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Economic at a glance

2025 GDP Growth	+5.2%
2026 GDP Growth Forecast:	+5.0%
2027 GDP Growth Forecast:	+4.5%
2025 Unemployment Rate	3.0%
2026 Unemployment Rate Forecast:	3.0%
2027 Unemployment Rate Forecast:	3.0%
2025 Headline Inflation:	+1.4%
2026 Headline Inflation Forecast:	+2.0%
2027 Headline Inflation Forecast:	+2.0%
End-2025 OPR	2.75%
End-2026 OPR Forecast:	2.75%
End-2027 OPR Forecast:	3.00%

Economic outlook

Penang tech visit: Stronger conviction on Malaysia's tech outlook

- We visited five companies across Penang covering engineering & support services, equipment distribution & manufacturing, raw & semi-finished materials, Automated Test Equipment and precision machining & components.
- The current AI upcycle appears structural, while we noted evidence of trade diversion and talent shortages, and identified constraints to Malaysia moving up the value chain.
- Malaysia's concentration in lower-value segments of the semiconductor value chain could limit its ability to fully capture the broader tech upcycle dividend.
- The National Semiconductor Strategy (NSS) and initiatives such as the Malaysia Advanced Packaging Consortium (MAPC) could help address these constraints.

Visit to Penang tech companies

We organised a Penang tech visit in September covering five companies across the value chain in engineering & support services (**3Ren - NR**), equipment distribution & manufacturing (**QES - BUY; TP: RM0.75**), raw & semi-finished materials (**AMS - NR**), Automated Test Equipment (Mi Technovation - **BUY; TP: RM6.38**) and precision machining & components (**AmBest - NR**).

We walked away from the visit with greater clarity on the **ground conditions of Malaysia's semiconductor industry** and **stronger conviction in the sustainability of the current AI upcycle**. More importantly, the visit reinforced our view that **Malaysia has yet to fully capture the dividends** from the global AI upcycle. The visit also deepened our understanding of the **key bottlenecks facing the industry** and the **policy measures needed to further strengthen Malaysia's competitiveness** in the global semiconductor landscape.

Semiconductor landscape overview

The advancement of AI has driven a global race towards increasingly powerful chips, with a focus on smaller process nodes to improve computing performance. This structural trend has created significant opportunities in the global semiconductor industry along with its supporting ecosystem. The complexity of high-performance chips, such as GPUs, and the need to integrate them with high-bandwidth memory (HBM) have increased the importance of advanced packaging.

There are broadly three core stages in the semiconductor value chain: IC design, wafer fabrication, and assembly, testing and packaging (ATP) (Figure 1). IC design and wafer fabrication form the front end of the value chain, representing the most technology- and R&D-intensive segments. These activities are concentrated among a handful of leading semiconductor economies, reflecting high barriers to entry as incumbent players benefit from years of technological know-how and intellectual property that cannot be replicated overnight.

ATP represents the back end of the semiconductor value chain, involving the assembly, testing and packaging of chips before they are integrated into electronic products. ATP is Malaysia's stronghold, accounting for 13% of global ATP activity. It is worth noting that Malaysia has also developed capabilities across the broader supporting ecosystem, spanning semiconductor equipment, engineering, materials and others. Coupled with potential in advanced packaging, Malaysia could capture a greater share of the semiconductor upcycle dividend.

Figure 1: The global semiconductor value chain



Source: Malaysian Investment Development Authority, Apex Securities

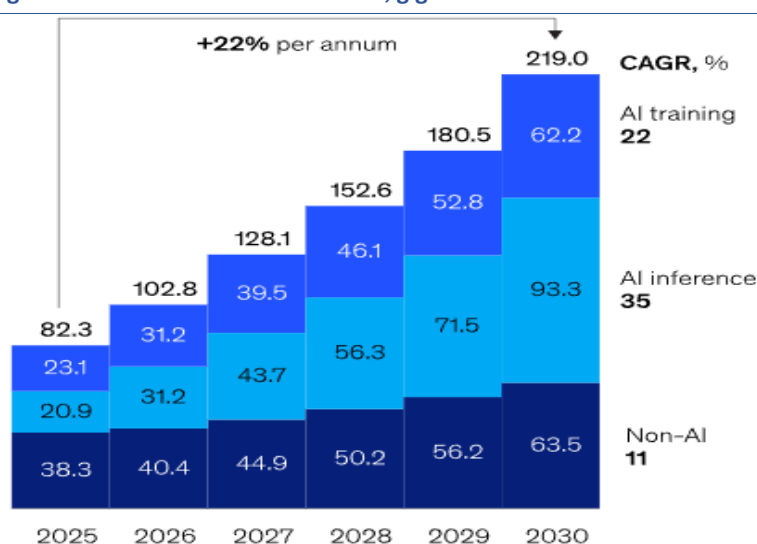
Key thoughts from Penang Visit:

I) The current AI upcycle is different

Most tech company management teams acknowledged that the key question of how long the current AI upcycle will last remains uncertain, and are therefore focused on capitalising the opportunity by optimising production capacity. Nevertheless, the consensus is that the upcycle remains in its early stages. This is evident from healthy orderbook growth across all five companies we visited, with several already fully booked and deliveries extending into 2027, while some are planning capacity as far out as 2028. With demand outstripping capacity, some companies are rationing orders, with one management describing its capacity as “up to the neck”.

Notably, one company described the AI upcycle as structural rather than a normal three-year inventory cycle. We broadly agree. **Instead of a one-off build-up in semiconductor inventories, AI is creating a multi-layered demand cycle.** The initial phase includes building computing infrastructure to train AI models, which drives demand for chips. As AI moves towards inference and increasingly specialised applications, demand for computing, memory and data-centre infrastructure will broaden further. This is consistent with McKinsey’s expectation for inference-server demand to grow at a 35% CAGR from 2025 to 2030 (Figure 2). Another structural trend is the wider adoption of AI by firms and consumers, creating sustained demand for computation.

Figure 2: Global data center demand, gigawatts



Source: McKinsey

II) Evidence of trade diversion

We observed evidence that Malaysian companies are direct and indirect beneficiaries of the China+1 strategy and trade diversion arising from US-China trade tensions. Chinese companies seek access to major export markets but face increasing trade restrictions, creating an incentive to establish alternative manufacturing bases outside China. During our visit, we saw Malaysian companies collaborating with Chinese partners via JVs, with a significant portion of production being carried out in Malaysia and the new products marketed under Malaysian brands.

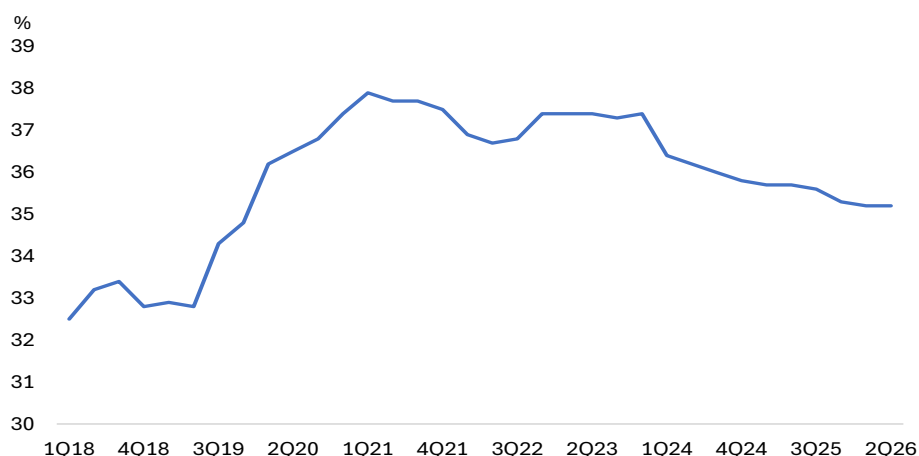
It is worth noting that these arrangements involve more than transshipment through Malaysia. **Companies are planning to localise content and labour, including meeting certificate-of-origin requirements with the relevant Malaysian authorities.** This suggests Malaysia's neutral position has helped capture the benefits of trade diversion through increased local production, investment and the development of technology capabilities.

III) Widespread talent shortages in the industry

One of the consistent pieces of feedback from management was the shortage of talent, particularly engineers. Companies reported an increasingly tight and expensive skilled labour market, with competition for talent intensifying as they ramp up production capacity. Local semiconductor players are also facing poaching pressure from larger multinational firms, which can offer higher salaries and greater work flexibility. Nonetheless, **we view this as an increasing cost pressure for domestic players, rather than a constraint on capacity expansion.**

On the positive side, the rapid expansion of the semiconductor industry is creating more demand for domestic engineering and technical talent, helping to alleviate Malaysia's long-standing issue of graduate underemployment. Skill-related underemployment remains elevated, with 35.2% of employed workers with tertiary education working in semi- or low-skilled jobs in 2Q26 (Figure 3). This underscores the importance of moving up the value chain to create more high-skilled jobs.

Figure 3: Skill-related underemployment



Source: Department of Statistics, Apex Securities

IV) Moving up the value chain requires more than capability

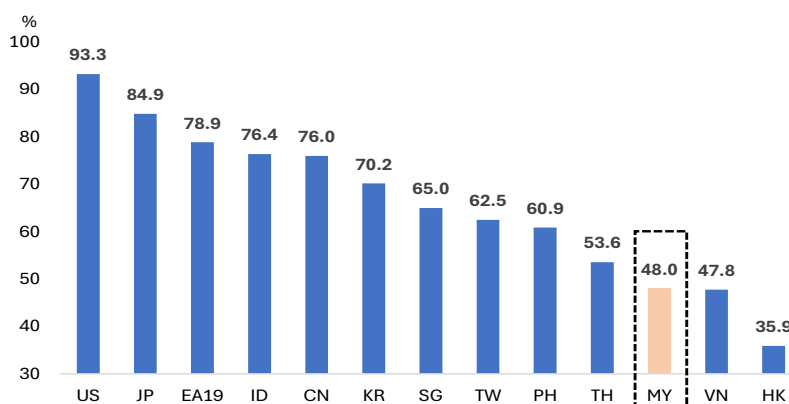
Malaysia has a well-established OSAT industry and supporting ecosystem, but its development in higher-value segments remains nascent. Based on our engagement with industry players, we believe there are two key constraints to moving up the value chain. Firstly, the semiconductor industry is highly sophisticated, with upstream customers prioritising product quality, reliability and a proven track record. For local players, **investing in R&D to develop new products carries considerable risk, as it remains uncertain whether the products will meet their clients' qualification requirements**. Thus, local players tend to focus on sharpening their capabilities in their respective areas of specialisation, rather than venturing into new areas.

Secondly, the semiconductor ecosystem tends to develop along the value chain in close proximity. Taiwan is a case in point, with its strong wafer fabrication base supporting the development of an adjacent advanced packaging industry. Malaysia's **lack of a comparable front-end anchor** could present an additional barrier to developing higher-value activities such as advanced packaging. That said, Intel's US\$7bn investment in Malaysia, including high-end 3D packaging in Penang, is a positive step towards moving Malaysia into higher-value segments.

Malaysia does not fully capture the benefits of E&E upcycle

Malaysia's concentration in the lower-value segments of the semiconductor value chain means that we cannot fully capture the broader tech upcycle dividend. E&E accounts for 40% of Malaysia's gross exports, but contributes only 7.4% of GDP. More importantly, domestic value-added accounts for just 48% of Malaysia's E&E exports, among the lowest across major E&E economies (Figure 4). This means that more than half of the value embedded in Malaysia's E&E exports is generated from foreign inputs and activities, underscoring the **relatively low domestic value captured despite its robust export headline**.

Figure 4: Domestic value added embedded in gross exports of E&E



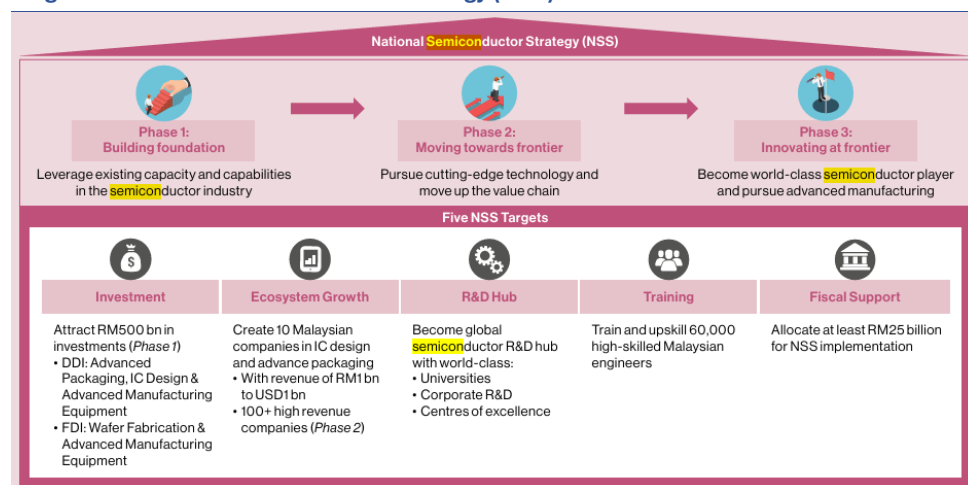
Source: Bank Negara Malaysia, OECD, Apex Securities

Policies in place to move up the value chain

We believe the National Semiconductor Strategy (NSS) provides the right policy framework for moving Malaysia up the semiconductor value chain. The NSS targets RM500bn of investments in Phase 1, with a focus on domestic investment in advanced packaging, IC design and advanced manufacturing equipment, alongside FDI in wafer fabrication. It also aims to train and upskill 60,000 high-skilled engineers and strengthen collaboration between industry, academia and Government in semiconductor R&D.

To build a more complete, home-grown advanced packaging ecosystem in Malaysia, the Malaysia Advanced Packaging Consortium (MAPC) brings together five local champions with capabilities across IC design (**SkyeChip – BUY; RM3.76**), advanced packaging (**FusionAP Sdn Bhd**), OSAT (**Inari – BUY; RM2.94**), ATE (**Pentamaster – NR**) and high-precision assembly equipment (**NSW Automation Sdn Bhd**), with the initial objective of developing a local HBM4 advanced-packaging proof of concept. We believe successful execution of these initiatives could help address the constraints identified during our company visits.

Figure 5: National Semiconductor Strategy (NSS)



Source: BNM, MITI, Apex Securities

Implications for the Economic Outlook

We now have stronger conviction that the AI upcycle will remain a steady growth driver over the next few years, supported by the wider adoption of AI and cloud computing, digitalisation and increasing AI applications. In our view, concerns over a sharp slowdown in AI-related demand and investment are overdone. For Malaysia, this should continue to support E&E exports, manufacturing

activity and private investment, particularly through data-centre development and capacity expansion in the semiconductor industry.

However, we see 2027 as a year of stability rather than acceleration. While semiconductor demand and order pipelines should remain healthy, industry growth is likely to normalise following the strong performance this year. This is also consistent with feedback from the companies we visited, which are expanding capacity to meet sustained demand. However, they remain cautious about aggressive capacity expansion and hiring, given the risk of overcapacity when the cycle eventually turns. As such, we expect the AI upcycle to provide a steady support to Malaysia's growth in 2027, rather than another leg-up in growth momentum.

In addition, the broader macro picture is likely to remain uneven. External demand and manufacturing should remain relatively resilient, but domestic demand is expected to moderate from the strong pace seen previously, while elevated cost pressures and geopolitical uncertainties could weigh on business sentiment. Moreover, Malaysia's relatively low domestic value added in E&E means that strong gross export growth does not translate fully into stronger economy, given the industry's reliance on imported capital goods and intermediate inputs.

The bigger opportunity lies beyond the near-term growth cycle. If Malaysia can successfully move up the semiconductor value chain, the benefits could extend beyond exports and investment to productivity, high-skilled employment and domestic value added. This could ultimately raise Malaysia's potential growth over the longer term. **In short, we see stability as the near-term theme, but greater value added as the longer-term upside.**

We maintain our full-year 2026 GDP growth forecast at **+5.0% YoY**. For 2027, we project preliminary GDP growth of **+4.5%**, reflecting more moderate macroeconomic conditions.

Recommendation Framework:

BUY: Total returns* are expected to exceed 10% within the next 12 months.

HOLD: Total returns* are expected to be within +10% to – 10% within the next 12 months.

SELL: Total returns* are expected to be below -10% within the next 12 months.

TRADING BUY: Total returns* are expected to exceed 10% within the next 3 months.

TRADING SELL: Total returns* are expected to be below -10% within the next 3 months.

*Capital gain + dividend yield

Sector Recommendations:

OVERWEIGHT: The industry defined by the analyst is expected to exceed 10% within the next 12 months.

NEUTRAL: The industry defined by the analyst is expected to be within +10% to – 10% within the next 12 months.

UNDERWEIGHT: The industry defined by the analyst, is expected to be below -10% within the next 12 months.

ESG Rating Framework:

★★★★★ : Appraised with 3% premium to fundamental fair value

★★★★ : Appraised with 1% premium to fundamental fair value

★★★ : Appraised with 0% premium/discount to fundamental fair value

★★ : Appraised with -1% discount to fundamental fair value

★ : Appraised with -5% discount to fundamental fair value

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(a) nil.