DISSENT AND DEBATE: PUSHBACK ON THE TESLA VALUATION

Room to disagree…

My Tesla Post: Aftermath…

- I wrote about my most recent valuation of Tesla just over a week ago, and as has always been the case when I value this company, I have heard from both sides of the Tesla divide.
  - Some of you believe that I am being far too generous in my forecasts of revenues and profitability for a company that is facing significant competition, as it pursues growth, especially with questions about who's in charge of the company.
  - Others, just as passionately, have argued that I am underestimating the company's capacity to grow, enter new businesses and generate additional profits, and have pointed to my history of undershooting with the company.
- I am not defensive about my valuations, and am completely unfazed by the pushback, but I do think that since some of the pushback revolves around first principles of intrinsic value, rather than specifics about the company, there is value in discussing the issues raised.

Tesla

The Payoff to Flexibility - A Plausible Path to Auto Dominance, with a Wild Card	*Jan-23*

Tesla has changed the automobile business dramatically, moving electric cars to the center of the conversataion. While there is clearly uncertainty about how this disruption will play out and who the winners will be, it is clear that Tesla received a significant boost from COVID, using its flexibility to gain growth and more importantly, deliver profits. Even with competition from traditoinal auto and newcomers, Tesla will acquire a leading, perhaps even dominant share of the electric car market and push its production towards 10 million cars by 2032, it will also be able to deliver higher margins than conventional auto companies in steady state, using revenues from other businesses to complement auto sales, while investing less in capacity. The wild card in the Tesla valuation is Elon Musk, more than just a CEO, who brings a mix of vision, unpredictability and distraction to the company.

The Assumptions

	Base year	*Years 1-5*	*Years 6-10*		*After year 10*	*Link to story*
Revenues (a)	$ 81,462	24.00%	→ 3.47%		3.47%	Growth in EV market & Tesla's early mover advantage work in its favor.
Operating margin (b)	18.41%	18.41%	→ 16.00%		16.00%	Tech twist gives a boost, but price cuts and cost pressures will cap margins
Tax rate	10.00%	10.00%	→ 25.00%		25.00%	Global tax rate
Reinvestment (c)		Sales to capital ra	4.00	RIR =	19.28%	Capacity build up allows for less reinvestment in the near years.
Return on capital	41.26%	Marginal ROIC =	48.83%		18.00%	Cost of entry will limit competition.
Cost of capital (d)		10.15%	→ 9.00%		9.00%	Moves to median company cost of capital

The Cash Flows

	Revenues	*Growth Rate*	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$ 101,013	24.00%	17.93%	$ 18,111	$ 16,300	$ 4,888	$ 11,412
2	$ 125,256	24.00%	17.45%	$ 21,853	$ 19,668	$ 6,061	$ 13,607
3	$ 155,317	24.00%	16.96%	$ 26,349	$ 23,714	$ 7,515	$ 16,199
4	$ 192,594	24.00%	16.48%	$ 31,744	$ 28,570	$ 9,319	$ 19,251
5	$ 238,816	24.00%	16.00%	$ 38,211	$ 34,390	$ 11,556	$ 22,834
6	$ 286,326	19.89%	16.00%	$ 45,812	$ 39,857	$ 17,816	$ 22,040
7	$ 331,531	15.79%	16.00%	$ 53,045	$ 44,558	$ 16,952	$ 27,606
8	$ 370,261	11.68%	16.00%	$ 59,242	$ 47,986	$ 14,524	$ 33,462
9	$ 398,312	7.58%	16.00%	$ 63,730	$ 49,709	$ 10,519	$ 39,190
10	$ 412,133	3.47%	16.00%	$ 65,941	$ 49,456	$ 5,183	$ 44,273
Terminal year	$ 426,434	3.47%	16.00%	$ 68,229	$ 51,172	$ 9,865	$ 41,307

The Value

Terminal value	$ 746,967		
PV(Terminal value)	$ 293,102		
PV (CF over next 10 years)	$ 137,097		
Value of operating assets =	$ 430,199		
Adjustment for distress	$ -	Probability of failure =	0.00%
- Debt & Minority Interests	$ 5,874		
+ Cash & Other Non-operating assets	$ 21,107		
Value of equity	$ 445,432		
- Value of equity options	$ 36,769		
Number of shares	3,146.00		
Value per share	$ 129.90	Stock was trading at =	$143.51

Tesla: Filling in Valuation Details

- R*evenue growth rate* is a means to an end, not an end in itself. While my growth rate dropped from 35% in Nov 2021 to 24% in 2023,, my revenues in 2032 in both valuations converge on almost exactly the same number ($420 billion in November 2021 valuation and $412 billion in this one).
- *As you get past year 5,* the revenue growth rate does not drop precipitously to 3.47% in year 6 (more on that in the next bullet), and instead *declines, in linear terms*, between years 6 and 10 to approach 3.47% in 2032.
- Third, if it is *what happens after year 10* that puzzles you, it has more to do with answers to two questions. The first of the is as companies scale up, there will be a point where they will hit a growth wall, and their growth will converge on the growth rate for the economy. The second is the question of what the nominal growth in the global economy, in US dollar terms, will be, and my best answer to that question is the nominal riskfree rate, which was 3.47% at the time of this valuation.
- Fourth, on my *operating margin assumptions*, it does look like I am downbeat about the near future, since my operating margin is dropping from 17.93% to 16% over the next five years, but that is because the former is the operating margin during 2022, and the number careened wildly during the course of the year from more than 19% in the first quarter of the year, to just about 16% in the last quarter
- Finally, my starting *cost of capital of 10.15%* reflects the reality that the rskfree rate and equity risk premiums have risen over 2022, and my ending number of 9% is an indication that I expect Tesla to become less risky over time. There is not much room to maneuver on either number, since half of all US companies have costs of capital between 7.3% and 10.9%.

The Pushback from Tesla Bulls on Revenues..

1. Your revenues in year 10 for Tesla are "only $400 billion", too low given its potential and multiple businesses.

Company Name	*Revenue: LTM*	*Revenue CAGR (10 years)*	*Operating Margin*
Walmart Inc.	$600,112	2.38%	4.01%
Saudi Arabian Oil Company	$592,386	4.33%	50.78%
Amazon.com, Inc.	$502,191	21.76%	2.58%
China Petroleum & Chemical	$448,550	-0.55%	3.35%
PetroChina Company	$448,310	1.87%	6.75%
Apple Inc.	$394,328	8.72%	30.29%
Exxon Mobil Corporation	$389,392	-0.10%	16.07%
Shell plc	$365,291	-2.28%	14.50%
UnitedHealth Group	$324,162	10.22%	8.77%
CVS Health Corporation	$314,343	9.63%	4.70%

And margins…

- The second critique of my valuation is that I am using an operating margin of "only 16%", backed by two arguments.
  - The first is that Tesla has a superior product to sell and that its customers are loyal, giving it pricing power, and that should lead to higher margins.
  - The second, and more compelling one, is that Tesla has actually been able to deliver margins that exceed 16%, and that as it scales up, economies of scale will lead to increasing margins.
- On both fronts, I am more cautious:
  - Operating margins are more determined by unit economics, not company quality.
  - Economies of scale level off, and the best of the scaling benefits have already shown up.

3. Multiple businesses…

- One of the most common critiques from Tesla bulls is that my valuation fails to incorporate all of the businesses that Tesla operates in, and that I was valuing it as an auto company. That is not true! In fact, it is precisely because Tesla has other businesses (software, energy, batteries) that it can use to augment its core auto revenues that I assume that revenues can get to $400 billion, making it larger than any other auto company in the world by a third and that operating margins will stay at 16%, which no auto company can sustain.
- It is true that I don't break revenues down, by business, but that reflects my view that breaking things into detail, without any real basis for forecasting detailed line items creates the illusion of precision, while actually making your valuation less so.
- If autonomous driving is your reason for investing in Tesla, you need to flesh out exactly how Tesla makes money on the business (selling the cars, running the ridesharing business, etc.) since it will determine the mix of revenues, margins and reinvestment.

Angst about Terminal Value

- Every company, as it scales up, will hit a wall, where it has become so large that it can grow, at best, at the rate that the economy (domestic or global) that the company operates in.
  - For some companies, that wall comes with larger revenues than others, and the very best companies are able to delay hitting the wall for longer.
  - I have assumed that Tesla reaches this status, when it has revenues of $400 billion, and around year 10.
- You may decide that this is too pessimistic, but if you do so, the response is not to increase the growth rate from 3.47% to a higher value after year 10, but to either use higher growth in the next ten years to reach revenues of $500 or $600 billion in year 10, or lengthen the growth period to 15 or 20 years.

Tesla is a "one-of-a-kind" company, with vision and specialness built in…

		Your assessment of the company					
		Exceptional	*Great*	*Good*	*Average*	*Bad*	*Abysmal*
Market's assessment of company	*Exceptional*	**Fair value**	Over valued	Over valued	Over valued	Over valued	Over valued
	Great	Under valued	**Fair value**	Over valued	Over valued	Over valued	Over valued
	Good	Under valued	Under valued	**Fair value**	Over valued	Over valued	Over valued
	Average	Under valued	Under valued	Under valued	**Fair value**	Over valued	Over valued
	Bad	Under valued	Under valued	Under valued	Under valued	**Fair value**	Over valued
	Abysmal	Under valued	Under valued	Under valued	Under valued	Under valued	**Fair value**

- There is a final critique that I find almost incomprehensible, where Tesla is posited to be so special a company and Musk such an out-of-the-box visionary that you cannot capture its value in earnings and cash flows. If you pay a price for Tesla, you are implicitly putting numbers on both

Tesla Bears on Near Term Concerns

- Coming in 2023, Tesla has been cutting the prices of its products, and with economists predicting a recession, my assumptions of 24% growth in revenues and 17.99% margins have been described as "whistling past the grave yard".
  - That is true, but a recession-induced lower revenues growth/margins in the near term will have little or no effect on the valuation, since you will recover on both counts as the economy bounces back.
  - Lowering revenue growth to 15% in 2023 and raising it to 33% in 2024 will deliver almost the same value for the company, as what I get with my smoothed-out values.
- If you are a long-term investor, you are buying a company across economic cycles, not just through the next one, and expectations of a recession may, at best, affect your investment timing more than it does investment value.

Tesla Bears: It's just a car company...

- Taking the other side of the Tesla bull argument, Tesla bears view the higher revenues and margins that I am forecasting as coming from Tesla's other businesses as a pipe dream.
  - In their view, Tesla software will be bundled with the automobiles and be incapable of delivering additional revenues or profits on its own and
  - autonomous driving is a space that will take a lot longer to actualize, with Tesla facing competition from Google and other tech giants, not other states quo auto companies.
- I am truly in the middle on this one, splitting the difference between the hundreds of billions that Tesla bulls see as coming from other businesses and the zeros that the Tesla bears attribute to other businesses.

Tesla Bears on Cost of Capital

- To the argument that 10.15% is too low a cost of capital to use on a company like Tesla, in a cyclical business and with a unpredictable CEO at its helm, my response is the same it was to the Tesla bulls (who wanted me to use a much lower cost of capital).
- It is that there is not much room for disagreement on this measure, and much as analysts may want to let their senses drive them, and in the current market environment, costs of capital of 15% or 6% are just off the table.

Conclusion

- I know that you may not believe me on this claim, but I am in neither the Tesla bull nor the Tesla bear camp. It is true that in my valuations of the company, I have found it to be overvalued more frequently than I have have found it to be under valued. That said, I did buy Tesla in 2019, and while I held the stock for only seven months, before I sold it, I am clearly not in the "I will never buy Tesla" camp.
- If your counter is that I would have been far richer, if I had just bought Tesla and held, that is true, but I would have to abandon an investment philosophy that has not only worked for me, but also allows me to pass the sleep test.
- I am not in the business of dishing out investment advice, and the only person that my valuation was meant for, was me, and I aim to act on it.
  - I am not trying to convince you, if you are a Tesla bull, that you are wrong and should sell your stock, or if you are a Tesla bear, that you should buy the stock, if it drops below $130.
  - The very fact that you are letting my valuation, which reflects my view and value, shake your conviction should tell you more about your conviction (or perhaps the lack of it) than about my valuation. God speed, and good luck!