

TTM Technologies, Inc. (NasdaqGS:TTMI) Preliminary Investment Memorandum

Recommendation: Long | Current Price: \$67.99 | Price Target: \$85.60 | Time Horizon: 2 Years

Executive Summary:

TTM Technologies is successfully leveraging its scale and unique North American capacity to transition from a historically cyclical printed-circuit board (PCB) manufacturer to a leader in advanced, high-margin, mission-critical components for Aerospace & Defense (A&D) and Generative AI infrastructure. The market currently discounts TTMI due to historical cyclicity and margin pressure from facility ramps. Our variant view is that the structural growth in US defense spending, reshoring mandates (NDAA), and unprecedented demand for AI servers create a sustained, high-growth earnings runway that justifies a premium valuation. The combined "Defense + AI" vertical now drives approximately 80% of total sales.

Business Overview:

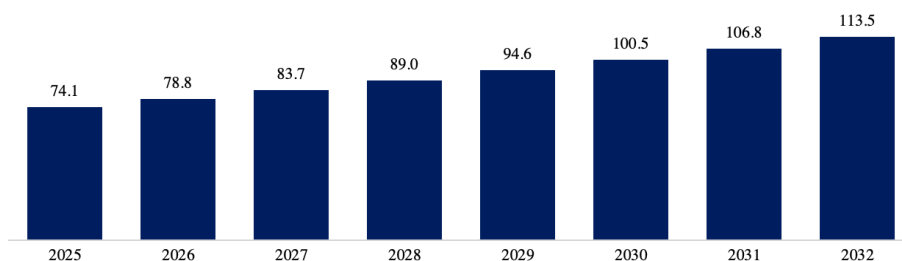
TTM Technologies is a leading global manufacturer of highly complex Printed Circuit Boards (PCBs), Radio Frequency (RF) components, and assemblies. It serves as a critical technology partner for Original Equipment Manufacturers (OEMs) who require advanced component solutions for high-performance and high-reliability systems. The company is led by President & CEO Edwin Roks (assumed in Sept 2025), focusing on a strategy of shifting the revenue mix toward "Advanced Technology" products and optimizing the global manufacturing footprint (including strategic investments in US/Malaysia and divestitures of lower-margin China operations). TTM operates two main segments:

- (1) *PCB*, which consists of 15 domestic system, subsystem, and PCB plants; four PCB fabrication plants in China; one in Malaysia; and one in Canada
- (2) *RF and Specialty Components (RF&S Components)*, which consists of one domestic RF component plant and one RF component plant in China. Each segment operates predominantly in the same industries with facilities that produce customized products for our customers and use similar means of product distribution

Revenue Mix (Est. FY 2024): Aerospace & Defense (~46%), Data Center Computing (~21%), Automotive (~13%), Medical/Industrial/Instrumentation (~14%), Networking/Communications (~6%)

Industry Overview:

The global Printed Circuit Board market size is estimated at between \$74bn and \$81bn in 2025, with a projected CAGR of 5-6% through 2032/2035. TTMI competes primarily in the higher-growth, specialized segments (HDI, RF Components) which outpace the overall market growth rate. The North American PCB market, a critical focus for TTMI, is estimated at over \$16 billion. The PCB industry is highly fragmented and capital-intensive. Global volume production is dominated by Asia-Pacific (Taiwan, China, South Korea).



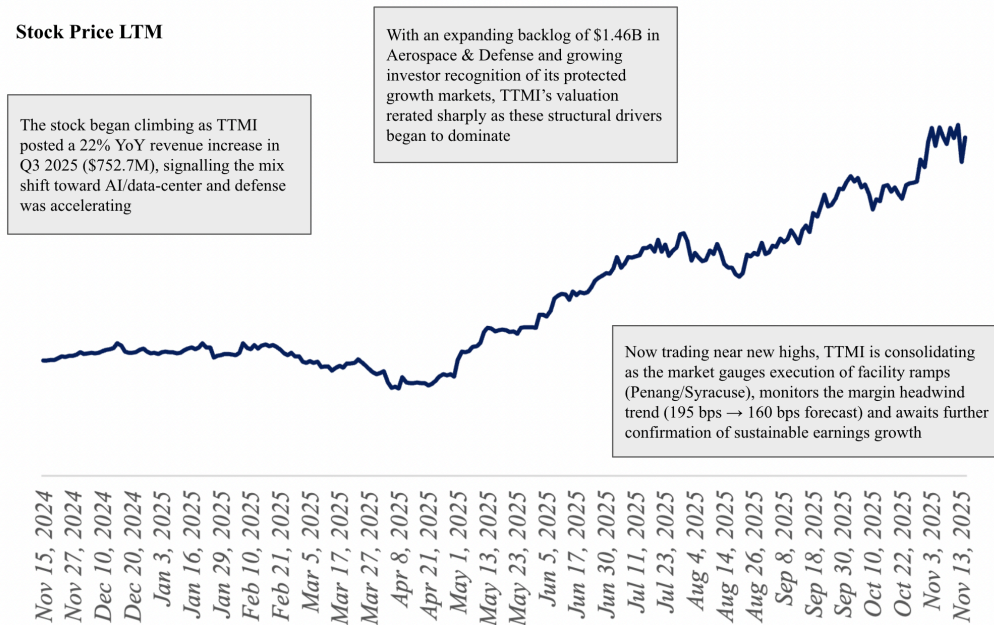
- **Global Volume Competitors:** Large Asian manufacturers (e.g., Unimicron, ZDT). TTMI avoids direct competition in low-complexity, high-volume consumer electronics.

- Specialty Competitors: Smaller, specialized firms focused on niche RF or quick-turn prototyping

TTMI's competitive advantage lies in its global scale combined with its US-based, high-security manufacturing footprint, which is mandatory for many A&D and critical infrastructure customers. This provides a structural barrier to entry for its most profitable segments.

Set-Up:

TTMI presents an attractive entry point because the market continues to price it like a cyclical PCB manufacturer, despite the company now deriving ~80% of revenue from structurally growing, high-margin A&D and AI end-markets. TTMI's competitive advantage lies in its global scale combined with its US-based, high-security manufacturing footprint, which is mandatory for many A&D and critical infrastructure customers. This provides a structural barrier to entry for its most profitable segments.



The market is affording TTMI a multiple that reflects its history as a cyclical, commodity-like component supplier, failing to fully recognize the magnitude of the shift driven by two primary, non-cyclical factors: National Defense and Generative AI. The stock is currently trading under its intrinsic value because the market perceives: 1) Margin Risk due to the ongoing ramp-up challenges at new facilities (e.g., First Manufacturing Facility, Penang, in Malaysia), and 2) Global Economic Cyclicity affecting the Automotive and Industrial segments. The strong Q3 performance (40.9% EBIT growth, 118% OCF growth) suggests the core high-growth markets are offsetting these headwinds faster than anticipated, providing a compelling entry point. Some argue that TTMI's recent performance is unsustainable pointing to margin pressure from the Penang/Syracuse facility ramps and the risk that AI server demand or A&D contract awards are slow. However, our variant view is that the structural shift toward domestic defense programs and next-generation AI compute creates a multi-year earnings runway as margin headwinds abate and backlog converts.

Thesis Overview:

The core of the investment thesis is that TTM Technologies is executing a successful secular shift, driven by legislative protection and unprecedented data center demand, that will fundamentally change its margin and growth profile.

TTMI's valuation is undergoing a structural rerating. The company is shedding its legacy identity as a cyclical, commodity PCB manufacturer (which trades at 10-15x P/E) and is being recognized as a high-tech, sole-source defense

and AI infrastructure provider (which trades at 25-35x+ P/E). The 170% run-up in TTMI's stock was the market's initial, violent rerating of the company as it shed its legacy commodity identity. The true opportunity now lies in the next phase: capturing the sustained earnings growth that will justify this new valuation. This growth is currently suppressed by short-term margin headwinds from new facility ramps, like in Penang. The opportunity is to invest before these temporary costs roll off and the company's true, higher-margin profile—driven by its 80% sales mix in non-cyclical A&D and secular GenAI markets—becomes fully visible in its results.

Thesis 1: US Defense & Reshoring Mandates Create a Protected Moat

A&D represents ~46% of TTMI's revenue, backed by a \$1.46 billion backlog. Legislative trends, including the National Defense Authorization Act (NDAA), are increasingly mandating that critical components for secure systems must be sourced domestically (outside China). TTMI is a primary beneficiary of this reshoring trend, securing long-term, high-margin, and less-cyclical revenue streams in a protected market.

Beginning in 2027, Section 5949 requires government agencies to reject products containing semiconductors from certain Chinese vendors, forcing primes and cloud service providers to certify component provenance. This drives a preference for fully U.S.-manufactured PCBs, as it simplifies compliance by avoiding mixed-origin verification. Hyperscalers such as AWS, Azure, Google, and Oracle already operate physically segregated GovCloud infrastructure, which further reinforces demand for domestically produced boards. TTMI is uniquely positioned as the only mass-volume U.S. server-board manufacturer capable of producing highly complex, ≥ 20 -layer motherboards at scale, while competitors are largely limited to prototypes or niche RF applications. As a result, customers are beginning to dual-source ahead of the 2027 deadline, creating early pull-through demand.

Section 301 tariffs maintain a 25% duty on Chinese PCBs, with potential escalation to 50%+, increasing cost pressure on offshore competitors. This tariff “umbrella” allows TTMI to maintain pricing while competitors face higher costs, effectively expanding margins. Because these policies are likely to persist given bipartisan national security priorities, the combination of regulatory requirements and tariff protection creates a long-term structural advantage for TTMI's U.S.-based production.

Thesis 2: Secular AI Demand Drives Mix Shift to Advanced Technology

The demand for Generative AI and high-performance computing clusters requires cutting-edge, ultra-high-density, multi-layer PCBs and specialized RF components for data transmission. TTMI's Data Center Computing revenue grew 44% YoY in Q3 2025, validating its status as a key supplier for this high-growth, high-value end market. The combined "Defense + AI" vertical now accounts for approximately 80% of all sales, representing the highest-margin and most durable segment of the business and indicating this accelerated mix shift will drive sustained margin expansion.

Next-generation AI accelerators and 800G/1.6T optical transceivers require significantly higher layer-count PCBs, advanced materials for signal integrity, and complex thermal management solutions. This means TTMI's revenue-per-server will structurally increase. They are not just selling more boards; they are selling far more advanced (and expensive) boards with each new AI hardware generation. Importantly, this reflects a shift from a pure volume story to a complexity and content-per-server story, where each successive generation of AI hardware drives higher ASPs and greater board content per system.

Additionally, more complex thermal designs and higher-performance requirements increase both the number of boards per server and the technical difficulty of each board, further reinforcing pricing power. While short-term facility ramp headwinds may obscure the full margin impact, the underlying shift toward advanced technology products, combined with multi-year AI design cycles, creates strong revenue visibility and supports sustained long-term margin expansion.

Thesis 3: Operational Excellence and De-leveraging

TTM is demonstrating strong cash flow from operations (\$141.8M in Q3 2025, 18.8% of revenue and >10% consistently), which is being deployed to fund capital expenditures for new, specialized facilities (including Penang, Syracuse, and the planned Eau Claire, WI plant). Importantly, capex is fully funded by internal cash generation even during a heavy investment cycle, allowing the company to expand capacity without relying on external financing.

The drag from facility ramps is being actively managed and is trending in the right direction, with margin impact improving from ~195 basis points in Q3 2025 to ~160 basis points expected in Q4. Penang has been the primary source of drag but is expected to flip to a positive contributor at maturity, while Syracuse remains a smaller, more controlled ramp with limited near-term P&L impact. As these facilities scale, the company is positioned for a clear path to margin uplift, with normalization expected to recapture ~200+ bps of lost margin.

At the same time, TTMI maintains a strong balance sheet, with Net Debt/EBITDA of ~1.0–1.2x, \$491M in cash, and ~\$703M in total liquidity with no major maturities until 2028. This financial flexibility supports continued investment while limiting downside risk. As ramp inefficiencies fade and mix shifts further toward higher-margin A&D and AI end markets, returns are improving, with ROIC already inflecting upward (from ~10.3% in FY24 to ~13.2% YTD Q3 2025) and targeting 13–15% longer term. Overall, the combination of self-funded growth, improving ramp efficiency, and disciplined leverage positions TTMI to capture secular demand while expanding margins and returns on invested capital.

Catalyst Path/Signposts:

Q4 2025 Margin Inflection: Confirmation that the manufacturing ramp challenges in Penang are abating, evidenced by actual Adjusted EBITDA margin expansion exceeding the 16.3% achieved in Q4 2024, or a reduction in the identified Q4 margin headwind to <160 bps.

A&D Backlog Conversion: Sustained, high-velocity revenue conversion from the \$1.46 billion A&D backlog, paired with new, material contract wins that drive the overall book-to-bill ratio above 1.05 for two consecutive quarters.

AI Design Win Momentum: Announcement of Data Center Computing revenue growth accelerating into the high-double digits (e.g., >30% YoY), confirming market share gains in the highest-speed, most complex HDI/Microvia components required for next-generation AI accelerators.

Eau Claire Facility De-risking: Securing the anticipated anchor tenant commitment that locks in the necessary volume to justify the full build-out of the advanced manufacturing facility in Eau Claire, WI.

Risks & Mitigants to Thesis:

Execution Risk in Facility Ramps (Penang/Syracuse): A protracted delay in achieving design yields or production throughput at new facilities, resulting in sustained margin compression and lower-than-forecasted returns on invested capital (ROIC).

- **Mitigant:** Strong OCF generation (\$141.8M in Q3) provides internal funding flexibility. The quantifiable reduction in the margin headwind from Q3 (195 bps) to Q4 (160 bps forecast) suggests a manageable, albeit gradual, operational correction trajectory.

Secular & Cyclical Demand Deceleration: The thesis relies on two strong, independent growth pillars. A "pause" in GenAI spending or a budget-driven slowdown in A&D program awards would be detrimental. This risk is compounded

by the ongoing cyclical weakness in the legacy Automotive and Industrial segments, which could create a revenue "hole" that even AI/A&D cannot fully plug in the near term.

- **Mitigant:** The \$1.46 billion A&D backlog and its long-term, "program-of-record" nature provide multi-year, non-correlated revenue visibility that acts as a structural floor. On the AI front, demand is driven by technological upgrades (e.g., the transition to 800G/1.6T) which creates a "content-per-box" tailwind that is more durable than a simple capex build-out cycle.

Valuation Multiple Contraction: The current elevated P/E multiple contracts back toward historical commodity-manufacturing averages (e.g., 20x-22x forward P/E) before the thesis fully materializes, resulting in near-term multiple compression risk.

- **Mitigant:** The sustained revenue mix shift (80% in secular/protected growth markets) is a permanent structural change, justifying the rerating. Continued strong EBIT growth (+40.9% YoY in Q3) and expanding ROIC are necessary to defend and expand the current multiple.

General Bear, Base, Bull:

Base:

1. Core thesis plays out. The Penang ramp stabilizes by mid-2026, and the margin headwind abates, allowing consolidated EBITDA margins to expand to 17.5%.
2. Drivers: AI/Data Center growth moderates from 44% but sustains a strong 25-30% YoY growth rate. A&D backlog converts steadily, and the legacy auto/industrial markets remain soft but stable (do not deteriorate further).

Bear:

1. The Penang ramp fails. The margin drag is not temporary; it's structural, as TTMI fails to achieve the high yields required for complex AI boards. The new, expensive facilities become a permanent drag on ROIC. Simultaneously, the 44% AI growth was a one-off bubble, and a "pause" in data center capex combines with a deep recession in the legacy auto/industrial markets.

Bull:

1. The Penang ramp is completed ahead of schedule (Q1 2026) as new AI customers pull in orders, allowing the facility to hit near-optimal utilization almost immediately.
2. Growth accelerates as the 800G/1.6T upgrade cycle pulls in demand. The A&D "reshoring" urgency creates a new wave of backlog bookings. Consolidated EBITDA margins expand past 18% and trend toward 20% as more of a macro, administration and corporate push for reshoring tick upward as well.