

MICROSOFT CORPORATION (MSFT)

Information Technology – Software

October 12, 2023

Investment Thesis

We recommend a BUY rating on Microsoft with a target price range of \$375-395, representing an 13-19% upside from its current price of \$331.16. Microsoft is currently the largest holding in the Henry Fund portfolio, with a weight of 7.45%. We believe that despite macroeconomic pressures, Microsoft's significant investments into generative AI, strong positioning and growth in the industries it is active in, as well as the expected acquisition of Activision-Blizzard poise the company to be successful in the long-term.

Drivers of Thesis

- MSFT has been making significant investments into AI/generative AI and integrating it into their products. The generative AI is expected to grow at a CAGR of 42% over the next 10 years.
- With the acquisition of Activision-Blizzard (ATVI) expected to go through, we expect MSFT to greatly enhance the value proposition of the Xbox Game Pass, paired with increasing its market share in the gaming market.
- Microsoft's revenue is highly diversified, with exposure to multiple high-growth industries, such as cloud computing, artificial intelligence, and gaming.

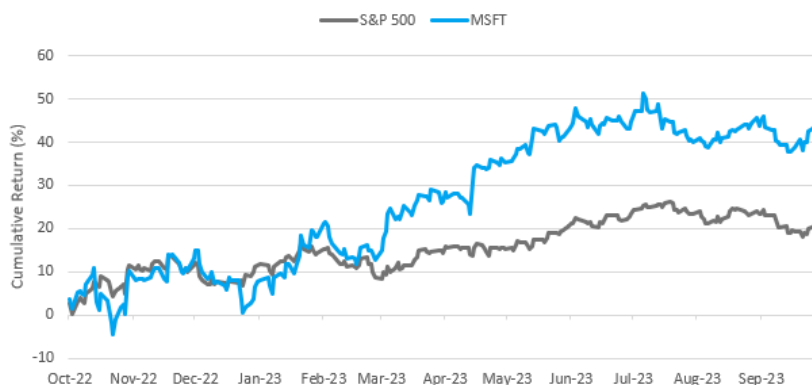
Risks to Thesis

- In the event of a recession, Microsoft may see lower IT spending, paired with lower demand for PCs, servers, and business spending, adversely affecting revenue.
- Microsoft is highly exposed to regulatory pressures, including AI, which may impact future acquisitions and adversely impact revenue, which may impact our forecast estimates.

Earnings Estimates

Year	2021	2022	2023	2024E	2025E	2026E
EPS	\$8.12	\$9.70	\$9.72	\$10.99	\$12.65	\$14.94
HF est.				\$10.78	\$12.80	\$15.39
growth	13.9%	39.5%	13.4%	6.5%	3.1%	17.6%

12 Month Performance



Stock Rating

BUY

Target Price

\$375-395

Henry Fund DCF	\$384
Henry Fund DDM	\$216
Relative Multiple	\$289

Price Data

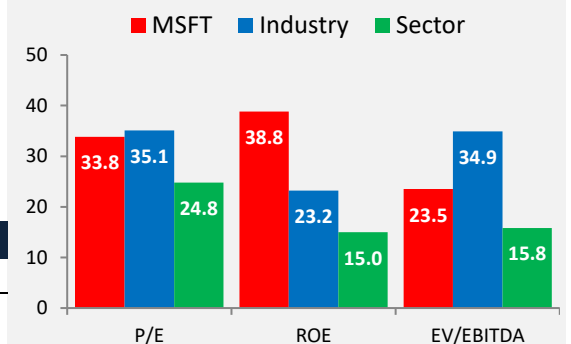
Current Price	\$331.16
52wk Range	\$213.43 – 366.78
Consensus 1yr Target	\$396.64

Key Statistics

Market Cap (B)	\$2,435.0
Shares Outstanding (M)	7,430
Institutional Ownership	72.2%
Beta	1.03
Dividend Yield	0.90%
Est. 5yr Growth	13.4%
Price/Earnings (LTM)	33.8
Price/Earnings (FY1)	30.2
Price/Sales (Current)	11.6

Profitability

Operating Margin	39.3%
Profit Margin	33.9%
Return on Assets (2023)	18.6%
Return on Equity (2023)	38.8%



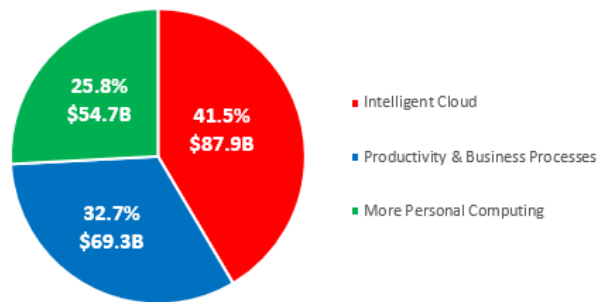
Company Description

Microsoft Corporation (MSFT) is a multinational technology corporation engaging in the development and support of software, services, devices, and solutions. MSFT's main products include the Windows line of operating systems and the Office 365 suite of software applications. Additionally, MSFT owns the cloud computing platform Azure as well as Xbox, LinkedIn, GitHub, Bing, and the Edge web browser. MSFT was founded in 1975 and is headquartered in Redmond, WA.

COMPANY DESCRIPTION

Microsoft Corporation (MSFT) engages in the development and support of software, services, devices, and solutions⁴. The company operates across three main business segments: Productivity and Business Processes, Intelligent Cloud, and More Personal Computing. MSFT's main products and services include the Azure cloud computing platform, the Office 365 suite of software products, Xbox, LinkedIn, GitHub, Bing, and the Edge web browser.

Business Segments % of Revenue FY 2023



Source: MSFT 10-K

Historically, MSFT's Intelligent Cloud segment has been growing to comprise a greater percentage of MSFT's total revenue, with 2020 onwards marking the point where a majority of MSFT's came from their Intelligent Cloud segment. This share has been largely taken from the More Personal Computing segment, which in FY 2019 was MSFT's largest revenue segment. We expect Intelligent Cloud to remain MSFT's primary source of revenue over our forecast horizon.

MSFT's business segments can be further decomposed into significant product and service offerings, which are highlighted below, including their contribution to MSFT's total revenue. Acronyms used are as follows:

- **PBC:** Productivity & Business Processes
- **IC:** Intelligent Cloud
- **MPC:** More Personal Computing

Offering	Segment	% Total
Server Products & Cloud Services	IC	37.7%
Office Products & Cloud Services	PBC	23.0%
Windows	MPC	10.1%
Gaming	MPC	7.3%
LinkedIn	PBC	7.1%
Search and news advertising	MPC	5.8%
Enterprise Services	IC	3.6%
Devices	MPC	2.6%
Dynamics	PBC	2.6%
Other	N/A	0.1%

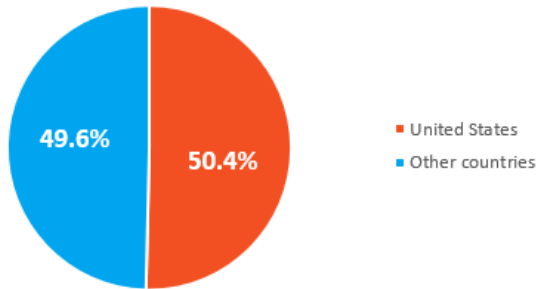
Source: MSFT 10-K

Over our 10-year forecast horizon, we opted to forecast based on MSFT's product and service offerings, which will be described under their respective business segments. For fiscal year 2024, we forecast in-line with management expectations, which are outlined under "Q4 FY 2023 Earnings Announcement". Additionally, in our forecasts, we aim to be in-line with management guidance, favoring optimism in the case of areas with strong growth, namely MSFT's server products given the strong growth in demand for cloud computing, as well as gaming in the short-term, through the anticipated Activision-Blizzard acquisition.

Geographic Business Segments

MSFT reports across two key geographical segments: US and Other Countries. As of FY 2023, each geographical segment contributed roughly half to MSFT's overall revenues, with this trend holding historically. Given MSFT's significant international revenues, developments in regulations and operating environment outside of the U.S. will be important to monitor. While MSFT does not break these segments down further, China comprises less than 2% of MSFT's revenue³.

MSFT Geographic Business Segments FY 2023



Source: MSFT 10-K

Productivity and Business Processes

MSFT's Productivity and Business Processes segment consists of products and services for MSFT's productivity, communication, and information services, spanning a variety of platforms¹. This segment can be divided further into four sub-segments: Office Commercial, Office Consumer, LinkedIn, and Dynamics business solutions.

Office Commercial includes Office 365 subscriptions, as well as Office, Exchange, SharePoint, Microsoft Teams, Office 365 Security and Compliance, Microsoft Viva, and Microsoft 365 Copilot¹. Growth in this area depends on MSFT's ability to reach new users in new markets paired with adding value to their current product and service offerings¹. Revenue is mainly affected by continued installed base growth, average revenue per user expansion, and the continued shift from office licensed on-premises to Office 365¹. Average revenue per user (APRU) has been increasing in recent years, increasing by 25.8% from end of FY 2019 to 2022 to \$128.21.

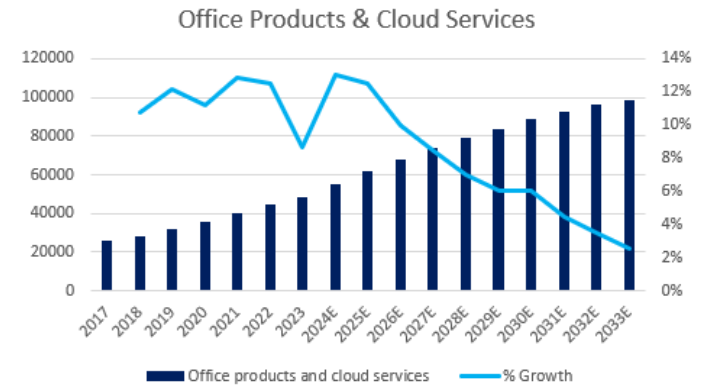
Office Consumer includes Microsoft 365 Consumer subscriptions, Office licensed on-premises, and other Office services¹. Growth here is driven the same way as with Office Commercial, albeit with different user markets. Revenue is primarily affected by subscriptions, advertising, and sale of minutes for Skype, Outlook.com, and OneDrive¹.

MSFT faces strong competition in the office software market, namely from software and global application vendors such as Apple, Cisco Systems, Meta, Google, Okta, Zoom, and others¹.

Office Products & Cloud Services

(23.0% of revenue)

The global office software market is expected to grow at a CAGR of approximately 7% from 2023-2030, driven by factors such as rising IT spending, increased demand for cloud-based software and applications, and increasing number of business and startups⁶. We estimate a CAGR of 7.3% from 2023-2033 resulting from the drivers above on expectations that MSFT will continue to deliver growth in these areas.

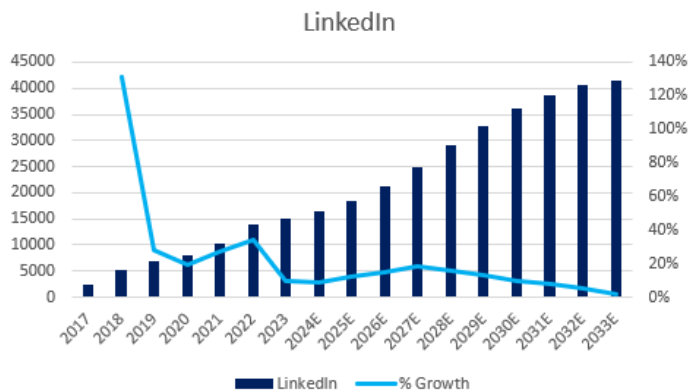


Source: MSFT 10-K, HF estimates

LinkedIn

(7.0% of revenue)

LinkedIn includes Talent Solutions, Marketing Solutions, Premium Subscriptions, and Sales Solutions¹. Growth in this area will depend on MSFT's ability to increase LinkedIn's membership count and offering services to increase user engagement. Revenue for LinkedIn is driven by demand from enterprises and professional organizations for Solutions and Premium subscriptions, as well as member engagement and quality of sponsored content delivered to those members¹. LinkedIn's ad revenue is expected to reach \$10.35B in 2027, with a CAGR of 15.0%⁷, as the user base continues to grow and given LinkedIn's dominant market share as a professional services network, which we do not expect will change. We forecast a CAGR of 10.2% from 2023-2033, driven by expected ad revenue and increasing user growth, increased use of AI (such as AI-powered collaborative articles, LinkedIn's current fastest-growing traffic driver²), as well as expected recovery in advertising spend and hiring. Currently LinkedIn has 310 monthly active users, which is lower than major social media cites such as Facebook (2.9M), Instagram (1.4M), TikTok (1M), and Snapchat (557M). However, remains at the top of business/employment-focused social media.

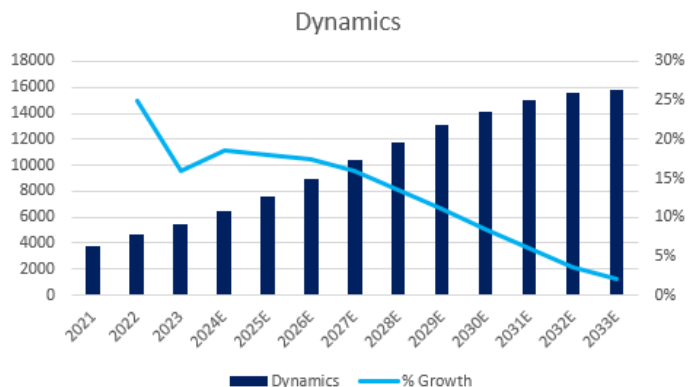


Source: MSFT 10-K, HF estimates

Dynamics

(2.6% of revenue)

Dynamics business solutions, including Dynamics 365, comprises a set of intelligent, cloud-based applications across ERP, CRM (including Customer Insights), Power Apps, and Power Automate, and on-premises ERM and CRM applications¹. Revenue is driven by the number of users licensed and applications consumed, expansion of average revenue per user, and the continued shift to Dynamics 365¹. Dynamics competes with other cloud-based and on-premises business solution providers, namely Oracle, Salesforce, and SAP¹. The global enterprise resource planning (ERP) software market size is expected to grow at a CAGR of 11.0% from 2023-2030, driven by an increased need for operational efficiency in business processes, increasing demand for data-driven decisions, and rising adoption in mobile and cloud applications⁹. We forecast a CAGR of 12.8% for MSFT's Dynamics offering, given strong historical growth in this segment paired with MSFT's increased investment and presence in the cloud computing space.



Source: MSFT 10-K, HF estimates

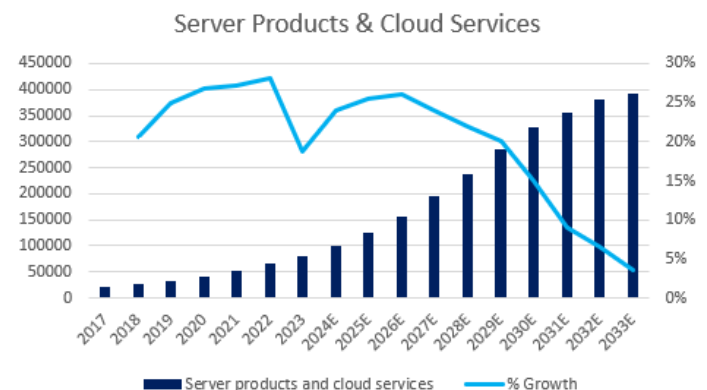
Intelligent Cloud

The Intelligent Cloud segment consists of MSFT's public, private, and hybrid server products and cloud services that can power modern business and developers¹, and is MSFT's largest revenue segment, comprising 41.5% of MSFT's FY 2023 total revenue. This segment primarily consists of two categories: server products and cloud services and enterprise services.

Server Products & Cloud Services

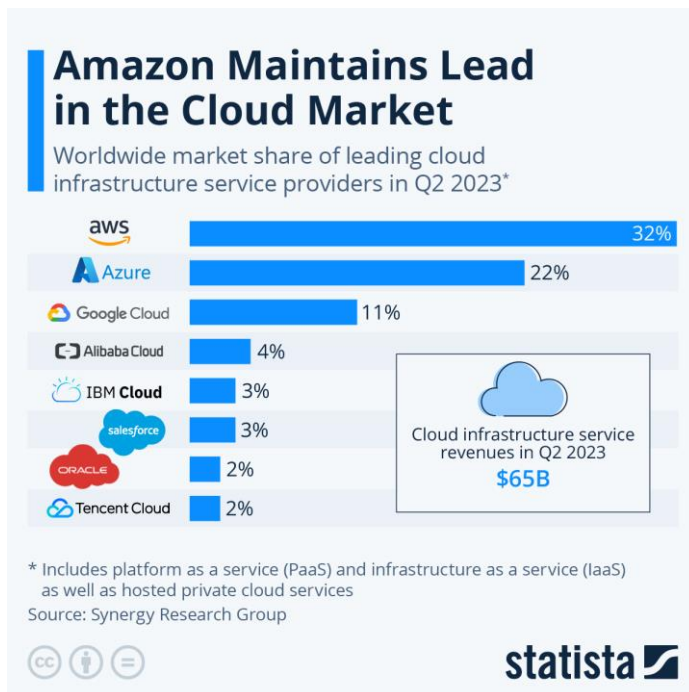
(37.7% of revenue)

Server products and cloud services include Azure and other cloud services, SQL Server, Windows Server, Visual Studio, System Center, Related Client Access Licenses ("CALs"), Nuance, and GitHub. Azure is a significant offering for MSFT, contributing to over half of MSFT's \$110B cloud revenue in FY 2023, fueled by Azure OpenAI¹⁰. Azure revenue is primarily driven by infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS) consumption-based services, as well as per user-based services.



Source: MSFT 10-K, HF estimates

Currently Azure is the second largest cloud infrastructure service provider, behind Amazon Web Services (AWS):

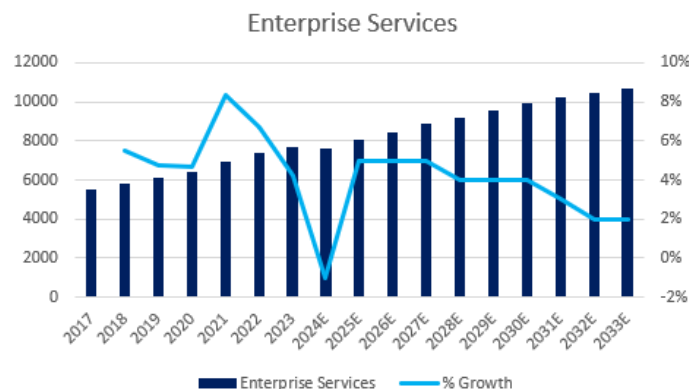


Source: Statista

Enterprise Services

(3.6% of revenue)

Enterprise services include Enterprise Support Services, Industry Solutions, and Nuance professional services, assisting customers in developing, maintaining, deploying, and managing Microsoft server solutions¹. MSFT competes with a wide range of companies in this area, namely multinational consulting firms and small niche businesses focused on specific technologies. We expect this to grow at a CAGR of 2.9% over our forecast horizon, in-line with historical growth trends.



Source: MSFT 10-K, HF estimates

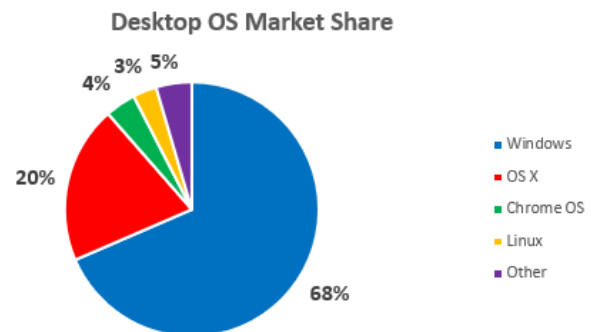
More Personal Computing

The More Personal Computing segment consists of products and services more geared towards the end-user's experience with MSFT's technology. This segment consists of four categories: Windows, Devices, Gaming, and Search and news advertising.

Windows

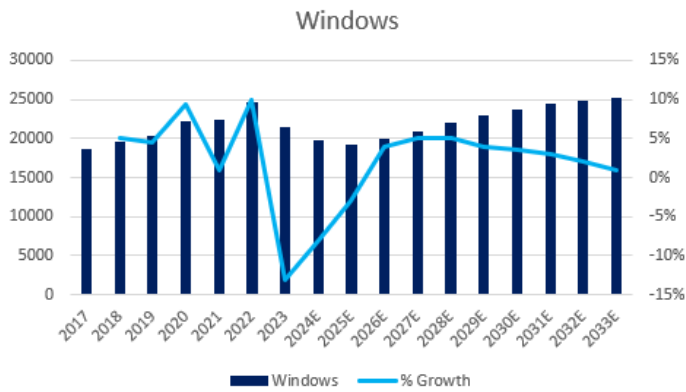
(10.1% of revenue)

Windows includes Windows OEM, and Windows OEM revenue is significantly impacted by the number of OEM system licenses purchased by OEMs ("Original equipment manufacturers"), which they pre-install on the devices they sell¹. Currently, among desktop PCs, Windows maintains a dominant market share at around 70%, with Apple's macOS having gained market share over the years, with around 20% market share⁷.



Source: StatCounter (Sep. 2023)

The global operating systems market is projected to grow at a CAGR of 1.7% through 2027, driven largely by demand for PCs and computer systems, though limited by the increased use of pirated versions of operating systems⁶. We forecast growth to grow at a 1.1% CAGR over our forecast horizon, given increased adoption of other operating systems as well as piracy impacting the operating systems market.

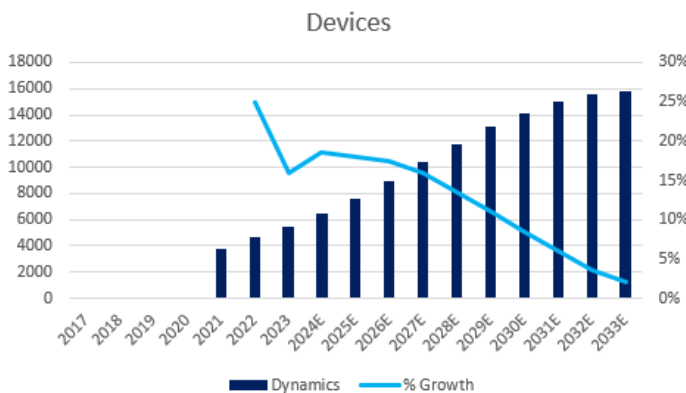


Source: MSFT 10-K, HF estimates

Devices

(2.6% of revenue)

Devices includes Surface, HoloLens, and PC accessories, with growth driven by total PC shipments, ability to attract new customers, MSFT's product roadmap, as well as the company's ability to expand into new categories¹. In this area, MSFT faces competition from Apple and other computer, tablet, and hardware manufacturers¹. From 2023-2027, PC devices ships are expected to grow at a CAGR of 1.9%, with recent downturn driven by high sales resulting from the COVID-19 pandemic. We forecast a CAGR of -4.1% over our forecast horizon, impacted by an expected mid-30s percentage decline in FY 2024 resulting from the overall PC market. We do expect this to increase in the future as shipments rebound.



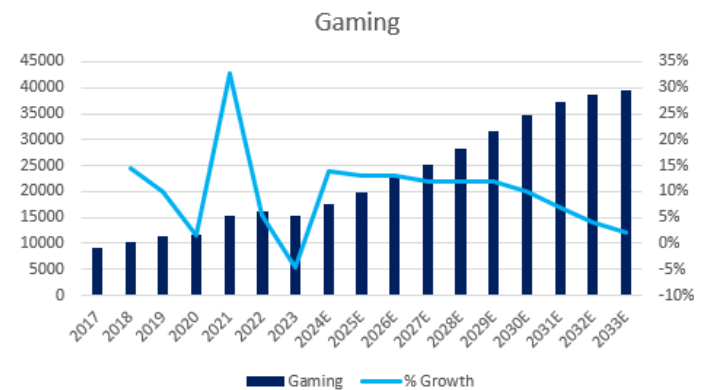
Source: MSFT 10-K, HF estimates

Gaming

(7.3% of revenue)

Gaming includes Xbox hardware and Xbox content and services, including Xbox Game Pass and other subscriptions, Xbox Cloud Gaming, advertising, third-party disc royalties, and other cloud services¹. Xbox revenue is driven primarily by subscriptions and sales of

first and third-party content and advertising¹. To expand in this area, MSFT is looking to increase the number of games available, increase the user base using Xbox enabled content, as well as providing exclusive content for gamers. A key development in this area is MSFT's planned acquisition of Activision-Blizzard, which we expect will go through given it has passed all regulatory hurdles, which would add major game franchises such as Call of Duty, Overwatch, World of Warcraft, Diablo, and Candy Crush to MSFT's ever-growing portfolio of games. However, MSFT faces strong competition in this area, namely against console platforms such as Nintendo and Sony, though we do not expect MSFT to lose market share against these two companies over our forecast horizon. This is driven by our belief that the Activision-Blizzard acquisition will go through, thereby expanding MSFT's portfolio of games paired with increased likelihood of further acquisitions going through, strong value proposition of the Xbox Game Pass, as well as the ability to effectively out-spend both Sony and Nintendo in the gaming space. We forecast this by including higher-than-consensus estimates in the near term for this segment.



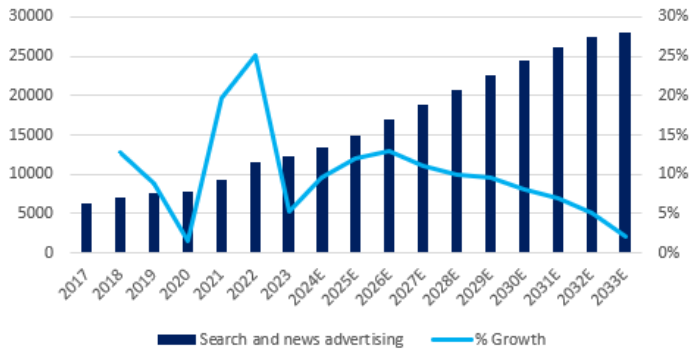
Source: MSFT 10-K, HF estimates

Search & News Advertising

(5.8% of revenue)

Search and news advertising includes Bing, Microsoft News, Microsoft Edge, and third-party affiliates, with growth being driven mainly by MSFT's ability to attract new users, understand intent of searches, as well as matching intent with relevant content on advertising offerings¹. MSFT faces strong competition in this area, namely from Google which holds an 80% market share in the online search market, as well as a wide array of websites, social platforms such as Meta, and other portals providing content and online offerings to end-users¹.

Search and News Advertising

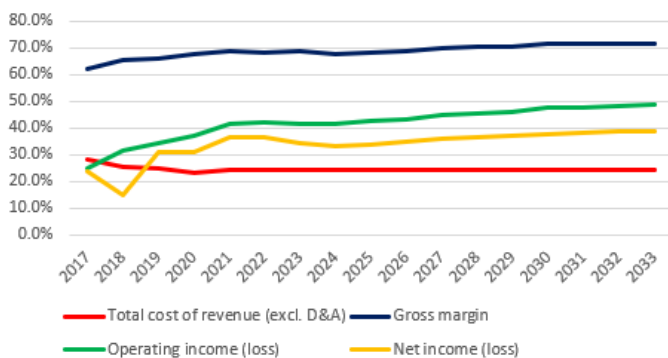


Source: MSFT 10-K, HF estimates

Cost Structure Analysis

The figure below shows MSFT's gross margin, operating margin, cost of revenue, and net margins over both the historical period and our forecast horizon:

MSFT Margins and COGS



Source: MSFT 10-K, HF estimates

MSFT has experienced a generally upward trend in its margin, with slight fluctuation. We forecast these trends to continue moving forward and slightly increase as MSFT continues to scale and further integrate AI into its business offerings. In particular, as MSFT continues to scale, we applied a negative growth factor to operating expenses as a percent of total revenue, and expect this to decrease over our forecast horizon.

Debt Maturity Analysis

The figure below shows MSFT's debt maturity schedule as of FY 2023:

Five-Year Debt Maturity Schedule

Fiscal Year	Payment (\$M)
2023	\$5,250
2024	2,250
2025	3,000
2026	8,000
2027	0
Thereafter	34,366
Total	\$52,866

Source: MSFT 10-K

The figure below shows MSFT's bond rating relative to its peers in the Information Technology industry. S&P gives MSFT a rating of AAA, which is considered investment-grade. Among its peers, MSFT has the highest credit rating, with AAA, which is higher than that of US government debt. In addition, the size of MSFT's operating cash flow from the most recent fiscal year is \$87,582 million, indicating the company's ability to service their debt.

Company	Rating
Microsoft (MSFT)	AAA
Alphabet (GOOGL)	AA+
Amazon (AMZN)	AA
Apple (AAPL)	AA+
Meta Platforms (META)	AA-

Source: S&P Global

In terms of liquidity ratios, MSFT has a quick ratio of 1.75 and current ratio of 1.77 as of a fiscal year 2023. As a result of all these factors, we do not anticipate MSFT having issues repaying their debt.

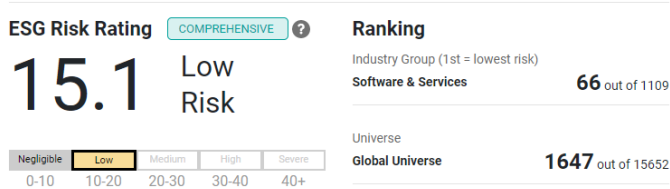
ESG Analysis

ESG, standing for Environment, Social, and Governance, is a framework to assess the sustainability and ethical impact of companies based on those three metrics. We find MSFT to be well-positioned among its peers, having the lowest ESG risk rating of 15.06, or low. Among its immediate peer group, only MSFT and AAPL are considered to have low ESG risk ratings. A lower ESG risk rating considered to be better.

Company	ESG Risk Rating	
Microsoft (MSFT)	15.06	Low
Alphabet (GOOGL)	24.04	Medium
Amazon (AMZN)	30.61	High
Apple (AAPL)	17.22	Low
Meta Platforms (META)	34.08	High

Source: Morningstar Sustainability

Financially, MSFT stands to gain from having a lower ESG risk rating, through improved investor perception, lower relative regulatory scrutiny, and assisting with long-term business sustainability. In addition, MSFT ranks highly in terms of ESG scores relative to its industry group and the global universe of companies covered by Morningstar:



Source: Morningstar Sustainability

This is driven by MSFT's progress towards its ESG initiatives in FY 2023, which include¹:

- Overall emissions declined by 0.5%.
- Signed new power purchase agreements, bringing the total portfolio of carbon-free energy to over 13.5 gigawatts.
- Diverted 12,159 metric tons of solid waste from landfills and incinerators across their direct operational footprint.
- Protected 12,270 acres of land in Belize – more than the 11,206 acres of land MSFT uses around the world.

RECENT DEVELOPMENTS

Q4 FY 2023 Earnings Announcement

MSFT announced their fourth quarter and annual earnings for FY 2023 on June 30, 2023. They reported an EPS of \$2.69 and revenue of \$55.49B, beating consensus estimates by 5.59% and 1.26%, respectively. This was primarily driven by growth in Microsoft cloud, up 27% in constant currency, accounting for \$110 billion in annual revenue².

Looking forward, MSFT provided guidance lower than analysts' expectations, partially due to weakness in the Windows segment, as well as expectations that MSFT's AI services will impact the second half of FY 2024, as opposed to the first half. MSFT's expectations for FY 2024 for each of its offering segments are outlined below². Relative to these estimates, we generally remain in-line, with a slightly lower forecast in server products and cloud services, given Azure is not the only product in that portfolio, as well as higher than consensus estimates for gaming, given that we anticipate the Activision-Blizzard merger to go through.

- LinkedIn: Low to mid-single digits growth, which is impacted by overall markets for recruiting and advertising, especially in the technology industry.
- Dynamics: Mid to high teens growth, driven by continued growth in Dynamics 365.
- Azure: 25-26%, driven by Office 365 momentum, and demand for cloud services.
- Enterprise services: Low to mid-single digit decline, with growth offset by a decline in Industry Solutions.
- Windows: Low to mid-teens decline, as there are no significant changes to PC demand environment, which has been on a downturn, paired with inventory build-up.
- Devices: mid-30s decline, due to overall PC environment and portfolio adjustments.
- Gaming: mid-single digits, driven by Xbox content and service offerings. We expect this to be higher over time, assuming the Activision-Blizzard acquisition is successful.
- Search and News advertising: mid-to-high single digit growth, resulting from continued volume strength, edge browser share gains, and continued investment into AI.

COVID-19 Impact

The COVID-19 pandemic had a significant impact on MSFT, with significantly increased demand for its cloud services, driven by enterprises' need to shift work remotely¹⁶. In addition, MSFT's Gaming segment saw strong growth as well, given increased usage resulting from COVID-19 stay-at-home orders³.

OpenAI Acquisition

In January 2023, MSFT announced that it will be investing \$10B into OpenAI, a privately-held AI research and deployment company which owns ChatGPT, a large-language model-based chatbot which was at the time the fastest-growing software application in history¹⁶. We expect this to be very beneficial for MSFT in the long-term through integration with Azure and other offerings, with Azure powering all of OpenAI's workloads¹. In addition, this technology can be integrated with Bing, MSFT's search engine, paired with potential billions in revenue per year, as Azure becomes increasingly used for AI development¹⁵. Per the current deal, MSFT will get a 75% share of OpenAI's profits until it makes back the money on its investment, after which MSFT will assume a 49% stake in the firm¹⁵.

Activision-Blizzard Acquisition

On January 18, 2022, MSFT announced plans to acquire Activision Blizzard, Inc. (ATVI), a leading video game developing and publishing company, for an all-cash transaction valued at \$68.7B. In acquiring ATVI, MSFT will acquire large video game franchises such as Warcraft, Diablo, Overwatch, Call of Duty, and Candy Crush³, expanding MSFT's market share in the gaming space and increasing the value proposition of Xbox Game Pass. As it stands right now, the Activision-Blizzard deal is set to close October 13, 2023, after passing regulatory hurdles from the FTC and CMA regulatory agencies. Based on ATVI's latest financial reports, the company made \$7.52 billion, contributing to our above-consensus growth estimates. Currently, MSFT has only around \$34.4 billion in cash on its balance sheet, with \$76.5 billion in short-term investments, and has currently not made any notes of debt financing for this acquisition.

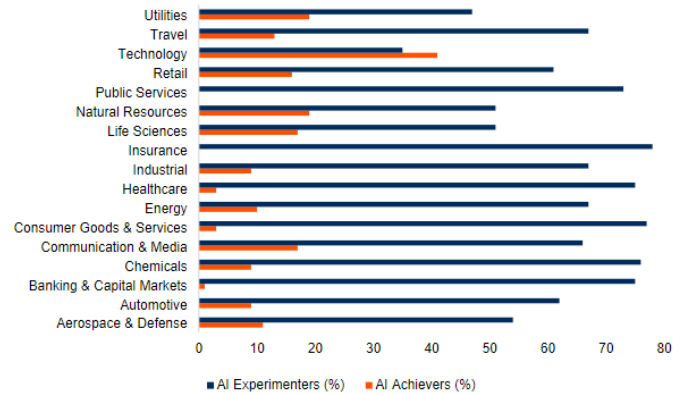
INDUSTRY TRENDS

Growth of AI and Generative AI

Generative AI is a form of artificial intelligence which uses neural networks to generate new content based on a variety of user inputs, with inputs/outputs including text, images, sounds, 3D models, or other types of data²². By 2032, generative AI is poised to become a \$1.3T revenue market, with a CAGR of 42% over the next 10 years¹⁰, representing a major growth opportunity for companies that become major players in this market, such as Microsoft, Google, Nvidia, and Amazon. This growth is expected to be driven by rising demand for generative AI products, and its far-reaching applications including task automation, data analysis, increasing productivity, etc.¹².

While AI adoption has grown across industries, they remain at different stages in terms of AI maturity, which can be approximated by the % of AI Achievers. Among firms marked as "AI Achievers", 30% of their revenue was the product of AI, on average¹².

AI MATURITY BY INDUSTRY



Source: CFRA, Accenture

Ultimately, we believe these trends will be a significant tailwind for MSFT, given their significant investment in this area and integration into their product offerings. These contribute to our overall optimistic revenue assumptions for areas in MSFT incorporating AI solutions.

Growth of Cloud Computing

Cloud computing refers to the delivery of computing services, such as servers, storage, databases, networking, etc. over the internet (or the "cloud"), which allows for companies to lower their operating costs, increase efficiency³, and allows for companies to more easily facilitate remote or hybrid work models.

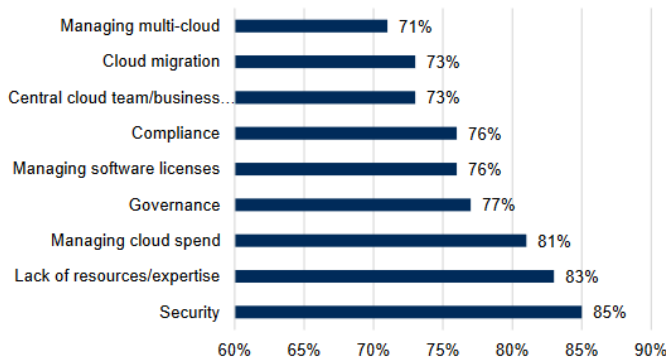
The global cloud computing market is expected to grow at a CAGR of 14.1%, driven by demand for cloud computing to improve business processes, increasing need for hybrid work models⁹, as well as other benefits including high performance, security, and ease of scalability³.

For MSFT, this is expected to greatly benefit Azure, which we factor into our server products and cloud services segment.

Focus on Cybersecurity

As shown by the figure below, cybersecurity is at the top in terms of challenges facing organizations across a variety of industries in the cloud^{12,17}. Cyberattacks can be very costly for organizations, with data breaches costing an average of \$4.45M globally (a 15% increase over 3 years)¹⁸, with cybercrime estimated to cost \$13.8T by 2028⁷.

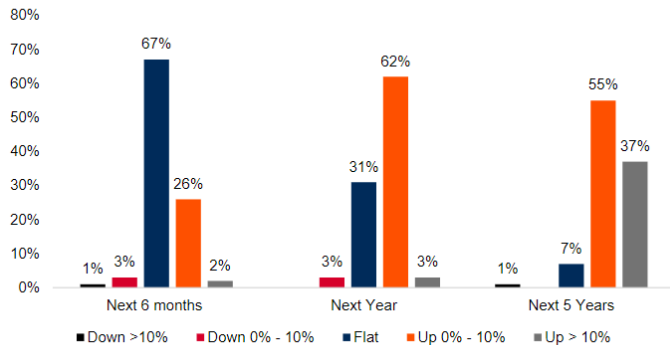
TOP CLOUD CHALLENGES FOR ALL ORGANIZATIONS



Source: Flexera

As shown in the figure below, among IT executives, the far majority are expecting to spend on cybersecurity in both the short and long-term.

EXPECTED CLOUD SOFTWARE SPENDING IN SECURITY



Source: CFRA, Battery's 2022 Cloud Software Spending Survey.

Source: CFRA

MARKETS AND COMPETITION

Metric Comparisons

For the Market Valuation and Dividend Yield metrics, we use the most recent available figures relative to our report date. For the profitability ratios, while MSFT has reported FY 2023 figures, we opt to use FY 2022 figures to create a fair comparison between all firms. As of this report, only MSFT has reported FY 2023 figures. From these figures, we can note that relative to its peers, MSFT maintains a higher operating and net margin, as well as a positive dividend yield, indicating higher profitability relative to competitors.

Market Valuation & Dividend Yield

Company	Market Cap (B)	P/E (LTM)	Div. Yield
MSFT	2,435.0	33.8	0.9%
GOOGL	1,739.0	29.1	0.0%
AMZN	1,331.7	103.2	0.0%
AAPL	2,796.2	30.1	0.5%
META	809.7	36.7	0.0%

Source: FactSet

Profitability Ratios

Company	Oper. Margin	Net Margin	ROA (%)	ROE (%)
MSFT	42.1%	36.7%	20.8%	47.2%
GOOGL	25.9%	21.4%	16.6%	23.6%
AMZN	2.6%	-0.5%	-0.6%	-1.9%
AAPL	30.3%	25.3%	28.4%	175.5%
META	28.8%	19.9%	13.2%	18.5%

Source: FactSet

Alphabet, Inc. (GOOGL)

Alphabet, Inc. (GOOGL) is an American multinational technology conglomerate holding company, with Google as a wholly owned subsidiary, generating 99% of Alphabet's revenue⁸. The company engages primarily in the business of delivering online advertising, cloud-based solutions providing enterprise customers with infrastructure and platform services, and provision of communication and collaboration tools. The company operates across three business segments: Google Services, Google Cloud, and Other Bets⁴. Alphabet was founded by Larry Page and Sergey Brin in 2015, with Google being founded in 1998, and is headquartered in Mountain View, CA.

Currently, Alphabet dominates the online search market with over 80% market share, with MSFT's Bing being second at only 9.19%⁷. While we expect MSFT to gain some market share with its investment into generative AI in Bing, we do not expect this to threaten Alphabet's market leadership in the online search market.

Amazon.com, Inc. (AMZN)

Amazon.com, Inc. (AMZN) is a multinational technology company engaging in the provision of online retail shopping services⁴ and is one the highest-grossing e-commerce aggregators⁵. The company operates through three business segments: Online Stores, Third-party Seller Services, and Amazon Web Services (AWS). AMZN was

founded by Jeff Bezos in 1994, and is headquartered in Seattle, WA.

MSFT's Azure competes against AMZN's AWS in the cloud infrastructure services market, with AWS holding majority market share with 32% against Azure's 23% as of Q4 2022⁷. We expect AWS and Azure to gradually gain market share in this market from other, smaller cloud service providers as both services continue to incorporate AI in their offerings.

Apple, Inc. (AAPL)

Apple, Inc. (AAPL) is a multinational technology company engaging in the design, manufacture, and sale of smartphones, personal computers, tablets, wearables and accessories, and other related services⁴. The company operates across four business segments: iPhone, Services, Wearables, Home & Accessories, and Other. AAPL was founded by Steve Wozniak, Steve Jobs, and Ronald Wayne in 1976 and is headquartered in Cupertino, CA⁴.

MSFT competes against AAPL in the software, hardware, and gaming spaces. Specifically, Apple's software products which compete against MSFT's office software, Apple's gaming platform, and macOS which competes against Windows. In this area, macOS has made slight market share gains, though Windows remains the dominant operating system in the desktop PC market, which we expect will hold over our forecast horizon.

Meta Platforms, Inc. (META)

Meta Platforms (META), formerly known as Facebook, is a multinational American technology conglomerate engaging in the development of social media applications⁴. The company operates across two business segments: Family of Apps and Reality Labs. Meta was founded by Mark Zuckerberg, Dustin Moskovitz, Chris Hughes, and Eduardo Saverin in 2004 and is headquartered in Menlo Park, CA.

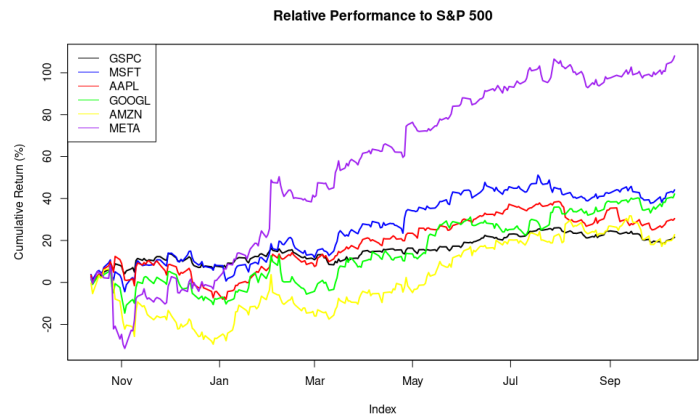
In February 2023, Zuckerberg announced that 2023 would be the "year of efficiency" for Meta following a round of layoffs, which refers to Meta's initiative towards restructuring parts of the company to achieve leaner operations, paired with significant investments into AI for use in Meta's products¹⁴. So far, these efforts have proven successful, given Meta's stronger than expected Q2 earnings and guidance, return on investments in AI,

rebound in online advertising, as well as rising monetization of Reels, Meta's TikTok competitor¹⁵.

MSFT competes with Meta with the communications tools they provide, social platforms, AI solutions, and in the gaming space via the metaverse¹.

Relative Performance

Over a one-year period (10/12/2022 – 10/12/2023), MSFT outperformed both the market and most of its peer group, beaten only by META over this period, shown in the figure below. It should be noted that relative performance depends significantly on the timeframe used, so this should not be used as the sole indicator of MSFT's competitive positioning and overall performance.



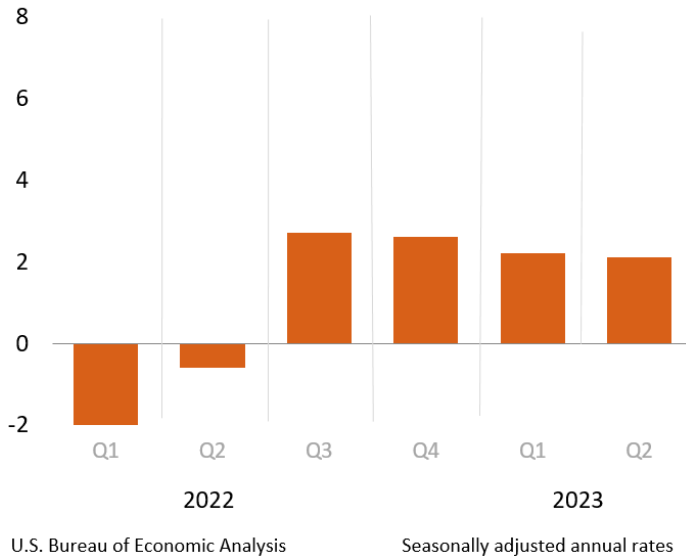
Source: Yahoo Finance, quantmod R package

ECONOMIC OUTLOOK

Real GDP Outlook

In Q1 and Q2 of 2023, the real gross domestic product (GDP), increased at an annual report of 2.2% and 2.1%, respectively. Looking forward, the Conference Board forecasts real GDP growth to be 3.6% and 1.0% in Q3 and Q4 2023, respectively, then becoming negative in the first half 2024.

Real GDP: Percent change from preceding quarter



Source: U.S. Bureau of Economic Analysis

A slowing GDP would have an adverse effect on MSFT, as this would result in lower IT spending, paired with lower demand for PCs, servers, and business spending, adversely affecting revenue¹. However, MSFT has stated that they have accounted for a potential slowdown, so we opt to use management expectations for forecasting in the short-term.

Fed Funds Rate & Inflation

The Fed Funds rate has ripple effects throughout the economy, impacting longer-term interest rates, such as mortgages, loans, and savings, which significantly impact consumer wealth and confidence. As for inflation, the US CPI has increased by 0.7% from 3.0% to 3.7% from June to September 2023.



Source: U.S. Bureau of Labor Statistics

As for Fed Funds rate hikes, consensus is pointing towards an end to further rate hikes, with rate cuts expected in 2024²³. We expect interest rates to remain

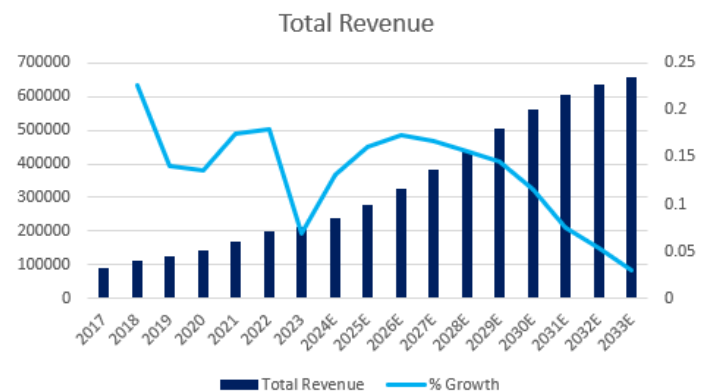
higher for longer as the inflation rate approaches the Fed's 2% target.

A regime of higher interest rates would have a negative impact on MSFT, due to increased borrowing costs, reduced consumer spending, as well as lower IT spending/business investment.

VALUATION

Revenue Growth

Our growth assumptions are based on MSFT's different offering segments with a forecasted CAGR of 11.1%. For FY 2024, we forecast revenue growth in-line with management expectations for growth or decline per offering segment. Our largest growth expectations come from the server products and cloud services segment, largely driven by growth in Azure, cloud, and AI integration. Historical revenue growth and our estimates are shown in the figure below:



Source: MSFT 10-K, HF Estimates

Earnings Estimates

Compared to consensus estimates, we forecast generally than consensus expected earnings for 2024 and 2025, which we believe are driven by MSFT's strong server products offerings, continued incorporation of OpenAI's offerings into MSFT products, and expected growth from the Activision-Blizzard acquisition. For 2023, our consensus is slightly lower, as we use management guidance as a benchmark, though we are more optimistic in our forecasts.

WACC Assumptions

We calculated a weighted average cost of capital (WACC) of 9.63% for MSFT, below the consensus estimate of 10.0%. This largely due to our differing assumption for

beta, which is lower than the 3yr adjusted used by FactSet. For this calculation, we used the following assumptions:

Risk-Free Rate: We used 4.63%, the 10-year US Treasury bond yield as of October 1, 2023.

Beta: We used 1.03, equal to the average of 5-year monthly beta, and 1, 2, and 3 weekly beta estimates for MSFT.

Equity Risk Premium: We used the Henry Fund consensus estimate of 5.00%.

Pre-tax Cost of Debt: We used 4.61%, equal to FactSet's estimate based on bond securities MSFT has issued.

Tax Rate: We used 20.8% for our forecast horizon, equal to the implied marginal tax rate of FY 2023.

We opted to use the book value of debt as a proxy for the market value of debt, given the difficulty of accurately estimating this value for MSFT.

DCF / Economic Profit (EP)

Our discounted cash flow (DCF) and economic profit (EP) models both yielded an implied price today of \$384.30, representing an upside of 16% from the current price. We opt to use this as our primary model driving our recommendation, as the model considers more company-specific factors and allows us to incorporate growth assumptions per offering segment. Our assumption for CV growth of NOPLAT is 3.75%, equal to our final year NOPLAT growth rate.

Relative Valuation (P/E and PEG)

For our relative valuation models, we considered MSFT's primary competitors in the Information Technology industry, as well as firms where MSFT notes they compete against for their main products. For this model, it is important to note that MSFT has reported figures for 2023, while other companies in its competitive set have not.

Our relative P/E valuation models yielded an implied price today of \$276.87 and \$252.79 based on forecasted 2023 and 2024 EPS figures, implying that it is overvalued relative to its peers. However, given how other companies have yet to report their 2023 figures, as well as the differences in business models and exposures

among each company, we do not believe these prices accurately reflect MSFT's intrinsic price.

Dividend Discount Model (DDM)

Our dividend discount model (DDM) yielded an implied price of \$216.38, representing a baseline for the stock price based on the company's dividend payments. As MSFT has been growing their dividend over our historical period, we estimate dividend growth to be 10.1%, equal to the 3-year historical average. However, we do not believe this accurately reflects MSFT's intrinsic value, as it fails to consider other company-specific growth factors.

In this area, we forecast our share repurchases to be \$4 billion per year, based on historical repurchases and MSFT's \$60 billion share repurchase program.

KEYS TO MONITOR

For MSFT, keys to monitor will be their continued investment into and utilization of generative AI, future of their Gaming segment and offerings if the acquisition of Activision-Blizzard is successful, growth in industries MSFT is exposed to, the broader macroenvironment environment, and regulatory pressures.

Beginning with generative AI, developments in this and the broader AI space will be important to monitor given MSFT's significant investment in this area and integration into product offerings. If growth fails to materialize in this area, MSFT would be significantly adversely affected.

Regarding the Activision-Blizzard acquisition, as of this report, we expect this to go through without any further challenges. As such, how Xbox utilizes the gaming franchises acquired from this acquisition will be important to monitor, given the significant size of the acquisition.

Given MSFT's exposure to a variety of industries (including the broader software market, cloud computing, etc.), how these industries develop will be important to monitor. Fortunately for MSFT, we expect these industries to experience strong growth over our forecast horizon.

As for the macroeconomic environment, a recession would likely lead to decreased IT/business spending, decreased consumer spending, which would have an adverse impact on MSFT's revenue.

Lastly, the regulatory environment, both in the U.S. and internationally, will be important to monitor. Regulatory developments may impact MSFT's ability to make acquisitions in the future,

Summary

We recommend a BUY rating for MSFT, with a target price range of \$375-395 representing a current upside of up to 19% from the current price of \$331.16. Given MSFT's significant investment into AI, the expected successful acquisition of Activision-Blizzard, and exposure to several high-growth industries, we expect MSFT to be able to deliver strong growth in the future.

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Microsoft Corporation (MSFT)
Sensitivity Tables

Risk-free rate	Beta						
	384.30	0.97	0.99	1.01	1.03	1.05	1.07
	4.33%	429.86	421.57	413.58	405.88	398.43	391.25
	4.43%	421.57	413.58	405.87	398.43	391.25	384.30
	4.53%	413.58	405.87	398.43	391.24	384.30	377.58
	4.63%	405.87	398.43	391.24	384.30	377.58	371.08
	4.73%	398.43	391.24	384.30	377.58	371.08	364.79
	4.83%	391.24	384.30	377.58	371.08	364.79	358.70
	4.93%	384.29	377.58	371.08	364.79	358.70	352.79

Equity Risk Premium	Pre-tax cost of debt						
	384.30	4.31%	4.41%	4.51%	4.61%	4.71%	4.81%
	4.25%	445.47	445.28	445.09	444.90	444.71	444.53
	4.50%	423.31	423.14	422.97	422.79	422.62	422.45
	4.75%	403.15	402.99	402.84	402.68	402.52	402.36
	5.00%	384.73	384.59	384.44	384.30	384.15	384.01
	5.25%	367.84	367.71	367.57	367.44	367.31	367.17
	5.50%	352.29	352.17	352.05	351.92	351.80	351.68
	5.75%	337.94	337.83	337.71	337.60	337.48	337.37

CV Growth of NOPLAT	ROI assumption						
	384.30	2.43%	3.43%	4.43%	5.43%	6.43%	7.43%
	1.16%	308.01	307.45	306.84	306.20	305.51	304.77
	2.16%	331.86	331.24	330.58	329.87	329.11	328.30
	3.16%	363.08	362.39	361.65	360.86	360.01	359.10
	4.16%	405.72	404.93	404.09	403.18	402.21	401.17
	5.16%	467.43	466.51	465.51	464.44	463.29	462.06
	6.16%	564.73	563.58	562.34	561.01	559.58	558.04
	7.16%	740.81	739.25	737.58	735.78	733.85	731.76

FY 2026+ Inflation Est.	Normal Cash Est. % Sales						
	384.30	5.5%	6.0%	6.5%	7.0%	7.5%	8.0%
	2.00%	385.80	385.35	384.89	384.43	383.98	383.52
	2.10%	385.76	385.30	384.84	384.39	383.93	383.48
	2.20%	385.71	385.26	384.80	384.34	383.89	383.43
	2.30%	385.67	385.21	384.75	384.30	383.84	383.39
	2.40%	385.62	385.16	384.71	384.25	383.80	383.34
	2.50%	385.58	385.12	384.66	384.21	383.75	383.29
	2.60%	385.53	385.07	384.62	384.16	383.71	383.25

F. Marg. Tax Rate	Forecasted Effective Tax Rate						
	384.30	19%	21%	23%	25%	27%	29%
	14.80%	412.26	412.26	412.26	412.26	412.26	412.26
	16.80%	402.95	402.95	402.95	402.95	402.95	402.95
	18.80%	393.63	393.63	393.63	393.63	393.63	393.63
	20.80%	384.30	384.30	384.30	384.30	384.30	384.30
	22.80%	374.96	374.96	374.96	374.96	374.96	374.96
	24.80%	365.61	365.61	365.61	365.61	365.61	365.61
	26.80%	356.26	356.26	356.26	356.26	356.26	356.26

Microsoft Corporation (MSFT)

Revenue Decomposition

Fiscal Years Ending Dec. 31	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Revenue by Significant Product and Service Offerings:													
Server products and cloud services	52589	67350	79970	99163	124449	156806	194440	237216	284660	327359	356821	380014	393315
% Growth	27.1%	28.1%	18.7%	24.0%	25.5%	26.0%	24.0%	22.0%	20.0%	15.0%	9.0%	6.5%	3.5%
% of Total Revenue	31.3%	34.0%	37.7%	41.3%	44.7%	48.0%	51.0%	53.8%	56.4%	58.1%	58.9%	59.6%	59.9%
Office products and cloud services	39872	44862	48728	55063	61945	68140	73932	79107	83854	88885	92885	96136	98539
% Growth	12.9%	12.5%	8.6%	13.0%	12.5%	10.0%	8.5%	7.0%	6.0%	6.0%	4.5%	3.5%	2.5%
% of Total Revenue	23.7%	22.6%	23.0%	23.0%	22.2%	20.9%	19.4%	17.9%	16.6%	15.8%	15.3%	15.1%	15.0%
Windows	22488	24732	21507	19786	19193	19961	20959	22007	22887	23688	24398	24886	25135
% Growth	0.9%	10.0%	-13.0%	-8.0%	-3.0%	4.0%	5.0%	5.0%	4.0%	3.5%	3.0%	2.0%	1.0%
% of Total Revenue	13.4%	12.5%	10.1%	8.3%	6.9%	6.1%	5.5%	5.0%	4.5%	4.2%	4.0%	3.9%	3.8%
Gaming	15370	16230	15466	17631	19923	22513	25215	28241	31630	34793	37228	38717	39492
% Growth	32.8%	5.6%	-4.7%	14.0%	13.0%	13.0%	12.0%	12.0%	12.0%	10.0%	7.0%	4.0%	2.0%
% of Total Revenue	9.1%	8.2%	7.3%	7.4%	7.2%	6.9%	6.6%	6.4%	6.3%	6.2%	6.1%	6.1%	6.0%
LinkedIn	10289	13816	15145	16432	18404	21165	24975	28970	32737	36010	38711	40647	41459
% Growth	27.4%	34.3%	9.6%	8.5%	12.0%	15.0%	18.0%	16.0%	13.0%	10.0%	7.5%	5.0%	2.0%
% of Total Revenue	6.1%	7.0%	7.1%	6.9%	6.6%	6.5%	6.6%	6.6%	6.5%	6.4%	6.4%	6.4%	6.3%
Search and news advertising	9267	11591	12208	13368	14972	16918	18779	20657	22620	24429	26139	27446	27995
% Growth	19.7%	25.1%	5.3%	9.5%	12.0%	13.0%	11.0%	10.0%	9.5%	8.0%	7.0%	5.0%	2.0%
% of Total Revenue	5.5%	5.8%	5.8%	5.6%	5.4%	5.2%	4.9%	4.7%	4.5%	4.3%	4.3%	4.3%	4.3%
Enterprise Services	6943	7407	7722	7645	8027	8428	8850	9204	9572	9955	10253	10459	10668
% Growth	8.3%	6.7%	4.3%	-1.0%	5.0%	5.0%	5.0%	4.0%	4.0%	4.0%	3.0%	2.0%	2.0%
% of Total Revenue	4.1%	3.7%	3.6%	3.2%	2.9%	2.6%	2.3%	2.1%	1.9%	1.8%	1.7%	1.6%	1.6%
Devices	7143	7306	5521	4141	3851	3697	3697	3771	3903	4020	4120	4203	4266
% Growth	10.6%	2.3%	-24.4%	-25.0%	-7.0%	-4.0%	0.0%	2.0%	3.5%	3.0%	2.5%	2.0%	1.5%
% of Total Revenue	4.2%	3.7%	2.6%	1.7%	1.4%	1.1%	1.0%	0.9%	0.8%	0.7%	0.7%	0.7%	0.6%
Dynamics	3754	4687	5437	6443	7603	8933	10362	11761	13055	14165	15015	15540	15851
% Growth		24.9%	16.0%	18.5%	18.0%	17.5%	16.0%	13.5%	11.0%	8.5%	6.0%	3.5%	2.0%
% of Total Revenue	2.2%	2.4%	2.6%	2.7%	2.7%	2.7%	2.7%	2.7%	2.6%	2.5%	2.5%	2.4%	2.4%
Other	373	289	211	159	118	88	65	49	36	27	20	15	11
% Growth	-90.1%	-22.5%	-27.0%	-24.8%	-25.9%	-25.3%	-25.6%	-25.5%	-25.5%	-25.5%	-25.5%	-25.5%	-25.5%
% of Total Revenue	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Revenue	168088	198270	211915	239830	278485	326649	381273	440983	504952	563329	605591	638062	656731
% Growth	17.5%	18.0%	6.9%	13.2%	16.1%	17.3%	16.7%	15.7%	14.5%	11.6%	7.5%	5.4%	2.9%
Revenue by Business Segment:													
Intelligent Cloud	60080	75251	87907										
% Growth	24.2%	25.3%	16.8%										
% of Total Revenue	35.7%	38.0%	41.5%										
Productivity & Business Processes	53915	63364	69274										
% Growth	16.2%	17.5%	9.3%										
% of Total Revenue	32.1%	32.0%	32.7%										
More Personal Computing	54093	59655	54734										
% Growth	12.1%	10.3%	-8.2%										
% of Total Revenue	32.2%	30.1%	25.8%										
Total Revenue	168088	198270	211915										
% Growth	17.5%	18.0%	6.9%										
Revenue by Geographic Segment													
United States	83953	100218	106744										
% Growth	14.8%	19.4%	6.5%										
% of Total Revenue	49.9%	50.5%	50.4%										
Other Countries	84135	98052	105171										
% Growth	20.4%	16.5%	7.3%										
% of Total Revenue	50.1%	49.5%	49.6%										
Total Revenue	168088	198270	211915										
% Growth	17.5%	18.0%	6.9%										
Revenue by Revenue Type													
Product	71074	72732	64699										
% Growth	4.5%	2.3%	-11.0%										
% of Total Revenue	42.3%	36.7%	30.5%										
Service & other revenue	97014	125538	147216										
% Growth	29.4%	29.4%	17.3%										
% of Total Revenue	57.7%	63.3%	69.5%										
Total Revenue	168088	198270	211915										
% Growth	17.5%	18.0%	6.9%										

Microsoft Corporation (MSFT)
Income Statement

<i>Fiscal Years Ending Dec. 31</i>	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Total revenue	168088	198270	211915	239830	278485	326649	381273	440983	504952	563329	605591	638062	656731
Total cost of revenue (excl. D&A)	40546	48190	52002	58332	67919	79757	92939	107572	123185	137387	147719	155637	160183
Depreciation & amortization	11686	14460	13861	19524	20655	21470	22097	22705	24939	23375	23865	24266	24595
Depreciation expense	9300	12600	11000	17161	18774	20089	21168	22053	22779	23375	23865	24266	24595
Amortization expense	2386	1860	2861	2363	1881	1381	929	652	2160	0	0	0	0
Gross margin	115856	135620	146052	161975	189911	225423	266238	310706	356827	402567	434007	458160	471952
Research & development	20716	24512	27195	29695	34534	40547	46799	53972	61532	68224	73015	76546	78375
Sales & marketing	20117	21825	22759	25471	28394	32469	36939	41429	46164	50085	52322	53610	53647
General & administrative	5107	5900	7575	7512	8808	10532	11856	13680	15565	17104	18241	19032	19374
Operating income (loss)	69916	83383	88523	99297	118175	141875	170644	201624	233566	267155	290430	308972	320555
Other income (expense), net	1186	333	788	996	886	1203	1400	1549	1830	2030	2168	2298	2361
Income (loss) before income taxes	71102	83716	89311	100292	119061	143078	172044	203173	235396	269185	292598	311271	322917
Provision (benefit) for income taxes	9831	10978	16950	20861	24765	29760	35785	42260	48962	55990	60860	64744	67167
Net income (loss)	61271	72738	72361	79432	94296	113318	136259	160913	186433	213194	231737	246527	255750
Weighted average shares outstanding - basic	7547	7496	7446	7436	7450	7472	7494	7517	7541	7565	7590	7616	7642
Year end shares outstanding	7519	7464	7432	7,440	7,461	7,483	7,505	7,529	7,553	7,577	7,603	7,629	7,655
Net earnings (loss) per share - basic	8.12	9.7	9.72	10.68	12.66	15.17	18.18	21.41	24.72	28.18	30.53	32.37	33.47
Cash dividends declared per common share	2.24	2.48	2.72	3.00	3.30	3.63	4.00	4.40	4.85	5.33	5.87	6.46	7.11

Microsoft Corporation (MSFT)
Balance Sheet

Fiscal Years Ending Dec. 31	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Cash & cash equivalents	14224	13931	34704	100604	177094	282409	416961	560028	772506	969245	1171506	1379323	1584017
Short-term investments	116110	90826	76558	80715	85098	89719	94590	99727	105142	110851	116870	123216	129907
Accounts receivable, net	38043	44261	48688	54307	63070	74331	86482	100082	114680	127854	137474	144857	149077
Inventories	2636	3742	2500	3706	4281	4641	5723	6555	7420	8369	8966	9434	9730
Other current assets	13393	16924	21807	22991	24240	25556	26943	28406	29949	31575	33290	35097	37003
Total current assets	184406	169684	184257	262322	353783	476655	630700	794798	1029696	1247895	1468105	1691928	1909734
Property & Equipment, gross	111066	134058	163892	190045	216146	242248	268349	294451	320552	346654	372755	398857	424958
Accumulated depreciation	51351	59660	68251	85412	104186	124275	145442	167495	190274	213650	237514	261780	286376
Property & equipment, net	59715	74398	95641	104633	111960	117973	122907	126955	130278	133004	135241	137076	138582
Operating lease right-of-use assets	11088	13148	14346	15695	16794	17696	18436	19043	19541	19950	20286	20561	20787
Equity investments	5984	6891	9879	7997	8704	9341	9152	9558	9858	10039	10351	10630	10902
Goodwill	49711	67524	67886	67886	67886	67886	67886	67886	67886	67886	67886	67886	67886
Intangible assets, net	7800	11298	9366	7003	5122	3741	2812	2160	0	0	0	0	0
Other long-term assets	15075	21897	30601	32263	34014	35861	37809	39862	42026	44308	46714	49251	51925
Total assets	333779	364840	411976	497798	598263	729153	889701	1060262	1299285	1523083	1748583	1977332	2199816
Accounts payable	15163	19000	18095	21699	25221	29009	34295	39589	45199	50556	54307	57199	58901
Current portion of long-term debt	8072	2749	5247	5250	2250	3000	8000	0	34366	34366	34366	34366	34366
Accrued compensation	10057	10661	11009	13235	14936	17505	20641	23719	27185	30375	32610	34372	35384
Short-term income taxes	2174	4067	4152	5817	6906	8299	9979	11784	13653	15613	16971	18054	18730
Short-term unearned revenue	41525	45538	50901	57313	65801	77900	90709	104759	120171	133970	144002	151772	156186
Other current liabilities	11666	13067	14745	16380	18917	22408	26031	30105	34529	38480	41373	43603	44868
Total current liabilities	88657	95082	104149	119693	134030	158122	189656	209957	275103	303360	323629	339365	348435
Long-term debt	50074	47032	41990	42411	45037	47845	50675	53672	56503	59364	61672	63627	65114
Long-term income taxes	27190	26069	25560	33085	36208	42310	50518	57628	66099	73999	79321	83638	86124
Long-term unearned revenue	2616	2870	2912	3500	3974	4639	5473	6295	7209	8057	8651	9117	9386
Deferred income taxes	198	230	433	435	437	439	441	443	446	448	450	452	454
Operating lease liabilities	9629	11489	12728	13925	14900	15700	16357	16895	17337	17700	17998	18242	18443
Other long-term liabilities	13427	15526	17981	19429	22666	26922	31114	36075	41377	46072	49564	52230	53740
Total liabilities	191791	198298	205753	232478	257252	295976	344235	380965	464076	509000	541285	566670	581696
Common stock & paid-in capital	83111	86939	93718	103679	113641	123602	133564	143525	153487	163448	173410	183371	193333
Retained earnings (accumulated deficit)	57055	84281	118848	167984	233714	315917	418245	542115	688066	856977	1040231	1233634	1431131
Accumulated other comprehensive income (loss)	1822	-4678	-6343	-6343	-6343	-6343	-6343	-6343	-6343	-6343	-6343	-6343	-6343
Total stockholders' equity (deficit)	141988	166542	206223	265320	341012	433177	545466	679297	835210	1014082	1207298	1410662	1618121
Total Liabilities and stockholder's equity	333779	364840	411976	497798	598263	729153	889701	1060262	1299285	1523083	1748583	1977332	2199816

Microsoft Corporation (MSFT)
Historical Cash Flow Statement

Fiscal Years Ending Dec. 31	2017	2018	2019	2020	2021	2022	2023
Net income (loss)	21204	16571	39240	44281	61271	72738	72361
Depreciation, amortization, & other adjustments	8778	10261	11682	12796	11686	14460	13861
Stock-based compensation expense	3266	3940	4652	5289	6118	7502	9611
Net recognized losses (gains) on investments & derivatives	-2073	-2212	-792	-219	-1249	-409	196
Deferred income taxes	-3296	-5143	-6463	11	-150	-5702	-6059
Deferral of unearned revenue	67711	-	-	-	-	-	-
Recognition of unearned revenue	-57735	-	-	-	-	-	-
Accounts receivable	-925	-3862	-2812	-2577	-6481	-6834	-4087
Inventories	50	-465	597	168	-737	-1123	1242
Other current assets	1066	-952	-1718	-2330	-932	-709	-1991
Other long-term assets	-539	-285	-1834	-1037	-3459	-2805	-2833
Accounts payable	81	1148	232	3018	2798	2943	-2721
Unearned revenue	-	5922	4462	2212	4633	5109	5535
Income taxes	-	18183	2929	-3631	-2309	696	-358
Other current liabilities	386	798	1419	1346	4149	2344	2272
Other long-term liabilities	1533	-20	591	1348	1402	825	553
Net cash flows from operating activities	39507	43884	52185	60675	76740	89035	87582
Repayments of debt	-7922	-10060	-4000	-5518	-3750	-9023	-2750
Common stock issued	772	1002	1142	1343	1693	1841	1866
Common stock repurchased	-11788	-10721	-19543	-22968	-27385	-32696	-22245
Common stock cash dividends paid	-11845	-12699	-13811	-15137	-16521	-18135	-19800
Other financing activities, net	-190	-971	-675	-334	-769	-863	-1006
Net cash flows from financing activities	8408	-33590	-36887	-46031	-48486	-58876	-43935
Additions to property & equipment	-8129	-11632	-13925	-15441	-20622	-23886	-28107
Acquisition of companies, net of cash acquired, & purchases of intangible & other assets	-25944	-888	-2388	-2521	-8909	-22038	-1670
Purchases of investments	-176905	-137380	-57697	-77190	-62924	-26456	-37651
Other investing activities, net	-	-	-	-1241	-922	-2825	-3116
Maturities of investments	28044	26360	20043	66449	51792	16451	33510
Sales of investments	136350	117577	38194	17721	14008	28443	14354
Securities lending payable	-197	-98	-	-	-	-	-
Net cash flows from investing activities	-46781	-6061	-15773	-12223	-27577	-30311	-22680
Effect of foreign exchange rates on cash & cash equivalents	19	50	-115	-201	-29	-141	-194
Net change in cash & cash equivalents	1153	4283	-590	2220	648	-293	20773
Cash & cash equivalents, beginning of period	6510	7663	11946	11356	13576	14224	13931
Cash & cash equivalents, end of period	7663	11946	11356	13576	14224	13931	34704

Microsoft Corporation (MSFT)
Forecasted Cash Flow Statement

Fiscal Years Ending Dec. 31	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Cash Flow at Beginning of Period	34704	100604	177094	282409	416961	560028	772506	969245	1171506	1379323
Net Income	79432	94296	113318	136259	160913	186433	213194	231737	246527	255750
Adjustments to reconcile net income to cash from operating activities:										
Depreciation, amortization, and other	19524	20655	21470	22097	22705	24939	23375	23865	24266	24595
Changes in Operating Activities:										
Accounts Receivable, net	-5619	-8763	-11261	-12151	-13600	-14598	-13175	-9620	-7383	-4220
Inventories	-1206	-576	-359	-1082	-832	-865	-949	-597	-468	-296
Other current assets	-1184	-1248	-1316	-1388	-1463	-1542	-1626	-1715	-1808	-1906
Other long-term assets	-1662	-1752	-1847	-1947	-2053	-2164	-2282	-2406	-2537	-2674
Accounts Payable	3604	3522	3789	5286	5294	5610	5357	3751	2891	1703
Accrued compensation	2226	1702	2569	3136	3078	3466	3189	2235	1762	1012
Short-term unearned revenue	6412	8488	12099	12809	14050	15411	13799	10032	7770	4414
Short-term income taxes	1665	1089	1393	1680	1806	1869	1960	1358	1083	675
Other current liabilities	1635	2537	3492	3623	4074	4424	3951	2893	2229	1266
Long-term unearned revenue	588	474	665	834	822	914	848	594	466	269
Deferred income taxes	2	2	2	2	2	2	2	2	2	2
Long-term income taxes	7525	3122	6103	8208	7110	8471	7900	5322	4317	2486
Operating right-of-use assets	-1349	-1099	-902	-740	-607	-498	-409	-336	-275	-226
Operating lease liabilities	1197	975	800	657	539	442	363	298	244	200
Other long-term liabilities	1448	3237	4256	4193	4960	5303	4695	3492	2666	1509
Net cash from operations	114237	126661	154269	181475	206797	237618	260193	270907	281752	284561
Changes in Financing Activities:										
Common stock and additional paid-in capital	9961	9961	9961	9961	9961	9961	9961	9961	9961	9961
Accumulated other comprehensive income	0	0	0	0	0	0	0	0	0	0
Current portion of long-term debt	3	-3000	750	5000	-8000	34366	0	0	0	0
Long-term debt	421	2626	2808	2831	2996	2832	2861	2308	1955	1487
Dividends Paid	-22296	-24566	-27115	-29931	-33043	-36483	-40283	-44483	-49124	-54253
Share Repurchases	-8000	-4000	-4000	-4000	-4000	-4000	-4000	-4000	-4000	-4000
Net cash from financing activities	-19910	-18979	-17595	-16139	-32086	6677	-31461	-36214	-41208	-46804
Changes in Investing Activities:										
Property and equipment, gross	-26153	-26102	-26102	-26102	-26102	-26102	-26102	-26102	-26102	-26102
Equity and other investments	1882	-707	-637	189	-406	-300	-182	-312	-279	-272
Short-term investments	-4157	-4383	-4621	-4872	-5136	-5415	-5709	-6019	-6346	-6691
Net cash from investing activities	-28427	-31192	-31359	-30784	-31644	-31817	-31992	-32433	-32727	-33064
Cash and cash equivalents, end of period	100604	177094	282409	416961	560028	772506	969245	1171506	1379323	1584017

Microsoft Corporation (MSFT)
Common Size Income Statement

Fiscal Years Ending Dec. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Total revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total cost of revenue (excl. D&A)	23.3%	24.1%	24.3%	24.5%	24.3%	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%	24.4%
Depreciation & amortization	8.9%	7.0%	7.3%	6.5%	8.1%	7.4%	6.6%	5.8%	5.1%	4.9%	4.1%	3.9%	3.8%	3.7%
Depreciation expense	7.5%	5.5%	6.4%	5.2%	7.2%	6.7%	6.1%	5.6%	5.0%	4.5%	4.1%	3.9%	3.8%	3.7%
Amortization expense	1.5%	1.4%	0.9%	1.4%	1.0%	0.7%	0.4%	0.2%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%
Gross margin	67.8%	68.9%	68.4%	68.9%	67.5%	68.2%	69.0%	69.8%	70.5%	70.7%	71.5%	71.7%	71.6%	71.9%
Research & development	13.5%	12.3%	12.4%	12.8%	12.4%	12.4%	12.4%	12.3%	12.2%	12.2%	12.1%	12.1%	12.0%	11.9%
Sales & marketing	13.7%	12.0%	11.0%	10.7%	10.6%	10.2%	9.9%	9.7%	9.4%	9.1%	8.9%	8.6%	8.4%	8.2%
General & administrative	3.6%	3.0%	3.0%	3.6%	3.1%	3.2%	3.2%	3.1%	3.1%	3.1%	3.0%	3.0%	3.0%	3.0%
Operating income (loss)	37.0%	41.6%	42.1%	41.8%	41.4%	42.4%	43.4%	44.8%	45.7%	46.3%	47.4%	48.0%	48.4%	48.8%
Other income (expense), net	0.1%	0.7%	0.2%	0.4%	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Income (loss) before income taxes	37.1%	42.3%	42.2%	42.1%	41.8%	42.8%	43.8%	45.1%	46.1%	46.6%	47.8%	48.3%	48.8%	49.2%
Provision (benefit) for income taxes	6.1%	5.8%	5.5%	8.0%	8.7%	8.9%	9.1%	9.4%	9.6%	9.7%	9.9%	10.0%	10.1%	10.2%
Net income (loss)	31.0%	36.5%	36.7%	34.1%	33.1%	33.9%	34.7%	35.7%	36.5%	36.9%	37.8%	38.3%	38.6%	38.9%

Microsoft Corporation (MSFT)
Common Size Balance Sheet

Fiscal Years Ending Dec. 31	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Cash & cash equivalents	8.5%	7.0%	16.4%	41.9%	63.6%	86.5%	109.4%	127.0%	153.0%	172.1%	193.4%	216.2%	241.2%
Short term investments	69.1%	45.8%	36.1%	33.7%	30.6%	27.5%	24.8%	22.6%	20.8%	19.7%	19.3%	19.3%	19.8%
Accounts receivable, net	22.6%	22.3%	23.0%	22.6%	22.6%	22.8%	22.7%	22.7%	22.7%	22.7%	22.7%	22.7%	22.7%
Inventories	1.6%	1.9%	1.2%	1.5%	1.5%	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%
Other current assets	8.0%	8.5%	10.3%	9.6%	8.7%	7.8%	7.1%	6.4%	5.9%	5.6%	5.5%	5.5%	5.6%
Total current assets	109.7%	85.6%	86.9%	109.4%	127.0%	145.9%	165.4%	180.2%	203.9%	221.5%	242.4%	265.2%	290.8%
Property & equipment, net	35.5%	37.5%	45.1%	43.6%	40.2%	36.1%	32.2%	28.8%	25.8%	23.6%	22.3%	21.5%	21.1%
Operating lease right-of-use assets	6.6%	6.6%	6.8%	6.5%	6.0%	5.4%	4.8%	4.3%	3.9%	3.5%	3.3%	3.2%	3.2%
Equity investments	3.6%	3.5%	4.7%	3.3%	3.1%	2.9%	2.4%	2.2%	2.0%	1.8%	1.7%	1.7%	1.7%
Goodwill	29.6%	34.1%	32.0%	28.3%	24.4%	20.8%	17.8%	15.4%	13.4%	12.1%	11.2%	10.6%	10.3%
Intangible assets, net	4.6%	5.7%	4.4%	2.9%	1.8%	1.1%	0.7%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Other long term assets	9.0%	11.0%	14.4%	13.5%	12.2%	11.0%	9.9%	9.0%	8.3%	7.9%	7.7%	7.7%	7.9%
Total assets	198.6%	184.0%	194.4%	207.6%	214.8%	223.2%	233.3%	240.4%	257.3%	270.4%	288.7%	309.9%	335.0%
Accounts payable	9.0%	9.6%	8.5%	9.0%	9.1%	8.9%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%
Current portion of long-term debt	4.8%	1.4%	2.5%	2.2%	0.8%	0.9%	2.1%	0.0%	6.8%	6.1%	5.7%	5.4%	5.2%
Accrued compensation	6.0%	5.4%	5.2%	5.5%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%	5.4%
Short-term income taxes	1.3%	2.1%	2.0%	2.4%	2.5%	2.5%	2.6%	2.7%	2.7%	2.8%	2.8%	2.8%	2.9%
Short-term unearned revenue	24.7%	23.0%	24.0%	23.9%	23.6%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%	23.8%
Other current liabilities	6.9%	6.6%	7.0%	6.8%	6.8%	6.9%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Total current liabilities	52.7%	48.0%	49.1%	49.9%	48.1%	48.4%	49.7%	47.6%	54.5%	53.9%	53.4%	53.2%	53.1%
Long-term debt	29.8%	23.7%	19.8%	17.7%	16.2%	14.6%	13.3%	12.2%	11.2%	10.5%	10.2%	10.0%	9.9%
Long-term income taxes	16.2%	13.1%	12.1%	13.8%	13.0%	13.0%	13.2%	13.1%	13.1%	13.1%	13.1%	13.1%	13.1%
Long-term unearned revenue	1.6%	1.4%	1.4%	1.5%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
Deferred income taxes	0.1%	0.1%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Operating lease liabilities	5.7%	5.8%	6.0%	5.8%	5.4%	4.8%	4.3%	3.8%	3.4%	3.1%	3.0%	2.9%	2.8%
Other long term liabilities	8.0%	7.8%	8.5%	8.1%	8.1%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%	8.2%
Total liabilities	114.1%	100.0%	97.1%	96.9%	92.4%	90.6%	90.3%	86.4%	91.9%	90.4%	89.4%	88.8%	88.6%
Common stock & paid-in capital	49.4%	43.8%	44.2%	43.2%	40.8%	37.8%	35.0%	32.5%	30.4%	29.0%	28.6%	28.7%	29.4%
Retained earnings (accumulated deficit)	33.9%	42.5%	56.1%	70.0%	83.9%	96.7%	109.7%	122.9%	136.3%	152.1%	171.8%	193.3%	217.9%
Accumulated other comprehensive income (loss)	1.1%	-2.4%	-3.0%	-2.6%	-2.3%	-1.9%	-1.7%	-1.4%	-1.3%	-1.1%	-1.0%	-1.0%	-1.0%
Total stockholders' equity (deficit)	84.5%	84.0%	97.3%	110.6%	122.5%	132.6%	143.1%	154.0%	165.4%	180.0%	199.4%	221.1%	246.4%
Total Liabilities and stockholder's equity	198.6%	184.0%	194.4%	207.6%	214.8%	223.2%	233.3%	240.4%	257.3%	270.4%	288.7%	309.9%	335.0%

Microsoft Corporation (MSFT)
Value Driver Estimation

Fiscal Years Ending Dec. 31	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
NOPLAT:													
Total revenue	168088	198270	211915	239830	278485	326649	381273	440983	504952	563329	605591	638062	656731
Less: Total cost of revenue	40546	48190	52002	58332	67919	79757	92939	107572	123185	137387	147719	155637	160183
Less: Depreciation expense	9300	12600	11000	17161	18774	20089	21168	22053	22779	23375	23865	24266	24595
Less: Amortization Expense	2386	1860	2861	2363	1881	1381	929	652	2160	0	0	0	0
Less: Research and development	20716	24512	27195	29695	34534	40547	46799	53972	61532	68224	73015	76546	78375
Less: Sales and marketing	20117	21825	22759	25471	28394	32469	36939	41429	46164	50085	52322	53610	53647
Less: General and Administrative	5107	5900	7575	7512	8808	10532	11856	13680	15565	17104	18241	19032	19374
Plus: Implied interest on operating leases	404	511	606	661	724	774	816	850	878	901	920	935	948
EBITA	69916	83383	88523	99297	118175	141875	170644	201624	233566	267155	290430	308972	320555
Implied Marginal Tax Rate	19.70%	21.10%	20.80%	20.80%	20.80%	20.80%	20.80%	20.80%	20.80%	20.80%	20.80%	20.80%	20.80%
Adjusted Taxes													
Provision for income taxes	9831	10978	16950	20861	24765	29760	35785	42260	48962	55990	60860	64744	67167
Plus: Tax Shield on other income (expense)	234	70	164	207.08521	184.38035	250.32123	291.2773	322.26632	380.5789	422.20498	450.95628	478.08533	491.10603
Plus: Tax Shield on implied interest on operating leases	79	108	126	138	150	161	170	177	183	187	191	195	197
Total Adjusted Taxes	10144	11156	17240	21205	25100	30172	36246	42759	49526	56600	61503	65417	67855
Change in Deferred Taxes	6	-32	-203	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
NOPLAT	59778	72195	71080	78089	93073	111701	134395	158863	184039	210553	228925	243553	252698
Invested Capital (IC):													
Plus: Normal Cash	11810	13931	14890	16851	19567	22951	26789	30985	35479	39581	42550	44832	46144
Plus: Accounts receivable, net of doubtful accounts	38043	44261	48688	54307	63070	74331	86482	100082	114680	127854	137474	144857	149077
Plus: Inventories	2636	3742	2500	3706	4281	4641	5723	6555	7420	8369	8966	9434	9730
Plus: Other current assets	13393	16924	21807	22991	24240	25556	26943	28406	29949	31575	33290	35097	37003
Less: Accounts Payable	15163	19000	18095	21699	25221	29009	34295	39589	45199	50556	54307	57199	58901
Less: Accrued compensation	10057	10661	11009	13235	14936	17505	20641	23719	27185	30375	32610	34372	35384
Less: Income taxes	2174	4067	4152	5817	6906	8299	9979	11784	13653	15613	16971	18054	18730
Less: Short-term unearned revenue	41525	45538	50901	57313	65801	77900	90709	104759	120171	133970	144002	151772	156186
Less: Other current liabilities	11666	13067	14745	16380	18917	22408	26031	30105	34529	38480	41373	43603	44868
Net Operating Working Capital	-14703	-13475	-11017	-16588	-20622	-27643	-35718	-43929	-53210	-61614	-66984	-70778	-72115
Plus: Property and equipment, net accumulated depreciation	59715	74398	95641	104633	111960	117973	122907	126955	130278	133004	135241	137076	138582
Plus: Operating lease right-of-use assets	11088	13148	14346	15695	16794	17696	18436	19043	19541	19950	20286	20561	20787
Plus: Intangible assets, net	7800	11298	9366	7003	5122	3741	2812	2160	0	0	0	0	0
Plus: Other long-term assets	15075	21897	30601	32263	34014	35861	37809	39862	42026	44308	46714	49251	51925
Less: Long-term income taxes	27190	26069	25560	33085	36208	42310	50518	57628	66099	73999	79321	83638	86124
Less: Long-term unearned revenue	2616	2870	2912	3500	3974	4639	5473	6295	7209	8057	8651	9117	9386
Invested Capital (IC)	49169	78327	110465	106420	107087	100679	90254	80168	65327	53591	47285	43355	43669
Free Cash Flow (FCF):													
NOPLAT	59778	72195	71080	78089	93073	111701	134395	158863	184039	210553	228925	243553	252698
Change in IC	28863	29158	32138	-4045	667	-6408	-10425	-10086	-14841	-11735	-6307	-3930	314
FCF	30915	43037	38942	82134	92406	118109	144820	168949	198880	222288	235232	247483	252384
Return on Invested Capital (ROIC):													
NOPLAT	59778	72195	71080	78089	93073	111701	134395	158863	184039	210553	228925	243553	252698
Beginning IC	20307	49169	78327	110465	106420	107087	100679	90254	80168	65327	53591	47285	43355
ROIC	294.4%	146.8%	90.7%	70.7%	87.5%	104.3%	133.5%	176.0%	229.6%	322.3%	427.2%	515.1%	582.9%
Economic Profit (EP):													
Beginning IC	20307	49169	78327	110465	106420	107087	100679	90254	80168	65327	53591	47285	43355
x (ROIC - WACC)	284.7%	137.2%	81.1%	61.1%	77.8%	94.7%	123.9%	166.4%	219.9%	312.7%	417.5%	505.4%	573.2%
EP	57822	67460	63537	67452	82825	101389	124700	150172	176319	204262	223764	239000	248523

Microsoft Corporation (MSFT)

Weighted Average Cost of Capital (WACC) Estimation

Cost of Equity:

Risk-Free Rate	4.63%
Beta	1.03
Equity Risk Premium	5.00%
Cost of Equity	9.78%

ASSUMPTIONS:

US 10 Year Treasury as of 10/1/2023
 Avg. of 5yr monthly beta and 1,2,3 weekly betas
 HF consensus estimate

Cost of Debt:

Risk-Free Rate	4.63%
Implied Default Premium	-0.02%
Pre-Tax Cost of Debt	4.61%
Marginal Tax Rate	21%
After-Tax Cost of Debt	3.65%

US 10 Year Treasury as of 10/1/2023

FactSet estimate, derived from outstanding bonds

Market Value of Common Equity:

Total Shares Outstanding	7446
Current Stock Price	\$331.16
MV of Equity	2,465,817.36

MV Weights

97.56%

Market Value of Debt:

Long-Term Debt	41990
Current Portion of LTD	5247
PV of Operating Leases	14346
MV of Total Debt	61,583.00

2.44%

Market Value of the Firm

2,527,400.36

100.00%

Estimated WACC

9.63%

Microsoft Corporation (MSFT)

Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

Key Inputs:

CV Growth of NOPLAT	3.75%
CV Year ROIC	582.86%
WACC	9.63%
Cost of Equity	9.78%

Fiscal Years Ending Dec. 31	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
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DCF Model:

Free Cash Flow (FCF)	82134	92406	118109	144820	168949	198880	222288	235232	247483	252384
Continuing Value (CV)										4273661
PV of FCF	74919	76886	89639	100258	106688	114557	116794	112738	108191	1868300
Value of Operating Assets:	2768969									
Non-Operating Adjustments										
Plus: Excess Cash	19814									
Plus: ST Investments	76558									
Plus: Equity Investments	9879									
Less: Current portion of LT Debt	-5247									
Less: Operating Lease Liab.	-12728									
Less: Long-term debt	-41990									
Less: PV of operating leases	-606									
Less: Long-term tax payable	-25560									
Less: ESOP	-1199									
Value of Equity	2787890									
Shares Outstanding	7432									
Intrinsic Value of Last FYE	\$ 375.12									
Implied Price as of Today	\$ 384.30									

EP Model:

Economic Profit (EP)	67452	82825	101389	124700	150172	176319	204262	223764	239000	248523
Continuing Value (CV)										4230306
PV of EP	61527	68914	76949	86329	94830	101561	107322	107242	104483	1849346
Total PV of EP	2658504									
Invested Capital (last FYE)	110465									
Value of Operating Assets:	2768969									
Non-Operating Adjustments										
Plus: Excess Cash	19814									
Plus: ST Investments	76558									
Plus: Equity Investments	9879									
Less: Current portion of LT Debt	-5247									
Less: Operating Lease Liab.	-12728									
Less: Long-term debt	-41990									
Less: PV of operating leases	-606									
Less: Long-term tax payable	-25560									
Less: ESOP	-1199									
Value of Equity	2787890									
Shares Outstanding	7432									
Intrinsic Value of Last FYE	\$ 375.12									
Implied Price as of Today	\$ 384.30									

Microsoft Corporation (MSFT)

Dividend Discount Model (DDM) or Fundamental P/E Valuation Model

Fiscal Years Ending Dec. 31	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
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EPS	\$ 10.68	\$ 12.66	\$ 15.17	\$ 18.18	\$ 21.41	\$ 24.72	\$ 28.18	\$ 30.53	\$ 32.37	\$ 33.47
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Key Assumptions

CV growth of EPS	3.39%
CV Year ROE	18.13%
Cost of Equity	9.78%

Future Cash Flows

P/E Multiple (CV Year)										12.72
EPS (CV Year)										\$ 33.47
Future Stock Price										\$ 425.74
Dividends Per Share	3.00	3.30	3.63	4.00	4.40	4.85	5.33	5.87	6.46	7.11
Discounted Cash Flows	3.01	3.02	3.02	3.03	3.04	3.05	3.06	3.06	3.07	\$ 183.85

Intrinsic Value as of Last FYE	\$ 211.21
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Implied Price as of Today	\$ 216.38
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Microsoft Corporation (MSFT)
Relative Valuation Models

Ticker	Company	Price	EPS 2023E	EPS 2024E	P/E 23	P/E 24	Est. 5yr EPS gr.	PEG 23	PEG 24
AAPL	Apple Inc.	\$177.49	\$6.06	\$6.55	29.29	27.10	7.4	3.96	3.66
AMZN	Amazon.com, Inc	\$127.96	\$2.21	\$3.16	57.90	40.49	49.8	1.16	0.81
GOOGL	Alphabet Inc.	\$137.58	\$5.68	\$6.72	24.22	20.47	18.4	1.32	1.11
IBM	International Business Machines Corporation	\$142.03	\$9.57	\$10.06	14.84	14.12	3.4	4.37	4.15
META	Meta Platforms Inc.	\$315.43	\$13.47	\$16.83	23.42	18.74	31.8	0.74	0.59
ORCL	Oracle Corporation	\$109.96	\$5.56	\$6.25	19.78	17.59	10.9	1.82	1.62
CRM	Salesforce, Inc.	\$207.36	\$8.02	\$9.37	25.86	22.13	26.4	0.98	0.84
INTU	Intuit	\$533.30	\$16.37	\$18.60	32.58	28.67	14.7	2.22	1.95
Average					28.48	23.67		2.07	1.84

MSFT	Microsoft Corporation (MSFT)	\$331.16	\$9.72	\$10.68	34.1	31.0	14.4	2.4	2.2
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Implied Relative Value:

P/E (EPS23)	\$ 276.87
P/E (EPS24)	\$ 252.79
PEG (EPS23)	\$ 289.72
PEG (EPS24)	\$ 283.46

Microsoft Corporation (MSFT)

Key Management Ratios

Fiscal Years Ending Dec. 31	2017	2018	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Liquidity Ratios:																	
Current Ratio (CA/CL)	2.48	2.90	2.53	2.52	2.08	1.78	1.77	2.19	2.64	3.01	3.33	3.79	3.74	4.11	4.54	4.99	5.48
Quick Ratio (CA - Inv) / CL	2.44	2.86	2.50	2.49	2.05	1.75	1.75	2.16	2.61	2.99	3.30	3.75	3.72	4.09	4.51	4.96	5.45
Cash Ratio (Cash + Mkt. Sec.) / CL	2.06	2.29	1.93	1.89	1.47	1.10	1.07	1.51	1.96	2.35	2.70	3.14	3.19	3.56	3.98	4.43	4.92
Asset-Management Ratios:																	
Asset Turnover (Net Sales / Avg. Total Assets)		0.96	1.02	1.11	1.20	1.26	1.30	1.24	1.11	0.96	0.81	0.00	0.00	0.00	0.00	0.00	0.00
Inventory Turnover (COGS / Avg. Inv)		11.60	13.22	16.82	17.90	15.11	16.66	18.80	17.01	17.88	17.93	17.52	17.63	17.40	17.04	16.92	16.72
Accounts Receivable Turnover (Sales / Avg. AR)		4.77	4.49	4.65	4.80	4.82	4.56	4.66	4.75	4.75	4.74	4.73	4.70	4.65	4.56	4.52	4.47
Financial Leverage Ratios:																	
Debt-to-Equity Ratio (ST debt + LT debt / TSE)	1.07	0.92	0.71	0.54	0.41	0.30	0.23	0.18	0.14	0.12	0.11	0.08	0.11	0.09	0.08	0.07	0.06
Debt-to-Asset Ratio (ST debt + LT debt / Assets)	0.32	0.29	0.25	0.21	0.17	0.14	0.11	0.10	0.08	0.07	0.07	0.05	0.07	0.06	0.05	0.05	0.05
Profitability Ratios:																	
Return on Equity (NI/Beg TSE)		22.9%	47.4%	43.3%	51.8%	51.2%	43.4%	38.5%	35.5%	33.2%	31.5%	29.5%	27.4%	25.5%	22.9%	20.4%	18.1%
Return on Assets (NI / Total Assets)	8.8%	6.4%	13.7%	14.7%	18.4%	19.9%	17.6%	16.0%	15.8%	15.5%	15.3%	15.2%	14.3%	14.0%	13.3%	12.5%	11.6%
Operating Profit Margin (Opr. Profit / Sales)	24.8%	31.8%	34.1%	37.0%	41.6%	42.1%	41.8%	41.4%	42.4%	43.4%	44.8%	45.7%	46.3%	47.4%	48.0%	48.4%	48.8%
Net Profit Margin (Net Income / Sales)	23.6%	15.0%	31.2%	31.0%	36.5%	36.7%	34.1%	33.1%	33.9%	34.7%	35.7%	36.5%	36.9%	37.8%	38.3%	38.6%	38.9%
Payout Policy Ratios:																	
Dividend Payout Ratio (Dividend/EPS)	56.9%	78.1%	36.0%	35.1%	27.6%	25.6%	28.0%	28.1%	26.1%	24.0%	22.0%	20.6%	19.6%	18.9%	19.2%	20.0%	21.2%
Total Payout Ratio ((Divs. + Repurchases)/NI)	111.5%	141.3%	85.0%	86.1%	71.7%	69.9%	58.1%	28.1%	26.1%	23.9%	22.0%	20.5%	19.6%	18.9%	19.2%	19.9%	21.2%

Microsoft Corporation (MSFT)

Present Value of Operating Lease Obligations

Fiscal Years Ending Dec. 31	2016	2017	2018	2019	2020
Year 1	360.0	370.0	380.0	390.0	400.0
Year 2	310.0	320.0	330.0	340.0	350.0
Year 3	255.0	260.0	265.0	270.0	275.0
Year 4	205.0	210.0	215.0	220.0	225.0
Year 5	124.0	128.0	132.0	136.0	140.0
Thereafter	350.0	360.0	370.0	380.0	390.0
Total Minimum Payments	1604.0	1648.0	1692.0	1736.0	1780.0
Less: Cumulative Interest	227.2	233.4	239.6	245.7	251.9
PV of Minimum Payments	1376.8	1414.6	1452.4	1490.3	1528.1
Implied Interest in Year 1 Payment		63.5	65.2	67.0	68.7
Pre-Tax Cost of Debt	4.61%	4.61%	4.61%	4.61%	4.61%
Years Implied by Year 6 Payment	2.8	2.8	2.8	2.8	2.8
Expected Obligation in Year 6 & Beyond	124	128	132	136	140
Present Value of Lease Payments					
PV of Year 1	344.1	353.7	363.3	372.8	382.4
PV of Year 2	283.3	292.4	301.6	310.7	319.8
PV of Year 3	222.8	227.1	231.5	235.9	240.2
PV of Year 4	171.2	175.4	179.5	183.7	187.9
PV of Year 5	99.0	102.2	105.4	108.6	111.8
PV of 6 & beyond	256.5	263.9	271.2	278.6	286.0
Capitalized PV of Payments	1376.8	1414.6	1452.4	1490.3	1528.1

Microsoft Corporation (MSFT)

Effects of ESOP Exercise and Share Repurchases on Common Stock Account and Number of Shares Outstanding

Number of Options Outstanding (shares): 96
Average Time to Maturity (years): 3.00
Expected Annual Number of Options Exercised: 32

Current Average Strike Price: \$ 311.30
Cost of Equity: 9.78%
Current Stock Price: \$331.16

Fiscal Years Ending Dec. 31	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Increase in Shares Outstanding:	32	32	32	32	32	32	32	32	32	32
Average Strike Price:	\$ 311.30	\$ 311.30	\$ 311.30	\$ 311.30	\$ 311.30	\$ 311.30	\$ 311.30	\$ 311.30	\$ 311.30	\$ 311.30
Increase in Common Stock Account:	9,961	9,961	9,961	9,961	9,961	9,961	9,961	9,961	9,961	9,961
Share Repurchases (\$)	8,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Expected Price of Repurchased Shares:	\$ 331.16	\$ 360.56	\$ 392.58	\$ 427.44	\$ 465.39	\$ 506.71	\$ 551.70	\$ 600.68	\$ 654.02	\$ 712.09
Number of Shares Repurchased:	24	11	10	9	9	8	7	7	6	6
Shares Outstanding (beginning of the year)	7,432	7,440	7,461	7,483	7,505	7,529	7,553	7,577	7,603	7,629
Plus: Shares Issued Through ESOP	32	32	32	32	32	32	32	32	32	32
Less: Shares Repurchased in Treasury	24	11	10	9	9	8	7	7	6	6
Shares Outstanding (end of the year)	7,440	7,461	7,483	7,505	7,529	7,553	7,577	7,603	7,629	7,655

Microsoft Corporation (MSFT)

Valuation of Options Granted under ESOP

Current Stock Price	\$331.16
Risk Free Rate	4.63%
Current Dividend Yield	0.90%
Annualized St. Dev. of Stock Returns	25.10%

Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted
Range 1	5,007,656	287.97	3.00	\$ 93.01	\$ 465,754,237
Range 2	5,355,638	314.26	3.00	\$ 79.23	\$ 424,325,025
Range 3	4,416,960	334.15	3.00	\$ 69.96	\$ 309,009,630
Total	14,780,254	\$ 311.30	3.00	\$ 87.15	\$ 1,199.09