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ANALYSIS

Vehicle Equity and Long-Term Car Loans

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Introduction

There has been a spate of articles lately illustrating concern about elevated growth in the auto finance sector. Some have argued that increased subprime lending to low- and middle-income people threatens some of the same fallout experienced in the subprime mortgage crisis. Others have bemoaned the asset-backed securities sector and the fact that many auto loans are packaged into exotic deals and sold off to investors hungry for yield.

Vehicle Equity and Long-Term Car Loans

There has been a spate of articles lately discussing concerns about elevated growth in the auto finance sector. Some have argued that increased subprime lending to low- and middle-income consumers could result in some of the same fallout that occurred in the wake of the subprime mortgage crisis. Others have bemoaned the asset-backed securities sector in general, as well as the fact that many auto loans are packaged into exotic deals and sold off to investors hungry for yield.

Most of these concerns seem unfounded. The subprime auto industry has been around for many years and historically, although anecdotes about poor underwriting can always be found, the rate of industry losses has been manageable. This situation would likely continue even if recent macroeconomic good fortune were to evaporate. Although the concept of a subprime mortgage was a radical idea in 2004, the notion of "no credit, no worries" in the auto sector has never been particularly controversial.

There are three main reasons for optimism regarding auto finance. First, the auto markets are inherently nonspeculative. If you know of anyone stockpiling Toyota Camrys with a view to a quick flip then you have my blessing to panic about the state of auto finance. Second, if the economy goes south, favorable used-vehicle supply-side dynamics will eventually kick in to offset elevated default rates. Third, Americans love (and significantly rely on) their cars and will typically sacrifice much to maintain access to individualized transportation.

One recent trend in auto lending that does raise concerns, however, is the growth in longer-term loans. In the past, consumers would typically take a 60-month loan as the standard option to buy a new car, with some cash-strapped buyers possibly being offered a 72-month loan to get the deal done. Nowadays, many are signing up for 84- or even 96-month commitments, especially at the subprime end of the spectrum.

Some will say that since cars are now built better and last longer, the move toward longer-term loans is a reasonable development. Bear in mind that when the loan is finally exhausted—be it after five, eight or 20 years—the car owner will hold some equity, even if it is merely the salvage value of the vehicle. The question, though, is not whether a vehicle is still drivable after eight years. The more pressing issue is the relationship between the principal outstanding on the loan and the dynamics of the car's market value at interim periods. How will borrowers behave if, after five years, their ride is under water, with three years of loan payments still to go? Will they keep licking the stamp?

To understand this question, it helps to quantify the equity remaining in the vehicle under some typical assumptions about loan terms. To assist in this endeavor, we can use Moody's Analytics forecasts of car wholesale values under stress economic scenarios at the make/model/year level.

Consider two different vehicles: One is the Toyota Camry, which is the fifth highest-selling vehicle in the U.S. and well-regarded in terms of its resale value. (Side note: Will our analysis suggest a missed speculative opportunity?) The other vehicle is the Jeep Wrangler, which is famous for its retention of value in the secondary used-vehicle market. We assume that they are both 2014 vehicles purchased in early 2014 and consider loans with two interest rates: one with a 12% APR and one for which a relatively good-quality borrower can negotiate a 6% annual rate. We also assume that the loan amount is approximately equal to the full economic value of the vehicle on the day of purchase. In other words, we assume that the down payment covers on-road costs, including any depreciation caused by merely driving the vehicle off the lot.

Charts 1 and 2 show the results for the Camry and Wrangler based on the lower interest rate assumption.

The projections indicate substantial seasonality. The source of this is the seasonal pattern in the outcomes of wholesale vehicle auctions, which form the basis of the projections developed here. Looking through these cycles and focusing on the trend, we see that under baseline macroeconomic conditions, the 60-month loan generates substantial amounts of equity in the vehicle across the entire forecast horizon. Camry owners with such loans can expect to end their term owning a $12,000 car outright, while the Wranglers will be worth slightly more at that point (the vehicles, as specified, have similar values on day one).

By way of contrast, when we assume an eight-year loan term, we see that the equity held in the vehicle never amounts to much. Under baseline conditions, we find that the Camry owner has just shy of $4,000 in the vehicle after a little more than two years, but this figure will decline as the vehicle ages and end the five-year forecast horizon a little higher than a grand to the good. The

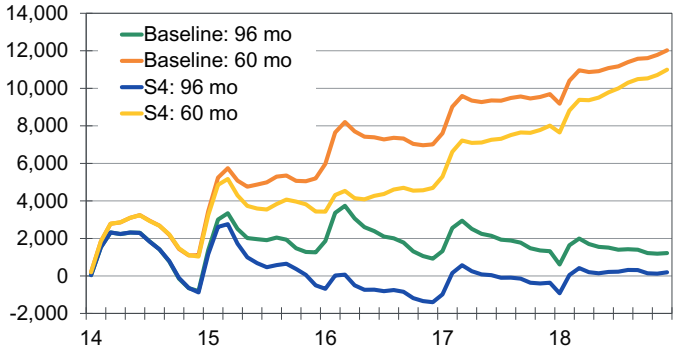
Equity after 60 months and 96 months, in baseline and S4 (dire) scenarios

Equity held by vehicle owner, 6% APR, $

Toyota Camry

Chart 1: Equity Fails to Grow in 96-Month Loans

Equity held by vehicle owner, Toyota Camry, 6% APR, $

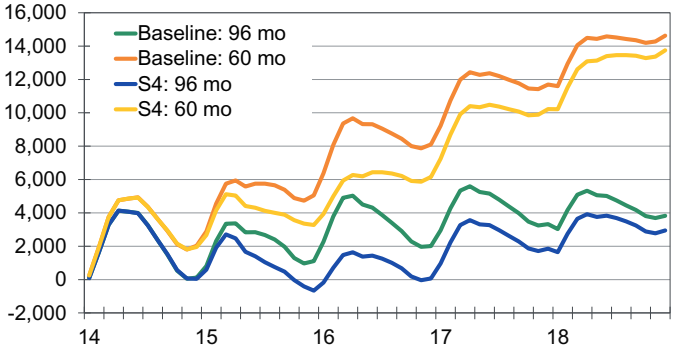


Source: Moody's Analytics

Jeep Wrangler

Chart 2: Recession Kills Aftermarket Champion

Equity held by vehicle owner, Jeep Wrangler, 6% APR, $



Source: Moody's Analytics

situation is a bit better for Wrangler owners: Equity in the vehicle will grow over time, albeit at a glacial pace, ending the five-year window at around $4,000.

In a dire macroeconomic scenario (the Moody's Analytics S4 scenario), the situation for 96-month loans becomes even more tenuous. Wrangler owners' equity does not start to turn positive until three years into their loan term, while Camry owners effectively never build a significant ownership stake in their vehicles. Specifically: For the Camry, the 96-month loan is almost $3,000 under water after three years, but for the Wrangler, it is closer to $1,000. In S4, the 96-month Camry loan remains under water through the entire forecast period. (Based on these numbers, Camry speculation looks like a fool's errand.) By contrast, the 60-month loan terms yield positive equity at all points in time even in the event of a recession; the dynamics for a 12% APR loan are similar (see Charts 3 and 4).

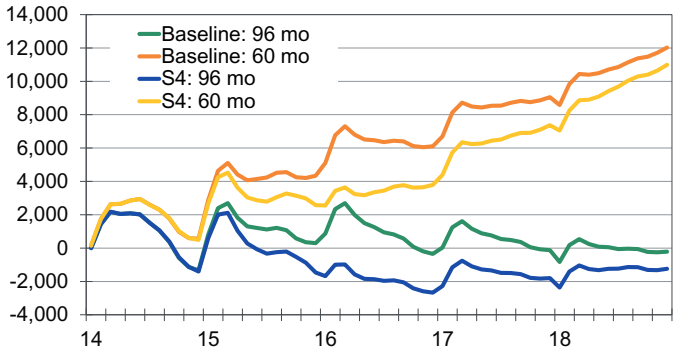
We can draw several additional conclusions from this analysis. The first is that, in most respects, 96-month auto loans are effectively operating as unsecured loans. From the bank's perspective, after costs are carefully considered, it is a toss-up whether the wholesale value of the vehicle will cover the outstanding balance of the loan, assuming a 96-month term and a "full economic value" starting point. This suggests that interest rates on 96-month loans really should be only marginally lower than on the equivalent unsecured personal installment loans made to borrowers with similar credit scores. The car might still be worth something after repossession, but only if a number of external factors go right for the bank.

One implication of this analysis is that if a 96-month loan is already effectively an unsecured loan, a bank might as well issue 108-month loans—such a trend would make little difference to the likely dynamics of available vehicle equity. Then again, giving subprime clients 108 potential payments to miss would almost certainly be a losing proposition!

All joking aside, the final point is that down payments are obviously critical. With outstanding equity almost flat under the assumptions employed here, it makes sense for

Chart 3: Camry Is Not a Good Speculative Play

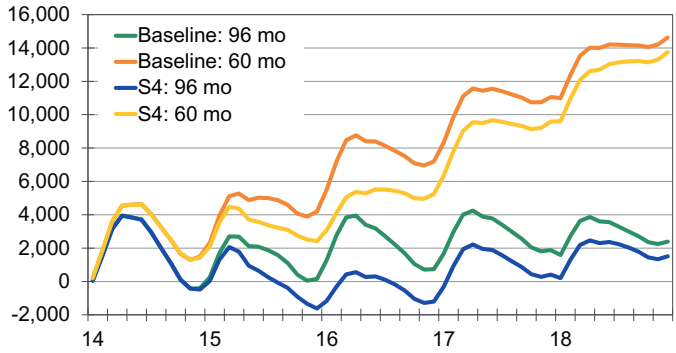
Equity held by vehicle owner, Toyota Camry, 12% APR, $



Source: Moody's Analytics

Chart 4: Wrangler Equity Is Thin With High APR

Equity held by vehicle owner, Jeep Wrangler, 12% APR, $



Source: Moody's Analytics

financiers to build a buffer into the terms of the loan in the form of a higher down payment. Lenders who grant these loans should nonetheless be aware that the borrower's initial equity is unlikely to grow during the life of the loan. Further, the desirability of a large down payment likely negates the need for a 96-month loan in the first place.

"Sure, we can get you into a 96-month loan, but you have to pay $4,000 up front" is a lot less catchy than "no credit, no problem!"

About the Author

Tony Hughes is a managing director in the Economic & Consumer Credit group at Moody's Analytics. He is the head of a small group of high-caliber modelers, charged with identifying new business opportunities for the company. Prior to this appointment, he led the Consumer Credit Analytics team for eight years from its inception in 2007. His first role after joining the company in 2003 was as lead economist and head of the Sydney office of Moody's Economy.com.

Dr. Hughes helped develop a number of Moody's Analytics products. He proposed the methodology behind CreditCycle and CreditForecast 4.0, developed the pilot version of the Stressed EDF module for CreditEdge, and initiated the construction of the Default, Prepayment and Loss Curves product, which provides forecasts and stress scenarios of collateral performance for asset-backed securities and residential mortgage-backed securities deals worldwide. More recently, he championed the development of the Pre-Provision Net Revenue Factors Library, a tool that provides industry-level projections of key bank balance sheet line items. In the credit field, Dr. Hughes' research has covered all forms of retail lending, large corporate loans, commercial real estate, peer-to-peer, structured finance, and the full range of PPNR elements. He has conducted innovative research in deposit modeling and in the construction of macroeconomic scenarios for use in stress-testing.

Dr. Hughes has managed a wide variety of large projects for major banks and other lending institutions. In addition, he has published widely in industry publications such as American Banker, Nikkei, GARP, and the Journal of Structured Finance as well as papers in peer-reviewed academic journals. He obtained his PhD in econometrics from Monash University in Australia in 1997.

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