

RBC Global Asset Management

The future of emerging markets: Is there a technology bubble?

The RBC Emerging Markets Equity team



While it took Instagram two years to reach 100 million users, and Fortnite 18 months, Zoom reached that milestone in just 90 days. Technology has been a key investment area with strong structural tailwinds for some time, and the effects of COVID-19 have accelerated this trend. To put this in context, data is being created at an unprecedented rate, with an increase of 50% from pre-COVID-19 levels. Moreover, two of the largest technology companies in the U.S. have a combined market capitalisation of over US\$2 trillion, which is the total of all the companies on the STOXX 50 European Equity Index (as of May 2020). These developments, coupled with the strong performance of technology stocks globally so far this year, have prompted some to ask whether we are on the verge of another asset bubble?

In order to address this question, it is important to acknowledge that not all technology stocks are created equal. Regional exposures and sub-industries (software, hardware, E-commerce, internet etc.) offer vast differences in terms of performance, valuations, business models and profitability. It is also important to differentiate between cyclical and structural factors. In the short term, cyclical tops and bottoms are very difficult to time, however taking a longer term view, we believe the forces underpinning many areas of the technology sector have never been stronger.

We do not see compelling evidence of a technology bubble, at least not in emerging markets (EM). On the contrary, we have identified many areas within the EM technology sector that offer attractive valuations and long-term growth opportunities. In this paper we outline several important factors which reinforce our view:

1. Equity market analysis – recent performance and valuations

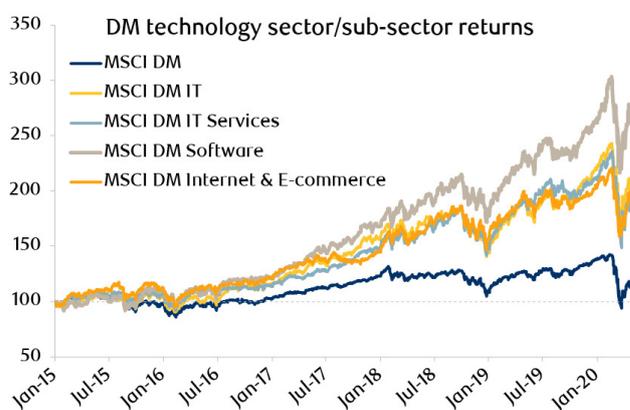
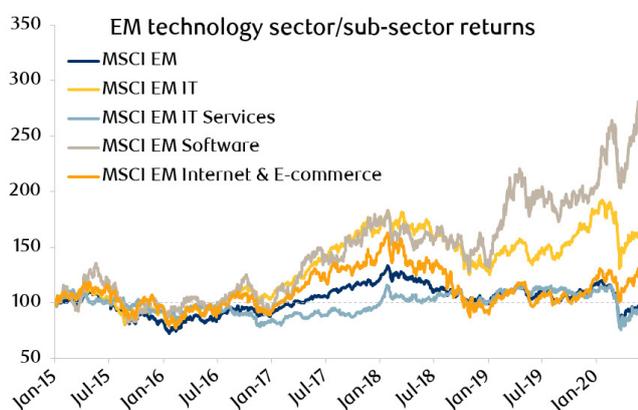
Outperformance of technology stocks in developed markets (DM) versus EM

- DM technology stocks have seen much bigger gains than their EM counterparts.
- Performance for EM technology has been strong, but far from extreme, except perhaps for the EM software segment which is a relatively small area within EM technology comprised exclusively of China A share-listed stocks (Exhibit 1).

EM technology valuations are far from extreme

- Except for the EM software segment, EM technology stock valuations don't look extreme and are in line with their long-term averages.¹ Information technology (IT) services look particularly attractive on a price-to-earnings (P/E) valuation. (Exhibit 2)
- Most areas within EM technology trade at a significant discount to their DM counterparts. (Exhibit 3)

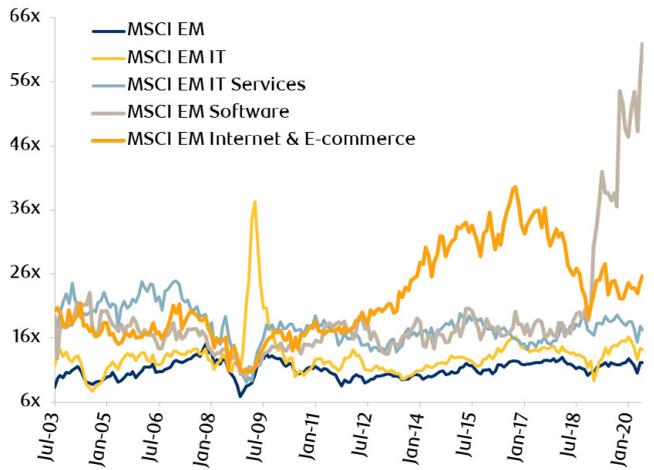
Exhibit 1: The technology sector returns have been much more extreme in DM than EM



Source: RBC Global Asset Management. Bloomberg. MSCI World Index and MSCI Emerging Markets Index. Data as at 31 May, 2020.

¹ Bloomberg. Data as at 31 May, 2020.

Exhibit 2: EM technology valuations - 12-month forward P/E



Source: RBC Global Asset Management. Bloomberg. MSC World Index and MSCI Emerging Market Index relative valuations (12-month forward P/E) for technology and sectors/sub-sectors. Data as at 31 May, 2020.

2. Outlook for EM technology

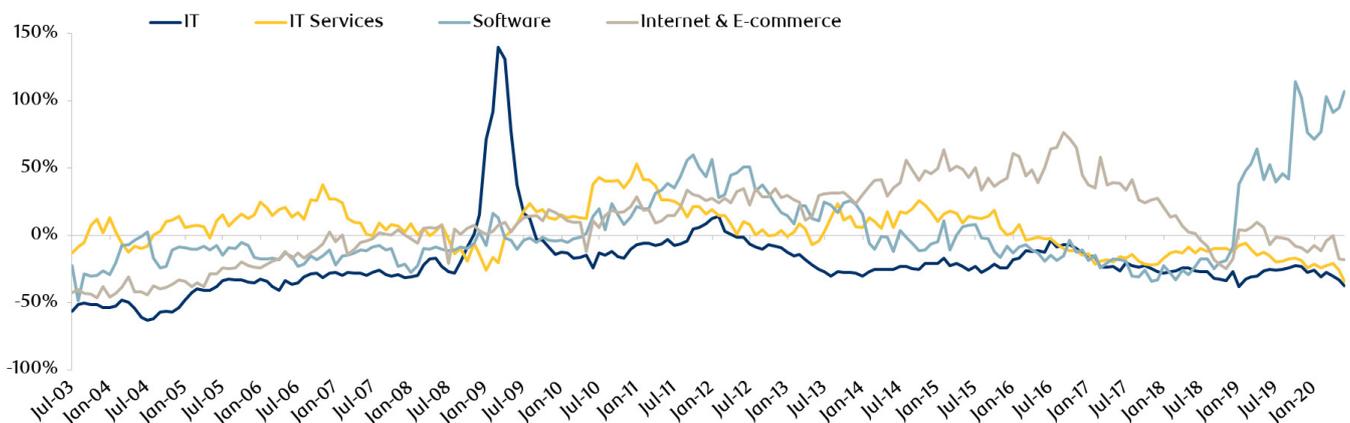
EM technology stocks have performed very well in recent months despite the pandemic and significant economic headwinds, and we believe that there are important structural tailwinds that will support the EM technology industry for many years to come. Below we highlight those we believe to be the most important:

Localised IT infrastructure: Data has become the new must-have strategic resource for a country’s competitiveness, replacing oil and mining products in the 1990s and 2000s. This means that there is potential for an emerging “tech war” to become the new geopolitical battleground. We are on the verge of an acceleration in technology investments, driven by a combination of new communication infrastructure, data generation, cloud computing power, and bandwidth. Underlying communication infrastructure may differ regionally, however, due to ongoing and escalating trade tensions relating to technology. The U.S. government’s inclusion of China’s leading multinational technology company on its “entity list” has potentially raised a major issue for the Chinese government and original equipment manufacturers (OEMs) concerning the availability of critical U.S.-supplied components, especially semiconductors.² In our opinion this incident is likely to strengthen China’s resolve to reduce its reliance on U.S. suppliers. As of 2018, China was the largest consumer of semiconductors and imported over US\$300bn-worth of semiconductor products annually while producing only US\$24bn domestically.³ This imbalance poses a significant risk to China and to the Chinese government’s “Made in China 2025” policy which set a target of reaching a 40%/70% self-sufficiency ratio for integrated circuit production, as well as other areas of technology. Consequently we believe that there will be plenty of

EM technology stocks offer similar or higher levels of profitability than their DM counterparts

- EM technology valuations’ discount to their DM counterparts comes despite broadly similar levels of return on equity (ROE). Within this context we find IT services, internet and E-commerce stocks particularly attractive with higher ROE but cheaper valuations than their DM counterparts. We also find the EM IT area attractive. This area of technology tends to be more cyclical when compared to other technology areas; nonetheless ROE has averaged 14% over the last two decades and looks attractive on a long-term basis. We believe that both growth and profitability are poised to increase for reasons that are detailed below.

Exhibit 3: EM trades at a discount to DM in most areas of technology



Source: RBC Global Asset Management. Bloomberg. MSC World Index and MSCI Emerging Market Index relative valuations (12-month forward P/E) for technology and sectors/sub-sectors. Data as at 31 May, 2020.

² The entity list includes the names of foreign persons, government organizations and companies that are subject to specific licence requirements for the export of certain items. These specific licence requirements are in addition to those requirements outlined within the Export Administration Regulations. ³ IC Insights. Data as at December, 2019.

demand for IT hardware and services and that those EM technology companies with existing operations and factories in China stand to benefit the most from this trend.

More processing power needed: We are witnessing an acceleration in the rate of technological change that could be categorised as ‘revolutionary’ rather than ‘evolutionary’. Big data, artificial intelligence (AI), cloud computing, smart factories, smart cities, and E-commerce all represent areas where such an acceleration is taking place. While all areas of technology stand to gain from these ongoing structural shifts in the future, we believe that the semiconductors industry is likely to be a key beneficiary at all levels (consumption, computing, cloud/data centres) as we will need more processing power and therefore more semiconductors to support more data collection, storage and, more generally, cloud and IT infrastructure. Increased levels of working from home, E-commerce, connectivity and media consumption are all examples of what is driving this trend.

Technology has become less cyclical: Our analysis of previous cycles and current trends reveals that the technology industry is exhibiting signs of becoming less cyclical, with peaks and troughs becoming more muted.⁴ To be clear, we are not arguing that the technology industry isn’t cyclical, because it certainly is; instead we are suggesting that the industry has become far less cyclical than it has been in the past. For example, we examined previous semiconductor cycles to offer some historical perspective. There have been seven ‘cycles’ since 1990 and each lasted approximately 15 quarters (3.75 years) on average with a typical ‘upturn’, or period of trough-to-peak sales, lasting nine quarters versus a typical ‘downturn’, or

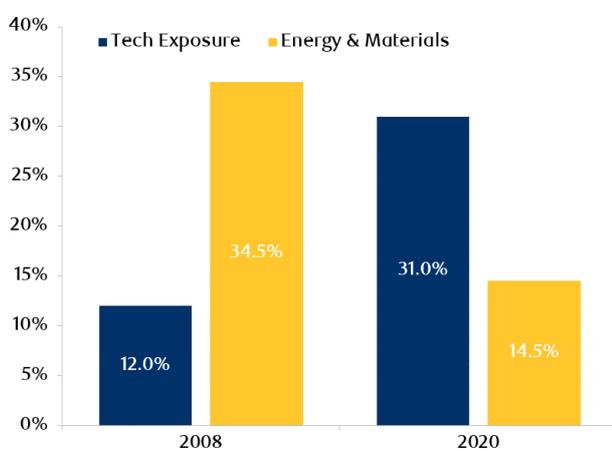
period of peak-to-trough-sales, lasting six quarters. The most recent downturn only lasted three quarters, however, and we believe there are four key fundamental changes that have occurred over the last 20-30 years that have made the semiconductor industry less cyclical and more profitable:

- **More diversified revenue base:** Demand is now more diversified and robust and more of the end demand for semiconductors is driven by non-consumer applications.
- **Industry consolidation:** There are far fewer suppliers in the industry due to consolidation. Three companies control 70% of the memory market and one company controls 60% of the logic market.
- **Moore’s Law has slowed:** It has become harder to design and manufacture new microchip technologies.⁵
- **Structural shifts in new technologies adoption:** The industry is in the early stages of transitioning to a new wave of computers, prompted by the need to support new technologies (AI, Internet of Things, 5G, autonomous driving, etc.).

3. The rise of technology in EM equities

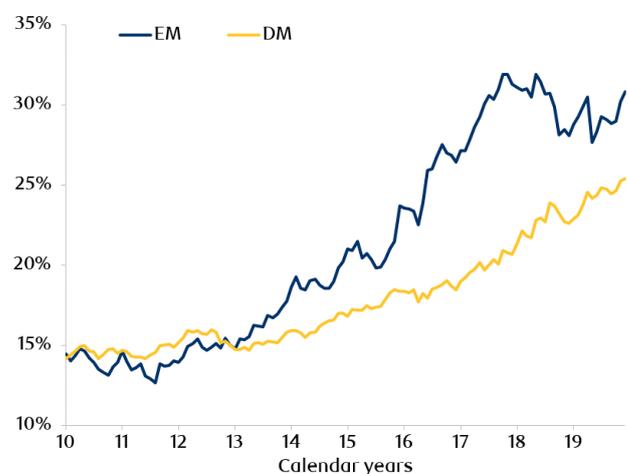
We believe that there has been an improvement in the sectoral composition of EM equities over the past decade and that the higher quality consumer and IT sectors have become much more significant at the expense of the commodity sectors (Exhibits 4 & 5). These sectors tend to have higher ROE and more stable earnings growth. The technology industry in particular, which has become the largest industry in the context of EM market capitalisation,

Exhibit 4: Shift in sectoral composition in EM



Source: RBC Global Asset Management. Bloomberg. Data as at January, 2020. Weight of IT sector + media and entertainment industry group + internet and direct marketing retail industry.

Exhibit 5: EM now more exposed to technology than DM



Source: RBC Global Asset Management. MSCI World Index and MSCI Emerging Market Index, Datastream, UBS. Data as at January, 2020. Weight of IT sector + media and entertainment industry group + internet and direct marketing retail industry.

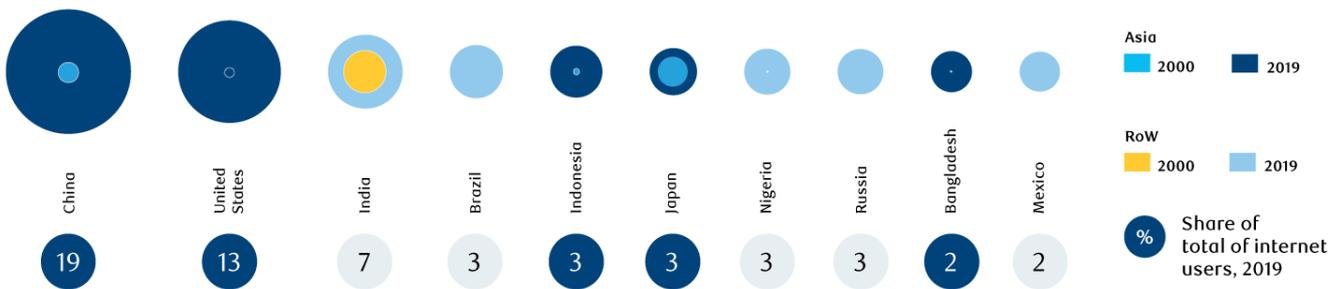
⁴ Merrill Lynch, SIA, Bloomberg. Data as at May, 2020. ⁵ Moore’s Law: the principle that the speed and capability of computers can be expected to double every two years, as a result of increases in the number of transistors a microchip can contain.

is expected to drive the majority of the earnings-per-share growth for EM. For example, in 2020 the technology industry is expected to contribute over 50% of EM earnings growth, driven by 5G capex and smartphones, and by memory prices rebounding on the back of a resumption of spending on cloud-related capex following the pause in 2019.

Longer term, and in four of the last five years, the technology industry has been the best performing industry within EM equities. While we believe that market breadth in EM is likely to improve, the technology industry should continue to perform well as valuations are not stretched and growth is supported by many structural elements. Key among these elements is the fact that more than half of the world's internet users are now in emerging Asia and a large majority of the global middle class reside in EM countries. (Exhibit 6)

We hope you enjoyed our research insights. For further information please visit the [RBC Emerging Markets Equity Team Site](#) or contact your RBC representative.

Exhibit 6: Asia accounts for half of the world's total internet users (millions)



Source: 'Asia's future is now', published by McKinsey Global Institute. Data as at July, 2019.

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Guido is Head of Research and a Portfolio Manager for the Emerging Markets Equity team in London. Before joining RBC Global Asset Management in 2010, Guido was an Emerging Markets Portfolio Manager at Rexiter Capital Management. Previous experience includes roles as an Emerging Markets Equities Analyst at Rexiter and Securities Analyst then Junior Portfolio Manager at HSBC Asset Management. Guido began his career in the investment industry in 1998 as an Equity and Derivatives Trader for BSI in Italy.

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