

Rating Criteria for Semiconductor Companies

Executive Summary

The semiconductor industry is a crucial segment of the manufacturing sector that drives economic growth and technological advancement. Beyond production, it influences exports, employment, industrial structure, and the development of the technology ecosystem. With appropriate policy support and investment, the semiconductor industry has the potential to further enhance the competitiveness of the manufacturing sector.

This document provides a brief analysis of the key attributes considered by Brickwork Ratings (BWR) in rating companies within the semiconductor industry. The sector comprises various subsectors such as semiconductors and semiconductor equipment, computer hardware, storage and peripherals, electronic components and office electronics, consumer electronics, communications equipment, electronic manufacturing services (EMS) and technology distributors, among others.

The Government of India has prioritized the semiconductor sector through the India Semiconductor Mission (ISM), launched in 2021, to boost domestic manufacturing and reduce import dependency. With initiatives such as financial incentives and infrastructure support, the government aims to position India as a global semiconductor hub. Under the same ISM plan, in 2025, the government approved ten semiconductor projects across six states to strengthen the supply chain. India's semiconductor market, valued at USD 52 billion in 2024-25, is expected to grow to USD 103.4 billion by 2030, driven by rising demand in mobile, IT, and industrial sectors.

Scope of the Criteria

The scope of this document is to outline the key risks considered by BWR when determining the credit rating of companies in the semiconductor industry.

BWR factors in various quantitative and qualitative risks that semiconductor companies are exposed to while assessing their creditworthiness. The primary risks considered in the assessment of the semiconductor industry are industry risk, business risk, financial risk, and management risk. The approach to incorporating these risks into the rating framework for semiconductor companies is discussed in detail in the sections that follow.

Research and Development (R&D) forms the backbone of the semiconductor industry; hence, BWR also assesses the capital expenditure and budget allocation for such activities by evaluating a company's commitment to technological advancement, future growth and the ability to drive long-term innovation in an evolving market.

In addition to the risks mentioned above, BWR also recognizes Environmental, Social and Corporate Governance (ESG) risks and opportunities can increasingly impact the operations and sustainability of issuer's business.

Framework for Risk Assessment

A. Industry Risk

BWR evaluates industry risk for semiconductor companies by considering several critical factors that influence the overall stability and performance of the sector. The assessment includes the nature of the industry, competitive dynamics and growth potential, the impact of government policies, the demand-supply scenario and barriers to entry.

i) Nature of the Industry (Cyclicality and Technological risk)

The semiconductor industry is highly cyclical, with demand closely tied to global economic conditions, technological advancements and market-specific drivers such as consumer spending, capital investment and GDP growth. The industry's performance tends to fluctuate in response to economic downturns, with revenue and profitability often showing significant volatility during recessions.

Rapid technological advancements in semiconductor design, manufacturing, and end-use applications create both opportunities and challenges. The industry is constantly evolving, and companies need to invest heavily in R&D to stay competitive. However, this also exposes companies to the risk of obsolescence and the burden of high capital expenditure for adopting new technologies.

ii) Competitive Dynamics and Industry Growth

The semiconductor industry is highly competitive, with numerous players vying for market share. Factors such as pricing pressure, competition from new entrants, and technological innovation affect a company's ability to maintain profitability. Moreover, the degree of fragmentation or concentration across various sub-sectors influences the overall competitive landscape.

Despite competitive pressures, the industry's growth prospects remain strong, driven by emerging technologies such as Artificial Intelligence (AI), Electric Vehicles (EVs), 5G connectivity and the Internet of Things (IoT). However, intense competition can erode margins, particularly for firms lacking technological differentiation.

iii) Impact of Government Policy and Regulation

Government policies and regulatory frameworks play a significant role in shaping the semiconductor industry. Trade regulations, tariffs, and subsidies have a substantial influence on the sector.

The industry is also highly sensitive to geopolitical risks, including trade restrictions and cross-border tensions that can disrupt supply chains or affect access to critical markets and raw materials. Additionally, environmental and energy regulations may further impact operating costs and capital requirements.

iv) Demand and Supply Scenario (Global Dependence & Supply Chain Risk)

The semiconductor industry operates within a complex and globally integrated supply chain, relying on multiple countries for raw materials, equipment and manufacturing processes. This global dependence makes the industry vulnerable to geopolitical disruptions, logistics constraints and foreign exchange volatility.

Demand fluctuations across key end markets such as consumer electronics, automotive and industrial applications contribute to cyclical variations in capacity utilization and profitability. Supply-side challenges, including shortages of critical materials or delays in equipment procurement, can result in production bottlenecks and revenue loss.

v) Barriers to Entry

There are significant barriers to entry in several semiconductor subsectors due to high capital requirements, technological complexity, and intellectual property protections. However, these barriers vary across sub-sectors; for example, semiconductor foundries and advanced process technologies tend to have higher entry barriers compared to other segments such as EMS or consumer electronics.

In addition, access to rare-earth materials has become a barrier to entry due to new export regulations that restrict and delay the supply of key inputs required for advanced semiconductor equipment. This increases costs and uncertainty for new firms and further reinforces the challenges of entering cutting-edge chip manufacturing.

B. Business Risk

A semiconductor company's business risk, which measures its capacity to generate profits and sustain growth over time, is a crucial component in evaluating its credit profile.

Factors that shape business risk for semiconductor companies include:

i) Market Position and Competitive Advantage

For semiconductor companies, market position reflects their industry standing and competitiveness. It is influenced by technology leadership, product portfolio, manufacturing capabilities, customer relationships, and supply chain strength. Brand reputation, financial and operational strength, and the ability to innovate and scale production further enhance market position. Diversification across products and end markets helps companies manage cyclical demand, maintain profitability, and sustain a resilient competitive advantage.

ii) Operational Efficiency

Operational efficiency reflects a company's cost competitiveness and ability to maintain its market position. This includes managing production costs, efficiently utilizing manufacturing capacity, and leveraging flexible operations or outsourcing. Effective raw material procurement, backward or forward integration, and converting R&D into profitable products are viewed positively. Companies that can navigate market fluctuations or industry challenges with minimal impact demonstrate operational resilience, strengthening their overall credit profile.

iii) Research and Development (R&D)

Sustained investment in R&D is essential for innovation, developing distinct products, and improving processes. Strong R&D capabilities enable semiconductor companies to create products that stand out in the market through advanced performance, unique features, or specialized applications, helping them maintain technological leadership and a competitive edge. Companies that successfully translate R&D outcomes into commercially viable solutions are better positioned to sustain profitability and long-term financial viability in a highly dynamic and cyclical industry.

C. Financial Risk

In evaluating the financial risk of semiconductor companies, BWR considers several key factors that influence a company's ability to manage debt, generate consistent cash flows, and maintain financial stability.

The assessment focuses on specific financial ratios that capture the company's cash flow strength, leverage position, and debt-servicing capacity, based on its overall cash flow and capital structure profile.

i) Profitability Ratios

BWR assesses the profitability of semiconductor companies using various metrics that reflect the company's ability to deliver consistent returns and maintain a strong market position. High profitability is driven by factors such as strong demand for the company's products, operational efficiency, and effective cost management, all of which are crucial for ensuring long-term financial stability.

For semiconductor manufacturers, profitability also reflects their ability to scale production, drive innovation, and navigate the complexities of technology development and supply chain dynamics. A company that maintains strong profits under both favorable and challenging market conditions demonstrates resilience, which helps mitigate overall credit risk and signals a healthy financial foundation.

Some of the ratios considered by BWR when evaluating profitability include PAT margins, operating margins, cash accruals and return ratios.

Ratio	Method of Computation
PAT Margin	$\frac{\text{Profit After Tax}}{\text{Revenue}}$
Operating Margin	$\frac{\text{Operating Profit}}{\text{Revenue}}$
Return on Capital Employed (ROCE)	$\frac{\text{EBIT}}{\text{Capital Employed}}$
Net Cash Accruals /Total Debt	$\frac{\text{PAT} + \text{Dep.} - \text{Dividend}}{\text{Total Debt}}$

ii) Capital Structure, Leverage & Coverage Ratios

BWR evaluates issuer's financial flexibility and debt-repayment capacity by analyzing their capital structure and leverage profile. Given the cyclical and capital intensive nature of the semiconductor industry, the analysis focusses on the company's ability to generate steady earnings and cash flows to service debt across business cycles.

BWR considers the following ratios when evaluating capital structure and debt protection: debt to equity, total outside liabilities to tangible net worth (TOL/TNW), interest coverage ratio and debt service coverage ratio.

Additionally, BWR assesses other aspects that reflect the sector's financial characteristics, including ability of cash generation to support capital expenditure and the balance between debt-funded and internally funded growth. A sound capital structure and prudent leverage strengthen financial resilience and support stable credit quality over the long term.

Ratio	Method of Computation
Interest Coverage Ratio	$\frac{\text{EBITDA}}{\text{Interest \& Finance Charges}}$
DSCR	$\frac{\text{PAT} + \text{Dep.} + \text{Interest Exp.}}{\text{Interest Exp.} + \text{Principal Repayment}}$

iii) Turnover & Liquidity Ratios

BWR evaluates the turnover and liquidity position of semiconductor companies to assess their efficiency in managing working capital and meeting short-term obligations. The analysis focuses on cash availability, unutilized bank limits and the company's ability to manage receivables, payables and operational requirements. Strong liquidity ensures that semiconductor companies can support production schedules and respond to cyclical demand fluctuations without stress.

BWR considers key liquidity and working capital metrics, including the current ratio and quick ratio.

Ratio	Method of Computation
Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Quick Ratio	$\frac{\text{Total Current Assets} - \text{Total Inventory}}{\text{Total Current Liabilities}}$

iv) Financial Flexibility

Financial flexibility reflects a company's ability to raise funds from alternate sources when needed. For semiconductor companies, this is particularly important given the capital-intensive nature of operations and the cyclical industry environment. BWR considers factors such as access to banks and capital markets, undrawn credit lines and ability to timely monetize its non-core assets, in case required. Strong financial flexibility enhances the company's resilience, enabling it to sustain operations and fund growth even under adverse conditions.

D. Management and Corporate Governance

BWR assesses the consistency of performance demonstrated by the management and the quality of corporate governance adopted by the entity. Additionally, BWR evaluates the company's accounting quality and the reliability of its financial statements while assessing key risks and overall performance.

A strong, dedicated and highly experienced board of directors helps the organization achieve profitability and operating efficiency targets, while also supporting improvements in the company's financial and liquidity position. Any red flags highlighted by internal or external stakeholders may negatively affect the rating. The financial flexibility of the management evidenced by successfully supporting group companies or manufacturing units, a proven track record in running operations, and adherence to sound corporate governance practices is factored into the assessment of the company's overall credit profile.

BWR also monitors management's ability to navigate changes in the dynamic environment, such as regulatory or technological shifts. Succession planning and key-person risk are considered particularly important if operations are heavily dependent on a single promoter or manager.

In addition, the management's track record in timely debt repayments, compliance with statutory requirements, and transparency in corporate disclosures are critical determinants of the overall assessment.

Environmental, Social and Governance (ESG) Factors

ESG factors are becoming increasingly critical in the semiconductor industry, where companies face growing scrutiny over their environmental impact, labor practices, and governance structures. Semiconductor manufacturing is energy-intensive, requiring companies to focus on sustainability initiatives such as reducing carbon emissions, improving energy efficiency, and managing waste.

Accordingly, BWR, while assessing the credit profile of semiconductor companies, also evaluates their ESG profile based on available data. The impact of an issuer's ESG profile, in terms of both its strengths and weaknesses, is incorporated into the various management risk parameters when assessing the overall credit risk associated with the entity.

Group or Parent Support

In cases where a semiconductor company is part of a larger group, the willingness and ability of the parent or affiliated entities to provide financial, operational, or strategic support are carefully evaluated. Strong group linkages to a highly rated parent can enhance the company's credit profile, provide stability amid the industry's inherent cyclicality, and strengthen overall management credibility. *(Please refer to the Group and Parent Support Criteria on the BWR website).*

Conclusion

BWR's credit assessment of semiconductor companies reflects an integrated evaluation of business risk, operational efficiency, market position, financial flexibility, and growth prospects.

The rating captures the company's ability to sustain profitability, manage market and technology cycles, maintain competitive advantage, and meet financial obligations, providing a comprehensive view of its overall credit quality.

This is the first criterion document, so no prior version or reference link exists.

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