A Work Project, presented as part of the requirements for the Award of a Master's degree in Finance from the Nova School of Business and Economics.

Merger & Acquisition Idea Field Lab - Advanced Micro Devices' Acquisition of Globalfoundries

Alexandra Filipa Gameiro Alcobia

Work project carried out under the supervision of:

Fernando Anjos

17/12/2024

Group Part

Abstract

This thesis examines the strategic implications of mergers and acquisitions (M&A) in the semiconductor sector, with a focus on the integration of Advanced Micro Devices (AMD), a fabless semiconductor company, and GlobalFoundries, a foundry. Set against the backdrop of intense global competition, rapid innovation, and crucial global conflicts, the potential economic benefits of a vertical integration is evaluated. It is also discussed whether the integration enhances AMD's supply chain resilience, operational flexibility, and innovation capacity while aligning GlobalFoundries with evolving industry demands. The analysis encompasses pre- and post-merger valuations, deal structure, synergy evaluation, and strategic implications.

Keywords

AMD, GlobalFoundries, Semiconductor Industry, Synergies, Financial Valuation, Value Creation, M&A, Corporate Strategy

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

Index

Introduction 3
Literature Review 5
Sector overview 9
GlobalFoundries Overview 13
GlobalFoundries Financial Analysis 17
GlobalFoundries Valuation 19
Motives for merger 23
Deal Terms and Structure 26
Deal Impediments 29
Post-Merger Strategic Plan 30
GlobalFoundries Synergies 34
Value Creation Analysis 36
Conclusion 37
References 38
Appendices 42

Introduction

In today's globalized economy, intense competition and rapid innovation across all sectors are reshaping markets, driven by evolving consumer preferences, increasing demands, and shifting market dynamics. Simultaneously, global conflicts among major economic players are disrupting global trade and supply chains, adding complexity for businesses operating in interconnected markets.

To address these challenges, mergers and acquisitions (M&A) and business partnerships serve as a useful strategy for companies to adapt and thrive. By integrating operations, companies can streamline processes, reduce costs, and consolidate resources to pursue broader strategic goals. M&A enables the creation of synergies through complementary strengths, enhanced capabilities, and accelerated innovation. These deals not only improve the competitive positioning of the entities involved but also serve as a calculated response to market volatility and disturbances, ensuring resilience in a quickly evolving economic landscape.

The semiconductor sector lies at the heart of these dynamics, serving as a cornerstone of modern progress and a vital enabler of industries such as consumer electronics, automotive, communications, IoT, and artificial intelligence. Amid intense competition and constant technological advancement, the sector faces additional pressures from geopolitical conflicts, particularly involving key players such as the United States, China, and Taiwan. These tensions have far-reaching implications for the sector's performance and its role in supporting the broader global economy.

In this context, M&A has proven to be an effective tool for semiconductor companies in overcoming challenges posed by worldwide volatile events. Building on this foundation, this thesis delves into the semiconductor sector, a timely and critical case for examining the broader

implications of mergers and acquisitions, by exploring the potential impacts of integrating a foundry into a fabless company. The proposed merger between GlobalFoundries and AMD is analyzed as a case study, driven by strategic efforts to tackle key challenges in the industry. GlobalFoundries opted against investing in cutting-edge semiconductor technologies following a 2018 corporate decision, while TSMC became the number one player in the high-end market. Meanwhile, AMD, as a fabless company, benefits from the cost savings associated with outsourcing manufacturing to foundries but faces significant dependency on suppliers, particularly those located in sensitive regions like Taiwan. This reliance limits AMD's flexibility in its production process, leaving it vulnerable to potential global shortages.

This thesis provides a detailed analysis of both companies, encompassing pre-merger and post-merger valuations, a discussion of potential deal impediments, the proposed deal structure, a post-merger strategic plan, and an in-depth examination of the anticipated synergies. The study aims to determine the potential benefits of the transaction, including whether AMD could achieve greater control over its supply chain, enhanced production flexibility, and insulation from external risks through integration with GlobalFoundries. Additionally, it explores whether investing in GlobalFoundries to keep it in line with the evolving needs of the industry could strengthen the combined entity’s competitive position and future growth trajectory.

Literature Review

According to Copeland and Weston (2004), the broad concept of mergers and acquisitions (M&A) encompasses strategic expansion, corporate restructuring, corporate control, and changes in ownership. Within the domain of strategic expansion, mergers and acquisitions are classified as business combinations, while joint ventures and strategic alliances fall under strategic cooperation initiatives. Weston, Weaver (2001) define mergers and acquisitions as a “transaction that forms one economic unit from two or more previous ones”. The participants in a joint venture continue as separate firms, but create a new corporation, partnership, or other business form […] limited in scope and duration.”

While some authors distinguish between "merger" and "acquisition," they are often used interchangeably. According to the Organization for Economic Cooperation and Development (2004), “an acquisition is a business transaction between unrelated parties […] The acquiring company purchases the assets and liabilities of the target company. […] A merger is the combination of two or more companies to share resources to achieve common objectives. A merger implies that, because of the operation, only one entity will survive.”

Depamphilis (2018) defines a merger as “a combination of two or more firms, often comparable in size, in which all but one ceases to exist legally” and an acquisition as occurring “when a company takes a controlling interest in another firm, a legal subsidiary of another firm, or selected assets of another firm, such as a manufacturing facility. They may involve the purchase of another firm’s assets or stock, with the acquired firm continuing to exist as a legally owned subsidiary.”

M&As can be classified as horizontal, involving firms in the same industry; vertical, depending on positions along the supply chain; or conglomerate when firms are in different industries (Depamphilis, 2018).

Regarding the motives for merger, synergy effect is one of the main sources in which acquisition adds value, which can be defined according to Depamphilis (2018) as “the value realized from the incremental cash flows generated by combining two businesses.” Synergies can be operational, which includes “economies of scale, economies of scope, and the acquisition of complementary technical assets and skills, which can be important determinants of shareholder wealth creation”, improved through managerial skills; and can be financial when there is a “reduction in the acquirer’s cost of capital due to a merger or acquisition. (…)” and it occurs “if the merged firms have cash flows that are relatively uncorrelated, realize cost savings from lower securities’ issuance and transactions costs, or experience a better matching of investment opportunities with internally generated funds.”

Beyond the synergy effect, the same author presents other factors that drive M&A deals, such as diversification, strategic realignment, winner’s curse tendency, undervalued assets, agency problems, tax considerations and market power.

Firstly, regarding diversification, it can be achieved by “buying firms beyond a company’s current lines of business,” while strategic realignment happens when “firms use M&As to make rapid adjustments to changes in their external environment such as regulatory changes and technological innovation”. In addition, Hubris and the “Winner’s Curse” happens when “CEOs with successful acquisition track records may pay more than the target is worth due to overconfidence”. The undervalued assets are also a great justification for M&As as “firms can choose to invest in new plant and equipment or obtain the assets by buying a company with a market value less than what it would cost to replace the assets,” which happens when the market-to-book or Q-ratio (the ratio between the market value of the acquirer’s stock to the replacement cost of its assets) is less than 1. Furthermore, when agency problems arise, where management's actions are driven by self-interest, compensation motives, or ego, conflicting with shareholder interests, the likelihood of

engaging in mergers and acquisitions (M&As) increases. In addition, tax considerations could also be a justification as “acquirers of firms with accumulated losses and tax credits may use them to offset future profits generated by the combined firms,” as well as the desire of the acquiring company to improve its market power or to capture arbitrage opportunities when the shareholders misvalue the share price.

Besides the theoretical concepts associated with M&A, it is important to analyze the evolution of transactions as well as their performance. According to the S&P Global Report, the latest data from Q3 2024 highlights a positive trend in the M&A sector, driven by stabilized inflation, improved credit and financing conditions due to central bank rate cuts, and stronger equity market returns.

Deal counts in Q3 2024 totaled 9,141 transactions, 6% higher than Q3 2023 (8,613) and close to the six-quarter average of 9,114. In 2023, 37,285 deals were recorded, while the first three quarters of 2024 registered 27,162 deals, representing 73% of last year’s total and a 4% decrease compared to the same period in 2023 (28,197).

In terms of transaction values, Q3 2024 reached $602.7 billion, a 9% increase from Q2 2024 ($553.2 billion) and 22% higher than Q3 2023 ($493.5 billion). The total transaction value for 2023 was $2,101 billion, while the first three quarters of 2024 recorded $1,727.1 billion, accounting for 82% of 2023’s total and 17% higher than the same period last year ($1,473.5 billion).

Based on that, the total transaction value in 2024 is expected to exceed the amount registered last year, marking a recovery from the downward trend since 2021. In 2021, M&A activity peaked at $4,542 billion, driven by factors such as lower interest rates facilitating deal financing, company misevaluations amid economic uncertainty, and the pressing need for strategic realignment during the pandemic. This peak contradicted the decline observed since 2018. Following 2021, transaction values fell below pre-pandemic levels but are now rebounding toward pre-pandemic highs.

Geographically, all regions experienced increased transaction values in Q3 2024, except Africa, which saw a 10% decrease to $2.3 billion from $2.6 billion in Q3 2023. The United States and Canada grew to $350.4 billion (+27%), Europe reached $172.2 billion (+15%), and Asia-Pacific rose to $104 billion (+11%). Latin America and the Caribbean saw a 111% increase to $11 billion, while the Middle East grew 25% to $7.8 billion.

Regarding total transaction value, Information Technology led with $84.4 billion (+34% YoY), followed by Industrials at $74.7 billion (+84% YoY). Communication Services had the largest growth (+229% YoY), reaching $65.1 billion. In addition, Financials Services achieved $74.6 billion (+8% YoY), and Healthcare registered $47.9 billion (-3% YoY).

Among the top three transactions in Q3 2024, the third largest was Blackstone's $16.1 billion acquisition of AirTrunk in the Information Technology sector. The top two deals were in Consumer Staples ($35.8 billion) and Communication Services ($19.9 billion).

Sector overview

The semiconductor industry is a vital part of the global economy, with growing importance as we move toward a more and more digital world, providing the foundational components for every modern electronic device, such as computers, smartphones, automotive systems and industrial equipment. This sector's key products are microprocessors (CPUs), graphics processing units (GPUs), memory chips, analog chips and application-specific integrated circuits (ASICs), where the major players include Intel, AMD, Nvidia, AMD, TSMC, Samsung and Qualcomm, each with its focus, from design to fabrication.

The semiconductor sector consists of distinct types of companies, each with benefits and challenges. First, there are fabless companies, such as AMD, Qualcomm and NVIDIA, which focus solely on designing chips. Next, there are foundries, like TSMC and GlobalFoundries, which handle the manufacturing of chips designed by fabless companies. Then, we have Integrated Device Manufacturers (IDMs), such as Intel and Samsung, which both design and produce their own chips. Finally, the sector includes equipment and materials suppliers, which provide the specialized machinery and materials needed for chip production.

Fabless semiconductor companies outsource the manufacturing to specialized foundries, such as TSMC, allowing them to focus on technological innovation in chip architecture and software development, while maintaining flexibility, as they can work with multiple manufacturers according to their strategic needs. Both AMD and Nvidia, for example, resort to TSMC for the fabrication of their most advanced products, while outsourcing to GlobalFoundries and Samsung, respectively, the production of chips using older nodes. On the other hand, these companies are heavily dependent on the manufacturers, being exposed to supply chain risks, such as production delays and constraints, caused by, for example, tensions between Taiwan, China and the USA.

Limited control over the manufacturing process is also a factor to consider, as they are subject to the foundries' production timelines and capacity.

Integrated Device Manufacturers (IDMs) maintain complete control over the entire semiconductor production process, from chip design to fabrication. This approach offers greater supervision over timelines, quality assurance and overall supply chain management, optimized for their specific needs. This integration allows for IDMs to quickly respond to market changes, being less exposed to the risks associated with outsourcing, such as geopolitical tensions and production holdups. This model requires very high capital investments for building, maintaining and continuous advancements of fabrication facilities, as the demand for technologically advanced products is always increasing. While IDMs enjoy greater control, they may face challenges in keeping up with fast paced innovation, part of this industry.

Building on the broader overview of the semiconductor industry, the semiconductor foundry sector is crucial in supporting the global technology ecosystem, as technological demands increase. These collaborations, which extend beyond manufacturing to include packaging and testing, for example, are integral to meeting the growing demand for semiconductors across industries like consumer electronics, automotive, telecommunications, and defense, making foundries an indispensable part of the semiconductor supply chain. Therefore, it is essential to analyze the evolution of the foundry market and its performance.

Geographically, the revenue share of Taiwan's semiconductor foundries, according to Statista, has risen from 63% in 2020 to 70% in 2024. In contrast, Korea's share of global revenues has declined from 18% to 11% during the same period. China has seen an increase from 6% to 8%, while the share of other countries has decreased from 13% to 11%. Over time, Taiwan has shown a steady upward trend, with a dominating position worldwide, whereas Korea's share has consistently declined, with China and other countries experiencing fluctuations.

Further suggested by Statista, the data on global revenue share indicates that the major players in the market are TSMC, Samsung, SMIC, UMC and GlobalFoundries, which together account for 89.2% of total revenue in the first quarter of 2024. TSMC's share has increased from 48.1% in 2019 to 61.7% in 2024, while Samsung's share has dropped from 19.1% to 11%. GlobalFoundries' share decreased from 8.4% to 5.1%, while UMC's share went from 7.2% to 5.7% and SMIC's went from 4.5% to 5.7%. in 2023, the total market revenue reached $117.443 billion, reflecting a 14.1% decline from 2022, driven by customer inventory adjustments, weaker demand following the pandemic-driven revenue peak in 2022, and the impact of ongoing geopolitical uncertainties. However, the first quarter of 2024 shows a growth of 9.9% compared to the same period the previous year.

According to *Counterpoint*, a researcher in technology industry, in the fourth quarter of 2023, the foundry industry share by technology node was as follows: 3nm accounted for 9%, driven by the ramp-up of the iPhone 15; 4/5nm captured 26%, fueled by high demand for AI applications; and 6/7nm held 13%, supported by strong restocking demand for low-to-mid-end smartphones. Both the 12/14/16nm and 22/28nm nodes each represented 9% of the market, while all other mature chips collectively made up 34% of production.

Lastly, recent international tensions and chip shortages have highlighted vulnerabilities in the semiconductor supply chain, driving governments—particularly in the U.S. and EU—to implement initiatives aimed at boosting domestic foundry capacity, developing skilled workforces, and supporting R&D. Those programs include the U.S. CHIPS and Science Act of 2022, which allocates $52 billion for semiconductor manufacturing, research, and innovation and its complementary projects, such as New York's Green CHIPS program, further emphasizing sustainability, providing additional incentives for eco-friendly semiconductor manufacturing. In the European Union, the European Chips Act, approved in 2023, commits approximately $43

billion with a goal to double its global semiconductor foundry market share to 20% by 2030. Additionally, the semiconductor sector is closely tied to government interests due to its strategic importance for national security, as semiconductors are essential for defense systems, leading to increased focus on secure production by entities such as the U.S. Department of Defense's Trusted Access Program Office.

GlobalFoundries Overview

GlobalFoundries (GF), a U.S.-based semiconductor manufacturer, was founded in 2009 as a joint venture between Advanced Micro Devices (AMD) and Abu Dhabi's Advanced Technology Investment Company (ATIC). Nowadays, GF's outstanding shares are held 84,8% by Mubadala, a sovereign wealth fund from Abu Dhabi and 6.3% by FMR LCC (Fidelity Management and Research), a financial services corporation.

Originally established to become a major player in semiconductor manufacturing, GlobalFoundries (GF) rapidly expanded through strategic acquisitions, such as the $4 billion purchase of Chartered Semiconductor in 2010, which was a leading foundry at that time, allowing GF to expand its manufacturing capacity and solidify its position. In 2015, it further strengthened its technological capabilities and production capacity by acquiring IBM's Microelectronics division, which was advancing the development of cutting-edge semiconductor nodes. As part of this deal, GF received $1.5 billion from IBM and entered a 10-year commitment to supply it with advanced semiconductor technology. Recently, in 2023, GlobalFoundries acquired Renesas Electronics' CBRAM technology to bolster its capabilities in developing IoT and 5G applications. Additionally, in 2024, the company improved its semiconductor product offerings by acquiring Tagore Technology's Gallium Nitride (GaN) technology portfolio, enhancing its power management solutions for high-efficiency applications. Today, it holds over 9,000 global patents and maintains partnerships with leading semiconductor companies such as AMD, Samsung, TSMC, and IBM, further reinforcing its position in the global semiconductor industry.

GF has established a strong global presence with 4 manufacturing locations: New York and Vermont (USA), Germany (Europe), and Singapore (Asia). The company continues to expand, exemplified by a $4 billion expansion of its Singapore facility in 2023 and a collaboration with

STMicroelectronics to build a high-volume fab in Crolles, France, to be operational by 2027, supported by the European Chips Act and by the French government. GF also benefits from a $1.5 billion grant from U.S. CHIPS and Science Act and $550 million from New York State's Green CHIPS Program to support a 10-year project to expand an existing fab and construct a new state-of-the-art fab in New York and modernize a facility in Vermont. Furthermore, its partnerships with governments and academic institutions, such as multi-year contracts with the U.S. Department of Defense and collaborations with Purdue and Georgia Tech, have further accelerated its growth.

GlobalFoundries (GF) offers an advanced portfolio of technologies, including CMOS, FinFET, RF SOI, FDX FD-SOI, SiGe, and Silicon Photonics (SiPh), which it uses in its manufacturing services for a wide range of semiconductor devices such as microprocessors, mobile application processors, baseband and network processors, RF modems, microcontrollers, and power management units. In addition, it delivers mask services, post-fabrication solutions, multi-project wafer projects, and specialized services for aerospace, defense, and RF networks.

According to last year’s data, the company's end markets included smart mobile devices (41% of total revenue), communication infrastructure and data centers (12%), home and industrial IoT (19%), automotive (14%), personal computing (3%), and non-wafer services (12%). This diverse offering supports a secure and reliable supply chain for over 250 global clients, including top IC (Integrated Circuit) design companies in China, Japan, South Korea, Europe, and U.S.

In 2018, Caulfield, the CEO of GlobalFoundries, announced a major strategic decision to halt the development of 7nm chips. This choice was primarily driven by the high costs and complexity associated with the technology, which rendered the potential financial returns insufficient to justify the investment, particularly as competitors were already leading the market. As a result, the company has since shifted its focus to more mature nodes, specifically 12nm and above.

In 2023, revenue from the two operating segments was split between 11.6% for Engineering and Other Pre-Fabrication Services and 88.4% for Wafer Fabrication. Engineering and Other Pre-Fabrication Services saw a 6.1% increase in revenue compared to the previous year, reaching $856 million in 2023, with a CAGR of 20.7% over the period 2021-2023. In contrast, Wafer Fabrication revenue declined by 10.5% to $6.54 billion, although it posted a CAGR of 4.4% between 2021 and 2023. As of Q3 2024, based on the latest available data, while certain segments are beginning to recover from the demand peak of 2022 and the subsequent buildup of customer inventories, 2024 remains a year of continued customer adjustments. Therefore, revenue levels are expected to align with the lower figures recorded in 2023, reflecting these ongoing market recalibrations.

Furthermore, GlobalFoundries reported $1.533 billion in revenue from Europe, the Middle East, and Africa, marking a 29.7% year-over-year increase and a CAGR of 38.0% from 2021 to 2023, accounting for 20.7% of total revenue. The U.S. segment reported $4.262 billion, a 13% decline from the previous year, but with a CAGR of 3.5%, contributing 57.7% of the company's total revenue. In contrast, the "Other" regions generated $1.597 billion, down 21.3% year-over-year, with a negative CAGR of 5.9%, representing 21.6% of overall revenue.

In the first quarter of 2023, the company held a 6.6% share of the overall semiconductor foundry sector's revenue, but this declined to 5.8% by the last quarter of the year, although its revenue has increased from $1,841 million to $1,854 million. By the first quarter of 2024, its market share had fallen further to 5.1%, with revenue declining to $1,549 billion. In 2023, when compared with 2022, revenue dropped 8.8% to $7.4 billion, driven by weak demand for lower-end consumer and home electronics, elevated inventory and global economic challenges, partially offset by a strong 3x growth in automotive segment revenue, representing 14% of total revenue (vs. 4.6% in 2022),

GF continues to prioritize innovation through a strong focus on R&D, investing $428 million (6% of its revenue) in 2023 to advance materials, substrates, and chip architecture, supporting its leadership in the mature nodes market, enabling the delivery of more efficient and reliable products. In addition, governance structure is also an important point to highlight in terms of diversity and inclusion policies, leadership and board representation. The company has a well-diversified workforce, with 90 nationalities across 14 countries, with women representing 25% of the total workforce, 21% of management roles, 20% of executive levels, and 23% of roles in engineering-related fields. The same level of diversification applies to the Leadership Team, Board of Directors, and Committees.

The GF's Leadership Team has 26 members, consisting of 20 males and 6 females, with 6 of them being part of the Executive Team: Dr. Thomas Caulfield (CEO), John Hollister (CFO), Niels Anderskouv (CBO), Saam Azar (CLO), Tim Breen (COO), and Pradheepa Raman (CPO). It is important to note that Saam Azar previously served as a senior member of the Legal & Compliance Unit at Mubadala Investment Company, while Pradheepa Raman is currently a member of Mubadala's senior leadership team and serves on the board of directors for various private North American Mubadala investments.

The Board of Directors consists of 11 members, 4 of whom currently serve Mubadala, the shareholder company. Out of the 11 members, 8 are males and 3 are females. The company also has 4 committees, each composed of all 11 Board of Directors' members, with some members serving on more than one committee. The Audit Committee has 3 members (2 females and 1 male), the Nominating and Governance Committee has 4 members (1 female and 3 males), the People and Compensation Committee has 3 members (2 females and 1 male), and the Strategy and Technology Committee has 5 members (4 males and 1 female).

GlobalFoundries Financial Analysis

Over the past four years, GlobalFoundries (GF) has demonstrated strong financial performance, as evidenced by key capital structure, profitability, efficiency, and cash flow management indicators. In terms of capital structure, GF has successfully reduced its leverage, with the debt-to-equity ratio declining to 24.80% in 2023 from 39.05% in 2020, and the debt-to-assets ratio falling to 15.26% from 22.74% registered in 2020. Meanwhile, the solvency ratio (Equity/Liabilities) rose significantly from 141.26% in 2020 to 161.09% in 2023, underscoring GF's emphasis on maintaining a strong balance sheet and low leverage for enhanced financial stability.

Profitability ratios also reflect marked improvements. The gross margin, which was negative at -14.68% earlier, turned positive, reaching 28.42% in 2023. EBITDA margins grew from 17.87% in 2020 to an impressive 34.90% in 2023, supported by higher revenues, reduced depreciation, and controlled R&D and administrative expenses. Similarly, the EBIT margin improved from -34.13% in 2020 to 15.27% in 2023. The net margin followed a similar trend, climbing from -27.28% in 2020 to 13.77% in 2023, peaking at 17.83% in 2022, driven partly by tax benefits. However, the decline in net income from 2022 to 2023 led to decreases in Return on Equity (ROE) and Return on Assets (ROA), which stood at 9.17% and 5.64%, respectively, in 2023.

Cash flow management reveals mixed results. GF's Cash Conversion Cycle extended from 88 days in 2021 to 118 days in 2023, indicating slower inventory turnover and inefficiencies in collecting receivables. The Average Holding Period and Average Collection Period were higher in 2023 compared to 2021, while the Average Payable Period slightly decreased to 35 days in 2023 from 36 in 2022. Despite these challenges, GF maintained robust liquidity metrics. The Current Ratio increased from 1.58 in 2020 to 2.04 in 2023, and the Quick Ratio remained strong at 1.56 in 2023, reflecting the company's ability to meet short-term obligations. The Cash Ratio, which remained

above 0.5, rose from 0.48 in 2020 to 0.77 in 2023, while Net Working Capital saw a significant increase, highlighting effective working capital management.

Overall, GF's financial performance illustrates a strategic focus on balancing growth initiatives with prudent financial management, ensuring both stability and sustainable growth.

GlobalFoundries Valuation

In valuing the company, forecasts were projected through 2035, using economic predictions, the company's strategic plans, and anticipated industry trends. According to McKinsey, the end markets served by the company are expected to see sustained growth between 2021 and 2030, with CAGRs of 6.2% for Smart Mobile, 5.3% for Communication Infrastructure & Data Centers, 8.8% for Home and Industrial IoT, and 12.2% for Automotive. These growth rates align with GF's expected future evolution, based on historical data, as they reflect conservative targets, avoiding the significantly higher growth associated with recent advancements in single-nanometer mass production technology (5nm and 3nm), which GF cannot implement.

According to an analysis by *Khaveen Investments*, a global macro quantamental hedge fund with a well-diversified portfolio, GF's four largest customers in the Smart Mobile segment saw an increase in Days of Outstanding Inventory in 2022, a trend that continued into 2023, which aligns with the slowdown in GF's revenue for this segment during that period. However, inventory levels showed a correction by August 2024, indicating projected growth of approximately 2% for the segment in 2024, consistent with GF's revenue growth through the third quarter. An accelerated growth trajectory was projected, reaching 10% by 2029, with a terminal growth rate of 6% starting that year, which is below overall market expectations (CAGR 4,50%).

In the Communications Infrastructure & Data Center segment, a 35% decrease in 2024 revenue is anticipated, reflecting the most recent financial data and company disclosures, which aligns with the trend of clients transitioning to one-digit nanometer platforms, a shift that reduces reliance on the older, more mature nodes, already highlighted in 2023's annual report. As a result, we project a continued negative revenue growth in this segment until 2029. Starting in 2029, we expect a

terminal growth rate of 2%, which aligns with inflation rates and accounts for the ongoing demand for mature nodes to support stable, cost-efficient operations.

The Home and Industrial IoT and Automotive segments remain less affected by the shift towards cutting-edge semiconductor nodes, as they heavily rely on more mature technologies. Home and Industrial IoT is expected to face a 7% revenue decline, driven by a significant decrease in revenues and inventory buildup at its two largest customers. However, the situation has started to improve, and stabilization is expected. Therefore, a recovery in this segment is projected, with growth reaching 15% by 2029 and a terminal growth rate of 7% thereafter, which results in a CAGR of 9,82%.

The automotive sector is currently experiencing steady, inflation-level growth, as confirmed by recent financial data, following a significant boost in 2023 driven by advancements in vehicle infrastructure, such as 40nm image sensor processor technology and 130 nm BCD power platforms for critical ADAS (Advanced Driver Assistance System). Projected revenue growth is expected to reach 20%, supported by strategic partnerships within this segment, such as with Infineon, with a multi-year agreement on the supply of 40nm automotive safety controller and power management and connective solutions. A terminal growth rate of 7% is anticipated by 2030.

For the non-Wafer segment, the Q3 2024 financial release indicates a 20% decrease, being expected a recovery to historical growth patterns, with projections achieving 10% by 2029 and a terminal growth rate of 6% thereafter.

According to Q3 2024 reports, the cost of sales currently accounts for 75% of total revenue, a level that is projected to hold steady for the entire year. However, a gradual reduction in this percentage is expected over the next two years, aiming to return to 2023's margins. A further decline is forecasted in subsequent years, reaching a terminal value of 66%, reflecting the company's efforts to enhance operational efficiency and adopt more innovative cost-saving practices.

To forecast operating expenses, the historical average, as a percentage of revenues, was used and applied to the projected period, except for R&D expenses, which include a slight increase to reflect industry needs, despite the company's clear position on not developing cutting-edge technology. Additionally, depreciation was forecasted using the historical average as a percentage of revenue and interest expense was calculated based on the cost of debt used in the WACC computation. All other items relevant to the FCF calculation, including CAPEX and changes in NWC, were forecasted using historical averages as a percentage of revenue. The tax rate used was provided by Bloomberg forecasts.

In respect to WACC computation, the cost of equity was obtained by a linear regression of GF's returns against the MSCI's returns, giving us the beta of equity which was then unlevered to remove the effects of GF's current capital structure, and re-levered it to reflect the target capital structure. Again, we opted for a value closely aligned with the current one, resulting in minimal impact. The CAPM method was used to determine the cost of equity, using the 10-year U.S. Treasury bond as a proxy for the risk-free rate and a market risk premium of 5% (Koller, Goedhart, and Wessels 2020). To establish the optimal capital structure, the historical Net Debt/EV ratio was analyzed using data from the past three years, as the company has been public only since 2021. This analysis showed a ratio of -2.3%, which led to the decision to target a -3% ratio. The cost of debt was only calculated through the company's probability of default (obtained using the Bloomberg terminal), as the company doesn´t disclose publicly a credit rating emitted by a recognized institution. A WACC of 13.04% was obtained.

The forecasted free cash flows (FCFs) were discounted using the weighted average cost of capital (WACC) to determine the present value of core unlevered FCFs, which sum represents the total PV of projected cash flows. Additionally, a terminal value was calculated using a perpetual growth rate of 5,5% (justified in "AMD's Valuation" chapter), and its PV was added to the PV of projected

cash flows, resulting in the core levered enterprise value (EV). By adding net financial debt to this EV, the equity value was obtained. Finally, dividing the equity value by the total shares outstanding as of October 31 yielded a share price estimate of $36.17, 1% lower than the actual share price ($36.50).

The Comparables Valuation for GF provided more accurate results than for AMD, with values closer to the share price derived through the DCF. The companies used for this were TSMC, UMC, SMIC, Vanguard International Semiconductor Corporation and Tower Semiconductor. The EV/EBITDA multiple resulted in a share price of $32.89 using all companies, and $36.95 when excluding Tower Semiconductor, which was classified as an outlier. The EV/Revenues multiple gave a share price of $45.25, similar to the Price-to-Book multiple which derived a share price of $44.37, both higher than the current share price. Finally, the Price-to-Earnings multiple resulted in a share price of $29.48, when using similar companies.

Motives for merger

Currently, AMD does not produce chips in-house, meaning that it is highly dependent on external foundries, such as TSMC in Taiwan and GlobalFoundries in the US for the actual production of semiconductors. This dependency creates vulnerabilities to global crises and geopolitical tensions, that may severely impact the company's supply chain and operations. AMD also must compete for foundry capacity with other major TSMC customers, including Apple and Nvidia, which could lead to supply constraints. Looking into the recent past, AMD has found itself hampered several times due to TSMC's production constraints, during the Global Chip Shortage of 2020-2023. In this period, the semiconductor sector was heavily impacted by the COVID-19 pandemic, when the shortage of materials and product lines disruptions constrained AMD's and Nvidia's ability to meet high demand across product lines, thereby hindering growth potential. Even if owning a foundry wouldn't have fully protected the companies against supply shortages, it would have provided flexibility and priority in production.

It is also worth noting that AMD's main competitor in the CPU space, Intel, contemplated acquiring GlobalFoundries in 2021. Intel has traditionally relied on internal manufacturing and explored this acquisition as part of their strategy of expanding foundry services, in order to meet global demand. Even though this acquisition did not materialize, for undisclosed reasons, it highlights the strategic value of GF. In September 2024, Intel announced their plan to restructure their foundry business into an independent subsidiary. This move aims to optimize the capital structure of each business unit, facilitating access to external sources of funding, aligning with Intel's efforts to revitalize the company and regain a leading position in the industry.

Despite the strategic initiatives of some companies in the semiconductor industry that demonstrate potential pathways to success, geopolitical tensions have emerged as a dominant challenge,

impacting both the global economy and industry stability. These tensions threaten supply chains, trade relations, and resource availability, making it imperative for companies to adopt collaborative strategies, such as mergers, to ensure resilience and sustained growth. Firstly, political tensions between China and Taiwan have significantly affected the industry. Since the end of the Chinese Civil War in 1949, relations between China, the victorious party, and Taiwan, the defeated one, have been marked by persistent tensions over the question of sovereignty. Taiwan, formally the Republic of China (ROC), has functioned autonomously from mainland China, officially known as People's Republic of China (PRC), establishing a self-governed democratic state in contrast to China's communist government. In recent years, these tensions have escalated significantly, particularly following the election of former Taiwanese President Tsai Ing-wen as under his leadership Taiwan adopted a more robust approach to self-governance and resisted policies promoting closer strait-ties. According to U.S. Air Force General Kevin Schneider, incursions by China’s People’s Liberation Army Air Force (PLAAF) into Taiwan’s air defense identification zone (ADIZ) have soared, with Chinese aircraft violating the ADIZ over 1,085 times in recent months, marking a threefold increase from the previous year, as a warning for a possible invasion. Therefore, Taiwan Semiconductor Manufacturing Company (TSMC), the main foundry in the semiconductor industry, mainly in the cutting-edge technology domain, is facing a huge challenge, as it sits at the center of a strategic intersection between technology, geopolitics, and national security. In response to the mentioned recent events signaling the possibility of war, U.S. has imposed export controls on TSMC to restrict China’s access to advanced technology that could bolster its military capabilities, prohibiting the sale of its most sophisticated semiconductor products, such as 7nm and 5nm nodes, to Chinese companies like Huawei. In addition, Admiral Phil Davidson, former head of the U.S. Indo-Pacific Command, has suggested that 2027 could be a plausible window for a Chinese invasion of Taiwan.

On the other hand, Taiwanese government has taken steps to ensure TSMC's next generation 2nm technology remains within Taiwan's borders, aiming to solidify the country's role as a global semiconductor hub, but possibly hindering TSMC's ability to form international partnerships or access financial incentives from other countries.

Further complicating the landscape, U.S. President Donald Trump, during his tenure, proposed imposing higher tariffs on imports, including semiconductors. Given his recent re-election, this policy could be implemented in the near future, potentially impacting the semiconductor industry by increasing costs for U.S. companies reliant on imports, as US is only responsible for 10% of the world's manufacturing capacity, as of 2022, according to SIA. This position aligns with the objectives of the CHIPS Act, a U.S. legislative measure designed to bolster domestic semiconductor production, offering substantial grants and financial support to encourage the establishment of semiconductor manufacturing within the U.S., aiming to reduce dependence on Taiwan and mitigate risks associated with potential geopolitical disruptions.

In summary, TSMC's sales and performance are vulnerable to the political tensions between China and Taiwan, export restrictions imposed by Taiwan, and the possibility of higher tariffs from the U.S. At the same time, the U.S. is heavily reliant on semiconductor imports, particularly from Taiwan, where TSMC plays a pivotal role, being responsible for 60% of global semiconductor production and 90% of the most advanced chips. Consequently, the U.S. could face severe shortages if TSMC's supply capacity is disrupted by geopolitical tensions or if its products are subject to higher tariffs upon entering the U.S., leading to significant economic impacts. This interdependence underscores the rationale for a potential merger between AMD and a U.S.-based company (GlobalFoundries), which could boost domestic manufacturing capacity and secure the U.S. semiconductor supply chain, supporting economic development and reducing reliance on foreign sources.

Deal Terms and Structure

Our proposed acquisition structure envisions GlobalFoundries becoming a subsidiary of AMD. This way, GF would remain an independent operational entity, maintaining its brand and client base, preserving AMD's focus and minimizing any disruptions to core operations. This strategy avoids the heavy burden of full direct integration, offering key financial flexibility. Post-acquisition, GF would benefit from the backing of the parent company's financial strength, facilitating access to debt financing with more favorable terms and conditions. In the long term, as will be discussed in our post-merger strategy plan, GF will serve as a vital member of AMD's vertical supply chain, allowing for the reduction of the dependency on external foundries. This structure was chosen over alternative partnerships, such as Joint Ventures, as these other options would limit operational oversight, could potentially lead to diverging objectives in the future and possibly even reduce GF's ability to secure better debt terms and conditions. An acquisition provides greater certainty and alignment with our proposed strategy, securing stability and strength for AMD's competitive position, as our proposed merger involves a makeover of GF's operational capabilities.

A 40% premium over GlobalFoundries' market value was applied for the calculation of the purchase price, assuming GF's share price of $36.50, as of October 31, 2024. This translates to a payment of $51.10 per GF share, leading to a total equity purchase price of $28,411.6 million. Based on AMD's stock price of $144.07 as of October 31, 2024, this translates to an exchange ratio of 0.35469. For the calculation of the premium, we considered information from several reports and studies regarding M&A deals, and the semiconductor industry. According to a publication by the Wall Street Journal in collaboration with Deloitte, which analyzed over 1,200 acquisitions spanning a 24-year period, 30.1% is the average premium paid in the analyzed M&A deals. A 2016

McKinsey study analyzing deal makings in the semiconductor sector reports an average of 40% premium, where the value created typically surpassed the price premium. The 40% deal premium is justified by these industry benchmarks, as well as the strategic value GF is expected to bring to AMD. We aimed to keep this figure in line with realistic expectations to keep the possibility of this deal actually going through as reasonable as possible.

Three different scenarios were outlined, each with a different impact on AMD's capital structure and financial flexibility. For the debt financing across these scenarios, a senior secured loan with a 10-year term is assumed, ensuring that the debt would be fully repaid by the final year of our forecast, preventing it from impacting the projected capital structure beyond the forecast period. We made sure in all scenarios AMD had the capacity to pay off its debt without severely affecting its operations, by looking at the expected free cash flows generated, with the worst-case scenario having a debt service coverage ratio (FCF/Debt Service) of at least 2.5x. The interest rate of 6.32% was calculated combining a 2% spread, reflecting market-based credit risk, with the current 10-year US Treasury of 4.32%. An issuance fee of 1.5% was assumed for the debt financing, transaction costs of 1% of the purchase price and restructuring costs of 0.5% of the purchase price. When determining the amount of cash used in each payment plan, we always set a minimum cash balance for AMD of $1 billion, making sure each scenario is manageable for the company. As of Q3 2024, AMD's balance sheet cash position is at $3.897 billion.

In the first scenario, a heavy amount of equity, $19.9 billion (leading to the issuance of 138.04 million new shares), is used to finance the transaction, accounting for around 70% of the total deal, alongside $7 billion in debt and $1.948 billion in cash reserves. This strategy minimizes debt load and financing interest obligations, preserving financial flexibility, at the cost of dilution of ownership for current shareholders, who may prefer using less equity given how AMD's stock price should be undervalued, according to our DCF valuation. For the second scenario, we

established a balanced payment plan, using 50% stock, corresponding to issuing 98.6 million new shares to GF shareholders. The other 50% is paid using $13 billion in debt and $1.720 billion in cash. This scenario may be the most appealing, as it balances equity dilution with the debt burden, giving an optimal safe solution. The third scenario is comprised of financing only 30% in stock, $8.5 billion, which leads to the issuance of 59.16 million new shares. A substantial $18 billion in debt would be utilized, along with $2.477 billion in cash. This option offers the highest potential returns for AMD shareholders by minimizing dilution, allowing existing shareholders to retain a larger share of future earnings. However, this also introduces higher leverage risk, as the debt burden could place considerable pressure on AMD's financial health if cash flows or market conditions become unfavorable.

Deal Impediments

The semiconductor industry regularly encounters significant regulatory scrutiny, so this proposed merger is bound to be faced with challenges related to antitrust concerns, geopolitical sensitivities, environmental regulations and trade policies.

The U.S. Federal Trade Commission, as well as the European Commission, closely monitor M&A deals in order to prevent monopolies and to ensure fair competition, highlighting the importance of the 3 main antitrust laws – Sherman Act, Clayton Act and FCT Act – under which AMD and GlobalFoundries will be evaluated. The Sherman Act targets agreements that restrain unreasonable trade and prohibits monopolistic practices, while The Clayton Act addresses some gaps that the previous doesn´t cover, such as mergers that may substantially lessen competition, exclusive dealing contracts, and interlocking directorates, where individuals also serve on boards of competing companies. The FTC Act prohibits unfair methods of competition and deceptive practices, noting that any violations of the Sherman Act are also considered violations of the FTC Act, punishable by the Department of Justice, along with non-compliance with the other mentioned laws.

Therefore, the acquisition of GlobalFoundries by AMD would be subject to review for the potential impact on market competition due to vertical integration, as some of AMD's competitors who are also clients of GF could face limited access to manufacturing capacity or find themselves in a disadvantaged position. This merger could also be affected because this industry is at the center of worldwide geopolitical tensions, since GF's customer base is spread across the globe and their facilities are also located across multiple countries. For this reason, conflicts may arise related to, for example, AMD, an American company, controlling a foundry company that supplies chips around the world. Concerns over Environmental policies may also take place, as this is a topic that

has been gardening increasing attention, and any negative environmental performance may lead to public backlash and regulatory hurdles.

Despite the regulatory scrutiny, we believe this merger provides an intriguing discussion point, by realistically addressing the challenges present in the current landscape of this industry.

Post-Merger Strategic Plan

With GlobalFoundries (GF) now acquired by AMD and operating as its subsidiary, GF's strategic plans will undergo significant changes, as the *parent company* aims to reduce its dependence on key major players in the one-digit-nanometer foundry market and minimize risks from potential supply chain disruptions due to political issues. Therefore, AMD intends to position GlobalFoundries (GF) as a leading participant in the one-digit-nanometer chip market, making it the primary supplier of chips across various sizes, with a focus on developing cutting-edge technologies.

To pursue these plans, the construction of a fab dedicated to one-digit-nanometer chips was considered. This fab will be composed of two units, each capable of operating independently, with one unit expected to begin operations in early 2026 and the other in early 2029.

Given the limited information available regarding the costs incurred by companies in building new facilities or expanding existing ones, several data sources were assessed: i) information from TSMC regarding the construction of its new facility in Arizona, which is already producing 5nm chips, with an average investment of $12 million for a production capacity of 20,000 wafers per month; ii) 2020 McKinsey Report, which projected the cost of semiconductor fab module construction at $5.4 billion for 5nm technology and $2.9 billion for 7nm, including a 12-24 month construction period for the shell and an additional 36-42 months to reach full capacity; iii) the planned construction of JASM's second fab in Japan, a subsidiary of TSMC, which is slated to

operate by 2027 with a total investment of $20 billion to add 5nm and 7nm production, targeting a total production of 100,000 mm wafers per month; iv) the extreme case of the construction of TSMC’s Fab 18 which had a total cost of 17 billion to produce 1.3 million 300mm wafers of 5nm production annually, and took three years to complete, from 2018 to 2021.

Therefore, considering that GlobalFoundries (GF) intends to expand one of its existing fabs and has some experience in the construction process, we have estimated a cost of $10 billion for an average production facility, which is a conservative figure when compared to the building of new fabs, as seen in the Arizona plant. For reference, we have not considered the 3nm expansion in our estimates, as it requires a significantly higher investment, as indicated by the TSMC disclosure of construction costs for a 3nm fab, projected to range between $27 billion and $29 billion. This higher cost is further compounded by the fact that GF will not be able to benefit from the cost reductions typically associated with more mature technologies, as 3nm is still in the early stages of market establishment.

To fund the fab construction, projected to cost $10 billion, GlobalFoundries (GF) plans to secure $5.5 billion through debt (via a loan), $2.5 billion from grants, $1 billion from cash reserves, and $1 billion from marketable securities. GF’s current cash position includes $2.3 billion in cash and cash equivalents and $1.2 billion in marketable securities. The expectation of a $2.5 billion grant is justified, as GF has already received $1.5 billion from the U.S. CHIPS and Science Act and $550 million from New York State's Green CHIPS Program to support a 10-year project which application process was finalized in November 2024. These funds will be used to expand an existing fab in New York to advance the automotive sector, construct a new state-of-the-art fab at the same site, and modernize a facility in Vermont. The CHIPS Act focuses on enhancing U.S. semiconductor manufacturing, securing supply chains, and bolstering national security, with $52 billion allocated for federal semiconductor incentives. New York's Green CHIPS Program, offering

up to $10 billion, aims to promote environmentally sustainable semiconductor manufacturing. The mentioned programs offer substantial financial assistance to support domestic semiconductor manufacturing, which will likely influence the funding available to companies like GlobalFoundries (GF). The projected grant for the construction of a new fab, tied to GF's acquisition by AMD, is based on GF's plans to expand production of advanced technologies critical to U.S. semiconductor supply. This expansion is particularly important amid ongoing geopolitical tensions between China and Taiwan, along with Taiwan's export restrictions on TSMC chips. Additionally, GF's commitment to environmental compliance strengthens its eligibility for funding from both programs.

Additionally, for the post-merger forecast, adjustments were made to the original valuation prepared without the merger scenario, which includes changes to the levels of PP&E, depreciations and interest expenses. The net book value of the fabrication plant was calculated across the forecast period, with depreciation beginning in 2026 to 50% of the total investment, due to the completion of the first construction phase. An additional depreciation line will commence in 2029, reflecting the remaining investment balance, as the second phase of construction reaches completion.

The Deloitte report “Tooling up the CHIPS Act: How to fast-track your new fab equipment ramp” indicates that approximately 45% of total investment is allocated to building facilities, while 55% goes toward equipment purchases. Based on this allocation, building investments were depreciated annually at a rate of 2.56%, considering an useful life of 39 years, as defined by IRS, although GF disclosed an increase of buildings’ useful life from 26 years to 50 years in the last annual report; and equipment investments at 14.29%, considering an useful life of 7 years, a conservative perspective based on the period currently used by the company, from 2 to 10 years.

The interest expenses incurred with the fab project implementation were computed by structuring a credit amortization plan 11Y to maturity, with grace period of 4Y relative to construction time,

using the 10-year US Treasury with a spread of 1.75%, aligned with the lowest spreads in GF's current loans, reflecting the anticipated increase in negotiation power driven by AMD's influence. A capital amortization of 5% was defined in the first 2 years, 10% in the third, and 15% until maturity, with a bullet of 20% that should be refinanced. The bullet will affect the company's debt structure in future, as by 2025, its net debt-to-enterprise value ratio will be -0.5%, maintaining its negative trend, due to a conservative perspective to guarantee the deal's value creation. We have inferred the company's capacity to pay the debt by the FCF. As FCF are negative until 2027, becoming slightly positive in 2028, one year before the new fab starts to fully operate, the interest expenses were capitalized to the principal amount, starting to be repaid in 2029, time at which the company starts to pay interest, guaranteeing a ratio FCF/Debt service around 3x to 6x, which is sufficient to face fab debt service. It's important to note that other debt payments related to existing loans are guaranteed as they were forecasted based on the current Debt/EV ratio, which gives a cautious outlook, as the EV increases in the post-merger scenario.

GlobalFoundries Synergies

To estimate revenue synergies from producing single-digit nanometer chips, TSMC's financial data was used, as TSMC is currently the only foundry producing these advanced nodes while Intel and Samsung have broader business activities outside wafer production. TSMC's financial reports indicate that revenues from its 7nm production began in 2018, with 5nm following in 2020, representing a CAGR of 22% between 2018 and 2022, which may be slightly underestimated as 2018 did not represent a full year of production. Subsequent years were not included as they already benefit from 3nm revenues.

Under the expansion program, GF is projected to supply AMD, supporting AMD's strategic goals with lower associated costs and securing GF a stable revenue stream, enhanced by existing agreements between the companies. Given AMD's strong position in Communications Infrastructure & Data Center, GF is expected to see notable revenue growth in these areas, with potential to exceed the conservative 20% growth rate assumed. Other segments, included in Home and Industrial IoT and Automotive, which are significant to AMD's operations and continue to rely on mature nodes, are also likely contributing to above-average growth. For forecasting, a cautious approach was taken, with a 20% revenue growth rate being assumed for all segments, except Smart Mobile (15%) starting in year six, reflecting anticipated full production capacity. For years three through five, where only one phase of the expansion is completed, the synergy rate suggested by Deloitte (8%) was applied, representing roughly less than half of full potential synergies across segments.

According to Deloitte's report "Unlocking the Full Potential of M&A: What It Takes to Be a Value Creation Champion.", SG&A expenses and total cost of sales are expected to decrease by 5%. This could be attributed to GF leveraging AMD's existing agreements, such as pricing conditions for

services like accounting and auditing. Additionally, as a subsidiary of AMD, GF could benefit from the parent company's negotiating power, which might result in slight reductions in supplier negotiations. On the other hand, TSMC's gross margin varied during the introduction of single-digit nanometer chips, preventing a clear margin projection related to the cost of sales. However, a similar case study, the Nokia-Alcatel merger, provides relevant insights into integration and synergy realization, which leads to a 5% decrease in total costs, aligning with the report conclusion. As a result of the merger, it is essential to increase R&D expenditure from an average of 8% of revenue to a range of 10%-20%. Specifically, for the first five years (Years 1-5), R&D spending is set at 20% of revenue, a conservative figure given that, according to TechInsights, a leading information platform for the semiconductor industry, companies in this sector typically allocate 17.7% of their sales to R&D. A reduction to 10% for the following period is assumed, continuing indefinitely from Year 6 onward.

Value Creation Analysis

To evaluate the value creation derived from this deal, we performed an Adjusted Present Value valuation of each company, now incorporating the effects of the expected synergies, as well as the effect of varying debt levels throughout the valuation period.

We looked at three possible scenarios regarding value creation: the Base case, with the value of synergies discussed previously; the Optimistic case where we increased the value of synergies by 25%; and the Conservative case where we decreased the value of synergies by 50%. On the Base case AMD’s enterprise value increased by around 32.02%, going from $239,445 million to $316,119 million, reflecting how much we believe the company may benefit in the long term from the realization of the synergies. The Optimistic case achieves a value creation of 40.26%, and the Conservative a value of 15.86%. GF's enterprise value declined from $18,917 billion to $17,715 billion (-6.36%) in the baseline scenario, primarily due to the higher impact of CAPEX (construction of fab) outweighing the synergies of the merger. However, under the optimistic scenario, the enterprise value increases by 3.29%, reflecting a more favorable outlook, where the more Conservative decreases by 24,5%. When analyzing the value of the combined entity, the Base scenario displays an increase in value of 29.21%, the Optimistic 37.55% and the Conservative 12.90%.

In summary, this analysis demonstrates the value creation potential for the combined entity in either scenario, as the collaboration between the two companies unlock opportunities that would not be achievable independently.

Conclusion

We believe this potential acquisition between AMD and GlobalFoundries presents a compelling case for an M&A deal in the semiconductor industry. The vertical integration of AMD's design expertise with GF's manufacturing capabilities could create an opportunity for great sustainable growth, as synergies are realized.

This Field Lab's analysis highlights the potential benefits related to enhanced supply chain resilience, improved production efficiency and reduced external dependency. Our financial analysis and forecasts prove that integrating GF as a subsidiary to AMD is both viable and advantageous, particularly in the coming years when the demand for cutting-edge semiconductors is likely to explode, and synergies are expected to take effect. Our analysis concludes that the combined entity is stronger than the sum of its parts, with AMD being expected to benefit the most during this period, since GlobalFoundries must go through a heavy investment phase during the first half of the forecast period, impacting on its value creation capabilities.

Not without its risks, a merger of this type is presumed to face regulatory hurdles and raise geopolitical concerns, given the nature of the industry. Alongside this, risks associated with the heavy investment required for upgrading GF's capabilities are also present, since any major disruptions may impact the value creation capabilities of this deal.

In conclusion, this study emphasizes the interesting possibilities of deal making in the semiconductor industry, seeking to evaluate the feasibility and potential benefits. We believe this proposal represents an intriguing and realistic point of discussion for both academics and industry stakeholders, as the strategic role of M&A may shape the trajectory of this industry. This is especially relevant as we reach a point where innovation is becoming more and more challenging, and collaboration is crucial to drive progress and overcome complex obstacles.

References

PCGamesN. n.d. “Ferrari F1 Sponsorship, Financials, and the GlobalFoundry Deal.” https://www.pcgamesn.com/amd/ferrari-f1-sponsorship-financial-globalfoundry-deal.

..

ATREG. 2024. “Global Semiconductor Growth Encouraging: 2024-2025 Indicators.” https://atreg.com/global-semiconductor-growth-encouraging-2024-2025-indicators/.

Deloitte. 2024. “Semiconductor Industry Outlook.” https://www2.deloitte.com/us/en/pages/technology-media-and-telecommunications/articles/semiconductor-industry-outlook.html.

Saratogian. 2024. “GlobalFoundries Receives Federal Funding to Expand and Create New Manufacturing Fab in Malta.” https://www.saratogian.com/2024/02/19/globalfoundries-receives-federal-funding-to-expand-and-create-new-manufacturing-fab-in-malta/.

Tirias Research. 2024. “GlobalFoundries Trusted Foundry Status Helped Secure CHIPS Act Investment.” *Forbes*. https://www.forbes.com/sites/tiriasresearch/2024/03/18/globalfoundries-trusted-foundry-status-helped-secure-chips-act-investment/.

AnySilicon. 2024. “Semiconductor Foundry Revenue: 2023-2024.” https://anysilicon.com/semiconductor-foundry-revenue-2023-2024/.

Mordor Intelligence. 2024. “Semiconductor Foundry Market Report.” https://www.mordorintelligence.com/industry-reports/semiconductor-foundry-market.

Counterpoint Research. 2024. “Infographic: Q4 2023 Semiconductor Foundry Smartphone AP Share.” https://www.counterpointresearch.com/insights/infographic-q4-2023-semiconductors-foundry-smartphone-ap-share/.

ComputerWorld. 2024. “GlobalFoundries Completes Integration of Chartered Semiconductor.” https://www.computerworld.com/article/1597767/globalfoundries-completes-integration-of-chartered-semi.html.

DBS Bank. 2024. “GlobalFoundries Financial Analysis.” https://www.dbs.com.sg/treasures/aics/templatedata/article/generic/data/en/GR/US/GFS_US.xml.

GlobalData. 2024. “GlobalFoundries Company Profile.” https://explorer.globaldata.com/Company/Profile/global-foundries_2453254.

Counterpoint Research. 2024. “Strong Automotive Performance Helps GlobalFoundries Limit FY2023 Revenue Fall to 9% YoY.” https://www.counterpointresearch.com/insights/strong-automotive-performance-helps-globalfoundries-limit-fy2023-revenue-fall-to-9-yoy/.

Tirias Research. 2022. “GlobalFoundries Finally Hits Its Stride on the Road Not Taken.” *Forbes*. https://www.forbes.com/sites/tiriasresearch/2022/05/24/globalfoundries-finally-hits-its-stride-on-the-road-not-taken/.

Deloitte. 2024. “What Makes M&A So Challenging.” *The Wall Street Journal*. https://deloitte.wsj.com/cio/what-makes-m-a-so-challenging-01654188458.

McKinsey. 2024. “Winning through M&A: Deal-Making in the Semiconductor Sector.” https://www.mckinsey.com/~/media/mckinsey/industries/semiconductors/our%20insights/winning%20through%20m%20and%20a%20deal%20making%20in%20the%20semiconductor%20sector/winning%20through%20m%20and%20a%20final.pdf.

CFR. 2024. “China-Taiwan Relations and U.S. Policy.” https://www.cfr.org/backgrounder/china-taiwan-relations-tension-us-policy-biden#chapter-title-0-4.

Semiconductor Industry Association. 2024. “CHIPS Act Overview.” https://www.semiconductors.org/chips/.

Economist. 2023. “Taiwan’s Dominance of the Chip Industry.” https://www.economist.com/special-report/2023/03/06/taiwans-dominance-of-the-chip-industry-makes-it-more-important.

S&P Global. 2024. “Global M&A by the Numbers: Q3 2024.” https://www.spglobal.com/market-intelligence/en/news-insights/research/global-m-a-by-the-numbers-q3-2024.

A&O Shearman. 2024. “Government Scrutiny of Semiconductor Transactions: Recent Cases.” https://www.aoshearman.com/en/insights/global-trends-in-government-scrutiny-of-semiconductor-transactions-an-overview-of-recent-cases.

Federal Trade Commission (FTC). 2024. “Guide to Antitrust Laws.” https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/antitrust-laws.

Boston Consulting Group. 2024. “M&A 2024 General Dashboard.” https://public.tableau.com/app/profile/the.boston.consulting.group/viz/MA2024GeneralDashboardFINAL/OverallMA.

Eurogamer. 2024. “Intel Loses Contract for PlayStation 6 Chips.” https://www.eurogamer.pt/intel-perde-contrato-de-chips-para-a-playstation-6.

Fortune Business Insights. 2024. “Embedded Systems Market Report.” https://www.fortunebusinessinsights.com/embedded-systems-market-108767.

Seeking Alpha. 2024. “GlobalFoundries Stock: Good Value Buy.” https://seekingalpha.com/article/4726477-globalfoundries-stock-good-value-buy.

Semiconductor Engineering. 2024. “Chip Shortages Grow for Mature Nodes.” https://semiengineering.com/chip-shortages-grow-for-mature-nodes/.

Counterpoint Research. 2024. “GlobalFoundries Q1 2024 Revenue.” https://www.counterpointresearch.com/insights/globalfoundries-q1-2024-revenue/.

GlobalFoundries. 2024. “Q4 2023 and FY2023 Financial Results.” https://gf.com/gf-press-release/globalfoundries-reports-fourth-quarter-2023-and-fiscal-year-2023-financial-results/.

Futurum Group. 2024. “Intel Exploring a Potential Deal to Buy GlobalFoundries.” https://futurumgroup.com/insights/intel-exploring-a-potential-deal-to-buy-globalfoundries/.

CNBC. 2024. “Intel Turns Foundry Business into Subsidiary, Weighs Outside Funding.” https://www.cnbc.com/2024/09/16/intel-turns-foundry-business-into-subsidiary-weighs-outside-funding.html.

EY. 2024. “Trends in Estimating Mergers & Acquisitions Integration Costs.” https://www.ey.com/en_us/insights/strategy-transactions/four-current-trends-estimating-mergers-acquisitions-integration-costs.

Deloitte. 2024. “Tooling up the CHIPS Act: How to fast-track your new fab equipment ramp.” https://www2.deloitte.com/us/en/pages/technology-media-and-telecommunications/articles/fabrication-equipment-ramp.html.

Digitimes. 2024. “Semiconductor Trends and Updates.” https://www.digitimes.com/news/a20240711PR200.html&chid=9.

Tom's Hardware. 2023. "Both Trump and Biden Expected to Attend TSMC’s Arizona Fab Grand Opening Ceremony: Fab 21 Opens in December." https://www.tomshardware.com/tech-industry/both-trump-and-biden-expected-to-attend-tsmcs-arizona-fab-grand-opening-ceremony-fab-21-opens-in-december.

TSMC. 2023. "TSMC Commences Volume Production of N4 Process Technology at New Arizona Fab." https://pr.tsmc.com/english/news/2033.

SemiAnalysis. 2022. "TSMC’s 3nm Conundrum: Does It Even?" https://semianalysis.com/2022/12/21/tsmcs-3nm-conundrum-does-it-even/.

McKinsey & Company. 2023. "Semiconductor Design and Manufacturing: Achieving Leading-Edge Capabilities."

https://www.mckinsey.com/industries/industrials-and-electronics/our-insights/semiconductor-design-and-manufacturing-achieving-leading-edge-capabilities.

AnandTech. 2023. "TSMC to Build Second Fab in Japan: 6nm and 7nm Coming to Japan." https://www.anandtech.com/show/21256/tsmc-to-build-second-fab-in-japan-6nm-and-7nm-coming-to-japan.

TSMC. 2022. "TSMC to Build First 1nm Semiconductor Fab in Taiwan." https://pr.tsmc.com/english/news/1951.

Koller, Tim, Marc Goedhart, and David Wessels. Valuation: Measuring and Managing the Value of Companies. 7th ed. Hoboken, NJ: John Wiley & Sons, 2020.

McKinsey & Company. *McKinsey on Semiconductors: Creating Value, Pursuing Innovation, and Optimizing Operations*. March 2024.

Deloitte AG and University of St. Gallen. Unlocking the Full Potential of M&A: What It Takes to Be a Value Creation Champion. Switzerland: Deloitte, 2022.

Copeland, Thomas E., and J. Fred Weston. Financial Theory and Corporate Policy. 4th ed. Boston: Addison-Wesley, 2004.

Weston, J. Fred, and Samuel C. Weaver. Mergers and Acquisitions. New York: McGraw-Hill, 2001.

DePamphilis, Donald M. Mergers, Acquisitions, and Other Restructuring Activities: An Integrated Approach to Process, Tools, Cases, and Solutions. 9th ed. San Diego: Academic Press, 2018.

Appendices

GlobalFoundries Financial Analysis

Capital Structure Ratios				
	2020	2021	2022	2023
Debt Ratio	**22.74%**	**16.23%**	**16.01%**	**15.26%**
Debt	2,802	2,439	2,856	2,754
Total Assets	12,322	15,028	17,841	18,044
Debt-to-Equity	**39.05%**	**30.58%**	**28.81%**	**24.80%**
Debt	2,802	2,439	2,856	2,754
Equity	7,176	7,976	9,913	11,104
Debt-to-EBITDA	**323.24%**	**156.44%**	**102.37%**	**106.74%**
Debt	2,802	2,439	2,856	2,754
EBITDA	867	1,559	2,790	2,580
Solvency Ratio	**141.26%**	**114.03%**	**125.78%**	**161.09%**
Equity	7,176	7,976	9,913	11,104
Liabilities	5,080	6,994	7,881	6,893
Financial Autonomy	**58.24%**	**53.07%**	**55.56%**	**61.54%**
Equity	7,176	7,976	9,913	11,104
Assets	12,322	15,028	17,841	18,044

Profitability from Operations				
	2020	2021	2022	2023
Gross Margin	**-14.68%**	**15.38%**	**27.61%**	**28.42%**
Gross Profit	-712	1,013	2,239	2,101
Revenue	4,851	6,585	8,108	7,392
EBITDA Margin	**17.87%**	**23.67%**	**34.41%**	**34.90%**
EBITDA	867	1,559	2,790	2,580
Revenue	4,851	6,585	8,108	7,392
EBIT Margin	**-34.13%**	**-0.91%**	**14.39%**	**15.27%**
EBIT	-1,656	-60	1,167	1,129
Revenue	4,851	6,585	8,108	7,392
Net Margin	**-27.88%**	**-3.86%**	**17.83%**	**13.77%**
Net Income	-1,353	-254	1,446	1,018
Revenue	4,851	6,585	8,108	7,392

Group Part

Return and Efficiency Ratios

	2020	2021	2022	2023
ROE	**-18.85%**	**-3.18%**	**14.59%**	**9.17%**
Net Income	-1,353	-254	1,446	1,018
Equity	7,176	7,976	9,913	11,104
ROA	**-10.98%**	**-1.69%**	**8.10%**	**5.64%**
Net Income	-1,353	-254	1,446	1,018
Total Assets	12,322	15,028	17,841	18,044
ROIC	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Operational Result				
Total Invested Capital	4249	4852	53498	54891

Cash Flow Management

	2020	2021	2022	2023
ACTIVITY RATIOS				
Average Holding Period	**60**	**73**	**83**	**103**
Inventories	920	1,121	1,339	1,487
COGS	5,563	5,572	5,869	5,291
Average Payable Period	**27**	**36**	**33**	**35**
Payables	415	551	532	511
COGS	5,563	5,572	5,869	5,291
Average Collection Period	**62.41**	**50.74**	**38.17**	**51.11**
Receivables	829	915	848	1,035
Revenues	4,851	6,585	8,108	7,392
Cash Conversion Cycle	**96**	**88**	**88**	**118**

	2020	2021	2022	2023
LIQUIDITY RATIOS				
Current Ratio	**1.58**	**1.67**	**1.73**	**2.04**
Current Assets	2,987	5,291	5,800	6,327
Current Liabilities	1,896	3,163	3,359	3,099
Quick Ratio	**1.09**	**1.32**	**1.33**	**1.56**
Current Assets - Inventories	2,067	4,170	4,461	4,840
Current Liabilities	1,896	3,163	3,359	3,099
Cash Ratio	**0.48**	**0.93**	**0.70**	**0.77**
Cash and Equivalents	908	2,939	2,352	2,387
Current Liabilities	1,896	3,163	3,359	3,099
Net Working Capital	**1,091**	**2,128**	**2,441**	**3,228**
Current Assets	2,987	5,291	5,800	6,327
Current Liabilities	1,896	3,163	3,359	3,099

Group Part

Pre-Merger Valuations

GlobalFoundries Forecast

Income Statement

(FYE, USD in millions)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Revenues																	
Smart mobile		2,421	3,350	3,723	3,023	3,083	3,268	3,530	3,883	4,271	4,698	4,980	5,279	5,596	5,932	6,287	6,665
Smart Mobile % of growth			*38.37%*	*11.13%*	*-18.80%*	*2.00%*	*6.00%*	*8.00%*	*10.00%*	*10.00%*	*10.00%*	*6.00%*	*6.00%*	*6.00%*	*6.00%*	*6.00%*	*6.00%*
Communications Infrastructure & Data Center		983	998	1,423	863	561	421	358	304	289	274	280	285	291	297	303	309
Communications Infrastructure & Data Center % of growth			*1.53%*	*42.59%*	*-39.35%*	*-35.00%*	*-25.00%*	*-15.00%*	*-15.00%*	*-5.00%*	*-5.00%*	*2.00%*	*2.00%*	*2.00%*	*2.00%*	*2.00%*	*2.00%*
Home & Industrial IoT (and Personal Computing)		1,749	1,362	1,782	1,604	1,412	1,553	1,863	2,236	2,571	2,957	3,164	3,385	3,622	3,876	4,147	4,438
Home & Industrial IoT (and Personal Computing) % of growth			*-22.13%*	*30.84%*	*-9.99%*	*-12.00%*	*10.00%*	*20.00%*	*20.00%*	*15.00%*	*15.00%*	*7.00%*	*7.00%*	*7.00%*	*7.00%*	*7.00%*	*7.00%*
Automotive		100	287	373	1,046	1,067	1,227	1,534	1,917	2,301	2,646	2,831	3,029	3,241	3,468	3,711	3,970
Automative % of growth			*187.00%*	*29.97%*	*180.43%*	*2.00%*	*15.00%*	*25.00%*	*25.00%*	*20.00%*	*15.00%*	*7.00%*	*7.00%*	*7.00%*	*7.00%*	*7.00%*	*7.00%*
Wafer		5,253	5,997	7,301	6,536	6,123	6,469	7,284	8,340	9,432	10,575	11,255	11,979	12,750	13,572	14,448	15,382
Wafer % of growth			*14.16%*	*21.74%*	*-10.48%*	*-6.32%*	*5.65%*	*12.61%*	*14.49%*	*13.09%*	*12.12%*	*6.43%*	*6.43%*	*6.44%*	*6.45%*	*6.45%*	*6.46%*
Non-Wafer & Corporate Other		(402)	588	807	856	685	753	866	996	1,096	1,205	1,278	1,354	1,436	1,522	1,613	1,710
Non-Wafer & Corporate Other % of growth			*n.a.*	*37.24%*	*6.07%*	*-20.00%*	*10.00%*	*15.00%*	*15.00%*	*10.00%*	*10.00%*	*6.00%*	*6.00%*	*6.00%*	*6.00%*	*6.00%*	*6.00%*
Total	**5,813**	**4,851**	**6,585**	**8,108**	**7,392**	**6,808**	**7,222**	**8,151**	**9,336**	**10,528**	**11,781**	**12,533**	**13,333**	**14,186**	**15,094**	**16,061**	**17,091**
Total % of growth	-	*-16.55%*	*35.75%*	*23.13%*	*-8.83%*	*-7.91%*	*6.09%*	*12.86%*	*14.54%*	*12.76%*	*11.90%*	*6.38%*	*6.39%*	*6.40%*	*6.40%*	*6.41%*	*6.41%*

Group Part

Cost of Sales																	
Total Cost of Sales	**6,345**	**5,563**	**5,572**	**5,869**	**5,291**	**5,106**	**5,164**	**5,706**	**6,349**	**7,053**	**7,775**	**8,209**	**8,733**	**9,292**	**9,887**	**10,520**	**11,195**
in % of revenues	*109.16%*	*114.68%*	*84.62%*	*72.39%*	*71.58%*	*75.00%*	*71.50%*	*70.00%*	*68.00%*	*67.00%*	*66.00%*	*65.50%*	*65.50%*	*65.50%*	*65.50%*	*65.50%*	*65.50%*
Operating Expenses																	
Research and development	583	476	478	482	428	529	561	633	747	842	942	1,003	1,067	1,135	1,208	1,285	1,367
in % of revenues	*10.03%*	*9.81%*	*7.26%*	*5.94%*	*5.79%*	*7.77%*	*7.77%*	*7.77%*	*8.00%*	*8.00%*	*8.00%*	*8.00%*	*8.00%*	*8.00%*	*8.00%*	*8.00%*	*8.00%*
Selling, general and administrative expense	446	445	595	496	473	426	452	510	584	659	737	784	834	888	945	1,005	1,070
in % of revenues	*7.67%*	*9.17%*	*9.04%*	*6.12%*	*6.40%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*	*6.26%*
Restructuring expense	-	-	-	94	71	52	41	30	15	-	-	-	-	-	-	-	-
in % of revenues	*0.00%*	*0.00%*	*0.00%*	*1.16%*	*0.96%*	*0.76%*	*0.56%*	*0.36%*	*0.17%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*	*0.00%*
Other (impairment charges)	64	23	-	-	-	21	23	26	29	33	37	39	42	44	47	50	54
in % of revenues	*1.10%*	*0.47%*	*0.00%*	*0.00%*	*0.00%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*	*0.31%*
Total Operating Expenses	**1,093**	**943**	**1,073**	**1,072**	**972**	**1,028**	**1,076**	**1,198**	**1,376**	**1,534**	**1,717**	**1,826**	**1,943**	**2,067**	**2,199**	**2,340**	**2,491**
Total Expenses	**7,438**	**6,507**	**6,645**	**6,941**	**6,263**	**6,134**	**6,240**	**6,904**	**7,724**	**8,588**	**9,492**	**10,035**	**10,676**	**11,359**	**12,086**	**12,861**	**13,685**
in % of revenues	*127.95%*	*134.13%*	*100.91%*	*85.61%*	*84.73%*	*90.10%*	*86.40%*	*84.70%*	*82.74%*	*81.57%*	*80.57%*	*80.07%*	*80.07%*	*80.07%*	*80.07%*	*80.07%*	*80.07%*
EBITDA	**1,053**	**867**	**1,559**	**2,790**	**2,580**	**2,132**	**2,528**	**2,992**	**3,611**	**4,194**	**4,811**	**5,181**	**5,512**	**5,864**	**6,240**	**6,640**	**7,065**
Depreciation & Amortization	2,678	2,523	1,619	1,623	1,451	1,458	1,546	1,745	1,999	2,254	2,522	2,683	2,855	3,037	3,232	3,439	3,659
in % of revenues	*46.07%*	*52.00%*	*24.58%*	*20.02%*	*19.63%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*
EBIT - Operating Income (loss)	**-1,625**	**-1,656**	**-60**	**1,167**	**1,129**	**674**	**982**	**1,247**	**1,612**	**1,940**	**2,289**	**2,498**	**2,657**	**2,827**	**3,008**	**3,201**	**3,406**
Operating Margin	*-27.95%*	*-34.13%*	*-0.91%*	*14.39%*	*15.27%*	*9.90%*	*13.60%*	*15.30%*	*17.26%*	*18.43%*	*19.43%*	*19.93%*	*19.93%*	*19.93%*	*19.93%*	*19.93%*	*19.93%*
Interest Expense	(230)	(154)	(114)	(111)	(137)	(59)	(64)	(69)	(74)	(79)	(83)	(87)	(91)	(95)	(100)	(104)	(109)
Interest Rate		*11.02%*	*4.35%*	*4.19%*	*4.88%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*	*3.69%*
Interest Income	11	3	6	51	149	41	43	49	56	63	71	75	80	85	90	96	102
% Revenues	*0.20%*	*0.06%*	*0.09%*	*0.63%*	*2.02%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*	*0.60%*
Other income (expense)	697	442	(8)	425	(57)	346	368	415	475	536	599	638	678	722	768	817	870
in % of revenues	*11.98%*	*9.11%*	*-0.12%*	*5.24%*	*-0.77%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*	*5.09%*
Income (loss) before income taxes and equity income	**-1,147**	**-1,365**	**-176**	**1,532**	**1,084**	**1,002**	**1,329**	**1,641**	**2,069**	**2,460**	**2,876**	**3,124**	**3,324**	**3,538**	**3,767**	**4,010**	**4,269**
Income Tax (benefit)	(224)	12	(78)	(86)	(66)	(83)	(110)	(136)	(172)	(204)	(239)	(259)	(276)	(294)	(313)	(333)	(354)
Tax Rate	*n.a.*	*-0.90%*	*n.a.*	*-5.61%*	*-6.09%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*
Net Income	**-1,371**	**-1,353**	**-254**	**1,446**	**1,018**	**919**	**1,218**	**1,505**	**1,897**	**2,256**	**2,637**	**2,864**	**3,048**	**3,245**	**3,454**	**3,677**	**3,915**

Cash Flow

(FYE, USD in millions)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
EBIT	**(1,625)**	**(1,656)**	**(60)**	**1,167**	**1,129**	**674**	**982**	**1,247**	**1,612**	**1,940**	**2,289**	**2,498**	**2,657**	**2,827**	**3,008**	**3,201**	**3,406**
Tax Rate	*n.a.*	*-0.90%*	*n.a.*	*-5.61%*	*-6.09%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*	*-8.30%*
Taxes	(224)	12	(78)	(86)	(66)	(56)	(82)	(103)	(134)	(161)	(190)	(207)	(221)	(235)	(250)	(266)	(283)
NOPLAT	**-1,849**	**-1,643**	**-138**	**1,081**	**1,063**	**618**	**901**	**1,143**	**1,478**	**1,779**	**2,099**	**2,290**	**2,437**	**2,592**	**2,758**	**2,935**	**3,123**
D&A	2,678	2,523	1,619	1,623	1,451	1,458	1,546	1,745	1,999	2,254	2,522	2,683	2,855	3,037	3,232	3,439	3,659
in % of revenues	*46.07%*	*52.00%*	*24.58%*	*20.02%*	*19.63%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*	*21.41%*
Change in NWC	-	-	(919)	161	586	(566)	(23)	(20)	(30)	(25)	(28)	(17)	(13)	(14)	(15)	(16)	(17)
Cash-flow from operating activities	**829**	**879**	**2,399**	**2,543**	**1,928**	**2,642**	**2,470**	**2,909**	**3,506**	**4,058**	**4,649**	**4,990**	**5,304**	**5,644**	**6,005**	**6,390**	**6,800**
Expenditures for property and equipment (Capex)	(772.82)	(592.49)	(1766.34)	(3059.00)	(1804.00)	(1558.48)	(1653.36)	(1865.95)	(2137.32)	(2410.09)	(2696.95)	(2869.08)	(3052.39)	(3247.60)	(3455.51)	(3676.93)	(3912.76)
in % of revenues	13.30%	12.21%	26.82%	37.73%	24.40%	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*	*22.89%*
Cash-flow from investment activities	**(772.82)**	**(592.49)**	**(1766.34)**	**(3059.00)**	**(1804.00)**	**(1558.48)**	**(1653.36)**	**(1865.95)**	**(2137.32)**	**(2410.09)**	**(2696.95)**	**(2869.08)**	**(3052.39)**	**(3247.60)**	**(3455.51)**	**(3676.93)**	**(3912.76)**
Free Cash-flows	**56.55**	**286.77**	**633.11**	**-515.95**	**124.16**	**1083.05**	**816.43**	**1042.92**	**1369.12**	**1648.30**	**1952.28**	**2121.25**	**2252.08**	**2396.12**	**2549.53**	**2712.91**	**2886.93**

Group Part

GlobalFoundries Valuation

Assumptions	
Valuation Date	31-10-24
TV Growth Rate	5.50%
Risk Free Rate	4.31%
Market Risk Premium	5.00%
Probability of Default	1.38%
LGD	60.00%
Be (historical)	1.70
Bd	-0.12
Bu	1.74
Be (relevered)	1.69
Ru	13.03%
Rd	3.69%
Re	12.76%
Tax Rate	8.30%
Net Debt / Enterprise Value	-3%
Equity Value / Enterprise Value	103%
Net Debt / Equity	-3%
WACC	**13.04%**

(FYE, USD in millions)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Terminal Cash Flow
Free Cash Flows	124	1,083	816	1,043	1,369	1,648	1,952	2,121	2,252	2,396	2,550	2,713	2,887	3,046
Discount Rate (WACC)	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	13.04%	
Discounted Core Unlevered Free	-	958	639	722	838	893	936	899	845	795	748	704	663	
Core Levered Enterprise Value	**17,653**	**18,872**	**20,517**	**22,150**	**23,669**	**25,108**	**26,430**	**27,756**	**29,123**	**30,525**	**31,957**	**33,411**	**34,882**	
Total Enterprise Value	**17,653**	**18,872**	**20,517**	**22,150**	**23,669**	**25,108**	**26,430**	**27,756**	**29,123**	**30,525**	**31,957**	**33,411**	**34,882**	

DCF Valuation	
PV of Forecasted Cash Flows	9,641
PV of Terminal Value	9,276
Core Levered Enterprise Value	**18,917**
Non-Core Assets	
Net Financial Debt	-1,046
Equity Value	**19,964**
# Shares Outstanding	552
Share Price	**36.17**

Group Part

Deal Terms Scenarios:

	Active Scenario	Equity 1	Balance 2	Debt 3
Purchase price & consideration				
Offer premium to market	*40.0%*	*40.0%*	*40.0%*	*40.0%*
Cash consideration (%)	*50.0%*	*30.0%*	*50.0%*	*70.0%*
Acquisition financing				
Senior Secured Loan	$13,000.00	$7,000.0	$13,000.0	$18,000.0
Senior Secured Loan B	$0.00	–	–	–
Common stock issuance	$0.00	–	–	–

Balanced Case:

Purchase Price		
GF stock price	$	36.50
Offer premium to market		40%
Offer price per share	$	51.10
(/) AMD stock price	$	144.07
Exchange ratio		0.35469
GF fully diluted shares outstanding (FDSO)		556.00
(x) Offer price per TargetCo share		$51.10
Equity purchase price		**$28,411.6**
(+) Net Financial Debt		–
Enterprise value		**$28,411.6**

Purchase Price Allocation	
Purchase price	$28,411.6
(+) FV of noncontrolling interests	–
(–) Book value	(11,582.0)
Excess purchase price to allocate	16,829.6
Write off existing goodwill	–
Write off purch. accounting-related intangibles	–
Fair value adjustments	–
(–) Book value adjustments	–
Excess purchase price after allocation	16,829.6
(+) Bargain purchase gain	–
Goodwill created	**$16,829.6**

Restructuring Charge at Close	
Total restructuring charge (pre-tax)	$142.1
(x) Restructuring charge realized at close	*25.0%*
Restructuring charge at close (pre-tax)	$35.5

Pro Forma FDSO at Close	
BuyerCo standalone FDSO	1,625.00
(+) BuyerCo shares issued as consideration to seller	98.60
(+) BuyerCo shares issued to third parties	–
(+) TargetCo options rolled over (Treasury Method)	–
(+) BuyerCo warrants issued (Treasury Method)	–
Pro forma FDSO	1,723.60

Sources & Uses	
Sources	
Cash	$1,720.4
AMD common stock	14,205.8
Third party financing	13,000.0
Total sources	**$28,926.2**
Uses	
Cash consideration	$14,205.8
Stock consideration	14,205.8
Equity purchase price	28,411.6
Financing fees	195.0
Transaction costs expensed at close	284.1
Restructuring charge at close	35.5
Total uses	**$28,926.2**

Cash Schedule	
Cash available	
AMD existing cash	$3,897.0
(+) Financing	13,000.0
(–) Minimum pro forma cash balance	1,000.0
Total cash available	**$17,897.0**
Cash needed	
Cash consideration	$14,205.8
Restructuring charge at close	35.5
Financing fees	195.0
Advisory fees	284.1
Total cash used	**$14,720.4**

Group Part

Equity Case:

Purchase Price		
GF stock price	$	36.50
Offer premium to market		40%
Offer price per share	$	51.10
(/) AMD stock price	$	144.07
Exchange ratio		0.35469
GF fully diluted shares outstanding (FDSO)		556.00
(x) Offer price per TargetCo share		$51.10
Equity purchase price		**$28,411.6**
(+) Net Financial Debt		–
Enterprise value		**$28,411.6**

Purchase Price Allocation	
Purchase price	$28,411.6
(+) FV of noncontrolling interests	–
(–) Book value	(11,582.0)
Excess purchase price to allocate	16,829.6
Write off existing goodwill	–
Write off purch. accounting-related intangibles	–
Fair value adjustments	–
(–) Book value adjustments	–
Excess purchase price after allocation	16,829.6
(+) Bargain purchase gain	–
Goodwill created	**$16,829.6**

Restructuring Charge at Close	
Total restructuring charge (pre-tax)	$142.1
(x) Restructuring charge realized at close	*25.0%*
Restructuring charge at close (pre-tax)	$35.5

Pro Forma FDSO at Close	
BuyerCo standalone FDSO	1,625.00
(+) BuyerCo shares issued as consideration to seller	138.04
(+) BuyerCo shares issued to third parties	–
(+) TargetCo options rolled over (Treasury Method)	–
(+) BuyerCo warrants issued (Treasury Method)	–
Pro forma FDSO	1,763.04

Sources & Uses	
Sources	
Cash	$1,948.1
AMD common stock	19,888.1
Third party financing	7,000.0
Total sources	**$28,836.2**
Uses	
Cash consideration	$8,523.5
Stock consideration	19,888.1
Equity purchase price	28,411.6
Financing fees	105.0
Transaction costs expensed at close	284.1
Restructuring charge at close	35.5
Total uses	**$28,836.2**

Cash Schedule	
Cash available	
AMD existing cash	$3,897.0
(+) Financing	7,000.0
(–) Minimum pro forma cash balance	1,000.0
Total cash available	**$11,897.0**
Cash needed	
Cash consideration	$8,523.5
Restructuring charge at close	35.5
Financing fees	105.0
Advisory fees	284.1
Total cash used	**$8,948.1**

Group Part

Debt Case:

Purchase Price		
GF stock price	$	36.50
Offer premium to market		40%
Offer price per share	$	51.10
(/) AMD stock price	$	144.07
Exchange ratio		0.35469
GF fully diluted shares outstanding (FDSO)		556.00
(x) Offer price per TargetCo share		$51.10
Equity purchase price		**$28,411.6**
(+) Net Financial Debt		–
Enterprise value		**$28,411.6**

Purchase Price Allocation	
Purchase price	$28,411.6
(+) FV of noncontrolling interests	–
(–) Book value	(11,582.0)
Excess purchase price to allocate	16,829.6
Write off existing goodwill	–
Write off purch. accounting-related intangibles	–
Fair value adjustments	–
(–) Book value adjustments	–
Excess purchase price after allocation	16,829.6
(+) Bargain purchase gain	–
Goodwill created	**$16,829.6**

Restructuring Charge at Close	
Total restructuring charge (pre-tax)	$142.1
(x) Restructuring charge realized at close	*25.0%*
Restructuring charge at close (pre-tax)	$35.5

Pro Forma FDSO at Close	
BuyerCo standalone FDSO	1,625.00
(+) BuyerCo shares issued as consideration to seller	59.16
(+) BuyerCo shares issued to third parties	–
(+) TargetCo options rolled over (Treasury Method)	–
(+) BuyerCo warrants issued (Treasury Method)	–
Pro forma FDSO	1,684.16

Sources & Uses	
Sources	
Cash	$2,477.8
AMD common stock	8,523.5
Third party financing	18,000.0
Total sources	**$29,001.2**
Uses	
Cash consideration	$19,888.1
Stock consideration	8,523.5
Equity purchase price	28,411.6
Financing fees	270.0
Transaction costs expensed at close	284.1
Restructuring charge at close	35.5
Total uses	**$29,001.2**

Cash Schedule	
Cash available	
AMD existing cash	$3,897.0
(+) Financing	18,000.0
(–) Minimum pro forma cash balance	1,000.0
Total cash available	**$22,897.0**
Cash needed	
Cash consideration	$19,888.1
Restructuring charge at close	35.5
Financing fees	270.0
Advisory fees	284.1
Total cash used	**$20,477.8**

Group Part

Synergies

GlobalFoundries:

Revenue Synergies		1 - Conservative	2 - Base	3 - Optimistic
Smart mobile				
Synergies in Year 1 & 2	–	0%	0%	0%
Synergies in Year 3-5	*10.0%*	4%	8%	10%
Synergies in Years 6+	*18.8%*	8%	15%	19%
Communications Infrastructure & Data Center				
Synergies in Year 1 & 2	–	0%	0%	0%
Synergies in Year 3-5	*10.0%*	4%	8%	10%
Synergies in Years 6+	*25.0%*	10%	20%	25%
Home & Industrial IoT (and Personal Computing)				
Synergies in Year 1 & 2	–	0%	0%	0%
Synergies in Year 3-5	*10.0%*	4%	8%	10%
Synergies in Years 6+	*25.0%*	10%	20%	25%
Automotive				
Synergies in Year 1 & 2	–	0%	0%	0%
Synergies in Year 3-5	*10.0%*	4%	8%	10%
Synergies in Years 6+	*25.0%*	10%	20%	25%
Non-Wafer & Corporate Other				
Synergies in Year 1 & 2	–	0%	0%	0%
Synergies in Year 3-5	*10.0%*	4%	8%	10%
Synergies in Years 6+	*25.0%*	10%	20%	25%

Total Cost saving Synergies		1 - Conservative	2 - Base	3 - Optimistic
Total Cost of Sales	*Realization*			
Synergies in Year 1 & 2	*2.5%*	1%	2%	3%
Synergies in Year 3-5	*5.0%*	2%	4%	5%
Synergies in Years 6+	*6.3%*	3%	5%	6%
Selling, general and administrative expense				
Synergies in Year 1 & 2	*2.5%*	1%	2%	3%
Synergies in Year 3-5	*5.0%*	2%	4%	5%
Synergies in Years 6+	*6.3%*	3%	5%	6%
Research and development				
Year 1&2	*20.0%*			
Year 3-5	*20.0%*			
Years 6+	*10.0%*			

Group Part

Post-Mergers Valuations

GlobalFoundries Base Case

Assumptions	
Valuation Date	31-10-24
TV Growth Rate	5.50%
Ru	13.03%
Rd	3.69%
Re	12.76%
Tax Rate	8.30%
Net Debt / Enterprise Value	-0.05%
Equity Value / Enterprise Value	103.00%
WACC	13.14%

(FYE, USD in millions)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Terminal Cash Flow
Core Unlervered Free Cash Flows	124	-2,072	-2,391	-1,147	-904	287	3,438	3,622	3,790	3,975	3,780	3,990	4,213	4,445
Discount rate (Ru)	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	
PV of Core Unlervered Free Cash Flo	-	-1833	-1871	-794	-554	156	1649	1536	1423	1320	1110	1037	969	
Core Unlevered Enterprise Value	**17,715**	**22,095**	**27,365**	**32,078**	**37,162**	**41,718**	**43,717**	**45,792**	**47,969**	**50,245**	**53,014**	**55,933**	**59,010**	
Interest Tax Shield		5	5	61	65	69	73	70	67	61	51	42	32	34
Discount rate (Rtxa = Ru)	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	
Value Interest Tax Shield	375	419	468	468	464	456	442	430	419	413	415	428	451	
Core Levered Enterprise Value	**18,090**	**22,514**	**27,834**	**32,546**	**37,627**	**42,174**	**44,159**	**46,222**	**48,388**	**50,658**	**53,429**	**56,361**	**59,461**	
Total Levered Enterprise Value	**18,090**	**22,514**	**27,834**	**32,546**	**37,627**	**42,174**	**44,159**	**46,222**	**48,388**	**50,658**	**53,429**	**56,361**	**59,461**	

APV Valuation	
PV of Forecasted Cash Flows	4,148
PV of Terminal Value	13,567
Unlevered Core Enteprise Value	**17,715**
PV of Interest Tax Shields	375
Non Core Assets	0
Net Financial Debt	-25
Equity Value	**18,115**

Group Part

GlobalFoundries Conservative Case

Assumptions	
Valuation Date	31-10-24
TV Growth Rate	5.50%
Ru	13.03%
Rd	3.69%
Re	12.76%
Tax Rate	8.30%
Net Debt / Enterprise Value	-0.05%
Equity Value / Enterprise Value	103.00%
WACC	13.14%

(FYE, USD in millions)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Terminal Cash Flow
Core Unlervered Free Cash Flows	124	-2,126	-2,442	-1,289	-1,061	108	3,019	3,188	3,330	3,485	3,258	3,434	3,622	3,821
Discount rate (Ru)	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	
PV of Core Unlervered Free Cash Flo	-	-1881	-1912	-892	-650	59	1448	1353	1250	1157	957	892	833	
Core Unlevered Enterprise Value	**14,277**	**18,263**	**23,086**	**27,383**	**32,013**	**36,076**	**37,759**	**39,491**	**41,308**	**43,206**	**45,579**	**48,085**	**50,730**	
Interest Tax Shield		5	5	61	65	69	73	70	67	61	51	42	32	34
Discount rate (Rtxa = Ru)	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	
Value Interest Tax Shield	375	419	468	468	464	456	442	430	419	413	415	428	451	
Core Levered Enterprise Value	**14,652**	**18,683**	**23,554**	**27,851**	**32,477**	**36,532**	**38,201**	**39,921**	**41,727**	**43,619**	**45,994**	**48,512**	**51,181**	
Total Levered Enterprise Value	**14,652**	**18,683**	**23,554**	**27,851**	**32,477**	**36,532**	**38,201**	**39,921**	**41,727**	**43,619**	**45,994**	**48,512**	**51,181**	

APV Valuation	
PV of Forecasted Cash Flows	2,613
PV of Terminal Value	11,664
Unlevered Core Enteprise Value	**14,277**
PV of Interest Tax Shields	375
Non Core Assets	0
Net Financial Debt	-22
Equity Value	**14,673**

Group Part

GlobalFoundries Optimistic Case

Assumptions	
Valuation Date	31-10-24
TV Growth Rate	5.50%
Ru	13.03%
Rd	3.69%
Re	12.76%
Tax Rate	8.30%
Net Debt / Enterprise Value	-0.05%
Equity Value / Enterprise Value	103.00%
WACC	13.14%

(FYE, USD in millions)	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Terminal Cash Flow
Core Unlervered Free Cash Flows	124	-2,044	-2,365	-1,072	-821	381	3,662	3,852	4,036	4,237	4,057	4,285	4,528	4,777
Discount rate (Ru)	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	
PV of Core Unlervered Free Cash Flow	-	-1809	-1851	-742	-503	207	1756	1634	1515	1407	1192	1114	1041	
Core Unlevered Enterprise Value	**19,540**	**24,131**	**29,641**	**34,575**	**39,903**	**44,722**	**46,888**	**49,146**	**51,516**	**53,993**	**56,972**	**60,111**	**63,418**	
Interest Tax Shield		5	5	61	65	69	73	70	67	61	51	42	32	34
Discount rate (Rtxa = Ru)	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	13.03%	
Value Interest Tax Shield	375	419	468	468	464	456	442	430	419	413	415	428	451	
Core Levered Enterprise Value	**19,915**	**24,550**	**30,109**	**35,044**	**40,367**	**45,178**	**47,331**	**49,576**	**51,935**	**54,405**	**57,387**	**60,539**	**63,869**	
Total Levered Enterprise Value	**19,915**	**24,550**	**30,109**	**35,044**	**40,367**	**45,178**	**47,331**	**49,576**	**51,935**	**54,405**	**57,387**	**60,539**	**63,869**	

APV Valuation	
PV of Forecasted Cash Flows	4,959
PV of Terminal Value	14,581
Unlevered Core Enteprise Value	**19,540**
PV of Interest Tax Shields	375
Non Core Assets	0
Net Financial Debt	-27
Equity Value	**19,942**

Group Part

Value Creation

	Conservative Case	Value Creation	Base Case	Value Creation	Optimistic Case	Value Creation
AMD Enterprise Value	$ 277,413	15.86%	$ 316,119	32.02%	$ 335,844	40.26%
GlobalFoundries Enterprise Value	$ 14,277	-24.53%	$ 17,715	-6.36%	$ 19,540	3.29%
Combined Entity Enterprise Value	**$ 291,690**	**12.90%**	**$ 333,834**	**29.21%**	**$ 355,384**	**37.55%**