Market Cap

ESG Risk Rating Assessment¹

Alibaba Group Holding Ltd ADR BABA ★★★★ 16 Aug 2024 05:02, UTC

Price/FVE



Equity Style Box

Capital Allocation

Uncertainty

Total Return % as of 15 Aug 2024. Last Close as of 15 Aug 2024. Fair Value as of 16 Aug 2024 04:58, UTC.

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Research Methodology for Valuing Companies

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

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

Alibaba Earnings: Higher Sales Growth Offset by Increasing Investments; Valuation Raised by 4%

Analyst Note Chelsey Tam, Senior Equity Analyst, 16 Aug 2024

Alibaba Group's June-quarter results are on track to meet our full-year estimate. However, messages from the earnings are mixed as higher future top-line growth will be offset by rising investments. At the same time, we see uncertainty in the turnaround of businesses outside of e-commerce and cloud. We have rolled our model while keeping our estimates largely intact, leading to a 4% increase in fair value estimate to USD 100 per ADS (HKD 97 per share). Alibaba is currently undervalued, in our view, underpinned by our 10-year adjusted EBITA compound annual growth rate forecast of 3%. We estimate that cash, cash equivalents, and investments account net of debt, as of June, accounted for 58% of the current market cap. We think our valuation can be driven higher if Alibaba proves its ability to consistently maintain or regain market share for Taobao and Tmall Group while at the same time improving margins and expediting capital return to shareholders.

We find management's reiteration that take rate (customer management revenue/gross merchandise volume) will pick up and that cloud revenue, excluding Alibaba's consolidated subsidiaries, will return to double-digit growth in the second half of fiscal 2025 (ending March) encouraging. Management now expects the businesses outside e-commerce and cloud to break even in one to two years and become profitable after that. Nonetheless, we think these positives will be offset by (1) continuous investments in the Taobao and Tmall Group, which could pressure the bottom line, (2) growing losses in Alibaba International Digital Commerce group in the near term as it expands, (3) potentially slower than



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100.00 USD 16 Aug 2024 04:58, UTC Price/FVE 0.80

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Capital Allocation Standard

ESG Risk Rating Assessment¹ **@@@@** 7 Aug 2024 05:00, UTC

Sector Industry Consumer Cyclical

Internet Retail

Business Description

Alibaba is the world's largest online and mobile commerce company as measured by gross merchandise volume. It operates China's online marketplaces, including Taobao (consumer-to-consumer) and Tmall (business-to-consumer). The China commerce retail division is the most valuable cash flow-generating business at Alibaba. Additional revenue sources include China commerce wholesale, international commerce retail/wholesale, local consumer services, cloud computing, digital media and entertainment platforms, Cainiao logistics services, and innovation initiatives/ other.

expected turnaround in the businesses outside of e-commerce and cloud, and (4) large capital expenditure on artificial intelligence.

Business Strategy & Outlook Chelsey Tam, Senior Equity Analyst, 15 May 2024

Alibaba is losing market share to PDD Holdings, or PDD, and Douyin in the China e-commerce business, and we don't see a quick fix in the near term. Alibaba's number of annual active consumers in the China retail marketplace was surpassed by PDD in the fiscal year ended March 2021. Meanwhile, Douyin has gained share from Alibaba especially in the beauty and apparel categories in recent years, and entered the traditional search-based e-commerce space, competing directly with Alibaba. The number of annual active consumers at Alibaba is close to the ceiling in China. Alibaba's gross merchandise volume to China's online retail sales of goods ratio was 62% in the year ended March 2023 at Alibaba, down from 72% in the year-ago period. We believe Alibaba's marketplace monetization rates will decline in the long run, due to mix-shift toward Taobao which has lower take rate compared with Tmall, and more competition.

In our view, the Taobao/Tmall marketplaces remain as Alibaba's core cash flow driver and can support the expansion of AliCloud as well as the firm's globalization strategy, which offers long-term growth potential. While AliCloud will remain in investment mode in the medium term, downsizing low-margin businesses can drive segment margins higher over time. On globalization, Alibaba International Digital Commerce Group's year-on-year revenue growth has been strong recently, thanks to AliExpress' expanding cross-border business.

We expect Alibaba to return more capital to shareholders and increase its return on invested capital, or ROIC, after divestments of noncore investments. We are pleased that Alibaba has upsized its sharerepurchase program by USD 25 billion for the next three fiscal years (until end-March 2027) to USD 35.3 billion. Management targets to lift ROIC (based on Alibaba's calculation) from single digits in fiscal 2023 to double digits in the next few years. Alibaba had sizable cash and equivalents and investments of CNY 829 billion on its balance sheet as of December 2023.

Bulls Say Chelsey Tam, Senior Equity Analyst, 16 Aug 2024

- ▶ Alibaba is able to maintain or increase its gross merchandise volume share in China's e-commerce space, demonstrating its ability to execute its turnaround strategy.
- ▶ Alibaba successfully increases key metrics such as customer retention, purchase frequency, and average order value, driving gross merchandise volume growth to outperform the growth of China's online retail sales of physical goods.
- Alibaba delivers better-than-expected adjusted EBITA margins despite competition and reinvestment.

Bears Say Chelsey Tam, Senior Equity Analyst, 16 Aug 2024



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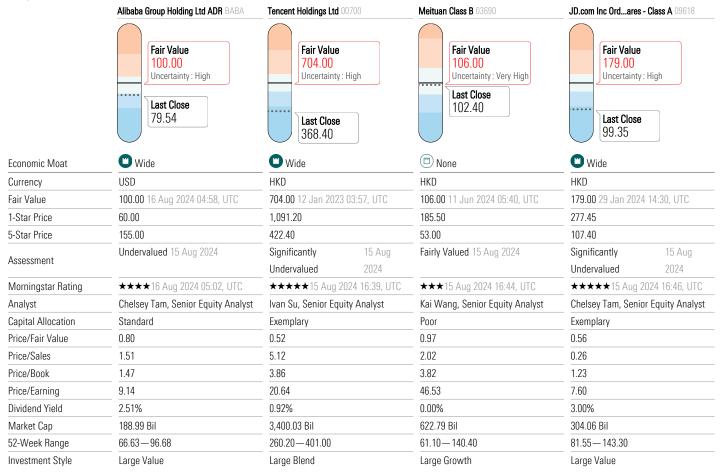
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Aug 2024 05:00, UTC

Competitors



- ▶ Alibaba's gross merchandise volume share in China decreases faster than our expectation as competitors such as Douyin successfully enter the search-based e-commerce business.
- ► Expansion into the nonphysical-goods-marketplace businesses and other regions leads to lower-thanexpected margins and the timing of profitability is delayed.
- ► Alibaba fails in its globalization, public cloud, and Al efforts, and delivers slower-than-expected earnings growth.

Economic Moat Chelsey Tam, Senior Equity Analyst, 15 May 2024

Despite increasing competition, we're maintaining our wide economic moat rating based on Alibaba's strong network effect, where the value of the platform to consumers increases with a greater number of sellers and vice versa. Alibaba is monetizing its network effect better than any other e-commerce platform in China. The short video platforms Douyin and Kuaishou, have not proved they can monetize the physical goods e-commerce market with a durable profit margin, but Alibaba has been profitable for



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a decade, and we believe it will remain profitable for the next 20 years. In addition, we think that the livestreaming e-commerce that Kuaishou and Douyin offer is a supplement to e-commerce offerings, not a replacement of the mainstream e-commerce platforms. Livestreaming e-commerce tends to satisfy impulsive purchase instead of planned or urgent purchases. The return and refund ratio of livestreaming is high, which we think is inherent in its impulse purchase nature; this makes it difficult for brands to rely on this channel solely in the long term.

Even if these new competitors are successful in generating long-term durable profit, we still see Alibaba remaining as a key e-commerce marketplace for consumers due to its vast range of stock-keeping units, logistics infrastructure, operational expertise (governance of products and merchants, protection of consumers), and tools for merchants to manage full product lifecycles. It is the largest e-commerce platform that provides its merchants with predictability in sales and production volume, which leads to predictable production costs. There were over 124 million active consumers who spent over CNY 10,000 on Taobao and Tmall in fiscal 2022 (ending March) and fiscal 2023 respectively, while the retention rate of these consumers stayed at a similar level in fiscal 2023 as compared with the 98% in fiscal 2022. Alibaba has solutions for diversifying consumption scenarios like on-demand delivery, online-to-offline, offline, and content e-commerce. We think Alibaba will always have its place in China's increasingly complex retail market.

Alibaba continues to most effectively monetize the network in terms of gross merchandise volume, or GMV, and margin, in our estimate. This should last for the next 20 years. According to Analysys, a data analytics company, Alibaba's China commerce retail business was the largest in the world in terms of GMV in the 12 months ended March 31, 2023. We estimate Pinduoduo should have a similar number of customers as Alibaba, but its GMV in 2022 should be less than half of Alibaba's GMV in fiscal 2023. Meanwhile, we believe JD.com's GMV should be similar to PDD's in 2022. We estimate Alibaba's Taobao Tmall Group's adjusted EBIT margin was 46% in the September quarter of 2023, higher than JD Retail's 5.2% EBIT margin and PDD's 26.3% non-GAAP EBIT margin during the same period. Even though we think there will be a decline in Alibaba's adjusted EBIT margin in the marketplace businesses in the next five years due to reinvestment into the Taobao Tmall business, we don't think this will be significant enough to reduce Alibaba's return on invested capital to below that of Pinduoduo and JD Retail.

We don't see the key competitors PDD and Douyin registering higher adjusted operating margins than Alibaba in the foreseeable future. PDD's strategy has shifted to focus more on research and development—such as in technology and marketing tools—from a previous focus on sales and marketing in the first five years of the company's history. It started its global e-commerce platform Temu to take on Shein. Management also reiterated the importance of investing in businesses such as Temu and in technology, while profitability is not the priority for now. These will offset the margin improvement from increasing the monetization rate of the Pinduoduo platform. These lead us to think



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that Pinduoduo's adjusted EBIT margin is likely to be lower than 40% on a full-year basis in our next five-year forecast period. On the other hand, ByteDance is competing with many internet companies on many new fronts—cloud, business services, search, and e-commerce. There is no detail on its 2023 profit level as it is a private company. It is unclear if ByteDance's China e-commerce segment will be able to register profit consistently, in our view. In addition, a successful e-commerce company cannot only rely on online traffic to succeed—customer service; governance of e-commerce platforms to balance the interests of merchants and consumers, such as the management of issues like false advertisement and promises, and formulating return policies; the supply chain; logistics; and merchant support are critical as well.

We think the livestreaming e-commerce that Kuaishou and Douyin offer is a supplement to the ecommerce offerings, not a replacement of the mainstream e-commerce platforms. These newer platforms monetize their network of users mainly by content e-commerce — that is, content such as short videos or livestreaming — or interest e-commerce, which is selling products by understanding and predicting users' interests. Key opinion leaders and livestreaming hosts in these short video platforms conduct livestreaming sessions to sell products online. Livestreaming e-commerce tends to satisfy impulse purchases instead of planned or urgent purchases. The return and refund ratio of livestreaming is higher, which we think is inherent in its impulse purchase nature, which makes it difficult for brands to rely on this channel solely in the long term. As per the 2020 Livestreaming E-commerce White paper published by Xiaohulu, a livestreaming e-commerce service provider, the livestreaming industry's return rate can be as high as 30%-40%, much higher than the traditional online sales return ratio of 10%-15%. The return rate of the leading livestreaming hosts is 10%-15%. We don't think the return rate has improved significantly over the years. According to e-commerce insight provider DongGeJieDuDianShang, Douyin e-commerce's 2022 Double 11 Shopping Festival return rate was at least 40%. Meanwhile, Kuaishou's most famous key opinion leader Xinba, who generated CNY 9.6 billion of paid GMV in the month of October 2023, disclosed that the return rate was 42% in the same month. We think the impulse purchase nature of livestreaming should keep the return rate higher than that of traditional e-commerce. The uncertainty in sales volume makes it difficult for established brands to plan production volume, which makes it difficult to achieve economies of scale. Such merchants wouldn't rely on content e-commerce companies as their sole e-commerce channel. Thanks to the support of venture capitalists in China, new brands can spend generously on advertising dollars on the short video platforms to get brand exposure and sell their products, but maintaining the GMV of these brands is questionable if they reduce their advertising spending on these platforms.

Short-form video platforms Douyin and Kuaishou have entered the e-commerce arena with quick GMV growth, but we see less significant growth opportunities for livestreaming e-commerce in the future. Douyin's GMV was up 80% year on year to CNY 2.1 trillion and Kuaishou's GMV rose 31% to CNY 1.2 trillion in 2023, based on our estimate. Livestreaming e-commerce GMV was estimated to be CNY 4.6



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trillion in 2023 as per data analytics firm DianShuBao, about 31.9% of the China internet shopping market, which is already high in terms of penetration. Meanwhile, Double 11 Shopping Festival livestreaming GMV year-on-year growth in 2023 slowed to 19% from 146% in the same period in 2022, as per data analytics firm Syntun. In our opinion, Douyin and Kuaishou will need to be successful in traditional search-based e-commerce in order to overtake the incumbents.

Anticompetitive exclusivity arrangements between merchants and Alibaba are a key environmental, social, and governance risk. We think the end of exclusive merchants on Alibaba's platform has some, but not significant impact on Alibaba's wide moat due to reasons aforementioned in this section, and we have accounted for the share loss in GMV to other platforms in our forecasts.

Fair Value and Profit Drivers Chelsey Tam, Senior Equity Analyst, 16 Aug 2024 Our fair value estimate is USD 100 per ADS or HKD 97 per share.

Alibaba's ratio of China retail marketplace gross merchandise volume to China's retail sales of consumer goods reduced for the first time in a year, down 100 basis points from our estimate in the year ended March 2023 to 17%. This ratio continued to reduce to 16% on our estimate, and we expect it to go to 14% in a decade. The GMV to online sales of physical goods ratio will decline from 59% in the year ended March 2024 to 46% a decade later, by our estimate. Considering intensive competition to acquire merchants and a shift toward recruiting more smaller and white-label merchants, we assume monetization of the China retail marketplace to be flattish in the coming decade. The 10-year CAGR of total revenue is 6%. Our 10-year adjusted EBITA CAGR estimate is 3% due to management's reiteration of its dedication to defending market share by investing in users, ecosystem, and technology.

Risk and Uncertainty Chelsey Tam, Senior Equity Analyst, 15 May 2024

We assign Alibaba a Very High Morningstar Uncertainty Rating. China's e-commerce landscape has become increasingly competitive, with Pinduoduo registering faster GMV and user growth than Alibaba and JD.com demonstrating its quality services amid covid-19. Short video platforms and Tencent have also entered the e-commerce sector. Pinduoduo's number of active buyers in the year ended December 2020 already surpassed that of Alibaba.

The largest material environmental, social, and governance issue for Alibaba is its business ethics with regard to anticompetitive measures. It was fined CNY 18.2 billion in April 2021 for forcing merchants to choose its platform exclusively and required to curb its anticompetitive behavior. Financial regulators in China have continuously scrutinized online financial services, leading to the cancelation of investee Ant Financial's IPO. Alibaba has persistently faced the issue of counterfeit and infringing goods on its marketplaces. The Hangzhou government's assigning of representatives to work inside Alibaba also raises concerns, although there is no any evidence of value destruction for Alibaba.



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Expansion into peripheral businesses might distract management and reduce profitability without materially improving Alibaba's ecosystem. While we're optimistic about Alibaba's ability to become a preferred partner for international retailers and consumer brands looking to sell in China, the firm does not enjoy the same network effect and brand recognition in other countries, and it may face challenges directly expanding in these markets.

Another ESG issue is corporate governance. In 2011, the company transferred the ownership of Alipay to a new company (now called Ant Financial, which is 33% owned by Alibaba) without the approval of key shareholders Yahoo and SoftBank.

Capital Allocation Chelsey Tam, Senior Equity Analyst, 15 May 2024

We assign Alibaba a Morningstar Capital Allocation Rating of Standard.

The shareholder distribution policy of Alibaba is conservative despite a sound balance sheet with a net cash position. Alibaba had sizable cash and equivalents and investments of CNY 829 billion on its balance sheet as of December 2023. While we are pleased that Alibaba approved the first annual dividend of USD 1 per ADS for fiscal 2023, it translated to a low dividend yield. In 2023, Alibaba repurchased approximately 3.3% of the ordinary shares issued and outstanding. We are pleased with Alibaba's decision to upsize its share-repurchase program for the next three fiscal years (until end-March 2027) by USD 25 billion to USD 35.3 billion. Alibaba is also committed to reducing share count by at least 3% per year in the next three fiscal years. In our view, Alibaba has room to increase its return to shareholders.

Return on invested capital, or ROIC, excluding idle cash and investments for Alibaba fell from fiscal 2018's (ended March 2018) 29% to fiscal 2023's 15% as the firm has invested heavily in emerging businesses for future growth at the expense of margin. As a comparison, wide-moat rated Tencent also saw a reduction in adjusted ROIC from 2016's 369% to 30% in 2022.

We believe management has delivered mixed results when it comes to its investment. The prime example is its inability to maintain its gross merchandise volume, or GMV, share in China's retail marketplace. GMV to China's online retail sales of goods ratio was 62% in the year ended March 2023 for Alibaba, down from 72% in the year-ago period, due to competition. Additionally, we think Alibaba's food delivery business in the Local Consumer Services Group, Digital Media and Entertainment Group, and Southeast Asian e-commerce businesses in the Alibaba International Digital Commerce Group lag its competitors while generating losses. The Local Consumer Services Group, Digital Media and Entertainment Group and Alibaba International Digital Commerce Group, or AIDC, represented negative 14%, negative 10% and negative 11%, respectively, of Alibaba's adjusted EBITA in the 2023 December quarter. Meanwhile, its Local Consumer Services Group competitor, Meituan is profitable. Despite being the early mover in Southeast Asian E-commerce, Lazada's (under AIDC) gross merchandise volume, or



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GMV, share in Indonesia (the largest e-commerce market with a majority of GMV market share in the region) was only 10% in 2022, versus 36% for latecomer Shopee and 35% for Tokopedia. Adjusted EBITA margin has dwindled to 20% in the December 2023 quarter from 26.9% in fiscal 2020, while the revenue growth has also moderated to 5% year on year in the December 2023 quarter compared with 35% in fiscal 2020. On the other hand, we like Alibaba's investment in Cainiao to improve the delivery quality of its e-commerce goods. Meanwhile, the company started its cloud business in China in 2009, earlier than its competitor Tencent. Alibaba announced in October 2023 that the firm had been the world's third largest laaS provider by revenue for the fifth consecutive year with a market share of 7.7% in 2022, as per Gartner.

We expect Alibaba's adjusted EBITA margin to tread lower in the next 10 years, mainly due to investments in its retail business, which we think is necessary to maintain its competitiveness amid heavy investments among its Chinese e-commerce peers. These investments will go into technology, merchant supports, user acquisition, user experience enhancement, improving supply chain, and merchandising for high-frequency categories.

We are not giving Alibaba a Poor Capital Allocation Rating because the firm is returning capital to shareholders by monetizing its noncore assets. For instance, Alibaba sold some shares of GoGoX and Xpeng. Based on Alibaba's calculation, ROIC was single digits in fiscal 2023, and Alibaba is working to increase ROIC to double digits in the next few years.

Analyst Notes Archive

Alibaba Earnings: More Positive Outlook Despite Mixed Results; Raising Fair Value Estimate by 2% Chelsey Tam, Senior Equity Analyst, 15 May 2024

Alibaba Group's March-quarter revenue beat our estimate by 1% but missed our adjusted EBITA by 2%. We find management's fiscal 2025 (ending March) outlook on gross merchandise volume, or GMV, growth, take rate (customer management revenue/GMV), and cloud revenue encouraging. We think the 6% share price correction during US trading hours after the results was due to the 5% year-on-year decline in adjusted EBITA amid higher investments. That said, we expect these investments to bring positive returns to Alibaba in the longer term.

We are pleased that the online GMV of the cash-cow business, Taobao and Tmall Group, achieved double-digit year-over-year growth in this quarter, beating our 8% estimate, thanks to its focus on large product assortment, competitively priced products, and customer experience. However, adjusted EBITA for Taobao and Tmall fell 1% year on year, demonstrating Alibaba's strategy to prioritize market share gain over profitability in the near term.

We raised our fair value estimate by 2% to USD 96 per ADS or HKD 93 per share on higher GMV



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assumption and customer management revenue in the next 10 years, partly offset by lower adjusted EBITA margin assumption due to higher investments. Our respective fiscal 2025-27 adjusted EBITA forecasts are 2% lower, 1% lower, and 1% higher compared with our previous estimates, and we think our 10-year adjusted EBITA CAGR forecast of 3% is achievable. While Alibaba is fairly valued currently, in our view, we think our valuation can be driven higher if there is a meaningful improvement in discretionary spending and a consumption upgrade, then Alibaba can prove its ability to consistently maintain and regain market share for Taobao and Tmall Group while maintaining growth in earnings and expediting capital return to shareholders.

Alibaba: Cutting Fiscal 2024-26 Adjusted EBITA by 6%-8% Due to Higher Expansion Expenses

Chelsey Tam, Senior Equity Analyst, 12 Apr 2024

We now estimate Alibaba Group's revenue and adjusted EBITA for the fourth quarter of fiscal 2024 ending March to rise 5% and decline 3% year over year, respectively, compared with our previous forecasts of 3% and 38% increase. We raised our revenue estimate as we project customer management revenue — marketing services and commissions on transactions — to grow faster than expected, thanks to less market share loss than anticipated. On the other hand, the lower adjusted EBITA is attributed to substantially larger expansion expenses in the fast-growing Alibaba International Digital Commerce, or AIDC, and Cainiao Smart Logistics, or Cainiao. Management wants to increase investments in Cainiao to improve AIDC's logistics services. In addition, Alibaba increased compensation to retain Cainiao's employees while we expect cost savings in local services and digital media and entertainment to lag our forecast. As a result, we reduced Alibaba's adjusted EBITA during fiscal 2024-26 by 6%-8%. We maintained our fair value estimate at USD 94 per ADS (HKD 91 per share) as the effect of lower earnings is offset by adding back higher impairment in fiscal 2024 to our free cash flow calculation and lower share count. We think Alibaba continues to be undervalued. Its December quarter net cash, including short-term investments, accounts for 67% of its market cap as of the US close on April 11.

We expect Alibaba to increase capital returns to shareholders going forward. The reduction in outstanding shares in the full year ended March 2024 was 5.1%, higher than just 3.3% in the year ended December 2023. We also anticipate Alibaba to focus on monetizing its non-core assets, as exemplified in the disposals of some stakes in Xpeng and Bilibili recently. We assume Alibaba will increase the dividend payout ratio for fiscal 2024 to 20% from just 4% in fiscal 2023.

Alibaba: Purchase of Minority Stake in Cainiao Won't Materially Change Alibaba's Earnings Chelsey

Tam, Senior Equity Analyst, 27 Mar 2024

We maintain wide-moat Alibaba Group Holding, or Alibaba's, fair value estimate at USD 94 per ADS and HKD 91 per share after 1) the withdrawal of the Hong Kong IPO application of Alibaba's logistics subsidiary Cainiao Smart Logistics Network; and 2) Alibaba's offer to purchase the 36.3% stake held by



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Cainiao's minority shareholders for total consideration of up to USD 3.75 billion. We think this consideration is priced at the high end of the valuation range due to the need to maintain the morale of Cainiao's employees, who are also shareholders. The consideration only represents 4% of Alibaba's cash, cash equivalents, short-term investments, and equity securities and other investments in the current assets as of Dec. 31, 2023. Cainiao's December-quarter adjusted EBITA accounted for only 3% of Alibaba's total adjusted EBITA. Therefore, purchasing a minority stake in Cainiao won't have a meaningful impact on Alibaba's balance sheet and earnings.

When asked about shareholder capital return, management brought up the announcement of the fiscal year 2024 dividend as a way to return capital to shareholders after the monetization of assets. We think a higher dividend payout ratio for fiscal year 2024 compared with fiscal year 2023 could be on the cards. Separately, Alibaba continues to consider stakes in express delivery companies as strategic, and thus has no plans to sell those shares.

Alibaba Earnings: Increased Investments Bring Uncertainty to Margins; Fair Value Estimate Cut Chelsey Tam, Senior Equity Analyst, 8 Feb 2024

We like Alibaba upsizing its share-repurchase program until the end of March 2027 to USD 35.3 billion, amounting to 18% of its market cap as of Feb. 7. Alibaba is committed to reducing its outstanding shares by at least 3% annually for the next three fiscal years. However, as cash and investments under current assets accounted for 44% of its market cap, we hope to see share repurchase at a faster pace and greater magnitude. While we agree with the firm's emphasis in driving market share growth at domestic and international e-commerce, and in cloud, we think this will come at the expense of margin erosion. Alibaba is committed to selling noncore assets and increasing return on invested capital to double digits over the next few years. This is longer than we hope, as selling assets amid weak market conditions is difficult.

We cut Alibaba's fair value estimate by 27% to USD 94 (HKD 91). We cut our 10-year revenue CAGR to 4% from 6% and adjusted EBITA growth to 3% from 4% to reflect the intense industry competition, slower-than-expected retail sales recovery, and deflationary risks in China. We see lackluster topline recovery in its China marketplace, local services, and offline retail businesses in the coming quarters due to higher base resulting from the reopening of the China economy at the end of 2022. We have increased the Morningstar Uncertainty Rating to Very High from High to account for the uncertainty in Alibaba's strategy to regain market share in China's retail marketplace and the risk of margin erosion resulting from that. We also downgraded Alibaba's Morningstar Capital Allocation Rating to Standard from Exemplary, as its track record in recent year has been poor. The prime example is its market share loss in China's retail marketplace. Our order of preference in China e-commerce is PDD Holding, JD.com and Alibaba. We think PDD is the best positioned in the value for money consumption trend and JD.com should register stronger growth versus Alibaba.



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Alibaba Earnings: Cloud Spinoff Halt a Surprise, Size and Timing of Capital Returns Uncertain

Chelsey Tam, Senior Equity Analyst, 17 Nov 2023

We are surprised that Alibaba will no longer fully spin off the Cloud Intelligence Group and we see larger uncertainty around the size and timeline of capital returns to shareholders. We leave Alibaba's forecasts and fair value estimate unchanged. Although Alibaba is still undervalued, we now prefer JD.com over Alibaba as we think the former is more likely to turn around next year. Alibaba deemphasizes the importance of gross merchandise volume, or GMV, which leads us to think Alibaba is not confident about its GMV growth in the future. Meanwhile, JD.com guided for 2024 GMV growth to be higher than the retail sales of consumer goods growth next year. In the September quarter, there was a modest decline in Taobao and Tmall online paid GMV, but a high-single-digit GMV growth at JD.com.

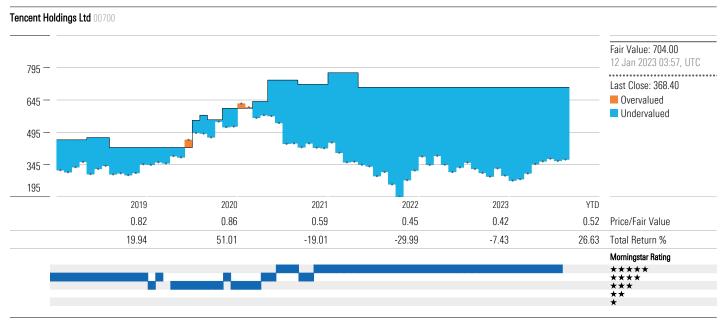
Management said the U.S.' recent export ban to China—which we think is about Nvidia's pared-down H800 and A800 chips—led to the halt of the cloud unit's spinoff. However, we think Alibaba would already have factored export bans of chips into the decision about the spinoff. As background, long before this spinoff plan was announced in May 2023, there was the export ban of Nvidia's A100 and H100 chips to China in October 2022. Hence, we think the scrapping of the spinoff plan may be because a change of CEO for the cloud unit leads to a review of future strategy. A possible concern could be that the cloud unit requires consistent and sizable investment to stay ahead of the game, and a spinoff unit may see more difficulty in financing as a more independent company. We think there will be more clarity as to the cloud corporate strategy direction when the cloud unit's CEO is finalized.

Alibaba, JD, PDD: August China Retail Sales Growth Accelerated; Online Consumption In Line Chelsey Tam, Senior Equity Analyst, 15 Sep 2023

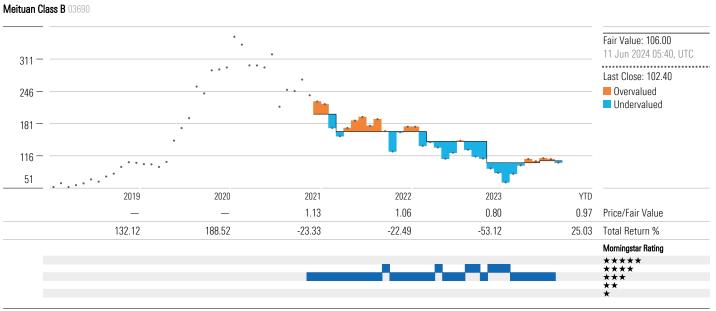
China's August online and offline retail sales of consumer goods growth improved to 4.6% year on year in the month versus 2.5% in the prior month, thanks to the rollout of supportive policies by the government, in our view. Online sales of goods in the month were up 8% year on year, slightly better than the 7% in the previous month. We maintain our forecasts and fair value estimates for Alibaba Group at USD 128 per ADS and HKD 124 per share; JD.com at USD 88 per ADS and HKD 341 per share; and PDD Holdings at USD 117 per ADS. This is because we think China's online consumption trend is in line with our expectations. In our view, PDD Holdings is fairly valued. While both Alibaba Group and JD.com are undervalued for long-term investors, we don't see near-term catalysts for these shares. The physical goods e-commerce penetration in the month reached 26.3%, compared with 25.5% in August 2022. So far after the phasing out of the lockdown measures, we don't see the offline segment taking market share, although people are going out more. Year-to-date physical goods e-commerce penetration was up 80 basis points year on year, supporting our forecasts of long-term e-commerce penetration increasing to 42.2% in a decade.



Competitors Price vs. Fair Value



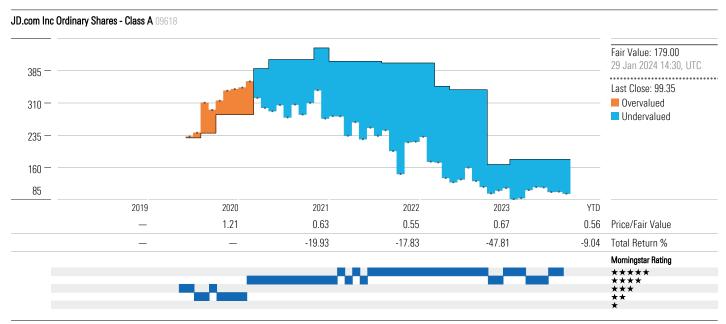
Total Return % as of 15 Aug 2024. Last Close as of 15 Aug 2024. Fair Value as of 12 Jan 2023 03:57, UTC



Total Return % as of 15 Aug 2024. Last Close as of 15 Aug 2024. Fair Value as of 11 Jun 2024 05:40, UTC.



Competitors Price vs. Fair Value



Total Return % as of 15 Aug 2024. Last Close as of 15 Aug 2024. Fair Value as of 29 Jan 2024 14:30, UTC



Last Price 79.54 USD 15 Aug 2024	Fair Value Estimate 100.00 USD 16 Aug 2024 04:58, UTC	Price/FVE 0.80	Market Cap 188.99 USD Bil 15 Aug 2024		Economic Moat ^T Wide	Economic Moat™ Equity Style Box Wide		Uncertainty Capital Allocation High Standard		@ @	ESG Risk Rating Assessment ¹ (D (
Morningstar H	istorical Summary												
Financials as of 30) Jun 2024												
Fiscal Year, ends 31	Mar	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (CNY Bil)		53	76	101	158	250	377	510	717	853	869	243	950
Revenue Growth %	, 0	52.1	45.1	32.7	56.5	58.1	50.6	35.3	40.7	18.9	1.8	3.9	5.9
EBITDA (CNY Bil)		31	40	90	77	126	138	214	218	128	153	37	137
EBITDA Margin %		58.4	51.9	89.4	48.7	50.3	36.8	42.0	30.4	15.0	17.6	15.0	14.4
Operating Income	(CNY Bil)	25	23	30	49	70	57	92	90	95	103	36	115
Operating Margin	%	48.0	30.6	29.6	30.7	28.1	15.2	18.1	12.5	11.1	11.9	14.8	12.1
Net Income (CNY E	Bil)	23	24	71	44	64	88	149	151	62	73	24	70
Net Margin %		44.0	31.7	70.7	27.6	25.6	23.3	29.3	21.0	7.3	8.4	10.0	7.3
Diluted Shares Out	tstanding (Mil)	2,332	2,500	2,562	2,573	2,610	2,624	2,668	2,748	2,723	2,639	2,449	2,513
Diluted Earnings Per Share (CNY)			9.70	27.89	16.97	24.48	33.36	55.92	54.72	22.72	27.44	9.92	27.92
Dividends Per Shar		_	_	_	_	_	_	_	_	_	_	7.27	14.36
Valuation as of 31	Jul 2024												
		2014	2015	2016	2017	2018	2019	2020	2021	2022		Recent Otr	TTM
Price/Sales		24.2	15.8	12.5	14.8	7.9	8.8	7.5	2.6	1.9	1.6	1.4	1.5
Price/Earnings		52.4	21.9	46.9	47.8	41.0	25.6	23.3	16.7	120.5	10.9	16.7	18.3
Price/Cash Flow		46.9	26.9	24.6	28.1	18.1	23.6	20.9	10.6	10.7	6.7 1.29	7.3 2.78	8.0 2.54
Dividend Yield % Price/Book		12.9	6.9	6.2	9.0	 5.8	6.6	 5.1	2.1	1.7	1.29	1.3	1.4
EV/EBITDA		0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	914.0	0.0	0.0
	nance / Profitability as o										010		
Fiscal Year, ends 31	-	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %		26.3	13.2	23.1	10.0	10.5	10.4	13.1	10.0	3.7	4.2	1.4	3.9
ROE %		157	27.6	39.4	17.6	19.9	20.4	23.9	17.8	6.6	7.5	2.5	7.1
ROIC %		47.9	14.0	11.1	12.1	9.7	9.9	11.8	9.3	6.9	7.5	2.2	7.1
Asset Turnover		0.6	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.1	0.5
Financial Leverag	e												
Fiscal Year, ends 31	Mar	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 F	Recent Otr	TTM
Debt/Capital %		43.7	25.8	19.7	21.6	24.6	18.5	15.6	14.9	14.6	15.2	16.0	_
Equity/Assets %		26.3	56.9	59.6	55.0	51.0	51.0	57.5	55.5	55.9	56.5	52.5	_
Total Debt/EBITDA		1.8	1.3	0.6	1.2	1.0	1.0	0.7	0.8	1.4	1.3	5.7	_
EBITDA/Interest Ex	rpense	14.0	14.4	46.5	28.8	35.3	26.7	41.4	48.7	6.2	9.0	16.7	7.5

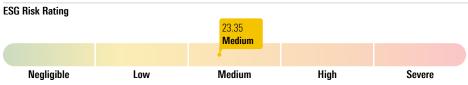
Financials			Estimates		
Fiscal Year, ends 31 Mar 2024	2023	2024	2025	2026	2027
Revenue (CNY Mil)	867,098	941,168	1,019,630	1,113,626	1,174,270
Revenue Growth %	1.7	8.5	8.3	9.2	5.5
EBITDA (CNY Mil)	100,351	113,350	136,623	146,167	152,454
EBITDA Margin %	11.6	12.0	13.4	13.1	13.0
Operating Income (CNY Mil)	101,476	123,871	136,623	146,167	152,454
Operating Margin %	11.7	13.2	13.4	13.1	13.0
Net Income (CNY Mil)	141,379	157,479	120,353	130,277	135,797
Net Margin %	16.3	16.7	11.8	11.7	11.6
Diluted Shares Outstanding (Bil)	21	20	19	18	17
Diluted Earnings Per Share(CNY)	6.70	7.74	6.31	7.31	8.21
Dividends Per Share(CNY)	0.86	0.90	1.27	1.52	1.73

Forward Valuation		Es	timates		
	2023	2024	2025	2026	2027
Price/Sales	2.1	0.2	1.3	1.2	1.1
Price/Earnings	13.1	1.2	11.3	9.7	8.7
Price/Cash Flow	_	_	_	_	_
Dividend Yield %	1.0	10.0	1.8	2.1	2.4
Price/Book	1.9	0.2	1.4	1.3	1.2
EV/EBITDA	14.4	1.0	7.1	6.6	6.4
			7.1		



Last Price Fair Value Estimate Price/FVE Market Cap Economic Moat™ **Equity Style Box** Uncertainty **Capital Allocation** ESG Risk Rating Assessment¹ 188.99 USD Bil Wide (Large Value High Standard **@@@@** 79.54 USD 100.00 USD 0.80 15 Aug 2024 7 Aug 2024 05:00, UTC 15 Aug 2024 16 Aug 2024 04:58, UTC

ESG Risk Rating Breakdown Exposure Subject O Subindustry (38.0) Company Exposure¹ 38.4 38.4 - Manageable Risk 35.8 Medium 55+ Unmanageable Risk² 2.7 Low Medium High Management 35.8 Manageable Risk 42.1% - Managed Risk3 15.1 Average Management Gap 20.7 100 Strong Average Weak **Overall Unmanaged Risk** 23.3 **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 42.1% 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

- 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 Assessment⁵











ESG Risk Rating is of Aug 07, 2024. Highest Controversy Level is as of Aug 08, 2024. Sustainalytics Subindustry: Internet Software and Services. 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/

Peer Analysis 07 Aug 2024	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			
Alibaba Group Holding Ltd	38.4 Medium	0 — 55+	42.1 Average	100 0	23.3 Medium	0 40+		
Baidu Inc	39.0 Medium	0 — 55+	57.4 Strong	100 0	18.2 Low	0		
Tencent Holdings Ltd	37.2 Medium	0 55+	54.2 Strong	100 0	18.4 Low	0 40+		
JD.com Inc	35.4 Medium	0 — 55+	28.5 Average	100 0	26.0 Medium	0 40+		
Meituan	36.3 Medium	0 55+	42.0 Average	100 0	22.1 Medium	0 40+		



Appendix

Historical Morningstar Rating

Alibaba Grou	ip noiding Eta		J								
Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	★★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2023	Nov 2023	0ct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
lec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★
lec 2021	Nov 2021	0ct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
	★★★	★★★★	★★★★	★★★★	★★★	★★★	—	★★★★	★★★	★★★	★★★
0ec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★	★★★
lec 2019	Nov 2019	0ct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Tencent Hol	dings Ltd 0070	0 15 Aug 2024	16:39, UTC								
Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2023	Nov 2023	0ct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2022	Nov 2022	0ct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2021	Nov 2021	0ct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★★	★★★★	★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★	★★★	★★★	★★★
Dec 2020	Nov 2020	0ct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	—	★★★	★★★	★★★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
Vleituan Cla	ss B 03690 15 A	Aug 2024 16:44	, UTC								
Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★
Dec 2023	Nov 2023	0ct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★	★★★	★★★	★★★
0ec 2022	Nov 2022	0ct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★
ec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★	—	—	—	—	—	—	—	—	—	—	—
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
-	—		—	—	—	—	—	—	—	—	—
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019 —	Jun 2019 —	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019



JD.com Inc Ordinary Shares - Class A 09618 15 Aug 2024 16:46, UTC

Dec 2024 —	Nov 2024 —	Oct 2024 —	Sep 2024 —	Aug 2024 ★★★★	Jul 2024 ★★★★	Jun 2024 ★★★★	May 2024 ★★★★	Apr 2024 ★★★★	Mar 2024 ★★★★	Feb 2024 ★★★★	Jan 2024 ★★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
****	****	****	****	****	****	****	****	****	****	****	****
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
****	****	****	****	****	****	****	****	****	****	****	****
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
****	****	****	***	****	****	****	****	****	****	**	**
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
**	**	***	**	**	***	***		_	_	_	_
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
_	_	_		_	_	_			_	_	_



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, indepth 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 shortterm market-price movements), but we believe these negatives are mitigated by deep analysis and our longterm 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 singlepoint 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 midcycle 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 workingcapital 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





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 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

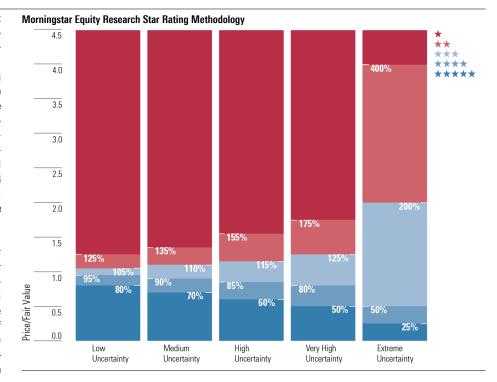
Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly,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



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.
- $\star\star\star$ 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-



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.

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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/

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