The credit profile of Carvana crashes as inflationary headwinds upend its debt-funded growth

by Amrita Parab

- **NUS-CRI PD of Carvana deteriorates as declining sales, increasing costs, and an ill-timed debt-funded acquisition push credit risk higher**
- **NUS-CRI Agg Forward PD of US-domiciled car dealers suggests that declining demand in face of macroeconomic headwinds may possibly worsen credit health for the whole industry**

Carvana, the fastest growing online automobile retailer domiciled in the US, shot to popularity during the pandemic as demand for the e-commerce automotive platform drove up interest from both customers and investors alike. However, since the start of 2022, inflationary headwinds, a recently completed debt-funded acquisition, and a wider-than-expected loss caused Carvana's NUS-CRI 1-year Probability of Default (PD), which had remained consistently below BB upper bound for the most part of 2021, to sharply deteriorate in Apr-2022. The NUS-CRI Forward 1-year PD[1] (See Figure 1b) as of Apr-2022 suggests a possible improvement in credit health should the company be able to effectively execute its plan to control costs and capital expenditures in the near term. However, the broad slowdown in the economy and tightening financial conditions indicate that the demand for used cars may remain depressed for a longer period.

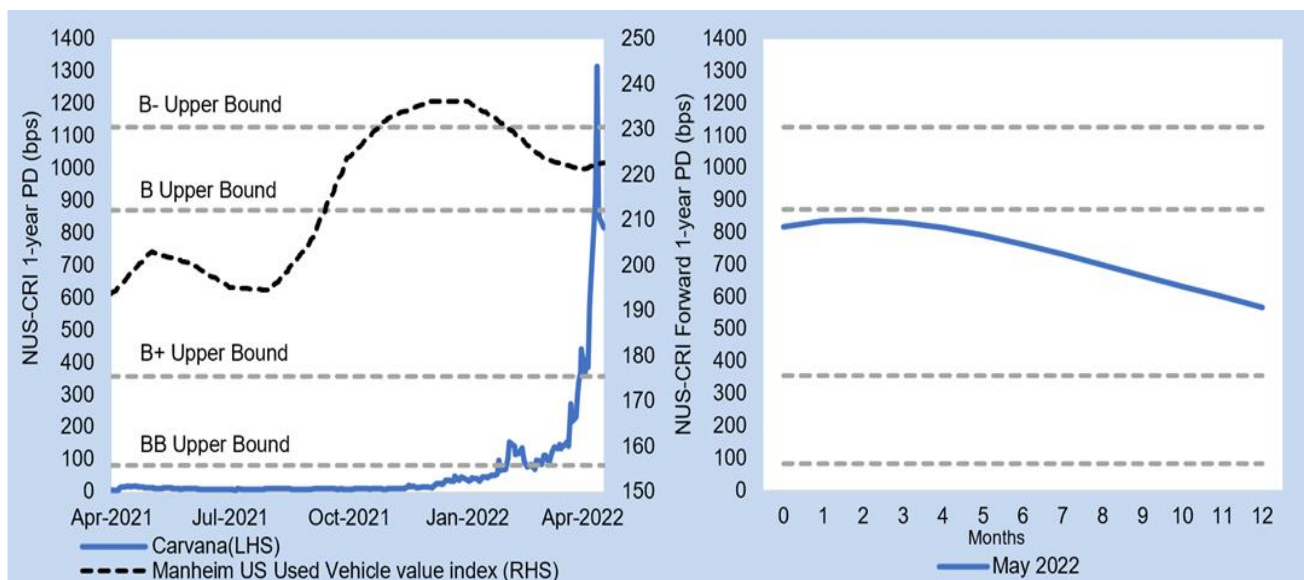

Figure 1a (LHS): NUS-CRI 1-year PD for Carvana from Apr-2021 to May-2022 with reference to PDiR2.0[2] bounds; Manheim US Used Vehicle value index (Base Year 1995=100). Figure 1b (RHS): NUS-CRI Forward 1-year PD for Carvana as of May-2022 with reference to PDiR2.0 bounds. *Source: Bloomberg, NUS-CRI*

Unsurprisingly, the ongoing semiconductor shortages, driven by global supply-chain disruptions, have been limiting auto manufacturers' ability to increase production since the onset of the pandemic. As a consequence, 2021 saw a surge in demand for used car dealers with prices of used cars also increasing in tandem (See Figure 1a). However, with US inflation levels reaching a four-decade high, consumer demand for discretionary goods, such as automobiles, is decreasing. For a company that saw a surge in demand and revenue during the midst

[1] The Forward PD estimates the credit risk of a company in a future period, which can be interpreted similarly to a forward interest rate. For example, the 6-month Forward 1-year PD is the probability that the firm defaults during the period from 6 months onwards to 18 months – this is conditional on the firm's survival in the next 6 months.
[2] The Probability of Default implied Rating version 2.0 (PDiR2.0) provides a more familiar interpretation through mapping the NUS-CRI 1-year PDs to the S&P letter grades. The method targets S&P's historical credit rating migration experience exhibited by its global corporate rating pool instead of relying solely on the reported default rates.

of the pandemic, Carvana reported its first decline in sales in Q1 2022[3]. Owing to its worsening operating performance since 2017, Carvana has historically relied on external financing to support its working capital needs. The company has also incurred significant capital expenditures as it prioritized growth over financial health, making it vulnerable to increasing borrowing costs, which could, in turn, further squeeze its narrowing margins. Moreover, Carvana's reckless procurement of expensive inventory, that remained unsold[4] amid low demand, inflated costs as additional storage and maintenance expenses would need to be incurred. In Q1 2022, the company realized a loss of USD 3,255 on every vehicle sold, as the EBITDA margin decreased to -10.4%. The impact of the unfavorable macroeconomic conditions, especially waning demand, was felt by the rest of the industry as well. Figure 2a and 2b show the NUS-CRI Aggregate (Median) 1-year PD (Agg PD) and Forward 1-year PD (Agg Forward PD) for listed car dealers domiciled in the US worsening over the next 12 months, crossing the BB upper bound when referenced to PDiR2.0. The deteriorating credit profile and negative credit outlook suggest that the industry may also be susceptible to Carvana's current woes, hence, its situation may be referred to as a warning against adopting aggressive expansion strategies in the current macroeconomic scenario.

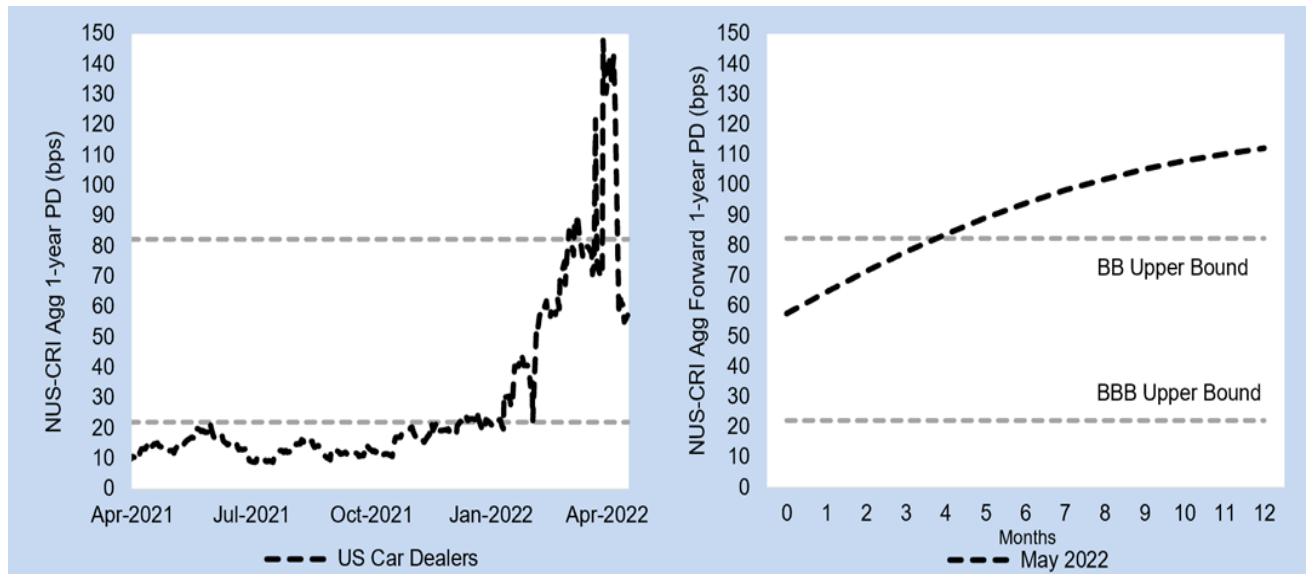

Figure 2a (LHS): NUS-CRI Agg (median) 1-year PD for US Car Dealers from Apr-2021 to May-2022 with reference to PDiR2.0 bounds. Figure 2b (RHS): NUS-CRI Agg (median) Forward 1-year PD for US Car Dealers as of May-2022 with reference to PDiR2.0 bounds. *Source: NUS-CRI*

Carvana's recent acquisition of Adesa[5] was aimed at leveraging Adesa's business strengths to increase capacity, improve delivery times, and boost sales by providing a wider product offering to consumers. However, the company's growth strategy proved to be ill-timed as it came just as the impact of inflation on vehicle sales became apparent. Carvana has been relying heavily on capital markets to raise financing due to its weak liquidity position (See Table 1). With unfavorable macroeconomic factors impacting earnings, the company's declining sales and poor operating results have made it difficult for Carvana to access capital markets. When its recent bond offering to fund the acquisition failed to attract investors, it was forced to add investor-friendly covenants and agree on a higher coupon rate of 10.25%[6] in order to secure funding, signaling that its access to bond markets will only get more difficult going forward. Similar to debt markets, the company's access to equity markets may continue to be hindered as investors lose confidence.

[3] Concurrent with a slowdown in demand, the prices of used cars also dropped adding to the pressure on the company's revenue-generating abilities.
[4] As of Mar-2022, inventories comprise 43.6% of Carvana's total assets; while average inventory days have increased to 91.8 in Q1 2022 from 59.1 for the same period in 2020.
[5] Carvana announced its intent to acquire the physical auction business of Adesa US from KAR Global in Feb-2022 for USD 2.2bn. The deal was successfully completed in May-2022.
[6] The bond, which was issued at the start of May, is currently trading at a YTM of 13.37%, close to three percentage points higher than at issuance.

	Q2 2021	Q3 2021	Q4 2021	Q1 2022
EBITDA to interest expense	2.77x	0.38x	-0.87x	-5.72x
Quick ratio	0.61x	0.67x	0.33x	0.23x
Debt to capital	80.9%	84.8%	91.7%	99.2%

Table 1: Key financial ratios of Carvana. *Source: Bloomberg*

Going forward, the credit health of Carvana will largely depend on its ability to improve operational efficiency. The company has shown commitment to optimizing its operating expenses[7] and reducing dependence on external financing. At the same time, Carvana expects to reduce long-term borrowings by lowering its capital expenditure in the upcoming quarters. Should the company be able to tide over its current distressed position, and successfully realize its planned operational objectives, it may see an improvement in its credit health. The hump-shaped forward PD curve in Figure 1b suggests that data-based prediction seems to lend support to such a scenario.

[7] In the near term, Carvana has set a targeted goal to reduce SG&A expenses from around USD 4,700 per unit to USD 3,000 per unit. Simultaneous to the completion of the acquisition, the company laid off 12% of its workforce in an effort to bring down costs by an estimated USD 125mn annually. In addition to personnel costs, the company also expects to realize savings via efficient management of advertisement and logistics expenses.

Credit News

Investors urge US to extend Russian bond payment waiver

May 18. Investors are urging the US office of foreign assets control (OFAC) for an extension on the waiver that allows them to receive payments on Russian bonds despite the ongoing sanctions against the country. The extension of the waiver will also allow depositary receipts tied to Russian companies more time to convert them to local shares. So far, this has been restricted by the sanctions increasing liquidity and counterparty risk as market participants do not wish to hold securities and bonds of Russian corporates. Should the extension of the waiver not go through, the Russian government will be one step closer to default, with the resultant fallout rippling through the Russia-domiciled corporates. (Bloomberg)

Chinese developers get state help to tap bond market

May 19. China's central bank and its property developers are utilizing a myriad of measures to revive the real estate industry which had nosedived last year owing to the weak economic sentiments of the nation and the poor financial structure of developers. China's central bank attempts to improve the accessibility of mortgage loans by reducing mortgage rates and easing procedural restrictions. The developers, on the other hand, tap into the bond and credit derivatives market to reduce credit risk. However, the credit derivative tool is a less viable option for weaker firms that carry a greater credit risk. Therefore, as stronger developers have more resources to tap into to mitigate their default risk, these players are likely to make up a substantial portion of the Chinese property market in the future. (WSJ)

Retail stock meltdown shows signs of seeping into junk bonds

May 20. Retail giants have not been immune to the market downswing that was set in motion by the spiking inflation. These factors pressure margins by lowering demand, thereby increasing the risk that the expected profits from the inventories would remain unrealized. With the narrowing margins, investors also fear that liquidity may be hindered, heightening the likelihood that retailers will not be able to pay for interest on their outstanding bonds as maturities are nearing. Collectively, the sentiments have sent bond returns tumbling by as much as -16%. (Bloomberg)

China stops reporting bond trades by foreigners after selloff

May 17. China's main bond trading platform for foreign investors has stopped providing data on their transactions. Due to the decline of the main rate of the Chinese market, global funds sold record amounts of Chinese sovereign debt in February and March as their yield premium over treasuries collapsed. While China has taken steps in recent years to improve foreign access to its markets, international investors have long had concerns about the reliability of the nation's official data. The missing data add to the uncertainty over capital flows into and out of China. Data showed foreign investors offloaded USD 6.2bn of Chinese government bonds in April, but experts predict the sudden decline of the yuan likely stoked selling again. (Bloomberg)

Investors dare to dip back into bonds

May 21. Most of the buyers anticipate that bond prices have fallen to levels they say are too good to pass up, offering a credible alternative to stocks. Investors historically held bonds as ballast against more volatile stocks, but that dynamic broke down this year when debt and equity markets fell together in anticipation of the Fed's shift to more aggressive interest-rate increases. After the recent downturn, bonds seem closer to their bottom than stocks, and the ability for fixed income to act as an equity buffer has increased, while the risk of buying now is that high inflation could persist, forcing the Fed to push interest rates past current forecasts. (WSJ)

US corporate bond deals to ebb this year amid higher rates, volatility - BofA (Reuters)

Russia threat deters bond investors from Baltics and Finland (FT)

Elon Musk has a bigger problem than Twitter bots: A huge debt burden (Bloomberg)

Regulatory Updates

Powell says Fed will 'keep pushing' until inflation comes down

May 18. After hiking interest rates by 50bps earlier this month, the Fed emphasized its determination to combat inflation aggressively, reiterating that subsequent hikes of similar magnitude are underway. The Fed acknowledged that the further tightening of monetary policy might hurt the labor market, but overall, the US economy is adequately prepared and capable of withstanding it. One of the Fed's objectives is to curb the price pressures in the housing sector after the rise in long-term yields pushed borrowing costs up. Aside from inflation, the Fed also considers the impact of supply chain disruptions caused by the Russia-Ukraine war and lockdowns in China as it formulates its near-term policy. (Bloomberg)

BOE's Pill sees need for further interest rate rises

May 20. BOE looks to hike interest rates further as England faces historically high inflation rates of 9.0%. Interest rates have been raised four times since Dec-2021 and are projected to double by the end of 2022 from 1% currently. This wave of inflation comes about from expectations, geopolitical conflicts, supply chain disruptions, and escalating energy prices. Although forecasts published by the BOE envision inflation dropping to optimal levels in three years, it severely disregards potential future European policies on Russian fuel exports which could impact consumer price levels. (Reuters)

India cuts taxes and boosts subsidies to fight inflation (Bloomberg)

Canada to ban Chinese telecoms Huawei and ZTE from 5G networks (FT)

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