

STRATEGIC ASSET ANALYSIS – COMPANY COVERAGE RESEARCH

Photronics, Inc.

NASDAQ: PLAB

“Photomasks are the foundation of wafer manufacturing and a critical, non-substitutable enabler of the semiconductor production process: no advanced Integrated Circuit (IC) or Flat Panel Display (FPD) can be fabricated without them, and Photronics is a global merchant leader in their production”

An Independent Analysis of Strategy, Competitive Positioning, Financial Performance, and Long-Term Structural Themes

COVERAGE TYPE	RESEARCH DATE	EV / TTM OPER. INCOME	SECTOR
Independent	June 2026	~6.9x	Semiconductor Equipment / Photomasks

Sector: Semiconductor Capital Equipment / Photomasks

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1. Executive Summary & Key Findings

Photronics, Inc. (NASDAQ: PLAB) is one of the world's leading independent merchant manufacturers of photomasks — the precision templates required to transfer circuit designs onto semiconductor wafers and display substrates. The share price fell sharply following its fiscal second-quarter 2026 print (down a cumulative ~37% across the prior week, per company-adjacent press coverage, before a partial post-call recovery of +8.45% on the earnings day itself), as investors reacted to a 5% year-over-year decline in Integrated Circuit (IC) or semiconductor revenue and management's acknowledgment of “unexpected near-term headwinds” in chip design releases. This reaction appears to conflate a temporary, well-explained delay in customer tape-outs with a structural deterioration in demand, and the resulting valuation reset is a central analytical question this report examines for a business whose long-term drivers — semiconductor complexity, advanced packaging, AI-driven memory and logic demand, and a multi-year regionalization buildout in Korea and the United States — remain fully intact.

The company's recent six-month revenue is \$435.0 million (ending May 3, 2026), with net income attributable to shareholders totaling \$74.4 million. Its balance sheet shows \$637.7 million in cash and short-term investments, contrasted with only \$3.9 million in long-term debt. The company's own management was explicit, repeatedly and consistently across the call, that the issue is one of timing rather than demand destruction: CEO George Macricostas stated plainly that industry demand for leading-edge memory and logic chips for AI applications remains exceptionally

strong, and that the deferral is attributable to elevated fab utilization, memory supply constraints, and a geopolitical shock (the U.S.-Iran conflict) that emerged mid-quarter — not to any erosion in the underlying secular case for photomask demand.

Crucially, the delayed demand is not stranded. President of Photronics Taiwan KangJyh Lee told analysts directly that tape-out activity had already begun recovering since the beginning of May — meaning the recovery in design releases was already underway at the time of the print, even as management appropriately tempered near-term visibility given the company's typical 1-3 week order backlog. Meanwhile, the company's Flat Panel Display (FPD) business posted one of the strongest quarters in its history, up 13% year-over-year, evidence that the IC softness is concentrated and explainable rather than company-wide.

Layered on top of the cyclical recovery case is a credible, already-funded structural growth driver: Photronics is mid-construction on capacity expansions in Korea (extending capability to 8-nanometer and below) and at its Allen, Texas facility (which began producing qualification masks in the current quarter), both explicitly designed to capture the industry's regionalization of semiconductor manufacturing and increased outsourcing from captive mask producers to merchant suppliers like Photronics. Management reaffirmed its \$330 million fiscal 2026 capital expenditure guidance on the call despite the demand softness — a signal of confidence in the multi-year opportunity that the current market pricing may not yet fully credit.

This report approaches that question through the distinction between deferred and destroyed demand, a fortress balance sheet that allows continued through-cycle investment, and the early stages of a regionalization-driven re-rating in the U.S. and Korea — not a single-quarter trade.

The Durable Case, in One Paragraph

Strip away any single quarter's results, and the durable case for Photronics rests on a small set of structural assets, inventoried in Section 2.4: decades of advanced-node mask process know-how that a new entrant cannot replicate without years of foundry qualification cycles; a global manufacturing footprint across five regions that positions the company to capture semiconductor regionalization spending; switching costs built into multi-quarter customer qualification cycles; and a net-cash balance sheet that allows continued through-cycle investment in Korea and Allen, Texas while more leveraged peers retrench. Whether that combination is sufficient to justify a structurally different valuation than the market currently assigns — and whether it would still hold up a decade from now, after several more node-migration and AI-driven demand cycles — is the underlying question the rest of this report is built to help a reader answer for themselves.

2. Company Overview

Photronics, Inc. is one of the world's leading manufacturers of photomasks — high-precision photographic quartz or glass plates containing microscopic images of electronic circuits, used as masters to transfer circuit patterns onto semiconductor wafers and flat panel display (FPD) substrates. **Photomasks are the foundation of wafer manufacturing and a critical, non-substitutable enabler of the semiconductor production process: no advanced IC or FPD can be fabricated without them**, and Photronics is a global merchant leader in their production, competing for share that captive (in-house) mask-making operations and a small number of other independent merchant suppliers do not already hold. The company operates 11 manufacturing facilities located in Taiwan (3), China (2), South Korea (1), the United States (3), and Europe (2), and reported approximately 58.96 million shares outstanding as of June 4, 2026.

Photomask demand is structurally tied to semiconductor design activity — new chip tape-outs and design releases — rather than to wafer production volumes directly, a distinction that is central to interpreting the current quarter's results. The company's revenue mix is split between Integrated Circuit (IC) photomasks, which represented 72% of trailing-twelve-month revenue, and Flat Panel Display (FPD) photomasks, at 28%. Within both categories, Photronics further segments revenue between High-End products (28nm and below for IC; G10.5+, AMOLED, and LTPS for FPD) and Mainstream products, with High-End now representing approximately 52% of total revenue.

Six-Month and Quarterly Financial Snapshot (per Form 10-Q)

Metric	Q2 FY26	Q1 FY26	Q2 FY25	6M FY26	6M FY25
Revenue (\$M)	209.9	225.1	211.0	435.0	423.1
Gross Margin	31.3%	35.0%	36.9%	33.2%	36.3%

Metric	Q2 FY26	Q1 FY26	Q2 FY25	6M FY26	6M FY25
Operating Margin	20.1%	24.4%	26.4%	22.3%	25.5%
Net Income Attrib. to PLAB (\$M)	31.4	42.9	8.9	74.4	51.7
Diluted EPS	\$0.54	\$0.74	\$0.15	\$1.27	\$0.84
Non-GAAP Diluted EPS	\$0.42	\$0.61	\$0.40	n/a	n/a

Source: Form 10-Q for the quarterly period ended May 3, 2026; FQ2 2026 Earnings Presentation.

Revenue Mix (Trailing Twelve Months, [per May 2026 Investor Presentation](#))

Dimension	Breakdown
By Geographic Origin	Taiwan 32% · South Korea 19% · China IC 15% · U.S. 18% · China FPD 12% · Europe 4%
By Technology	High-End 52% · Mainstream 48%
By Product Line	Integrated Circuits 72% · Flat Panel Display 28%

2.4 Strategic Asset Inventory

Before turning to financial performance and valuation, it is useful to separate the durable, structural assets Photronics owns from the cyclical results those assets happen to be producing in any given fiscal quarter. The categories below are the lens applied throughout this report — proprietary process know-how, distribution, intellectual property, management and disclosure quality, switching costs, structural industry shifts, and capital allocation — each cross-referenced to the section where it is examined in depth.

Strategic Asset	What Photronics Owns, and Where It Is Examined
Proprietary Process Know-How	Decades of accumulated advanced-node mask process and yield know-how, including qualification at the 7-nanometer node at Boise, active EUV photomask production capability (including a manufacturing-grade joint R&D agreement with IBM Research for 7nm and 5nm EUV mask processes), U.S. Government Trusted designation, and the first U.S. merchant multi-beam mask writer — not replicable by a new entrant without years of qualification cycles with foundry customers (Section 3.1, Section 3.4A, Section 8.3)
Distribution	Eleven manufacturing facilities across Taiwan, China, South Korea, the United States, and Europe, positioning Photronics as one of a small number of global merchant photomask suppliers able to serve both IC and FPD customers across geographies (Section 2)
Intellectual Property	Advanced-node mask qualification and FPD mask-writer capability (including the G8.6 AMOLED writer in Korea) that a small number of merchant competitors and captive producers can match (Section 4.2, Section 8.2)
Management & Disclosure Quality	Specific, falsifiable causal explanations for the Q2 print and candid acknowledgment of limited cost-cutting flexibility when asked directly, rather than a defensively managed narrative (Section 9, Section 5.3)
Switching Costs	Foundry and FPD customers qualify specific mask sets and process recipes with Photronics over multi-quarter cycles, creating switching costs that underpin demand stability once a customer's designs are qualified (Section 3.1)
Structural Industry Shifts	Semiconductor regionalization/reshoring policy in the U.S. and Korea, rising mask complexity at advanced nodes, and AI-driven memory/logic demand are reshaping the addressable market independent of any single quarter's design-release timing (Section 3.1, Section 3.4, Section 8)
Capital Allocation	A net-cash balance sheet (\$637.7M cash and short-term investments vs. \$3.9M long-term debt) funding a \$330M regionalization capex program through-cycle without raising capital, alongside a disciplined buyback pause during the capex ramp (Section 6.3, Section 3.3)

The remainder of this report develops each of these seven categories in detail. The organizing question is not only what multiple the equity should trade at, but what durable, structurally defensible assets the company controls — and how the market's current pricing does or does not reflect them.

3. Structural Investment Considerations

3.1 Semiconductor Complexity, Not Unit Volume, Is the Relevant Demand Driver

The central analytical observation underpinning this research, and reaffirmed by the [Q2 2026 print](#), is that photomask demand scales with the complexity of semiconductor design; AI accelerators, high-bandwidth memory, advanced packaging, and chiplet architectures all require more sophisticated and more numerous mask sets, rather than with raw semiconductor unit volume. Management's own framing on the call reinforces this directly: industry demand for leading-edge memory and logic chips supporting AI applications was described as exceptionally strong, even as the same call disclosed a 5% year-over-year decline in IC revenue. These two facts are not in tension once the distinction between design-release timing and end demand is properly understood, and it is this distinction that the market's pricing may not fully reflect.

This relationship has a specific, quantifiable mechanism that may be underappreciated in how the equity is currently priced: as node geometries shrink and pattern density rises, from 130nm and 90nm through 40/45nm, 22/28nm, 12/14nm, and 7/8nm, toward the 2/3nm nodes Photronics is positioning to serve — mask pattern complexity, the number of masks required per IC design, and the sensitivity of IC yield to mask performance all increase, and indicative mask value rises accordingly, with the steepest inflection occurring below roughly 12/14nm. This is the structural mechanism by which node migration drives higher individual mask average selling prices, more layers per mask set, and higher barriers to entry for competitors lacking the advanced-node qualification Photronics already holds at nodes such as Boise's 7-nanometer capability; a tailwind that operates independently of, and on a longer time horizon than, any single quarter's design-release timing.

3.2 The Delay Is Documented, Specific, and Already Showing Signs of Reversal

Unlike a vague or evasive management explanation, the Q2 call provided a remarkably specific and falsifiable causal chain for the IC softness: (1) elevated industry-wide fab utilization rates left limited capacity for new customer design releases; (2) a surge in memory prices and related supply constraints delayed several consumer electronics product launches as OEMs prioritized securing memory supply over releasing new designs; and (3) the U.S.-Iran conflict, which CFO Eric Rivera identified as the point at which visibility became cloudy, introduced incremental macro uncertainty mid-quarter. President of Photronics Taiwan KangJyh Lee's direct disclosure that tape-out activity had already begun recovering since the beginning of May is arguably the single most important and most underappreciated data point in the [entire Q2 2026 earnings call transcript](#) — it indicates the delay explanation is not merely management's hopeful framing but is supported by observed order-flow data inside the current quarter.

3.3 A Fortress Balance Sheet Enables Continued Through-Cycle Investment

As of May 3, 2026, Photronics held \$637.7 million of cash and short-term investments against only \$3.9 million of long-term debt, with total assets of \$1.93 billion versus total liabilities of just \$237.4 million. This balance sheet strength is not incidental to the analysis; it is the mechanism by which Photronics can continue to fund its \$330 million fiscal 2026 capital expenditure program (reaffirmed on the call despite the demand softness) without the kind of capital discipline retreat that typically afflicts more leveraged semiconductor supply-chain participants during cyclical air pockets. Competitors and even Photronics' own captive-mask-producing customers do not universally enjoy this flexibility, which is a structural advantage that compounds during periods exactly like the current one.

3.4 Regionalization Is a Multi-Year, Already-Funded Tailwind

Governments across the U.S., Korea, Japan, Europe, and China have made semiconductor manufacturing a strategic national priority, and Photronics has aligned its capital allocation directly with this trend. The Allen, Texas, facility began producing qualification masks during the quarter, with management targeting initial revenue late in fiscal 2026 and a more meaningful contribution to revenue growth in 2027 and beyond. In Korea, clean room preparation is underway for equipment extending the capability to 8-nanometer and below, with installations expected to begin later in the fiscal year. Both projects position Photronics to benefit from increased outsourcing by captive photomask producers as manufacturing diversifies geographically — a trend that is independent of, and additive to, the near-term cyclical recovery in design-release timing.

3.4A Repositioning Toward Higher-Value Revenue: The Allen-Boise-Korea Capital Allocation Strategy

The [Q2 FY2026 earnings call \(May 28, 2026\)](#) discloses a more deliberate strategy than "regionalization adds capacity." On the call, management described the Allen, Texas, expansion as accomplishing three distinct things at once, not one. First, it is a technology upgrade: President of Photronics Taiwan KangJyh Lee stated that the Allen qualification work is for technology nodes that the site cannot produce today, meaning Allen becomes able to compete for business it was previously unable to bid on at all. Second, management explicitly connected that qualification to a market-share objective rather than to simple capacity addition, stating on the call that once a customer is qualified at the new node, the company expects to increase its market share in that specific technology node. Third, and least discussed in prior coverage of this name, management described a deliberate internal transfer of work: lower-end, high-end mainstream production is being moved from the Boise, Idaho, facility to Allen, specifically to free Boise capacity for higher Average Selling Price (ASP) orders. In management's own framing, this is a win for both sites; Allen gains qualified volume it could not previously win, and Boise is freed to focus on its highest-margin work.

Boise itself is described as following a similar trajectory at the top of the value ladder: the site is currently qualified at the 7-nanometer node and is in active EUV photomask production — including a manufacturing-grade joint R&D agreement with IBM Research for 7nm and 5nm EUV mask processes and beyond, established subsequent to the earnings call covered in this report (August 2025). On August 8, 2025, Photronics announced the installation of the first U.S. merchant multi-beam mask writer at Boise, explicitly supporting EUV and nanoimprint masks and U.S. Government Trusted applications. Management had indicated on the Q2 FY2026 call that it is working with customers toward even more advanced nodes beyond that, consistent with this roadmap. Combined with the Boise-to-Allen transfer described above, the practical effect is that Boise's product mix should skew toward progressively higher-ASP, more advanced-node work over time, while Allen absorbs the mainstream and qualification-stage volume that Boise no longer needs to carry. Reading the Allen, Boise, and Korea investments together rather than as three separate capacity announcements, a single capital-allocation logic emerges: each dollar of growth capital is directed toward shifting the company's product mix up the value chain, toward more advanced geometries, higher engineering content, and higher ASPs, while using the lower end of the portfolio to keep utilization high and cash flowing through the transition. Management's own language on the call was explicit that this is the intent rather than an incidental byproduct, describing the strategic goal as strengthening its position as a leading domestic merchant photomask supplier as onshore semiconductor manufacturing continues to expand.

This reframes the captive-to-merchant outsourcing dynamic discussed in Section 3.7 as well. Rather than reading regionalization purely as Photronics taking share from other merchant suppliers (Toppan, DNP), **management's framing on the call points to a second, additive growth path: captive capacity moving to merchant suppliers as masks become more capital- and engineering-intensive, which would expand the total addressable merchant market rather than simply redividing it.** Taken together, this report reads the Allen/Boise/Korea program as resting on three largely independent sources of potential upside rather than one: technology migration into higher-ASP nodes, explicit market-share gains in newly-qualified geometries, and an expansion of the addressable merchant market itself as captive volume migrates outward. None of this changes the near-term, cyclical analysis in Sections 3.1-3.2 — management was equally explicit that near-term design-release visibility remains limited — but it is a materially more specific articulation of the long-term structural case than "complexity is increasing" alone, and it is sourced directly to management's own remarks rather than inferred from industry data.

3.5 Why Photomasks Remain One of the Semiconductor Industry's Most Underappreciated Assets

Nearly every discussion of artificial intelligence infrastructure focuses on GPUs, HBM memory, advanced packaging, networking, optical interconnects, or power. Photomasks are rarely mentioned — not because they have become less important, but because they are generally assumed to exist. Their absence from the discussion reflects their historical reliability rather than their strategic significance.

Photomasks remain one of the least-discussed yet indispensable components of semiconductor manufacturing. Unlike GPUs, memory, advanced packaging, or EUV lithography, photomasks rarely dominate industry headlines because they have not recently been the industry's primary bottleneck. Yet every leading-edge semiconductor — from AI accelerators to HBM memory and chiplet architectures — must first be translated into an increasingly complex series of photomasks before production can begin. As semiconductor designs become more sophisticated, the economic value embedded in each mask set rises through higher engineering content, additional process steps, more stringent qualification requirements, and greater performance sensitivity. If this trend continues, photomasks may capture a larger share of the value created by increasing semiconductor design complexity even without ever becoming the industry's headline bottleneck.

Every semiconductor follows the same value chain, and the mask sits closer to the origin of that chain than most analyses acknowledge:

Design → EDA → Photomask → Wafer Fabrication → Packaging → Testing → Server → AI

Most analysis of the AI infrastructure buildout begins at the wafer, or further downstream at the server and the rack. This report begins one step earlier — at the mask itself, the step where design intent is first translated into a manufacturable pattern. That is a different starting point than most coverage of this industry, not a different conclusion about it.

3.6 The Economics of Semiconductor Complexity

Rather than assert that AI "requires more masks," it is worth tracing the specific mechanism by which each major AI-infrastructure trend translates into incremental photomask content:

AI Infrastructure Trend	Mechanism: Effect on Photomask Demand
Smaller nodes	More mask layers per design, each with tighter critical-dimension and overlay tolerances
Chiplets	More individual mask sets, since each chiplet is a distinct tape-out rather than one monolithic die
HBM	More advanced, tightly-toleranced masks per stacked memory layer
Advanced packaging (2.5D/3D)	More iterations, plus incremental redistribution-layer and interposer masks beyond front-end wafer processing
Custom ASICs	More distinct tape-outs at lower volume per design, raising mask cost as a share of total program spend
AI inference chips	More design diversity and shorter design cycles, increasing the number of distinct mask sets in development at any time

Semiconductor value creation is migrating from unit volume toward engineering complexity. Photomasks participate directly in that transition because every increase in design complexity must ultimately be translated into manufacturable mask patterns. There is no path from a more complex chip design to a finished wafer that does not pass through a more complex mask set.

What the available data show:

- **Mask content per design is rising faster than semiconductor unit volume.** Third-party industry sources (SEMI-cited figures and trade-press reporting; not independently verified against a primary, audited source) put mask-layer counts for leading-edge logic at roughly 60 layers at 28nm, rising to 100 or more at 7nm, with cumulative mask-layer counts across the most advanced multi-patterned designs cited as high as 1,200 — several multiples of the layer counts common in the 45nm era. Semiconductor unit volumes have not grown anywhere near that rate over the same period; industry-wide wafer shipment growth has tracked closer to mid-single-digit annual rates. If directionally accurate, this implies mask content per design is compounding faster than the industry's unit-volume growth rate, independent of any single company's execution.
- **Advanced-mask ASPs appear to be rising in complexity, not general inflation.** Trade-press and third-party market-research estimates place a 14-nanometer mask set at roughly \$3 million and a 7-nanometer set at \$5 million to \$8 million; separate estimates put a 5-nanometer mask set above \$15 million, against roughly \$5 million at 28-nanometer. EUV-specific masks are cited as costing several multiples more than DUV masks, attributed explicitly to reflective-substrate defect specifications, multilayer coatings, and multi-beam writing requirements rather than to broad input-cost inflation. These figures come from industry trade publications and market-research aggregators rather than from any single company's audited disclosure, and should be read as directional rather than precise.
- **Engineering hours per advanced mask appear to be increasing.** Trade-press reporting describes mask data preparation for advanced designs now generating terabytes of data per layer with processing times that can exceed 72 hours, and describes the computational load associated with inverse lithography and resolution-enhancement techniques as having grown by roughly two orders of magnitude over the past decade. This is consistent with the qualitative shift discussed in Section 3.10 below, from a manufactured product toward an engineered one. However, the precise figures should again be treated as directional industry commentary rather than company-specific, audited data.
- **The merchant supplier base has consolidated, which is consistent with (though not proof of) greater pricing power for the suppliers that remain.** The merchant photomask market is commonly described as a three-supplier structure — Photronics, Toppan (recently rebranded Tekscend), and Dai Nippon Printing (DNP) — alongside a smaller number of captive shops operated directly by the largest chipmakers. Trade-press estimates cited in industry research suggest the number of mask shops capable of supporting 5-nanometer

production has fallen from roughly seven to four globally, and that the top three merchant suppliers account for a large majority of advanced-mask merchant volume. Fewer qualified suppliers at the leading edge, combined with the multi-year, multi-million-dollar qualification cycles discussed in Section 3.1, is the kind of structural setup that tends to support supplier pricing discipline — though Museum Park Capital has not independently verified specific market-share figures and treats them as directional industry context rather than company-specific fact.

3.7 Is the Captive/Merchant Boundary Itself Shifting?

A different and, in some respects, more important question than whether photomasks are becoming scarce is whether it remains economical for every leading foundry to produce every advanced mask internally. As masks become more expensive, more engineering-intensive, more capital-intensive (multi-beam writers and EUV-capable inspection tools each carry tens of millions of dollars in capital cost), and more geopolitically sensitive, the calculus behind owning a captive mask shop changes — even for a well-capitalized foundry.

Photronics management has stated directly, on the record, that it expects to benefit from increased outsourcing by captive mask producers as part of the rationale for its Korea and Allen, Texas capacity expansions — a forward-looking expectation, not a guarantee, but one consistent with the broader economics at work. Trade-press industry commentary similarly suggests that as more single-site captive shops face the capital burden of keeping pace with EUV-class tooling, merchant suppliers gain incremental bargaining power and incremental volume over time. This is a slow-moving, structural question about the economic boundary of the firm across the entire semiconductor industry — not a near-term, company-specific catalyst — and this report treats it accordingly: as a multi-year tailwind to watch via the outsourcing and capacity-utilization data points already tracked in Section 15, not as a near-term thesis driver in its own right.

Translating that industry-level dynamic into company-specific terms: if only 5%-10% of advanced captive production migrated to qualified merchant suppliers over the next decade, the addressable merchant market available to Photronics, Toppan, and DNP could expand materially even with no change at all in underlying semiconductor unit demand. That is a different growth driver than the cyclical recovery discussed in Section 3.2 — it does not require the semiconductor industry to grow faster, only for a larger share of a similarly-sized industry's advanced-mask production to shift toward the small set of merchant suppliers capable of qualifying for it.

3.8 The Merchant Capacity Scarcity Hypothesis

Everything documented in Section 3.6 describes masks becoming more expensive and more engineering-intensive. That is a different claim from the one this section asks about: whether qualified merchant manufacturing capacity itself could become scarce. Those are not the same idea. HBM memory did not re-rate because DRAM became more architecturally complicated in the abstract; it re-rated because qualified HBM capacity became constrained relative to demand. The question worth asking about photomasks is the analogous one: does rising complexity eventually translate into a constraint on the available pool of qualified merchant capacity, not merely on the price of an individual mask?

As advanced-node mask production becomes increasingly engineering-intensive, capital-intensive, and qualification-intensive, another question emerges beyond pricing: whether the industry's limited pool of qualified merchant suppliers can expand capacity quickly enough to meet rising design activity. The thesis developed in this report does not depend upon photomasks becoming a headline bottleneck akin to HBM memory. However, even modest constraints in qualified merchant capacity — particularly if reshoring policies increase domestic demand for trusted suppliers — could strengthen utilization, pricing discipline, and customer relationships across a highly concentrated industry.

This report does not claim that merchant capacity has already become scarce, nor does it forecast a date by which it might. The honest position is that this is an open question rather than a documented fact: the same forces already evidenced above — fewer qualified suppliers at the leading edge (Section 3.6), multi-year qualification cycles (Section 3.1), rising capital intensity per facility (Section 3.3), and a possible captive-to-merchant share shift (Section 3.7) — are the same raw ingredients that produced a capacity-driven re-rating in HBM memory. Whether they compound the same way in photomasks is a question this report flags for ongoing monitoring (Section 15) rather than one it answers in advance of the evidence.

What If Photomasks Never Become the Bottleneck?

That may, counterintuitively, be the more favorable case rather than the less favorable one. Investors tend to notice bottlenecks — a visible shortage is a visible catalyst. A structural improvement in mask economics does not require a shortage narrative at all; it only requires rising ASPs, increasing engineering content per mask, increasing qualification difficulty, and increasing switching costs, each of which can compound quietly without ever producing a headline. The thesis developed in this report does not require photomasks to become the semiconductor industry's

next bottleneck, and it is deliberately framed without one. A structural argument that depends on a supply shock is fragile, because supply shocks resolve; an argument that depends on the mechanics of rising design complexity, documented above, does not require any single dramatic event to play out, which — perhaps counterintuitively — makes it a more durable basis for a multi-year view, not a weaker one.

3.10 From Manufacturing Mask to Engineering Yield

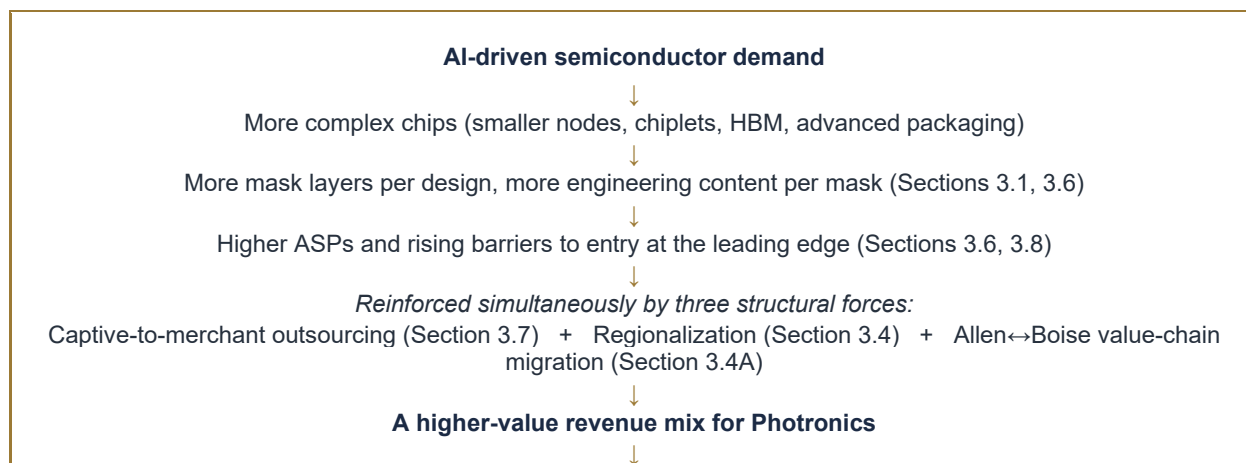
It understates the modern photomask to describe it as "a more complex mask." A leading-edge mask today embeds optical proximity correction, computational lithography, automated inspection, defect repair, multi-step verification, and defect-control processes layered on top of the physical patterning itself — and it is qualified against a specific customer's specific process, often over multiple quarters, before it is ever used in production. The product Photronics actually sells is no longer adequately described as quartz and chrome. The product is yield: a customer's confidence that a wafer run costing tens or hundreds of millions of dollars will not fail because of a mask defect. That distinction — selling manufacturing confidence rather than a physical manufactured part — is what moves Photronics conceptually closer to an engineering business than a manufacturing one, and it is the underlying reason switching costs (Section 3.1) and qualification cycles are as durable as they are.

3.11 What the Market May Be Missing

Investors generally evaluate Photronics as a cyclical semiconductor supplier, priced primarily off near-term tape-out and design-release timing. This report instead asks whether the market is applying a cyclical valuation multiple to a business whose competitive position is becoming more structural. If semiconductor complexity continues increasing faster than semiconductor unit volumes, if advanced-node qualification continues to become more valuable as a switching cost, if merchant outsourcing from captive shops continues as discussed in Section 3.7; and if regionalization persists as discussed in Section 3.4 — then Photronics may participate in a gradual increase in the economic value captured by advanced photomask suppliers, independent of any temporary supply shortage. The market currently appears focused on quarterly tape-out timing. The more important, and harder, question may be whether photomasks themselves are becoming structurally more valuable assets within the semiconductor ecosystem — a question this report answers tentatively in the affirmative, while flagging throughout exactly which figures are company-specific and audited versus directional and third-party-sourced.

Sections 3.5 through 3.10 each examine one piece of a larger puzzle — complexity, ASPs, engineering content, supplier consolidation, and the captive-versus-merchant dynamic. Put together, they synthesize into a single open question that this report calls the merchant capacity scarcity hypothesis, stated here deliberately as a question rather than a prediction: if AI increases design activity, node migration raises engineering intensity, reshoring expands domestic manufacturing, and only a handful of qualified merchant suppliers exist globally, does advanced merchant photomask capacity itself become an increasingly scarce strategic asset? This report does not claim to have confirmed that hypothesis, and the monitoring framework in Section 15 is built in part to track the evidence — utilization rates, qualification announcements, capacity additions, and outsourcing commentary — that would support or undermine it over time. If even part of it holds up, the more interesting comparison is not to other photomask suppliers, but to other once-overlooked capacity bottlenecks that the market was slow to reprice.

The Section 3 Argument, in One Diagram



Higher ROIC · Higher free cash flow · Potential re-rating, if the market reflects it (Sections 6-7, 14)

Every link above is developed with supporting evidence in the cross-referenced subsection; this diagram is a navigational summary of Section 3, not a substitute for it.

Section 3 Takeaway

The near-term case for Photronics rests on a documented, temporary delay in chip design releases rather than lost demand (Sections 3.1-3.2), supported by a net-cash balance sheet that can fund growth investment through the cycle (Section 3.3) and a regionalization buildout already underway in Korea and Texas (Section 3.4). The longer-term case, developed in Sections 3.5-3.11, is less conventional: rising semiconductor design complexity appears to be increasing mask content, advanced-mask pricing, and engineering intensity faster than unit volumes are growing, in an industry with very few qualified merchant suppliers. None of this requires a shortage to materialize — it only requires complexity to keep compounding the way it already has. Readers short on time can proceed directly to Section 4 and treat Sections 3.5-3.11 as supporting detail to revisit later.

4. Segment Deep Dive: Integrated Circuits and Flat Panel Display

4.1 Integrated Circuits — The Source of Q2 Softness

Metric	Q2 FY26	Q/Q	Y/Y
High-End IC Revenue (\$M)	56.7	(21%)	(4%)
Mainstream IC Revenue (\$M)	90.9	(3%)	(6%)
Total IC Revenue (\$M)	147.5	(11%)	(5%)
High-End % of IC Revenue	38%	—	—

IC revenue declined 10.8% sequentially and 5.4% year-over-year, which management attributed primarily to delayed design releases rather than any loss of share or end-demand weakness. Notably, year-to-date IC revenue for the first six months of fiscal 2026 actually increased 1.0% versus the comparable prior-year period, driven by increased global demand for high-end products — a detail obscured by the quarter-over-quarter framing that dominated the market's reaction to the print. The decline in High-End IC revenue specifically (down 21% sequentially) is consistent with management's explanation that foundry customers, who account for the bulk of design-release-driven demand, were the locus of the slowdown, rather than the mainstream, more capacity-utilization-driven portion of the business.

4.2 Flat Panel Display — Evidence the Issue Is Concentrated, Not Company-Wide

Metric	Q2 FY26	Q/Q	Y/Y
High-End FPD Revenue (\$M)	52.8	13%	21%
Mainstream FPD Revenue (\$M)	9.6	(25%)	(16%)
Total FPD Revenue (\$M)	62.4	4%	13%
High-End % of FPD Revenue	85%	—	—

FPD revenue of \$62.4 million represented, in management's own words, one of the strongest quarters in the history of its display business, up 13% year-over-year and accelerating from Q1. Growth was driven by complex, larger mask sizes and the company's differentiated position in AMOLED, with particular strength in the China and Korea markets ahead of high-end consumer electronics launches (smartphones and smartwatches) scheduled for Western markets later in the year. The recently installed FPD mask writer in Korea, targeting the higher-ASP G8.6 AMOLED market, is expected to see wider adoption later in the calendar year and represents an incremental, underappreciated growth vector layered on top of the existing FPD recovery.

The juxtaposition of a 5% IC revenue decline against a 13% FPD revenue increase in the same quarter is arguably the clearest evidence available that the IC softness reflects a specific, identifiable disruption in customer design-

release timing — not a broad-based deterioration in Photonics' competitive position, manufacturing execution, or end-market demand.

5. Why Demand Is Delayed, Not Destroyed: Reading the Q2 Print Correctly

A standalone section is dedicated to this distinction because it is the single point on which this analysis and the market's post-earnings reaction most directly diverge, and because management itself returned to this framing repeatedly and consistently across the call — a degree of message discipline that, in our experience, is more often associated with a genuinely well-understood timing issue than with a company attempting to obscure a structural problem.

5.1 The Backlog Structure Limits, But Does Not Eliminate Visibility

CFO Eric Rivera was explicit that Photonics' typical order backlog is only 1 to 3 weeks, and that high-ASP mask orders mean even a small number of orders can materially swing quarterly revenue and earnings. This limited visibility is a structural feature of the business model, not a new risk introduced this quarter — but it does mean that a few weeks of delayed tape-outs around the Chinese New Year seasonal trough, compounded by an unrelated geopolitical shock, can produce an outsized quarterly revenue miss relative to the underlying trajectory of design activity. The same structural feature that produced the Q2 miss is the one that allows revenue to recover quickly once delayed designs are released, as Mr. Lee's comment about early-May tape-out activity suggests is already occurring.

5.2 Three Distinct, Identifiable, and Plausibly Temporary Causes

- Elevated fab utilization: foundry customers prioritized continued production on existing, already-profitable designs over releasing new ones, because their own fabs lacked spare capacity to accommodate new design ramps.
- Memory supply constraints and price surges: per Mr. Lee, this had a significant negative impact specifically on low-end consumer products, concentrated in Asia (Taiwan and China), as OEMs delayed new product launches to manage rising memory costs — a cost dynamic, not a demand-destruction dynamic.
- Geopolitical uncertainty: the U.S.-Iran conflict introduced a macro shock that both Mr. Rivera and Mr. Macriostas identified as compounding, rather than causing, in isolation, the slowdown that began after the Chinese New Year period.

None of these three factors implicates Photonics' win rates, technology roadmap, or customer relationships. This stands in contrast to a scenario in which a company loses share to a competitor or faces a structural shift away from its core technology — neither of which appears in the disclosed evidence.

5.3 Management's Own Candor on Cost Structure Limits Should Be Read as Discipline, Not Alarm

When pressed directly by Gowshihan Sriharan (Singular Research) on available margin levers if demand remained soft, Mr. Rivera responded candidly that there were very little levers to pull, since most of the company's cost is fixed. This reads not as a red flag but as evidence of analytical honesty consistent with the rest of management's disclosure on the call — a management team attempting to paper over a structural problem would be more likely to overstate its ability to manage costs defensively. The acknowledgment of high fixed-cost operating leverage is a known, longstanding feature of the photomask manufacturing model (also disclosed plainly in the Form 10-Q's MD&A section) and is the same operating leverage that drives margin expansion once volumes recover.

6. Financial Analysis: Quality of Earnings, Balance Sheet, Capital Allocation

6.1 Income Statement Detail (Six Months Ended May 3, 2026, per Form 10-Q)

Metric	6M FY26 (\$000s)	6M FY25 (\$000s)
Revenue	435,006	423,130
Cost of Goods Sold	290,547	269,689
Gross Profit	144,459	153,441
Operating Income	97,038	107,894
Foreign Currency Transactions Impact, Net	20,734	(12,668)
Income Before Income Tax Provision	128,388	107,089
Net Income	103,427	82,474
Net Income Attributable to PLAB Shareholders	74,368	51,712

Gross margin compressed to 33.2% for the first six months of fiscal 2026 from 36.3% in the prior-year period, which management attributed to higher material costs, labor and benefits costs, and other manufacturing costs — cost-side pressure rather than pricing erosion. A meaningful portion of the year-over-year net income improvement is attributable to favorable foreign currency transaction gains (\$20.7 million benefit in 6M FY26 versus a \$12.7 million headwind in 6M FY25), driven by movements in the New Taiwan dollar and South Korean won against the U.S. dollar. We flag this explicitly because it is a genuine quality-of-earnings consideration: on a non-GAAP basis (excluding FX), diluted EPS was \$0.42 in Q2 FY26 versus \$0.40 in Q2 FY25 — essentially flat, and a materially less dramatic year-over-year comparison than the GAAP EPS swing from \$0.15 to \$0.54 implies.

6.2 Balance Sheet Strength (as of May 3, 2026, per Form 10-Q)

Item	May 3, 2026	October 31, 2025
Cash and Cash Equivalents (\$000s)	511,490	492,256
Short-Term Investments (\$000s)	126,177	95,909
Total Cash & Short-Term Investments (\$000s)	637,667	588,165
Long-Term Debt (\$000s)	3,853	13
Total Assets (\$000s)	1,930,826	1,804,534
Total Liabilities (\$000s)	237,365	207,227
Total Photronics Shareholders' Equity (\$000s)	1,241,250	1,173,589

The balance sheet carries effectively no leverage — long-term debt of \$3.9 million, almost entirely a finance lease related to an FPD lithography tool component, against \$637.7 million of cash and short-term investments. This is a meaningfully different risk profile from a typical capital-intensive semiconductor supply-chain participant and is the primary mechanism by which Photronics can sustain its regionalization-driven capital expenditure program through a demand air pocket without raising capital or curtailing investment.

6.3 Cash Flow and Capital Allocation

Net cash provided by operating activities increased to \$144.3 million for the first six months of fiscal 2026, up from \$109.9 million in the comparable prior-year period, driven by increased net income and favorable working capital changes. Capital expenditure payments were \$93.4 million year-to-date, tracking toward the reaffirmed \$330 million full-year guidance, directed toward Korean advanced-node expansion, the Allen, Texas facility, and end-of-life tool upgrades. The company repurchased no shares during the three- or six-month periods ended May 3, 2026, leaving \$27.6 million available under its existing authorization — we view the pause in buybacks as a sensible capital allocation decision given the magnitude of the ongoing regionalization capex program, rather than a signal of concern about the business.

7. Valuation Framework

7.1 Current Multiples

At a reference price of \$33.63 per share and approximately 58.96 million shares outstanding (per the Form 10-Q cover page, as of June 4, 2026), Photronics carries a market capitalization of approximately \$1.98 billion. Netting out cash and short-term investments of \$637.7 million against minimal debt of \$3.9 million, the company's enterprise

value is approximately \$1.35 billion — meaning roughly one-third of the current market capitalization is covered by net cash alone.

Metric	Value
Market capitalization (current)	~\$1.98B
Cash + short-term investments (5/3/26)	\$637.7M
Total debt	\$3.9M
Enterprise value	~\$1.35B
TTM Revenue (per May 2026 Investor Presentation)	\$861M
TTM Operating Income (per May 2026 Investor Presentation)	\$197M
TTM Operating Cash Flow (per May 2026 Investor Presentation)	\$283M
EV / TTM Revenue	~1.6x
EV / TTM Operating Income	~6.9x
EV / TTM Operating Cash Flow	~4.8x
Price / Book (PLAB shareholders' equity)	~1.60x

The EV/TTM Revenue and EV/TTM Operating Income figures use trailing-twelve-month results as disclosed in the May 2026 Investor Presentation (\$861 million revenue; \$197 million operating income), which we treat as the more reliable basis for a full-cycle multiple than annualizing a single half-year or quarter, since TTM blends the strong Q1 FY26 print together with the weaker Q2. EV/TTM Operating Cash Flow is derived the same way from the disclosed \$283 million TTM figure. Price/Book uses Photronics, Inc. shareholders' equity of \$1,241.3 million (excluding the \$452.2 million of noncontrolling interest equity attributable to joint-venture partners, principally DNP in the China-based PDMCX joint venture) against the 58.15 million shares issued and outstanding as of May 3, 2026.

7.2 P/E and the FX Distortion in Trailing EPS

GAAP diluted EPS swung from \$0.15 in Q2 FY25 to \$0.54 in Q2 FY26, a move the headline numbers might suggest reflects a dramatic underlying earnings improvement. It does not, in the main. The Form 10-Q's own non-GAAP reconciliation isolates the driver: a foreign currency transaction gain of \$7.9 million in Q2 FY26 versus a \$31.1 million loss in Q2 FY25 — a roughly \$39 million swing — driven by movements in the New Taiwan dollar and South Korean won against the U.S. dollar. Stripping this out, non-GAAP diluted EPS was \$0.42 in Q2 FY26 versus \$0.40 in Q2 FY25 — essentially flat, and a materially less dramatic comparison than the GAAP figures imply. The non-GAAP basis is treated here as the more reliable read of core, currency-normalized earnings power.

Annualizing H1 FY26 results gives a GAAP-basis implied P/E of approximately 13.2x (\$1.27 diluted EPS × 2, against the \$33.63 reference price) versus a non-GAAP-basis implied P/E of approximately 16.3x (\$1.03 combined H1 non-GAAP EPS × 2). The spread between these two figures is arguably the single most important number in this valuation section: the lower, GAAP-derived multiple looks cheap almost entirely because of the FX gain, not because of any improvement in operating performance. Anchoring a valuation view to the 13.2x figure on its own would be a methodological error.

Management's fiscal Q3 FY26 guidance — revenue of \$207-\$215 million, operating margin of 18%-20%, and non-GAAP diluted EPS of \$0.39-\$0.45 — provides a more direct forward read than annualizing trailing data. Blending the H1 FY26 actuals with the midpoint of Q3 guidance (\$0.42) implies a forward non-GAAP run-rate in the area of \$1.70-\$1.75 per share across the trailing-plus-guided-quarter window, modestly below the H1-only annualized \$2.06 figure, consistent with the sequential margin compression management has now explicitly guided into Q3 rather than left to be inferred.

7.3 Net-Cash-Adjusted Earnings Yield

Net cash of approximately \$633.8 million equates to roughly \$10.75 per share, implying that investors are paying approximately \$22.88 per share for the operating business once the cash cushion is backed out of the \$33.63 reference price. One nuance worth flagging directly: per both the Form 10-Q and management's commentary on the earnings call, \$477 million of the company's \$638 million of cash and short-term investments is held within joint ventures in which Photronics holds only a 50.01% ownership interest — meaning a meaningful share of the consolidated cash balance, while fully consolidated and accessible to Photronics as the controlling party, is not fungible to U.S. parent-level capital allocation (buybacks, U.S. dividends) without potential foreign-exchange or

repatriation friction. This does not undermine the balance-sheet-strength analysis articulated in Section 6, but it is a relevant qualifier when using the full net cash figure to back into an operating multiple.

Against the H1-annualized non-GAAP run-rate of approximately \$2.06 per share, the implied operating P/E is approximately 11.4x. Against the more conservative forward-looking run-rate of \$1.70-\$1.75 per share (Section 7.2), which incorporates management's own Q3 guidance, the implied operating P/E rises to approximately 13.1x-13.5x. Both are presented because the gap between them is informative in its own right: it isolates exactly how much of the apparent cheapness in this equity depends on whether the reader extrapolates from the strong H1 print or from management's own, more cautious near-term guidance. The latter is the more defensible basis for a base-case valuation, while the former is the basis for a more favorable scenario if the early-May tape-out recovery (Section 3.2) continues to build through Q3 and Q4.

7.4 Valuation Methodology and Re-Rating Sensitivity

A useful framework for thinking about valuation here is to compare the current multiple against a normalized, full-cycle multiple rather than to derive a single fair-value figure. A re-rating toward 9.0x-10.0x EV/TTM Operating Income — still inside the range observed across the photomask cycle, and consistent with the early-May tape-out recovery commentary discussed in Section 3.2 — applied against the disclosed trailing operating income base of \$197 million would imply an enterprise value of roughly \$1.77 billion to \$1.97 billion, versus the current ~\$1.35 billion. Adding back net cash of approximately \$634 million (treating the FY26 capex program as substantially internally funded by the \$283 million of TTM operating cash flow disclosed in the investor presentation, rather than a draw on this balance) implies an equity value of roughly \$2.40 billion to \$2.60 billion, or approximately \$41-\$44 per share on the current share count — before accounting for any incremental earnings contribution from the Korea and Allen regionalization investments coming online in late fiscal 2026 and fiscal 2027. This sensitivity is presented as a methodology and a range of historical reference points for investors to weigh themselves, not as a derived fair-value conclusion.

7.5 Reading the Post-Print Valuation Reset

A reported cumulative decline of approximately 37% in the days surrounding the Q2 print, against a quarter in which revenue was essentially flat year-over-year (\$209.9 million versus \$211.0 million), gross margin remained at 31.3%, and the company generated \$31.4 million of net income attributable to shareholders, is a disproportionate reaction by any conventional valuation framework. The magnitude of the move is consistent with a market that had priced in continuation of the unusually strong Q1 FY26 results (which themselves benefited from seasonal strength ahead of Chinese New Year) and was unprepared for a reversion toward, rather than below, the company's longer-run trend growth rate. No disclosure in the Form 10-Q, the earnings call, or the investor presentation identified any points that point to a structural loss of share, technology obsolescence, or customer attrition — the necessary ingredients for a structurally negative, rather than cyclical, decline. Consistent with Section 11, the magnitude and precise timing of the reported price decline have not been independently re-verified against live market data, and any trading decision should incorporate current, re-verified pricing at the time of execution.

8. Capital Allocation & Regionalization Strategy: Korea and Allen, Texas

Photronics' \$330 million fiscal 2026 capital expenditure program, reaffirmed despite the quarter's demand softness, is concentrated on two regionalization investments that are arguably the most underappreciated component of the long-term analysis precisely because they will not show up meaningfully in reported financials until late fiscal 2026 and fiscal 2027.

8.1 Allen, Texas — Mainstream U.S. Capacity

The Allen facility began producing qualification masks during the quarter, with management targeting initial revenue late in fiscal 2026 and a more meaningful contribution in 2027 and beyond. KangJyh Lee clarified on the call that the Allen expansion serves a dual purpose: extending Photronics' mainstream IC capability in the U.S., and creating room to transfer higher-ASP mainstream work from the company's existing Boise facility to Allen — freeing Boise capacity for more advanced, higher-margin orders. Management framed the strategic objective plainly: to become the main photomask supplier in the United States as onshore semiconductor manufacturing continues to expand.

8.2 Korea — Advanced-Node Extension to 8-Nanometer and Below

In Korea, clean room preparation is underway for equipment that will extend Photronics' capability to 8-nanometer and below, with installations expected to begin later in the fiscal year and initial Korea-driven revenue contribution

anticipated by the end of fiscal 2027. CFO Eric Rivera confirmed on the call that the company's aspiration is to continue moving down the node curve below 7/8 nanometers over time, consistent with the broader industry shift toward leading-edge logic and memory production for AI applications.

8.3 Boise, Idaho — The Existing High-End U.S. Anchor

Boise is already qualified to produce masks at the 7-nanometer node — the company's most advanced U.S. capability today — and management indicated ongoing work with customers toward even more advanced nodes. The combination of Boise's existing high-end qualification and Allen's expanding mainstream capacity gives Photronics what management described as a uniquely complete U.S. domestic offering across the technology spectrum, which we view as a meaningful structural advantage as reshoring incentives continue to direct new fab capacity toward U.S. soil.

9. Management Assessment

Photronics' leadership team is led by Executive Chairman George Macricostas, a long-tenured industry veteran, alongside CFO Eric Rivera, President of Photronics Taiwan KangJyh Lee, and Vice President of Investor Relations Ted Moreau. The certifications accompanying the Form 10-Q were signed by Mr. Macricostas as Chief Executive Officer and Principal Executive Officer, and by Mr. Rivera in his capacity as President, Chief Financial Officer, and Principal Financial Officer.

The quality of disclosure on the Q2 call is a meaningful, if qualitative, positive signal. Management did not obscure the magnitude of the IC decline, offered a specific and falsifiable explanation for it across three named causal factors, and volunteered (rather than were forced to disclose under analyst pressure) the detail that tape-out activity had already begun recovering in early May. CFO Rivera's candid acknowledgment of limited cost-cutting flexibility, when asked directly, is consistent with a management team that answers analyst questions plainly rather than managing the narrative defensively — a pattern that weighs positively on the credibility of management's broader long-term framing around regionalization and AI-driven complexity tailwinds.

We do flag one disclosure gap worth monitoring: the Form 10-Q notes a research and development expense credit for the six-month period attributable to the forfeiture of previously granted time-vesting restricted stock awards, following the departure of an executive, without naming the individual or role. While immaterial to the financial statements, we would seek clarification on this departure at the next opportunity, simply as a matter of governance hygiene rather than because it alters the investment case.

10. Risk Factors (Primary Source: Form 10-Q and Earnings Call)

10.1 Risks Already Substantially Reflected in This Report

- Limited order backlog (typically 1-3 weeks) and the resulting low forward revenue visibility, explicitly disclosed by management as a structural feature of the business (addressed in Section 5.1)
- High fixed-cost structure that limits the ability to defend margins if demand softness persists (addressed in Section 5.3)
- Foreign currency exposure, particularly to the New Taiwan dollar and South Korean won, which the Form 10-Q discloses, could produce a \$66.8 million pre-tax unrealized loss under a 10% adverse currency move (addressed in Section 6.1)
- Continued elevated capital intensity (~22% of TTM revenue in fiscal 2026) as the Korea and Allen expansions ramp (addressed in Section 8)

10.2 Risks Disclosed in the Form 10-Q That Received Limited Discussion on the Call

The Form 10-Q's Note 6 discloses that Photronics' joint venture partner DNP holds a put right over its 49.99% interest in the PDMCX joint venture (the company's China-based IC business) under certain ownership-threshold conditions, with any such sale priced at the exiting party's ownership percentage of net book value. As of the report date, DNP had not indicated intent to exercise this right, and Photronics and DNP each held net investments of approximately \$177.1 million in the joint venture — but the structural existence of this put right, combined with PDMCX representing a meaningful portion of consolidated cash (the Form 10-Q discloses \$389.2 million of the company's cash is held

within the Taiwan and China joint ventures, out of \$464.9 million held by foreign subsidiaries in total), is a governance and capital-access nuance that received no mention on the earnings call and deserves direct monitoring.

Separately, the Form 10-Q discloses that transfers of funds from China are subject to China's State Administration of Foreign Exchange procedures and applicable withholding taxes — management's own characterization is that this affects timing and net proceeds rather than the company's underlying ability to access cash, but it is a relevant caveat when evaluating how readily the company's consolidated cash balance could be deployed toward U.S. or Korea capital expenditures versus repatriated for buybacks.

10.3 Macro and Geopolitical Sensitivity

Management was unusually direct in attributing part of the Q2 slowdown to the U.S.-Iran conflict — a geopolitical variable entirely outside Photronics' operational control. While we do not attempt to forecast geopolitical developments, the company's own disclosed sensitivity to this category of risk (alongside memory-market dynamics largely driven by a small number of large memory producers) means that a recurrence or escalation of macro shocks could again compress near-term design-release activity, independent of the underlying secular demand analysis.

11. Market Reaction Since Q2 Earnings

The market's reaction to the May 28, 2026, print and the days surrounding it is itself informative. Headlines from the period indicate that the bulk of the decline occurred in the days before and/or after the print, with the share price itself rising 8.45% (to \$33.63) on the day the transcript was published, a pattern consistent with a market that had already substantially priced in disappointment ahead of, or immediately upon, the headline IC revenue miss, followed by a partial stabilization once the full context (including the FPD strength and the early-May tape-out recovery commentary) became available.

Period	Approx. Price / Move	Note
Week of May 22-29, 2026	Cumulative ~(-37%)	Per contemporaneous press coverage
Earnings day (May 28, 2026)	+8.45% to \$33.63	Stock recovered on the day transcript/results were fully digested
Reference price for this report	\$33.63	Reflects a sharp post-earnings reset rather than a gradual decline; the prior trading range has not been independently verified

The specific press headlines referenced above were identified through the materials provided for this analysis rather than independently re-verified against live market data; any trading decision should incorporate current, re-verified pricing and analyst commentary at the time of execution.

12. Risks and Counterarguments

Intellectual honesty requires taking the risks and counterarguments as seriously as the structural investment considerations. Three distinct ways this analysis could prove wrong are identified below, ranked roughly by probability.

12.1 The Delay Proves More Durable Than Management's Early-May Commentary Suggests

The single biggest risk to this analysis is that the tape-out recovery KangJyh Lee described as already underway in early May stalls or reverses, and that elevated fab utilization, memory tightness, or renewed geopolitical disruption persist through fiscal Q3 and beyond. Management's own Q3 guidance (\$207-\$215 million revenue; 18%-20% operating margin; \$0.39-\$0.45 non-GAAP diluted EPS) embeds continued caution and explicitly limited visibility — if design releases do not recover at the pace the early-May commentary implied, the cyclical-recovery framing central to this report would need to be reassessed.

12.2 High Fixed-Cost Operating Leverage Works in Both Directions

CFO Rivera's direct acknowledgment that the company has very little levers to pull on costs means that a prolonged demand air pocket would compress margins more than a typical variable-cost business, even with no change in revenue trajectory beyond what is currently guided. Should IC softness persist for multiple additional quarters rather

than resolve as we expect, operating margin could compress further from the 20.1% reported in Q2 FY26, disproportionately affecting earnings and, by extension, any near-term equity re-rating.

12.3 Regionalization Capex Ramps Into a Soft Demand Environment

The Allen and Korea expansions are being built and qualified into a demand environment that, at least for the current quarter, has shown more softness than strength. If the broader IC design-release recovery is delayed well beyond fiscal 2027 — the timeframe management has guided for meaningful revenue contribution from these facilities — the company would be adding capacity and associated depreciation into an environment that does not yet need it, pressuring returns on the regionalization investment in the near term even though we continue to view the long-term strategic logic (proximity to onshore fabs, captive-to-merchant outsourcing) as sound.

13. Relevance to Long-Term Structural Themes

Principle	Application to PLAB
Think in Themes, Not Tickers	Direct expression of the semiconductor-complexity and regionalization/reshoring themes — photomasks sit at the foundation of every advanced chip design, regardless of which architecture ultimately wins
Seek Variant Perception	Market priced a 37% peak-to-trough decline against a quarter of essentially flat revenue, expanding FPD strength, and management's own disclosed evidence of an already-recovering order book
Management Matters	Candid, specific, falsifiable disclosure of the causes of the IC slowdown; volunteered disclosure of early-May tape-out recovery rather than waiting to be asked
Margin of Safety	Net cash of ~\$634M covers roughly one-third of the current market capitalization; EV/TTM Operating Income of ~6.9x is undemanding for a debt-free business with this margin profile
Structural Over Cyclical	IC softness is procurement/design-timing driven and cyclical; semiconductor complexity growth, AI-driven memory/logic demand, and regionalization capacity are structural, multi-year drivers
Second-Order Effects	Memory price surges, framed by the market as a negative read-through, are themselves evidence of robust underlying AI-driven memory demand — the same dynamic causing near-term design delays is downstream of the secular tailwind this analysis depends on
Concentrated Conviction	Balance sheet quality and absence of leverage risk are analytically significant given near-term earnings volatility from fixed-cost operating leverage (see Section 14.2)

The one area of partial tension with the stated philosophy is the preference for low-expectations, weak-sentiment setups to be paired with clear evidence the bottom is in. Here, management's own guidance retains meaningful caution (near-term visibility regarding the timing of certain design releases remains limited), meaning investors are underwriting a recovery that has only partially shown up in hard data (the early-May tape-out commentary) rather than one fully confirmed in a subsequent quarter's reported results. This is addressed directly in the risk-weighting considerations below (Section 14.2) rather than treated as disqualifying.

14. Valuation Observations

The scorecard below is anchored to Museum Park Capital's core research philosophy: identify misunderstood companies with scarce strategic assets, attached to durable structural themes, supported by policy or geopolitical tailwinds, trading at valuations that underestimate future earnings power, with identifiable catalysts that can force the market to reprice the business. Each criterion below maps to one element of that framework — misunderstood (Management & Disclosure Quality, and the gap between the post-Q2 selloff and the underlying print), scarce strategic assets (Business Quality / Moat, reflecting Photronics' position as one of a small number of global merchant photomask suppliers with advanced-node qualification), durable structural themes (Growth Durability and the node-migration/ASP-expansion mechanism detailed in Section 3.1), policy or geopolitical tailwinds (Regionalization / Secular Optionality, given the explicit alignment of the Korea and Allen, Texas expansions with reshoring incentives), undervalued future earnings power (Valuation / Margin of Safety), and identifiable catalysts (the monitoring framework in Section 15). Each dimension is scored on a 1-10 scale before arriving at an overall weighted assessment.

Criterion	Score (1-10)	Rationale
Business Quality / Moat	7.0	Leading independent merchant mask maker; high barriers to entry at advanced nodes; demand tied to complexity, not volume
Revenue Quality / Diversification	7.0	Balanced IC/FPD mix; FPD strength in Q2 offset IC softness, evidencing diversification benefit
Margin Structure	6.5	31.3% gross margin in Q2, compressed from 36.9% Y/Y on cost inflation; high fixed-cost leverage cuts both ways
Management & Disclosure Quality	8.0	Specific, falsifiable explanations for the quarter; candid acknowledgment of limited cost levers; volunteered positive data points
Balance Sheet / Leverage	9.5	\$637.7M cash and short-term investments vs. \$3.9M long-term debt; minimal leverage risk
Governance / Minority Considerations	7.5	Standard public-company governance; PDMCX joint-venture put-right structure and China cash-repatriation mechanics warrant monitoring
Growth Durability	6.5	IC near-term choppy; FPD and regionalization (Korea/Allen) provide multi-year durability once design-release timing normalizes
Regionalization / Secular Optionality	8.0	Allen and Korea expansions already funded and under construction; aligned with reshoring and captive-to-merchant outsourcing trends
Valuation / Margin of Safety	8.5	EV/TTM Operating Income ~6.9x; net cash covers ~1/3 of market cap; undemanding for a debt-free, historically ~20%+ operating-margin business
Overall Weighted Assessment	7.6 / 10	Differentiated research case with a fortress balance sheet; not yet a low-volatility compounder given fixed-cost operating leverage

14.1 Valuation Observations

Taken together, the analysis in this report points to a disproportionate reaction to a well-explained, specifically-attributed, and already-showing-signs-of-reversing delay in IC design releases, set against a balance sheet and capital allocation program that remain fully intact. At a reference price of \$33.63, the equity traded at a discount both to its own normalized full-cycle multiple (Section 7) and to the average sell-side analyst target identified in Section 11. Whether and how quickly that gap closes depends on (1) the distinction between deferred and destroyed IC demand, supported directly by management's disclosure of early-May tape-out recovery, (2) continued FPD strength heading into a favorable AMOLED upgrade cycle, and (3) an already-funded, multi-year regionalization buildout in Korea and the United States that the current valuation, on the multiples discussed in Section 7, appears to assign limited credit to.

14.2 Risk-Weighting Considerations

Photronics combines genuine balance-sheet and valuation support with a structural dependence on a design-release recovery that, as of the report date, is supported by early but not yet fully confirmed evidence. Investors weighing this name would likely want to account for the fixed-cost operating leverage risk modeled in Section 12.2, which can compress margins faster than a typical variable-cost business if the IC recovery is slower than the early-May commentary implied, even where the balance sheet itself provides a meaningful downside backstop relative to a comparably-priced, more leveraged peer. These are factors for analytical consideration in the context of individual due diligence and risk tolerance.

15. Monitoring Framework

15.1 Near-Term Catalysts (Next 1-2 Quarters)

- Fiscal Q3 FY26 results and confirmation of whether the early-May tape-out recovery KangJyh Lee described translated into actual revenue and order-book improvement

- Continued momentum in the FPD business ahead of the targeted Western-market smartphone/smartwatch launches referenced on the call
- Progress on Korea clean room equipment installation, expected to begin later in fiscal 2026
- Allen, Texas, qualification mask progress and any commentary on the timing of initial commercial revenue
- Any update on memory supply/pricing dynamics, given management's direct attribution of part of the Q2 delay to this factor

15.2 Medium-Term Catalysts (12-24 Months)

- Initial revenue contribution from the Allen, Texas facility, targeted for late fiscal 2026
- Initial revenue contribution from the Korea 8-nanometer-and-below expansion, targeted for end of fiscal 2027
- Wider adoption of the G8.6 AMOLED FPD mask writer capability, anticipated later in the calendar year
- Resumption of share repurchase activity once the Korea/Allen capex program matures, as a signal of management's confidence in normalized free cash flow generation

15.3 Red Flags That Would Warrant Reassessment

- A second consecutive quarter of IC revenue decline without the kind of specific, falsifiable causal explanation provided on the Q2 call
- Any indication that the early-May tape-out recovery described by management failed to materialize in subsequent order flow
- Deterioration in the cash position held within the Taiwan/China joint ventures, or any signal that DNP intends to exercise its put right under the PDMCX joint venture agreement
- A reduction in, or delay to, the \$330 million fiscal 2026 capital expenditure guidance, which would signal reduced management confidence in the regionalization opportunity
- Gross margin compression below the 31.3% reported in Q2 FY26, without a corresponding explanation tied to temporary cost factors rather than structural pricing erosion

16. What Would Change Our Mind?

This report represents a point-in-time analytical assessment, not a fixed position. The structural themes discussed throughout — the deferred-versus-destroyed demand distinction, the regionalization buildout, and the node-migration/ASP-expansion mechanism — are testable, and this section sets out, in advance, the specific evidence that would strengthen or weaken the assessment as new information becomes available. Readers are encouraged to track these markers independently rather than rely on any single section of this report as a final word.

16.1 Evidence That Would Strengthen This Assessment

- Fiscal Q3 FY26 results confirming that the early-May tape-out recovery KangJyh Lee described translated into actual revenue and order-book improvement, not just commentary
- Continued FPD strength and wider adoption of the G8.6 AMOLED mask-writer capability ahead of the targeted Western-market consumer electronics launches
- On-schedule progress on Korea clean room equipment installation and Allen, Texas qualification mask output, consistent with the reaffirmed \$330 million capex guidance
- Resumption of share repurchase activity once the Korea/Allen capex program matures, signaling management confidence in normalized free cash flow generation

16.2 Evidence That Would Weaken This Assessment

- A second consecutive quarter of IC revenue decline without the kind of specific, falsifiable causal explanation provided on the Q2 call, suggesting the delay is more durable than early-May commentary implied
- Gross margin compression below the 31.3% reported in Q2 FY26, without an explanation tied to temporary cost factors rather than structural pricing erosion

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- A reduction in, or delay to, the \$330 million fiscal 2026 capital expenditure guidance, signaling reduced management confidence in the regionalization opportunity
 - Deterioration in the cash position held within the Taiwan/China joint ventures, or any signal that DNP intends to exercise its put right under the PDMCX joint venture agreement
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This report was prepared using primary-source materials (Photronics, Inc. Form 10-Q for the quarterly period ended May 3, 2026; the FQ2 2026 earnings call transcript dated May 28, 2026; and the Photronics May 2026 Investor Presentation), supplemented by contemporaneous press headlines referencing the share price's reaction as provided in the source materials for this analysis. It is intended for informational and analytical purposes as part of an independent company research process and is not a substitute for independent due diligence, legal advice, or the advice of a licensed financial advisor. This report does not contain investment recommendations or price targets; all valuation multiples, historical trading ranges, and sensitivity analyses represent analytical judgment based on the cited sources as of the analysis date and are not guarantees of future performance.