

Toyota vs. EV extremists – Who is right?



CASE STUDY
VALUATION MASTER CLASS

by

A. Stotz INVESTMENT
RESEARCH



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What's interesting
about **Toyota** is that if
you **buy today**, you
get its **future growth**
for free



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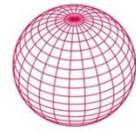
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This is NOT investment advice
or a recommendation.

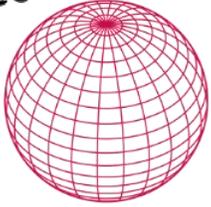


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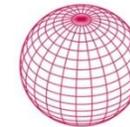


Mo'men



Pete

Toyota: The right time to buy might be now



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I value Toyota at JPY2,509, implying an upside of 40%, deriving our target price from a DCF-based valuation using a WACC of 6.4% and a terminal growth rate of 1%.

Highlights:

- ICE vehicles are not going away, providing ongoing revenue support
- Hybrid and Hydrogen leadership and more EVs coming could prove critics wrong
- Negative sentiment pressuring price; but at 1x PB, it might be the time to BUY

Risks: Failure to adapt to the industry trends, soaring raw material prices, and concentration of suppliers

Valuation table					
Year end Mar	21A	22A	23E	24E	25E
PE (x)	11.4	9.2	8.7	8.6	8.5
Recurring net profit growth (%)	6.1	20.4	5.3	(0.4)	0.8
Recurring EPS (Yen)	158.1	194.7	207.7	208.8	212.3
Recurring EPS growth (%)	6.2	23.1	6.6	0.6	1.7
PBV (x)	1.1	0.9	0.9	0.8	0.8
BVPS (Yen)	1,674	1,905	2,050	2,201	2,357
ROE (%)	10.2	11.5	10.5	9.8	9.3
DPS (Yen)	47.0	52.0	62.3	62.7	63.7
Dividend yield (%)	2.6	2.9	3.5	3.5	3.5
Enterprise value (Yen bn)	40,995	42,527	43,398	43,510	43,901
EV-to-EBITDA (x)	9.8	7.9	7.5	7.3	7.1

The Valuation Master Class team and graduates

Please refer to important disclaimer and disclosures at the end of the report.

Toyota Motor Corporation

Recommendation: BUY

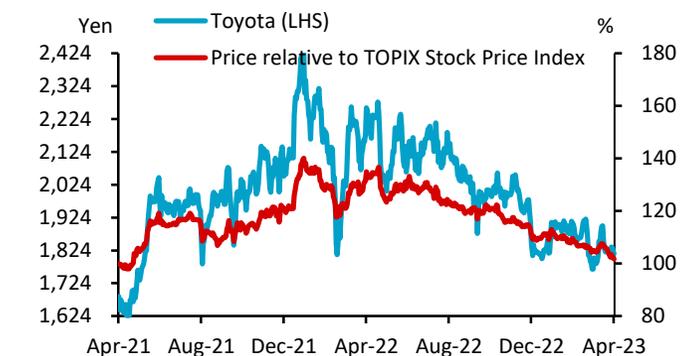
Current price: JPY1,798

Target price: JPY2,509

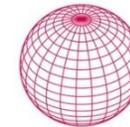
Upside: 40%

Stock data

RIC code	7203.T
Index	.TOPX
TOPIX Stock Price Index (20 April 2023)	2,039.73
Market cap (Yen bn)	24,652
Shares outstanding (million)	13,711
Par (Yen)	24.34



Toyota: Heads or Tails? EVs, Hybrids, or ICE?



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ICE vehicles are not going away, providing ongoing revenue support

Toyota is the world's largest car manufacturer, ranked by a composite of market cap, revenue, and employees. The company has been a leader in alternative energy solutions such as hybrids and hydrogen-powered vehicles. The prior president has said that the company will "not simply repeat the approach of other companies" when it comes to electric vehicles (EV). Toyota points out the limited battery range, scarcity of lithium resources, lack of a charging network, and consumer preferences towards internal combustion engines (ICE). And developing markets in South America, Asia, and Africa could be decades away from having the infrastructure to implement a massive EV rollout; Toyota is well positioned to grow with these markets. Over the next five years, we expect Toyota to return to its pre-pandemic average growth level and achieve a CAGR of 6.9%.

Hybrid and Hydrogen leadership and more EVs coming could prove critics wrong

Toyota is a pioneer in the mass production of hybrid technology, having rolled out its hybrid "Prius" model in 1997, since selling more than 5m. Currently, hybrids account for about 27% of total vehicle sales. Toyota is pushing ahead with hydrogen-powered cars, currently selling its "Mirai" model. The beaten-down share price is some evidence that observers expect the company's hydrogen offerings will eventually fail. But there is promise to the technology, and an investor could consider Toyota's hydrogen to have an option value. Of course, Toyota has not turned its back on EVs; recently, announcing plans to invest US\$70bn in electrifying part of its fleet by 2030. We appreciate Toyota's diversified approach to transition to more carbon-neutral cars and expect total CAPEX spending of about JPY12trn over the next few years.

Negative sentiment pressuring price; but at 1x PB, it might be the time to BUY

The sector is unfavorable given recession fears, as well, investors doubts Toyota's unconventional EV policies and its ability to defend its position as the world's largest carmaker. The company's price-to-book ratio (PB) dropped below 1x, which is 1x std dev below its long-term average. With an average net margin of 7.8% over the past 5 years, Toyota is among the most profitable automobile companies in the world. We believe negative sentiment has been too punishing, and the stock deserves a re-rating.

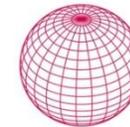


Background: Toyota is a world-leading Japanese automaker maker. It also finances some of its customers through its finance arm.

The company sells its vehicles in 200 countries and regions, with main markets being Japan, North America, Europe, and Asia.

In 2022, the company produced 10.6 million vehicles and topped the ranking of the world's largest car brands with a market share of around 11.5%.

Toyota: FY3Q23 saw strong revenue growth



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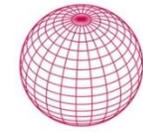
(Yen m)	FY3Q22	FY4Q22	FY1Q23	FY2Q23	FY3Q23	YoY (%)
Revenue	7,786	8,112	8,491	9,218	9,755	25.3
Cost of sales	(6,260)	(6,755)	(7,100)	(7,795)	(7,821)	24.9
Gross profit	1,526	1,357	1,391	1,424	1,933	26.7
SG&A	(742)	(893)	(812)	(861)	(977)	31.7
Other (exp)/inc	(0)	0	(0)	(0)	0	nm
EBIT	784	464	579	563	957	22.0
Finance cost	(9)	(18)	(19)	(51)	(38)	313.0
Other inc/(exp)	116	38	108	59	109	(5.8)
Earnings before taxes	891	483	667	571	1,028	15.3
Income tax	(275)	(262)	(263)	(351)	(290)	5.7
Earnings after taxes	617	221	404	220	738	19.6
Equity income	154	145	171	134	170	10.1
Minority interest	(27)	43	(21)	(27)	(17)	(38.7)
Earnings from cont. operations	744	409	554	326	891	19.8
Forex gain/(loss) & unusual items	48	125	183	108	(163)	nm
Net profit	792	534	737	434	728	(8.1)
Recurring profit	758	459	610	369	836	10.3
EBITDA	1,410	1,088	1,253	1,209	1,645	16.7
Recurring EPS (Yen)	54.741	33.244	44.444	26.984	61.344	12.1
Reported EPS (Yen)	57.184	38.677	53.655	31.727	53.398	(6.6)
Profits (%)	FY3Q22	FY4Q22	FY1Q23	FY2Q23	FY3Q23	Diff (%)
Gross margin	19.6	16.7	16.4	15.4	19.8	0.2
Operating margin	10.1	5.7	6.8	6.1	9.8	(0.3)
Net margin	10.2	6.6	8.7	4.7	7.5	(2.7)

Toyota's 3Q23 revenue was up an impressive 25% YoY due to strong sales volume.

The operating profit also grew by 22%, with the positive effect of higher sales volume more than offsetting soaring material prices.

Though, the bottom line is slightly weaker YoY due to FOREX losses.

Toyota: Revenue structure



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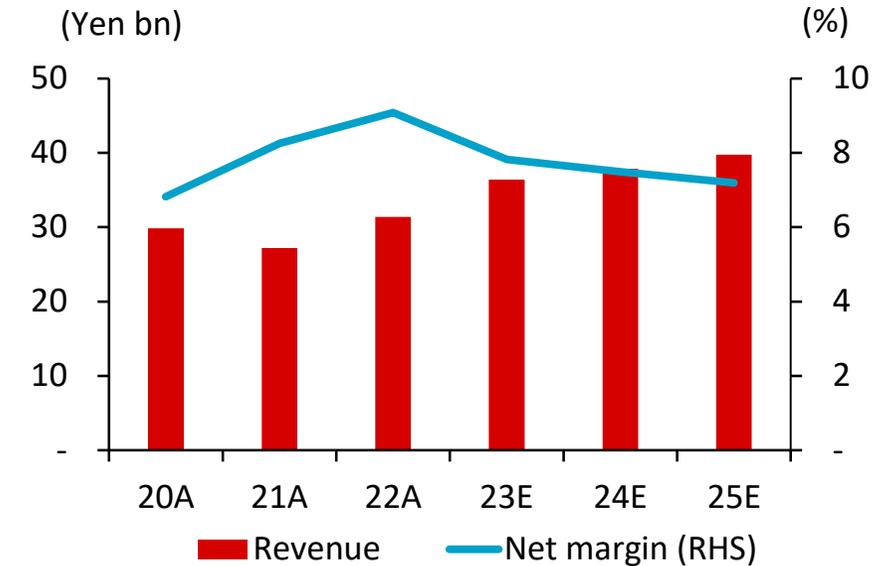
Risks

With 10.5m sold cars in 2022, Toyota remained the largest car manufacturer in the world. Its automotive segment, which accounts for 91% of revenue includes the production of passenger cars, commercial vehicles, and related parts.

The company produces vehicles under four brands: Daihatsu, Hino, Lexus, and the namesake Toyota. Accounting for 85% of total automotive sales, Toyota was the best-selling brand.

It derives 7% of its revenue from financial services. Compared to other car companies, this contribution is relatively low, meaning that Toyota generates most of its sales from its core segment of car production.

Toyota gets its revenues from multiple geographic regions. In 2022, North America was the largest region in terms of revenue as it represented 35% of total revenue. Its domestic market Japan makes up 26%, followed by Asia (18%), and Europe (12%).

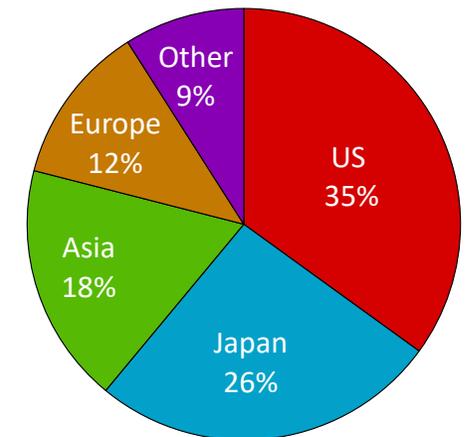


Revenue breakdown by segments and geographies, 2022

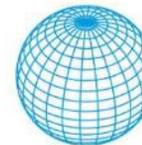
Automotive 91 %



Financial Services 7 %



Toyota: A. Stotz Four Elements



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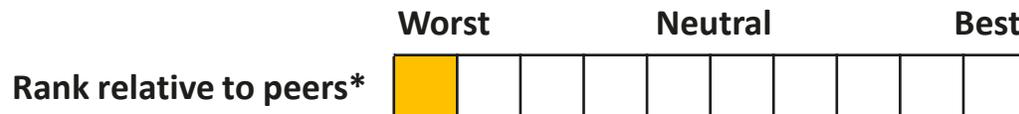
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(%)	Mar-19	Mar-20	Mar-21	Mar-22	PTM**
Operating profit margin	7.8	7.7	7.7	9.5	5.4
Recurring net margin	6.9	6.8	8.3	9.3	6.4
Asset turnover	59.1	56.4	46.8	48.3	52.6
Return on assets	4.1	3.9	3.9	4.5	3.4
Recurring return on equity	10.7	10.1	10.2	11.7	8.7



(x)	Mar-19	Mar-20	Mar-21	Mar-22	PTM**
Price-to-sales	3.1	3.1	4.5	1.0	0.7
Price-to-earnings	45.1	45.3	54.4	10.6	11.3
Price-to-book	4.6	4.4	5.1	1.2	0.9
PE-to-EPS growth (PEG)	nm	nm	5.2	0.3	nm
EV/EBIT	39.6	40.7	56.5	13.9	18.2



(%)	Mar-19	Mar-20	Mar-21	Mar-22	PTM**
Revenue growth	2.9	(1.2)	(8.9)	15.3	14.9
Recurring EPS growth	(82.6)	(0.3)	10.4	32.6	(23.1)
Operating profit margin chg. (bps)	29	(12)	1	185	(312)
	6mth	3mth	1mth	3wk	1wk
Price change	(8.8)	(3.0)	0.9	(0.6)	0.6



(x)	Mar-19	Mar-20	Mar-21	Mar-22	PTM**
Current ratio	1.0	1.0	1.1	1.1	1.1
Net debt-to-equity (%)	78.3	76.7	73.6	71.6	74.1
Times-interest-earned	83.7	51.8	49.1	92.0	nm
	5yr	3yr	1yr	6mth	3mth
Beta	1.0	1.1	1.3	1.0	1.2

Note: Benchmarking against 2,300 non-financial companies in Japan.

Overall: Toyota is highly unappealing relative to 2,300 non-financial companies in Japan considering Fundamentals, Valuation, Momentum, and Risk.

Fundamentals: Ranked in the bottom 30% in Japan due to low profitability driven by low margin and slow return on assets.

Valuation: Neutral as it trades on considerably lower PE, and PB relative to other companies in the Japanese market but on higher EV/EBIT.

Momentum: Moderately unattractive as both price and fundamental momentum are inconsistent and have not delivered convincing results.

Risk: Toyota has a low current ratio and risky debt status, but consistently high times interest earned. Price risk measured in terms of beta is about the same as the Japanese market.

Toyota: A. Stotz Profitable Growth



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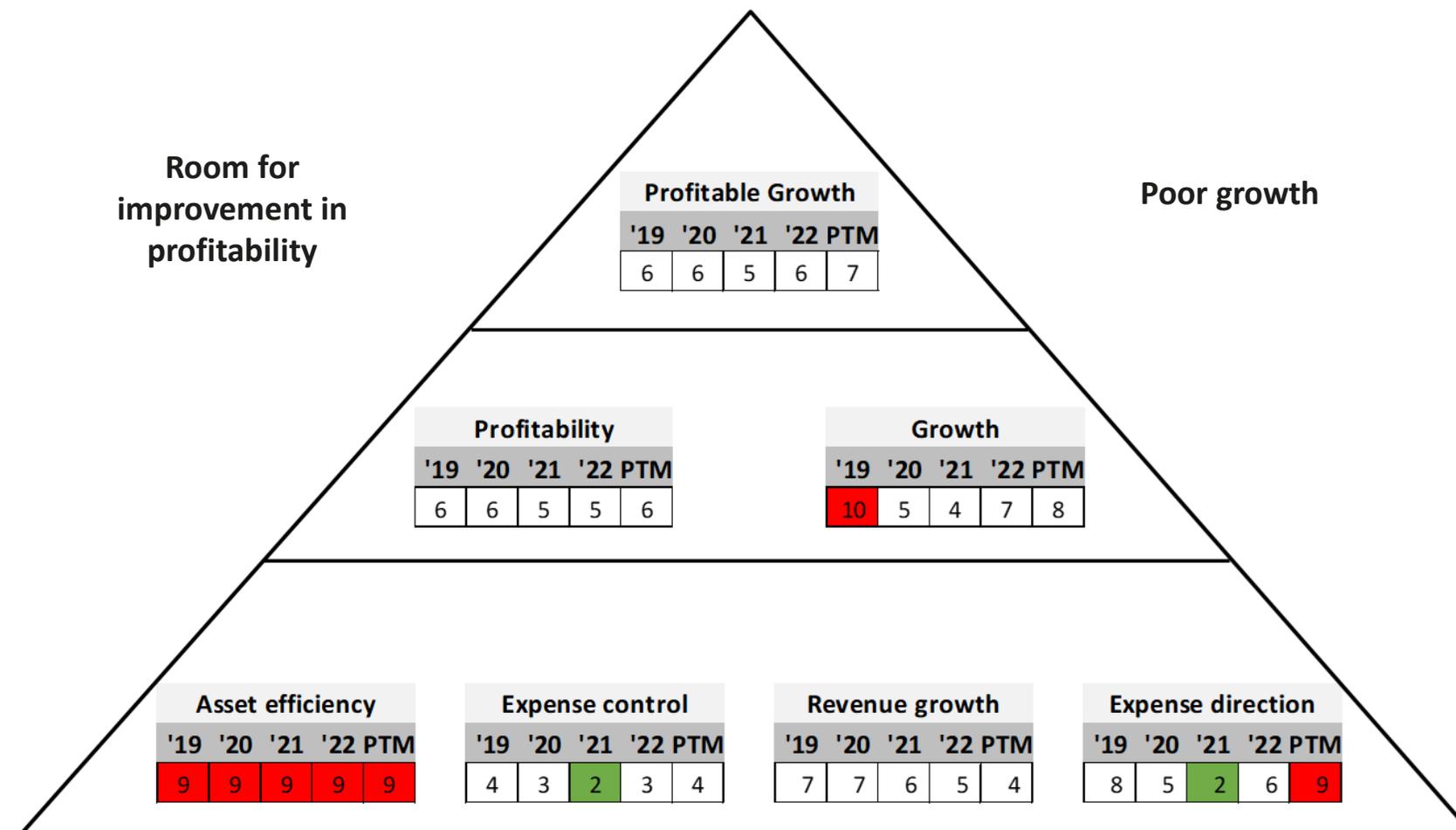
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Benchmarked against 930 large Cons. Disc. companies worldwide.

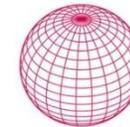
Profitable Growth consistently ranked slightly below average among 930 large Consumer Discretionary companies globally. In the past 12 months, the ranking among its peers fell to #7 from #6 in 2022.

Profitability shares a similar story, ranking at #6 for more than half the period. **Growth** has improved slightly since 2019 to #8 from #10 but can also be seen as continually dropping from #5 in 2020.

Asset efficiency has ranked #9 since 2019 and constituted a heavy drag on Profitability. However, strong **Expense control** has been slightly effective in compensating for poor Asset efficiency. It has been the main driver of the overall Profitable Growth rank.

Sales growth has ranked below average, however, in the past 12 months, it peaked at #4. **Expense direction** has been volatile; it dropped to #9 after a strong #2 rank in 2021.

Toyota: Profit and loss statement



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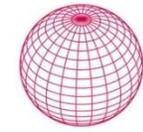
Value

Risks

(YE Mar, Yen bn)	Actual			Forecast				
	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Revenue	29,867	27,215	31,380	36,400	37,856	39,749	41,737	43,823
Cost of goods & services	(24,485)	(22,382)	(25,408)	(29,666)	(30,947)	(32,594)	(34,224)	(35,935)
Gross profit	5,381	4,832	5,972	6,734	6,909	7,155	7,513	7,888
SG&A	(2,982)	(2,635)	(2,976)	(3,458)	(3,596)	(3,776)	(3,965)	(4,163)
Other operating (exp)/inc	0	(0)	0	-	-	-	-	-
EBIT	2,399	2,198	2,996	3,276	3,312	3,379	3,548	3,725
Interest expense (net)	78	63	69	39	(1)	(65)	(74)	(73)
Other non-operating inc/(exp)	100	305	149	75	75	76	77	78
Earnings before taxes (EBT)	2,577	2,566	3,214	3,390	3,386	3,390	3,550	3,730
Income tax	(682)	(650)	(1,116)	(1,017)	(1,016)	(1,017)	(1,065)	(1,119)
Earnings after taxes (EAT)	1,895	1,916	2,098	2,373	2,371	2,373	2,485	2,611
Equity income/Minority interest	235	314	536	474	466	487	453	438
Earnings from cont. operations	2,131	2,230	2,634	2,847	2,836	2,860	2,938	3,049
Forex/Exceptionals before tax	(95)	15	216	-	-	-	-	-
Net profit	2,036	2,245	2,850	2,847	2,836	2,860	2,938	3,049
Earnings per share adjustments								
Net profit	2,036	2,245	2,850	2,847	2,836	2,860	2,938	3,049
Less: Preferred share dividend & other adj.	13	13	0	-	-	-	-	-
Net profit attributable to common shares	2,049	2,258	2,850	2,847	2,836	2,860	2,938	3,049
Add: Exceptional items after tax	-	-	-	-	-	-	-	-
Add: Foreign exchange loss/(gain) after tax	69	(11)	(146)	-	-	-	-	-
Recurring profit after tax	2,118	2,247	2,704	2,847	2,836	2,860	2,938	3,049

Sources: A. Stotz Investment Research, company data, Refinitiv

Toyota: Balance sheet - Assets



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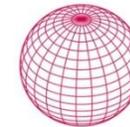
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Value

Risks

(YE Mar, Yen bn)	Actual			Forecast				
	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Cash & short-term investments	6,242	9,316	8,621	8,008	8,328	7,950	8,347	8,765
Accounts receivable	9,294	9,747	10,364	11,122	11,357	11,814	12,289	12,782
Inventories	2,534	2,888	3,821	4,038	4,126	4,255	4,373	4,492
Other current assets	894	826	916	1,092	1,136	1,192	1,252	1,315
Total current assets	18,963	22,777	23,722	24,260	24,947	25,212	26,262	27,353
Long-term investments	4,298	4,161	4,838	5,031	5,233	5,442	5,605	5,745
Net fixed assets	10,871	11,801	12,775	13,463	13,918	14,415	14,955	15,541
Intangible assets	1,000	1,109	1,192	1,427	1,697	2,007	2,364	2,775
Goodwill	-	-	-	-	-	-	-	-
Other long-term assets	18,840	22,420	25,162	26,168	27,215	28,303	29,435	30,613
Total assets	53,972	62,267	67,689	70,349	73,010	75,380	78,622	82,027

Toyota: Balance sheet - Liabilities and equity



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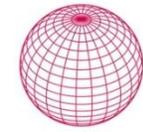
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Value

Risks

(YE Mar, Yen bn)	Actual			Forecast				
	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Overdrafts & short-term loans	9,907	12,212	11,188	10,923	11,197	11,049	11,732	12,274
Accounts payable	4,755	5,443	5,813	6,180	6,447	6,790	7,130	7,486
Other current liabilities	3,481	3,805	4,842	5,096	5,111	5,167	5,217	5,478
Total current liabilities	18,142	21,460	21,842	22,199	22,755	23,007	24,079	25,239
Long-term debt	11,434	13,448	15,309	15,831	15,989	16,149	16,310	16,474
Other long-term liabilities	3,057	3,071	3,383	3,417	3,451	3,486	3,521	3,556
Total liabilities	32,633	37,979	40,534	41,447	42,195	42,642	43,911	45,268
Minority interest	720	884	909	967	1,055	1,143	1,234	1,328
Paid-up capital - Common shares	886	894	896	896	896	896	896	896
Paid-up capital - Preferred shares	-	-	-	-	-	-	-	-
Retained earnings	22,234	24,104	26,453	28,447	30,433	32,435	34,493	36,627
Revaluation/Forex/Others	(2,502)	(1,594)	(1,103)	(1,407)	(1,569)	(1,736)	(1,911)	(2,092)
Total equity	20,619	23,405	26,246	27,935	29,760	31,594	33,477	35,431
Total liab & shareholders' equity	53,972	62,267	67,689	70,349	73,010	75,380	78,622	82,027
Book value per share adjustments								
Total Equity	20,619	23,405	26,246	27,935	29,760	31,594	33,477	35,431
Less: Preferred shareholders' equity	-	-	-	-	-	-	-	-
Less: Hybrid debt & others	-	-	-	-	-	-	-	-
Common shareholders' equity	20,619	23,405	26,246	27,935	29,760	31,594	33,477	35,431

Toyota: Cash flow statement



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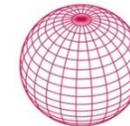
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(YE Mar, Yen bn)	Actual			Forecast				
	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E
Net income	2,036	2,245	2,850	2,847	2,836	2,860	2,938	3,049
Depreciation & amortization	1,595	1,644	1,822	1,983	2,116	2,250	2,392	2,544
Calculated chg in net working capital	(62)	274	(235)	(529)	(85)	(243)	(263)	(57)
Other non-cash & balancing items	(1,170)	(1,436)	(714)	(1,100)	(1,144)	(1,220)	(1,243)	(1,289)
Operating cash flow	2,398	2,727	3,723	3,201	3,724	3,647	3,824	4,247
Capital expenditures	(2,307)	(2,356)	(2,250)	(2,279)	(2,164)	(2,324)	(2,499)	(2,689)
(Inc)/dec in other investments	183	(2,328)	1,673	(668)	(695)	(722)	(751)	(785)
Investing cash flow	(2,125)	(4,684)	(577)	(2,947)	(2,859)	(3,047)	(3,250)	(3,474)
Increase/(dec) in debt	1,513	3,201	(1,300)	257	432	12	844	705
Dividend paid	(619)	(626)	(710)	(854)	(850)	(858)	(881)	(914)
Change in equity	(476)	200	(405)	(304)	(161)	(168)	(174)	(181)
Others	(55)	(37)	(52)	34	34	35	35	35
Financing cash flow	363	2,739	(2,467)	(867)	(545)	(978)	(176)	(355)
Net inc/(dec) in cash & cash equi	637	782	679	(613)	320	(379)	397	417
Beginning cash	5,828	6,242	9,316	8,621	8,008	8,328	7,950	8,347
Adjustment for historic data	(223)	2,292	(1,374)	-	-	0	-	-
Ending cash	6,242	9,316	8,621	8,008	8,328	7,950	8,347	8,765



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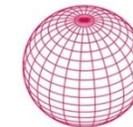
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Value

Risks

	Actual			Forecast			Recent quarters		
(YE Mar)	2020A	2021A	2022A	2023E	2024E	2025E	Jun '22	Sep '22	Dec '22
Internal liquidity (x)									
Current ratio	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Quick, or acid test ratio	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Working cap. mgmt (Days)									
Inventory conversion period	38	44	48	48	47	46	50	48	48
Receivables collection period	114	126	115	106	107	105	111	108	105
Days from raw mat to coll	152	170	163	154	154	151	161	156	153
Payables deferral period	78	82	80	73	73	73	73	68	69
Cash conversion cycle	74	88	83	81	81	78	89	87	84
Profitability ratios (%)									
Gross profit margin	18.0	17.8	19.0	18.5	18.3	18.0	16.4	15.4	19.8
EBIT margin	8.0	8.1	9.5	9.0	8.8	8.5	6.8	6.1	9.8
EBIT return on avg assets	4.5	3.8	4.6	4.7	4.6	4.6	3.3	3.1	5.2
Return on average assets	3.8	3.9	4.4	4.1	4.0	3.9	4.2	2.4	4.0
Financial risk (x)									
Liabilities-to-assets (%)	60.5	61.0	59.9	58.9	57.8	56.6	60.6	61.1	60.3
Debt-to-equity	1.0	1.1	1.0	1.0	0.9	0.9	0.6	0.6	0.6
Net debt-to-equity	0.7	0.7	0.7	0.7	0.6	0.6	0.3	0.3	0.3
Times-interest-earned	90.6	90.6	148.4	39.5	26.9	20.6	55.9	21.1	38.9
Effective interest rate (%)	0.2	0.2	0.1	0.5	0.7	1.0	0.4	1.2	0.9

Toyota: Ratios (continued)



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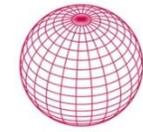
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Value

Risks

	Actual			Forecast			Recent quarters		
(YE Mar)	2020A	2021A	2022A	2023E	2024E	2025E	Jun '22	Sep '22	Dec '22
General growth (YoY, %)									
Revenue	(1.2)	(8.9)	15.3	16.0	4.0	5.0	7.0	22.2	25.3
Assets	3.9	15.4	8.7	3.9	3.8	3.2	16.7	20.6	12.5
Gross profit	(1.2)	(10.2)	23.6	12.8	2.6	3.6	(15.7)	(1.1)	26.7
Operating profit	(2.8)	(8.4)	36.3	9.4	1.1	2.0	(42.0)	(25.0)	22.0
Attributable profit	8.1	10.3	26.9	(0.1)	(0.4)	0.8	(17.9)	(30.7)	(8.1)
EPS	10.9	11.0	27.2	1.2	0.6	1.7	(16.6)	(29.7)	(6.8)
Recurring EPS	16.7	6.2	23.1	6.6	0.6	1.7	(29.4)	(38.9)	12.1
Du Pont analysis (%)									
Net profit margin	6.8	8.3	9.1	7.8	7.5	7.2	8.7	4.7	7.5
Revenue per Yen100 of assets	56.4	46.8	48.3	52.7	52.8	53.6	48.7	50.4	53.4
Assets/equity (x)	2.6	2.6	2.6	2.5	2.5	2.4	2.6	2.6	2.6
Return on equity	10.1	10.2	11.5	10.5	9.8	9.3	11.0	6.3	10.5
Others (%)									
Effective tax rate	27.5	25.2	32.5	30.0	30.0	30.0	31.0	51.7	33.6
Dividend payout ratio	29.5	29.7	26.7	30.0	30.0	30.0	-	92.6	-

Toyota: Consensus estimates



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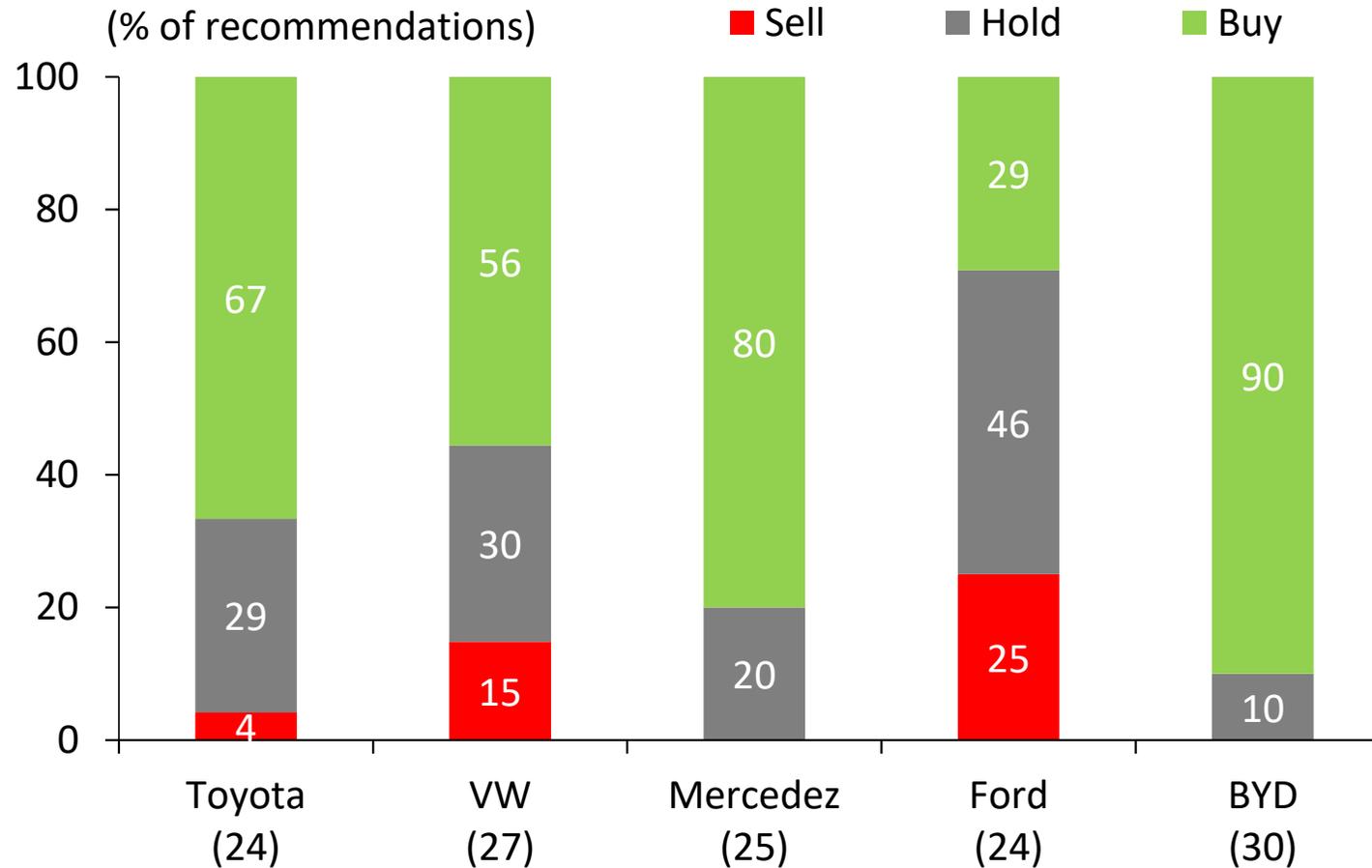
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Around 2/3 of analysts are bullish on Toyota, and only 1 analyst issued a SELL recommendation. The mean target price is at JPY2,180, which is a 21% upside compared to the current share price.

In general, analysts are most bullish on BYD, with 90% of analysts optimistic that the stock will outperform in the future. The average upside accumulates to 137%.

The German car manufacturer Mercedes-Benz receives a similar positive sentiment, with around 80% of analysts issuing a BUY recommendation. They expect a solid upside of 32%.

US car giant Ford has the least favorable rating. 25% of analysts say it's a SELL.

What's interesting
about **Toyota** is that if
you **buy today**, you
get its **future growth**
for free



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CASE STUDY

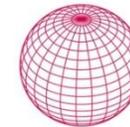
VALUATION MASTER CLASS

by

A. Stotz

INVESTMENT
RESEARCH

Toyota: Relative valuation



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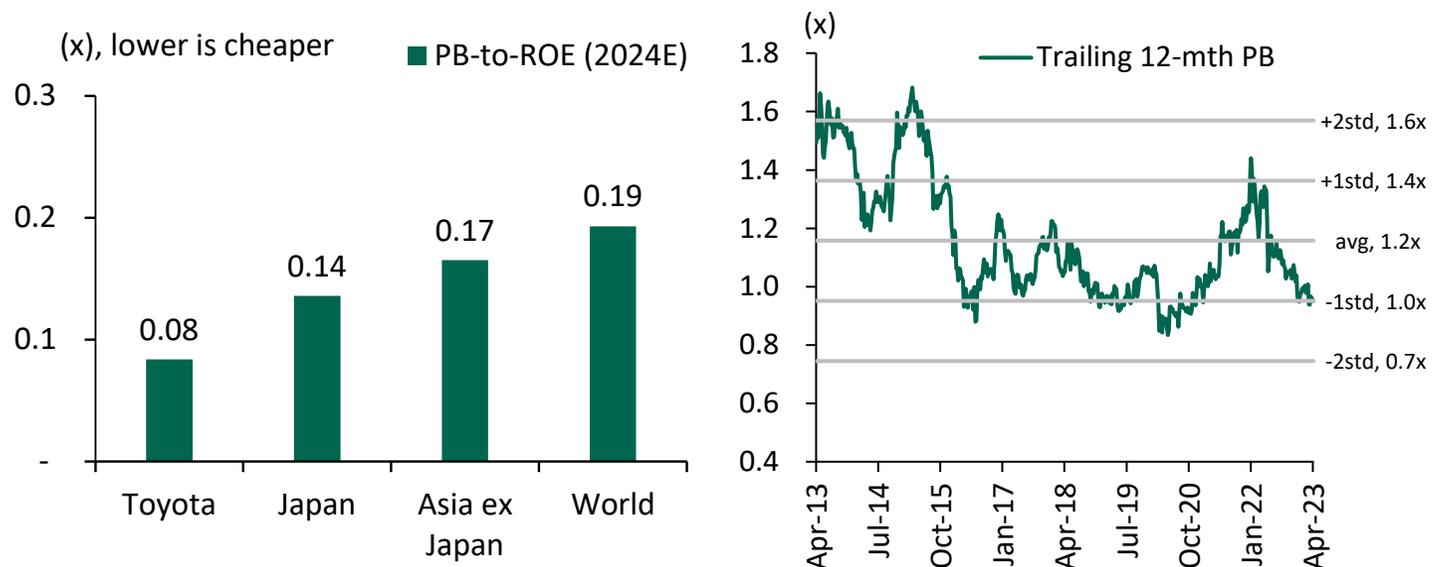
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PB ratio (x)	2021A	2022A	2023E	2024E
Toyota	1.1	1.1	0.9	0.8
Japan	na	1.4	1.2	1.2
Asia ex Japan	na	2.5	2.1	1.9
World	na	3.4	3.1	3.0

ROE (%)	2021A	2022A	2023E	2024E
Toyota	10.2	11.5	10.5	9.8
Japan	na	7.9	9.5	8.5
Asia ex Japan	na	7.6	9.0	11.6
World	na	14.3	13.6	15.4

Looking at trailing price-to-book ratio (PB), Toyota currently trades 1x std dev below its long-term average of 1.2x. It has recently fallen below 1.0x.

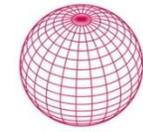
On the forward 2024E PB multiple, Toyota trades at a massive discount to the Consumer Discretionary sector in Japan. The gap to Asia and World is even higher, which makes Toyota appear very cheap.

Its return on equity (ROE) is expected to be slightly above the Japanese and Asian sector averages. This leads Toyota to trade at a deep discount based on 2024E PB-to-ROE multiple.

If we were to revalue Toyota to the 2024E PB-to-ROE multiple of Japan, the company would deserve to trade at a 2024E PB of 1.4x. This would lead to a value estimate of JPY3147, or 75% higher than the current share price. Based on that, Toyota seems to be massively undervalued.

Though, we have chosen to use a DCF-based valuation to value Toyota.

Toyota: Free cash flow data



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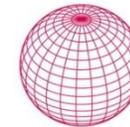
Risks

	Actual			Forecast					Fade period*	
(YE Mar, Yen bn)	2020A	2021A	2022A	2023E	2024E	2025E	2026E	2027E	2028E	2029E
EBIT	2,399	2,198	2,996	3,276	3,312	3,379	3,548	3,725	3,954	4,183
Tax rate (%)	27	25	33	30	30	30	30	30	30	30
NOPAT	1,740	1,644	2,021	2,293	2,319	2,365	2,483	2,607	2,768	2,928
Add: Depre & amort	1,595	1,644	1,822	1,983	2,116	2,250	2,392	2,544	2,649	2,750
Cash NOPAT	3,336									
Chg in A/R	295	(453)	(618)	(758)	(235)	(457)	(475)	(493)		
Chg in inventory	123	(354)	(933)	(217)	(88)	(129)	(118)	(119)		
Chg in oth curr assets	(88)	68	(90)	(176)	(44)	(57)	(60)	(63)		
Chg in A/P	(1,114)	688	369	368	267	343	340	356		
Chg in oth curr liabs	721	325	1,036	254	15	57	50	261		
Less: Chg in working cap	(62)	274	(235)	(529)	(85)	(243)	(263)	(57)		
Less: CAPEX	(2,307)	(2,356)	(2,250)	(2,279)	(2,164)	(2,324)	(2,499)	(2,689)		
Less: Chg in invest cap									(2,860)	(2,969)
Free cash flow to firm	966	1,207	1,358	1,468	2,186	2,047	2,113	2,405	2,557	2,709
FCF per share (Yen)	67.9	84.9	97.8	107.1	161.0	151.9	158.2	181.7	186.5	197.6
NOPAT growth (%)	(0.8)	(5.5)	22.9	13.5	1.1	2.0	5.0	5.0	6.2	5.8
FCF growth (%)	19.1	24.9	12.5	8.1	48.9	(6.4)	3.2	13.8	6.3	5.9

Sources: A. Stotz Investment Research, company data, Refinitiv.

Note: *Shows the two first years of the fade period.

Toyota: Valuation and target price



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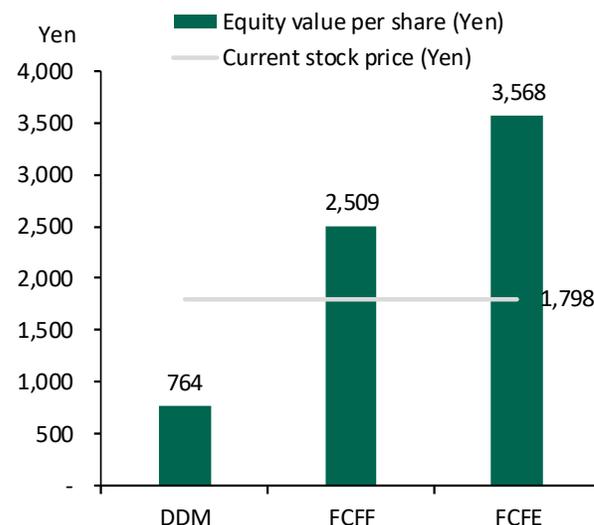
Calculation of cost of equity (COE, %)

	Estimate
Market: Japan	
Market risk-free rate	1.0
Market equity risk premium	10.0
Market return	11.0
Company beta (x)	1.0
COE	11.0

Calculation of WACC

	Average
Cost of debt	1.0
Average tax rate	30.0
After tax cost of debt	0.7
Cost of preferred stock	-
Debt as a % of total capital	44.6
Preferred stock as a % of total capital	-
Equity market value as a % of total capital	55.4
Weighted average cost of capital	6.4

Toyota: Valuation (Yen bn)	DDM	%	FCFF	%	FCFE	%
PV of cash flow in years 2023-27	3,264	31	8,670	25	8,398	17
PV of fade period	4,181	40	15,815	46	13,146	27
PV of terminal value	3,033	29	23,858	69	13,923	28
Present value of future cash flows	10,477	100	48,343	141	35,467	72
Add: Cash & ST investments	na*	-	8,621	25	8,621	18
Add: Long-term investments	na	-	4,838	14	4,838	10
Corporate value	10,477	100	61,801	180	48,926	100
Less: Total debt, preferred stock & minorities	na	-	(27,405)	(80)	na	-
Shareholder value	10,477	100	34,396	100	48,926	100
Number of shares (m)	13,711		13,711		13,711	
Equity value per share (Yen)	764		2,509		3,568	



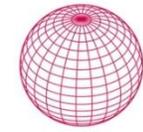
We assume a risk-free rate of 1% and a market equity risk premium for the Japanese market of 10% like its recent past.

Toyota has been performing in line with the market; thus, we assume a beta of 1x. We forecast a capital structure with 44.6% debt to total capital, in line with the current level. This results in a WACC and a discount rate of 6.4%. We use a terminal growth rate of 1% and use Free Cash Flow to Firm (FCFF) to value Toyota.

Our base case assumes a gross margin of 18.2% p.a. until 2027E, resulting in a value of JPY2,509 per share based on the FCFF methodology. A 40% upside compared to the current market price.

In our sensitivity analysis (see next page), our optimistic case assumes a gross margin of 20.2% p.a. until 2027E. If Toyota were to deliver that target, the value derived from FCFF would be JPY2,802. In our pessimistic case, we look at if Toyota's gross margin were only 16.2% per year. Then the value would be JPY2,214 per share, which still allows for plenty of upside.

Toyota: Sensitivity analysis



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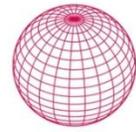
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Value

Risks

Fundamentals (% , five year-average)				Valuation (US\$)				
Toyota	EPS growth	Net margin	ROE	DDM	FCFF	FCFE	PEG	PB/ROE
What if sales growth changed by X% from base case?								
+10 (7.7%)	nm	7.3	9.7	792	2,517	3,595	na	2,985
Base case of 7.0%	nm	7.3	9.5	764	2,509	3,568	na	2,941
-10 (6.3%)	nm	7.3	9.4	737	2,500	3,542	na	2,898
What if gross margin changed by X percentage points from base case?								
+2 (20.2%)	nm	8.7	11.0	919	2,802	3,692	na	3,495
Base case of 18.2%	nm	7.3	9.5	764	2,509	3,568	na	2,941
-2 (16.2%)	nm	5.9	7.9	609	2,214	3,444	na	2,393
What if discount rate changed, by changing the risk factor (beta) from base case?								
+10 (Beta 1.1x, COE 12.0%)				687	2,339	3,370		
Base case of 1.00x (COE 11.0%)				764	2,509	3,568		
-10 (Beta 0.9x, COE 10.0%)				860	2,694	3,794		
What if terminal growth rate changed by X percentage points from base case?								
+1				811	2,997	4,018		
Base case of 1%				764	2,509	3,568		
-1				726	2,162	3,247		



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Failure to adapt to the industry trends

We built our forecast around the fact that Toyota's decision to delay the full shift to EVs is a wise decision and also around the fact that it would be successful in its endeavors toward hybrids, electric, and hydrogen fuel cars. Any sudden change in consumer preferences would hurt the company's short-term results. Also, any failure in the production of its new hybrid, electric, or hydrogen fuel cars would hurt the automaker's long-term results. Toyota recently offered to buy back its new electric SUV (BZ4X) from its owners because of a severe problem: the wheels could fall off while driving even after just a short time on the road! Anything like that would drag down our target price and affect the company's position in the market.

Soaring raw material prices

Prices of raw materials such as cobalt, lithium, and nickel have surged. In May 2022, lithium prices were over seven times higher than at the start of 2021. Unprecedented battery demand and a lack of structural investment in new supply capacity are key factors. Russia's invasion of Ukraine has created further pressure since Russia supplies 20% of global high-purity nickel. Also, China produces three-quarters of all lithium-ion batteries and is home to 70% of the production capacity for cathodes and 85% of the production capacity for anodes (both are key components of batteries), so if geopolitical tensions lasted long it would cause huge drops in the company's margins and disruptions in its supply chain.

Concentration of suppliers

Automakers must rely on suppliers of cheaper raw materials to succeed in the automotive industry. But, Toyota depends on a limited number of suppliers, whose replacement with others may be difficult, exposing the company to a wide range of risks. Any loss of an important supplier or inability to obtain materials in a timely and cost-effective manner could lead to increased costs or delays in Toyota's production and deliveries, which would hurt the company's revenues and margins. Nonetheless, Toyota has managed to build great relationships with its suppliers which reduces the risk of losing them.