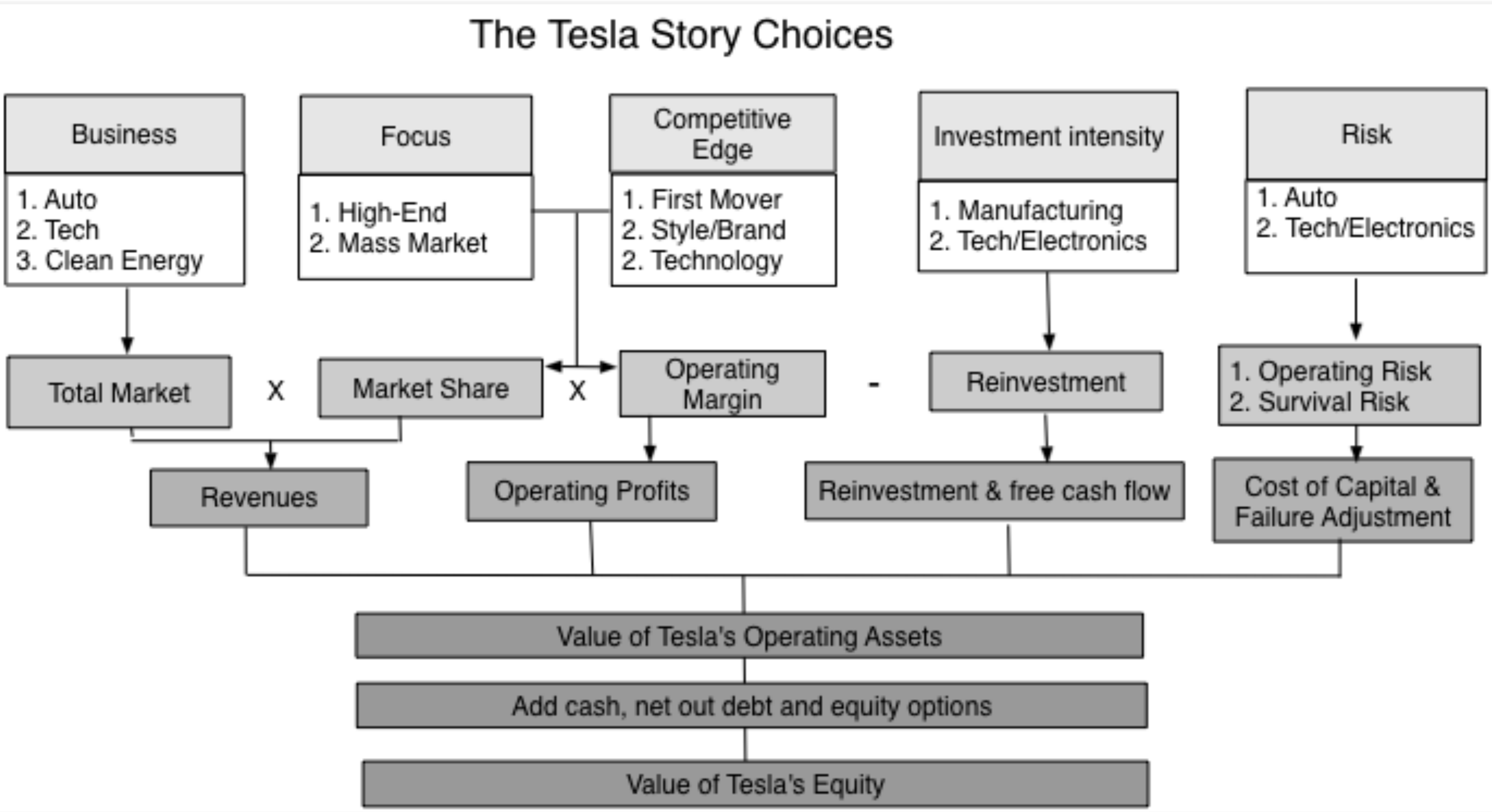
TESLA: A TALE OF DISRUPTION, WITH A DEBT TWIST!

Interest payments with hope and potential?

The Story Stock



From Story to Value!

High End

Higher Revenues

Mass Market

Auto

Less sales per $ invested (More reinvestment)

Tech

Weaker competitive advantages

Higher profit margins

Stronger competitive advantages

		Revenue in 2026 (in billions) with 9% margin				
		$ 60	$ 70	$ 80	$ 90	$ 100
Sales/Capital	1.19 (Auto)	$ (60.34)	$ (63.30)	$ (66.29)	$ (68.74)	$ (71.16)
	1.58 (Current)	$ (12.34)	$ (7.28)	$ (1.50)	$ 3.78	$ 9.47
	2.24 (Tech)	$ 30.81	$ 43.08	$ 56.75	$ 68.99	$ 81.97
		Revenue in 2026 (in billions) with 12% margin				
		$ 60	$ 70	$ 80	$ 90	$ 100
Sales/Capital	1.19 (Auto)	$ 11.25	$ 19.51	$ 28.81	$ 37.22	$ 46.22
	1.58 (Current)	$ 59.25	$ 75.53	$ 93.60	$ 109.75	$ 126.85
	2.24 (Tech)	$ 102.40	$ 125.89	$ 151.85	$ 174.96	$ 199.35
		Revenue in 2026 (in billions) with 15% margin				
		$ 60	$ 70	$ 80	$ 90	$ 100
Sales/Capital	1.19 (Auto)	$ 82.66	$ 102.11	$ 123.68	$ 142.95	$ 163.33
	1.58 (Current)	$ 130.65	$ 158.13	$ 188.47	$ 215.48	$ 243.97
	2.24 (Tech)	$ 173.80	$ 208.49	$ 246.72	$ 280.68	$ 316.46

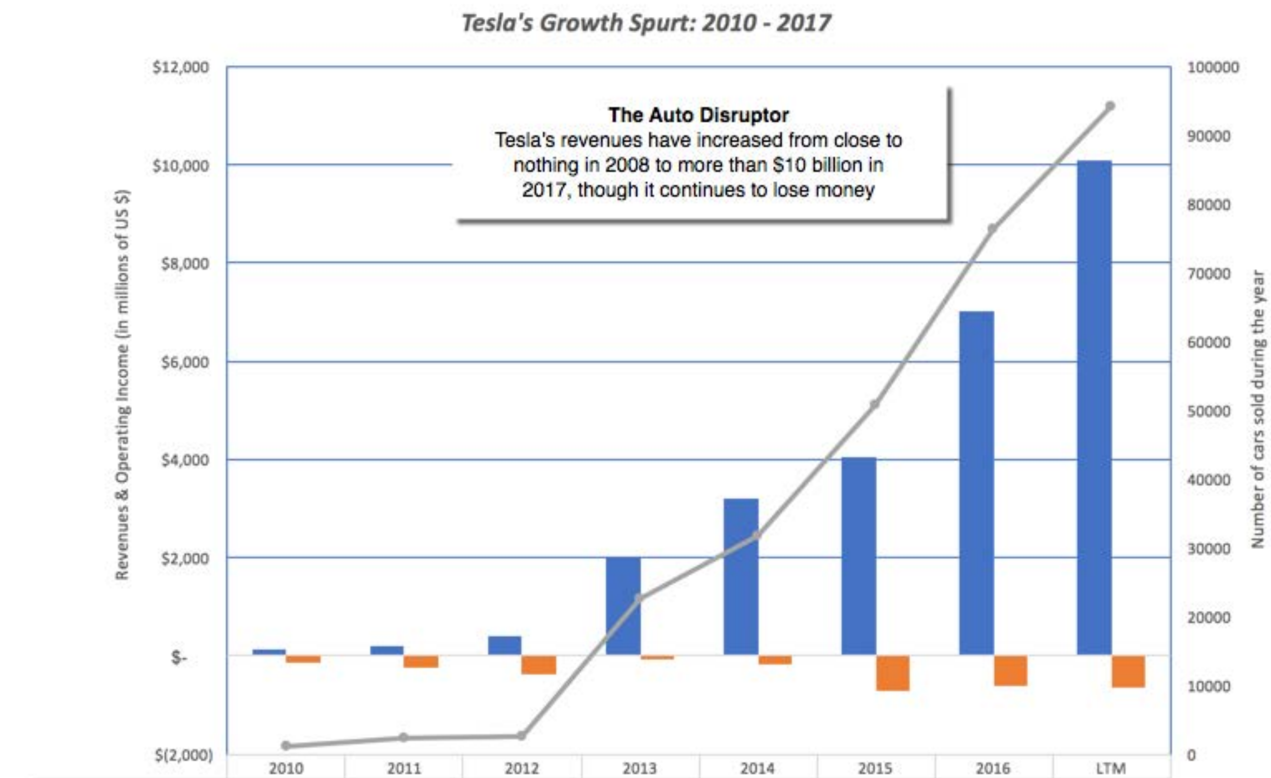
My base case

From Height to Height: The market loves Tesla

Leaping over the establishment…

Company	Market Cap	Enterprise Value	Revenues	EBITDA	# Cars Sold (2016)	EV/Sales	EV/Car Sold
Toyota Motor	$ 167,406	$ 297,693	$ 249,750	$ 31,653	10,175,000	1.19	$ 29.26
Volkswagen	$ 76,101	$ 228,522	$ 256,924	$ 32,833	10,310,000	0.89	$ 22.17
Daimler AG	$ 75,399	$ 195,094	$ 182,010	$ 20,674	2083888	1.07	$ 93.62
BMW	$ 61,089	$ 158,029	$ 111,287	$ 15,101	2003359	1.42	$ 78.88
Tesla	**$ 60,951**	**$ 68,948**	**$ 10,069**	**$ 734**	**94152**	**6.85**	**$ 732.31**
General Motors	$ 51,946	$ 120,708	$ 170,231	$ 21,490	7951972	0.71	$ 15.18
SAIC Motor Corporation	$ 51,365	$ 51,302	$ 110,059	$ 4,091	2600000	0.47	$ 19.73
Honda Motor	$ 50,394	$ 96,712	$ 126,769	$ 11,913	4743000	0.76	$ 20.39
Ford Motor	$ 43,252	$ 160,944	$ 153,596	$ 13,987	6651000	1.05	$ 24.20
Nissan Motor	$ 38,626	$ 103,260	$ 105,274	$ 9,978	5,556,241	0.98	$ 18.58

While delivering growth (though not profits)



	2010	2011	2012	2013	2014	2015	2016	LTM
Revenues	$117	$204	$413	$2,013	$3,198	$4,046	$7,000	$10,069
Operating Income	$(147)	$(252)	$(394)	$(61)	$(187)	$(717)	$(625)	$(638)
Number of cars sold	1000	2400	2650	22477	31655	50658	76297	94152

And Changing the Auto Business

- The Early Response: While it was dismissed by the other automobile companies as a newcomer that would learn the facts of life in the sector, as it aged, the reverse has occurred.
- The Status Quo shifts: It is the conventional automobile companies that are, slowly but surely, coming to the recognition that Tesla has changed their long-standing business with its innovations. Volvo, a Swedish automaker not known for its flair, announced recently that all of its cars would be either electric or hybrid by 2019, and Ford's CEO was displaced for not being more future oriented.
- In a hide-bound sector: A little more than a decade after it burst on to the scene, it is a testimonial to Elon Musk that he has started the disruption of one of the most tradition-bound sectors in business.

Valuation Update

- Story Update: My story for Tesla, from July 2016, of a company that will be able to meld the margins and reinvestment needs of a tech company with the revenues of an automobile company remains intact.
- Numbers Update: There were two tweaks to the numbers:
  - Higher end-year revenues: The revenues in year 10 will be close to $93 billion, up from $82 billion in my July 2016 valuation.
  - Lower reinvestment: The improved operating margins reduce reinvestment needs to fund growth. You still have seven years of negative free cash flows totaling $15.5 billion, requiring capital infusions.
- Value Update: Updated value per share of $192.34, up from $151.85 from July 2016.

Tesla (August 2017)

The Story

Tesla is an auto/tech company looking towards the mass market. Its primary competitive advantages lies in superior battery technology and brand loyalty with a secondary advantage in styling/design. In terms of investment needs and risk, it is as much tech as auto company. The combination of cash burn (negative cash flows for the next seven years) and a large debt burden exposes the firm to distress risk, reflected in a 10% probability of failure.

The Assumptions

	Base year	*Years 1-5*	*Years 6-10*		*After year 10*	*Link to story*
Revenues (a)	$ 10,069	35.00%	35%->2.23%		2.23%	Mass market focus = $100 billion in revenue
Operating margin (b)	-1.02%	-1.02%	→ 12.00%		12.00%	Tech superiority & brand = High margins
Tax rate	30.00%	30.00%	→ 30.00%		30.00%	Global marginal tax rate average
Reinvestment (c)		Sales to capital ratio	2.24	RIR =	24.78%	Invest like an auto/tech company
Return on capital	-0.71%	Marginal ROIC =	30.52%		9.00%	In maturity,, has tech features
Cost of capital (d)		8.83%	→ 7.50%		7.50%	50% auto, 50% technology

The Cash Flows

	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$ 13,593	0.28%	$ 39	$ 39	$ 1,573	$ (1,535)
2	$ 18,351	1.59%	$ 291	$ 291	$ 2,124	$ (1,833)
3	$ 24,774	2.89%	$ 715	$ 715	$ 2,867	$ (2,152)
4	$ 33,444	4.19%	$ 1,401	$ 1,401	$ 3,871	$ (2,470)
5	$ 45,150	5.49%	$ 2,479	$ 2,304	$ 5,226	$ (2,922)
6	$ 57,993	6.79%	$ 3,940	$ 2,758	$ 5,734	$ (2,976)
7	$ 70,689	8.09%	$ 5,722	$ 4,005	$ 5,668	$ (1,662)
8	$ 81,531	9.40%	$ 7,661	$ 5,363	$ 4,840	$ 522
9	$ 88,693	10.70%	$ 9,489	$ 6,642	$ 3,197	$ 3,445
10	$ 90,671	12.00%	$ 10,880	$ 7,616	$ 883	$ 6,733
Terminal year	$ 92,693	12.00%	$ 11,123	$ 7,786	$ 1,929	$ 5,857

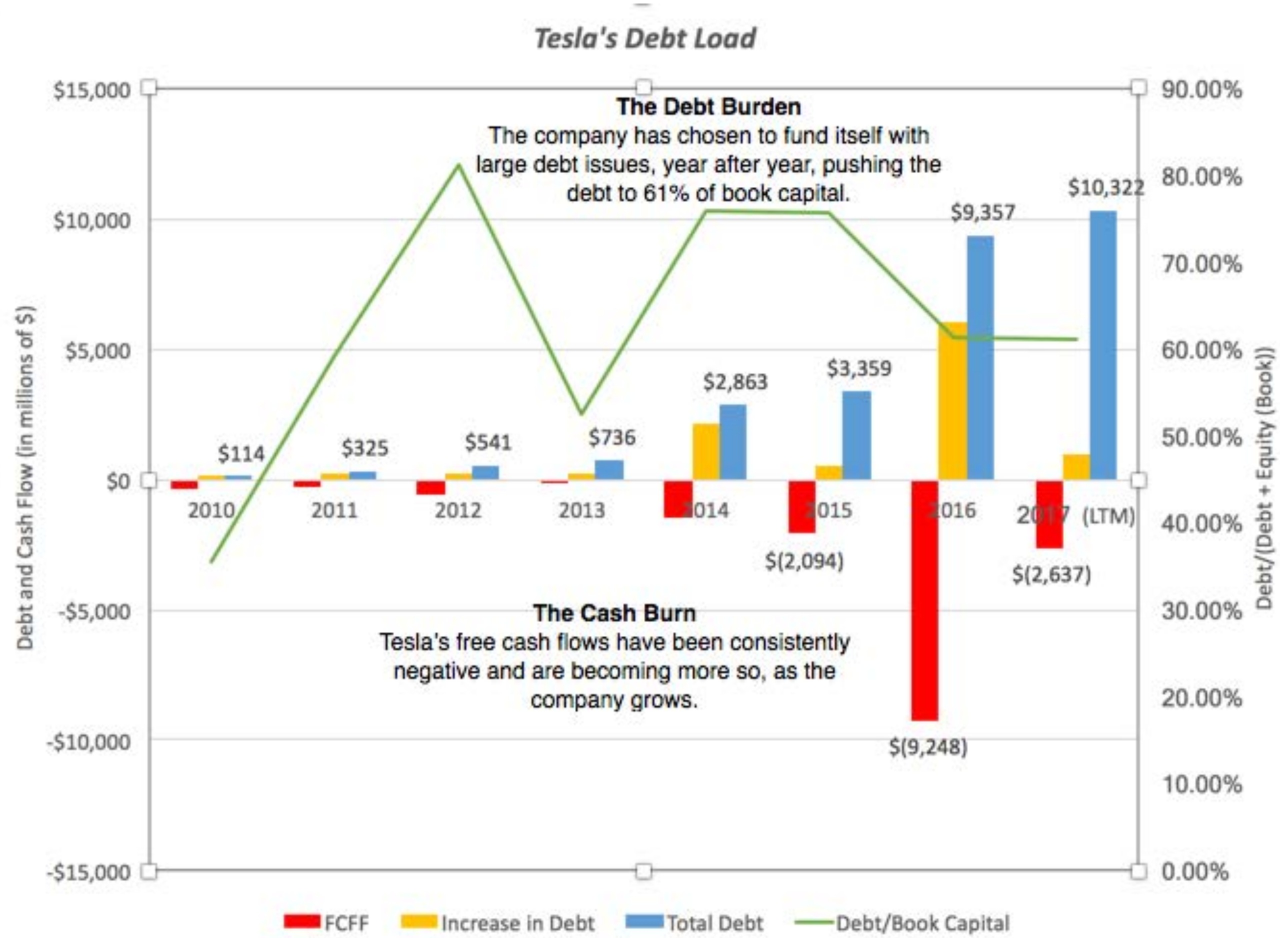
The Value

Terminal value	$ 111,137		
PV(Terminal value)	$ 49,472		
PV (CF over next 10 years)	$ (6,108)		
Value of operating assets =	$ 43,364		
Adjustment for distress	$ 2,168	Probability of failure =	10.00%
- Debt & Mnority Interests	$ 10,328		
+ Cash & Other Non-operating assets	$ 3,036		
Value of equity	$ 33,904		
- Value of equity options	$ 3,533		
Number of shares	157.90		
Value per share	$ 192.34	Stock was trading at =	$365.00

Tesla's Challenges

- Can Tesla sell millions of cars? The revenues that I project in 2010 will require Tesla to sell close to 2 million cars, in the face of increased competition.
- Can it make millions of cars? There are two production tests that Tesla has to meet. The first is timing, since the deliveries have been promised for the middle of 2018 and the assembly lines have to be humming by then. The second is cost, since a subtext of the Tesla story, reinforced by Elon Musk, is that the company has found new and innovative ways of scaling up production at much lower costs than conventional automobile companies.
- Can it generate double digit margins? In my valuation, I assume an operating margin of 12% for Tesla, almost double the average of 6.33% for global auto companies.

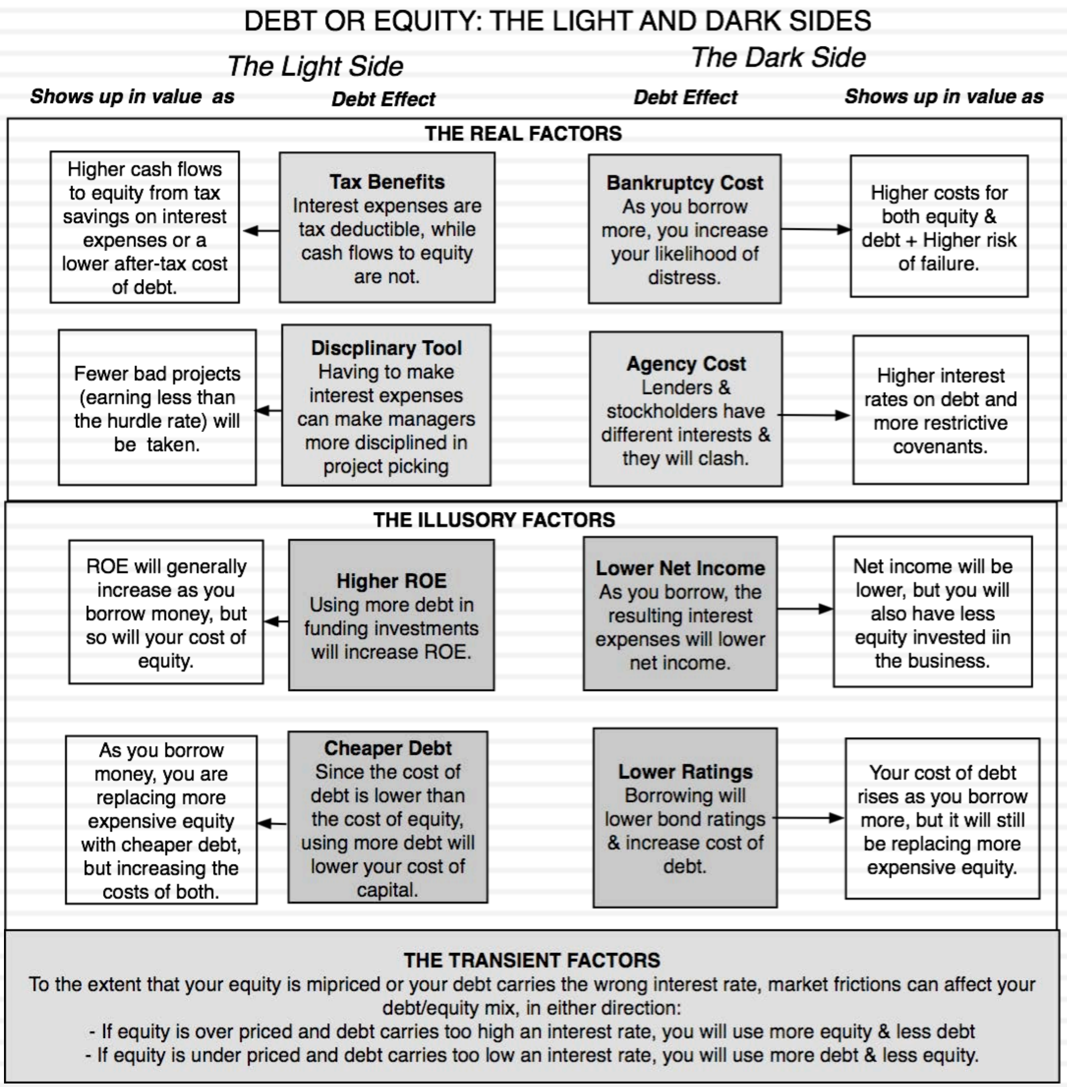
Tesla's Odd Financing Choices



With a new debt issue coming up..

- That debt load, already high, given Tesla's operating cash flows is likely to get even bigger if Tesla succeeds in its newest debt issue of $1.5 billion, which it is hoping to place with an interest rate of 5.25%, trying to woo bond buyers with the same pitch of growth and hope that has been so attractive to equity markets.
- That suggests that those making the pitch either do not understand how bonds work (that bondholders don't get to share much in upside but share fully in the downside) or are convinced that there are enough naive bond buyers out there, who think that interest payments can be made with potential and promise.

The Debt Equity Trade off



And why debt does not make sense for Tesla

- **No tax benefits**: It is a company that is not only still losing money but has carried forward losses of close to $4.3 billion, effectively nullifying any tax benefits from debt for the near future.
- **No disciplinary function**: With Elon Musk, the largest stockholder at the company, at the helm, there is no basis for the argument that debt will make managers more disciplined in their investment decisions.
- **Large bankruptcy risk**: The company is still young and losing money, and adding a contractual commitment to make interest payments on top of all of the other capital needs that the company has, strikes me as imprudent, with the possibility that one bad year could its promise at risk.
- **Agency problems**: In a company like Tesla, making large and risky bets in new businesses, the chasm between lenders and equity investors is wide, and lenders will either impose restrictions on the company or price in their fears (as higher interest rates).

So why is Tesla borrowing?

- The Dilution Bogeyman: The first is that the company or its investment bankers are so terrified of dilution, that a stock issue is not even on the table. Once the dilution bogeyman enters the decision process, any increase in share count for a company is viewed as bad, and you will do everything in your power to prevent that from happening, even if it means driving the company into bankruptcy.
- Inertia: Auto companies have generally borrowed money to fund assembly plants and the bankers may be reading the capital raising recipe from that same cookbook for Tesla. That is incongruent with Elon Musk's own story of Tesla as a company that is more technology than automobile and one that plans to change the way the auto business is run.

What Tesla should do..

- Issuing shares to fund investment needs will increase the share count at Tesla by about 3-4% (which is what you would expect to see with a $1.5 billion equity issue) but that is a far better choice than borrowing the money and binding yourself to make interest payments.
- If Tesla is dead set on not raising its share count, why not issue long term, really low coupon convertible bonds, very similar to this one from 2014, a bond only in name since almost all of its value came from the conversion option (which is equity with delayed dilution)?

The Conclusion

- The Tesla story continues to evolve, and there is much in the story that I like. It is changing the automobile business, a feat in itself, and it is starting to deliver on its production promises.
- The next year may be manufacturing hell, but if the company can make its through that hell and find ways to deliver the tens of thousands of Tesla 3s that people have put down deposits for, it will be well on its way.
- I still find the stock to be too richly priced, even given its promise and potential, for my liking, but this much I know. I would rather own equity in this company than the bonds that it is planning to issue.