

**XPeng Inc Class A 09868** ★★★ 16 Nov 2023 07:48, UTC

<b>Last Price</b> 65.15 HKD 16 Nov 2023	<b>Fair Value Estimate</b> 61.70 HKD 16 Nov 2023 07:47, UTC	<b>Price/FVE</b> 1.06	<b>Market Cap</b> 121.45 HKD Bil 15 Nov 2023	<b>Economic Moat™</b> None	<b>Equity Style Box</b> Large Value	<b>Uncertainty</b> Very High	<b>Capital Allocation</b> Standard	<b>ESG Risk Rating Assessment<sup>1</sup></b> 1 Nov 2023 05:00, UTC
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**Vincent Sun, CFA**

Equity Analyst

Morningstar

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The primary analyst covering this company does not own its stock.

Reporting Currency: USD | Trading Currency: HKD  
Currency amounts expressed with "\$" are in U.S. dollars (USD) unless otherwise denoted.

The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating.

## XPeng Earnings: Vehicle Margin Remains Depressed but Guided to Improve

**Analyst Note** Vincent Sun, CFA, Equity Analyst, 16 Nov 2023

XPeng reported third-quarter revenue at the low end of its guidance. Excluding inventory write-off, vehicle margin of negative 3% indicates continued pressure from price promotions amid industry competition. But management guided a margin turnaround in the fourth quarter and meaningful improvement next year on larger volume, lower battery cost, and cost reduction initiatives that have been taken.

With enlarged losses on soft vehicle margin in the quarter, we increase our 2023-25 net loss forecasts. However, as we maintain our profitability forecast for the outer years on a higher volume expectation, we raise our fair value estimates to USD 15.90 per ADS (HKD 61.70 per share) from USD 14.50 (HKD 56.00), which implies a forward 2024 price/sales ratio of 1.8 times. Shares are in Morningstar 3-star territory and fairly valued, in our view. We suggest investors wait for a better entry point to accumulate the stocks.

For the fourth quarter, management guided vehicle delivery to recover 168%-186% year over year to 59,500-63,500 units and total revenue to grow 147%-165% year over year to CNY 12.7 billion-CNY 13.6 billion. The midpoint of the delivery guidance implies a monthly sales volume of around 21,000 units for November and December, which we believe is in line with market expectation. For new models, the company is to launch the X9 soon and two new models built on the SEPA platform in second-half 2024. In addition, the first sedan model under the Mona brand is also to be delivered in the third quarter of next year.

We expect the disappointing third-quarter margin and noncash fair value losses to trigger consensus earnings downgrades. However, with October delivery reaching the 20,000-unit mark, the company's growth trend has

**Financial Summary and Key Statistics**

	Actual		Forecast	
	2021	2022	2023	2024
Revenue (USD Mil)	20,988	26,855	30,651	53,799
Revenue Growth %	259.1	28.0	14.1	75.5
Operating Income (Mil)	-6,797	-8,815	-11,650	-6,974
Operating Margin %	-32.4	-32.8	-38.0	-13.0
Adjusted EBITDA (Mil)	-5,587	-9,094	-9,929	-4,764
Adjusted EBITDA Margin %	-26.6	-33.9	-32.4	-8.9
Earnings Per Share (Diluted) (USD)	-2.96	-5.34	-6.71	-3.43
Adjusted Earnings Per Share (Diluted) (USD)	-3.74	-4.62	-6.27	-3.55
Adjusted EPS Growth %	-34.0	23.5	35.9	-43.4
Price/Earnings	-6.4	-1.1	-1.4	-2.4
Price/Book	0.9	0.2	0.5	0.6
EV/EBITDA	-6.2	-0.6	—	—
Free Cash Flow Yield %	—	—	—	—

Source: Morningstar Valuation Model. Data as of 16 Nov 2023.

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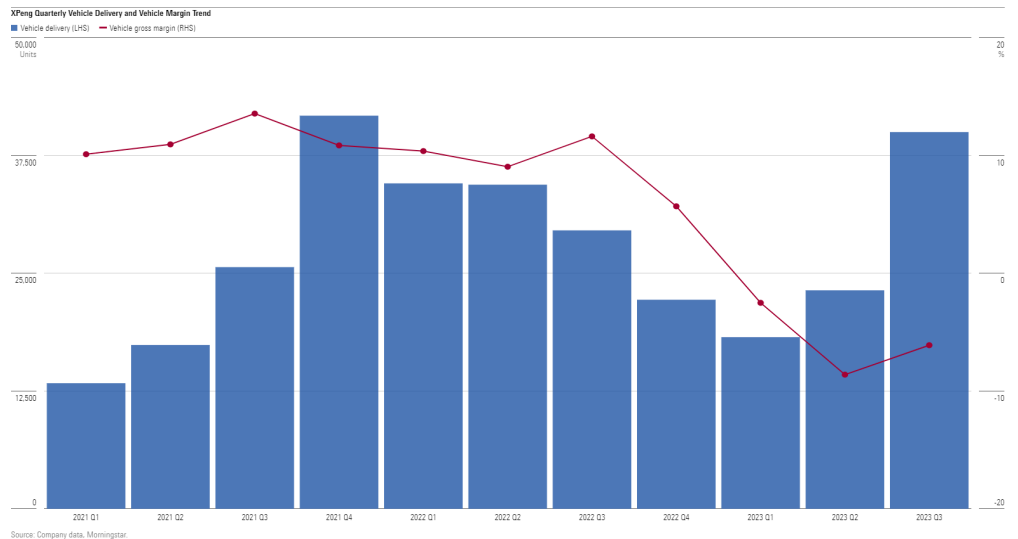
**Sector** Consumer Cyclical Auto Manufacturers

**Business Description**  
Founded in 2015, XPeng is a leading Chinese smart electric vehicle, or EV, company that designs, develops, manufactures and markets EVs in China. Its products primarily target the growing base of technology-savvy middle-class consumers in the midrange to high-end segment in China’s passenger vehicle market. The company sold over 120,000 EVs in 2022, accounting for about 2% of China’s passenger new energy vehicle market. It is also a leader in autonomous driving technology.

bottomed out as we anticipated, and the focus of investors for next year is whether the company can maintain decent delivery momentum with new launches and improve profitability in a challenging pricing environment, in our view.

XPeng’s third-quarter revenue grew 25.0% year over year to CNY 8.5 billion on the back of a 35.3% increase in the quarter’s vehicle delivery to 40,008 units. Top-line growth was partly offset by a 7.1% decline in average selling price due to a higher G6 sport utility vehicle mix and sales discounts to fend off competition. As a result of price promotions and inventory write-down related to the old G3i model, the vehicle margin for the quarter remained in negative territory but improved 2.5 percentage points quarter over quarter to negative 6.1%—and from negative 8.6% in the second quarter. Excluding the one-off inventory write-off, vehicle margin remained depressed at negative 3.2% amid industry price competition. Coupled with a CNY 1-billion fair value loss from the forward share purchase agreement with Volkswagen, third-quarter net loss expanded 63.6% from the prior-year period and 38.6% from last quarter to CNY 3.9 billion.




We raise our 2023-25 vehicle delivery forecasts by 7%-11% to factor in the year-to-date sales run-rate and new model contribution, and we now expect XPeng to sell 143,445 units of vehicles in 2023. However, partially offset by lower price assumptions, given competition and a higher G6 mix, we increase our 2023-25 revenue estimates by 5%-8%. We expect the vehicle margin to remain under pressure in the next few quarters, given aggressive pricing for recently launched models and continued price competition in the mass segment. We bump up our 2023 net loss estimate by 21% to reflect inventory write-offs and fair value losses. With higher vehicle sales assumptions, we also edge up our 2024-25 net loss forecast by 9%-15%. We now estimate the company to record a net loss of CNY 11.5 billion in 2023 and expect XPeng to break even in 2026, with CNY 2.3 billion in net profit with an improved vehicle sales profitability outlook on growing economies of scale.



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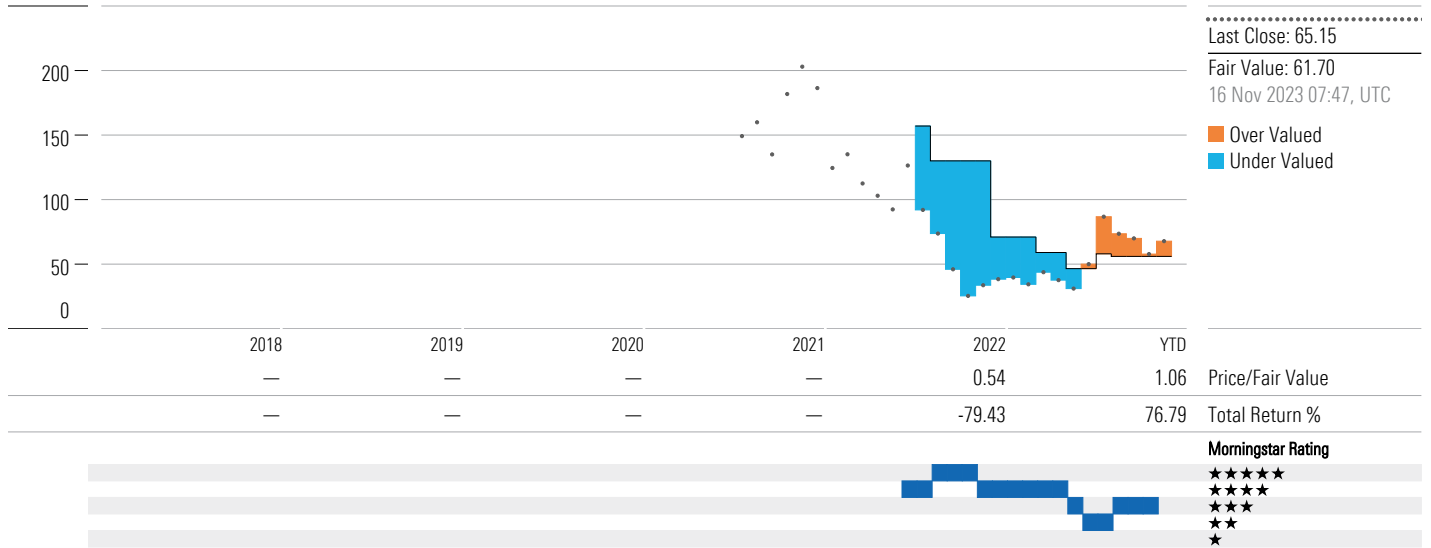
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Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment <sup>1</sup>
65.15 HKD 16 Nov 2023	61.70 HKD 16 Nov 2023 07:47, UTC	1.06	121.45 HKD Bil 15 Nov 2023	 None	 Large Value	Very High	Standard	 1 Nov 2023 05:00, UTC



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## Price vs. Fair Value



## Competitors

	XPeng Inc Class A 09868	Tesla Inc TSLA	BYD Co Ltd Class A 002594	Li Auto Inc Or...ares - Class A 02015
Economic Moat	None	Narrow	None	None
Currency	HKD	USD	CNY	HKD
Fair Value	61.70 16 Nov 2023 07:47, UTC	210.00 19 Oct 2023 01:46, UTC	281.00 31 Oct 2023 04:26, UTC	151.90 10 Nov 2023 07:48, UTC
1-Star Price	107.98	367.50	435.55	265.83
5-Star Price	30.85	105.00	168.60	75.95
Assessment	Fairly Valued 15 Nov 2023	Fairly Valued 15 Nov 2023	Under Valued 15 Nov 2023	Fairly Valued 15 Nov 2023
Morningstar Rating	★★★ 16 Nov 2023 07:48, UTC	★★★ 15 Nov 2023 22:33, UTC	★★★★ 15 Nov 2023 17:36, UTC	★★★ 15 Nov 2023 17:22, UTC
Analyst	Vincent Sun, Equity Analyst	Seth Goldstein, Strategist	Vincent Sun, Equity Analyst	Vincent Sun, Equity Analyst
Capital Allocation	Standard	Exemplary	Standard	Standard
Price/Fair Value	1.06	1.16	0.85	1.05
Price/Sales	5.17	8.81	1.20	4.05
Price/Book	3.47	14.44	5.35	5.55
Price/Earnings	—	78.37	24.20	178.87
Dividend Yield	—	—	0.48%	—
Market Cap	121.45 Bil	772.29 Bil	688.19 Bil	318.70 Bil
52-Week Range	25.85—96.30	101.81—299.29	229.66—306.13	61.95—185.50
Investment Style	Large Value	Large Growth	Large Growth	Large Growth

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## Morningstar Valuation Model Summary

### Financials as of 16 Nov 2023

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
Revenue (USD Mil)	5,844	20,988	26,855	30,651	53,799	68,338	87,524	107,931
Operating Income (USD Mil)	-4,381	-6,797	-8,815	-11,650	-6,974	-2,294	1,385	4,808
EBITDA (USD Mil)	-2,513	-4,916	-9,009	-10,929	-4,764	443	4,547	8,440
Adjusted EBITDA (USD Mil)	-3,875	-5,587	-9,094	-9,929	-4,764	443	4,547	8,440
Net Income (USD Mil)	-4,890	-4,863	-9,139	-11,497	-5,962	-1,419	2,253	5,794
Adjusted Net Income (USD Mil)	-4,272	-6,142	-7,910	-10,750	-6,163	-1,619	2,053	5,593
Free Cash Flow To The Firm (USD Mil)	-27,250	-39,111	2,796	-8,862	-2,575	-1,196	-177	880
Weighted Average Diluted Shares Outstanding (Mil)	754	1,643	1,713	1,713	1,737	1,737	1,737	1,737
Earnings Per Share (Diluted) (USD)	-6.48	-2.96	-5.34	-6.71	-3.43	-0.82	1.30	3.34
Adjusted Earnings Per Share (Diluted) (USD)	-5.66	-3.74	-4.62	-6.27	-3.55	-0.93	1.18	3.22
Dividends Per Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### Margins & Returns as of 16 Nov 2023

	3 Year Avg	Actual			Forecast					5 Year Avg
		2020	2021	2022	2023	2024	2025	2026	2027	
Operating Margin %	-37.4	-75.0	-32.4	-32.8	-38.0	-13.0	-3.4	1.6	4.5	-9.9
EBITDA Margin %	—	-43.0	-23.4	-33.6	-35.7	-8.9	0.7	5.2	7.8	—
Adjusted EBITDA Margin %	—	-66.3	-26.6	-33.9	-32.4	-8.9	0.7	5.2	7.8	-5.5
Net Margin %	-47.0	-83.7	-23.2	-34.0	-37.5	-11.1	-2.1	2.6	5.4	-8.5
Adjusted Net Margin %	-43.9	-73.1	-29.3	-29.5	-35.1	-11.5	-2.4	2.4	5.2	-8.3
Free Cash Flow To The Firm Margin %	-214.1	-466.3	-186.4	10.4	-28.9	-4.8	-1.8	-0.2	0.8	-7.0

### Growth & Ratios as of 16 Nov 2023

	3 Year CAGR	Actual			Forecast					2027 5 Year CAGR
		2020	2021	2022	2023	2024	2025	2026	2027	
Revenue Growth %	126.2	151.8	259.1	28.0	14.1	75.5	27.0	28.1	23.3	32.1
Operating Income Growth %	32.5	15.5	55.2	29.7	32.2	-40.1	-67.1	-160.4	247.1	—
EBITDA Growth %	49.5	-30.4	95.6	83.3	21.3	-56.4	-109.3	926.4	85.6	173.5
Adjusted EBITDA Growth %	35.7	6.5	44.2	62.8	9.2	-52.0	-109.3	926.4	85.6	-198.5
Earnings Per Share Growth %	-26.2	-51.2	-54.3	80.3	25.8	-48.8	-76.2	-258.8	157.1	—
Adjusted Earnings Per Share Growth %	-26.2	-47.0	-34.0	23.5	35.9	-43.4	-73.7	-226.8	172.5	—

### Valuation as of 16 Nov 2023

	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
Price/Earnings	—	-6.4	-1.1	-1.4	-2.4	-9.3	7.4	2.7
Price/Sales	—	1.9	0.3	0.5	0.3	0.2	0.2	0.1
Price/Book	—	0.9	0.2	0.5	0.6	0.7	0.6	0.5
Price/Cash Flow	—	—	—	—	—	—	—	—
EV/EBITDA	—	-6.2	-0.6	—	—	—	—	—
EV/EBIT	—	-5.1	-0.6	—	—	—	—	—
Dividend Yield %	—	—	—	—	—	—	—	—
Dividend Payout %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Free Cash Flow Yield %	—	—	—	—	—	—	—	—

### Operating Performance / Profitability as of 16 Nov 2023

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
ROA %	-10.9	-7.4	-12.8	-16.0	-7.5	-1.6	2.3	4.9
ROE %	-14.2	-11.5	-24.8	-37.9	-24.5	-6.2	9.0	18.7
ROIC %	-15.6	4.2	-2.6	-11.7	-0.9	3.7	7.0	10.0

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## Financial Leverage (Reporting Currency)

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
Debt/Capital %	6.3	11.1	60.4	10.0	11.3	12.3	13.1	13.6
Assets/Equity	1.3	1.6	1.9	2.4	3.2	3.8	4.0	3.8
Net Debt/EBITDA	12.2	7.1	2.0	1.3	1.6	-9.8	-1.5	-1.4
Total Debt/EBITDA	-0.6	-0.9	-1.4	-1.1	-2.9	37.9	4.4	2.7
EBITDA/ Net Interest Expense	35.1	8.1	9.8	10.8	5.8	-0.7	-6.9	-10.9

## Forecast Revisions as of 16 Nov 2023

Prior data as of 20 Aug 2023	2023		2024		2025	
	Current	Prior	Current	Prior	Current	Prior
Fair Value Estimate Change (Trading Currency)	61.70	14.50	—	—	—	—
Revenue (USD Mil)	30,651	29,259	53,799	51,346	68,338	63,227
Operating Income (USD Mil)	-11,650	-10,739	-6,974	-6,449	-2,294	-2,013
EBITDA (USD Mil)	-9,929	-8,959	-4,764	-4,273	443	690
Net Income (USD Mil)	-10,750	-9,755	-6,163	-5,673	-1,619	-1,440
Earnings Per Share (Diluted) (USD)	-6.71	-5.55	-3.43	-3.15	-0.82	-0.71
Adjusted Earnings Per Share (Diluted) (USD)	-6.27	-5.69	-3.55	-3.27	-0.93	-0.83
Dividends Per Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00

## Key Valuation Drivers as of 16 Nov 2023

Cost of Equity %	9.0
Pre-Tax Cost of Debt %	5.3
Weighted Average Cost of Capital %	9.8
Long-Run Tax Rate %	15.0
Stage II EBI Growth Rate %	3.0
Stage II Investment Rate %	10.0
Perpetuity Year	11

Additional estimates and scenarios available for download at <https://pitchbook.com/>.

## Discounted Cash Flow Valuation as of 16 Nov 2023

	USD Mil
Present Value Stage I	-5,555
Present Value Stage II	5,437
Present Value Stage III	63,711
<b>Total Firm Value</b>	<b>63,592</b>
Cash and Equivalents	29,957
Debt	7,794
Other Adjustments	4,131
<b>Equity Value</b>	<b>89,887</b>
Projected Diluted Shares	1,737
<b>Fair Value per Share (HKD)</b>	<b>61.70</b>

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## Income Statement (USD)

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
<b>Revenue (Mil)</b>	<b>5,844</b>	<b>20,988</b>	<b>26,855</b>	<b>30,651</b>	<b>53,799</b>	<b>68,338</b>	<b>87,524</b>	<b>107,931</b>
Cost of Goods Sold (Mil)	5,578	18,366	23,767	30,501	47,324	56,827	71,260	86,934
<b>Gross Profit (Mil)</b>	<b>266</b>	<b>2,623</b>	<b>3,088</b>	<b>151</b>	<b>6,475</b>	<b>11,510</b>	<b>16,264</b>	<b>20,997</b>
Selling, General, Administrative & Other Expenses (Mil)	2,921	5,305	6,688	6,437	7,532	8,201	8,752	8,635
Advertising & Marketing Expenses (Mil)	0	0	0	0	0	0	0	0
Research & Development (Mil)	1,726	4,114	5,215	5,364	5,918	5,604	6,127	7,555
Depreciation & Amortization (if reported separately) (Mil)	0	0	0	0	0	0	0	0
<b>Adjusted Operating Income (Mil)</b>	<b>-4,381</b>	<b>-6,797</b>	<b>-8,815</b>	<b>-11,650</b>	<b>-6,974</b>	<b>-2,294</b>	<b>1,385</b>	<b>4,808</b>
Financial Non-Cash (Gains)/Losses (Mil)	-177	-602	1,311	-255	-200	-200	-200	-200
Irregular Cash (Gains)/Losses (Mil)	-1,362	-671	-84	1,000	0	0	0	0
<b>Operating Income (Mil)</b>	<b>-2,841</b>	<b>-5,525</b>	<b>-10,041</b>	<b>-12,395</b>	<b>-6,774</b>	<b>-2,094</b>	<b>1,585</b>	<b>5,008</b>
Net Interest Expense (Mil)	-111	-688	-927	-921	-824	-678	-664	-775
Income Tax Expense (Mil)	1	26	25	23	12	3	-4	-12
After-Tax Items (Mil)	-2,158	0	0	0	0	0	0	0
(Minority Interest) (Mil)	0	0	0	0	0	0	0	0
<b>Net Income (Mil)</b>	<b>-4,890</b>	<b>-4,863</b>	<b>-9,139</b>	<b>-11,497</b>	<b>-5,962</b>	<b>-1,419</b>	<b>2,253</b>	<b>5,794</b>
<b>Adjusted Net Income (Mil)</b>	<b>-4,272</b>	<b>-6,142</b>	<b>-7,910</b>	<b>-10,750</b>	<b>-6,163</b>	<b>-1,619</b>	<b>2,053</b>	<b>5,593</b>
Weighted Average Diluted Shares Outstanding (Mil)	754	1,643	1,713	1,713	1,737	1,737	1,737	1,737
<b>Diluted Earnings Per Share</b>	<b>-6.48</b>	<b>-2.96</b>	<b>-5.34</b>	<b>-6.71</b>	<b>-3.43</b>	<b>-0.82</b>	<b>1.30</b>	<b>3.34</b>
<b>Diluted Adjusted Earnings Per Share</b>	<b>-5.66</b>	<b>-3.74</b>	<b>-4.62</b>	<b>-6.27</b>	<b>-3.55</b>	<b>-0.93</b>	<b>1.18</b>	<b>3.22</b>
Dividends Per Common Share (USD)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>EBITDA (Mil)</b>	<b>-2,513</b>	<b>-4,916</b>	<b>-9,009</b>	<b>-10,929</b>	<b>-4,764</b>	<b>443</b>	<b>4,547</b>	<b>8,440</b>
<b>Adjusted EBITDA (Mil)</b>	<b>-3,875</b>	<b>-5,587</b>	<b>-9,094</b>	<b>-9,929</b>	<b>-4,764</b>	<b>443</b>	<b>4,547</b>	<b>8,440</b>

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## Key Cash Flow Items (USD)

Fiscal Year, ends 31 Dec	Actual			Forecast as of 16 Nov				
	2020	2021	2022	2023	2024	2025	2026	2027
Cash from Working Capital (Mil)	-19,915	-968	4,343	7,251	8,320	2,665	-151	-1,973
(Capital Expenditures) (Mil)	-806	-2,300	-4,276	-6,130	-8,070	-6,834	-7,002	-8,635
Depreciation (Mil)	303	573	915	1,302	1,854	2,387	2,819	3,295
Amortization (Mil)	25	36	116	163	156	150	143	137
<b>Net New (Investment), Organic (Mil)</b>	<b>-20,392</b>	<b>-2,659</b>	<b>1,098</b>	<b>2,587</b>	<b>2,261</b>	<b>-1,631</b>	<b>-4,191</b>	<b>-7,175</b>
(Purchases)/Sales of Companies & Assets (Mil)	-3,844	-30,789	8,956	1,226	2,152	2,734	2,626	3,238
<b>Net New (Investment), Total (Mil)</b>	<b>-24,236</b>	<b>-33,448</b>	<b>10,054</b>	<b>3,813</b>	<b>4,413</b>	<b>1,102</b>	<b>-1,565</b>	<b>-3,937</b>
Other Non-Cash Items, From Cash Flows (Mil)	-171	-109	2,811	766	1,345	1,708	2,188	2,698
<b>Free Cash Flow to the Firm (Mil)</b>	<b>-27,250</b>	<b>-39,111</b>	<b>2,796</b>	<b>-8,862</b>	<b>-2,575</b>	<b>-1,196</b>	<b>-177</b>	<b>880</b>

## Balance Sheet (USD)

Fiscal Year, ends 31 Dec	Actual			Forecast				
	2020	2021	2022	2023	2024	2025	2026	2027
<b>Assets</b>								
Cash and Equivalents (Mil)	30,189	36,883	29,957	24,907	21,402	21,149	26,459	34,553
Inventory (Mil)	1,343	2,662	4,521	5,014	7,131	8,563	10,738	13,100
Accounts Receivable (Mil)	1,129	2,673	3,873	4,199	6,633	8,425	10,791	13,307
Net Property, Plant and Equipment (Mil)	3,082	5,425	10,607	15,435	21,650	26,097	30,280	35,619
Goodwill (Mil)	0	0	0	0	0	0	0	0
Other Intangibles (Mil)	858	1,474	3,791	3,627	3,471	3,321	3,178	3,041
Other Operating Assets (Mil)	2,618	6,561	7,904	7,904	7,904	7,904	7,904	7,904
Non-Operating Assets (Mil)	5,488	9,973	10,838	10,838	10,838	10,838	10,838	10,838
<b>Total Assets (Mil)</b>	<b>44,707</b>	<b>65,651</b>	<b>71,491</b>	<b>71,924</b>	<b>79,029</b>	<b>86,298</b>	<b>100,188</b>	<b>118,362</b>
<b>Liabilities</b>								
Accounts Payable (Mil)	5,112	12,362	14,223	18,253	28,320	34,008	42,644	52,024
Debt (Mil)	1,818	1,675	7,794	10,794	13,794	16,794	19,794	22,794
Other Operating Liabilities (Mil)	3,038	7,294	9,966	9,966	9,966	9,966	9,966	9,966
Non-Operating Liabilities (Mil)	310	2,173	2,597	2,597	2,597	2,597	2,597	2,597
<b>Total Liabilities (Mil)</b>	<b>10,277</b>	<b>23,505</b>	<b>34,580</b>	<b>41,610</b>	<b>54,678</b>	<b>63,365</b>	<b>75,002</b>	<b>87,382</b>
<b>Equity</b>								
Shareholders' Equity (Mil)	34,430	42,147	36,911	30,314	24,352	22,933	25,186	30,980
Minority Interest (Mil)	0	0	0	0	0	0	0	0
<b>Total Equity (Mil)</b>	<b>34,430</b>	<b>42,147</b>	<b>36,911</b>	<b>30,314</b>	<b>24,352</b>	<b>22,933</b>	<b>25,186</b>	<b>30,980</b>



# XPeng Inc Class A 09868 ★★★ 16 Nov 2023 07:48, UTC

<b>Last Price</b> 65.15 HKD 16 Nov 2023	<b>Fair Value Estimate</b> 61.70 HKD 16 Nov 2023 07:47, UTC	<b>Price/FVE</b> 1.06	<b>Market Cap</b> 121.45 HKD Bil 15 Nov 2023	<b>Economic Moat™</b> None	<b>Equity Style Box</b> Large Value	<b>Uncertainty</b> Very High	<b>Capital Allocation</b> Standard	<b>ESG Risk Rating Assessment<sup>1</sup></b> 1 Nov 2023 05:00, UTC
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## ESG Risk Rating Breakdown

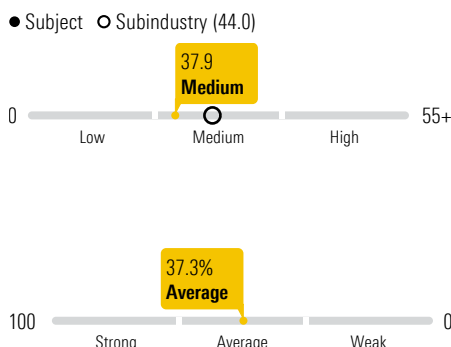
### Exposure

Company Exposure <sup>1</sup>	37.9	
- Manageable Risk	36.8	
<b>Unmanageable Risk<sup>2</sup></b>	<b>1.1</b>	

### Management

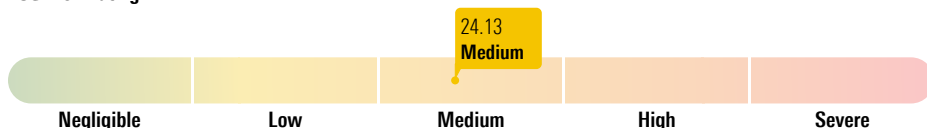
Manageable Risk	36.8	
- Managed Risk <sup>3</sup>	13.7	
<b>Management Gap<sup>4</sup></b>	<b>23.1</b>	

**Overall Unmanaged Risk 24.1**



- ▶ Exposure represents a company's vulnerability to ESG risks driven by their business model
- ▶ Exposure is assessed at the Subindustry level and then specified at the company level
- ▶ Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure
- ▶ Management measures a company's ability to manage ESG risks through its commitments and actions
- ▶ Management assesses a company's efficiency on ESG programs, practices, and policies
- ▶ Management score ranges from 0-100% showing how much manageable risk a company is managing

## ESG Risk Rating



ESG Risk Ratings measure the degree to which a company's value is impacted by environmental, social, and governance risks, by evaluating the company's ability to manage the ESG risks it faces.

1. A company's Exposure to material ESG issues 2. Unmanageable Risk refers to risks that are inherent to a particular business model that cannot be managed by programs or initiatives 3. Managed Risk = Manageable Risk multiplied by a Management score of 37.3% 4. Management Gap assesses risks that are not managed, but are considered manageable 5. ESG Risk Rating Assessment = Overall Unmanaged Risk = Management Gap plus Unmanageable Risk

## ESG Risk Rating Assessment<sup>5</sup>



ESG Risk Rating is of Nov 01, 2023. Highest Controversy Level is as of Nov 08, 2023. Sustainalytics Subindustry: Automobiles. Sustainalytics provides Morningstar with company ESG ratings and metrics on a monthly basis and as such, the ratings in Morningstar may not necessarily reflect current Sustainalytics' scores for the company. For the most up to date rating and more information, please visit: [sustainalytics.com/esg-ratings/](https://sustainalytics.com/esg-ratings/).

## Peer Analysis 01 Nov 2023

Peers are selected from the company's Sustainalytics-defined Subindustry and are displayed based on the closest market cap values

Company Name	Exposure	Management	ESG Risk Rating
<b>XPeng Inc</b>	37.9   Medium 0 —●— 55+	37.3   Average 100 —●— 0	24.1   Medium 0 —●— 40+
BYD Co Ltd	46.8   Medium 0 —●— 55+	44.4   Average 100 —●— 0	26.8   Medium 0 —●— 40+
Tesla Inc	41.3   Medium 0 —●— 55+	40.7   Average 100 —●— 0	25.2   Medium 0 —●— 40+
NIO Inc	44.6   Medium 0 —●— 55+	37.9   Average 100 —●— 0	28.4   Medium 0 —●— 40+
Li Auto Inc	44.9   Medium 0 —●— 55+	54.5   Strong 100 —●— 0	21.4   Medium 0 —●— 40+

# Research Methodology for Valuing Companies

## Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, in-depth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss short-term market-price movements), but we believe these negatives are mitigated by deep analysis and our long-term approach.

Morningstar's equity research group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate and (4) the current market price. This process ultimately culminates in our single-point star rating.

## 1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define economic profits as re-

turns on invested capital (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality, no-moat companies will see their normalized returns gravitate toward the firm's cost of capital more quickly than companies with moats.

When considering a company's moat, we also assess whether there is a substantial threat of value destruction, stemming from risks related to ESG, industry disruption, financial health, or other idiosyncratic issues. In this context, a risk is considered potentially value destructive if its occurrence would eliminate a firm's economic profit on a cumulative or mid-cycle basis. If we deem the probability of occurrence sufficiently high, we would not characterize the company as possessing an economic moat.

## 2. Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

### Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in working capital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBI) and the net new investment (NNI) to de-

rive our annual free cash flow forecast.

### Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

### Stage III: Perpetuity

Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

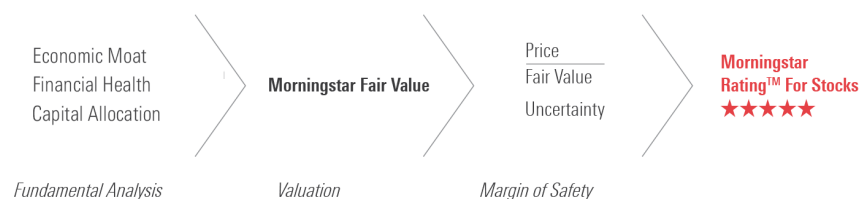
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market-value weights.

## 3. Uncertainty Around That Fair Value Estimate

Morningstar's Uncertainty Rating is designed to capture the range of potential outcomes for a company's intrinsic value. This rating is used to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating is aimed at identifying the confidence we should have in assigning a fair value estimate for a given stock.

Our Uncertainty Rating is meant to take into account anything that can increase the potential dispersion of future outcomes for the intrinsic value of a company, and any-

## Morningstar Equity Research Star Rating Methodology



# Research Methodology for Valuing Companies

thing that can affect our ability to accurately predict these outcomes. The rating begins with a suggested rating produced by a quantitative process based on the trailing 12-month standard deviation of daily stock returns. An analyst overlay is then applied, with analysts using the suggested rating, historical rating data, and their own knowledge of the company to inform them as they make the final Uncertainty Rating decision. Ultimately, the rating decision rests with the analyst. Analysts take into account many characteristics when making their final decision, including cyclical factors, operational and financial factors such as leverage, company-specific events, ESG risks, and anything else that might increase the potential dispersion of future outcomes and our ability to estimate those outcomes.

Our recommended margin of safety—the discount to fair value demanded before we’d recommend buying or selling the stock—widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the potential dispersion of outcomes, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the Uncertainty Rating provides guidance in portfolio construction based on risk tolerance.

Our Uncertainty Ratings are: Low, Medium, High, Very High, and Extreme.

Margin of Safety		
Qualitative Analysis	★★★★★ Rating	★ Rating
Uncertainty Ratings	★★★★★ Rating	★ Rating
Low	20% Discount	25% Premium
Medium	30% Discount	35% Premium
High	40% Discount	55% Premium
Very High	50% Discount	75% Premium
Extreme	75% Discount	300% Premium

Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly, when a stock hits 1 star, we expect there is a 75% chance that the intrinsic value of that stock lies below the current market price.

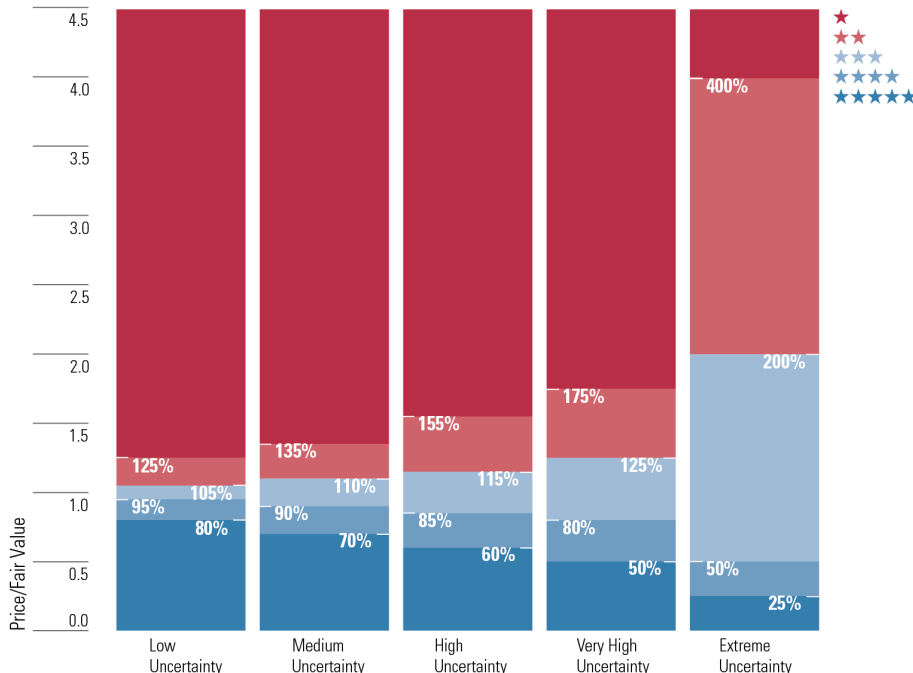
## 4. Market Price

The market prices used in this analysis and noted in the report come from exchange on which the stock is listed which we believe is a reliable source.

For more details about our methodology, please go to <https://shareholders.morningstar.com>

## Morningstar Star Rating for Stocks

Morningstar Equity Research Star Rating Methodology



Once we determine the fair value estimate of a stock, we compare it with the stock’s current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open. Our analysts keep close tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market’s valuation. When there are many 5-star stocks, the stock market as a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true the market price will converge on our fair value estimate over time generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk ad-

justed return is highly likely over a multiyear time frame. Scenario analysis developed by our analysts indicates that the current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

★★★★ We believe appreciation beyond a fair risk-adjusted return is likely.

★★★ Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

★★ We believe investors are likely to receive a less than fair risk-adjusted return.

★ Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. Scenario analysis by our analysts indicates that the market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

## Other Definitions

**Last Price:** Price of the stock as of the close of the market of the last trading day before date of the report.

**Capital Allocation Rating:** Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management’s capital allocation, with particular emphasis on the firm’s balance sheet, investments, and shareholder distributions. Analysts consider compan-

# Research Methodology for Valuing Companies

ies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

Capital Allocation (or Stewardship) analysis published prior to Dec. 9, 2020, was determined using a different process. Beyond investment strategy, financial leverage, and dividend and share buyback policies, analysts also considered execution, compensation, related party transactions, and accounting practices in the rating.

**Capital Allocation Rating:** Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider companies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

Capital Allocation (or Stewardship) analysis published prior to Dec. 9, 2020, was determined using a different process. Beyond investment strategy, financial leverage, and dividend and share buyback policies, analysts also considered execution, compensation, related party transactions, and accounting practices in the rating.

**Sustainalytics ESG Risk Rating Assessment:** The ESG Risk Rating Assessment is provided by Sustainalytics; a Morningstar company.

Sustainalytics' ESG Risk Ratings measure the degree to which company's economic value at risk is driven by environment, social and governance (ESG) factors.

Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score. Unmanaged Risk is measured on an open-ended scale

starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

Based on their quantitative scores, companies are grouped into one of five Risk Categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered.

The ESG Risk Rating Assessment is a visual representation of Sustainalytics ESG Risk Categories on a 1 to 5 scale. Companies with Negligible Risk = 5 Globes, Low Risk = 4, Medium Risk = 3 Globes, High Risk = 2 Globes, Severe Risk = 1 Globe. For more information, please visit [sustainalytics.com/esg-ratings/](https://sustainalytics.com/esg-ratings/)

Ratings should not be used as the sole basis in evaluating a company or security. Ratings involve unknown risks and uncertainties which may cause our expectations not to occur or to differ significantly from what was expected and should not be considered an offer or solicitation to buy or sell a security.

## Risk Warning

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# Research Methodology for Valuing Companies

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# Research Methodology for Valuing Companies

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