SENSITIVE – PREDECISIONAL
DRAFT- 5/2/2013

To: Bryce Stephens
From: [redacted]
RE: Auto Finance, draft bullets (v1 – Part 1)

Planning: [redacted]

Other dates that I will be out of the office: [redacted]

Framing the Issues

- The practice at issue is permitting deal-specific discretion that results in the consumer paying an interest rate that differs from the buy rate initially offered to the dealer by the lender.

    - The *buy rate* (B) is the interest rate offered to the dealer by the lender.

    - The *contract rate* (R) is the interest rate paid by the consumer for the loan. The *contract rate* may or may not equal the *buy rate.*

- Discretion can be exercised in several ways and may result in the consumer paying a higher or lower contract rate for the loan than the buy rate initially offered by the lender.[1]

- The methods through which discretion may be exercised vary across lenders and may include:

    1. Mark-up: The dealer may mark-up a loan above the buy rate offered by the lender. Mark-ups are permitted by policy and do not require deal-specific approval by the lender. A ceiling is generally imposed on this discretion.

    2. Mark-down/Buy-down: The dealer may fund a discount off of the buy rate and mark down (buy down) a loan. These are similarly permitted by policy and do not require deal-specific approval by the lender. A floor is generally imposed on this discretion.

    3. Rate concessions: The dealer may request that the lender make a deal-specific pricing concession which results in a lower buy rate at no cost to the dealer.[2] All or none of these savings could ultimately be passed on to the consumer.

[1] From a fair lending perspective, all of these forms of discretion could lead to a disparate impact. Therefore, eliminating mark-up does not remove the possibility of disparate pricing outcomes.
[2] Many times these concessions are given to meet a competitor's offer.

- Discretion, as defined above, does not preclude an individual lender from offering dealers a menu of different levels of compensation for loans originated at different buy rates.[3] We further assume that an individual lender cannot offer more than one buy rate for a given loan application.[4]

**Comment [BES1]:** Not sure that I understand this. I'll chat with you.

Dealer Compensation Structure

- Although it can take many forms, dealer compensation can generally be classified as one of three types:[5]

  1. Related to discretion that the dealer exercises in terms of setting the contract rate (marking up or marking down the buy rate offered by the lender);

  2. Related to other contract terms that the dealer is able to influence (*e.g.*, the amount financed[6]) but unrelated to discretion exercised by the dealer in setting the contract rate; or

  3. Not related to the activities of the dealer (*e.g.*, a true "flat fee" of $X per contract)

**Comment [BES2]:** You say dealer compensation but in the bullets seem to identify the degree of dealer ability to influence compensation. This is a minor point. For instance, dealer compensation associated with (1) would really be the dollar amount associated with markup, which in practice is usually a function of loan amount. Maybe change the wording of this sentence?

- Compensation programs of the first type are generally a hybrid. They typically include a payment (of the second or third type) for loans originated at or near the buy rate.

- The lender chooses the compensation structure to offer in a given market. Conditional on the compensation structure in effect, the lender chooses the buy rate to offer to the dealer for a given loan.

Compensation and Risk

**Comment [BES3]:** You might get to this later,..but I am commenting now. Do I need to care about the fact that compensation represents payment for the loan contract?

- Compensation structures vary in terms of how (prepayment/default) risk is allocated between the lender and the dealer.

- When a consumer prepays or defaults on a loan, the profits associated with financing the loan are reduced.

- All else equal, differences in risk allocation between the lender and the dealer can result in differences in the buy rate offered to the dealer. For instance, a lender will be willing to lend at a lower price (and offer a lower buy rate to the dealer) when the dealer assumes

[3] For instance, a lender could offer a dealer a schedule of buy rate offers for a given loan (with dealer compensation increasing in the buy rate).
[4] With this assumption, it is still possible that different buy rates and dealer compensation schemes are offered by different lenders in equilibrium and that dealer compensation will be increasing in the buy rate.
[5] In addition, lenders offer incentive and loyalty programs that reward dealers based on volume.
[6] The amount financed includes both the price of the vehicle and any add-ons net of any down payment.

all prepayment/default risk relative to a situation where the lender assumes some or all of that risk.

Comment [BES4]: Just curious: in the extreme case in which the dealer assumes all of the risk, I suppose the buy rate would look something like a "risk free" rate? Actually, if the dealer were assuming all of the prepayment risk, why would the deal ever occur? Isn't the dealer just providing the financing? Is this the buy-here-pay-here situation?

- From the lender's perspective, dealer compensation is a cost associated with lending and is considered, along with other costs, in setting the buy rate for the loan.[7] In determining the buy rate to offer, lenders try to maximize the profits they earn from lending activities, taking into account market competition.

- Holding margins constant, offering a dealer more compensation means that the lender needs to receive a higher return on the loan. This could mean that the lender offers a higher buy rate to the dealer (raises price) or that the lender incurs less prepayment/default risk (lowers costs).

Choices and Timing

Comment [BES5]: Might want to highlight the timing of the contract rate determination (make this more explicit). It looks like it is happening in (4) after the dealer learns about the buy rates. The reason I suggest this is b/c of the possibility of spot delivery (contract rate negotiation precedes buy rate offers). Might not want to make spot delivery a focus...but it would be worth thinking about how it would change results (or be prepared to respond).

1. Each lender commits to a compensation structure.

2. The dealer provides information to a set of lenders regarding the applicant and the deal terms so that lenders may assess the risk associated with the loan.

3. Lenders submit buy rates at which they are willing to provide financing.

4. The dealer observes compensation structures and buy rates offered and chooses a lender. Depending on the offer selected, the dealer may offer the consumer a contract rate that differs from the buy rate.[8]
    - *If the dealer is risk-neutral*, he chooses the package which results in his making the most money (in expectation) from loan assignment.[9]
    - *If the dealer is risk-averse*, he discounts expected returns for compensation structures exhibiting variance before making the comparison. If two packages exhibit the same expected compensation, he selects the package with less risk.

[7] Dealers that extend credit at the buy rate are still generally compensated, either at a flat fee or a percentage of the amount financed. We see many (non-subvented) loans offered at the buy rate and compensation methods that compensate the dealer for originating loans at the buy rate.
[8] For simplicity, we further assume that financing services are viewed as a commodity from the perspective of the downstream consumer. That is, we assume that the (retail) consumer's willingness to pay for financing services does not vary across providers. [Not necessary to be explicit as currently phrased.]
[9] If the buy rate offered exceeds the customer's willingness to pay for financing services, the dealer would have to have the ability to mark down the loan in order to extend this offer (and potentially receive compensation).

## Incentives

- Lenders and dealers jointly want to extract as many rents (from the car, add-ons, and financing) from the consumer as possible (maximize the pie), but they also each want to get the biggest piece of the pie.

- Profits from financing (the size of the pie) to be split between the lender and the dealer are a function of the total amount financed, the term of the loan, and difference between the contract rate on the loan and the costs of extending financing (which include the wholesale cost of funds and any other costs incurred by the lender or the dealer associated with the extension of credit).

- The method in which the pie is divided is determined by each side's bargaining power. Bargaining power is driven by the availability of substitutes. For instance, if only one lender is willing to underwrite a loan, the lender would be expected to get most of the pie. Relative bargaining power between a lender and a dealer may vary across particular loans.[10]

- Although lending services might be viewed as a commodity, lenders do attempt to differentiate their products by offering incentive programs for dealers (tied to volume), special promotions or subvention programs, high-quality service and responsiveness, or compensation structures that meet varied appetites for risk among dealers and different levels of mathematical aptitude.[11]

**Comment [BES6]:** I also wonder if floorplan financing arrangements are another way...

## The Lender's Information Set

- Lenders have access to information regarding borrowers that allows them to project a consumer's willingness to pay for financing services. For instance, cash may be a more viable substitute for financing for some consumers than for others.
  - This information may be used by the lender to segment the market (earning different profit margins on different segments).

- This information (along with information from the entire lending portfolio) also permits the lender to project the likelihood that a consumer will either prepay a loan or default on a loan at a given interest rate.

[10] For instance, a dealer seeking credit for a subprime borrower likely has fewer lending options than a dealer seeking credit for a super-prime borrower. All else equal, the dealer's share of the subprime pie should be smaller than the dealer's share of a super-prime pie.
[11] Some lenders have cited simplicity of their compensation programs as an advantage.

The Dealer's Information Set

- Through the negotiation process, dealers may be able to more closely identify an individual consumer's willingness to pay for financing services. However, negotiating is costly, so the dealer may not be expected to do so unless his compensation is increasing in negotiating effort.

- The dealer presumably does not have access to information that would help the lender to better understand prepayment or default risk.[12]

Comment [BES7]: Is the presumption here that the lender does not observe the down payment amount? Or couldn't back this out?

Risk and Information

- The contract rate paid by the consumer influences the risk of prepayment or default.

- Conditional on the deal terms and the consumer's creditworthiness, a higher contract rate implies higher prepayment/default risk.

- Longer term loans also are likely to carry increased prepayment/default risk.

- Furthermore, it is likely that prepayment/default risk increases at an increasing rate (is convex).

- All else equal, marking down a loan or offering a rate concession does not increase pre-payment or default risk.

- If the lender does not permit the dealer to exercise discretion, the lender can assess the prepayment/default risk associated with a given interest rate.

- When the dealer is able to exercise discretion, the lender must develop an expectation of what the contract rate is likely to prevail and assess default risk conditional on that contract.

- Mark-up caps are generally tied to term, with longer term loans having more restrictive caps.

The Dealer's Problem

- The dealer has several deal components from which he derives rents. These include the auto, add-ons/warranties, and financing. His objective is to maximize his net profit from the deal.[13]

[12] The dealer does observe the size of the downpayment (relative to any required minimum). This may not be known to the lender and may be informative regarding the probability of default.
[13] Some would argue that building customer loyalty (for future purchases or servicing) is also part of the objective function.

- Compensation arising from sale of the auto and add-ons/warranties is realized immediately (or within 90 days). The buyer either pays cash for these components or finances the deal through a lender which results in the dealer being paid. Additionally, there is no prepayment/default risk associated with those returns (or no discount applied to those returns to compensate a lender for bearing the risk).[14] Therefore, if the budget constraint applies to the bundle of vehicle price, add-ons, and financing, the dealer would prefer to extract rents via the sales price and add-ons to the fullest extent possible.

- It is possible that the consumer views the financing as a separate component. The lender wants to lend at the highest interest rate that the consumer will pay, conditional on the consumer still taking the deal. If this increases the size of the pie to be split (and results in the dealer ultimately having higher compensation), the dealer supports the increase as well.[15]

- For the purpose of this analysis, I assume that the non-finance components of the deal are fixed.[16]

*I. Dealers have the ability to price discriminate more effectively than lenders*

- Price discrimination (distinct from discrimination for fair lending purposes) is the ability for a seller to earn different margins on different sales of the same good or service. If it is the case that all consumers may be served by a seller at the same cost, this equates to having different prices.

- Market segmentation (a type of price discrimination) can occur when the seller has information regarding the willingness to pay for different groups and uses this information to offer different prices to different groups.[17]

[14] Lender compensation, either explicitly or through markup, is generally a function of the amount financed. Increasing the amount financed by raising the car price or through sale of add-ons and warranties means that the dealer earns both the profit associated with the sale of the car or add-ons as well as a share of the profits associated with financing a larger amount.

[15] Since the price of financing is based on an individual's risk profile and the deal-specific terms, the consumer is not as likely to be aware of the competitive price for financing as he is likely to be aware of the competitive price for other components of the deal. Therefore, the consumer's price elasticity for demand for financing is likely smaller in absolute magnitude than for other components of the bundle.

[16] If the dealer is currently subsidizing the price of the auto or other deal components with compensation obtained through the assignment of a loan to a lender, it is possible that a decrease (increase) in those profits could lead to an increase (decrease) in the lowest price at which the dealer is willing to offer other components. A BHPH dealer is likely doing the opposite. The expected return from financing the deal is sufficiently low (potentially negative) that the market requires that the financing component be bundled with the profits achieved from the other deal components.

[17] In order for price discrimination to occur, a firm must have market power (that is, they find it profitable to raise price above marginal cost), and resale/arbitrage of the product must be prevented. At the point in the auto purchase process where a consumer is faced with the option to purchase financing, search is costly.

- The dealer can use observable information to determine the consumer's likely responsiveness to price and segment the market above and beyond what the lender is able to consider in setting the buy rate for the loan. [18]

- As information about consumer's willingness to pay becomes more precise, the discriminating monopolist increases its profits and deadweight loss decreases. Consumer surplus first increases and then decreases. When information is perfect, there is no deadweight loss, and the monopolist captures all surplus.
    - Additional market segmentation results in inelastic consumers paying higher prices and elastic consumers paying lower prices.
    - Dealers are better off
    - The effect of additional information on consumer welfare is ambiguous (assumes that aggregate output may increase with price discrimination)

**Comment [LP8]:** Discuss output misallocation (additional assumption). See Liu and Serfes (2008) Third-Degree Price Discrimination

- In offering financing services to consumers, dealers choose to price discriminate provided that their compensation is increasing in their ability to do so. At this point in the transaction, the dealer is able to act as a price discriminating monopolist.[19]

---

[18] For an individual consumer, demand may be inelastic up to a reservation price. However, sellers generally do not know the consumer's reservation price, so expected market demand is downward sloping.

[19] Even if a particular lender does not structure compensation in this way, the resulting market equilibrium could be that different lenders offer different buy rates for the same contract (with dealer compensation increasing in the buy rate). [In theory, an aggregator like DealerTrack or RouteOne could offer loans directly to consumers. However, lenders likely have little incentive to participate in such an arrangement. Dealer mediated lending likely softens price competition]