

Box Article 2.1

SINGAPORE'S ELECTRONICS CLUSTER AND THE IMPACT OF THE AI BOOM

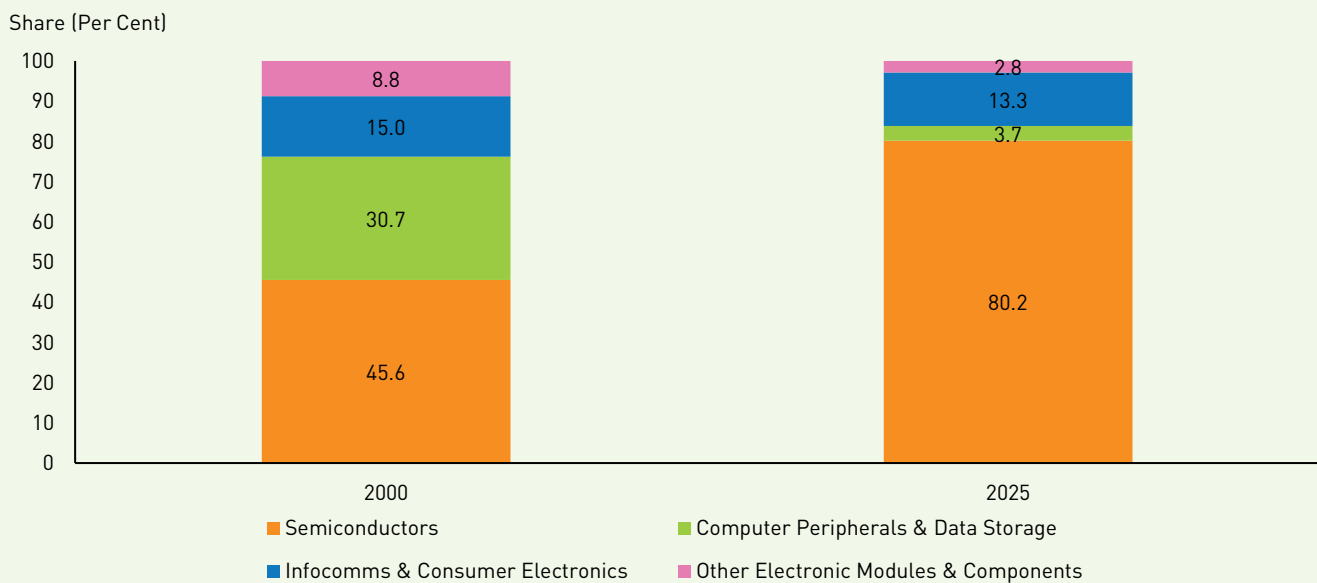
The electronics cluster is the largest cluster within the manufacturing sector in Singapore, accounting for 43.2 per cent of the sector's nominal value-added (VA) and 8.0 per cent of Singapore's overall nominal VA in 2025. This article examines the recent trends in Singapore's electronics cluster and the drivers of these trends.

Within Singapore's electronics cluster, semiconductors is the largest segment

Singapore's electronics cluster is made up of four segments, namely the semiconductors, computer peripherals & data storage, infocomms & consumer electronics, and other electronic modules & components segments.

Over the years, the growth of the semiconductors segment has outstripped that of the entire cluster, leading the segment to account for an increasing share of the cluster's nominal VA. In particular, from 2000 to 2025, the semiconductors segment grew by 7.3 per cent per annum (p.a.) in nominal terms, compared to 4.9 per cent p.a. for the entire cluster. Reflecting this strong growth, the semiconductors segment's nominal VA share within the cluster climbed from 45.6 per cent in 2000 to 80.2 per cent in 2025 [Exhibit 1].

Exhibit 1: Nominal VA Shares of Segments in Singapore's Electronics Cluster, 2000 and 2025



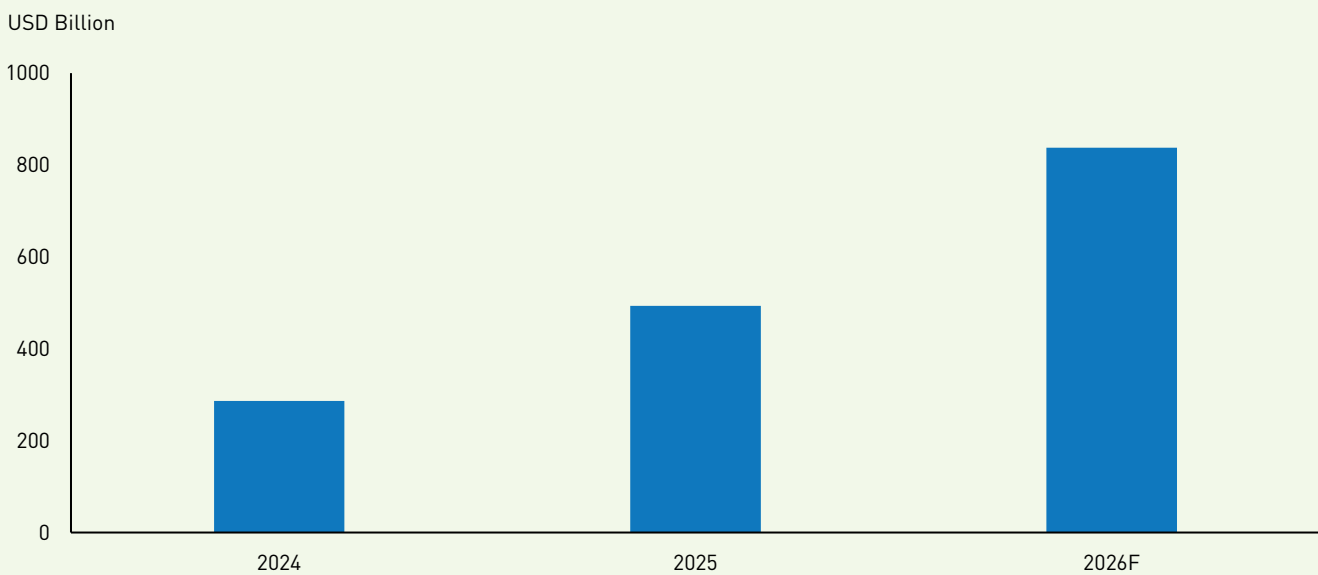
Source: Economic Development Board

In recent years, the artificial intelligence (AI) boom has transformed the global electronics industry, driving strong demand for AI infrastructure...

Prior to the current upturn propelled by the AI boom, the global electronics industry went through a significant downturn in 2023 as a post-pandemic softening of consumer electronics demand led to inventory drawdowns and production cutbacks across the value chain (Chan, 2024).

With the start of the AI boom, the global electronics industry saw a rebound in 2024. According to the World Semiconductor Trade Statistics, global semiconductor revenue surged by 19.7 per cent in 2024, reversing the 8.2 per cent decline in the previous year.¹ Since then, hyperscalers and technology companies around the world have significantly increased their capital expenditure (capex) as they compete to develop computational capacity for AI applications. Such applications include large language models, generative image creation, autonomous vehicle processing and real-time language translation services. Based on estimates by Bloomberg Intelligence, hyperscaler capex is expected to exceed USD 800 billion in 2026, up from around USD 290 billion in 2024 [Exhibit 2]. In turn, the robust growth in AI-related capex has led to an increase in demand for new data centres and supporting infrastructure, including high-speed networking equipment and specialised server hardware.

Exhibit 2: Hyperscaler Capital Expenditure



Source: Bloomberg Intelligence Estimates

Note: The chart above presents Bloomberg Intelligence estimates of firms' total cloud and data centre infrastructure investment, including compute hardware and physical data centre assets. Firms include Amazon Web Services, Google, Meta, Microsoft and Oracle.

...which has benefitted regional economies across Asia's interconnected semiconductors value chain

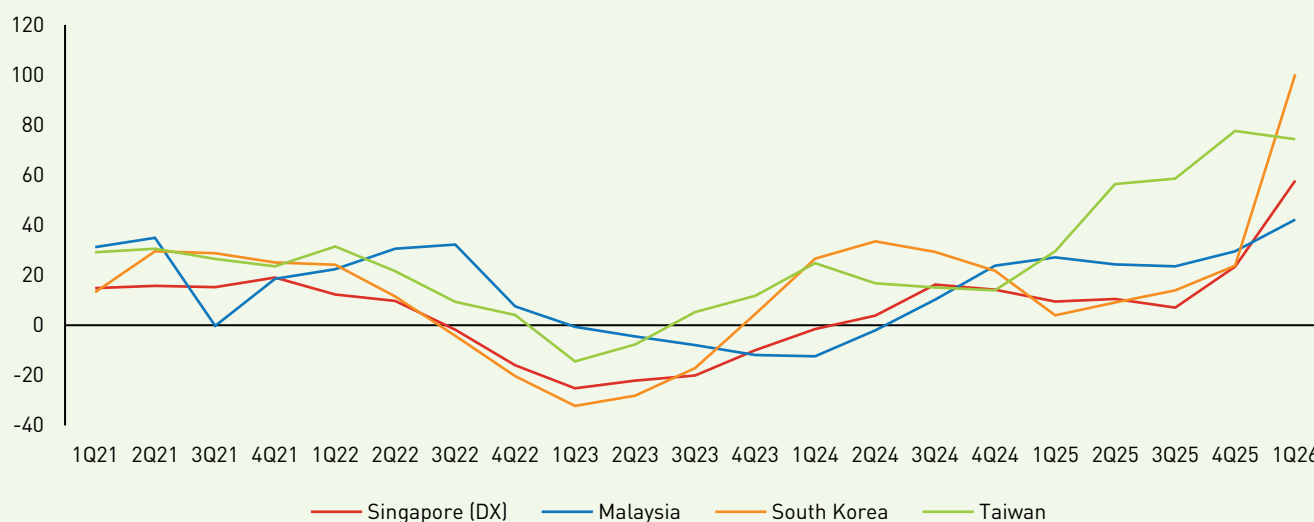
The global AI infrastructure buildout has benefitted economies in the region, including Singapore. This reflects the interconnected nature of the semiconductors value chain, where economies specialise in different stages of production and assembly. For example, Taiwan is a key producer of cutting-edge graphics processing units (GPUs) that power data centres, while South Korea and Singapore produce memory chips that are essential for AI computations. On the other hand, Malaysia plays a key role in semiconductor assembly and testing services, as well as the production of electronic components and printed circuit boards required for AI infrastructure.

¹ World Semiconductor Trade Statistics' Historical Billings Report (<https://www.wsts.org>).

The surge in global AI-related demand is reflected in the strong electronics exports performance of these regional economies.² In particular, after experiencing contractions in 2023 due to the global electronics downturn, the electronics exports of all four economies recovered in 2024. South Korea led the rebound, with its electronics exports growth coming in at 27.5 per cent, followed by Taiwan at 17.3 per cent. The momentum accelerated further in 2025, with Taiwan's electronics exports rising by 56.7 per cent as global demand for advanced GPUs intensified, while Malaysia recorded strong growth of 26.2 per cent due to increased assembly and testing activities. Meanwhile, Singapore's electronics domestic exports (DX) expanded by 12.7 per cent in 2025, reflecting the scaling of AI-related demand for memory chips produced by the semiconductors segment of Singapore's electronics cluster. The positive impact of the AI boom has continued into 2026, with exceptionally strong year-on-year growth in electronics exports seen in South Korea (100.3 per cent), Taiwan (74.3 per cent), Singapore (57.9 per cent) and Malaysia (42.2 per cent) in the first quarter of the year [Exhibit 3].³

Exhibit 3: Growth in Electronics Exports of Singapore and Regional Economies

Year-on-year Change (Per Cent)



Source: Enterprise Singapore, CEIC

Note: For Singapore, the electronics exports data refer to electronics domestic exports (DX). For the other economies, they refer to total electronics exports.

In tandem with our strong electronics DX growth, Singapore's electronics cluster similarly recorded robust real output growth in recent years, driven by the AI boom

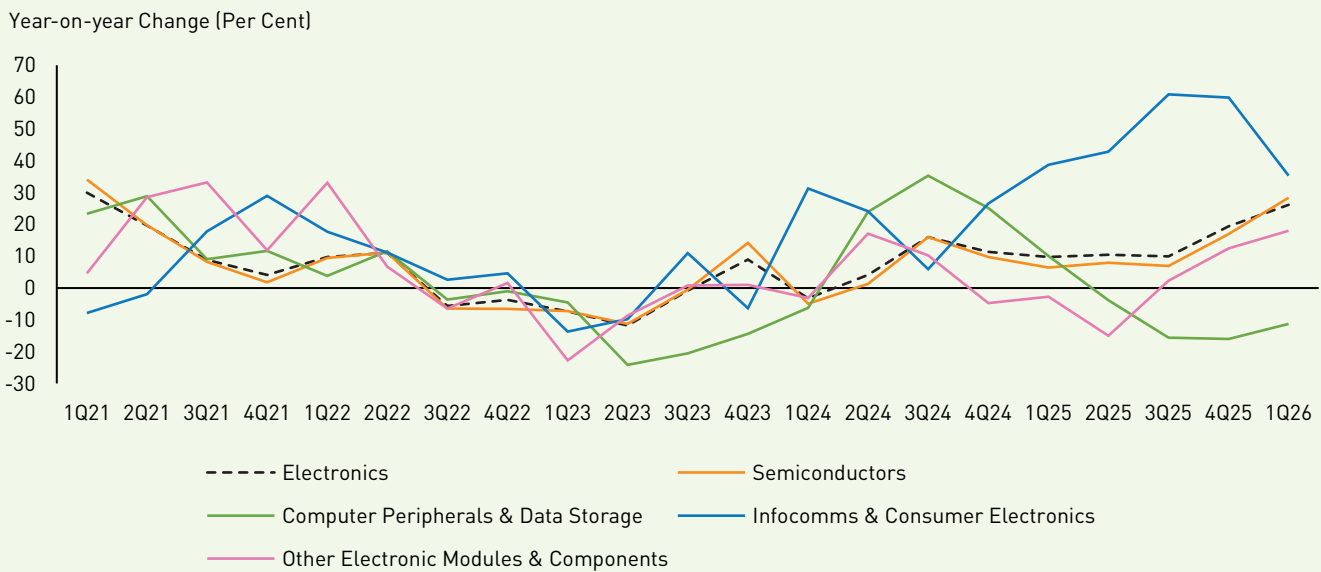
Following a broad-based contraction across all segments in 2023, Singapore's electronics cluster staged a recovery in 2024 as the onset of the AI boom spurred demand for AI-related electronics products, with overall electronics real output (i.e., stripping out the price effects) growing by 7.2 per cent.

Real output growth of the cluster accelerated to 12.7 per cent in 2025, led by the semiconductors and infocomms & consumer electronics segments. Notably, real output of the semiconductors segment increased by 9.8 per cent in 2025 due to strong demand for AI-related semiconductors. Meanwhile, the infocomms & consumer electronics segment surged by 51.4 per cent over the same period, buoyed by robust demand for servers and server-related products amidst the rapid expansion of AI data centres globally.

Growth momentum in the electronics cluster remained strong in the first quarter of 2026, coming in at 26.1 per cent year-on-year in real terms, again largely driven by output expansions in the infocomms & consumer electronics (35.3 per cent) and semiconductors (28.4 per cent) segments [Exhibit 4].

² For this article, the exports growth of regional economies is computed based on nominal export values in USD, while Singapore's exports growth is computed based on nominal export values in SGD for consistency with trade figures reported by Enterprise Singapore. The trends and conclusions presented in the article are not affected if Singapore's exports growth is computed based on export values in USD.

³ As exports are measured in nominal terms, a part of this surge is due to price effects. For instance, based on Gartner's 1Q26 Semiconductor & Electronics Forecast Update, average selling prices (ASP) of DRAM and NAND chips are projected to increase by 124.8 per cent and 234.1 per cent respectively in 2026.

Exhibit 4: Real Output Growth across Segments in Singapore's Electronics Cluster

Source: Economic Development Board

There are downside risks to the growth of Singapore's electronics cluster, including those arising from higher electricity prices and potential supply chain disruptions due to the US-Israel-Iran conflict

The start of the US-Israel-Iran conflict and ensuing blockade of the Strait of Hormuz have disrupted the global flow of crude oil and natural gas, leading to higher global oil and gas prices, which will cause the price of electricity in Singapore to rise. As a result, energy-intensive electronics producers and data centres in Singapore are likely to face higher operating costs, which could weigh on their margins.

As the Middle East is a key supplier of critical semiconductor inputs such as helium, bromine and sulphur, the conflict also poses supply chain risks to the electronics cluster. Specifically, there is a risk of a slowdown in semiconductor production in Singapore if the conflict is protracted and manufacturers start to face supply constraints in these critical inputs.

More broadly, uncertainty remains as to whether higher electricity prices will affect the growth trajectory of global AI-related capex. Although hyperscalers and technology companies have yet to signal a cutback in their AI-related capex, a protracted conflict could delay the development of new data centres due to their high energy requirements, potentially weakening future demand for AI-related electronics exports from Singapore.

Similarly, should there be a sudden pullback in global AI-related capex due to other factors such as financial markets' concerns over the returns to such investments, there would be a knock-on impact on the growth of Singapore's electronics cluster.

Barring the materialisation of these downside risks, Singapore's electronics cluster is expected to continue to perform well in 2026

In sum, the global AI infrastructure buildout has bolstered growth in Singapore's electronics cluster since 2024, with the semiconductors and infocomms & consumer electronics segments benefitting from robust AI-related demand for memory chips and servers & server-related products respectively.

Looking ahead, barring the materialisation of downside risks due to the conflict in the Middle East, the electronics cluster is poised for continued strong growth in 2026, supported by rising AI adoption across industries and sustained capex by hyperscalers and technology companies globally. Over the longer term, the growth prospects for Singapore's electronics cluster remain bright, with continued expansions in capacity putting it in a strong position to ride the global AI investment boom.

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REFERENCES

Chan, You Zhong. 2024. "Performance and outlook of the electronics cluster in Singapore", *Economic Survey of Singapore 2023*, pp. 76-80.