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RIVIAN

<u>Company Analysis Report – Rivian (NASDAQ: RIVN)</u>

Report Date: December 5, 2023

Current Share Price: \$17.41

Target Share Price: \$22.33

Recommendation: Buy

Investment Horizon: 12 months

Implied Return: 28.2%

Investment Thesis

- 1. RIVN is ahead of most other upstart EV manufacturers as it has started generating revenue it has an impressive reservation count and an agreement with Amazon, which will provide cash flow during the production ramp-up phase.
- 2. Trucks and SUVs have become increasingly popular with U.S. consumers while competition in the electric truck/SUV segment is increasing due to new models from Ford, GM, Tesla, and others.
- 3. The introduction of the more affordable R2S model will help RIVN capture customers that are migrating to lower-priced vehicles.
- 4. Termination of exclusivity with Amazon opens doors for commercial customers.

Investment Team

Michelle Yihan Xu: <u>michelle.xu@yale.edu</u> Anran Cai: <u>anran.cai@yale.edu</u>

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Business Overview

Rivian Automotive, Inc. ("Rivian"), founded in 2009, designs, develops, manufactures, and sells electric vehicles ("EV") and accessories. Rivian is based in Irvine, California, with facilities in California, Illinois, Michigan, Arizona, Canada, and UK. Rivian has a company-wide sustainability strategy and has signed the Climate Pledge to reach that goal by 2040, 10 years ahead of the Paris Agreement.¹

The company offers the R1T five-passenger pickup truck and R1S seven-passenger sports utility vehicles ("SUV") (Appendix A). It also provides Rivian Commercial Vehicle ("RCV") for Electric Delivery Van ("EDV") with collaboration with Amazon.com, Inc. The company sells its products directly to customers in the consumer and commercial markets.

Recent Development

In June 2023, Rivian announced that it would incorporate Tesla's EV charging standard, the North American Charging Standard (NACS) into R1T trucks and R1S SUVs in 2025, as well as in its upcoming R2 platform. Rivian owners may be able to use adapters to connect to Tesla's Supercharger network starting spring 2024.²

In October 2023, it was reported that Amazon's total fleet size of the EDV had reached 10,000 units. In its partnership with Amazon, Rivian expects to deliver 100,000 electric vans by 2030.³ Rivian also announced that it will allow other companies to purchase its custom-designed RCV, which will provide more upside for potential growth.⁴

In early 2024, Rivian plans to build a new Georgia manufacturing facility, which will have an annual production capacity of 400,000 units when fully complete and is located 40 minutes from Atlanta.⁵

¹ Rivian company website

² https://www.cnn.com/2023/06/20/business/rivian-tesla-chargers/index.html

³ <u>https://www.aboutamazon.com/news/transportation/everything-you-need-to-know-about-amazons-electric-delivery-vans-from-rivian</u>

⁴ Rivian company report

⁵ https://www.evinfocus.com/rivian-new-georgia-plant-to-spit-out-400-000-vehicles-yr/

Industry Overview⁶

CFRA Research estimates that global vehicle sales will increase by 10.2% to 90.0 million units in 2023 and another 3.0% to 92.7 million in 2024, as compared to an estimated 81.6 million in 2022 (-1.4% Y/Y). Global vehicle sales were up 10.6% in the first eight months of 2023, mainly driven by increases in Europe (+19%) and North America (+14%).

U.S. light vehicle sales is estimated to recover by 12% to 15.4 million units in 2023 and another 4% to 16.0 million units in 2024. Recovering inventory levels and an increase in promotional activity would help boost sales in the face of near-record high new vehicle prices and high interest rates in 2023.

On the positive side, economic growth and low unemployment rates would help support vehicle prices. Margins will benefit from a combination of near-record-high new vehicle price realizations (\$47,899 in the U.S. in September 2023) and cost cuts implemented during the Covid-19 pandemic. Meanwhile, affordability has become a major issue weighing on new vehicle sales, causing many consumers to migrate to the lower priced vehicles or postpone new vehicle purchases.

EV sales are expected to be a growth driver as various new EV models come to market. In 2022, EVs accounted for 13.0% of all new vehicle sales worldwide and 5.8% in the U.S. According to Cox Automotive estimates, Rivian had a 5% share of the U.S. EV market in Q3 2023.⁷

One other major secular trend has been the growing popularity of pickup trucks and SUVs, and the waning popularity of smaller passenger cars. In 2022, 37% of all new vehicles were cars and 63% of all new vehicles were trucks under EPA's light-duty GHG regulations. This is the highest percentage of trucks since at least 1975 and is projected to increase further in 2023. As of May 2023, light trucks remained the largest U.S. auto market segment with 1.07 million units of sales, increasing by 23% y/y and representing 76% of market sales.⁸



U.S. vehicle sales between January 2021 and May 2023, by vehicle type (in 1,000 units)⁹

⁶ CFRA Research; 2023 EPA Automotive Trends Report

⁷ https://www.nasdaq.com/articles/rivian-stock-2030-forecast%3A-can-rivn-make-it-big-in-the-ev-industry#

⁹ Statista

⁸ Statista

Financial Drivers and Forecasts

Sales Volume

In North America, Auto sales growth and GDP growth are positively correlated. We did a regression on the years from 1990 to 2022 and found that the correlation coefficient is 3.0. However, if we exclude the extreme years of 2008-2009 (Great Financial Crisis) and 2020 (Covid pandemic), the coefficient is around 1.6.



U.S. light vehicle sales growth vs U.S. real GDP Growth (1990-2022)¹⁰





¹⁰ Statista, team analysis

¹¹ Statista, team analysis

GDP Growth Rate in the U.S.¹²



The sales and profitability of vehicles within the North American market predominantly favor larger models like SUVs, trucks, and vans. This trend aligns with the broader industry shift in North America, where there has been a growing preference for utility vehicles and trucks in recent years. We expect this trend to continue as the company's model lineup captures current consumer preference.

Rivian's Production & Delivery¹³



In early March 2022, Rivian announced price increases of up to 20% for customers who had already placed an order for the R1T or R1S, citing inflationary pressures, which resulted in backlash from customers and order cancellations, resulting in a big drop in vehicle delivery.¹⁴ The average delivery rate since 4Q21 is 85%, and without 1Q22 as an outlier, the delivery rate averaged at 90.3%.

¹² Statista

¹³ Rivian company report

¹⁴ CFRA Research

	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23
Production	1,003.00	2,553.00	4,401.00	7,363.00	10,020.00	9,395.00	13,992.00	16,304.00
% change		154.5%	72.4%	67.3%	36.1%	-6.2%	48.9%	16.5%
Delivery	909.00	1,227.00	4,467.00	6,584.00	8,054.00	7,946.00	12,640.00	15,564.00
% change		35.0%	264.1%	47.4%	22.3%	-1.3%	59.1%	23.1%
Delivery Rate	90.6%	48.1%	101.5%	89.4%	80.4%	84.6%	90.3%	95.5%
Avg delivery rate								85.0%
Avg delivery rate w/o 1Q22								90.3%

<u>Amazon Fleet</u>: From summer 2022 to fall 2023, Rivian delivered 10,000 RCV to Amazon¹⁵ – this indicates an average delivery of 2,000 per quarter and we assumed the same trend until end of 2023. Starting 2024, with the help of the new factory in Georgia, Rivian will have additional production capacity. With a target delivery of 100,000 by 2030, this indicates a delivery of 12,571 units per year for Amazon fleet.

<u>R1T & R1S</u>: For 4Q23, we based our forecast on the company's full-year guidance in its Q3 earnings report. For 2024, production will go down in the first half of the year due to factory shutdown for upgrades but will catch up in the second half of year and we expect the increase in production capacity will offset the production drop in the full year analysis. We then forecasted sales growth using similar trends to Telsa's numbers before and after new product launch – 2024 and 2025 will show rapid growth and the growth rate will slow down in 2026 due to new model launch.

<u>R2S</u>: Per management expectation, R2S will start with an assembly line with an annual production capacity of 200,000 units and will double to 400,000 units. We assumed that the assembly line for R2S will start at 200,000 units in 2026 and will reach 400,000 units in 2027.¹⁶ Tesla's delivery rate was 90.4% in 2016, before the delivery of Model 3, and averaged 98.7% since 2017.¹⁷ Rivian currently has a similar delivery rate of 90.3% as compared to pre-launch of Model 3. Therefore, we applied an average delivery rate of 98.7% on top of the estimated production to reflect the sales figure.

	Tesla Production & Delivery											
Year	2016	2017	2018	2019	2020	2021	2022	2023 YTD	Average (2017-2023)			
Production	83,922	101,027	254,530	365,284	509,737	930,422	1,369,611	1,350,996				
% YoY		20.4%	151.9%	43.5%	39.5%	82.5%	47.2%		64.2%			
Sale	75.9	103.1	244.9	367.2	499	935.95	1313.86	1324.08				
% YoY		35.8%	137.5%	49.9%	35.9%	87.6%	40.4%		64.5%			
Delivery Rate	90.4%	102.1%	96.2%	100.5%	97.9%	100.6%	95.9%	98.0%	98.7%			

Price

Starting prices for R1T, R1S, RCV 500, and RCV 700 are \$73,000, \$78,000, \$83,000, and \$87,000, respectively.¹⁸ As mentioned earlier, the company imposed a price increase in 1Q22, causing a big jump in ASP. ASP per quarter averaged \$79,978 since 4Q21 and \$82,917 since 1Q22 after the price increase. Average percentage change in ASP averaged 1.8% per quarter

¹⁷ Tesla company website

¹⁵ https://www.aboutamazon.com/news/transportation/everything-you-need-to-know-about-amazons-electricdelivery-vans-from-rivian

¹⁶ <u>https://topelectricsuv.com/news/rivian/rivian-compact-suv/#Production_Release_Date</u>

¹⁸ Rivian company website

since 2Q22 (excl. the price increase in 1Q22) and we expect this trend to continue for existing models.

	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23
Revenue (million \$)	54.0	95.0	364.0	536.0	663.0	661.0	1,121.0	1,337.0
ASP - Revenue/Delivery (\$)	59,405.94	77,424.61	81,486.46	81,409.48	82,319.34	83,186.51	88,686.71	85,903.37
ASP % change		30.3%	5.2%	-0.1%	1.1%	1.1%	6.6%	-3.1%
Avg ASP								79,977.80
Avg ASP w/o 4Q21								82,916.64

Rivian will launch its new R2S model in 2024 with expected delivery in 2026, with pricing ranging from \$40,000 to \$60,000.¹⁹ Here, we take an average starting price of \$50,000. According to the 3Q23 starting price and ASP, ASP has an average premium of 7% on top of the starting price, reflecting vehicle customization, sales taxes and fees. We apply this premium on R2S average starting price of \$50,000 and reached an estimated ASP of \$53,522 in 2026.



Revenue Forecast

Based on our analysis on volume and prices, we forecasted Rivian's revenue using sales*price, as summarized in the table below.

	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	3Q23	4Q23E	FY2023E	FY2024E	FY2025E	FY2026E	FY2027E	FY2028E
Sale	909.00	1,227.00	4,467.00	6,584.00	8,054.00	7,946.00	12,640.00	15,564.00	12,925.17	48,777.63	69,660.11	92,495.58	297,887.99	504,079.65	513,750.47
Delivery - Amazon fleet				2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00	8,000.00	12,571.43	12,571.43	12,571.43	12,571.43	12,571.43
Delivery - R1T & R1S				4,584.00	6,054.00	5,946.00	10,640.00	13,564.00	10,925.17	40,777.63	57,088.68	79,924.15	87,916.56	96,708.22	106,379.04
Delivery - R2S													197,400.00	394,800.00	394,800.00
Production - R2S													200,000.00	400,000.00	400,000.00
Delivery Rate - R2S													98.7%	98.7%	98.7%
Price															
ASP - Revenue/Delivery (\$) w/o R2S	59,405.94	77,424.61	81,486.46	81,409.48	82,319.34	83,186.51	88,686.71	85,903.37	85,903.37	86,706.05	93,117.20	100,002.40	107,396.70	115,337.74	123,865.96
ASP - R2S													53,522.35	57,479.85	61,729.98
Price premium								1.07							
Revenue (million \$)	54.0	95.0	364.0	536.0	663.0	661.0	1,121.0	1,337.0	1,110.32	4,229.32	6,486.55	9,249.78	21,357.39	35,297.11	39,104.91

¹⁹ https://www.digitaltrends.com/cars/rivian-r2-rumored-price-release-date-dsign-specs/

Cost of Goods Sold (COGS)

Rivian currently runs on high costs as it's ramping up production facilities. Given the short history of the company, we decided to look at the history of Tesla to see how its COGS has evolved. Although the COGS was very volatile at the inception of the firm, Tesla has managed to maintain its COGS around 72% since 2008, when it started producing the first model.



So, we decided to use COGS/Revenue of 72% for Rivian from 2025 onwards, in line with management's projection in the Q3 2023 earnings call that the firm will achieve a double-digit gross profit margin in 2025. We extrapolate the COGS in 2024 from the historical data and projections from 2025 onwards, which reflects the continued expenses to ramp up the Georgia plant.



Selling, General and Administrative Expenses (SG&A)

Tesla maintained a high level of SG&A spending at the inception of its production, but this decreased immediately in 2013, as the firm delivered its first mass-produced model. We think

Rivian will have a similar trend to Tesla from 2012 when it delivered the first Model S. From 2012 to 2017, SG&A averaged 19% for Tesla.



We expect SG&A to maintain the same level of 2023 as % of revenue in 2024, and decline to 19% in 2025 onwards.



Research and Development (R&D)

Similar to SG&A, Tesla's R&D expense declined sharply in 2013 after the production of its Model S.



Rivian's R&D spending in \$ amount has been very stable from 2021 to 2023, we expect this to continue for the first three years in projection, and to decline to 5% in 2027, similar to Tesla's spending as the company matures.

Depreciation & Amortization (D&A)

After the production of the first model in 2008, Tesla experienced a sharp drop in D&A. D&A/Revenue averaged 8% from 2009 to 2023.



We expect Rivian to experience a similar D&A change after the production facility upgrades in 2024.



Debt and Cost of Debt

The company issued \$1,250 million senior secured floating rate notes due October 2026 in October 2021, with an 11.0% interest rate as of September 30, 2023. In March 2023, the company issued \$1,500 million green convertible unsecured senior notes due March 2029 at a 4.625% annual interest rate. In October 2023, the company issued \$1,725 million green convertible unsecured senior notes due October 2030 at a 3.625% annual interest rate.²⁰ Due to the complexities of the floating rate note, we use the sum of 5-Year High Quality Market (HQM) Corporate Bond Par Yield of 5.94%²¹ and ICE BofA AA US Corporate Index Option-Adjusted Spread of 0.55%²² as cost of debt, which is 6.49%

Taxes

The company had an effective tax rate of 0% for the past years. We expect this to continue until 2033 that the company will start paying taxes on its profits. We use Tesla's effective tax rate in 2022 of 8% as a benchmark for the company.

²⁰ 10-Q

²¹ Fred

²² Fred

Valuation

WACC Calculation

WACC Calculation		
Risk Free Rate	4.20%	10-Year US Treasury
Beta	1.1	Industry beta
Equity Risk Premium	5.50%	LT average
Cost of Equity	10%	Per CAPM
Cost of Debt	6.5%	
% Equity	74%	
% Debt	26%	
Tax Rate	0%	
WACC	9.4%	
Growth - 5Y	3.5%	
Terminal Growth	2.5%	

DCF Valuation

NPV	15,668.0
Net Debt	(5,720.0)
Equity Value	21,388.0
Current Market Cap	16,677.0
No. of Shares outstanding	957.9
Current Share Price	17.41
Target Price	22.33
Implied Return	28.2%

	 2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E-2032E	2033E
Sales	 1,658.0	4,229.3	6,486.6	9,249.8	21,357.4	35,297.1	39,104.9		
- COGS	(4,781.0)	(6,057.3)	(6,980.3)	(6,659.8)	(15,377.3)	(25,413.9)	(28,155.5)		
- SG&A	(1,789.0)	(1,657.7)	(2,542.4)	(1,757.5)	(4,057.9)	(6,706.5)	(7,429.9)		
- D&A	 (548.0)	(875.6)	(518.9)	(740.0)	(1,708.6)	(2,823.8)	(3,128.4)		
EBIT	 (5,460.0)	(4,361.3)	(3,555.0)	92.5	213.6	353.0	391.0		
Tax rate	-	-	-	-	-	-	-		8%
Taxes	-	-	-	-	-	-	-		
Interest expense	(90.0)	(244.0)	(97.4)	(97.4)	(97.4)	(97.4)	(97.4)		
NOPAT	(5,550.0)	(4,605.3)	(3,652.4)	(4.9)	116.2	255.6	293.7		
+ D&A	548.0	875.6	518.9	740.0	1,708.6	2,823.8	3,128.4		
(Capex)	(1,369.0)	(1,100.0)	(1,234.5)	(1,234.5)	(1,234.5)	(1,234.5)	(1,234.5)		
Free cash flows	 (6,371.0)	(4,829.7)	(4,367.9)	(499.4)	590.3	1,844.9	2,187.6		
Terminal Value								10,746.0	38,167.6
PV of cash flows		(4,800.2)	(3,969.4)	(414.9)	448.5	1,281.6	1,389.5	6,240.0	15,492.9

For terminal values, we believe the company will maintain a high growth rate of 3.5% from 2028 to 2033 and revert to a terminal growth rate of 2.5% from 2033 onwards.

Appendix A: Rivian Models²³

<u>R1T</u>



Dual-Motor AWD Everyday driving and adventures		Performance [AWD Additional power and accele		Quad-Motor AWD Maximum on-road and off-road performance			
Est. range ² •	0-60 mph 4.5 sec	Est. EPA range ²	0-60 mph 3.5 sec	Est. EPA range ^z •	0-60 mph 3.0 sec		
Torque 610 lb-ft	Horsepower 533 hp	Torque 829 Ib-ft	Horsepower 665 hp	™ 908 lb-ft	Horsepower 835 hp		
Accented badging Black	Brake callpers Silver	Accented badging Black	Brake calipers Silver	Accented badging	Brake calipers Yellow		
	<u>A</u> errain		스 /P බ errain Sport Soft Sand	All-Purpose Snow All-T	☆ / ► 欠 Terrain Sport Rally ல ⊕ Sand Conserve		

²³ Rivian company website

<u>R1S</u>



Dual-Motor AWD Everyday driving and advent	ures	Performance [AWD Additional power and accele		Quad-Motor AWD Maximum on-road and off-road performance			
Est. range ⁴ • 260-400 mi	0-60 mph 4.5 sec	Est. range ⁴ 352-400 mi	0-60 mph 3.5 sec	Est. EPA range ⁴ •	0-60 mph 3.0 sec		
Torque 610 lb-ft	Horsepower 533 hp	Torque 829 Ib-ft	Horsepower 665 hp	Torque 908 Ib-ft	Horsepower 835 hp		
Accented badging	Brake callpers Silver	Accented badging Black	Brake calipers Silver	Accented badging	Brake calipers Yellow		
Drive modes / !\ * / All-Purpose Snow All-Te	<u>n</u> Prrain	Drive modes /:\ 🔆 / All-Purpose Snow All-Te	신 /ె 🔊 🔊 errain Sport Soft Sand	All-Purpose Snow All-T	▲ / → 欠 errain Sport Rally ⊋ ∲ Sand Conserve		

Commercial Van





Delivery 500

Starting at \$83,000 Up to \$7,500 in tax credits may apply

Delivery 700 Starting at \$87,000

Up to \$7,500 in tax credits may apply

