## Moodys ANALYTICS

## How Will the Increase in Off-Lease Volume Affect Used Car Residuals?

## Today's Speakers



## TONY HUGHES, MANAGING DIRECTOR

An expert applied econometrician, Tony has extensive expertise in loss-forecasting analytics and has developed stress testing and modelling approaches for auto finance, retail, C\&I, and CRE portfolios. Tony has published widely in industry publications such as Auto Remarketing, Subprime Auto Finance News, American Banker, and GARP. He obtained his PhD in econometrics from Monash University, Australia.

## MICHAEL VOGAN, LEAD AUTO ECONOMIST

Michael Vogan is the lead auto economist at Moody's Analytics. Before joining Moody's Analytics, Michael was a research analyst at the Federal Reserve Bank of Philadelphia. He holds a master's degree in applied economics and econometrics from the University of Delaware and a bachelor's degree in economics from Bloomsburg University.

## Moody's Analytics extends Moody's capabilities beyond credit ratings.



Moody's Analytics, a unit of Moody's Corporation, helps capital markets and credit risk management professionals worldwide respond to an evolving marketplace with confidence.

The company offers unique tools and best practices for measuring and managing risk through expertise and experience in financial risk management.

## Moody's Analytics has extensive, integrated expertise in financial risk management

" We cover the full spectrum of risk, including economic, credit, investment, market, liquidity and solvency management.
" We have extensive experience in auto finance risk, covering origination, securitization, stress testing and scenario analyses.
" Our trusted forecasts, scenarios and models are in use by large captives and banks for their regulatory and risk management needs.
" We are extending our forecasting expertise to automobiles by incorporating economic factors into residual value forecasts.

## Agenda

"Economics of off-lease vehicles
" State of the US vehicle fleet
"Effect of off-lease volume on used vehicle prices
" Conclusion, Q\&A

## No Doubt That Off-Lease Volume Will Rise

Estimate of potential off-lease units per quarter, thousands


Sources: Moody's Analytics, CreditForecast.com


## Record New Vehicle Sales Were in 1978

In demographically adjusted terms


Sources: BEA, Federal Highway Administration, Moody's Analytics

## Signs that Leasing is Losing its Luster

Lease auto finance originations and auto finance total delinquency balance


Sources: Moody's Analytics, CreditForecast.com

## Vehicle Supply \& Demand

High numbers of off-lease vehicles increases both supply and demand


## Current Forecast Calls For Trend Price Increase

Manheim vehicle value index, Jan $95=100$


Sources: Manheim, Moody's Analytics

## Consumer Preferences Change Very Slowly

" A person who is normally happy owning a 3-8 year old car may have been tempted by a cheap new car lease, but will likely revert to form.
" There are risks to the industry associated with people shifting back from new cars to used cars.
" If there really were "too many" new cars on the road, while we would expect the average vehicle age to be falling, we do not.


## The State of the US Vehicle Fleet

## Retirement Rate Will Support Used Car Prices

Estimated vehicles retired or due for retirement, $1998=100$


Sources: Moody's Analytics, Consumer Expenditure Survey

## Vehicle Retirements Highest for 14 Year Old Cars

Annual vehicle retirements by age, 2010-2020, millions


Sources: Moody's Analytics, Consumer Expenditure Survey

## Fewer Middle Aged Cars, More Old Cars than 2008

Relative distribution of cars by age, \%


Sources: Moody's Analytics, BLS (Consumer Expenditure Survey)

## Earlier Recessions Had a More Muted Impact

Relative distribution of cars by age, \%


Sources: Moody's Analytics, BLS (Consumer Expenditure Survey)

## Earlier Recessions Had a More Muted Impact

Relative distribution of cars by age, \%


Sources: Moody's Analytics, BLS (Consumer Expenditure Survey)

## Retirements Will Be Low From 2020-2025

Relative distribution of cars by age, \%


Sources: Moody's Analytics, Consumer Expenditure Survey

## Retirement Rate Will Support Used Car Prices

Estimated vehicles retired or due for retirement, $1998=100$


Sources: Moody's Analytics, Consumer Expenditure Survey

## How Will This Affect Prices?

## Buyers of 6-8 Year Old Cars Will be Squeezed

Relative distribution of cars by age, 2015, \%


Sources: Moody's Analytics, BLS (Consumer Expenditure Survey)

## Conclusion

" Given the "hole" and the related decline in vehicle retirements, the supply picture will look very different in three years.
" Within next two years, risks are more finely balanced than most realize:

- Off-lease volume is definitely a risk. Will off-lease demand balance off-lease supply?

A high vehicle retirement rate represents a potential upside risk.
" On balance, while we will continue to expect softness in prices for young cars, broad indices like the Manheim will remain solid.


## Q\&A

## Residual Value Forecasting Solution

Moody's Analytics AutoCycle™ solution offers a quantitative, transparent methodology for incorporating economic factors into residual forecasts.

We provide a robust solution for front-end price setting and back-end risk management applications. Key Features:
" Forecasts under baseline and stressed scenarios, covering existing vehicles and future model years.
"Forecasts driven by macroeconomic factors including supply and demand drivers, and account for vehicle mileage and age.

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