

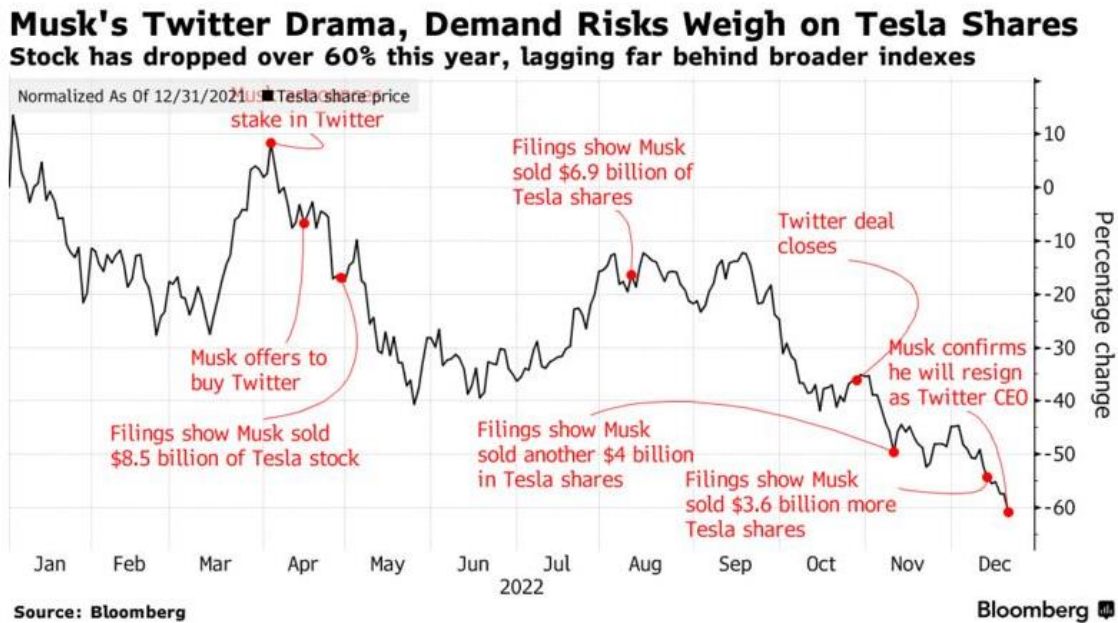
# The Musk Brand Has Contributed to the Massive Decline in Tesla’s Equity Value but the Tesla Brand is Still as Valuable as Ever

By

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The chart below summarizes the destruction in Tesla share value since the Twitter acquisition. Tesla’s market cap has declined by 52% between April 29, 2022, and December 20, 2022.



Our analysis shows that 21% is due to the reduction in the value of Tesla goodwill which is directly related to the Musk brand- the Technoking of Tesla.<sup>2</sup> The remainder is due to systematic risk factors that impact

<sup>1</sup> Dr. Feldman and Mr. Roberts are Tesla shareholders.

<sup>2</sup> Tesla 10 Q for period ending September 30, 2022 state: We are highly dependent on the services of Elon Musk, **Technoking** of Tesla and our Chief Executive Officer. Although Mr. Musk spends significant time with Tesla and is highly active in our management, he does not devote his full time and attention to Tesla. Mr. Musk also currently serves as Chief Executive Officer and Chief Technical Officer of Space Exploration Technologies Corp., a developer and manufacturer of space launch vehicles, and is involved in other emerging technology ventures



all firms. In contrast, Elon Musk has attributed the decline to macro factors only- rising interest rates and the likelihood of a recession. Key investors are not so sure, and several believe that the Twitter acquisition and the negative vibe around it, including Musk selling shares of Tesla to fund losses at Twitter, have contributed to the large decline in the Tesla share value. The public comments below indicate how public perceptions of Elon Musk have become more negative since his acquisition of Twitter.

1. “As his fanboy, I invested [because] of Elon,” Leo KoGuan, one of Tesla’s biggest individual shareholders, tweeted last week. “Of course, I prefer Elon to be CEO but he abandoned Tesla.”
2. Ross Gerber, a manager of a fund which is heavily invested in Tesla, has frequently tweeted that the Board of Directors of Tesla needs to manage the firm’s public relations better and offered himself up as a director.
3. Senator Elizabeth Warren’s letter to Tesla Board concludes<sup>3</sup>: Mr. Musk’s acquisition of Twitter and his simultaneous management of both Twitter and Tesla raise significant legal questions about conflicts of interest, compliance with labor laws, and misappropriation of corporate resources. As you know, it is the legal obligation of Tesla’s Board to ensure that its CEO is meeting all his legal responsibilities and serving as an effective leader. I am writing you so that I can better understand how you are dealing with these challenging circumstances so that I can evaluate current laws and current law enforcement in this area.

Several financial analysts, including Gary Black<sup>4</sup>, have noted that Musk’s actions have reduced Tesla’s brand equity. **This is not quite accurate because, as we show below, the Tesla brand is separate from the Musk mystique (the Technoking), although both impact the share price but are driven by different determinants.** To understand this separation, we need to appeal to purchase price accounting and finance principles.

When a firm is acquired, its purchase price is allocated to the fair value of acquired tangible assets- plant and equipment and current assets- and identified intangible assets- patents, brand names, trademarks, and customer relationships. In effect, accounting principles require the reconstruction of the acquired firm’s balance sheet from an accounting balance sheet based on historical values to an economic or market-based balance sheet reflecting fair values. Because of accounting rules, most intangible assets do not appear on the historical balance sheet and only show up when there is a change in control, which is the case when a firm is acquired.<sup>5</sup> This means, for example, the Tesla brand is not an asset on Tesla’s

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<sup>3</sup> Senator Elizabeth’s Warren December 18, 2022, letter to Dr. Robyn Denholm, Chairman of the Board, Tesla Inc

<sup>4</sup> Gary Black’s Twitter comment: I believe this is still a very small number today but brand equities can go downhill fast once compromised. [@elonmusk](#)’s libertarian political views - which I tend to share - clearly aren’t helping the Tesla brand. [12:17 PM · Dec 19, 2022](#)

<sup>5</sup> Intangible assets on Tesla’s balance sheet as of the first quarter of 2022 is equal to .4% of total assets. Tesla has a significant number of intangible assets including its brand, AI advances, robotics technology, driving data used to drive neural networks that facilitate full self-driving etc. None of these is accounted for on Tesla’s balance sheet.



accounting balance sheet nor is the value of Tesla goodwill which in part is driven by the Musk brand.<sup>6</sup> Keep in mind that the Musk brand is not owned by Tesla but belongs to Elon Musk, but its impact shows up in its effect on the value of Tesla's goodwill- the value that remains after allocating fair value to all identified assets. Hence, the Tesla brand and the Musk brand are separate identifiable intangible assets, and each has a separate impact on Tesla's equity value.

Using the above logic, we can allocate the Tesla's equity value to its identifiable assets as of April 29, 2022, about the time the Twitter deal was announced, and a current date-December 20, 2022. We can then attribute the change in Tesla's equity value to changes in the values of identified assets over the measurement period. Based on the latest Tesla financial filings there is little change in net fixed capital and current assets on Tesla's balance sheet, and there is no reason to expect that their fair values have changed during the measurement period, and if they have, the changes are not likely to be material. Tesla patents are open source, so by definition they have no monetary value, and even if they do, there is no evidence that they have become more obsolete over the measurement period. It is not likely that other intangible assets- AI related assets, driving data, battery production technology etc.- have declined in value; indeed, it is more likely they have increased in value.<sup>7</sup> The chief remaining assets are the Tesla brand and Tesla goodwill. As we show below, the value of the Tesla brand has not changed. But what has changed, indeed significantly declined, is Tesla's goodwill which is driven in large measure by the Musk brand.

Therefore, there are three potential contributors to the 52% decline in Tesla's market cap. The first relates to systematic factors or economic factors that impact all firms. These are expected interest rate changes, continuation of inflation above the Fed's 2% target, and of course a recession on the horizon. The second and third factors are the change in Tesla's brand value, and the change in the value of Tesla's goodwill, a significant portion of which is attributable to Musk's reputation as a visionary, a committed problem solver, and an inspirational leader. This is the Musk brand, and Tesla shareholders benefit from its existence.

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<sup>6</sup> "Despite the stock's performance, Tesla's innovation curve appears to be accelerating, a stark contrast to other large tech companies whose incremental product updates appear stagnant at best," Canaccord Genuity analyst George Gianarikas wrote in a note last week. He added that "green shoots" of recovery may appear in 2023. This suggests that Tesla's long-run growth prospects have not changed over the measurement period. Indeed, they have likely increased. Growth expectations based on the competitive position of a firm are incorporated in a firm's goodwill. The Musk brand effects Tesla's goodwill through his perceived ability to successfully overcome competitive and technical challenges. This recognition gives rise to the Musk brand- the technoking.

<sup>7</sup> As an example, Tesla's AI day in September of 2022 offered evidence of a humanoid robot which leveraged the technology developed for full self-driving (FSD).



## Tesla Valuation

The basic Tesla valuation equation is:<sup>8</sup>

$$\% \text{ Change in Tesla Equity Value} = \text{Beta} * (\% \text{ change in NASDAQ}) + \\ \% \text{ Change in Tesla Brand Value} + \% \text{ Change in the Value of Tesla Goodwill}$$

The first term to the right of the equal sign measures the contribution of systematic factors to the percent change in Tesla's equity value. The second and third terms reflect the change in the values of the Tesla brand and Tesla goodwill respectively. The table below summarizes our findings.

Contribution of the Change in Tesla Goodwill ( Due to the Musk Brand) to Tesla's Equity Value Decline from 4/29/2022 to 12/20/2022					
Row		4/29/2022	12/20/2022	Equation Inputs	Source
1	Tesla Equity Value (in \$MM)	\$902,097	\$435,172	-51.76%	Percent Change 4/29/2022 to 12/20/2022, CapitalIQ
2	Nasdaq Index	12,335	10,551	-14.46%	Percent Change 4/29/2022 to 12/20/2022, CapitalIQ
3	Beta			2.12	CapitalIQ, Axiom
4	(Tesla vs Nasdaq - 5 Year monthly)				
5	Systematic Risk (Nasdaq Price Change * Beta)			-30.72%	Row 2 * Row 3
6	Change in Brand Value			0%	Axiom
7	<b>Change in the Value of Tesla Goodwill</b>			<b>-21.04%</b>	Row 1 - Row 5 - Row 6

Note that there is no change in Tesla's brand value over the measurement period. The Appendix to this note describes the math that produces the Tesla brand value as of April 29, 2022. Our calculations show that the Tesla brand has a value of about \$153 billion or about 17% of Tesla's equity value as of April 29, 2022. Based on our analysis, Tesla will be willing to license its brand at a royalty rate of about 8.2%. To place this value in context, the average royalty rate across all industries is about 5% so the Tesla name has a significant advantage over other brands.<sup>9</sup> As the Appendix shows, brand value is a product of expected revenue and a market determined royalty rate.<sup>10</sup> We calculated the Tesla royalty rate based on the KPMG model and expected revenue is based on ARK'S Tesla bear case as of April 2022.<sup>11</sup> Our analysis considers auto revenue only. We have no reason to believe that the bear case has become worse over the measurement period- April 29, 2022, to December 20, 2022. In addition, even if near-term future revenue declines from the values we show because of the onset of a recession, there is no reason to think that these shortfalls will not be made up over the period to 2030. This all means that the Tesla brand value has likely remained unchanged over the measurement period. What has declined, however, is the value of

<sup>8</sup> The Beta is measured relative to the NASDAQ using data prior to April 29, 2022.

<sup>9</sup> See KPMG, Profitability and royalty rates across industries: Some preliminary evidence 2012. Axiom has valued hundreds of brands and the Tesla royalty rate is in the top 10% of royalty rates in place today.

<sup>10</sup> The method used to estimate the value of the Tesla brand is known as relief from royalty. It measures what Tesla would be hypothetically willing to pay if it had to license its brand.

<sup>11</sup> Tasha Keeney, CFA, ARK's Expected Value for Tesla In 2026: \$4,600 Per Share



Tesla's goodwill. Since there is no evidence that the factors that drive goodwill- the significant growth options that Tesla has that are magnified by the internal synergy of its products, software, and technology- have not changed; in fact, one could argue that they have increased during the measurement period. Therefore, the decline in the value of Tesla goodwill is only attributable to the influence of the Musk brand.

### **Conclusion**

We show that that 52% decline in Tesla's equity value is related to systematic factors, 31%, and the remainder, 21%, to the decline in the value Tesla goodwill which we attribute to the Musk brand. We are not suggesting that Mr. Musk has done anything wrong; he has not, as far as we know. But perceptions in the financial markets matter, and in the Tesla case they matter a great deal.



## Appendix

Royalty Rate Calculation				
	Profit Ratio (1)	Intercept (2)	Coefficient (2)	Royalty Rates (3)
Gross Margin	27.10%	0.000279	0.14970	4.1%
EBITDA Margin	20.59%	0.010800	0.34658	8.2%
EBIT Margin	15.49%	0.007318	0.47980	8.2%
Average				6.8%
(1) CapitalIQ (TTM as of 9/30/2022)				
(2) Based on Profitability and royalty rates across industries: Some preliminary evidence KPMG, 2012, Table 2: Regression Analysis: Reported Royalty Rates Against Profit Margins				
(3) Intercept + Profit Ratio * Coefficient				

Inputs to Tesla Brand Value Model			
<b>Brand Value of Tesla</b>			<b>\$ 152,639,026,106</b>
<b>Discounted Cash Flow (DCF) Analysis</b>			
Input			Source
A	Valuation Date	4/29/2022	Axiom
B	Cost of Equity	18.77%	CapitalIQ Axiom
C	Tax Rate	27.00%	KPMG
D	Effective Royalty Rate	8.16%	Axiom
E	Stub Period	0.67	Axiom
F	Discounting Period (Mid-year Convention)	0.33	Axiom
G	Cars on 12/31/2022	1,500,000	ARK Investment Management, LLC, 2022
H	Cars on 12/31/2026	10,000,000	ARK Investment Management, LLC, 2022
I	Cars on 12/31/2030	20,000,000	ARK Investment Management, LLC, 2022
J	Price per Car	\$ 38,000	ARK Investment Management, LLC, 2022, Axiom



**Brand Value of Tesla - Discounted Cash Flow**

Date	12/31/2022	12/31/2023	12/31/2024	12/31/2025	12/31/2026
Number of Cars	1,500,000	3,625,000	5,750,000	7,875,000	10,000,000
Price Per Car	\$49,000	\$38,000	\$38,000	\$38,000	\$38,000
Revenue	\$73,500,000,000	\$137,750,000,000	\$218,500,000,000	\$299,250,000,000	\$380,000,000,000
Brand Value	\$ 4,000,224,653	\$ 11,245,529,509	\$ 17,837,736,463	\$ 24,429,943,417	\$ 31,022,150,370
Taxes on Brand Value	1,080,060,656	3,036,292,967	4,816,188,845	6,596,084,722	8,375,980,600
Net Royalty Payment	2,920,163,997	8,209,236,542	13,021,547,618	17,833,858,694	22,646,169,770
Stub Period	0.67	1.00	1.00	1.00	1.00
Discounting Period (Mid-year Convention)	0.33	1.17	2.17	3.17	4.17
Present Value Factor	0.9443	0.8182	0.6889	0.5801	0.4884
<b>Present Value of Brand Value</b>	<b>\$ 1,838,305,637</b>	<b>\$ 6,716,744,762</b>	<b>\$ 8,970,649,470</b>	<b>\$ 10,344,554,984</b>	<b>\$ 11,060,288,557</b>

Date	12/31/2027	12/31/2028	12/31/2029	12/31/2030
Number of Cars	12,500,000	15,000,000	17,500,000	20,000,000
Price Per Car	\$38,000	\$38,000	\$38,000	\$38,000
Revenue	\$475,000,000,000	\$570,000,000,000	\$665,000,000,000	\$760,000,000,000
Brand Value	\$ 38,777,687,963	\$ 46,533,225,555	\$ 54,288,763,148	\$ 62,044,300,740
Taxes on Brand Value	10,469,975,750	12,563,970,900	14,657,966,050	16,751,961,200
Net Royalty Payment	28,307,712,213	33,969,254,655	39,630,797,098	45,292,339,540
Stub Period	1.00	1.00	1.00	1.00
Discounting Period (Mid-year Convention)	5.17	6.17	7.17	8.17
Present Value Factor	0.4112	0.3462	0.2915	0.2455
<b>Present Value of Brand Value</b>	<b>\$ 11,640,769,193</b>	<b>\$ 11,761,646,763</b>	<b>\$ 11,553,674,538</b>	<b>\$ 11,117,759,732</b>

<b>Long-term Terminal Growth Rate (gL)</b>	<b>2.00%</b>
<b>Gordon Growth Model</b>	
Last Projected Discrete Period Adjusted NOPAT	\$ 45,292,339,540
Residual Value at Terminal Year	\$ 275,534,893,026
Present Value Factor	0.2455
<b>Present Value of Residual Cash Flows</b>	<b>\$ 67,634,632,469</b>

<b>Summary</b>	
Sum of Present Value of Discrete Cash Flows	\$ 85,004,393,636
Present Value of Residual Cash Flows	67,634,632,469
<b>Value of Brand</b>	<b>\$ 152,639,026,106</b>
Market Value of Equity	\$902,097,000,000
Brand Value as Percent of Market Value	<b>16.92%</b>