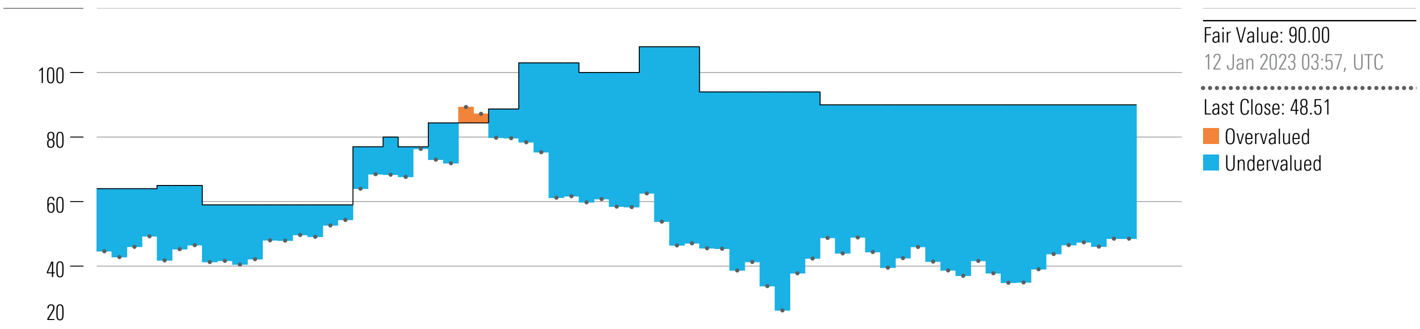
Morningstar Equity Analyst Report | Report as of 18 Sep 2024 12:38, UTC | Reporting Currency: CNY | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS

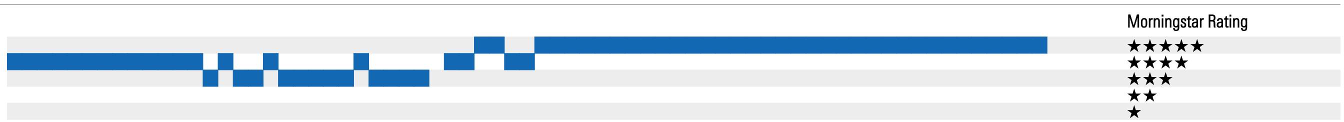
Tencent Holdings Ltd ADR TCEHY ★★★★★ 17 Sep 2024 21:41, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
48.51 USD 17 Sep 2024	90.00 USD 12 Jan 2023 03:57, UTC	0.54	446.46 USD Bil 18 Sep 2024	Wide	Large Growth	High	Exemplary	7 Aug 2024 05:00, UTC

Price vs. Fair Value



	2019	2020	2021	2022	2023	YTD	
	0.81	0.85	0.58	0.45	0.42	0.54	Price/Fair Value
	21.96	50.06	-18.62	-24.78	-6.06	29.52	Total Return %



Total Return % as of 17 Sep 2024. Last Close as of 17 Sep 2024. Fair Value as of 12 Jan 2023 03:57, UTC.

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

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

Tencent: Leveraging AI for Internal Growth

Analyst Note Ivan Su, Senior Equity Analyst, 18 Sep 2024

We recently attended the Tencent Global Digital Ecosystem Summit in Shenzhen. Although the event did not disclose significant financial numbers, it did showcase Tencent's qualitative advancements in cloud and artificial intelligence. Our key takeaway is that Tencent's near-term AI monetization opportunities lie in bolstering the growth and efficiency of its internal operations rather than immediate external sales. While the summit doesn't move our HKD 704 fair value estimate, it does reinforce our view that Tencent will continue to lead in the field of AI in China.

When we attended the same event in 2023—the year Tencent debuted its first large language model, Hunyuan—there was a lot of attention focused on the model's technical aspects and not enough on business cases. This year, however, we learned that Hunyuan is already used in over 700 business settings within Tencent's organization to boost efficiency.

For example, the Hunyuan-powered AI coding assistant is used by over 50% of Tencent's developers, reducing average coding time by 40%. By automating routine tasks and providing intelligent suggestions, the assistant increases programming efficiency and leads to faster development cycles, quicker time to market for new products, and ultimately improved user engagement and sales.

Another aspect not extensively discussed previously was how AI is now a key driver of Tencent's advertising revenue. This takes form in increasingly personalized ads that improve the likelihood of users clicking through and more holistic user data analysis to improve ad targeting. These improvements not

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Sector	Industry
Communication Services	Internet Content & Information

Business Description

Tencent holds a prominent position in China's internet sector, with a diverse portfolio of products and services used daily by a significant portion of the population. The company is the world's largest video game publisher and owns Honor of Kings, a top-grossing mobile game globally. Tencent also operates WeChat, China's largest social media super app, which has become deeply integrated into the daily lives of Chinese people for communication, entertainment, shopping, and more. Beyond its offerings, Tencent is a significant player in global venture capital and investment. The company holds substantial stakes in leading tech companies, including PDD, Kuaishou, and Epic Games.

only increase ad revenue but also contribute to a virtuous cycle of engagement. By delivering a more personalized and enjoyable user experience, Tencent can drive higher engagement, which generates more data to further refine its AI models, leading to even better ad targeting and personalization.

Business Strategy & Outlook Ivan Su, Senior Equity Analyst, 8 Jul 2024

Over the past decade, Tencent has capitalized on the industry shift toward mobile gaming. The firm owns some of the world's most popular titles, like Honor of Kings and PUBG Mobile. To date, games remain Tencent's primary monetization model—as we estimate more than 40% of the group's operating income comes from this segment. Tencent should continue to leverage its unrivaled access to user data and financial capital to create innovative, high-quality, and long-cycle games with a mobile-first approach.

Outside of games, other key businesses under the Tencent empire include WeChat, QQ, WePay, music streaming, on-demand cloud, and a host of other ventures. We see a tremendous amount of untapped value in WeChat as it continues to increase monetization through advertising and acts as a major gateway for other internet services (payment, delivery, insurance, and so on) looking to access the 1.2 billion-plus WeChat users.

Given WeChat's huge and engaged user base, advertisers will continue to find it one of the top marketing channels. We think there are ample advertising revenue opportunities ahead, driven by rising advertising inventory, higher ad loads, and improving ad-targeting efficiency.

While games and advertising will remain Tencent's core cash flow drivers, we believe the firm's leading position in payment, cloud storage, and enterprise software offers significant long-term value-creation potential. Given the size of China's economy and the prevalence of digital adoption, we foresee enormous opportunities ahead, particularly for enterprise technology akin to Zoom, Slack, and Teams. Tencent is well-positioned to capitalize on these opportunities and likely to transform these services into recurring revenue streams.

Tencent is also an investment powerhouse, and it loves using deals to expand its reach. Once invested, Tencent tends to add value through highlighting investees' services on WeChat and other in-house traffic platforms—reducing customer acquisition costs while helping them scale rapidly. This strategy has paid off nicely, as external investments have generated double-digit internal rate of return over the past decade.

Bulls Say Ivan Su, Senior Equity Analyst, 8 Jul 2024

- Many of Tencent's products are still in the early stages of monetization.
- Because Tencent is so deeply integrated in Chinese daily life, it can easily test out new monetization methods and pick the best ones to implement.

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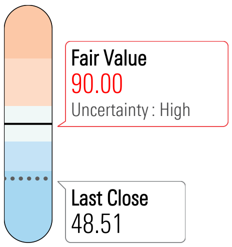
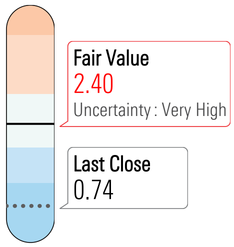
Competitors

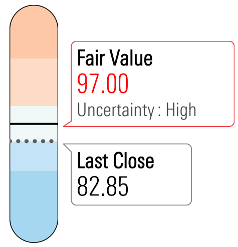
Tencent Holdings Ltd ADR TCEHY



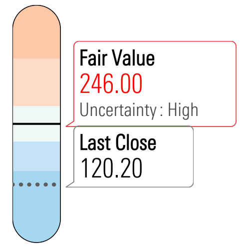
CMGE Technology Group Ltd 00302



Alibaba Group ...rdinary Shares 09988



NetEase Inc Ordinary Shares 09999



	Tencent Holdings Ltd ADR TCEHY	CMGE Technology Group Ltd 00302	Alibaba Group ...rdinary Shares 09988	NetEase Inc Ordinary Shares 09999
Economic Moat	Wide	None	Wide	Narrow
Currency	USD	HKD	HKD	HKD
Fair Value	90.00 12 Jan 2023 03:57, UTC	2.40 2 Apr 2024 09:37, UTC	97.00 16 Aug 2024 04:58, UTC	246.00 1 Mar 2024 14:46, UTC
1-Star Price	54.00	4.20	150.35	381.30
5-Star Price	139.50	1.20	58.20	147.60
Assessment	Significantly Undervalued 17 Sep 2024	Significantly Undervalued 17 Sep 2024	Undervalued 17 Sep 2024	Significantly Undervalued 17 Sep 2024
Morningstar Rating	★★★★★ 17 Sep 2024 21:41, UTC	★★★★★ 17 Sep 2024 16:32, UTC	★★★★ 17 Sep 2024 16:32, UTC	★★★★★ 17 Sep 2024 16:34, UTC
Analyst	Ivan Su, Senior Equity Analyst	Ivan Su, Senior Equity Analyst	Chelsey Tam, Senior Equity Analyst	Ivan Su, Senior Equity Analyst
Capital Allocation	Exemplary	Standard	Standard	Standard
Price/Fair Value	0.54	0.31	0.85	0.49
Price/Sales	5.27	0.81	1.61	3.37
Price/Book	3.78	0.34	1.56	2.75
Price/Earning	16.90	—	9.85	12.11
Dividend Yield	0.89%	0.00%	1.18%	3.26%
Market Cap	—	2.11 Bil	1,588.68 Bil	387.34 Bil
52-Week Range	—	0.63—1.63	64.60—86.90	116.10—185.70
Investment Style	Large Growth	Small Value	Large Value	Large Blend

- Compliance costs can rise to a point where they become significant barriers to entry to the Chinese internet industry.

Bears Say Ivan Su, Senior Equity Analyst, 8 Jul 2024

- Chinese regulators have become more assertive. There is always the possibility that the government may want more control over internet businesses by curbing monetization, limiting collection of user data, or restricting acquisitions.
- Tencent found success by riding the wave of mobile internet, but this is no guarantee that it can stay at the forefront of next-generation technologies.
- The possibility of highly competitive foreign internet service providers reentering China over the next 10-20 years.

Economic Moat Ivan Su, Senior Equity Analyst, 8 Jul 2024

Tencent's wide moat is primarily based on network effects around its massive user base. In addition, we also believe Tencent possesses secondary moat sources like intangible assets, cost advantage, and switching costs. Given Tencent's ability to profitably monetize its network via games, music, advertising, fintech, and other services, we think it is more likely than not that the business will generate excess returns on capital over the next 20 years.

It's widely recognized that Tencent owns the most dominant messaging apps in China—WeChat and QQ. But unlike other messaging apps, WeChat is a platform for daily life and work. Through in-app features, users can play games, read news, perform searches, watch videos, listen to music, and shop. In a way, WeChat is the equivalent of Facebook, WhatsApp, Netflix, Spotify, and PayPal distilled into one mobile application. As of September 2021, the number of MAUs WeChat reached 1.26 billion, effectively covering 90% of the Chinese population. This puts WeChat at the top of the most widely used apps in China. We think the value of Tencent's network increases for both new and existing users as more customers use WeChat. These network effects serve to create barriers to success for new social network upstarts and barriers to exit for existing users who might leave behind friends, business contacts, chat history, payment records, and more by departing to alternate platforms. So even in the remote event of major competitive entry (Meta for example) in the distant future, Tencent should still have the largest social media network as users already view WeChat as the de facto entry point to the internet. Outside of network effects, we believe that Tencent has also developed 1) intangible assets consisting of a vast collection of user behavior data and content/IPs ownership, and 2) switching costs built around business processes that are often centered around WeChat.

From a quantitative angle, Tencent's adjusted ROIC has been well above its WACC of 8.3% for the past 10 years, and we believe that Tencent will continue to leverage its massive user base to generate returns over WACC over the next 20 years

By operating segment, we think its online games segment deserves a wide moat based on network effects and intangible assets around IP ownership. The firm owns world-renowned titles such as Fortnite, PUBG, Clash of Clans, League of Legends, and Honor of Kings. Tencent is now the largest video game publisher globally, and it couldn't have achieved this without leveraging its dominant social networking (WeChat, QQ) presence across China.

Tencent has been the undisputable market leader of the online gaming industry in China for multiple years, with over 56% market share in terms of revenue in 2021 per Gamma Data. This could be ascribed to many of the most widely played online mobile games it has launched in China, including Honor of Kings, Peace Elite (Chinese PUBG), Happy Landlord, and The Magic Blade, and so on According to an industry report issued by Quest Mobile in 2021, Honor of Kings had an MAU size of over 150 million, and Peace Elite's MAU was over 100 million, ranked first and third among Chines mobile games. These games' massive player bases allow Tencent to generate recurring revenue streams from microtransactions.

Tencent's mobile platform is a two-sided market—it not only generates revenue from players through microtransactions and subscriptions, but also get paid by third-party developers to list their games on Tencent's platform. On the player side, Tencent knows that people like to play their favorite games with friends, so it leverages its substantial presence in social networking to attract gamers. The fact that players log in to games with their WeChat accounts makes playing with friends significantly easier. As soon as a player logs into any of Tencent's games, the player will immediately see which of their contacts are playing the same game. Increased social interactions significantly influence an individual's propensity to spend time and money on games.

On the game developer side, Tencent again leverages its dominance in social networks to establish strong bargaining power against the third-party online games developers that want to tap into Tencent's huge network of players. This is reflected in numerous mobile game developers willing to give Tencent a hefty percentage of revenue in exchange for tapping into Tencent's user base.

Over the past several years, Honor of Kings has been the most important mobile game developed by Tencent as it contributes to around 30%-40% of the group's mobile game revenue. According to App Annie, Honor of Kings is the highest revenue-generating game in China since 2010. We think that a level network effect exists within Honor of Kings that makes it more appealing to players than other games of the same genre. This is reflected in the fact that every additional player means shorter matchmaking time, more balanced sides, more variety matches, more players creating content around the game (guides, discussions, artwork, and so on), and more people to watch or contribute to esports.

On the PC and console side, Tencent has expanded the business through acquisitions of Western developers such as Riot, Supercell, and Epic Games. For instance, Riot Games (acquired by Tencent in 2015) owns the League of Legends (LoL) franchise, which is still one of the most popular PC games. LoL contributed over 25% of Tencent's PC game revenue in 2020, and it reached 115 million MAUs and rendered USD 1.75 billion revenue globally for the same year per Superdata, making it the top nonmobile free-to-play game. Similar to Honor of Kings, we believe that LoL will continue to reap benefits from its established player network. The success of LoL has allowed Riot to create other games based on the same IP, such as Teamfight Tactics, to capture incremental revenue opportunities.

Lastly, the strength of Tencent's franchises is also reflected in their ability to negotiate for a more favorable app store take rate. For some of its popular game titles, Tencent only pays 30% revenue share to various app stores on Android, whereas most other game publishers have to pay 50%.

The social networking segment consists mainly of Tencent's music streaming, on-demand video, and cuts from game grossing via its own Android app store. Tencent Video is among the top two Chinese online long-video streaming platforms with over 100 million subscribers, and Tencent Music Entertainment is the leading Chinese online music streaming platform, with over 500 million MAUs.

While it might be difficult to assess each social network product's moat on a stand-alone basis, we think the segment as a whole deserves a narrow moat. This is because most of these services also feed off WeChat's popularity. Take Tencent Music as an example; subscribers of the service will get a more integrated experience when using WeChat—more accessible playlist sharing with friends, one-click transition to Tencent karaoke, and so on. We surmise that these minor conveniences will eventually allow the firm to charge slightly more for subscriptions than competitors.

On the advertising front, roughly half of its revenue is generated from ads in WeChat and the other half from ads across various other apps, such as Tencent Video. We assign a wide moat to this segment based on network effects around a massive user base and intangible assets consisting of a vast collection of data that users have shared on its apps.

As discussed previously, Tencent's accumulation of over 1.2 billion user data is beneficial to merchants that would like to access broader customer groups and perform more accurate targeting. Tencent has established an advertising and big data platform, helping merchants with their promotional campaign strategy formulation and recommending suitable applications and platforms for merchants to most effectively launch advertisements. Through precisely analyzing the data and the pervasive application of artificial intelligence, advertisers can improve the efficiency of ads through marketing on Tencent's applications, which leads to higher advertising revenue for Tencent. Though the online advertising space in China is experiencing intensifying competition due to the rising popularity of short video platforms, Tencent's own short video offering, Video Accounts, helps the company maintain its competitive advantages. The integration of Video Accounts with Tencent's extensive social networks ensures that its unique advertising strengths remain intact. According to eMarketer, Tencent's CNY 100 billion online advertising revenue ranks third in China's digital ad market, only trailing Alibaba and Bytedance.

Lastly, we also assign a wide moat for Tencent's fintech and business services segment. This segment mainly consists of fintech revenue, including online payment, online lending, wealth management, and on-demand cloud service revenue. In 2020, revenue from WeChat Pay contributed to the majority of this segment's revenue.

Tencent Pay also benefits from a strong network effect. The more consumers plugged into a payment network, the more attractive that payment network becomes for merchants, which makes the network more convenient for consumers. This explains why WeChat Pay and Alipay have been holding market leaders—controlling over 90% of the payment market since 2015. According to iResearch, WeChat Pay was the second-largest payment service provider with about 40% market share in total transaction

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value, while Alipay held about 55%.

Tencent is also a leading cloud provider in China, but the company has scaled back its IaaS operations to focus more on SaaS. Unlike most of its other businesses, Tencent Cloud is enterprise-facing rather than consumer-facing. Enterprise customers rely on Tencent Cloud for core IT infrastructure, which can eventually translate to high switching costs. Embedding software into mission-critical workflows creates significant barriers that discourage customers from replacing their systems. Ultimately, the operational risks associated with changing mission-critical technology infrastructure are high, which is why core elements such as ERP systems and customer relationship management software are rarely changed.

The key ESG risk faced by Tencent lies in business ethics and data security. For instance, Tencent Music once had exclusive agreements with major music labels, effectively preventing other freemium music providers from assessing this content. While Tencent might eventually have to put a stop to these practices, doing so will not impact the strength of its network effects. Even if the business loses some monetization potential in a business or two, the massive size of Tencent's user base will enable the company to quickly find alternative ways to monetize.

Fair Value and Profit Drivers Ivan Su, Senior Equity Analyst, 27 May 2024

Our fair value estimate for Tencent is $90 per share, and it has already incorporated the distribution of Meituan shares. About 77% of our valuation comes from Tencent's core business, while the remaining 23% comes from its investments. Our valuation for the core business implies a forward 2022 adjusted P/E of 47. We discount the firm's free cash flows using a WACC of 8.3%. We expect the company to record a five-year revenue CAGR of 15%. We forecast operating margins to plateau as positive effects of operating leverage will be offset by unfavorable mix shift toward less-profitable segments. Therefore, we forecast Tencent to record a five-year adjusted earnings CAGR of 17%.

Tencent is a business with multiple growth drivers. We expect revenue from value-added services to increase at a five-year CAGR of 10% due to new title launches, continued monetization of existing titles, and rapid overseas expansion. We expect revenue generated from advertising to increase at a five-year CAGR of 10%, driven by increases in ad inventory, a long-lived shift of marketing budgets to online and social media, and more efficient ad targeting. Lastly, we forecast revenue from fintech and cloud to increase at a five-year CAGR of 23%, driven by increasing economic activities, business expansion in loan and wealth-management products, and rising demand for cloud services.

We assume the adjusted EBIT margin (excluding other gains) to plateau at around 20% over the next two years before slowly going up to 32% by 2031 as current investments start generating more returns. The main long-term gross margin driver lies in fintech, cloud, and various B2B services. On the fintech front, we expect a gradual revenue mix shift toward higher-margin business payment, wealth management products, and loan products. Increases in payment take rate seem mission impossible under the common prosperity push, but we wouldn't rule this out entirely over a 10-year horizon. Cloud and other business services should also see margin expansion, driven by the rising number of paying users, margin accretive services, and expense leverage.

Risk and Uncertainty Ivan Su, Senior Equity Analyst, 8 Jul 2024

Tencent faces significant risks from tightening regulations. Regulators are standardizing rules for fintech companies and traditional financial institutions, leading to more conservative operations and slower growth for Tencent's fintech arm. A 2017 payment rule required third-party services to deposit all customer funds with the central bank by 2019, resulting in a loss of interest income. Although a 0.35% annualized interest rate was reinstated in 2020, regulatory challenges persist.

In 2018, gaming license approvals were suspended due to government restructuring, delaying the monetization of games like PUBG. In 2021, regulators again suspended game license issuance for underage protection, adding pressure on gaming revenue. The unclear long-term government vision for the sector raises concerns about further license suspensions, posing risks to Tencent's gaming revenue.

The internet industry is highly competitive and volatile. ByteDance's mobile user time share rose from 3.9% in 2017 to over 10% in 2020, partly at Tencent's expense due to the rise of short videos.

Tencent's investments in loss-making future growth businesses, such as cloud services and Tencent Video, may weigh on overall margins.

Weak macroeconomic conditions, pandemics, and shifting consumer sentiment can negatively affect Tencent's profit, especially in advertising.

WeChat's super app status raises concerns about potential data overcollection and abuse, risking government fines.

Capital Allocation Ivan Su, Senior Equity Analyst, 8 Jul 2024

We assign Tencent an Exemplary Capital Allocation Rating, reflecting our assessment of its sound balance sheet, exceptional investments, and appropriate shareholder distributions. We believe that reinvestments into the business will be the primary driver of total shareholder returns and are rightly prioritized over dividends, buybacks, and share distributions.

Tencent considers investment its core strategy, and management has excelled in strengthening the company's competitive position. The firm boasts an impressive track record of delivering returns that far exceed its cost of capital over the past decade. One of management's most significant achievements is the development of WeChat for the mobile internet age. Tencent views its core competitive advantage as traffic, and it has continuously enhanced its network effect by adopting an open-platform approach and adding partners to its ecosystem.

Tencent has also made excellent investment decisions outside its core business. Over the past decade, external investments have generated an estimated internal rate of return in the double digits. Notable investments include JD, Meituan, PDD, and Xiaohongshu.

We view the firm's balance sheet as sound, evidenced by its strong cash position and modest debt. Tencent has generated positive free cash flow over the past decade and is expected to continue doing so in the foreseeable future. Given the business' strong balance sheet, we believe Tencent could easily afford substantial debt to fund acquisitions if desired.

Tencent has also been paying dividends, repurchasing shares, and distributing its investment holdings directly to investors. The firm significantly increased shareholder distributions since 2021, partly to offset the impact of share price declines on its investors. This peaked in 2023 when the company's distribution reached more than 180% of earnings, primarily driven by the distribution of shares in its investee companies.

But with China's reopening and an improving regulatory landscape, we believe Tencent's future capital deployment strategy will be more balanced. We estimate the company will allocate roughly 70% of its earnings to capital returns, with the remaining portion directed toward investments.

Analyst Notes Archive

From Myth to Reality: What's Next After Wukong? Ivan Su, Senior Equity Analyst, 22 Aug 2024
History was made when Wukong: Black Myth became the second most popular game on Steam, yet several questions about its implications remain unanswered. Here, are some of our thoughts.

First, the majority of Wukong’s sales are from China, evidenced by less than 10% of its Steam reviews being in English. This is much lower than AAA titles like Elden Ring, which has over 50% English reviews, and 37% for Resident Evil 2. In our view, this indicates that Wukong's success is driven by domestic enthusiasm, and while Chinese AAA are poised to gain more global recognition, progress is likely to be gradual.

Second, Wukong’s immense popularity in China prompted questions about a shift in gaming preferences, evidenced by a 20-fold increase in searches for “PS5” on WeChat. Yet, challenges like content restrictions and minimal social buzz for foreign games limit adoption. Additionally, long work hours in China challenge the deeper engagement required by AAA games. Therefore, we don’t expect Wukong’s success to take away the popularity of mobile gaming.

Third, although Wukong's release was celebrated in state media, this does not signal an immediate shift in the regulatory outlook for the industry. Positive coverage from Xinhua merely reflects their viewpoint. The National Press and Publication Administration sets the regulatory framework. Given the complex interactions between government bodies, we should be cautious about extrapolating broader regulatory shifts.

Lastly, looking beyond Wukong, AAA development remains a lengthy process and not always a priority for Chinese developers, leading to a limited pipeline. However, NetEase's upcoming AAA release of Where Winds Meet could spark interest. This open-world RPG, reminiscent of Elden Ring, will be available across all platforms. If successful, the game could further elevate China’s position in the global gaming scene and potentially influence more studios to expand into AAA development.

Tencent Earnings: Defying Economic Slowdown in China; Shares Very Undervalued Ivan Su, Senior Equity Analyst, 15 Aug 2024

Wide-moat Tencent’s second-quarter earnings were in line with our estimates despite revenue falling slightly short. Overall, Tencent’s numbers suggest the company has largely defied macroeconomic headwinds in China, except in its payment business. The biggest takeaway from the earnings call is that the substantial margin improvements seen over the past few quarters are set to continue, driven by a cost-conscious approach to expansion and a favorable shift in revenue mix. This reaffirms our view that even if China’s macroeconomic weakness lasts longer than expected, Tencent is still poised to achieve strong double-digit earnings growth in the next few quarters.

As of the end of the second quarter, Tencent's investments in other companies neared CNY 900 billion, accounting for nearly 30% of its market cap. Excluding the value of its investment portfolio, Tencent's shares are trading at a core price/earnings ratio of 13 times 2024 earnings—a clear indicator that shares are undervalued.

We maintain our $704 fair value estimate for Tencent, implying a 90% upside in share price.

The second quarter showed strong earnings and marked continued profitability improvements for Tencent. Revenue grew by 8% year over year, marking a sequential acceleration from the first quarter. Gross margin saw its sixth consecutive quarter of improvement to 53.3%. Adjusted operating profit surged by 27%, and adjusted earnings per share impressively increased by 55%. Margin improvements were evident across all business segments, while net profit was further bolstered by significant contributions from associate companies, notably strong performances at PDD, Kuaishou, and Epic Games.

Tencent: Gaming Turnaround Gains Momentum; Regulatory Tailwinds to Persist Ivan Su, Senior Equity Analyst, 8 Aug 2024

We lift Tencent's 2024 earnings forecast by 1% following Nexon's stronger-than-expected revenue from DnF Mobile in the second quarter of 2024. Even though DnF Mobile is not a major driver of Tencent's diversified revenue streams, this positive development hints at a potential turnaround in Tencent's

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gaming segment after two quarters of declining revenues. We are keeping our fair value estimate at HKD 704, as our long-term outlook for Tencent's gaming business, projecting mid-single-digit annual sales growth, remains unchanged. We view Tencent's shares as very undervalued.

Nexon is the developer of DnF Mobile, and it licenses the game to Tencent for distribution in China. Based on Nexon's second-quarter earnings, we estimate that DnF Mobile generated approximately CNY 7 billion in revenue during its first 40 days post-launch. Extrapolating these figures across the full year, we now anticipate DnF Mobile will contribute around CNY 22 billion to Tencent's 2024 revenue, marking a 120% increase from our prior estimate. However, this is just 3% of Tencent's 2024 revenue.

Looking into Tencent's game releases over the next few months, the pipeline appears light, likely due to developers avoiding a release clash with Black Myth: Wukong, a PC and console game that is poised to be China's first AAA title. Among Tencent's upcoming games, Honor of Kings: Breaking Dawn shows significant earnings potential. This game, reminiscent of Super Smash Bros, features popular characters from Honor of Kings. With a strong existing fanbase, Honor of Kings: Breaking Dawn is likely to achieve high engagement and revenue upon release, in our view.

Huawei's Potential Fee Shakeup Could Be a Win for Game Developers Ivan Su, Senior Equity Analyst, 19 Jun 2024

There have long been complaints that app stores take too big a share of in-app purchases, but nothing has managed to shake the 30% take-rate standard over the past decade. However, Bloomberg's recent report on Huawei's talks with Tencent to establish a lower-than-industry share of 20% for in-game purchases provides hope for a reset. This move also reinforces our call for higher profitability for gaming companies over the long run. Although the Huawei HarmonyOS mobile operating system currently represents a small percentage of smartphones in China, the potential lowering of its app store fee to 20% could pressure other mobile app platforms to follow suit.

We don't expect a whopping 10-percentage-point increase in profit margins for Chinese developers under our coverage. Our models generally bake in a 5-percentage-point increase in margins over the next 10 years due to a combination of lower take rates and the rising popularity of cross-platform games. However, news like this paves the way for higher margins at an earlier date. While we maintain our fair value estimates for Chinese gaming companies under our coverage for now, we recognize that a shift in app store fee structures could serve as a potential driver for future revisions. We recommend closely monitoring developments in this area as a 10-percentage-point improvement in margin is very significant for gaming companies that currently generate operating margins of around 30%.

Tencent Earnings: Clear Path to Margin Expansion Ivan Su, Senior Equity Analyst, 15 May 2024

Tencent's latest first-quarter earnings validate our thesis that its monetization avenues are far from being maxed out. Although WeChat might seem to be a mature network, already having 1.3 billion users across China, there remains plenty of room to increase monetization by introducing new products and services. While the number of users may not rise significantly, usage and monetization still have a very long runway ahead, as evidenced by the strong growth in Video Accounts and Weixin search revenue during the quarter. Although Tencent does not currently dominate the short video or search engine segments, the inherent benefits of its services—such as the seamless integration of content sharing within its expansive social network—set the stage for potential future market leadership.

More importantly, since these new products and services are integrated within the existing WeChat superapp infrastructure, minimal upfront investments and customer acquisition costs are needed, which translates to substantially higher profit margins from incremental sales. This belief underpins our above-consensus earnings forecasts going into the next three years.

While first-quarter net profit largely met our expectation, we maintain our fair value estimate on Tencent at HKD 704. Given that shares are trading at a 55% discount to our valuation, we view this as a compelling opportunity to invest in a wide-moat company.

Tencent Earnings: Scoring Big on Shareholder Returns; Gaming Turnaround Takes Center Stage Ivan Su, Senior Equity Analyst, 21 Mar 2024

Tencent's fourth-quarter earnings highlighted significant capital returns to shareholders, with the firm promising to distribute about 4.8% of its market cap as of March 20 as buybacks and dividends, affirming our Exemplary Capital Allocation Rating. Although gaming revenue growth has concerned investors, management is taking steps to resolve internal issues by enacting leadership changes, setting the stage for a turnaround. Comments on regulatory development were also reassuring. With earnings broadly in line with our estimates, we retain our fair value estimate of HKD 704 per share.

Fourth-quarter earnings displayed consistent patterns similar to previous quarters, such as: 1) profit growing faster than revenue, driven predominantly by a shift toward segments with higher margins; 2) Video Accounts continuing to deliver exceptional growth, driving advertising revenue to exceed market expectations; and 3) the gaming business continuing to grapple with challenges—yet there are early signs that suggest a turnaround is coming.

Tencent’s revenue grew 7% year over year for the quarter, falling behind Refinitiv’s consensus expectation. However, adjusted earnings per share were ahead of expectation, up by 46%. Our model calls for more margin expansion in 2024, which should drive adjusted net profit growth to 23%. Video Accounts are poised to remain a primary growth engine, elevating both advertising revenue and business services revenue (in the form of technology service fees on e-commerce transactions).

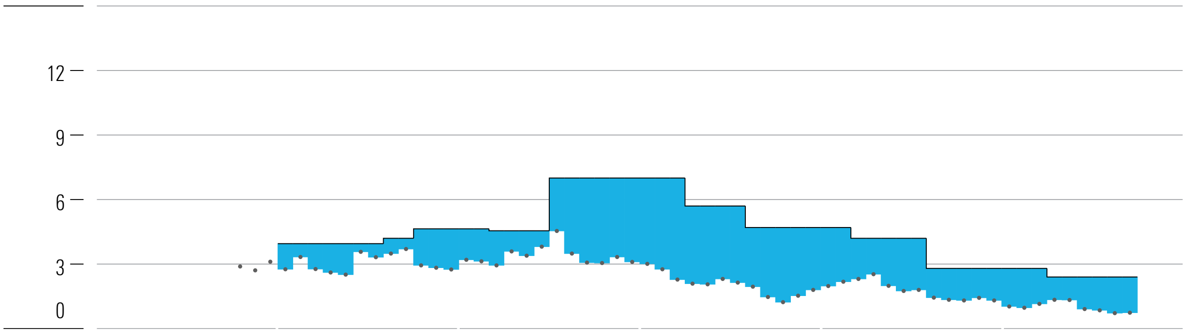
Financial technology and gaming are two swing factors to performance in 2024. The Chinese central bank's nod to increase Tenpay's registered capital to CNY 15.3 billion opens the door for up to CNY 3 trillion in additional consumer lending. Yet, the timeline for loan service expansion is uncertain due to a focus on regulatory compliance. In gaming, despite projections for revenue improvements beginning in the second quarter, the path to higher growth remains unclear.

Morningstar Equity Analyst Report | Report as of 18 Sep 2024 12:38, UTC | Reporting Currency: CNY | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS Page 14 of 24

Tencent Holdings Ltd ADR TCEHY ★★★★★ 17 Sep 2024 21:41, UTC

Competitors Price vs. Fair Value

CMGE Technology Group Ltd 00302

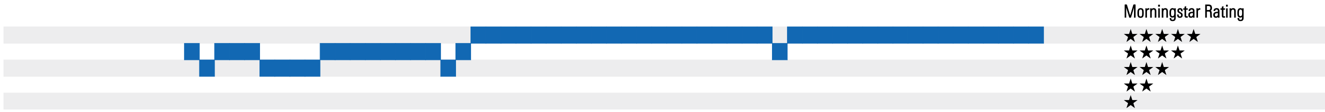


Fair Value: 2.40
2 Apr 2024 09:37, UTC

Last Close: 0.74
Overvalued
Undervalued

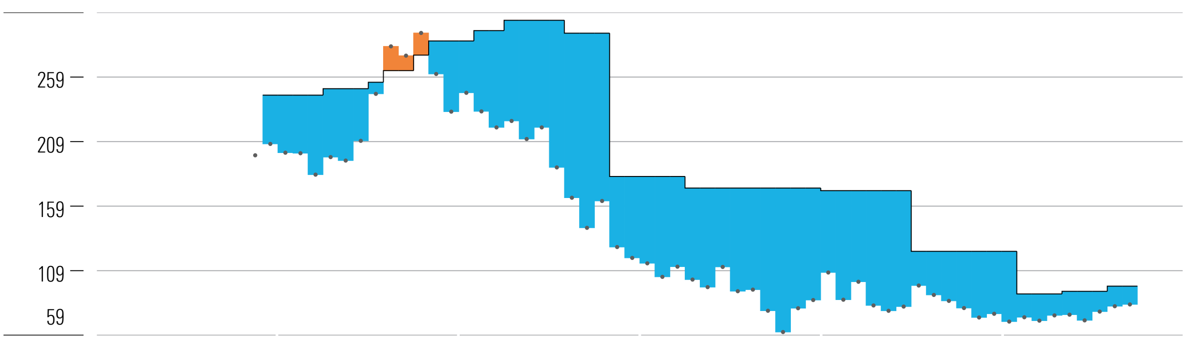
	2019	2020	2021	2022	2023	YTD
Price/Fair Value	—	0.59	0.44	0.38	0.47	0.31
Total Return %	—	-10.43	16.10	-41.94	-27.22	-43.51

Morningstar Rating



Total Return % as of 17 Sep 2024. Last Close as of 17 Sep 2024. Fair Value as of 2 Apr 2024 09:37, UTC.

Alibaba Group Holding Ltd Ordinary Shares 09988

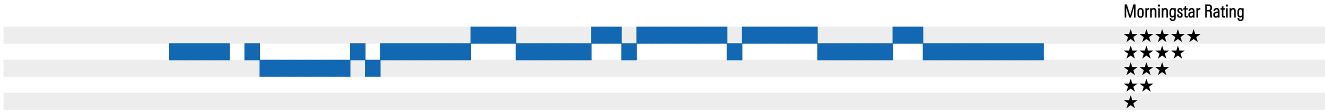


Fair Value: 97.00
16 Aug 2024 04:58, UTC

Last Close: 82.85
Overvalued
Undervalued

	2019	2020	2021	2022	2023	YTD
Price/Fair Value	0.85	0.81	0.65	0.50	0.61	0.85
Total Return %	—	12.07	-48.79	-27.46	-11.22	11.73

Morningstar Rating



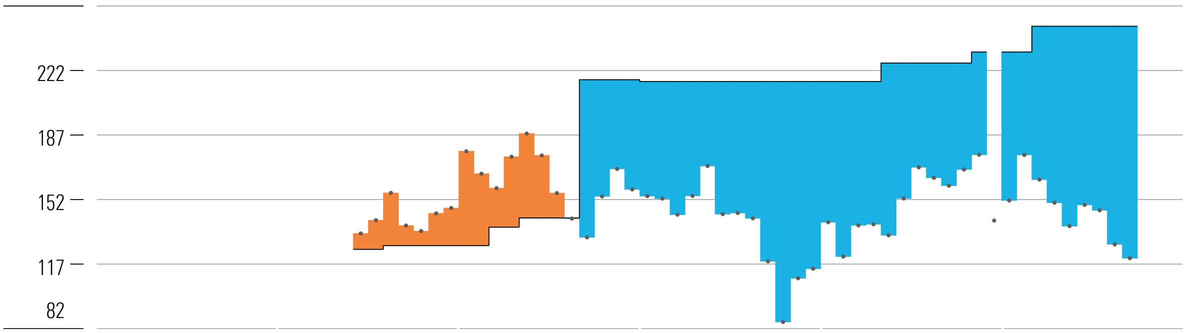
Total Return % as of 17 Sep 2024. Last Close as of 17 Sep 2024. Fair Value as of 16 Aug 2024 04:58, UTC.

Morningstar Equity Analyst Report | Report as of 18 Sep 2024 12:38, UTC | Reporting Currency: CNY | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS

Tencent Holdings Ltd ADR TCEHY ★★★★★ 17 Sep 2024 21:41, UTC

Competitors Price vs. Fair Value

NetEase Inc Ordinary Shares 09999



Fair Value: 246.00
1 Mar 2024 14:46, UTC

Last Close: 120.20
Overvalued
Undervalued

2019	2020	2021	2022	2023	YTD	
—	1.16	0.73	0.53	0.70	0.49	Price/Fair Value
—	—	7.72	-25.79	25.20	-12.28	Total Return %

Morningstar Rating

★★★★★
★★★★
★★★
★★
★

Total Return % as of 17 Sep 2024. Last Close as of 17 Sep 2024. Fair Value as of 1 Mar 2024 14:46, UTC.

Morningstar Equity Analyst Report | Report as of 18 Sep 2024 12:38, UTC | Reporting Currency: CNY | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS Page 16 of 24

Tencent Holdings Ltd ADR TCEHY ★★★★★ 17 Sep 2024 21:41, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
48.51 USD 17 Sep 2024	90.00 USD 12 Jan 2023 03:57, UTC	0.54	446.46 USD Bil 18 Sep 2024	Wide	Large Growth	High	Exemplary	7 Aug 2024 05:00, UTC

Morningstar Historical Summary

Financials as of 30 Jun 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (CNY Bil)	79	103	152	238	313	377	482	560	555	609	321	630
Revenue Growth %	30.6	30.3	47.7	56.5	31.5	20.7	27.8	16.2	-1.0	9.8	7.2	7.9
EBITDA (CNY Bil)	35	44	67	115	134	162	238	314	281	232	121	213
EBITDA Margin %	44.0	43.2	43.8	48.3	42.7	42.9	49.4	56.0	50.7	38.1	37.8	33.7
Operating Income (CNY Bil)	26	37	50	70	78	97	128	124	114	166	104	191
Operating Margin %	33.6	35.7	33.1	29.5	25.0	25.7	26.6	22.2	20.5	27.2	32.5	30.2
Net Income (CNY Bil)	24	29	41	72	79	93	160	225	188	115	90	153
Net Margin %	30.2	28.0	27.1	30.1	25.2	24.7	33.2	40.1	34.0	18.9	27.9	24.2
Diluted Shares Outstanding (Mil)	9,357	9,430	9,494	9,536	9,568	9,603	9,650	9,696	9,695	9,610	9,466	9,526
Diluted Earnings Per Share (CNY)	2.55	3.06	4.33	7.50	8.23	9.64	16.52	23.16	19.34	11.89	9.38	15.93
Dividends Per Share (CNY)	0.17	0.29	0.40	0.54	0.74	0.88	1.11	1.31	1.36	2.16	3.08	3.08

Valuation as of 30 Aug 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	11.2	12.8	11.5	15.0	8.8	9.0	10.0	6.6	5.2	4.3	5.4	5.2
Price/Earnings	38.6	43.5	42.2	52.6	30.5	37.5	37.5	19.1	16.2	13.4	29.0	21.6
Price/Cash Flow	29.2	31.5	25.0	33.1	25.5	25.2	23.1	20.9	17.6	12.7	14.9	13.4
Dividend Yield %	0.19	0.24	0.25	0.15	0.29	0.27	0.22	0.35	0.48	0.81	0.92	0.89
Price/Book	11.3	11.1	9.7	13.8	8.2	7.9	7.8	4.2	3.7	3.3	3.9	3.7
EV/EBITDA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Operating Performance / Profitability as of 30 Jun 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %	17.1	12.0	11.7	15.0	12.3	11.1	14.0	15.3	11.8	7.3	5.5	9.6
ROE %	34.5	28.8	27.9	33.2	27.2	24.7	28.1	29.8	24.6	15.1	10.7	18.6
ROIC %	24.5	18.7	17.3	21.1	17.7	16.2	19.7	21.6	17.2	10.1	7.3	12.6
Asset Turnover	0.6	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.2	0.4

Financial Leverage

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	27.6	29.4	34.9	30.3	30.0	31.2	25.8	27.1	31.4	27.7	25.8	—
Equity/Assets %	46.7	39.1	44.1	46.2	44.7	45.4	52.8	50.0	45.7	51.3	52.0	—
Total Debt/EBITDA	1.0	1.5	1.6	1.1	1.3	1.4	1.1	1.0	1.3	1.6	3.0	—
EBITDA/Interest Expense	40.1	29.4	30.7	37.5	27.3	21.0	32.0	39.6	28.2	19.5	20.3	17.7

Morningstar Analyst Historical/Forecast Summary as of 15 Aug 2024

Financials

			Estimates		
Fiscal Year, ends 31 Dec 2023	2022	2023	2024	2025	2026
Revenue (CNY Mil)	554,552	609,015	666,893	735,946	802,003
Revenue Growth %	-1.0	9.8	9.5	10.4	9.0
EBITDA (CNY Mil)	272,201	221,000	295,405	343,218	376,628
EBITDA Margin %	49.1	36.3	44.3	46.6	47.0
Operating Income (CNY Mil)	102,821	155,373	212,640	249,251	280,450
Operating Margin %	18.5	25.5	31.9	33.9	35.0
Net Income (CNY Mil)	115,649	157,688	233,469	261,362	290,701
Net Margin %	20.8	25.9	35.0	35.5	36.3
Diluted Shares Outstanding (Mil)	9,695	9,610	9,426	9,238	9,053
Diluted Earnings Per Share(CNY)	11.93	16.41	24.77	28.29	32.11
Dividends Per Share(CNY)	2.06	3.07	6.15	7.10	8.14

Forward Valuation

			Estimates		
	2022	2023	2024	2025	2026
Price/Sales	5.1	4.1	4.8	4.3	4.0
Price/Earnings	24.7	16.3	13.9	12.2	10.7
Price/Cash Flow	—	—	—	—	—
Dividend Yield %	0.7	1.2	1.8	2.1	2.4
Price/Book	3.5	3.6	4.3	4.1	3.7
EV/EBITDA	10.7	11.3	10.8	9.3	8.4

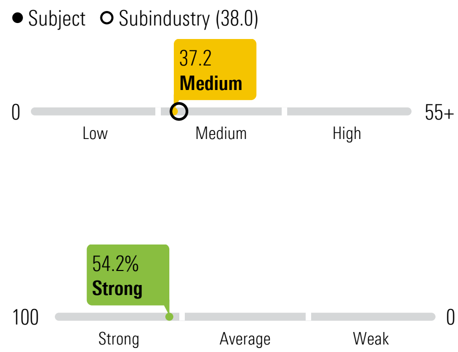
Morningstar Equity Analyst Report | Report as of 18 Sep 2024 12:38, UTC | Reporting Currency: CNY | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS Page 17 of 24

Tencent Holdings Ltd ADR TCEHY ★★★★★ 17 Sep 2024 21:41, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
48.51 USD 17 Sep 2024	90.00 USD 12 Jan 2023 03:57, UTC	0.54	446.46 USD Bil 18 Sep 2024	Wide	Large Growth	High	Exemplary	7 Aug 2024 05:00, UTC

ESG Risk Rating Breakdown

Exposure	
Company Exposure[1]	37.2
– Manageable Risk	34.6
Unmanageable Risk[2]	**2.6**
Management	
Manageable Risk	34.6
– Managed Risk[3]	18.7
Management Gap[4]	**15.8**
Overall Unmanaged Risk	**18.4**



- 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 54.2% 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[5]

ESG Risk Rating is of Aug 07, 2024. Highest Controversy Level is as of Sep 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/esg-ratings/.

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
Tencent Holdings Ltd	37.2 | Medium (0–55+)	54.2 | Strong (100–0)	18.4 | Low (0–40+)
Baidu Inc	39.0 | Medium (0–55+)	57.4 | Strong (100–0)	18.2 | Low (0–40+)
NetEase Inc	26.4 | Low (0–55+)	31.4 | Average (100–0)	18.6 | Low (0–40+)
Alibaba Group Holding Ltd	38.4 | Medium (0–55+)	42.1 | Average (100–0)	23.3 | Medium (0–40+)
CMGE Technology Group Ltd	23.0 | Low (0–55+)	26.7 | Average (100–0)	17.3 | Low (0–40+)

Morningstar Equity Analyst Report | Report as of 18 Sep 2024 12:38, UTC | Reporting Currency: CNY | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS

Appendix

Historical Morningstar Rating

Tencent Holdings Ltd ADR TCEHY 17 Sep 2024 21:41, 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
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★

CMGE Technology Group Ltd 00302 17 Sep 2024 16:32, 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
—	—	—	—	—	—	—	—	—	—	—	—

Alibaba Group Holding Ltd Ordinary Shares 09988 17 Sep 2024 16:32, 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
★★★★	—	—	—	—	—	—	—	—	—	—	—

Morningstar Equity Analyst Report | Report as of 18 Sep 2024 12:38, UTC | Reporting Currency: CNY | Trading Currency: USD | Exchange: OTC LINK ATS - OTC MARKETS

NetEase Inc Ordinary Shares 09999 17 Sep 2024 16:34, 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
—	—	—	—	—	—	—	—	—	—	—	—

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, 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 returns 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 derive our annual free cash flow forecast.

Stage II: Fade

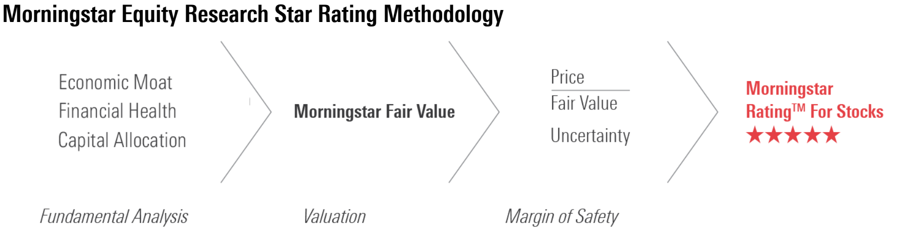
The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling 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.

Morningstar Equity Research Star Rating Methodology



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-

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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.

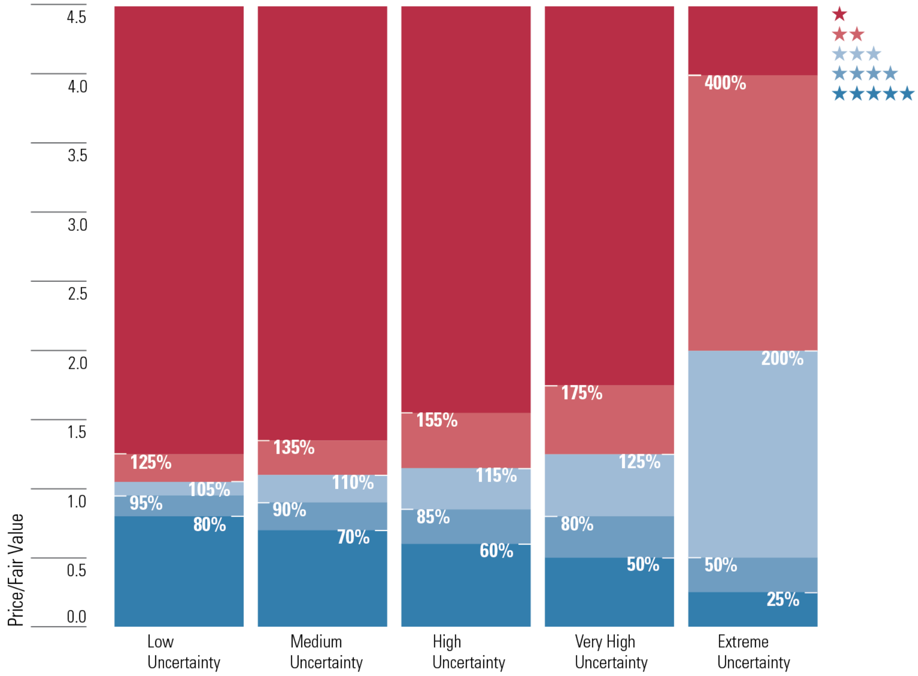
4. Market Price

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

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 adjusted 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-

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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 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/

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.

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