Equity Valuation Project

May 5th, 2023

Company	Ticker	Price	Intrinsic Value	Multiple	Relative Value	Recommendation
Lyft	LYFT	$8.63	$13.3	EV/Sales	$31.60	BUY
Nio	NIO	$8.15	$5.14	EV/Sales	$23.18	SELL
TransDigm	TDG	$767.19	$359.17	EV/Sales	$955.19	SELL

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Lyft Inc.

1. Company Overview

Lyft is a ride-sharing platform connecting passengers with nearby drivers through its mobile application. The company focuses on offering ridesharing in North America, as well as businesses in bike and scooter rental, and partnerships with car rental and parking services. For the quarter that ended on March 31st, 2023, Lyft had around 19.5 million active riders with a 4% increase year-over-year in average revenue per rider. As of December 31, 2022, Lyft had 4,419 employees. Lyft currently has a market capitalization of approximately $3.26 billion. Lyft competes with Uber but has maintained a significant market share in North America. Lyft continues to stabilize and consolidate its market in North America building on the sizable market share that Lyft gained during past expansion and growth rebound from COVID-19 while competing with Uber.

2. DCF Valuation

LYFT						**May-23**
The Ridesharing applications grows gradually towards maturity						
Lyft continues the expansion as a ridesharing application/platform in North America along with the growth of the overall market. Lyft will consolidate its market share in North America as a major ridesharing platform with a focused strategy. Lyft's growth will likely slow downs as the firm consolidates to grow more efficiently in North America, moving away from the hypergrowth period and the bounce back as a result of COVID-19. Cash flow will be negative initially as a result of past and current expansion but slowly increasing to positive in order to survive in the long term and maintain a competent position. Lyft runs a small amount of the risk due to pressure from competition and some debt. However, Lyft is most likely to survive due to its rather large market positions and barriers to entry as a result of network effect. Due to antitrust laws, Lyft is unlikely to be acquired by competitors. Therefore, Lyft has a low probability of failure.Overall, Lyft is likely to capture a sizeable proportion of the North America market share on rideshare transportation services and make a sizeable margin because of its light asset base. Lyft is unlikely to have mass expansion outside of US, due to the advantages that competitors have built already and thedirection of the strategy of the firm.						
The Assumptions						
	Base year	*Next year*	*Years 2-5*	*Years 6-10*	*After year 10*	*Link to story*
Revenues (a)	$4,095,135.00	12.0%	8.00%		3.44%	Growth slow down from the period of expansion as firm focuses on North America.
Operating margin (b)	-20.84%	-15.0%			18.00%	Margins improve as a result of the strategy. Any new features or new revenue streams can be easily capitalized due to exisiting customer base and network effect.
Tax rate	0.36%		0.36%		25.00%	The firm shifts towards using marginal US tax rate as negative earnings slow down.
Reinvestment (c)		2.20	2.40	2.60	39.36%	Reinvestment increases in later years built upon reliance on platform and exisiting software/hardware infrastructures.
Return on capital	-43.73%	Marginal ROIC =	144.21%		8.74%	Cost of entry producing competitive advantage, requiring siginificantly less investment to produce more return through investing on the platform technology.
Cost of capital (d)			11.48%		8.74%	Cost of capital close to median company.

The Cash Flows

	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$4,586,551.20	-15.00%	-$687,982.68	-$687,982.68	$223,371.00	-$911,353.68
2	$4,953,475.30	-8.40%	-$416,091.92	-$416,091.92	$152,885.04	-$568,976.96
3	$5,349,753.32	-5.10%	-$272,837.42	-$272,837.42	$165,115.84	-$437,953.26
4	$5,777,733.59	-1.80%	-$103,999.20	-$103,999.20	$178,325.11	-$282,324.32
5	$6,239,952.27	1.50%	$93,599.28	$93,599.28	$177,776.42	-$84,177.13
6	$6,682,240.09	4.80%	$320,747.52	$320,747.52	$170,110.70	$150,636.83
7	$7,094,935.24	8.10%	$574,689.75	$574,689.75	$158,728.90	$415,960.85
8	$7,468,412.63	11.40%	$851,399.04	$851,399.04	$143,645.15	$707,753.89
9	$7,793,437.95	14.70%	$1,145,635.38	$1,145,635.38	$125,009.74	$1,020,625.64
10	$8,061,532.21	18.00%	$1,451,075.80	$1,451,075.80	$103,113.18	$1,347,962.62
Terminal year	$8,338,848.92	18.00%	$1,500,992.81	$1,125,744.60	$443,084.83	$682,659.77

The Value

Terminal value	$12,880,373.04		
PV(Terminal value)	$4,680,239.04		
PV (CF over next 10 years)	-$348,272.59		
Value of operating assets =	$4,331,966.45		
Adjustment for distress	$108,299.16	Probability of failure =	5.00%
- Debt & Minority Interests	$986,183.98		
+ Cash & Other Non-operating assets	$1,796,792.00		
Value of equity	$5,034,275.31		
- Value of equity options	$4,075.34		
Number of shares	378,119.12		
Value per share	$13.30	Stock was trading at =	$8.63

The Story: Lyft will focus on its current business to develop into a highly efficient firm. Revenue growth will decrease from the period of hypergrowth and rebound from COVID-19. According to Lyft's announcement of Q1 2023, the year-over-year revenue growth is currently at 14%, compared to 27.64% in FY 2022. Revenue growth is projected to continually decline as the company transitions into a mature firm.

Operating margin is likely to increase in great proportions after the period of negative earnings, capitalizing on the existing customer base, network effect, and technological barrier of the platform; thus, Lyft's operating margin is expected to be comparable to or even higher than typical technology firms due to its light asset business. Lyft's plan to focus on its platform would yield higher sales-to-capital ratios in the coming years, providing more revenue streams and cash flows through capitalizing on enhanced features built upon the existing platform with a rather low risk, such as car and bike rental services. Lyft runs a relatively small risk of failure even under fierce competition with Uber as a result of its concentration in North America and its existing customer base.

3. Relative Valuation

Regression Statistics	
Multiple R	0.925756431
R Square	0.857024969
Adjusted R Square	0.807330402
Standard Error	3.015124227
Observations	25

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	1253.347596	626.673798	68.9336248	3.3519E-10
Residual	23	209.0924044	9.09097411		
Total	25	1462.44			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Est. Annual Revenue Growth - 2 Yr % (Capital IQ)	23.28993535	6.946420478	3.35279666	0.00275598	8.92016976	37.6597009	8.92016976	37.6597009
LTM EBIT Margin %	17.28645062	3.154531436	5.47987902	1.43E-05	10.7608052	23.8120961	10.7608052	23.8120961

I ran an EV/Sales regression because Lyft has negative earnings while other comparable firms mainly do not. I used a total of 25 comparable firms from mostly technology firms, car rental firms, and transportation firms . The R-squared is 85.5% with no intercept, and operating margin and growth as independent variables. Out of growth, operating margin, tax rate, and DFR, these two variables produced the highest R^2. I limited my sample to companies with market capitalization over $1 billion to increase sample size since Lyft currently has a market capitalization of over $3 billion.

EV/SALES = 23.290(g)+17.286(Operating Margin) ; R^2 = 0.857
(6.946) (3.353) t statistics 95%
For Lyft: Since Lyft is a negative earning company, I will be using the data from year 10.
EV/SALES in year 10= 23.290(0.0344)+17.286(0.18) = 3.913

Expected EV in year 10 = 3.913*8061532.21=31544775.538
Value today = 31544775.538/(1.0874*1.0929*1.0984*1.1038*1.1093*1.1148^5)
= 11,462,331.374
Price/Share = (11462331.374*(1-probability of failure) + proceeds* probability of failure - debt - minority interests + cash - value of options)/378119.119
= $31.60

Based on the regression, I obtained an EV/Sales multiple of 3.913. I multiplied this by Lyft's expected revenue, discounted it back by cost of capital, took account of failure probability, subtracted out debt and minority interest, added back cash and cash equivalents, and subtracted out option value to find value of equity in common stock.

4. Market Valuation

R^2 = 0.306
EV/Sales in year 10 = 2.32 + 2.60 g + 10.60 Oper Margin -1.40 DFR- 3.50 Tax rate
= 2.32+ 2.6(0.034) + 10.6*(0.18) -1.4*(0.1501) -3.5*(0.25) = 3.231
*In this case, I used DFR from the industry average of Software(Internet) since we cannot predict DFR in the future.
Value today = 9,464,423.07
Price/Share = (9,464,423.07 *(1-probability of failure) + proceeds* probability of failure - debt - minority interests + cash - value of options)/378119.119
= **$26.58**

5. Conclusion

Market Price	$8.63
Intrinsic Valuation	$13.30
Relative Valuation	$31.60
Market Valuation	$26.58

The current market price for Lyft is $8.63, which is lower than results from DCF valuation, relative valuation to comparable firms, and market valuation. Based on Lyft's future potential, I would recommend Lyft as a buy.

Nio Inc.

1. Company Overview

NIO Inc, established in 2014, is a Chinese-based electric vehicle manufacturer that designs and develops high-performance electric cars. NIO currently offers a range of electric vehicles, including the ES8, a seven-seater electric SUV, the ES6, a smaller electric SUV, and the EC6, a stylish electric coupe SUV. In addition to its vehicle offerings, NIO has also developed a charging infrastructure, including battery swapping stations and fast-charging stations. Since its founding, NIO has gained popularity in the Chinese electric vehicle market, and as of Q1 2023, the company's market capitalization on NYSE was approximately $13.76 billion.

2. DCF Valuation

Nio Inc.	May-23

Nio is a premium Chinese EV manufacturer known for its innovative technologies and effective branding strategies. Its unique battery-swapping system, advanced driver-assistance system, autonomous driving system, and in-car AI assistant provide a competitive advantage. Nio's strong brand image and marketing strategy have helped it attract consumers interested in sustainable and futuristic products.

However, Nio faces potential threats in the long run, such as the uncertainty of expanding its battery swapping stations and Tesla's ability to deliver better products at lower prices. Tesla's Supercharger network, advanced AI assistant, and faster Model S Plaid could surpass Nio's capabilities. BYD also offers comparable features at substantially lower prices. Therefore, reducing prices of their battery swapping services and EV models could potentially help Nio stay competitive in the global market in the long term.

The Assumptions

	Base year	*Next year*	*Years 2-5*	*Years 6-10*	*After year 10*	*Link to story*
Revenues (a)	$7,143,270.00	35.0%	20.00%		1.88%	Growth in EV market & NIO's early mover advantage work in its favor.
Operating margin (b)	-18.18%	-18.0%			14.00%	Premium car brands tend to have higher margins than the industry average. Potential software update sales in the future can bring up the margin further. But price cuts and cost pressures will cap margins.
Tax rate	19.97%		19.97%		25.00%	Tax rate approaches the global marginal tax rate over time.
Reinvestment (c)		1.03	0.70	0.94	26.18%	As sales increase, the company will need to continuously reinvest in expanding their battery swapping stations, but reinvestment will eventually slow down as the company approaches maturity (after year 7).
Return on capital	-37.66%	Marginal ROIC =	20.35%		7.18%	NIO's higher return on capital than other auto companies comes from its potential software update sales and bettery swapping fee.
Cost of capital (d)			11.81%		7.18%	Cost of capital close to median company

The Cash Flows

	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$9,643,414.50	-18.00%	-$1,735,814.61	-$1,735,814.61	$2,427,324.76	-$4,163,139.37
2	$11,572,097.40	-5.20%	-$601,749.06	-$601,749.06	$2,755,261.29	-$3,357,010.35
3	$13,886,516.88	1.20%	$166,638.20	$166,638.20	$3,306,313.54	-$3,139,675.34
4	$16,663,820.26	7.60%	$1,266,450.34	$1,266,450.34	$3,967,576.25	-$2,701,125.91
5	$19,996,584.31	14.00%	$2,799,521.80	$2,702,296.98	$3,564,453.53	-$862,156.55
6	$23,271,224.95	14.00%	$3,257,971.49	$2,574,709.71	$3,502,289.46	-$927,579.75
7	$26,238,771.56	14.00%	$3,673,428.02	$2,866,045.27	$3,173,846.64	-$307,801.36
8	$28,633,846.63	14.00%	$4,008,738.53	$3,087,289.89	$2,561,577.61	$525,712.28
9	$30,209,853.55	14.00%	$4,229,379.50	$3,214,624.47	$1,685,568.90	$1,529,055.58
10	$30,777,798.79	14.00%	$4,308,891.83	$3,231,668.87	$607,428.07	$2,624,240.80
Terminal year	$31,356,421.41	14.00%	$4,389,899.00	$3,292,424.25	$862,083.23	$2,430,341.02

The Value

Terminal value	$45,855,490.92		
PV(Terminal value)	$17,035,139.79		
PV (CF over next 10 years)	-$9,689,460.74		
Value of operating assets =	$7,345,679.04		
Adjustment for distress	$209,351.85	Probability of failure =	5.70%
- Debt & Minority Interests	$3,706,329.44		
+ Cash & Other Non-operating assets	$5,662,963.00		
Value of equity	$9,092,960.75		
- Value of equity options	$421,607.98		
Number of shares	1,687,741.81		
Value per share	$5.14	Stock was trading at =	$8.15

The Story: Nio is a premium Chinese EV manufacturer known for its innovative technologies and effective branding strategies. Its unique battery-swapping system, advanced driver-assistance system, autonomous driving system, and in-car AI assistant provide a competitive advantage. Nio's strong brand image and marketing strategy have helped it attract consumers interested in sustainable and futuristic products.

However, Nio faces potential threats in the long run, such as the uncertainty of expanding its battery swapping stations and Tesla's ability to deliver better products at lower prices. Tesla's Supercharger network, advanced AI assistant, and faster Model S Plaid could surpass Nio's capabilities. BYD also offers comparable features at substantially lower prices. Therefore, reducing prices of their battery swapping services and EV models could potentially help Nio stay competitive in the global market in the long term.

3. Relative Valuation

Regression Statistics	
Multiple R	0.88783979
R Square	0.7882595
Adjusted R Square	0.75731426
Standard Error	1.45112347
Observations	49

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	360.605071	120.20169	57.0823499	2.2301E-15
Residual	46	96.8649288	2.10575932		
Total	49	457.47			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Est. Annual Revenue Growth	3.06643865	1.557985	1.96820808	0.05508835	-0.06962249	6.2024998	-0.06962249	6.2024998
LTM EBIT Margin %	28.464256	3.14173472	9.0600444	8.529E-12	22.140272	34.78824	22.140272	34.78824
LTM Effective Tax Rate	-2.6348437	0.90152526	-2.92265101	0.00536655	-4.44951992	-0.82016748	-4.44951992	-0.82016748

I ran an EV/Sales regression because most EV manufacturers are young companies with negative EBITDA. My comparable list consists of 49 traditional auto manufacturers, EV manufacturers and EV technology companies based in Asia, North America, and Europe with a market capitalization bigger than $8 billion. The R-squared of the regression is 88.78%. It's worth noting that the intercept in the regression analysis has been set to zero. I did this because it ensures that all coefficients have the correct sign based on market regression and the original intercept was relatively low anyway.

Based on the regression, Nio's forward metrics at year 10, and the average debt ratio of the Auto & Truck industry, I got an EV/Sales ratio of 3.38x.

EV/Sales = 3.07(g) + 28.46(Op. Margin) - 2.63(Tax Rate); R^2: 88.78%
EV/Sales = 3.07(1.88%) + 28.46(14%) - 2.63(25%) = 3.38x

I multiplied this number by Nio' revenue in year 10 and arrived at an EV of $104.15 billion. Discounting the EV at year 10 by the compounded interest rate of 2.69, the PV is $38.69 billion.

EV = 3.38 * 30,777,798.79 = $104,150,038.7 (in thousands)
PV = $104,150,038.7 / 2.69 = $38,691,341.7(in thousands)

Based on the PV, I arrived at an equity value of $39.12 billion and a price per share of $23.18.

PV	$	38,691,341.70
Probability of failure =		5.70%
Proceeds if firm fails =		$19,345,670.85
Value of operating assets =	$	37,588,638.46
- Debt	$	3,437,044.00
- Minority interests	$	269,285.44
+ Cash	$	5,662,963.00
+ Non-operating assets	$	-
Value of equity	$	39,545,272.02
- Value of options		$421,607.98
Value of equity in commo	$	39,123,664.04
Number of shares		1,687,741.81
Estimated value /share	$	23.18
Price	$	8.15
Price as % of value		35.16%

4. **Market Valuation**

EV/Sales = 2.68 + 2.50(g) + 8.10(Op. Margin) + 2.10(DFR) - 5.10(Tax rate); R^2: 17.8%
EV/Sales = 2.68 + 2.50(1.88%) + 8.10(14%) + 2.10(42.43%) - 5.10(25%) = 3.48x

I multiplied this number by Nio's revenue in year 10 and arrived at an EV of $107.02 billion. Discounting the EV at year 10 by the compounded interest rate of 2.69, the PV is $39.76 billion.

EV = 3.48 * 30,777,798.79 = $107,015,329.74 (in thousands)
PV = $107,015,329.74 / 2.69 = $39,755,786.38 (in thousands)

Based on the PV, I arrived at an equity value of $40.16 billion and a price per share of $23.79.

PV	$	39,755,786.38
Probability of failure =		5.70%
Proceeds if firm fails =		$19,877,893.19
Value of operating assets =	$	38,622,746.47
- Debt	$	3,437,044.00
- Minority interests	$	269,285.44
+ Cash	$	5,662,963.00
+ Non-operating assets	$	-
Value of equity	$	40,579,380.03
- Value of options		$421,607.98
Value of equity in common s	$	40,157,772.05
Number of shares		1,687,741.81
Estimated value /share	$	23.79
Price	$	8.15
Price as % of value		34.25%

5. Conclusion

Market Price	$8.15
Intrinsic Valuation	$5.14
Relative Valuation	$23.18
Market Valuation	$23.79

The market has an "EV premium," with EV companies experiencing higher valuations due to increasing demand for electric vehicles driven by sustainability and environmental concerns. However, the EV premium may not last and is subject to changes in today’s uncertain market. While tracking relative valuations for NIO is important, I believe the company’s fundamentals provide a more objective picture of its worth. Therefore, I recommend selling the stock as I believe its current market price is overvalued as compared to its intrinsic value.

TransDigm

1. Company Overview

TransDigm is a global designer, producer, and supplier of highly engineered aircraft for use on nearly all commercial and military aircraft in service today. TransDigm maintains approximately 100 manufacturing facilities worldwide. The company primarily offers highly engineered proprietary aerospace components with significant aftermarket contents. The company typically chooses not to compete for non-proprietary business because it frequently offers lower margins than proprietary products. Transdigm's customers include distributors of aerospace components, worldwide commercial airlines and aircraft manufacturers, and armed forces of the U.S. and friendly foreign governments.

2. DCF Valuation

			The Assumptions			
	Base year	*Next year*	*Years 2-5*	*Years 6-10*	*After year 10*	*Link to story*
Revenues (a)	$5,632.00	12.0%	11.00%		3.44%	The company has a sustainable barrier to entry and the total revenue is still small relative to the overall Aerospace Parts Manufacturing Market. I believe the revenue still has plenty of upside potential - I assigned a growth rate roughly equal to the U.S. GDP Growth Rate
Operating margin (b	42.17%	42.0%			47.00%	Margins improve with continued economies of scale, redundant cost cutting
Tax rate	23.20%		23.20%		25.00%	US marginal tax rate over time
Reinvestment (c)		0.50	0.65	0.80	21.50%	Gradually growing towards industry average - slightly improve as the company operation becomes more efficient. However, Transdigm still need to invest a lot to develop proprietary products
Return on capital	13.42%	Marginal ROIC =	35.98%		16.00%	Strong pricing power and recurring revenue stream leads to great profitability
Cost of capital (d)			9.69%		9.38%	Cost of capital close to median company
			The Cash Flows			
	Revenues	*Operating Margin*	*EBIT*	*EBIT (1-t)*	*Reinvestment*	*FCFF*
1	$6,307.84	42.00%	$2,649.29	$2,034.66	$1,351.68	$682.98
2	$7,001.70	44.00%	$3,080.75	$2,366.02	$1,067.48	$1,298.53
3	$7,771.89	45.00%	$3,497.35	$2,685.97	$1,184.90	$1,501.06
4	$8,626.80	46.00%	$3,968.33	$3,047.68	$1,315.24	$1,732.43
5	$9,575.75	47.00%	$4,500.60	$3,456.46	$1,186.18	$2,270.28
6	$10,484.29	47.00%	$4,927.62	$3,766.67	$1,135.68	$2,630.99
7	$11,320.52	47.00%	$5,320.64	$4,047.95	$1,045.28	$3,002.66
8	$12,052.28	47.00%	$5,664.57	$4,289.21	$914.70	$3,374.51
9	$12,649.11	47.00%	$5,945.08	$4,480.21	$746.04	$3,734.18
10	$13,084.24	47.00%	$6,149.59	$4,612.19	$543.91	$4,068.28
Terminal year	$13,534.33	47.00%	$6,361.14	$4,770.85	$1,025.73	$3,745.12
			The Value			
Terminal value			$63,049.14			
PV(Terminal value)			$25,209.48			
PV (CF over next 10 years)			$13,424.60			
Value of operating assets =			$38,634.08			
Adjustment for distress			$0.00		Probability of failure =	0.00%
- Debt & Minority Interests			$19,811.00			
+ Cash & Other Non-operating assets			$3,288.00			
Value of equity			$22,111.08			
- Value of equity options			$2,501.29			
Number of shares			54.60			
Value per share			$359.17		Stock was trading at =	$767.19

The Story: TDG is a global manufacturer of thousands of small, highly engineered, low-cost aircraft parts. The valuation tells a story of how TDG continues to produce highly engineered proprietary components for different types of aircraft. TDG will have over 10% growth in the next couple of years benefiting from the recovery of the commercial flights and the TDG's strong pricing power. As the company continues to generate a significant part of profit from higher margin and stable aftermarket sales (sales occur for maintenance over the life of the aircraft) and the company achieves more efficient manufacturing - the operating margin is going to slightly improve from 42% to 47%. However, the company needs to reinvest heavily to keep developing proprietary products, maintaining its barrier to entry. Even though TransDigm has a large amount of debt, most of the debt is not due until 2025, given TDG's long operating history, stable and recurring revenue and the strong market position, it is expected that TDG will not likely to fail.

3. Relative Valuation

I ran an EV/ Sales regression because the EBIT and EBITDA margin varies across different manufacturers, revenue would better reflect the size of the company. I used a total of 31 comparable aerospace and defense manufacturers with enterprise value larger than 3 Billion USD. For the variables, I used LTM EBIT Margin and estimated revenue growth rate in 2 years from capital IQ. As a result, I get R-Square of 65.53% which is not the very ideal but still usable.

EV/Sales = -2.16114 + 31.09774 *(EBIT Margin) +0.162073*(g)

Regression Statistics	
Multiple R	0.809537
R Square	0.65535
Adjusted R Square	0.630732
Standard Error	1.490566
Observations	31

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	118.2919	59.14596	26.62091	3.34E-07
Residual	28	62.21001	2.221786		
Total	30	180.5019			

	Coefficients	*Standard Err*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-2.16114	0.731347	-2.95501	0.006277	-3.65924	-0.66304	-3.65924	-0.66304
LTM EBIT Margin %	31.09774	6.360506	4.889192	3.75E-05	18.06883	44.12664	18.06883	44.12664
Est. Annual Revenue Growth - 2 Yr % (Capital IQ)	0.162073	0.027754	5.839582	2.82E-06	0.105221	0.218924	0.105221	0.218924

Based on the regression, I got a EV/Sales of 12.638 for TDG. TDG's LTM sales is 5632 Million, it has 19803 M of Debt, 8 M of minority interest and 3288 M of Cash. TDG has total shares outstanding of 54.6 M with total value of employee options of 2501 M. Given data above, I calculated the price per share for TDG is (12.638*5632-19803-8+3288-2501)/54.6 = $955.19

4. Market Valuation

EV/Sales = 2.32 + 2.60 g + 10.60 Oper Margin -1.40 DFR- 3.50 Tax rate
I used the Market-wide Regressions of Multiples: US Companies in January 2023 for the calculation. As a result, I got an EV/ sales of 5.73 for TDG. I then calculated the price per share for TDG: (5.73*5632-19803-8+3288-2501)/54.6 = $242.63

5. Conclusion

Market Price	$767.19
Intrinsic Valuation	$359.17
Relative Valuation	$955.19
Market Valuation	$242.63

The current market price for TransDigm is $767.19 (as of 5/6/2023). This is higher than intrinsic price and market valuation, lower than relative price. At current market price, I believe TransDigm is a sell because it is way overpriced compared to the intrinsic value. Even though it may have some upside according to relative price, the upside potential does not match with the downside risk given the intrinsic value is way below the market price.