Mentioned Companies: TSLA

ARK's Price Target for Tesla in 2025

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Last year, ARK estimated that in 2024 Tesla's share price would hit $7,000 per share, or $1,400 adjusted for its five for one stock split. Based on our updated research, we now estimate that it could approach $3,000 in 2025.

To arrive at this forecast, ARK used a Monte Carlo model with 34 inputs, the high and low forecasts incorporating 40,000 possible simulations. Our bull and bear price targets are the top and bottom quartile outcomes from the simulations, as shown below:

ARK's Predicted Scenarios	2025 Price Target	Significance
Expected Value	$3,000	This projection is our base case for TSLA's stock price in 2025 based on our Monte Carlo analysis.
Bear Case	$1,500	We believe that there is a 25% probability that Tesla could be worth $1,500 per share or less in 2025.
Bull Case	$4,000	We believe that there is a 25% probability that Tesla could be worth $4,000 per share or more in 2025.

Note: Numbers for 2025 Price Target are rounded for simplicity and consistent with reasonable variance in the forecast.

Estimated Values in Bull and Bear Example Cases

	2020	Example Bear Case 2025	Example Bull Case 2025
Cars Sold (millions)	0.5	5	10
Average Selling Price (ASP)	$50,000	$45,000	$36,000
Electric Vehicle Revenue (billions)	$26	$234	$367
Insurance Revenue (billions)	Not Disclosed	$23	$6
Human-Driven Ride-Hail Revenue (net, billions)	$0	$42	$0
Autonomous Ride-Hail Revenue (net, billions)	$0	$0	$327
Electric Vehicle Gross Margin (ex-credits)	21%	40%	25%
Total Gross Margin	21%	43%	50%
Total EBITDA Margin*	14%	31%	30%
Enterprise Value/EBITDA	162	14	18
Market Cap (billions)	673	$1,500	$4,000
Share Price**	$700	$1,500	$4,000
Free Cash Flow Yield	0.4%	5%	4.2%

*Note: Figures are rounded for simplicity and consistent with reasonable variance in the forecast. 2020 total gross margin includes services, energy storage, and other. 2020 automotive gross margin including credits was 26% according to: https://www.sec.gov/Archives/edgar/data/1318605/000156459021004599/tsla-10k_20201231.htm#ITEM_6_SELECTED_CONSOLIDATED_FINANCIAL_D. *In the bear case, Tesla doesn't scale as aggressively and can stay at a higher price point for longer, which benefits its margins. **As of March 17th, 2021.*

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Using Wright's Law,* Electric Vehicle Gross Margins Never Exceed	40%	25%
Capital Efficiency (gross capex per car)	$8,000	$6,000
Maximum Annual Production Increase**	65%	90%
Percent of All Teslas on Autonomous Platform in 2025	0%	60%
Percent of Cars Sold into Human-Driven Ride-Hail	40%	40%

**Wright's Law: https://ark-invest.com/wrights-law/. ** The simulation drives production as a functio n of available cashflow for investment in EV manufacturing plants but imposes a fixed scaling constr aint on Tesla's ability to grow, reflective of likely raw material and battery production bottlenecks th at the company might encounter.*

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Key updates to our model:

We pushed our forecast price target forward one year to 2025.[2]

We refined our estimates for Tesla's capital efficiency.

We added Tesla's insurance business to our model.

We added assumptions for a human-driven ride-hail service.

We increased the probability of Tesla achieving fully autonomous driving within five years.

Electric Vehicles

Since our 2024 analysis, we have increased our assumptions for Tesla's capital efficiency. Previously we estimated that Tesla would spend $11,000-$16,000 per incremental unit of capacity in 2024. In 2019, Tesla spent $1.33 billion on capital expenditures (capex) and produced 509,737 vehicles, an increase of 144,505 vehicles from the previous year, suggesting that its capex per incremental vehicle produced was roughly $9,200. In 2020, Tesla spent $3.16 billion on capex, putting capital efficiency in 2021 at $10,330 assuming a 60%[3] increase in vehicle production. Note that this math probably overstates the capital required for an incremental vehicle because a portion of capex is for long-dated projects like autonomous data centers and Tesla's vertically integrated cell factory. At Battery Day, Tesla announced that its updated cell chemistry and manufacturing process would reduce investment costs by 75% over time. To give Tesla credit for what we believe is its superior capital efficiency, we lowered gross capital expenditure per car in our latest model. Given these updated estimates, along with an additional year of growth added to our model, our forecast for Tesla's unit sales is between 5 and 10 million vehicles in 2025.

dynamically, lowering customer acquisition costs, and increasing margins. Relative to Progressive's 13% EBIT margin in 2019, ARK estimates that Tesla could achieve margins close to 40%. If it were to sell 40% of vehicles with its own insurance offering by 2025, Tesla's insurance revenues could approach $23 billion annually in our bear case.[4] In our bull case, ARK estimates that, as robotaxis ramp, Tesla's insurance revenues will be incorporated into a platform fee. Insurance boosts our price target by roughly $60 in 2025.

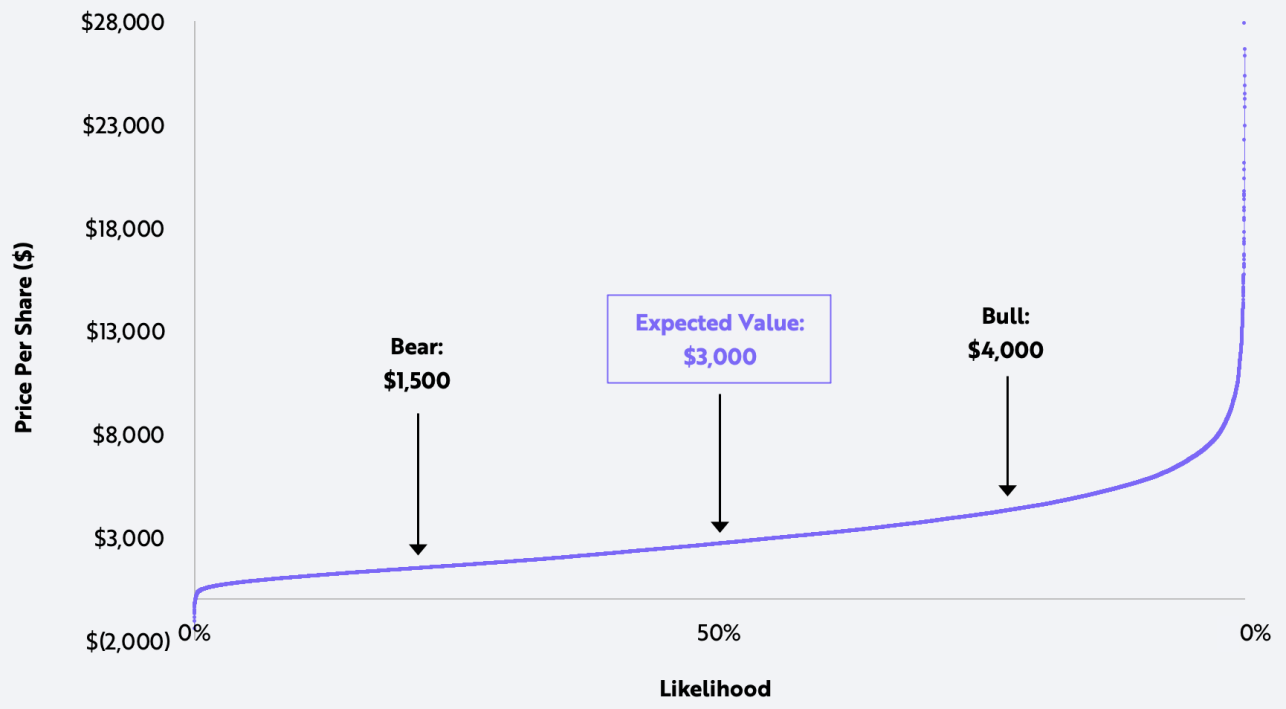
Human-Driven Ride-Hail

ARK's bear case now includes Tesla's opportunity to launch a human-driven ride-hail service. Previously, ARK detailed that a Tesla human-driven ride-hail service would have a lower cost structure than that of incumbent companies, laying the foundation for a fully autonomous ride-hail network. In our bear case example, ride-hail could add an additional $20 billion to Tesla's operating profit by 2025, increasing our price target by about $500.[5] In preparation for its robotaxi service, Tesla could launch a human-driven ride-hail network first, delivering a highly profitable recurring revenue stream and limiting the downside of a failed autonomous service. A human-driven ride-hail service could boost Tesla's price target in ARK's bear case significantly.

Fully Autonomous Ride-Hail

In our last valuation model, ARK assumed that Tesla had a 30% chance of delivering fully autonomous driving in the five years ended 2024. Now, ARK estimates that the probability is 50% by 2025. Since our last forecast, neural networks have solved many complex problems previously considered unsolvable, increasing the probability that robotaxis are viable.[6] ARK estimates that Tesla's vehicle fleet gives it access to 30-40 million miles of data per day, up from 20 million per day last year. If successful, Tesla could scale its robotaxi service rapidly, allocating the additional cash in turn to manufacturing capacity serving its autonomous network. If 60% of its vehicles equipped with Autopilot were to serve as robotaxis, Tesla could generate an additional $160 billion in EBITDA in 2025.[7] In our bull case, ride-hail would account for the majority of Tesla's enterprise value in 2025.

Note that autonomous driving pushes the distribution of our expected price targets up significantly, as shown below. The first chart represents the likely distribution of all possible price targets from our Monte Carlo analysis, while the second chart shows which scenarios occur within the ranges of price targets across our distribution.



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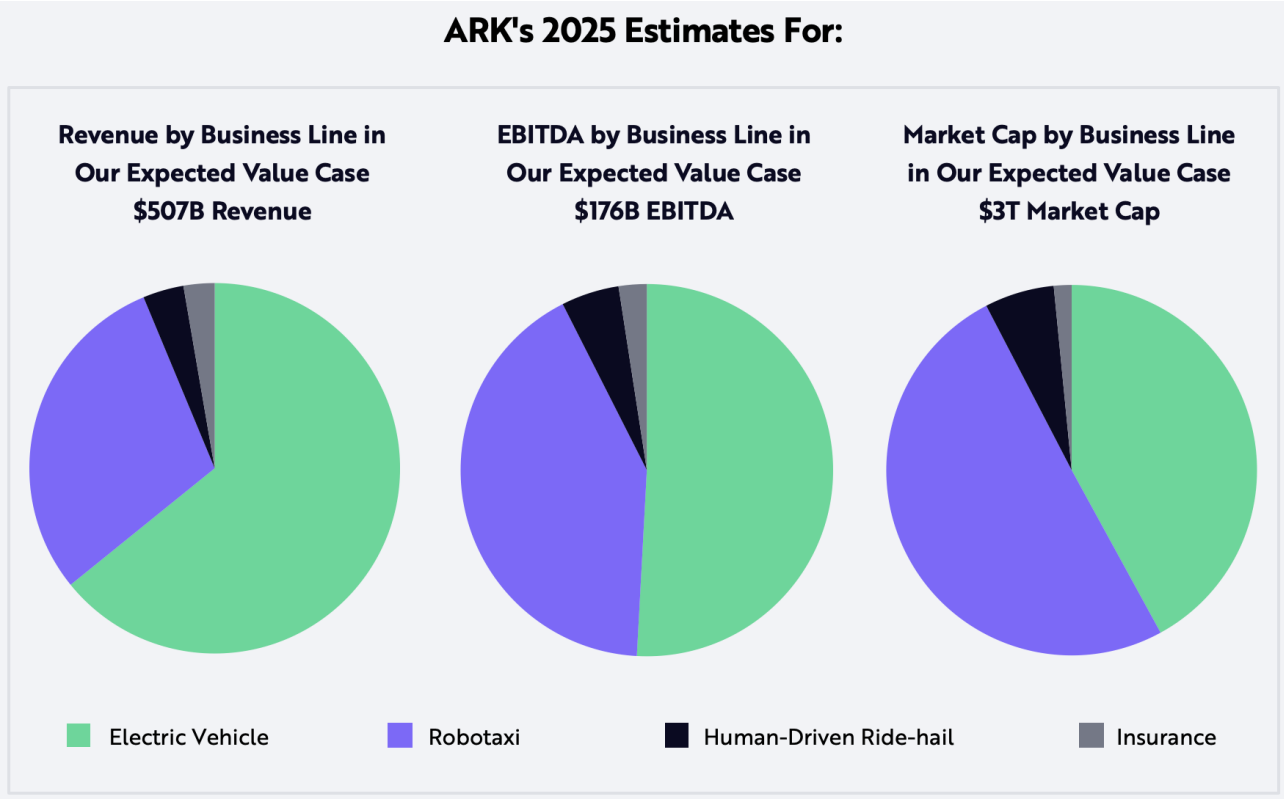
production is not constrained, a human-driven ride-hail network increases the expected price target range, as shown in green (less than 20% of Tesla vehicles sold into ride-hail in 2025) and navy (20-70% of Tesla vehicles sold into ride-hail in 2025). Finally, in purple, the high-end price targets incorporate the assumption that Tesla launches a robotaxi service.

In ARK's Tesla price target, please note that electric vehicle and robotaxi business lines generate roughly 40% and 50% of Tesla's expected market cap, the average values from our Monte Carlo simulation, respectively, in 2025, as shown below.



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Source: ARK Investment Management LLC, 2021

Conclusion

Given the updates outlined in this blog, ARK's 2025 price target for Tesla is $3,000. ARK's bear and bull case suggest that Tesla could be worth roughly $1,500 and $4,000 per share, respectively. We published our model on Github and invite you to test your own assumptions and/or craft visualizations from the simulation outputs for our assumptions.

Note: We do not model Tesla's utility energy storage or solar business in our models. We also have not modeled bitcoin assumptions in our model. For ARK's work on bitcoin as corporate cash, please download our latest Big Ideas presentation.

1* *Note that the independent nature of the key driver variables contributing to Tesla's future means that in the 25th percentile case not all of those variables are at the bottom end of the outcome distribution; if you have three coin flips with tails a loser and heads a winner, the 25th percentile case is not three tails, but two tails and one head.*

2* *Consistent with the five-year price targeting we conduct across all of our positions, we model the company as halting reinvestment in its manufacturing platform leading into that year and assume that the market will only pay an industry standard multiple for the cashflow (rather than paying the elevated multiple that would be more consistent with the likely continued growth trajectory of the company at that time).*

3* *Note that in Tesla's fourth quarter 2020 earnings call, Elon Musk said that he believed Tesla could achieve a growth rate "meaningfully above 50%" for 2021: https://seekingalpha.com/article/4401481-tesla-inc-tsla-ceo-elon-musk-on-q4-2020-results-earnings-call-transcript.*

4* *Note that our example bear case estimate for $23 billion of insurance revenues in 2025 is close to the $26 billion in revenues Tesla brought in from selling electric vehicles in 2020.*

5* *Figures are rounded for simplicity and consistent with reasonable variance in the forecast.*

6* *For reference: https://deepmind.com/blog/article/AlphaFold-Using-AI-for-scientific-discovery; https://www.technologyreview.com/2020/07/20/1005454/openai-machine-learning-language-generator-gpt-3-nlp/; https://openai.com/blog/clip/; https://ai.facebook.com/blog/timesformer-a-new-architecture-for-video-understanding/.*

7* *Figures are rounded for simplicity and consistent with reasonable variance in the forecast.*

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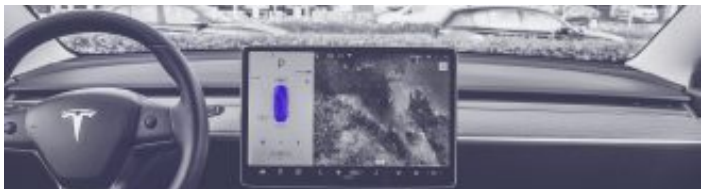

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