The Ringgit Rebuild

Malaysia's Semiconductor Packaging, Johor Data Centers, and the China Oversupply Risk

Darmine Capital · Macro Research Division · Singapore

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Abstract

Malaysia is the most literal expression of the AI hardware cycle in ASEAN. It does not design chips or fabricate leading-edge wafers, but it packages, tests, and assembles roughly 13% of the world's semiconductors, and it now hosts the fastest data-center buildout in Southeast Asia across Johor and the new Johor-Singapore Special Economic Zone. That leverage cuts both ways. The same back-end concentration that captures AI packaging demand also sits directly downstream of China's mature-node oversupply, where deflationary export pricing threatens margins in commodity assembly and test. Layered on top is a Madani government pushing subsidy rationalization and a broadened sales and services tax while trying to protect a fragile consumer. We hold Malaysia at market weight. The ringgit recovery and the packaging franchise are real, but the China oversupply overhang and fiscal execution risk cap the upside relative to India, Indonesia, and Singapore. This paper frames where the value sits and where it does not.

1. The Setup: A Back-End Economy in a Front-End Cycle

The AI capital expenditure supercycle is usually told through Taiwan foundries and Korean memory, which together account for roughly 30% of Asia AI capex on J.P. Morgan estimates and drive an expected 12 to 13% EPS growth for Asia ex-Japan in 2026. Malaysia sits one step downstream, in the back end. It is where the wafer becomes a usable chip, through assembly, packaging, and final test. Penang and the Kulim high-tech corridor host a dense cluster of outsourced semiconductor assembly and test (OSAT) firms and the local operations of Intel, Infineon, Bosch, Micron, and Lam Research. Malaysia captures an estimated 13% of global back-end packaging and test volume and roughly 7% of world semiconductor trade passes through it in some form.

This positioning is why Malaysia is a genuine AI cycle beneficiary rather than a bystander. Advanced packaging, the set of techniques that stitch multiple dies and high-bandwidth memory into a single accelerator, has become the binding constraint on AI compute. As leading-edge transistor scaling slows, more of the performance gain migrates into packaging: 2.5D and 3D integration, chiplet architectures, and substrate engineering. Malaysia does not own the frontier of that technology, which still concentrates in Taiwan, but it owns a large share of the labor-intensive, capacity-constrained conventional packaging and test that the whole industry still depends on.

The macro backdrop is supportive but not spectacular. Our house baseline puts Asia-Pacific 2026 growth near 4.4%, above the global average, with the region contributing roughly 60% of world GDP growth. Yet WTO global merchandise trade volume growth is projected at only about 0.5% in 2026, down sharply from above 2% in 2024 and 2025. A back-end exporter thrives on volume, and thin global trade growth is a headwind that the AI vertical only partly offsets.

> **Our view:** Malaysia is the purest ASEAN proxy for AI packaging demand, but it is a price-taker in a thin-trade world. The bull case is real and narrow; the beta to the cycle is high in both directions.

2. Penang, Kulim, and the Packaging Franchise

Penang's cluster is the crown jewel and the reason Malaysia commands market weight rather than underweight. Approved manufacturing investment into the electrical and electronics sector remained elevated through 2025 and into 2026, with multinationals expanding advanced packaging lines and local OSAT champions such as Inari Amertron and Unisem scaling capacity. The National Semiconductor Strategy, launched in 2024 with a headline ambition of at least 500 billion ringgit in investment and a push up the value chain into design and advanced packaging, is the government's attempt to convert assembly volume into higher-margin capability.

2.1 Where the margin actually is

The franchise splits into two very different businesses. High-end advanced packaging tied to AI accelerators and automotive power devices carries pricing power, long qualification cycles, and sticky customers. Commodity assembly and test for mature-node analog, discrete, and legacy logic is a volume game with thin, contestable margins. Malaysia's revenue mix is still weighted toward the latter, which is precisely where the China oversupply risk in Section 5 lands hardest. The investment thesis is that the mix migrates upward fast enough to outrun the commoditization pressure below it.

Labor and power are the constraints. Penang faces a structural shortage of engineers and technicians, and the sector competes with Singapore and Vietnam for the same talent pool. Electricity tariffs, historically a subsidized advantage, are rising as the Madani government rationalizes support (Section 6), which matters because both packaging and data centers are power-intensive. The offset is a weaker cost base after years of ringgit depreciation and a credible, if slow, upskilling agenda.

> **Our view:** We rate the packaging franchise a structural positive but not a re-rating catalyst on its own. The mix shift toward advanced packaging is happening, but it is measured in years, and the commodity base remains exposed to Chinese price competition. This is a hold-and-monitor asset, not a table-pounding overweight.

3. Johor, the JS-SEZ, and the Data-Center Wave

The second engine is geography. Johor, the southern state bordering Singapore, has become the region's data-center magnet. Singapore's own moratorium-era caution on data-center power and land, combined with cheaper Johor land and electricity, redirected a wave of hyperscale and colocation investment across the causeway. Committed data-center capacity in Johor has climbed past several gigawatts of planned load, anchored by operators serving cloud and AI training demand that cannot be sited economically in land-scarce Singapore.

The Johor-Singapore Special Economic Zone (JS-SEZ), formalized by the two governments in early 2025, is the institutional wrapper. It targets streamlined cross-border movement of goods and people, coordinated investment incentives, and priority sectors spanning digital economy, manufacturing, logistics, and financial services. The ambition is a complementary pairing: Singapore supplies capital, connectivity, and headquarters functions; Johor

supplies land, power, and labor. For Malaysia this is a genuine structural upgrade to its investment narrative, tying it to Singapore's quality-defense story, which we hold overweight.

3.1 The power and water tension

The buildout is not costless. Data centers consume enormous electricity and water, and Malaysia's grid and water infrastructure were not designed for gigawatt-scale AI load concentrated in one state. The government has signaled tighter scrutiny of new approvals, sustainability conditions, and a preference for projects that bring compute demand, not just real estate. There is a real risk that the headline capacity numbers overstate what the grid can actually energize this decade. Investors should discount announced capacity against deliverable capacity.

> **Our view:** The JS-SEZ and Johor data-center wave are the most compelling part of the Malaysia story and the clearest link to our Singapore overweight. But we treat announced capacity with skepticism; power, water, and grid constraints will throttle delivery, and the fiscal and tariff terms of the buildout are still being written.

4. The Ringgit Rebuild

The ringgit spent much of 2022 to 2024 as one of Asia's weakest currencies, pressured by a wide rate differential to the US, portfolio outflows, and a persistent perception of governance discount. The rebuild since late 2024 rests on three legs: a narrowing rate gap as the Fed moves into a cutting cycle, a firmer current account backed by electronics and commodity exports, and a policy push, including central-bank coordination and repatriation encouragement, to lift the currency off its lows. Bank Negara Malaysia has held its policy rate steady while inflation stayed contained, giving the ringgit a carry-and-stability profile rather than a high-yield one.

The currency matters to the thesis in two opposing ways. A firmer ringgit compresses the cost advantage that made Malaysian packaging and Johor land cheap, and it trims the ringgit value of dollar export receipts. But it also lowers imported input and energy costs, supports the consumer against subsidy-driven price increases, and signals the macro stabilization that foreign direct investors want to see before committing multi-year capital. On balance a gradual, orderly appreciation is the friendly outcome; a sharp move in either direction is not.

> **Our view:** We view the ringgit recovery as constructive and roughly two-thirds complete relative to fair value. It is a symptom of stabilization rather than a driver of outperformance. We do not build a large directional ringgit position into the market-weight call; the risk-reward is balanced.

5. The China Oversupply Risk

This is the section that keeps Malaysia at market weight rather than overweight. China is running a semiconductor capacity build of historic scale at mature and legacy nodes (28nm and above), the exact nodes where Malaysian assembly and test earn the bulk of commodity revenue. Blocked from leading-edge tools by US export controls, Chinese fabs have poured capital into trailing-edge capacity, and that capacity is now coming online into a domestic economy defined, on our house baseline, by persistent deflation, a 1.2 trillion US dollar 2025 trade surplus, and a 47.5% US effective tariff wall that redirects Chinese output toward the rest of Asia.

The transmission to Malaysia runs through price. As Chinese mature-node chips and the associated back-end capacity flood the market at deflationary prices, Malaysian OSATs in commodity segments face margin

compression and, in the harsher scenario, direct share loss. China is also building its own domestic OSAT and packaging capacity, which over time substitutes for the outsourced Malaysian value-add it once required. This is not a 2026 cliff; it is a multi-year grind on the low-margin base of the franchise, coincident with the high-margin advanced-packaging tier that is supposed to be growing.

The mitigants are real but partial. First, advanced packaging for AI and automotive is technically and relationally insulated from Chinese commodity competition. Second, China-plus-one supply-chain diversification and US customer preference for non-China back-end capacity actively benefit Malaysia. Third, the same US tariff wall that pushes Chinese goods into Asia also makes Malaysian-packaged, US-bound product relatively more attractive. The net effect is a bifurcation: the advanced tier wins from diversification while the commodity tier bleeds from oversupply.

> **Our view:** The China oversupply risk is the single most important reason we do not upgrade Malaysia. It is a slow, structural margin drag on roughly the half of the franchise that is commoditized, and it arrives precisely as the country tries to migrate upmarket. Bifurcation, not collapse, is the base case; the winners and losers within Malaysian tech will diverge sharply.

6. Madani Fiscal Rationalization and the Consumer

The Madani government's fiscal reform program is the domestic swing factor. The centerpiece is subsidy rationalization: the phased removal of blanket fuel subsidies, beginning with diesel and moving toward RON95 petrol, replaced by targeted cash transfers to lower-income households. Alongside it sits a broadened sales and services tax (SST) scope and a continued effort to narrow the fiscal deficit toward the government's medium-term targets under the Public Finance and Fiscal Responsibility Act. The direction is correct and long overdue; blanket subsidies were regressive, fiscally corrosive, and distortionary.

The execution is the risk. Removing fuel subsidies raises headline living costs for a consumer already stretched by housing and food inflation, and the political economy of the RON95 rationalization is delicate. If cash transfers are well-targeted and the ringgit stays firm enough to cap imported inflation, the reform lands cleanly and improves the sovereign credit trajectory. If transfers leak or timing collides with a growth wobble, the consumer weakens and the reform stalls. Fiscal consolidation is also, mechanically, a modest drag on near-term domestic demand even when it is the right long-run policy.

For our purposes the fiscal story is a credibility and rerating lever, not a growth engine. Successful rationalization narrows the governance discount that has weighed on the ringgit and the equity multiple for a decade. That is why we watch RON95 execution as a specific catalyst to reassess the market-weight call.

> **Our view:** We are cautiously constructive on Madani fiscal reform. The policy is right; the risk is entirely in execution and sequencing. Clean delivery of RON95 rationalization with intact consumer support would be a genuine upgrade trigger. Botched delivery would validate the discount.

7. Data Snapshot and Regional Context

The table below situates Malaysia against its APAC peers on the metrics that matter to the thesis: growth, the currency and rate stance, the semiconductor and AI linkage, and our house rating. Malaysia sits in the middle of the pack. It has better structural exposure than Thailand and Korea, but it lacks the domestic-demand depth of India and Indonesia or the quality-defense profile of Singapore.

Economy	2026 GDP	Policy / FX stance	Semis and AI linkage	Darmine rating
Malaysia	~4.4%	BNM on hold, ringgit rebuilding	Back-end packaging and test, Johor data centers	Market weight
Singapore	2.0-4.0%	MAS gradual S$NEER appreciation	High-value manufacturing, EDA, HQ functions	Overweight
India	~6.5%	Domestic-demand led, BBB (S&P)	Low chip-cycle beta, design talent	Overweight
Indonesia	~5.0%	BI managing rupiah, strong FDI	Nickel and EV batteries, not chips	Overweight
Korea	~1.8%	BOK recovery, high beta	Memory-chip cycle, front-end	Underweight (tactical)
China	4.4-4.5%	PBoC easing, deflation	Mature-node oversupply source	Underweight (domestic)
Thailand	1.8-2.5%	Regional laggard, high household debt	Legacy auto electronics	Underweight

Figures reflect Darmine house baseline as of August 2026. Ratings are relative within APAC. GDP figures are rounded central estimates.

The regional read is that Malaysia's cycle is levered to the same AI capex that lifts Taiwan and Korea, but its earnings quality is lower and its China exposure higher. It is a satellite of the Taiwan-Korea AI engine, capturing spillover packaging demand, while carrying an idiosyncratic oversupply vulnerability that those two do not share to the same degree at the back end.

> **Our view:** On a relative basis Malaysia ranks below our four APAC overweights and above the clear underweights. Market weight is the honest placement: real AI leverage, real China drag, and a fiscal reform that could tip the call either way.

Portfolio Positioning Summary

Overweight: Not Malaysia at the country level. Within Malaysia, we are selectively constructive on the advanced-packaging tier tied to AI accelerators and automotive power devices, and on Johor data-center and JS-SEZ

exposure that links directly to our Singapore overweight. These are the insulated, higher-margin, diversification-winning parts of the franchise.

Market weight: Malaysia overall. The semiconductor back-end franchise and the ringgit rebuild are genuine positives, but the China mature-node oversupply overhang, thin global trade growth (~0.5%), and fiscal execution risk cap the upside relative to India, Indonesia, and Singapore. Hold at benchmark and let stock and sub-sector selection do the work.

Underweight: The commodity assembly and test tier exposed to Chinese trailing-edge oversupply and deflationary pricing, and consumer-facing domestic names most sensitive to subsidy rationalization if RON95 execution goes poorly. This is where the margin drag and the fiscal squeeze concentrate.

Key catalysts to reassess: Reassess to overweight on: clean RON95 subsidy rationalization with intact targeted transfers; evidence of a faster-than-expected mix shift into advanced packaging; and confirmed grid and water capacity to energize announced Johor data-center load. Reassess toward underweight on: accelerating Chinese back-end capacity and price competition hitting Malaysian OSAT margins; a stall or reversal in fiscal consolidation; a sharp disorderly ringgit move; or Johor capacity announcements failing to convert into energized, revenue-generating load.

Conclusion

Malaysia is a well-built house on a shifting foundation. The packaging franchise in Penang and Kulim is a real and defensible participation in the AI hardware cycle, and the Johor data-center wave inside the JS-SEZ is the most credible new structural story in ASEAN outside India and Indonesia. The ringgit rebuild and Madani fiscal reform, if executed, would narrow a governance discount that has capped Malaysian assets for a decade. None of this is in doubt.

What holds us at market weight is the specificity of the vulnerability. The same back-end concentration that captures AI packaging demand sits directly downstream of China's mature-node oversupply, and that oversupply arrives as a slow deflationary grind on the commodity half of the franchise precisely when the country is trying to climb into the advanced half. Bifurcation is the base case: the advanced tier and the Johor-Singapore linkage win, while the commodity tier and the stretched consumer absorb the pressure. That is a stock-picker's market, not an index bet. We stay at market weight, overweight the insulated tiers, underweight the exposed ones, and watch RON95 execution and Chinese back-end pricing as the two catalysts that would move the call.

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