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EQUITY RESEARCH POWERED BY MORNINGSTAR

CMGE Technology Group Ltd 00302 (XHKG) | ★★★★★ BUY(1)

(1) Refer to mapping table between star rating and BNP Paribas B/H/R recommendation on last page

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Capital Allocation	Industry Group	ESG Risk Rating Assessment[1]
3.09 HKD	7.00 HKD	High	None	Stable	Standard	Interactive Media	3 of 5 globes

Fresh Takes on Three China Internet Stocks; Our Top Picks Are Tencent and NetEase

See Page 2 for the full Analyst Note from 03 Jan 2022

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

Research as of 03 Jan 2022
Estimates as of 03 Jan 2022
Pricing data through 03 Jan 2022 00:00
Rating updated as of 03 Jan 2022 00:00

[1]The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating.
Rating as of 01 Dec 2021 00:00

Currency amounts expressed with "$" are in U.S. dollars (USD) unless otherwise denoted.

Contents

Business Strategy and Outlook 03 Jan 2022

CMGE is one of the earliest Chinese game companies focusing on intellectual property, being the first to bring Disney and Toei IPs into China. According to Analysis, as of the end of 2020, CMGE was the Chinese gaming company that has the most mob ile IP games. We think that games with well-known IPs should attract some players, at least at the initial launch, because these titles already have their own loyal fan following whether they are based on films, TVs, or novels.

Other than CMGE developing licensed IPs from popular manga and Chinese comics into games, the company also obtained some well-tracked PC and video game IPs through their acquisition of a 51% equity interest in Beijing Softstar, a developer of successful PC games such as the series of Legend of Sword and Fairy. To revitalize Softstar's IPs, CMGE will also develop pan-entertainment products such as soft toys, figurines based on its proprietary IPs, explore partnerships with companies in industries such as motion picture, manga, animation, novel and music through licensing, coproduction and codevelopment. For example, CMGE licensed its IPs for the development and operation of a TV series, hotels and theme parks.

To enhance its mobile game ecosystem, CMGE maintains partnerships with game developers and invests in developers and IP companies. Some of the cooperation with game developers were under a contract term of at least three years. CMGE has invested in a number of game developers that possess a good track record, such as Love Games, Huanyu Jiuzhou and EZFun. Apart from third-party developers, the company also possesses in-house development capabilities through Beijing Softstar and Wenmai Hudong. The latter developed several popular MMORPGs such as The World of Legend--Thunder Empire. A majority of game revenue will still come from licensed games in the future, in our view. CMGE is a limited partner in the CPC Fund, which invests in IP owners, IP incubating platforms and vertical platforms. CMGE can license IPs from the portfolio companies invested by CPC Fund. CMGE will also expand internationally with games such as SNK Top Battle and Dynasty Warrior.

Vital Statistics

Market Cap (HKD Mil)	8,553
52-Week High (HKD)	5.09
52-Week Low (HKD)	2.68
52-Week Total Return %	15.7
YTD Total Return %	-1.0
Last Fiscal Year End	31 Dec 2020
5-Yr Forward Revenue CAGR %	8.0
5-Yr Forward EPS CAGR %	0.4
Price/Fair Value	0.44

Valuation Summary and Forecasts

Fiscal Year:	2019	2020	*2021(E)*	*2022(E)*
Price/Earnings	8.7	6.8	*6.3*	*7.4*
EV/EBITDA	15.3	7.1	*5.5*	*6.1*
EV/EBIT	21.0	12.5	*8.7*	*9.0*
Free Cash Flow Yield %	—	—	—	—
Dividend Yield %	1.1	3.5	*4.4*	*3.6*

Financial Summary and Forecasts (CNY Mil)

Fiscal Year:	2019	2020	*2021(E)*	*2022(E)*
Revenue	3,036	3,820	*5,001*	*5,197*
Revenue YoY %	90.2	25.8	*30.9*	*3.9*
EBIT	310	478	*735*	*709*
EBIT YoY %	18.7	54.3	*53.7*	*-3.5*
Net Income, Adjusted	611	807	*1,015*	*856*
Net Income YoY %	82.1	32.1	*25.7*	*-15.6*
Diluted EPS	0.32	0.34	*0.40*	*0.34*
Diluted EPS YoY %	73.5	6.5	*17.4*	*-15.6*
Free Cash Flow	-537	334	*528*	*558*
Free Cash Flow YoY %	-2,975.6	-162.2	*58.0*	*5.7*

Historical/forecast data sources are Morningstar Estimates and may reflect adjustments.

Profile

CMGE is an IP-based mobile game developer and publisher in China with 50 licensed IPs and 68 proprietary IPs as of June 2021. The company has 85 games on the shelf and over 20 games having lifecycles of over three years, and its average monthly active users (MAUs) reached 19.1 million in June 2021. The market share of CMGE for online gaming grossing income in 2020 is around 1.4%. We estimate that CMGE ranks between eighth and ninth in revenue among all Chinese online gaming companies.

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Morningstar Analysis

Fresh Takes on Three China Internet Stocks; Our Top Picks Are Tencent and NetEase 03 Jan 2022

We have taken a fresh look at wide-moat Tencent, narrow-moat NetEase, and no-moat CMGE, and our top picks are Tencent and NetEase. We believe the market has dramatically overreacted to recent regulatory risks while overlooking two firms' long-term revenue opportunities and margin upside. As we start to see signs of a stabilizing regulatory environment going into 2022, we have confidence that fears will subside as investors gradually understand headline risks do not represent fundamental game-changers to our long-term investment theses. Among the three names, NetEase and CMGE are pure gaming plays, while Tencent has about 40% of operating income exposure to games, with the rest coming from multiple other sources like advertising and fintech. On the game side, Tencent and NetEase are China's largest and second-largest publishers, respectively. Both companies own a vast number of well-known franchises that captivated multiple generations--Tencent is the owner of internationally renowned video game franchises like PUBG, Clash of Clans, League of Legends, Honor of Kings, and Fortnite (through Epic stake). At the same time, NetEase specializes in publishing Chinese domestic titles like Fantasy Westward Journey, Onmyoji, Identity V, and Naraka Bladepoint. We believe both firms will continue to capitalize on the success of existing franchisees while leveraging their capital and influence to develop next-generation titles.

Despite their promising long-term outlook, both Tencent and NetEase witnessed major sell-offs in share prices over the last months following several regulatory changes. While we understand that some of these changes give investors flashbacks to what has happened in the Chinese education sector, it is essential to understand that recent Internet regulations are not designed to wipe out the Internet industry or the private sector, nor will they erode the competitive advantages enjoyed by Tencent and NetEase. This is the reason why we think the duo can still comfortably achieve 15% to 20% earnings CAGR over the next five years, even after adjusting for negative impacts from policies.

Going into 2022, we expect a stabilizing, or perhaps even improving, regulatory environment. Based on a combination of discussions with industry sources and company management, we think the current suspension in new game licenses (which began in July) was done to implement minor protection measures. Combined with our understanding that the National Press and Publication Administration, the license approval agency, did not stop taking in new license applications, we have a strong conviction that the agency has not stopped the review process, and it should soon start issuing licenses. Assuming everything else equal, resumption of license approvals will benefit NetEase the most, given all its profit comes from games. Tencent will also benefit from improved grossing visibility but to a lesser degree, due to its more diversified revenue stream.

We also see early signs of positive regulatory developments outside of games, and we believe a continuation of these positive trends will ultimately ease investor concerns over Tencent. We got one positive sign from comments that came out of the latest Politburo meeting, where "anti-monopoly" and "preventing disorderly expansion of capital," which made their first appearance in last year's December meeting, were taken out this year. We view this as an indication that anti-monopoly will no longer be a top government priority in 2022. Furthermore, we think regulatory revamp over the past year might have helped Internet firms win government contracts, evidenced by Tencent Cloud's recent winning of the Beijing government's multi-million-dollar blockchain project. The fact that government is now comfortable with private companies handling its data suggests that there is not only an increased level of trust, but it also reaffirms the government's commitment to creating a vibrant private sector--a notion that came under question over the past months.

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Price/Fair Value Morningstar data as of Jan 03, 2022

Following a revisit to three companies' long-term assumptions, we raise Tencent's fair value estimate to HKD 837 from HKD 778 while maintaining NetEase and CMGE's fair value estimates unchanged. The bulk of the increase in our fair value estimate comes from our updated profitability outlook for Tencent's gaming business. Our sum-of-the-parts analysis assigns 30 times 2022 P/E multiple to Tencent's game business--a valuation equivalent to 36% of total group valuation. Advertising, fintech, and a list of other businesses contribute to 48% of the total valuation, while investments outside of the core make up the remaining 18% of the valuation.

Tencent's share price is currently at an historical trough, trading at a forward price to earnings multiple of just 21 times. We forecast the firm growing earnings at a 15% five-year CAGR before assuming any new revenue streams that are likely to emerge from the WeChat ecosystem. Our conviction in long-term growth is underpinned by three long-term secular trends: rising value proposition of online games (easy to access and highly engaging way to enjoy with friends), rapidly growing disposable income bodes well for advertising spend, and surging demand for cost-effective enterprise solutions provides ample of headroom for cloud services growth.

NetEase is well positioned to capitalize on opportunities outside its home. The firm has already demonstrated that it can build high-quality and longstanding mobile games for the Japanese market. We expect the firm to achieve moderate success at expanding its footprint in the U.S. and Europe. We expect the company to record a five-year revenue CAGR of 16%. Earnings expansion should outpace that of revenue, growing at 21% CAGR, as the business expands into more profitable overseas gaming markets. Our valuation implies forward 2022 P/E of 23, below the above 40 times earnings Pitchbook consensus multiples demanded by global peers like Take-Two. We expect continued strong revenue performance at recent game launches (Harry Potter and Naraka Bladepoint) to lend credence to the firm's ability to sustain a steady income stream from high-quality and long-cycle games, thus eliminating some of the uncertainty in the traditionally low visibility business.

Fair Value & Profit Drivers 03 Jan 2022

Our fair value estimate for CMGE is HKD 7 per share, which implies about 16 times price to 2021 earnings. We think CMGE will be able to deliver sustained long-term revenue growth for a few reasons: 1) CMGE's continued shift to long-cycle games will provide a relatively steady income stream, gradually eliminating some of the uncertainty in the traditionally low visibility business. This is evidenced by the firm's recent launch of One Piece The Voyage (mobile), where we see a much better balance between player experience and monetization, positioning the game for long-term success, 2) we also incorporated some effects of the projected 2022/23 release of Sword and Fairy Zero (mobile), a massive multiplayer online, or MMO, remake of an all-time classic--Sword and Fairy. Currently, we model in just modest revenue because we do not know enough about the game play and its exact launch date, but we believe Sword and

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Fairy Zero has the potential to be one of the top-20 grossing games for an extended period. The upcoming release of Sword and Fairy 7 (PC) should drive anticipation for the mobile MMO remake, and 3) recent tie-up with Bilibili (7% shareholder of CMGE) grants CMGE the priority rights to create games based on Bilibili's IPs, helping CMGE to further tap into younger audiences. This provides us a bit more visibility beyond the existing two-year pipeline, resulting in higher confidence in long-term revenue opportunities.

All things considered, we now model in a five-year revenue CAGR of 8%, in line with China's mobile game industry growth. But with the company doubling down on R&D investments (increased R&D headcounts from 400 to 800), we expect some cost pressures, but this spending should support higher-quality, more frequent content in coming years. While we concede the mobile game industry is extremely competitive and player churns are often very high, CMGE's strategy to build mobile games off existing IPs should keep a lid on user acquisition costs. Therefore, our midcycle operating margin assumption stands at about 13%, in line with the firm's three-year historical average. As a result, we forecast CMGE to record a five-year operating income CAGR of 9%.

Scenario Analysis

Our bull-case fair value estimate for CMGE is HKD 10.10 while our bear-case fair value estimate is HKD 4.70.

In the bull case, we expect five-year revenue CAGR to be 13%, led by the success of long-cycle games, improved monetization of Softstar's IPs, and more exclusive licensing deals with prominent game distribution platforms. Operating profit grows at a CAGR of 17% as staff costs are under control and marketing expense ratios run at a lower level due to more exclusive licensing agreements.

In the bear case, we expect five-year revenue CAGR to be 4%, due to the worse-than-expected performance of the key games such as Legend of Mir series, sluggish monetization of Softstar's IPs and reduced exclusive licensing agreement with large traffic platforms, and the inability to churn out popular games at CMGE. Operating profit should grow at a compound annual rate of 1% over the five-year explicit forecast period.

Economic Moat

We assign CMGE a no-moat rating because it does not own any long-cycle titles, nor do we think it has the resources to develop these titles to sustain ROICs above WACC over the next 10 years. Over the last few years, the mobile game marketplace has become increasingly competitive with larger publishers such as Tencent and NetEase consolidating and buying competitors. Due to this increased competition along with the inconsistent performance of the company's games, CMGE's ROICs have slid over the past couple of years. While we project the company's returns on invested capital to surpass its cost of capital for a few years of our explicit forecast period, the uncertainty around the longevity of its current franchises and whether the company can develop new titles to stay relevant casts doubt on CMGE's long-term returns.

However, we perceive that currently, no game launched by CMGE has demonstrated exceptional monetization capability for the past decade, unlike those launched by Tencent or NetEase. Furthermore, the success of future games to be published under the famous IPs acquired from Beijing Softstar may not be warranted given intensifying competition and uncertainty of the games' quality.

About 70% of CMGE's revenue comes from publishing mobile games developed by other studios. We do not believe CMGE's publishing is a moatworthy business because 1) it does not own the games nor the IPs of which these games are developed upon, 2) CMGE doesn't have the player traffic

Morningstar Analysis

that would allow it to establish strong bargaining power against the games developers, and 3) there is a lack of visibility on whether the developers will stick to CMGE as publisher.

Among the many CMGE games, none has enjoyed continuous success for over five years, with most seeing their grossing fade after just one year. CMGE's monthly active users, standing at 19.1 million in June 2021, is minimal compared with moaty peers like Tencent, suggesting that the firm does not have a strong network of players to sell games into. Lastly, most of the games published by CMGE are RPG, and collectible card games focus more on single-player adventures, so there is minimal network effect even if a game turns into a hit.

Around 30% of CMGE's revenue comes from developing and licensing out in-house IPs, but we also don't think this segment has a moat. CMGE got into game development in 2018, when it acquired a 51% stake in Beijing Softstar and Wenmai Hudong. Following the takeover of Beijing Softstar, CMGE obtained exclusive rights to five franchisees, namely Sword and Fairy, Xuan Yuan Sword, Richman, Stardom, and Empire of Angels. We believe the Sword and Fairy franchise is perhaps the strongest in terms of historical fan followings, but its reputation and player rating have declined, and there is not a lot of certainty on whether CMGE can revive this once great franchise.

After many years of anticipation, Sword and Fairy 7 (already in the development process before CMGE acquisition) was released in October 2021. Despite pulling in decent sales initially, feedback has been mixed--with only 69% of positive reviews. Adding to the fact that this franchise has seen sales decline after 2016, we need to see major signs of changes before considering assigning a moat.

Another reputable IP that came with the acquisition is Xuan Yuan Sword. This was another legacy franchise that achieved great success in the 2000s but has since declined. Therefore, we think that the future of this franchise is also looking grim. As for the Richman series, it is a solid franchisee but with a very niche and steady player base, making material earnings contribution unlikely in the foreseeable future.

Licensing is a straightforward business in the sense that CMGE receives a royalty for licensing its IP for any non-game content (mainly movies and TV shows). While CMGE was able to generate very high returns on these deals in the past (because there are basically no financial costs in licensing out), there is a lack of visibility on how sustainable this revenue stream will be long term. The minimal revenue contribution (approximately 4%) from this segment means any potential moats here will still be irrelevant to the overall company's competitive position.

Moat Trend

We believe that CMGE has a stable moat trend. On the publishing front, CMGE is still holding over 100 IPs (42 licensed IPs and 68 proprietaries), and we think these IPs are sufficient to support the company's competitive positions over the next couple of years. On the development side, the decade-long history behind its owned IPs such as Sword and Fairy and Xuan Yuan Sword means we shouldn't expect any material changes to their popularity over the next five years. From a financial perspective, these two IPs will contribute to a stable share of revenue and profit to CMGE. While the management is keen to further monetize these IPs, there simply isn't strong enough evidence to say whether these efforts will translate to a stronger competitive position for these franchisees.

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Bulls Say/Bears Say

Bulls Say

- CMGE was one of the first game companies to announce a metaverse project based on its legacy Sword and Fairy franchise.
- With most of its games created out of popular IP from film, TV, and manga, CMGE can quickly acquire players with minimal marketing spend.
- Company management is very keen to share latest information with investors.

Bears Say

- The lack of a strong game development track record remains an overhang on the sustainability of CMGE's current business model.
- There is no guarantee that CMGE can always renew its IP licenses at reasonable costs.
- Video game pure-plays like CMGE will remain susceptible to potential changes to the government's attitude toward games.

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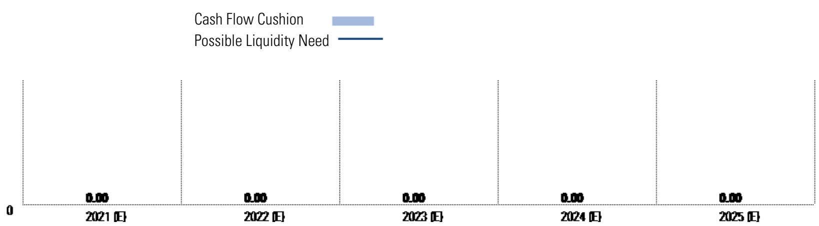
Five Year Adjusted Cash Flow Forecast (CNY Mil)

	2021(E)	2022(E)	2023(E)	2024(E)	2025(E)
Cash and Equivalents (beginning of period)	—	—	—	—	—
Adjusted Available Cash Flow	—	—	—	—	—
Total Cash Available before Debt Service	—	—	—	—	—
Principal Payments	—	—	—	—	—
Interest Payments	—	—	—	—	—
Other Cash Obligations and Commitments	—	—	—	—	—
Total Cash Obligations and Commitments	—	—	—	—	—

Cumulative Annual Cash Flow Cushion



Adjusted Cash Flow Summary

	CNY Millions	% of Commitments
Beginning Cash Balance	—	—
Sum of 5-Year Adjusted Free Cash Flow	—	—
Sum of Cash and 5-Year Cash Generation	—	—
Revolver Availability	—	—
Asset Adjusted Borrowings (Repayment)	—	—
Sum of Cash, 5-Year Cash Generation, Revolver and Adjustments	—	—
Sum of 5-Year Cash Commitments	—	—

Financial Strength

CMGE has a strong balance sheet. At the end of December 2020, the company had CNY 800 million in cash and cash equivalents. This compares with only less than CNY 500 million of short-term debt. Given its net cash position and ability to continuously generate positive cash flow, we think the firm should have no problem funding its core business while acquiring small game studios for future expansions. We think CMGE's capital structure is conservative but not uncommon among Chinese Internet firms, given that the company needs to have abundant cash on hand to quickly seize opportunities in the fast-changing Internet industry and give it a leg up on competition. Given the growth potential in the Chinese Internet space, many of these companies under our coverage do not pay dividends. However, CMGE has returned capital to shareholders via dividends and has set annual dividends at 30% of its after-tax net income.

Risk & Uncertainty

Chinese gaming companies have to comply with stringent regulations and procedures. The National Press and Publication Administration, and Ministry of Culture and Tourism is responsible for approving and filing, respectively, all online mobile games developed by PRC game developers. Failed attempts to obtain or maintain such approvals could lead to fines and penalties. The Publication Administrative Department of the local government and the State Administration of Press, Publication, Radio, Film and Television are responsible for approving an online game before its launch. A failure to comply could lead to the closure of the game, criminal liabilities and so on. Regulation risks are high in the China Internet space. For example, in 2018, gaming license approval in China was suspended as a result of restructuring of government departments. In addition, the government is cracking down on gaming among underage gamers. New and stricter regulations in gaming can put pressure on gaming revenue.

We have also examined ESG risks for CMGE while considering the uncertainty rating. In our opinion, the biggest risk lies in how the Chinese society and its government will view online games. If the government and society increasingly view online games are nothing but another addictive product, companies like CMGE will face more backlashes. This can be seen in anti-addiction measures introduced by the Chinese government in August 2021. Under this rule, Chinese children under the age of 18 can now only play online games for one hour a day and only on Friday, Saturday, Sunday, and holidays. While the chance might be remote, the government can extend anti-addiction measures to adults. There are other couple potential ESG risk areas to monitor (such as human capital and data privacy) but we do not see any material issues emerging at this moment.

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Management & Ownership

Management Activity

Name	Position	Shares Held	Report Date*	InsiderActivity
NA	NA	NA	NA	NA

*Represents the date on which the owner's name, position, and common shares held were reported by the holder or issuer.

Fund Ownership

Top Owners	% of Shares Held	% of Fund Assets	Change (k)	Portfolio Date
China Southern HK Growth QDII	0.85	2.25	23,486	31 Dec 2021
Vanguard Emerging Markets Stock Idx Fund	0.70	0.01	—	31 Dec 2021
Vanguard Total Intl Stock Idx Fund	0.65	0.00	—	31 Dec 2021
iShares Core MSCI Emerging Markets ETF	0.54	0.01	—	31 Dec 2021
DNB Fund - Asian Mid Cap	0.39	2.44	1,210	31 Dec 2021
Concentrated Holders				
Affin Hwang Select Asia (ex Jpn) Qtm	0.21	4.31	-4,786	31 Dec 2021
Hong Leong Asia-Pacific Dividend Fd	0.10	3.49	2,850	31 Dec 2021
DNB Fund - Asian Mid Cap	0.39	2.44	1,210	31 Dec 2021
China Southern HK Growth QDII	0.85	2.25	23,486	31 Dec 2021
CMF SHS Tech Creative Sel Them Alloc	0.02	2.08	500	31 Dec 2021

Institutional Transactions

Top 5 Buyers	% of Shares Held	% of Fund Assets	Shares Bought/ Sold (k)	Portfolio Date
China Southern Fund Mgmt Co.,Ltd	0.94	2.55	25,986	31 Dec 2021
China Asset Mgmt Co.,Ltd	0.31	0.30	8,660	31 Dec 2021
Hong Leong Asset Mngt Bhd	0.10	3.49	2,850	31 Dec 2021
China Merchants Fund Mgmt Co.,Ltd	0.09	3.94	2,500	31 Dec 2021
ZHONGGENG FUND MANAGEMENT CO,LTD	0.05	0.14	1,442	31 Dec 2021
Top 5 Sellers				
Fidelity Management & Research Company LLC	—	—	-26,782	31 Dec 2021
Invesco Great Wall Fund Mgmt Co. Ltd	—	—	-10,140	31 Dec 2021
GF Fund Mgmt Co.,Ltd	—	—	-8,532	31 Dec 2021
Fullgoal Fund Mgmt Co.,Ltd	—	—	-8,450	31 Dec 2021
Nordea Investment Management AB	—	—	-7,176	31 Dec 2021

Capital Allocation 03 Jan 2022

We assign CMGE a Standard capital allocation rating. We view the firm's balance sheet as sound. Through multiple equity issuances , the firm has established a strong cash position with no long-term debt. The firm generated free cash flow over the past five years and is expected to continue doing so over the foreseeable future. Given the cash position and the cash flow generation, we believe CMGE can issue a large amount of debt to fund potential acquisitions of small independent game studios.

We believe that the business will remain active in investing in game studios while recruiting its own research and development talents. We expect that most future acquisitions will be on the smaller to medium end of the spectrum as the firm gradually expands its mobile game development capabilities. But given the firm's limited acquisition track record, we remain neutral on whether these investments will generate economic value for shareholders.

CMGE also pays 30% of its net profit as dividends. Barring major acquisitions, we expect the company to maintain this dividend policy over the near term before gradually increasing payout ratio as the business matures.

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Morningstar Analyst Forecasts

Financial Summary and Forecasts

Fiscal Year Ends in December

Growth (% YoY)	3-Year Hist. CAGR	2018	2019	2020	*Forecast* 2021	2022	5-Year Proj. CAGR
Revenue	*55.7*	57.6	90.2	25.8	*30.9*	*3.9*	*8.0*
EBIT	*62.2*	133.2	18.7	54.3	*53.7*	*-3.5*	*8.6*
EBITDA	*40.9*	39.3	2.5	95.9	*39.5*	*-9.7*	*12.9*
Net Income	*44.9*	26.6	82.1	32.1	*25.7*	*-15.6*	*1.8*
Diluted EPS	*32.7*	26.6	73.5	6.5	*17.4*	*-15.6*	*0.4*
Earnings Before Interest, after Tax	*59.2*	66.0	132.3	4.6	*-4.4*	*38.7*	*15.0*
Free Cash Flow	*41.6*	-84.1	-2,975.6	-162.2	*58.0*	*5.7*	*18.4*

Profitability	3-Year Hist. Avg	2018	2019	2020	2021	2022	5-Year Proj. Avg
Operating Margin %	*13.0*	16.4	10.2	12.5	*14.7*	*13.7*	*13.6*
EBITDA Margin %	*20.7*	26.1	14.0	21.9	*23.3*	*20.2*	*23.7*
Net Margin %	*20.8*	21.0	20.1	21.1	*20.3*	*16.5*	*16.9*
Free Cash Flow Margin %	*-2.6*	1.2	-17.7	8.7	*10.6*	*10.7*	*11.1*
ROIC %	*-195.7*	-685.6	50.7	47.7	*70.0*	*75.8*	*79.1*
Adjusted ROIC %	*29.0*	44.0	17.7	25.5	*33.6*	*36.3*	*40.1*
Return on Assets %	*11.1*	15.1	6.0	12.2	*14.8*	*12.1*	*11.8*
Return on Equity %	*16.5*	23.4	9.3	16.9	*18.4*	*13.8*	*13.7*

Leverage	3-Year Hist. Avg	2018	2019	2020	2021	2022	5-Year Proj. Avg
Debt/Capital	*0.08*	0.03	0.11	0.09	*0.08*	*0.07*	*0.07*
Total Debt/EBITDA	*0.57*	0.12	1.04	0.54	*0.39*	*0.43*	*0.36*
EBITDA/Interest Expense	*31.12*	41.36	28.29	23.70	*32.72*	*29.55*	*35.56*

Valuation Summary and Forecasts

	2019	2020	2021(E)	2022(E)
Price/Fair Value	—	0.59	—	—
Price/Earnings	8.7	6.8	*6.3*	*7.4*
EV/EBITDA	15.3	7.1	*5.5*	*6.1*
EV/EBIT	21.0	12.5	*8.7*	*9.0*
Free Cash Flow Yield %	—	—	—	—
Dividend Yield %	1.1	3.5	*4.4*	*3.6*

Key Valuation Drivers

Cost of Equity %	10.0
Pre-Tax Cost of Debt %	5.5
Weighted Average Cost of Capital %	10.0
Long-Run Tax Rate %	25.0
Stage II EBI Growth Rate %	3.0
Stage II Investment Rate %	44.1
Perpetuity Year	10

Additional estimates and scenarios available for download at http://select.morningstar.com.

Discounted Cash Flow Valuation

	CNY Mil	Firm Value (%)	Per Share Value
Present Value Stage I	2,213	20.6	0.88
Present Value Stage II	2,020	18.8	0.80
Present Value Stage III	6,502	60.6	2.59
Total Firm Value	**10,735**	**100.0**	**4.28**
Cash and Equivalents	1,594	—	0.64
Debt	-451	—	-0.18
Preferred Stock	—	—	—
Other Adjustments	1,539	—	0.61
Equity Value	**13,417**	**—**	**5.35**
Projected Diluted Shares	2,510		
Fair Value per Share (HKD)	**7.00**		

The data in the table above represent base-case forecasts in the company's reporting currency as of the beginning of the current year. Our fair value estimate may differ from the equity value per share shown above due to our time value of money adjustment and in cases where probability-weighted scenario analysis is performed.

CMGE Technology Group Ltd 00302 (XHKG) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Capital Allocation	Industry Group	ESG Risk Rating Assessment[1]
3.09 HKD	7.00 HKD	High	None	Stable	Standard	Interactive Media	3 of 5 globes

Morningstar Analyst Forecasts

Income Statement (CNY Mil)
Fiscal Year Ends in December

	2018	2019	2020	*Forecast* 2021	*Forecast* 2022
Revenue	**1,596**	**3,036**	**3,820**	***5,001***	***5,197***
Cost of Goods Sold	1,064	1,953	2,597	*3,399*	*3,546*
Gross Profit	**532**	**1,083**	**1,223**	***1,601***	***1,651***
Selling, General & Administrative Expenses	271	773	745	*866*	*942*
Research & Development	—	—	—	—	—
Other Operating Expense (Income)	—	—	—	—	—
Depreciation & Amortization (if reported separately)	—	—	—	—	—
Operating Income (ex charges)	**261**	**310**	**478**	***735***	***709***
Restructuring & Other Cash Charges	20	22	-22	—	—
Impairment Charges (if reported separately)	—	—	—	—	—
Other Non-Cash (Income)/Charges	-124	-65	-231	*-267*	*-87*
Operating Income (incl charges)	**365**	**353**	**731**	***1,003***	***797***
Interest Expense	10	15	35	*36*	*36*
Interest Income	1	6	21	*17*	*25*
Pre-Tax Income	**356**	**344**	**717**	***984***	***786***
Income Tax Expense	40	100	27	*98*	*39*
Other After-Tax Cash Gains (Losses)	—	—	—	—	—
Other After-Tax Non-Cash Gains (Losses)	—	—	—	—	—
(Minority Interest)	-5	5	11	*37*	*31*
(Preferred Dividends)	—	—	—	—	—
Net Income	**311**	**248**	**701**	***922***	***778***
Weighted Average Diluted Shares Outstanding	1,800	1,889	2,344	*2,510*	*2,510*
Diluted Earnings Per Share	**0.17**	**0.13**	**0.30**	***0.37***	***0.31***
Adjusted Net Income	335	611	807	*1,015*	*856*
Diluted Earnings Per Share (Adjusted)	**0.19**	**0.32**	**0.34**	***0.40***	***0.34***
Dividends Per Common Share	—	0.03	0.08	*0.11*	*0.09*
EBITDA	**416**	**426**	**835**	***1,165***	***1,052***
Adjusted EBITDA	**416**	**426**	**835**	***1,165***	***1,052***

CMGE Technology Group Ltd 00302 (XHKG) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Capital Allocation	Industry Group	ESG Risk Rating Assessment[1]
3.09 HKD	7.00 HKD	High	None	Stable	Standard	Interactive Media	

Morningstar Analyst Forecasts

Balance Sheet (CNY Mil)

Fiscal Year Ends in December	2018	2019	2020	*Forecast 2021*	*2022*
Cash and Equivalents	144	771	795	*1,731*	*2,045*
Investments	—	406	799	—	—
Accounts Receivable	472	790	883	*1,155*	*1,201*
Inventory	—	—	—	—	—
Deferred Tax Assets (Current)	—	—	—	—	—
Other Short Term Assets	343	613	533	—	—
Current Assets	**960**	**2,581**	**3,010**	***2,887***	***3,246***
Net Property Plant, and Equipment	27	39	34	*37*	*34*
Goodwill	1,119	1,119	1,108	*1,108*	*1,108*
Other Intangibles	118	155	155	*209*	*325*
Deferred Tax Assets (Long-Term)	11	8	49	—	—
Other Long-Term Operating Assets	68	454	331	—	—
Long-Term Non-Operating Assets	711	853	1,645	*1,912*	*2,000*
Total Assets	**3,013**	**5,208**	**6,331**	***6,153***	***6,713***
Accounts Payable	111	170	269	*352*	*367*
Short-Term Debt	51	442	451	*451*	*451*
Deferred Tax Liabilities (Current)	41	117	138	—	—
Other Short-Term Liabilities	551	555	606	—	—
Current Liabilities	**755**	**1,284**	**1,464**	***803***	***818***
Long-Term Debt	—	—	—	—	—
Deferred Tax Liabilities (Long-Term)	30	32	53	—	—
Other Long-Term Operating Liabilities	365	180	13	—	—
Long-Term Non-Operating Liabilities	—	—	—	—	—
Total Liabilities	**1,150**	**1,497**	**1,530**	***803***	***818***
Preferred Stock	—	—	—	—	—
Common Stock	—	2	2	*2*	*2*
Additional Paid-in Capital	—	—	—	—	—
Retained Earnings (Deficit)	1,750	3,602	4,703	*5,348*	*5,893*
(Treasury Stock)	—	—	—	—	—
Other Equity	—	—	—	—	—
Shareholder's Equity	**1,750**	**3,604**	**4,704**	***5,350***	***5,895***
Minority Interest	113	108	96	—	—
Total Equity	**1,863**	**3,712**	**4,801**	***5,350***	***5,895***

CMGE Technology Group Ltd 00302 (XHKG) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Capital Allocation	Industry Group	ESG Risk Rating Assessment[1]
3.09 HKD	7.00 HKD	High	None	Stable	Standard	Interactive Media	

Morningstar Analyst Forecasts

Cash Flow (CNY Mil)

Fiscal Year Ends in December	2018	2019	2020	*Forecast 2021*	*2022*
Net Income	316	243	690	*885*	*747*
Depreciation	18	22	25	*21*	*24*
Amortization	33	52	79	*141*	*231*
Stock-Based Compensation	—	—	—	—	—
Impairment of Goodwill	—	—	—	—	—
Impairment of Other Intangibles	—	—	—	—	—
Deferred Taxes	—	—	—	*-141*	—
Other Non-Cash Adjustments	-62	366	-91	*-267*	*-87*
(Increase) Decrease in Accounts Receivable	-176	-332	-145	*-273*	*-45*
(Increase) Decrease in Inventory	—	—	—	—	—
Change in Other Short-Term Assets	-115	-134	-130	*533*	—
Increase (Decrease) in Accounts Payable	10	59	109	*83*	*15*
Change in Other Short-Term Liabilities	36	35	86	*-606*	—
Cash From Operations	**60**	**310**	**624**	***376***	***884***
(Capital Expenditures)	-4	-34	-19	*-25*	*-21*
Net (Acquisitions), Asset Sales, and Disposals	-43	-241	-121	*-196*	*-347*
Net Sales (Purchases) of Investments	-385	-460	-571	*799*	—
Other Investing Cash Flows	3	-584	-174	*318*	—
Cash From Investing	**-428**	**-1,319**	**-885**	***896***	***-368***
Common Stock Issuance (or Repurchase)	263	1,273	449	—	—
Common Stock (Dividends)	-21	-29	-75	*-277*	*-233*
Short-Term Debt Issuance (or Retirement)	40	391	9	—	—
Long-Term Debt Issuance (or Retirement)	—	—	—	—	—
Other Financing Cash Flows	-17	0	-54	*-59*	*31*
Cash From Financing	**265**	**1,635**	**330**	***-336***	***-202***
Exchange Rates, Discontinued Ops, etc. (net)	3	1	-45	—	—
Net Change in Cash	**-101**	**627**	**24**	***937***	***314***

CMGE Technology Group Ltd 00302 (XHKG) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Capital Allocation	Industry Group	ESG Risk Rating Assessment[1]
3.09 HKD	7.00 HKD	High	None	Stable	Standard	Interactive Media	

Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

Valuation Analysis

		Price/Earnings			EV/EBITDA			Price/Free Cash Flow			Price/Book			Price/Sales		
Company/Ticker	Price/Fair Value	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*
Tencent Holdings Ltd 00700 HKG	0.58	37.5	*30.8*	*26.2*	27.0	*21.5*	*23.3*	28.6	*28.9*	*30.9*	—	—	—	9.5	*6.3*	*5.3*
Average		37.5	*30.8*	*26.2*	27.0	*21.5*	*23.3*	28.6	*28.9*	*30.9*	—	—	—	9.5	*6.3*	*5.3*
CMGE Technology Group Ltd 00302	**0.44**	**6.8**	***6.3***	***7.4***	**7.1**	***5.5***	***6.1***	—	—	—	—	—	—	**1.5**	***1.4***	***1.3***

Returns Analysis

		ROIC %			Adjusted ROIC %			Return on Equity %			Return on Assets %			Dividend Yield %		
Company/Ticker	Last Historical Year Total Assets (Mil)	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*
Tencent Holdings Ltd 00700 HKG	— CNY	80.0	*64.0*	*47.6*	80.0	*64.0*	*47.6*	28.1	*19.4*	*18.6*	13.9	*10.6*	*10.8*	0.3	*0.4*	*0.6*
Average		80.0	*64.0*	*47.6*	80.0	*64.0*	*47.6*	28.1	*19.4*	*18.6*	13.9	*10.6*	*10.8*	0.3	*0.4*	*0.6*
CMGE Technology Group Ltd 00302	— CNY	**47.7**	***70.0***	***75.8***	**25.5**	***33.6***	***36.3***	**16.9**	***18.4***	***13.8***	**12.2**	***14.8***	***12.1***	**3.5**	***4.4***	***3.6***

Growth Analysis

		Revenue Growth %			EBIT Growth %			EPS Growth %			Free Cash Flow Growth %			Dividend/Share Growth %		
Company/Ticker	Last Historical Year Revenue (Mil)	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*	2020	*2021(E)*	*2022(E)*
Tencent Holdings Ltd 00700 HKG	482,064 CNY	27.8	*18.2*	*18.0*	29.6	*-1.8*	*4.7*	29.5	*-5.2*	*17.6*	89.0	*-65.1*	*-13.5*	32.4	*18.5*	*35.9*
Average		27.8	*18.2*	*18.0*	29.6	*-1.8*	*4.7*	29.5	*-5.2*	*17.6*	89.0	*-65.1*	*-13.5*	32.4	*18.5*	*35.9*
CMGE Technology Group Ltd 00302	**3,820** CNY	**25.8**	***30.9***	***3.9***	**54.3**	***53.7***	***-3.5***	**6.5**	***17.4***	***-15.6***	**-162.2**	***58.0***	***5.7***	**161.4**	***44.9***	***-15.6***

CMGE Technology Group Ltd 00302 (XHKG) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Capital Allocation	Industry Group	ESG Risk Rating Assessment[1]
3.09 HKD	7.00 HKD	High	None	Stable	Standard	Interactive Media	

Comparable Company Analysis

These companies are chosen by the analyst and the data are shown by nearest calendar year in descending market capitalization order.

Profitability Analysis

Company/Ticker	Last Historical Year Net Income (Mil)	Gross Margin % 2020	2021(E)	2022(E)	EBITDA Margin % 2020	2021(E)	2022(E)	Operating Margin % 2020	2021(E)	2022(E)	Net Margin % 2020	2021(E)	2022(E)	Free Cash Flow Margin % 2020	2021(E)	2022(E)
Tencent Holdings Ltd 00700 HKG	122,742 CNY	46.0	*44.7*	*44.3*	35.5	*29.7*	*23.2*	24.9	*20.7*	*18.4*	25.5	*20.5*	*20.6*	33.2	*21.7*	*17.2*
Average		46.0	*44.7*	*44.3*	35.5	*29.7*	*23.2*	24.9	*20.7*	*18.4*	25.5	*20.5*	*20.6*	33.2	*21.7*	*17.2*
CMGE Technology Group Ltd 00302	**807** CNY	**32.0**	***32.0***	***31.8***	**21.9**	***23.3***	***20.2***	**12.5**	***14.7***	***13.7***	**21.1**	***20.3***	***16.5***	**15.8**	***7.0***	***16.6***

Leverage Analysis

Company/Ticker	Last Historical Year Total Debt (Mil)	Debt/Equity % 2020	2021(E)	2022(E)	Debt/Total Cap % 2020	2021(E)	2022(E)	EBITDA/Interest Exp. 2020	2021(E)	2022(E)	Total Debt/EBITDA 2020	2021(E)	2022(E)	Assets/Equity 2020	2021(E)	2022(E)
Tencent Holdings Ltd 00700 HKG	248,444 CNY	35.3	*29.6*	*25.2*	26.1	*22.9*	*20.1*	21.7	*19.5*	*17.9*	1.5	*1.5*	*1.6*	1.9	*1.8*	*1.7*
Average		35.3	*29.6*	*25.2*	26.1	*22.9*	*20.1*	21.7	*19.5*	*17.9*	1.5	*1.5*	*1.6*	1.9	*1.8*	*1.7*
CMGE Technology Group Ltd 00302	— CNY	**9.6**	***8.4***	***7.7***	**8.8**	***7.8***	***7.1***	**23.7**	***32.7***	***29.5***	**0.5**	***0.4***	***0.4***	**1.3**	***1.2***	***1.1***

Liquidity Analysis

Company/Ticker	Market Cap (Mil)	Cash per Share 2020	2021(E)	2022(E)	Current Ratio 2020	2021(E)	2022(E)	Quick Ratio 2020	2021(E)	2022(E)	Cash/Short-Term Debt 2020	2021(E)	2022(E)	Payout Ratio % 2020	2021(E)	2022(E)
Tencent Holdings Ltd 00700 HKG	4,358,206 HKD	16.10	*23.68*	*29.61*	1.18	*1.39*	*1.47*	1.18	*1.39*	*1.47*	10.91	*16.13*	*20.26*	7.9	*10.0*	*12.0*
Average		16.10	*23.68*	*29.61*	1.18	*1.39*	*1.47*	1.18	*1.39*	*1.47*	10.91	*16.13*	*20.26*	7.9	*10.0*	*12.0*
CMGE Technology Group Ltd 00302	**8,553** HKD	**0.34**	***0.69***	***0.81***	**2.06**	***3.59***	***3.97***	**2.06**	***3.59***	***3.97***	**1.76**	***3.84***	***4.53***	**27.6**	***30.0***	***30.0***

Qualitative Equity Research Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, in-depth competitive advantage analysis, and a variety of other analytical tools to augment this process. We believe this bottom-up, long-term, fundamentally based approach allows our analysts to focus on long-term business drivers, which have the greatest valuation impact, rather than short-term market noise.

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 an uncertainty-adjusted discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk-adjusted discount to their fair values whereas 1-star stocks trade at premiums to their intrinsic worth.

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

1. Economic Moat

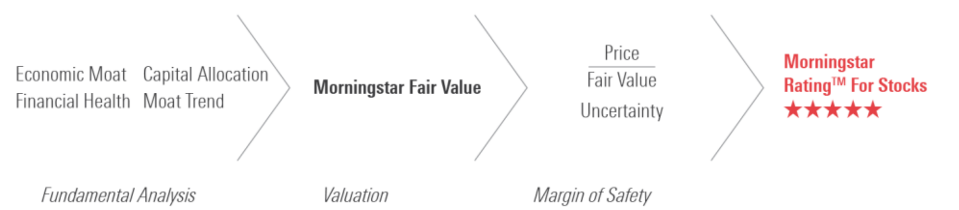
The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period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

To assess the sustainability of excess profits, analysts perform ongoing assessments of the moat trend. A firm's moat trend is positive in cases where we think its sources of competitive advantage are growing stronger; stable where we don't anticipate changes to competitive advantages over the next several years; or negative when we see signs of deterioration.

Morningstar Research Methodology for Valuing Companies



2. Estimated Fair Value

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

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in working-capital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes, or EBI, and the net new investment, or 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, or RONIC, and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until the perpetuity stage is reached. 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 captures a range of likely potential intrinsic values for a company and uses it to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating represents the analysts' ability to bound the estimated value of the shares in a company around the Fair Value Estimate, based on the characteristics of the business underlying the stock, including operating and financial leverage, sales sensitivity to the overall economy, product concentration, pricing power, exposure to material ESG risks, and other company-specific factors.

Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case, and a 25% probability that the company will perform worse than the bear case. The distance between the bull and bear cases is an important indicator of the uncertainty underlying the fair value estimate. In cases where there is less than a 25% probability of an event, but where the event could result in a material decline in value, analysts may adjust the uncertainty rating to reflect the increased risk. Analysts may also make a fair value adjustment to reflect the impact of this event.

Our recommended margin of safety widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the estimated value of the equity, 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 for our qualitative analysis are low, medium, high, very high, and extreme.

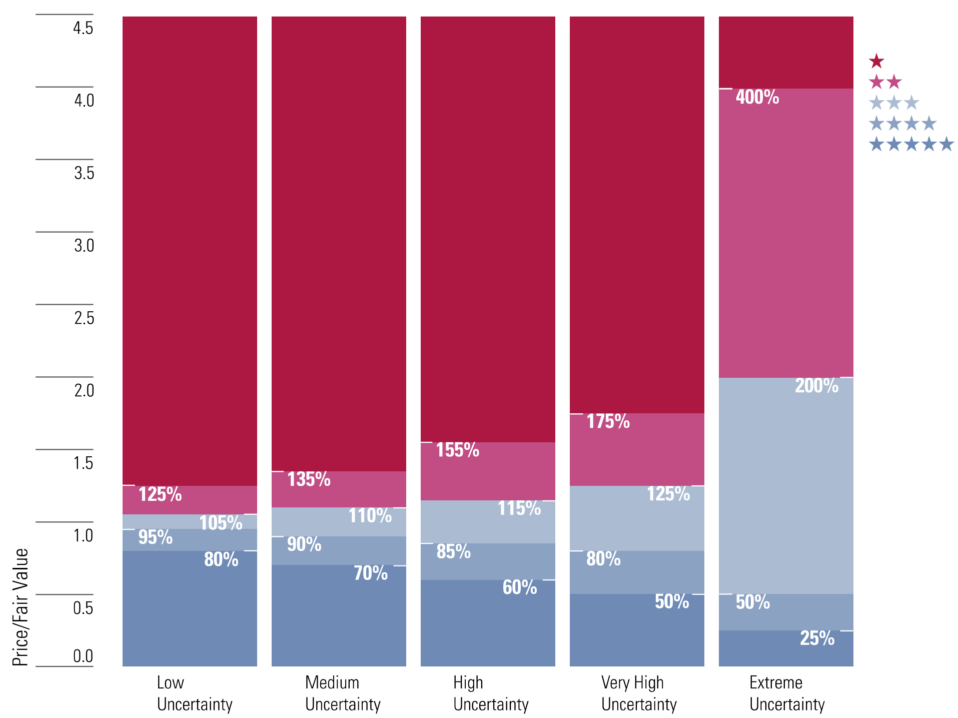
- Low–margin of safety for 5-star rating is a 20% discount and for 1-star rating is 25% premium.
- Medium–margin of safety for 5-star rating is a 30% discount and for 1-star rating is 35% premium.
- High–margin of safety for 5-star rating is a 40% discount and for 1-star rating is 55% premium.
- Very High–margin of safety for 5-star rating is a 50% discount and for 1-star rating is 75% premium.
- Extreme–margin of safety for 5-star rating is a 75% discount and for 1-star rating is 300% premium.

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 Equity Research Star Rating Methodology



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.

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. 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. The market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

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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.

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CMGE Technology Group Ltd 00302 (XHKG) | ★★★★★

Last Price	Fair Value	Uncertainty	Economic Moat™	Moat Trend™	Capital Allocation	Industry Group	ESG Risk Rating Assessment[1]
3.09 HKD	7.00 HKD	High	None	Stable	Standard	Interactive Media	

Price/Fair Value Morningstar data as of Jan 03, 2022

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Company	Ticker	Price	Rating	Valuation & Risks
Please refer to our last published note below for latest valuation and risks.				
Tencent (700 HK): Regulatory changes weigh on 3Q21, still attractive for the long term; BUY				

Source: Morningstar

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