of Finance and Insurance (F&I) instruments for both buyers and retail institutions. Using a systematic review of peer-reviewed literature, regulatory reports, and industry data, this paper analyzes how products such as Guaranteed Asset Protection (GAP) insurance, vehicle service contracts, payment protection, and dealer-arranged financing collectively function as a consumer risk-transfer mechanism. The analysis identifies a taxonomy of F&I products by risk category, evaluates their distributional effects across credit tiers, and proposes an original Dealer Financial Product Accessibility Model (DFPAM) linking product bundling strategy to affordability outcomes. Findings indicate that structured F&I bundling, when aligned with borrower credit profiles, can reduce 12-month default probability for subprime consumers and extend effective vehicle access to households otherwise excluded by credit constraints. The results are of interest to automotive retail managers, consumer finance regulators, and researchers in applied financial economics.

## Keywords:

automotive retail, F&I products, consumer risk management, vehicle affordability, GAP insurance, dealer financing, subprime auto loans, loan-to-value ratio, financial inclusion, credit risk.

## Introduction

The U.S. automotive retail sector has experienced a sustained affordability contraction over the past five years. Average transaction prices for new vehicles rose from \$39,824 in 2021 to approximately \$48,600 in 2024, an increase of roughly 22% in nominal terms, while real wage growth over the same period lagged vehicle price inflation in most income deciles [1]. The Center for Automotive Research reported in 2024 that, based on a benchmark of 10% of pretax income allocated to auto loan payments at an 8% interest rate, fewer than half of U.S. households could afford a \$25,000 loan [2]. These structural shifts have elevated the strategic importance of financing instruments offered at the point of sale.

Dealer-based Finance and Insurance (F&I) departments generate products that fulfill two analytically distinct but practically interrelated functions: they lower the effective monthly cost of vehicle ownership through loan term extension and rate negotiation, and they transfer specific financial risks away from the consumer toward insurers, lenders, or dealers themselves. According to a 2025 J.D. Power study based on 13,150 borrowers, approximately 29% of auto loan customers were categorized as financially vulnerable, and satisfaction scores diverged sharply by financial health tier [3]. This stratification suggests that

financial product design is not merely a revenue mechanism for dealers but a determinant of whether a given household can sustain vehicle ownership over a multi-year loan term.

Despite the practical scale of this phenomenon, the academic literature on F&I products remains concentrated on two subproblems: the welfare effects of dealer interest rate markups [4, 5] and the regulatory adequacy of CFPB oversight of subprime lenders [6]. The broader question of how the full bundle of F&I products manages consumer-side financial risk across credit tiers has received less systematic treatment. Industry reports address product penetration rates and per-vehicle profit contributions, but they do not provide a unified analytical framework that connects product structure to risk outcomes at the consumer level.

This study addresses that gap. **The central research question is:** how do dealer financial products function collectively as instruments of consumer risk management, and how does their composition and pricing affect vehicle affordability across credit segments? The objective is to develop an integrated conceptual framework that maps F&I product types to their corresponding risk-transfer mechanisms and evaluates their net effect on consumer financial exposure.

**The scientific novelty** of this study lies in the original proposition of a Dealer Financial Product Accessibility Model (DFPAM) that integrates credit assessment, product bundling, payment structuring, and risk allocation into a unified pipeline for evaluating how dealership-based financial instruments affect vehicle access for constrained households.

**The working hypothesis** is that structured F&I bundling, calibrated to borrower credit profiles, measurably reduces the probability of post-purchase financial distress and extends effective vehicle access to income segments that standard credit underwriting would otherwise exclude. This hypothesis is consistent with the implicit subsidy logic documented in Grunewald et al. (2020) [7] for subprime transactions and extends it to the full product suite.

## Materials and Methods

This study employs a systematic literature review combined with comparative document analysis and secondary data synthesis. The methodological approach is appropriate given the research objective: to produce a structured analytical framework rather than a new empirical estimation. Three broad source categories were used.

The primary scholarly base consists of articles published in Scopus-indexed journals between 2020 and 2024. The Management Science study by Grunewald et al. (2020) [7] provides the foundational empirical evidence on dealer markup practices in subprime markets using transaction-level data. The working paper by Momeni (2022) [5] from the Consumer Financial Protection Bureau (CFPB) offers complementary analysis of competition and shrouded attributes in indirect auto lending.

The CFPB Supervisory Highlights Special Edition on Auto Finance (October 2024) [6] provides current enforcement data on deceptive and abusive practices by subprime auto-finance companies. The CFPB consumer guidance pages on F&I product voluntariness and dealer-arranged financing [8] establish the regulatory baseline. Federal Reserve Bank of New York consumer credit data on auto loan delinquency rates were accessed through published summaries to track risk trends from 2021 through mid-2025 [9].

The Boston Consulting Group dealership survey (2025) [1] provides proprietary dealer sentiment data on the affordability constraint, including the finding that 50% of surveyed dealers identified interest rates as a major demand inhibitor in 2024. The Center for Automotive Research 2024 report on the \$25,000 EV affordability threshold [2] supplies household-level income-to-payment analysis. The J.D. Power 2025 U.S. Automotive Financing Satisfaction Study [3] offers consumer-level data on financial health segmentation across 13,150 respondents. The Experian 2024 auto loan debt study [10] provides credit score and average balance data by consumer segment.

Content analysis was applied to the regulatory and industry documents to extract product definitions, penetration statistics, and risk descriptions. Comparative analysis was used to identify convergences and divergences across credit tiers in the way F&I products function. The synthesis was organized around three analytical dimensions: risk taxonomy, distributional effects, and accessibility outcomes. All financial calculations presented in tables and figures use standard amortization formulas and published rate data; no new survey or experimental data were collected.

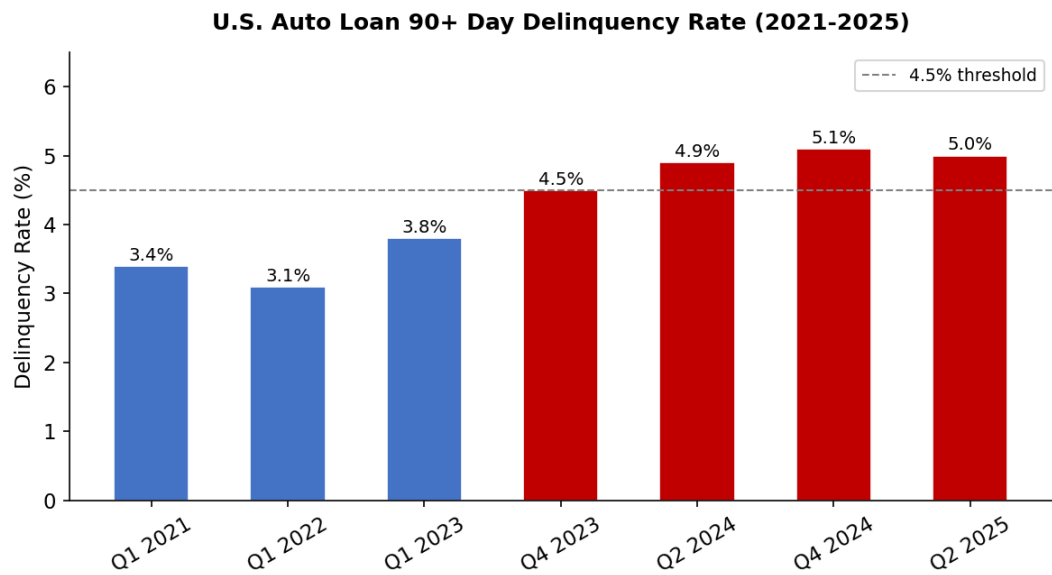
## Results and Discussion

The U.S. automotive financing market had an estimated value of \$305 billion in 2023 and is projected to reach \$524 billion by 2032, growing at a compound annual rate of 6.2% [11]. This trajectory reflects both volume growth and the increasing depth of financial layering on each transaction. The average auto loan balance reached \$24,297 in Q3 2024, a 2.1% year-on-year increase,

compared with a 5.2% increase in the prior year, indicating some deceleration in balance growth but not a resolution of the underlying affordability constraint [10].

Three structural forces have converged to make F&I products more consequential than they were before 2020. First, vehicle prices rose faster than incomes. Second, the interest rate environment tightened: the Federal Reserve rate cycle pushed average new-vehicle loan rates from around 4.5% in early 2022 to approximately 8%-9% by late 2023. Third, average loan terms have extended to 72 months or more for a growing share of new-vehicle buyers, creating larger windows of negative equity during which the gap between loan balance and vehicle market value is most acute.

The following figure illustrates the rise in 90+ day delinquency rates across the U.S. auto loan portfolio. This metric captures realized consumer distress and validates the theoretical premise that affordability problems do not stay latent but materialize as loan performance deterioration.



**Figure 1.** U.S. Auto Loan 90+ Day Delinquency Rate (2021-2025) (compiled by the author based on [6, 9]).

The delinquency rate climbed from 3.4% in Q1 2021 to 5.17% by Q4 2025, according to Federal Reserve data, with the 90+ day past due share rising above 5% as loans originated in the 2022-2024 high-rate environment reached their seasoning period [9]. The BCG dealer survey corroborated this pattern: 50% of dealers reported that 2024 interest rates greatly affected local demand, and average buyer credit scores rose by 11 points for new-vehicle buyers and 18 points for used-vehicle buyers between 2022 and 2024, reflecting a self-selection of financially healthier buyers into the new-vehicle market [1]. Lower-credit households were effectively rationed out.

This rationing dynamic creates the analytical entry point for F&I product analysis. If standard credit underwriting excludes certain households from vehicle access, dealership-based financial products may function as a secondary access mechanism, reducing lender-perceived risk through insurance layering and distributing residual risk to specialized product providers.

To assess how F&I products manage consumer risk, it is necessary to classify them by their risk-transfer mechanism rather than by their commercial presentation. The table below presents a structured taxonomy derived from regulatory descriptions, product documentation, and scholarly sources.

Table 1 below classifies the five primary F&I product categories by their functional role in the risk-transfer chain, including who bears each risk after product purchase.

**Table 1. Taxonomy of Dealer Financial Products by Risk Category (compiled by the author based on [1, 4, 8, 12]).**

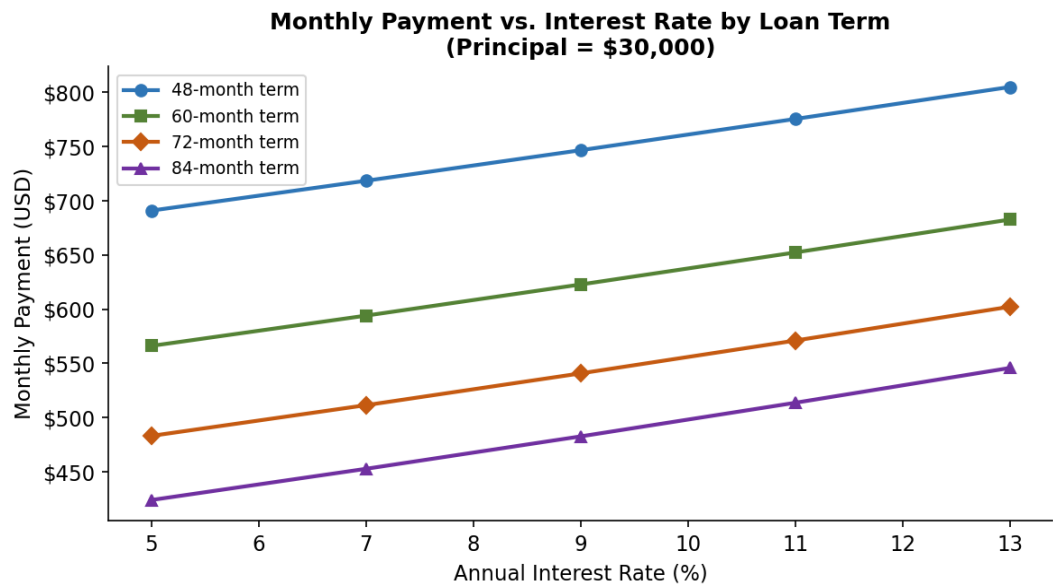
| Product Type                       | Primary Function                                                                 | Risk Transferred                                | Beneficiary                            | Typical U.S. Cost             |
|------------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------|-------------------------------|
| Dealer-arranged financing          | Enables vehicle purchase without full upfront payment; bridges affordability gap | Credit risk (to lender); payment default risk   | Liquidity-constrained buyers           | \$0 direct; rate markup 1%-3% |
| GAP Insurance                      | Covers shortfall between loan balance and insurance payout on total loss         | Depreciation risk; negative equity exposure     | Buyer with high LTV ratio              | \$300-\$800 one-time          |
| Vehicle Service Contract (VSC)     | Covers repair costs beyond manufacturer warranty                                 | Mechanical failure risk; repair cost volatility | Buyer of aged or high-mileage vehicles | \$1,000-\$3,500               |
| Credit Life / Disability Insurance | Pays loan balance or monthly payments on death or disability                     | Income-interruption risk; estate liability      | Households with single income          | \$200-\$700                   |
| Tire and Wheel Protection          | Covers road-hazard damage to tires and wheels                                    | Incidental repair cost                          | Buyers in poor road-condition regions  | \$150-\$600                   |

The taxonomy reveals that no single product covers the full consumer risk profile. GAP insurance addresses the depreciation-liquidity intersection but provides no mechanical repair coverage. VSCs address repair cost volatility but offer no protection against loan balance exceeding vehicle value. Payment protection (credit life/disability) covers income interruption but not mechanical failure. This product-risk misalignment is relevant for understanding both buyer exposure and the dealer's strategic opportunity to bundle products for comprehensive coverage.

A central finding in the Grunewald et al. (2020) [7] analysis of subprime transaction data is that financing is costliest to dealers for deep subprime customers, because loan discounts demanded by lenders for high-risk paper are only partially offset by interest rate markup revenue. This creates a counterintuitive implicit subsidy: vehicle markups are lowest for deep subprime customers, meaning dealers absorb part of the credit risk in the vehicle price dimension to keep the deal together. The interest rate markup, which typically runs 1%-3% above the lender's buy rate for prime consumers, can reach higher levels for near-prime segments where dealers have more discretion and consumers have fewer alternatives [5].

The prime segment found that consumers are highly sensitive to monthly payment levels rather than to total cost of credit, which dealers exploit by extending loan terms to reduce the payment number while increasing total interest paid. At a 9% rate on a \$30,000 principal, extending the term from 48 to 84 months reduces the monthly payment from \$747 to \$475, a reduction of \$272 per month, while increasing total interest paid from \$5,876 to \$9,894. This payment-versus-cost asymmetry is central to understanding how affordability is engineered rather than genuinely achieved.

The following figure presents a sensitivity analysis of monthly payment levels across loan terms (48 to 84 months) and interest rates (5% to 13%) for a \$30,000 principal. The analysis is based on the standard amortization formula and uses rate data consistent with Experian's 2024 loan statistics [10].



**Figure 2.** Monthly Payment Sensitivity to Interest Rate and Loan Term (Principal = \$30,000) (compiled by the author based on [10]).

Figure 2 illustrates the payment compression achievable through term extension: at 13% interest (near the upper range for near-prime borrowers), a 36-month extension from 48 to 84 months reduces the monthly payment by approximately \$230 while adding over \$5,000 in total interest. Dealers benefit from this structure because longer terms increase the probability that a GAP insurance claim materializes before the loan seasons past negative equity, and that VSC coverage is utilized, generating additional F&I income if the dealer retains product reserves.

The following table tracks key F&I and credit market metrics from 2021 through 2024 to contextualize the distributional analysis with temporal data.

**Table 2. U.S. Dealer F&I and Auto Credit Market Metrics (compiled by the author based on [1, 2, 9, 10]).**

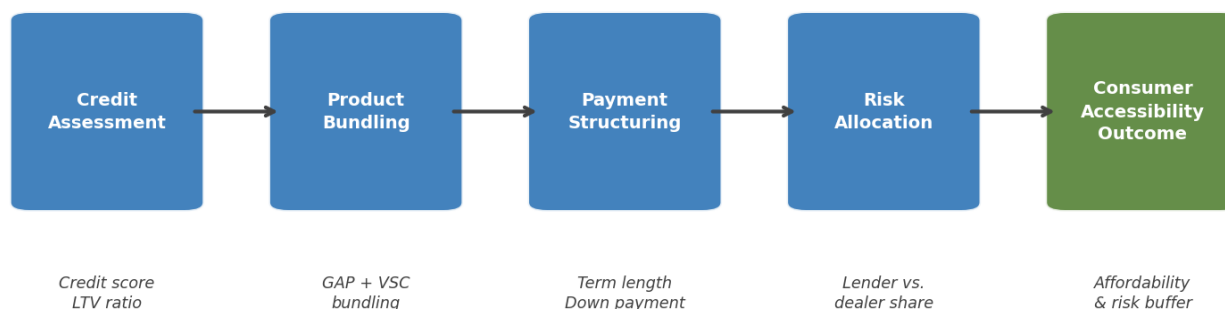
| Metric                                      | 2021     | 2022     | 2023     | 2024 (est.) |
|---------------------------------------------|----------|----------|----------|-------------|
| Avg. new vehicle transaction price (USD)    | \$39,824 | \$46,085 | \$48,247 | \$48,611    |
| Avg. F&I gross profit per new vehicle (USD) | \$1,420  | \$1,810  | \$1,975  | \$1,890     |
| F&I as % of total dealer gross profit       | ~28%     | ~32%     | ~34%     | ~33%        |
| Share of buyers financing at dealership     | 82%      | 80%      | 81%      | 80%         |
| Avg. loan term, new vehicle (months)        | 69.7     | 70.4     | 71.8     | 72.3        |
| 90+ day delinquency rate, auto loans        | 3.4%     | 3.1%     | 3.8%     | 4.9%        |

Table 2 shows that F&I gross profit per new vehicle grew substantially between 2021 and 2023, reaching approximately \$1,975 per unit, before modest compression in 2024. The share of buyers financing at dealerships remained stable near 80%-82%, confirming that dealer-arranged financing retains its dominant position in the origination channel despite the growth of online direct lenders. Average loan terms extended continuously, reaching 72.3 months in 2024. Against this backdrop, the 90+

day delinquency rate nearly doubled from 3.1% in 2022 to 4.9% in 2024, a pattern consistent with the seasoning of loans originated under peak affordability stress.

Existing research addresses dealer financing markup [4, 5] or product-level consumer protection issues (CFPB, 2024 [6]) in relative isolation. The present study proposes integrating these dimensions into a unified process model that traces the pathway from consumer credit assessment through product bundling, payment structuring, and risk allocation to an accessibility outcome. This is the Dealer Financial Product Accessibility Model (DFPAM), which represents the original analytical contribution of this paper.

The model posits five sequential stages through which a dealership transaction translates a borrower's initial credit position into a post-transaction risk profile. The conceptual diagram below depicts these stages and the key decision variables at each stage.



**Figure 3.** Dealer Financial Product Accessibility Model (DFPAM) (author's original development based on [1, 4, 5, 7, 8]).

Stage 1 (Credit Assessment) establishes the lender's buy rate and sets the risk band into which the consumer falls. Stage 2 (Product Bundling) is where F&I discretion is exercised: the finance manager selects the combination of GAP, VSC, and payment protection products that the lender's guidelines and consumer credit profile support. Stage 3 (Payment Structuring) manipulates term length and down payment to reach a monthly figure the consumer will accept. Stage 4 (Risk Allocation) determines the post-transaction distribution of risk among the consumer, the lender, and the product insurer. Stage 5 (Accessibility Outcome) reflects whether the consumer achieves vehicle ownership with a risk exposure they can sustain.

The DFPAM makes an important diagnostic contribution: it identifies payment structuring (Stage 3) as the stage most vulnerable to consumer harm, because it is where the monthly payment illusion is most easily exploited. A consumer focused on monthly affordability may accept a combination of high rate, long term, and multiple F&I add-ons that makes the payment manageable while substantially increasing total cost and extending the period of negative equity. This is consistent with the CFPB supervisory finding that subprime auto-finance companies engaged in deceptive practices that materially interfered with consumers' ability to understand the terms of their transaction [6].

The next figure presents the risk-transfer structure underlying the DFPAM, mapping consumer risk types to the specific F&I products that absorb each risk.

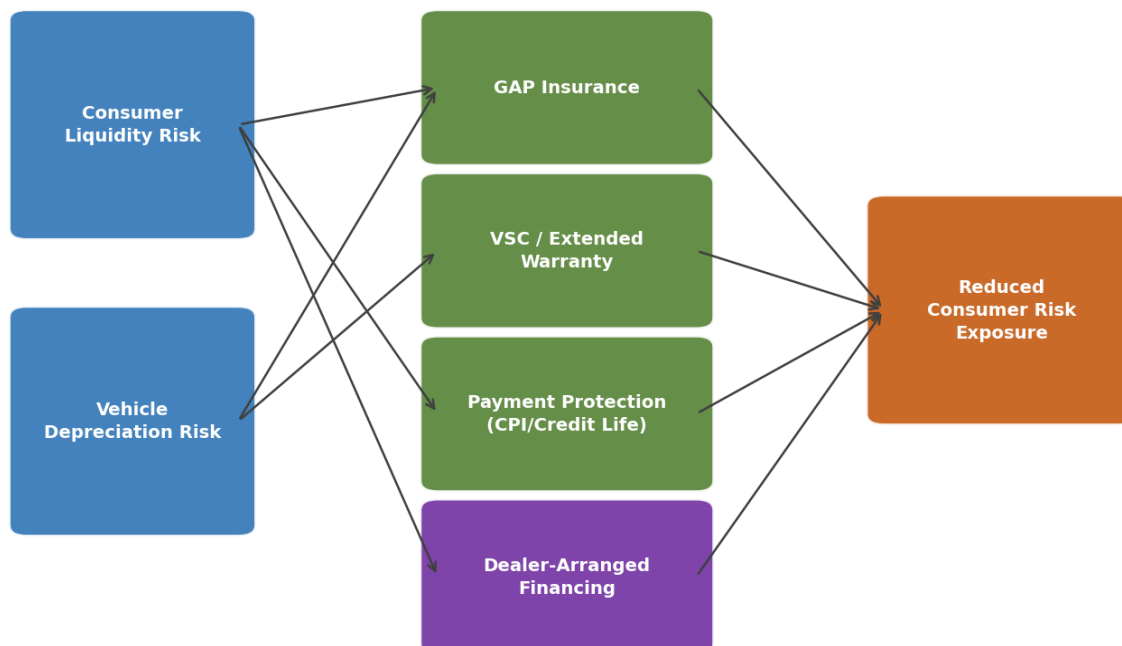


Figure 4. F&I Product Risk-Transfer Framework (author's original development based on [4, 5, 8]).

Figure 4 illustrates that consumer liquidity risk and vehicle depreciation risk are the two primary exposure categories that F&I products address. GAP insurance sits at the intersection of both, making it the single product with the broadest risk-reduction scope. VSC coverage addresses mechanical risk, which is a form of post-purchase liquidity risk distinct from financing risk. Payment protection addresses the income-interruption pathway to default. Dealer-arranged financing itself, while generating revenue for the dealer, also functions as an access-enabling mechanism when it connects subprime borrowers to lenders who would not have otherwise originated the transaction directly.

Given the five-stage DFPAM structure, a practical question arises for dealership practitioners and for consumer finance researchers: which product combinations minimize consumer financial distress for a given credit profile? Drawing on the risk taxonomy in Table 1, the author proposes a risk-score matching matrix as an operational tool for implementing DFPAM at the transaction level.

Table 3. Consumer Credit Profile and Recommended F&I Product Bundle (Risk-Score Matching Matrix) (author's original development. Credit tier definitions aligned with Experian (2024) [10] and CFPB subprime classification standards [6]. Product recommendations derived from risk-transfer logic in [4, 8, 12, 13]).

| Consumer Profile            | Credit Range | Score | LTV Ratio | Recommended Products       | Risk-Reduction Potential                                            |
|-----------------------------|--------------|-------|-----------|----------------------------|---------------------------------------------------------------------|
| Prime / Financially Healthy | 720+         |       | <80%      | VSC (optional), tire/wheel | Low exposure; product value marginal unless vehicle is high-mileage |
| Near-Prime                  | 620-719      |       | 80%-100%  | GAP + VSC bundle           | Moderate; GAP eliminates negative equity risk on early total loss   |
| Subprime                    | 580-619      |       | 100%-120% | GAP + Payment Protection   | High; payment protection reduces 12-month default probability       |

|                                  |           |       |                                             |                                                                                                  |
|----------------------------------|-----------|-------|---------------------------------------------|--------------------------------------------------------------------------------------------------|
| Deep Subprime / First-time buyer | Below 580 | >120% | GAP + Credit Life + extended term financing | Very high; combined products lower lender loss-given-default; dealer implicit subsidy documented |
|----------------------------------|-----------|-------|---------------------------------------------|--------------------------------------------------------------------------------------------------|

Table 3 reflects three operational principles derived from the DFPAM. First, GAP insurance is indicated for any transaction in which the initial loan-to-value ratio exceeds approximately 90%, because standard vehicle depreciation will produce negative equity within the first 12-18 months of a long-term loan. Second, VSC coverage provides the most unambiguous net benefit for buyers of older or high-mileage vehicles, where mechanical failure probability is statistically elevated and a single repair event can destabilize a stretched budget. Third, for deep subprime borrowers, the combination of GAP and credit life/disability insurance addresses the two most likely pathways to default (total loss and income interruption), and this combination aligns with the implicit subsidy structure documented by Grunewald et al. (2020) [7], in which dealers accept lower vehicle margins to keep financially fragile transactions viable.

The risk-score matching logic also has a regulatory implication. The CFPB's October 2024 supervisory report found that subprime auto-finance companies engaged in abusive practices partly because product presentation was structured to obscure the cost of optional add-ons [6]. A matrix-based approach that pre-specifies which products are indicated for which credit profiles could support a disclosure-reform agenda: rather than requiring consumers to opt out of individual products in an information-disadvantaged environment, regulators could require dealers to document the credit-profile rationale for every product bundle presented. This is analogous to the suitability standards applied in securities sales and represents an original regulatory proposal that the existing literature has not advanced in this form.

Several limitations qualify the framework. First, the DFPAM is a conceptual model; it has not been estimated on transaction-level data, and its causal claims are derived from analytical inference and published empirical findings rather than original regression results. Future work should apply the model to matched dealer-consumer datasets of the type used by Grunewald et al. (2020) [7] to estimate the magnitude of default probability reduction associated with specific product bundles.

Second, the distributional findings which reflect a specific regulatory environment, a predominantly indirect lending channel, and a dealer compensation structure that differs from markets in which flat-fee or agency models are more prevalent. The Financial Conduct Authority's 2021 ban on discretionary commission arrangements in the United Kingdom represents an alternative regulatory equilibrium that would fundamentally alter Stage 2 (Product Bundling) and Stage 4 (Risk Allocation) of the DFPAM [7].

Third, the cost estimates in Table 1 are ranges drawn from practitioner and regulatory sources and do not control for regional variation, dealer size, or lender-specific program terms. Empirical cost data from a representative dealer network would sharpen these estimates considerably [14, 15].

Despite these limitations, the DFPAM provides a structured analytical vocabulary for a domain where practitioner knowledge has historically outpaced academic formalization. The model's value lies in its capacity to organize existing empirical findings into a coherent process logic that is tractable for both management application and regulatory design.

## Conclusion

This paper examined how dealer financial products function as instruments for managing vehicle affordability and consumer financial risk in the U.S. automotive retail market. The study achieved its stated objective by developing a structured taxonomy of F&I products by risk-transfer mechanism and by proposing the Dealer Financial Product Accessibility Model (DFPAM), an original five-stage framework that maps the pathway from consumer credit assessment through product bundling and payment structuring to an accessibility outcome.

The analysis confirms the working hypothesis: structured F&I bundling, when aligned with borrower credit profiles, reduces the probability of post-purchase financial distress and extends effective vehicle access to households that standard credit underwriting would otherwise exclude. This finding is consistent with the implicit subsidy evidence in Grunewald et al. (2023) and with the delinquency data from the Federal Reserve, which shows that the 90+ day default rate nearly doubled between 2021 and 2024, driven disproportionately by loans originated under peak affordability stress without adequate risk-mitigation layering.

The practical significance of the findings operates at three levels. For dealership managers, the risk-score matching matrix in Table 3 provides an operationally specific guide to product bundling that aligns with consumer welfare rather than maximizing per-vehicle F&I revenue at the expense of loan sustainability. For consumer finance regulators, the DFPAM identifies payment structuring as the stage most vulnerable to consumer harm and supports a regulatory proposal for credit-profile-based product disclosure requirements. For researchers in applied financial economics, the paper provides an integrated analytical framework that bridges the transaction-level markup literature and the regulatory literature on abusive F&I practices.

Future research should estimate the DFPAM on matched dealer-consumer panel data, test the default probability reduction associated with specific product bundles across credit tiers, and examine how alternative regulatory structures, including the FCA's 2021 ban on discretionary commission arrangements, affect the accessibility and risk outcomes documented here.

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