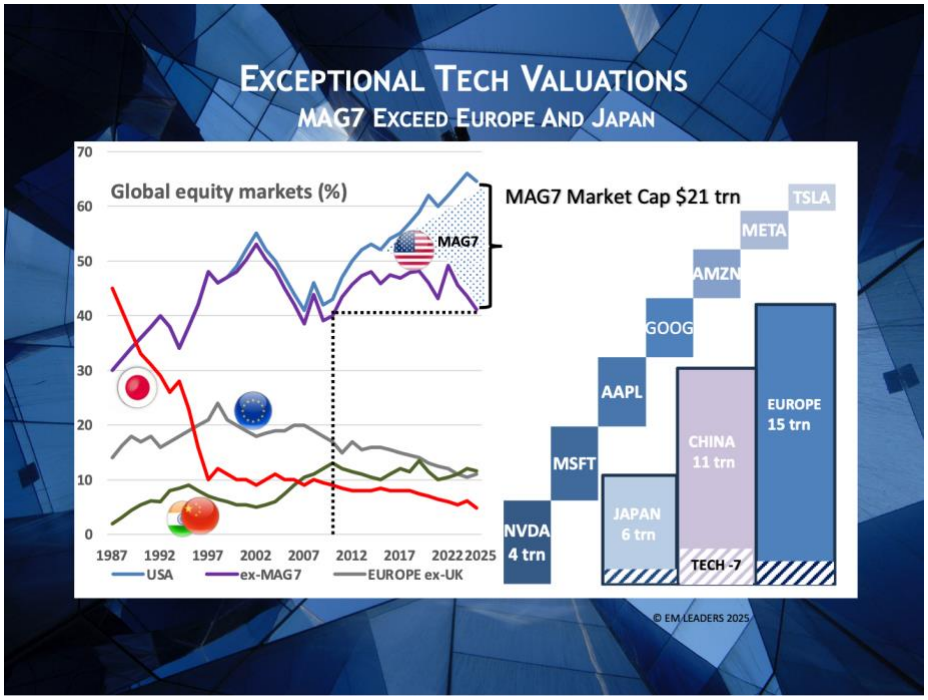


MASSIVE POTENTIAL FOR ASIAN AND EUROPEAN TECHNOLOGY

Q1: How big are $21trn MAG7 valuations? Larger than Europe and Japan combined
Q2: How small are top-7 Europe & China & Japan tech valuations? Similar to Apple
Q3: What explains US exceptionalism? Risk culture, talent, oligopolies & pensions

The market value of the seven largest companies in US equity markets today exceeds $21 trn, more than the size of the European and Japanese equity markets combined. These seven technology giants are Nvidia, Microsoft, Apple, Alphabet, Amazon, Meta, and Tesla have grown their market value ten-fold over the past decade, and account for 34% of the S&P500, more than half its earnings growth, and nearly 70% of US GDP.

This note looks at three questions and its investment implications: How realistic is that US exceptionalism? Which have been the driving factors for the Mag7 dominance? And are there potential parallels for Asian and European technology firms?

<A> Relative global equity market shares over the past 40 years reveal a powerful story: As illustrated on the left side of the chart, **Japanese** shares of global equity markets declined from nearly 50% in the 1980s to just 5% today, a stunning decline, especially during the 1980s and 1990s. Real annual Japanese equity market returns over 30 years were barely 0.4% as compared to 5.4% in ACWI global equity markets. Among the top 100 global technology firms, only seven are in Japan. The combined market values of Sony, SoftBank, Nintendo, Hitachi, Tokyo Electron, Keyence, and Advantech (Japan7) are $800 bn or one third of Amazon, although their P/E multiples are similar. This mirrors economic stagnation and declining per-capita incomes from $50K to $32K. Japan's real effective exchange rate has declined by 50% over the past 30 years. However, corporate reforms, attractive valuations, and renewed growth could signal a long-awaited turnaround in Japanese fortunes.

European (ex-UK) equity market shares never recovered after the 2008 financial crisis and declined from 20% to currently 11% while real incomes stagnated and the EU GDP increased by only 25% to $20 trn whereas US GDP doubled to $30 trn. The combined market values of ASML, SAP, Siemens, Schneider, Spotify, TEL, and Spotify (Europe7) are $1.3 trn combined, or one half of Amazon, and overall EU equity market long-term returns have been one half of US equities. UK equity markets performed even worse under precarious Brexit conditions, and market valuations stagnated for over ten years. Only ten of the world's largest 100 technology companies are in Europe, where over 50% of stocks are financials, industrials, and utilities (vs. 25% in the US).

Emerging markets have been grossly under-represented in equity capital markets, although their share has doubled to 12% (larger than Europe, and twice of Japan) over the past 20 years. One major factor has been the opening of Chinese markets, which currently represent one third of emerging markets and have a large and rising share of technology firms. Tencent, Alibaba, PDD, Xiaomi, Meituan, NetEase, and JD (China7) account for a combined market cap of $1.8 trn. However, their valuations are at least 50% cheaper than peers in developed markets, partly because of governance issues. On the other hand, Indian equity valuations are similar to US markets, and 25-year Nifty total dollar returns have been higher than for the S&P500, although India today accounts for less than 2% of ACWI equity capital markets.

That brings us to **US equity markets**, which can be divided into the MAG7 and the S&P493, with the latter stagnating at 40% since 2008, whereas MAG7 valuations have risen to 24% of global equity markets. These MAG7 equities recorded annual growth rates of 34% over the past decade, as compared to 15% for the overall S&P500, of which 5% came from multiples expansion. Today's valuation of the overall S&P500 index measured by the CAPE ratio exceeds 40 (99^{th} percentile) as compared to historic means of 17, with much higher ratios for MAG7 (TSLA posts a P/E above 200). Among the largest 100 technology firms, 60 are in the US, with 48% of aggregate employment and 82% of total market values, exceeding $30 trn (total of Europe + Japan + China).

Measures of world equity markets can differ, as smaller and private equity firms can be included. World Federation of Exchanges data reveal the US share around 50% of broader global markets, which would be higher when private equity is included. There are about 700 PE companies in the US, including OpenAi and SpaceX, with valuations exceeding $2.5 trn, as compared to a total of $700 bn in China and $300 bn in Europe.

Measures of household wealth also differ (age, income, median/average) but typically include equities (US 37%), real estate (US 30%), pensions (US 20%), and deposits (US 13%). Europe typically has higher real estate wealth and Asia higher deposits. Overall, the share of global wealth is 35% for the US, 20% for China, and 20% for Europe. The largest annual growth rates are in the US and China, with Europe having less growth. Inequalities are largest in Brazil, India, GCC, and the US, and lower across Europe, Korea, and Japan. Equity markets have been the largest driver of household wealth, and today over 62% of Americans and 33% of European are invested in equities. US household wealth in equities is estimated at $52 trn (170% of GDP) out of total wealth of $170 trn, whereas out of Chinese household wealth of $23 trn only about $5 trn (25% of GDP) is currently invested into equities.

<B> The **US equity culture** appears to be the driving factor of equity investments in general and of MAG7 valuations in particular, which have grown from start-ups into a sophisticated private-equity infrastructure. **Global talent** is critical for this equity culture as four of the MAG7 are led by immigrants (Nvidia, Microsoft, Alphabet, Tesla) and 13 million workers are employed in the US PE industry, of which 24% are led by immigrants, many of whom completed advanced degrees at leading US universities.

The US tech industry has leveraged its pricing power by acquiring smaller competitors and cross-investing deals that have fostered **oligopolistic market structures**. Google owns 92% of the search business, Nvidia produces 92% of data center GPUs, Facebook controls 70% of social networks, Microsoft runs 87% of PC operating systems, Apple (iOS) and Google (Android) dominate smartphone systems, Amazon controls 40% of e-commerce, and Tesla used to control 80% of EV sales in the US (now still 45%). All of the MAG7 are facing significant anti-trust litigation but have maintained their power with profit margins above 25% (twice the S&P500 average) and reaching 55% at Nvidia.

Oligopolistic markets, global talent, and the US equity culture are the three main factors that have propelled the exceptionalism in US equity markets. The US equity culture has been strengthened by **pension reforms** towards defined contributions and 401K plans, which are mostly invested into US equities with a strong "home bias". Today, US pension assets have reached $38 trn, as compared to $8 trn for Europe. Financial engineering and over $1 trn in annual US stock repurchases also contribute.

Contrary to popular belief, at least a dozen factors appear to be less relevant: smaller governments, supportive investment policies, lighter regulation, and stable macro-economics have all had positive but secondary contributions to markets. For example, GDP growth in China over the past decade was 6% as compared to 3% in the US, although its equity markets floundered. Labor productivity in Europe was higher than in the US, corporate earnings in Japan were higher than in the US, FDI inflows in the GCC were three times of the US, yet US equity markets dominated all of them. Massive money supply in Japan did not turn around equity markets, zero capital gains taxes in various tax havens and massive R&D subsidies in Israel did not spur capital markets. High real interest rates and most liquid derivatives and high trade surpluses (Brazil), policy devaluations (Argentina), younger populations (Central America), and small governments (Costa Rica) have not been silver bullets for equity markets either.

<C> What are the **investment implications** for the MAG7, Europe, Japan, and EM?

The bullish case for US and MAG7 equities rests on the AI revolution that could bring large productivity gains and even higher earnings as oligopolies could thrive under the umbrella of US national security, dominating Asia and Europe. MAG7 firms continue to invest into their own ecosystem, such as Nvidia investing $100 bn into OpenAI data centers, which in turn commits spending of $100 bn on Nvidia chips.

The bearish case draws parallels to similar "circular investment" episodes during the dot-com bubble that deflated in 2000 from very similar CAPE ratios of 40, which had been unprecedented. At that point, the top-seven stock concentration was below 20% of the index, as compared to 34% today, which implies much larger downside risk. And alternatives in Asian and European markets are now trading below average valuations.

A first diversification strategy would be to look at growth and technology companies beyond MAG7, as outlined in the previous note. In e-Commerce, Shopify generated twice of the Amazon returns over the past decade. In the bio-tech market, Eli Lilly delivered twice the returns as compared to its main competitor Novo Nordisk, but also exceeded ten-year returns of Apple, Alphabet, and Meta. In the aircraft and space segment, TransDigm returned twice the return of its larger peer Lockheed Martin. And in the financial aggregator space, KKR invested heavily into alternative structures in technology and outperformed many MAG7 companies over the past decade.

The second strategy would be to look at leading companies in Europe and Asia that produce similar earnings as their US peers at significant discounts. When the MAG7 are excluded, US market earnings are very similar to European market earnings, but multiples are at least 30% cheaper in Europe (EXSA P/E forward of 15 versus 21). Financials in Europe and Asia appear exceptionally cheap and international dividend funds (EFAS) produced the same five-year returns as the S&P500 with 30% lower P/E. When looking through the cycle at CAPE ratios, they currently stand at 20 in Europe, 23 in Japan, and 40 in the US (back in 2015 they were both 23 in the US and in Japan).

The third strategy would be to look at attractive companies in emerging markets that are known as technology leaders. For example, Mercado Libre is an e-commerce platform, now listed on Nasdaq, with ten-year returns of 39% (higher than six of the MAG7), outperforming Amazon. BYD is the Chinese leader for e-cars with a PEG ratio below one, as compared to four for Tesla, and higher returns over five years. TSMC is well known as leading semiconductor foundry with a $1.4 trn market cap (same size as Tesla) and ten-year returns above 30% (better than most MAG7) at lower multiples. SK Hynix of Korea is one of the major chip vendors to Microsoft and Apple, with net profit margins of 40%, yet trading at a single-digit P/E. The large-cap EM stocks in the MSCI EM50 index currently trade at an average P/E of 14, at large discounts to the US.

A fourth strategy would be to focus on the largest Taiwanese small-cap technology companies (Taiwan7): Chroma Ate, King Yuan, Gold Circuit, Aspeed, Phison, Tripod, MPI (market caps below $8 bn). Their 26% earnings growth rates are similar to those of the MAG7, but valuations are at 50% discounts. For each analyst coving the Taiwan7 there are 20 analysts covering the MAG7, which explains some market inefficiencies and lower multiples. The correlation between these two groups is high, as demand for TSM chips exceeds supply, hence smaller Taiwanese technology firms benefit as well.

In summary, the exceptional valuations of the MAG7 are unlikely to persist, even as the AI boom continues. Investors can diversify into other technology areas that would benefit from applied AI, such as biotech firms and financial aggregators. However, the US outperformance over Europe and Japan appears very extended after 15 years, especially as the S&P500 CAPE has breached 40. Smaller companies implementing AI applications in Europe and Japan are attractive and priced at 30% discounts to the US. Looking at emerging markets, leading large-cap firms are very competitive, as well as fast-growing smaller-cap firms, both trading at 50% discounts to the US. Ongoing structural reforms across Europe and Asia could yield additional benefits and also boost their currencies. These diversification strategies can substantially mitigate risk.

http://www.emleaders.com/pdf/eml-technology.pdf

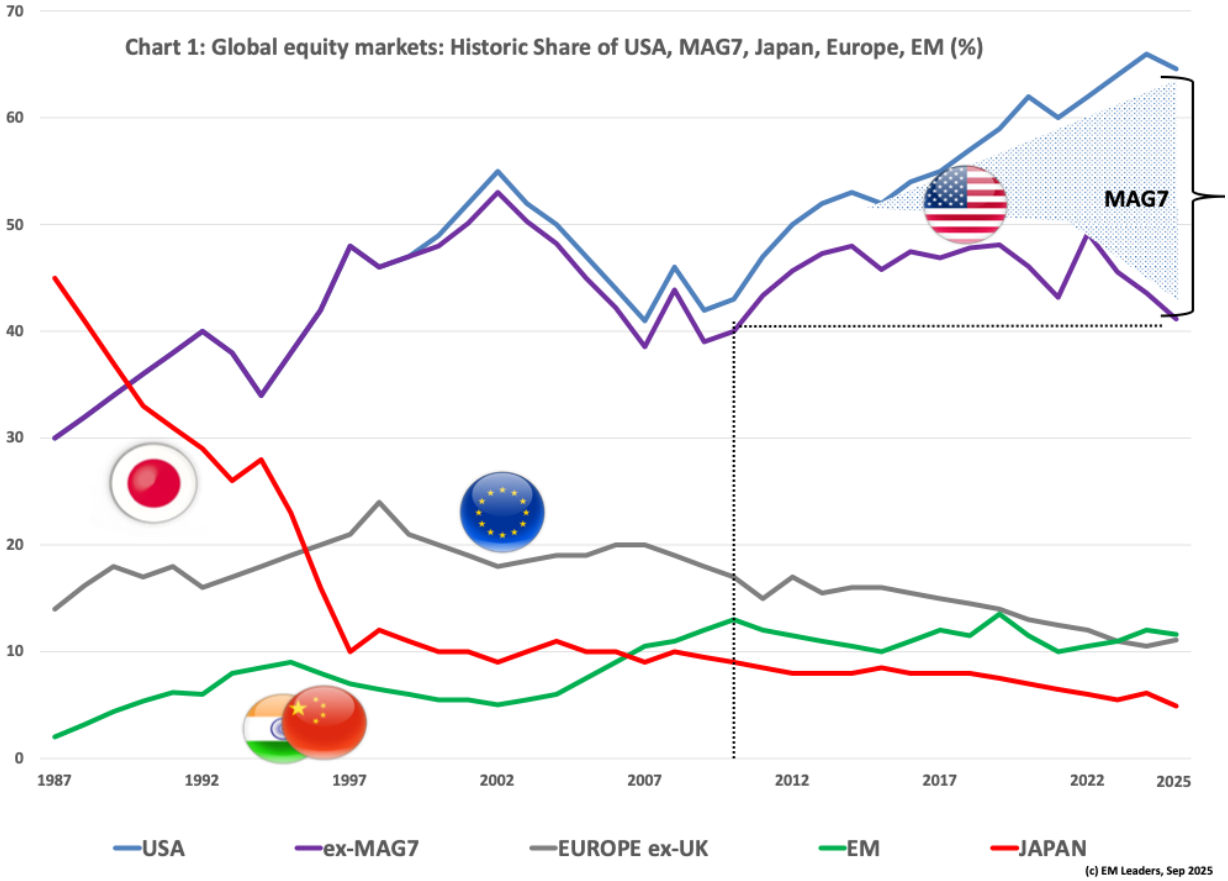
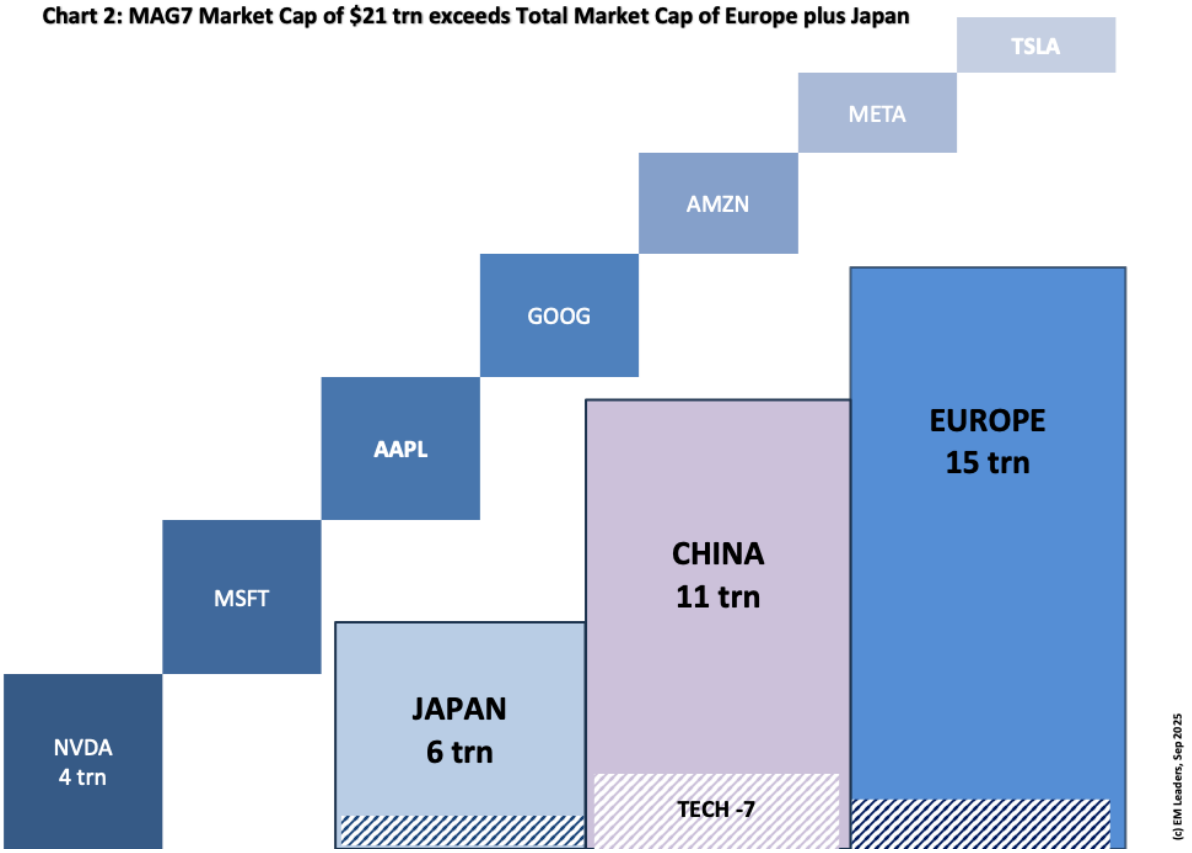


Chart 2: MAG7 Market Cap of $21 trn exceeds Total Market Cap of Europe plus Japan



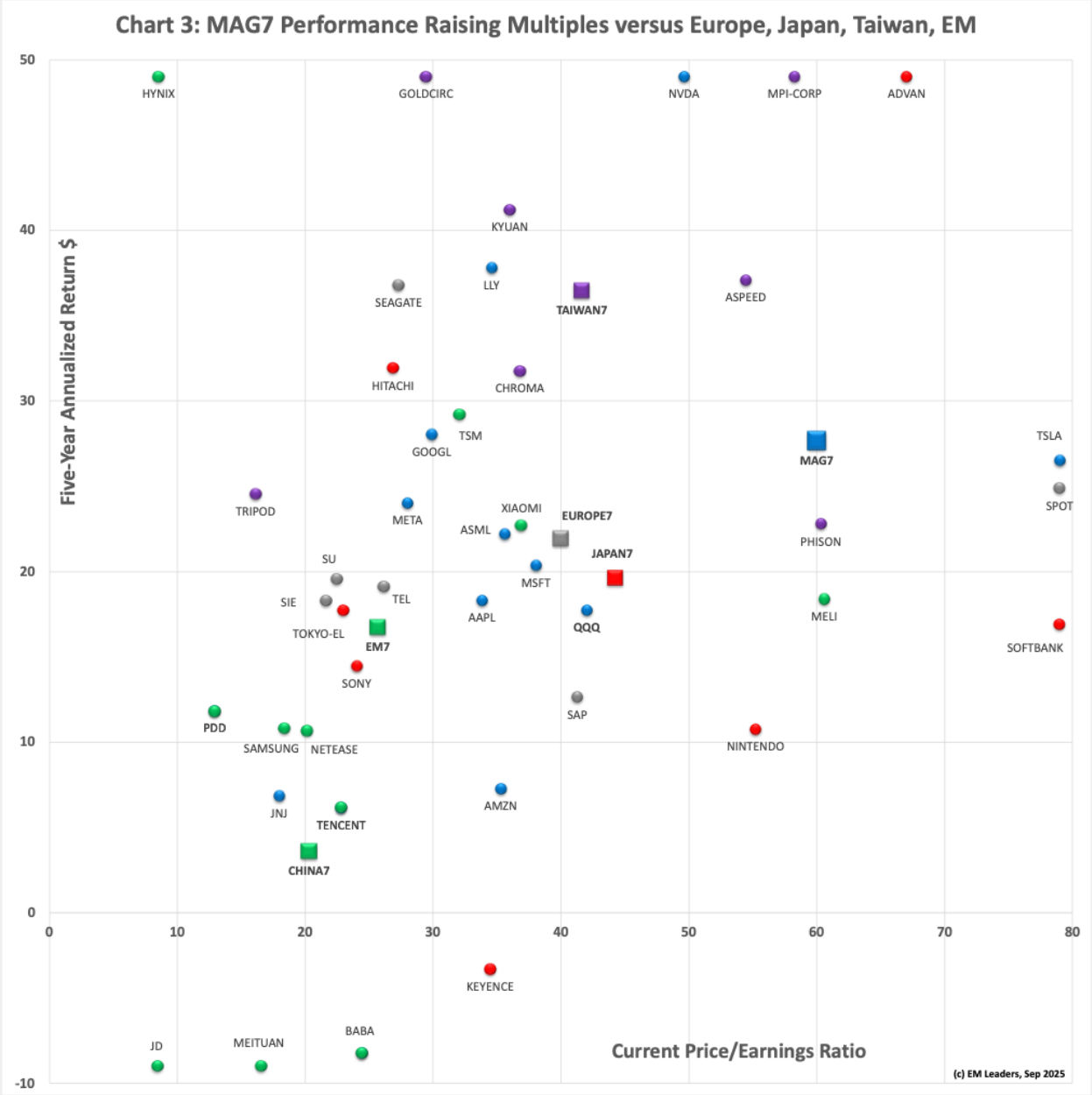


Chart 3: MAG7 Performance Raising Multiples versus Europe, Japan, Taiwan, EM
Five-Year Annualized Return $
Current Price/Earnings Ratio
(c) EM Leaders, Sep 2025
HYNIX
GOLDCIRC
NVDA
MPI-CORP
ADVAN
KYUAN
LLY
SEAGATE
TAIWAN7
ASPEED
HITACHI
CHROMA
TSM
GOOGL
MAG7
TSLA
SPOT
TRIPOD
META
XIAOMI
EUROPE7
ASML
PHISON
SU
JAPAN7
MSFT
SIE
TEL
AAPL
QQQ
MELI
TOKYO-EL
EM7
SOFTBANK
SONY
SAP
PDD
SAMSUNG
NETEASE
NINTENDO
JNJ
AMZN
TENCENT
CHINA7
KEYENCE
JD
MEITUAN
BABA
50
40
30
20
10
0
-10
0
10
20
30
40
50
60
70
80