

|  |    |
|--|----|
| Company Note   | 2  |
| Investment Thesis  | 5  |
| Company Overview   | 6  |
| Financial Data   | 7  |
| Financial Analysis   | 8  |
| Ratings History  | 9  |
| Tigress Research Methodology Overview                                      | 10 |
| Glossary of Key Terms and Measures   | 10 |
| Analyst Certification  | 11 |
| Research Disclosures   | 11 |
| Tigress Research Investment Rating Meanings and Distribution               | 11 |
| Specific Disclosures for the companies that are the subject of this Report | 12 |
| Research Report Disclaimer   | 13 |
| About Tigress Financial Partners LLC                                       | 13 |

**Microsoft Corporation (MSFT-US)****Software**

- We reiterate our Buy rating as MSFT continues to benefit from strong gains in cloud services, operating system, and Office 365 subscribers.
- The ongoing growth of MSFT's user base of key applications, including Office 365, Dynamics, Outlook Mobile, and Teams, along with tremendous Azure adoption, continues to drive accelerating Business Performance.
- MSFT's recent Department of Defense JEDI contract further validates the strength and industry-leading position of its Azure cloud platform.
- MSFT continues to gain ground in mobile hardware and recently introduced an impressive upgrade to its existing line of Surface Laptops and Tablets.
- MSFT's Productivity and Business Processes continues to see impressive growth.
- MSFT's More Personal Computing saw strong incremental gains in the most recent quarter.
- MSFT's strong balance sheet and cash flow will continue to fund ongoing growth and acquisition initiatives while enhancing shareholder returns through further dividend increases and share repurchases.

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**Company Note**
**Microsoft Corporation (MSFT-US)**  
 Software

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**Research Action:**

Reiterate rating

Rating: Buy

Prior Rating: Buy

Price 12/20/2019: \$157.41

52 Week High / Low: \$158.49 / \$93.96

**Key Data: (TTM as of Sep-19)**

Excess Cash per Share: \$17.40

Annual Dividend: \$2.04

Dividend Yield: 1.30%

Avg. Volume (30 Day): 22.4M

Shares Outstanding: 7,628.8M

Float: 7,513.5M

Short Interest: 61.1M

SI % / Float 0.81%

Equity MV: \$1,200,851.0M

Sales TTM: \$129,570.0M

Beta: 1.01

EBITDAR: \$79,489.8M

NOPAT: \$43,186.2M

Total Invested Capital: \$210,939.6M

Return on Capital: 22.32%

Cost of Capital: 6.30%

Economic Profit: \$31,002.6M

Market Value Added: \$1,083,557.4M

Current Operations Value: \$685,690.1M

Future Growth Value: \$608,806.8M

- **We reiterate our Buy rating as MSFT continues to benefit from strong gains in cloud services, operating system, and Office 365 subscribers.** MSFT recently reported strong Q1 results with revenue and earnings beating Street consensus, and Azure grew by 59% Y/Y. Microsoft also guided higher and expects strong Q2 growth, driven by strength in Productivity and Business processes and its Intelligent Cloud. MSFT Azure continues to represent a key upside catalyst, and its recently announced Department of Defense JEDI contract win further highlights its leadership position. Recent acquisitions, including GitHub and PlayFair, are also incremental growth drivers. MSFT's gaming segment also continues to perform well as it continues to drive user engagement with increasing subscriptions to its online gaming services including Xbox Live, Game Pass, and Mixer, along with a recent announcement of the new Surface product line introductions. MSFT also recently announced an 11% dividend increase and a new \$40 billion share repurchase authorization which further enhances shareholder returns. MSFT continues to benefit from a growing user base of its industry and market-leading applications, including Dynamics, Office 365, and most importantly, Azure cloud adoption. Ongoing Artificial Intelligence continues to drive increasing Azure adoptions and collaborations with key cloud service providers. Azure's growing customer base continues to be a significant catalyst. MSFT will continue to generate increasing Economic Profit and greater shareholder value creation. We believe further upside exists from current levels and continue to recommend purchase.
- **The ongoing growth of MSFT's user base of key applications, including Office 365, Dynamics, Outlook Mobile, and Teams, along with tremendous Azure adoption, continues to drive accelerating Business Performance.** For the 12 months ending September 2019, Net Sales Revenue increased 12.92% Y/Y from \$114.74 billion to \$129.57 billion. We forecast a further increase of 12.28% to \$145.48 billion over the NTM. Economic Operating Cash Flow (EBITDAR) increased 18.41% Y/Y from \$47.61 billion to \$79.49 billion over the LTM. We forecast a further increase of 12.41% to \$89.35 billion over the NTM. Net Operating Profit After Tax (NOPAT) increased 61.89% Y/Y from \$26.68 billion to \$43.19 billion over the LTM. We forecast a further increase of 16.15% to \$50.16 billion over the NTM. Return on Capital (ROC) increased from 14.17% to 22.32% over the LTM. We forecast a further increase to 23.32% over the NTM. Economic Profit (EP) increased 129.98% Y/Y from \$13.48 billion to \$31.00 billion over the LTM. We forecast a further increase of 12.54% to \$34.89 billion over the NTM.

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**Microsoft Corporation (MSFT-US)****Software**

- **MSFT's recent Department of Defense JEDI contract further validates the strength and industry-leading position of its Azure cloud platform.** MSFT beat out other leading cloud service providers, including Amazon's (AMZN-US, Buy Rated) AWS, winning the highly coveted JEDI (Joint Enterprise Defense Infrastructure) contract from the U.S. Department of Defense. The contract is worth \$10 billion over ten years and provides the Department of Defense with MSFT's Azure web platform for IaaS/PaaS (Infrastructure as a Service/Platform as a Service) hosted capabilities. While it may not be viewed as financially significant, the win is further validation of both Azure's leading position as a hyper-scale cloud service provider and that it is gaining ground on AWS. The JEDI win gives MSFT further momentum for other federal and state agencies along with other major enterprise wins. MSFT's JEDI win and continued, significant Azure growth further highlights Azure's position as the most advanced and secure cloud offering on the market, offering industry-leading development capabilities with integrated AI functionality and a high level of compliant security. In the most recent quarter, MSFT's Intelligent Cloud experienced a 30% increase in services revenue driven by Azure growth of 59%. MSFT's cloud edge solutions, including Azure Stack and Azure Sphere, are driving strong customer demand. MSFT continues to improve Azure's data analytics capabilities and AI functionality with Azure Cognitive Services, Azure Machine Learning, and new data services, including Azure Cosmos DB, to help its customers develop new insights and predictive abilities from their data sets.
- **MSFT continues to gain ground in mobile hardware and recently introduced an impressive upgrade to its existing line of Surface Laptops and Tablets.** In October, MSFT introduced a new Surface Laptop 3 in both 13-inch and 15-inch versions, powered by an Intel (INTC-US, Buy Rated) quad-core processor, making it twice as fast as the previous generation Surface laptop and three times faster than Apple's (AAPL-US, Strong Buy Rated) MacBook Air. MSFT also introduced the Surface Pro 7 upgrade to its line of tablets and the wirelessly connected Surface Pro 7X, both incorporating increased pen-based functionality. The surface Pro 7X uses a custom Qualcomm (QCOM-US, Buy Rated) -made SQ1 Snapdragon processor. MSFT also announced its new Surface Earbuds that work with any platform, including Amazon's Alexa, Google (GOOGL-US, Strong Buy Rated) Assistant, and Apple's Siri. The new Surface Earbuds have 24-hour battery life and can control connected devices using gestures and will be available in Spring 2020 for \$249.

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The highlight of the event was MSFT's introduction of its Surface Neo, a foldable dual-screen surface laptop, and the Surface Duo, a smartphone-sized dual-screen foldable phone, both of which highlight the future of MSFT's focus and new products. The new Surface Duo will use Google's Android operating system and marks the first time both companies that are fierce competitors are collaborating on a new product launch. While the Duo and Neo will not be available to the fall of 2020, the impressive new product launch and future products continue to highlight the strength of MSFT's innovative ability and further integration of both its Office productivity suite and its Windows 10 operating system to mobile devices.

- **MSFT's Productivity and Business Processes continues to see impressive growth.** Office Commercial revenue increased 13% Y/Y, driven by a 25% Y/Y gain in Office 365 revenue. Office 365 increased 5% Y/Y, and Office 365 subscribers hit 35.6 million. LinkedIn revenue increased by 25% Y/Y driven ongoing levels of strong engagement. Dynamics revenue increased 14% Y/Y, driven by a 41% Y/Y gain in Dynamics 365. LinkedIn continues to be a key contributor to growth as it sees record levels of user engagement and job postings. The increasing quality of newsfeeds drives the increased engagement of LinkedIn, along with video content, messaging, and significant increases in mobile usage. MSFT will continue to invest in driving further growth of LinkedIn to make it the world's professional interactive platform. MSFT continues to integrate LinkedIn within its other products, including Sales Navigator, Dynamic 365 for Sales, and Dynamics for Talent Search, as well as the launch of Profile Card to bring personalized LinkedIn insights directly into Office 365. MSFT's new Resume Assistant helps people build resumes online in LinkedIn via Office 365 as well.
- **MSFT's More Personal Computing saw strong incremental gains in the most recent quarter.** Windows OEM revenue increased by 9% Y/Y, and Windows Commercial increased by 26% Y/Y, up significantly from the prior quarter. Sales of Surface declined 1% but should see an upturn in the next quarter that will be driven by several key new product introductions. Search advertising revenue net of TAC (Traffic Acquisition Costs) increased by 11% Y/Y. Gaming increased just 1% but reversed a 10% decline last year. MSFT's leading gaming position should make increasingly positive contributions as MSFT's Xbox One X remains the most technologically advanced and powerful gaming console ever built and is outselling competitors' gaming console offerings. MSFT continues to invest in empowering the world's two billion gamers to provide them the ability to play any game they want with anyone, anywhere, and on any device with its new game streaming service. Project xCloud will launch this fall with public trials, and Xbox Live now has a record 65 million users with the highest number of PC and mobile users to date as of the FY year-end.

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Microsoft Corporation (MSFT-US)

Software

- **MSFT's strong balance sheet and cash flow will continue to fund ongoing growth and acquisition initiatives while enhancing shareholder returns through further dividend increases and share repurchases.** As of September 2019, MSFT had over \$132.84 billion, or \$17.40 per share, in excess cash and we expect it will generate Economic Operating Cash Flow (EBITDAR) of more than \$89 billion over the NTM, which will continue to drive ongoing growth initiatives and strategic acquisitions as well as the ongoing return of cash to shareholders. In September, MSFT increased its quarterly dividend 11% from \$0.46 a share to \$0.51 a share, which followed a 9.5% dividend increase in June 2018. In September, MSFT's board approved an additional \$40 billion share repurchase, which will have no expiration date. In FY2019, MSFT repurchased \$19.54 billion worth of stock, up significantly from the \$10.72 billion repurchased in FY 2018. So far, in Q12020, MSFT as repurchased \$4.9 billion worth of stock.

### Investment Thesis

MSFT continues to drive greater revenue growth through an evolving software as a service (SaaS) model with the launch of Office 365 and its industry-leading Azure cloud platform. MSFT is expanding its innovative capabilities to drive greater in-home and enterprise presence. MSFT is expanding its focus and presence away from the consumer and moving toward more profitable enterprise and cloud-based services. Enterprise services now account for more than half of MSFT's total revenue, driven by its strong market share across cloud, database, office, and OS. MSFT continues to gain a dominant position in the enterprise space, driven by its increasingly broad and powerful line of cloud-based product offerings. MSFT also benefits from incremental growth drivers, including LinkedIn, gaming, and hardware sales through its innovative Surface product line. MSFT's increasing margins through service-based offerings which will continue to drive greater Economic Profit and increasing shareholder value creation.

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**Company Overview**

**Microsoft Corp. (MSFT-US)** develops, sells, licenses, and supports operating systems, server applications, business, and consumer applications, software development tools, and intranet and internet software. Microsoft also manufactures the Xbox video game console, the Surface line of tablets and laptops, and other computer peripherals.

Microsoft operates the industry-leading cloud computing platform, Azure, offering application development and management through a hosted global network of Microsoft managed data centers. Microsoft operates several online and media services, including the MSN network, MSNBC, and Xbox 360 Live. Microsoft produces the world's leading business productivity software suite, Microsoft Office 365.

Microsoft competes and sells its products globally, and its customers include the world's largest corporations, global governments, small businesses, and consumers.

In 2016 Microsoft acquired business social network LinkedIn, increasing its capabilities to compete with relationship-oriented software by providers such as Salesforce. LinkedIn is part of Office 365 in the Windows ecosystem.

**Microsoft operates and reports revenue under three Business Segments:**

**Intelligent Cloud:** (29.2% of revenues) includes server and enterprise products and services.

**More Personal Computing:** (38.3% of revenues) includes the Windows operating system, Xbox 360 game console, Xbox 360 live online gaming platform, and its Bing search business.

**Productivity & Business Processes:** (32.5% of revenues) includes the Office business productivity suite and Dynamics CRM businesses.

**Microsoft reports revenue by two Geographic Segments:** United States (51% of revenue) and Other Countries (49% of revenue).



Company Report – Research Update

Microsoft Corporation (MSFT-US)

Software

Financial Data

| Report Basis                                      | LTM         | LTM         | LTM          | LTM         | LTM         | LTM           | NTM           | 5 Yr        | 3 Yr        | Current       |
|---|-------------|-------------|--------------|-------------|-------------|---------------|---------------|-------------|-------------|---------------|
| Reported Period Ending                            | 09/30/2014  | 09/30/2015  | 09/30/2016   | 09/30/2017  | 09/30/2018  | 09/30/2019    | 09/30/2020    | Average     | Average     | Trend         |
| <b>Net Sales Revenue</b>                          | \$91,404.0  | \$90,057.0  | \$84,803.0   | \$93,444.0  | \$114,740.0 | \$129,570.0   | \$145,475.3   | \$102,522.8 | \$112,584.7 | \$137,522.7   |
| Sales Growth                                      | 13.98%      | -1.47%      | -5.83%       | 10.19%      | 22.79%      | 12.92%        | 7.2%          | 7.2%        | 15.30%      | 12.60%        |
| Sales Growth Trend                                | 12.75%      | 4.71%       | -4.09%       | 3.78%       | 17.75%      | 16.87%        | 12.54%        | 7.80%       | 12.80%      | 14.70%        |
| <b>Cash Operating Expenses</b>                    | \$43,697.0  | \$44,002.3  | \$43,313.4   | \$41,321.1  | \$47,610.8  | \$50,080.2    | \$56,124.4    | \$45,265.5  | \$46,337.3  | \$53,102.3    |
| % of Sales  | 47.81%      | 48.86%      | 51.08%       | 44.22%      | 41.49%      | 38.65%        | 38.58%        | 44.86%      | 41.46%      | 38.62%        |
| <b>Operating Cash Flow (EBITDAR)</b>              | \$47,707.0  | \$46,054.7  | \$41,489.6   | \$52,122.9  | \$67,129.2  | \$79,489.8    | \$89,350.9    | \$57,257.3  | \$66,247.3  | \$84,420.4    |
| EBITDAR Margin                                    | 52.19%      | 51.14%      | 48.92%       | 55.78%      | 58.51%      | 61.35%        | 61.42%        | 55.14%      | 58.54%      | 61.38%        |
| EBITDAR Growth                                    | 8.79%       | -3.46%      | -9.91%       | 25.63%      | 28.79%      | 18.41%        | 12.41%        | 11.89%      | 24.28%      | 15.41%        |
| <b>Economic Operating Expenses</b>                | \$18,239.0  | \$18,922.0  | \$20,109.0   | \$24,035.0  | \$27,313.0  | \$30,987.0    | \$32,513.7    | \$24,273.2  | \$27,445.0  | \$31,750.4    |
| % of Sales  | 19.95%      | 21.01%      | 23.71%       | 25.72%      | 23.80%      | 23.92%        | 22.35%        | 23.63%      | 24.48%      | 23.13%        |
| <b>Net Operating Profit Before Tax (NOPBT)</b>    | \$29,468.0  | \$27,132.7  | \$21,380.6   | \$28,087.9  | \$39,816.2  | \$48,502.8    | \$56,837.2    | \$32,984.1  | \$38,802.3  | \$52,670.0    |
| NOPBT Margin                                      | 32.24%      | 30.13%      | 25.21%       | 30.06%      | 34.70%      | 37.43%        | 39.07%        | 31.51%      | 34.06%      | 38.25%        |
| NOPBT Growth                                      | 3.68%       | -7.92%      | -21.20%      | 31.37%      | 41.76%      | 21.82%        | 17.18%        | 13.16%      | 31.65%      | 19.50%        |
| <b>Cash Operating Income Tax</b>                  | \$6,407.7   | \$8,759.3   | \$3,275.5    | \$2,958.1   | \$13,139.4  | \$5,316.6     | \$6,678.4     | \$6,689.8   | \$7,138.0   | \$5,997.5     |
| Economic Tax Effective Rate                       | 21.74%      | 32.28%      | 15.32%       | 10.53%      | 33.00%      | 10.96%        | 11.75%        | 20.42%      | 18.16%      | 11.36%        |
| <b>Net Operating Profit After Tax (NOPAT)</b>     | \$23,060.3  | \$18,373.4  | \$18,105.2   | \$25,129.8  | \$26,676.9  | \$43,186.2    | \$50,158.8    | \$26,294.3  | \$31,664.3  | \$46,672.5    |
| NOPAT Margin                                      | 25.23%      | 20.40%      | 21.35%       | 26.89%      | 23.25%      | 33.33%        | 34.48%        | 25.04%      | 27.82%      | 33.90%        |
| NOPAT Growth                                      | 0.07%       | -20.32%     | -1.46%       | 38.80%      | 6.16%       | 61.89%        | 16.15%        | 17.01%      | 35.61%      | 39.02%        |
| <b>Cash &amp; Equivalents</b>                     | \$103,136.0 | \$110,793.0 | \$147,418.0  | \$143,814.0 | \$137,914.0 | \$139,320.0   | \$156,784.1   | \$135,851.8 | \$140,349.3 | \$148,052.0   |
| <b>Total Assets</b>                               | \$169,656.0 | \$172,896.0 | \$212,524.0  | \$249,097.0 | \$257,619.0 | \$278,955.0   | \$313,922.6   | \$234,218.2 | \$261,890.3 | \$296,438.8   |
| <b>Non - Interest Bearing Liabilities (NIBLs)</b> | \$49,467.0  | \$50,559.0  | \$59,773.0   | \$63,352.0  | \$75,920.0  | \$78,351.0    | \$88,172.5    | \$65,591.0  | \$72,541.0  | \$83,261.7    |
| <b>Net Assets</b>                                 | \$120,189.0 | \$122,337.0 | \$152,751.0  | \$185,745.0 | \$181,699.0 | \$200,604.0   | \$225,750.2   | \$168,627.2 | \$189,349.3 | \$213,177.1   |
| <b>Economic Asset Adjustments</b>                 | \$4,736.1   | \$6,475.3   | \$8,788.6    | \$13,603.5  | \$10,626.1  | \$10,335.6    | \$11,631.2    | \$9,965.8   | \$11,521.7  | \$10,983.4    |
| <b>Net Operating Assets</b>                       | \$124,925.1 | \$128,812.3 | \$161,539.6  | \$199,348.5 | \$192,325.1 | \$210,939.6   | \$237,381.3   | \$178,593.0 | \$200,871.1 | \$224,160.5   |
| <b>Debt &amp; Debt Equivalents</b>                | \$27,672.1  | \$43,210.3  | \$81,319.6   | \$95,542.5  | \$94,821.1  | \$93,646.6    | \$105,385.4   | \$81,708.0  | \$94,670.1  | \$99,516.0    |
| <b>Equity &amp; Equivalents</b>                   | \$90,170.0  | \$77,445.0  | \$70,372.0   | \$89,647.0  | \$85,967.0  | \$106,061.0   | \$119,356.0   | \$85,898.4  | \$93,891.7  | \$112,708.5   |
| <b>Total Capital - Financing Sources</b>          | \$117,842.1 | \$120,655.3 | \$151,691.6  | \$185,189.5 | \$180,788.1 | \$199,707.6   | \$224,741.4   | \$167,606.4 | \$188,561.7 | \$212,224.5   |
| <b>Capital Adjustments</b>                        | \$784.0     | \$1,832.0   | \$3,191.0    | \$6,809.0   | \$3,733.0   | \$2,663.0     | \$2,996.8     | \$6,440.7   | \$4,401.7   | \$2,829.9     |
| <b>Net Capital Financing Sources</b>              | \$118,626.1 | \$122,487.3 | \$154,882.6  | \$191,998.5 | \$184,521.1 | \$202,370.6   | \$227,738.2   | \$171,252.0 | \$192,963.4 | \$215,054.4   |
| <b>Net Working Capital</b>                        | (\$5,061.8) | (\$5,272.2) | (\$12,083.9) | (\$7,381.8) | (\$6,030.0) | (\$8,535.5)   | (\$9,605.4)   | (\$7,860.7) | (\$7,315.8) | (\$9,070.5)   |
| Cost of Net Working Capital                       | (\$265.8)   | (\$329.8)   | (\$580.1)    | (\$649.6)   | (\$470.1)   | (\$458.7)     | (\$516.2)     | (\$497.7)   | (\$526.1)   | (\$487.4)     |
| % of Revenue                                      | -0.29%      | -0.37%      | -0.68%       | -0.70%      | -0.41%      | -0.35%        | -0.35%        | -0.50%      | -0.49%      | -0.35%        |
| <b>Operational Capital</b>                        | \$12,119.3  | \$14,417.2  | \$12,737.8   | \$24,221.7  | \$39,027.1  | \$45,436.1    | \$51,131.6    | \$27,168.0  | \$36,228.3  | \$48,283.8    |
| Cost of Operational Capital                       | \$721.4     | \$847.0     | \$907.6      | \$1,233.4   | \$2,216.8   | \$2,659.8     | \$2,993.3     | \$1,572.9   | \$2,036.7   | \$2,826.5     |
| % of Revenue                                      | 0.79%       | 0.94%       | 1.07%        | 1.32%       | 1.93%       | 2.05%         | 2.06%         | 1.46%       | 1.77%       | 2.06%         |
| <b>Productive Capital</b>                         | \$38,893.3  | \$36,304.2  | \$34,166.8   | \$69,208.7  | \$82,461.1  | \$95,057.1    | \$106,972.7   | \$63,439.6  | \$82,242.3  | \$101,014.9   |
| Cost of Productive Capital                        | \$2,177.4   | \$2,400.2   | \$2,355.3    | \$3,449.8   | \$5,315.8   | \$5,590.2     | \$6,291.0     | \$3,822.3   | \$4,785.3   | \$5,940.6     |
| % of Revenue                                      | 2.38%       | 2.67%       | 2.78%        | 3.69%       | 4.63%       | 4.31%         | 4.32%         | 3.62%       | 4.21%       | 4.32%         |
| <b>Total Operating Capital</b>                    | \$26,359.3  | \$22,522.2  | \$18,361.8   | \$60,206.7  | \$60,148.1  | \$78,098.1    | \$87,887.9    | \$47,867.4  | \$66,151.0  | \$82,993.0    |
| Cost of Total Operating Capital                   | \$1,439.5   | \$1,560.2   | \$1,366.4    | \$2,621.9   | \$4,218.3   | \$4,353.5     | \$4,899.2     | \$2,824.1   | \$3,731.2   | \$4,626.4     |
| % of Revenue                                      | 1.57%       | 1.73%       | 1.61%        | 2.81%       | 3.68%       | 3.37%         | 3.37%         | 2.64%       | 3.28%       | 3.36%         |
| <b>Non - Operating Capital</b>                    | \$98,565.8  | \$106,290.2 | \$143,177.9  | \$139,141.8 | \$132,177.0 | \$132,841.5   | \$149,493.5   | \$130,725.7 | \$134,720.1 | \$141,167.5   |
| Cost of Non - Operating Capital                   | \$6,136.3   | \$6,538.7   | \$8,337.8    | \$9,421.3   | \$9,509.4   | \$8,345.7     | \$9,391.9     | \$8,430.6   | \$9,092.1   | \$8,868.8     |
| % of Revenue                                      | 6.71%       | 7.26%       | 9.83%        | 10.08%      | 8.29%       | 6.44%         | 6.46%         | 8.38%       | 8.27%       | 6.45%         |
| <b>Total Capital</b>                              | \$124,925.1 | \$128,812.3 | \$161,539.6  | \$199,348.5 | \$192,325.1 | \$210,939.6   | \$237,381.3   | \$178,593.0 | \$200,871.1 | \$224,160.5   |
| Cost of Total Capital                             | \$7,575.8   | \$8,099.0   | \$9,704.2    | \$12,043.3  | \$13,727.6  | \$12,699.2    | \$14,291.7    | \$11,254.7  | \$12,823.4  | \$13,495.2    |
| % of Revenue                                      | 8.29%       | 8.99%       | 11.44%       | 12.89%      | 11.96%      | 9.80%         | 9.82%         | 11.02%      | 11.55%      | 9.81%         |
| <b>Cost of Capital (WACC)</b>                     | 6.56%       | 6.38%       | 6.68%        | 6.67%       | 7.01%       | 6.30%         | 6.30%         | 6.61%       | 6.66%       | 6.30%         |
| Weighted After Tax Debt Cost of Capital           | 0.22%       | 0.31%       | 0.59%        | 0.57%       | 0.31%       | 0.28%         | 0.28%         | 0.41%       | 0.39%       | 0.28%         |
| Weighted Preferred Equity Cost of Capital         | 0.00%       | 0.00%       | 0.00%        | 0.00%       | 0.00%       | 0.00%         | 0.00%         | 0.00%       | 0.00%       | 0.00%         |
| Weighted Equity Cost of Capital                   | 6.33%       | 6.08%       | 6.09%        | 6.10%       | 6.70%       | 6.02%         | 6.02%         | 6.20%       | 6.27%       | 6.02%         |
| <b>Capital Structure</b>                          |             |             |              |             |             |               |               |             |             |               |
| <b>Debt &amp; Debt Equivalents</b>                | \$27,672.1  | \$43,210.3  | \$81,319.6   | \$95,542.5  | \$94,821.1  | \$93,646.6    | \$105,385.4   | \$81,708.0  | \$94,670.1  | \$99,516.0    |
| Debt & Debt Equivalents % of Market Value         | 6.75%       | 10.88%      | 15.35%       | 14.25%      | 9.75%       | 8.11%         | 8.11%         | 10.97%      | 10.15%      | 8.11%         |
| <b>Preferred Equity</b>                           | \$0.0       | \$0.0       | \$0.0        | \$0.0       | \$0.0       | \$0.0         | \$0.0         | \$0.0       | \$0.0       | \$0.0         |
| Preferred Equity % of Market Value                | 0.00%       | 0.00%       | 0.00%        | 0.00%       | 0.00%       | 0.00%         | 0.00%         | 0.00%       | 0.00%       | 0.00%         |
| <b>Market Value of Common Equity</b>              | \$381,999.4 | \$353,990.6 | \$448,361.8  | \$574,722.6 | \$878,077.0 | \$1,061,550.9 | \$1,194,618.7 | \$663,340.6 | \$838,116.9 | \$1,128,084.8 |
| Common Equity % of Market Value                   | 93.25%      | 89.12%      | 84.65%       | 85.75%      | 90.25%      | 91.89%        | 91.89%        | 89.03%      | 89.85%      | 91.89%        |
| <b>Total Economic Market Value (MV)</b>           | \$409,671.5 | \$397,201.0 | \$529,681.5  | \$670,265.1 | \$972,898.2 | \$1,155,197.5 | \$1,300,004.1 | \$745,048.6 | \$932,786.9 | \$1,227,600.8 |
| Total %   | 100.00%     | 100.00%     | 100.00%      | 100.00%     | 100.00%     | 100.00%       | 100.00%       | 100.00%     | 100.00%     | 100.00%       |
| <b>Excess Cash</b>                                | \$98,565.8  | \$106,290.2 | \$143,177.9  | \$139,141.8 | \$132,177.0 | \$132,841.5   | \$149,493.5   | \$130,725.7 | \$134,720.1 | \$141,167.5   |
| <b>Economic Enterprise Value</b>                  | \$311,105.7 | \$290,910.8 | \$386,503.6  | \$531,123.3 | \$840,721.2 | \$1,022,356.0 | \$1,150,510.6 | \$614,323.0 | \$798,066.8 | \$1,086,433.3 |
| <b>Ending Capital</b>                             | \$118,626.1 | \$122,487.3 | \$154,882.6  | \$191,998.5 | \$184,521.1 | \$202,370.6   | \$227,738.2   | \$171,252.0 | \$192,963.4 | \$215,054.4   |
| - Beginning Capital                               | \$101,025.6 | \$118,626.1 | \$122,487.3  | \$154,882.6 | \$191,998.5 | \$184,521.1   | \$202,370.6   | \$154,503.1 | \$177,134.1 | \$193,445.9   |
| <b>Average Capital</b>                            | \$109,825.9 | \$120,556.7 | \$138,685.0  | \$173,440.6 | \$188,259.8 | \$193,445.9   | \$215,054.4   | \$162,877.6 | \$185,048.7 | \$204,250.1   |
| <b>Capital Δ</b>                                  | \$17,600.5  | \$3,861.2   | \$32,395.3   | \$37,115.9  | (\$7,477.4) | \$17,849.5    | \$25,367.6    | \$16,748.9  | \$15,829.3  | \$21,608.5    |

Source: Company Data, Financial statements and Tigress Research

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## Company Report – Research Update

### Microsoft Corporation (MSFT-US)

### Software

#### Financial Analysis

| Report Basis  | LTM         | LTM         | LTM          | LTM          | LTM         | LTM           | LTM        | NTM           | 5 Yr        | 3 Yr        | Current       |
|---|-------------|-------------|--------------|--------------|-------------|---------------|------------|---------------|-------------|-------------|---------------|
| Reported Period Ending                              | 09/30/2014  | 09/30/2015  | 09/30/2016   | 09/30/2017   | 09/30/2018  | 09/30/2019    | 09/30/2019 | 09/30/2020    | Average     | Average     | Trend         |
| Return on Market Value (NOPAT / MV)                 | 5.63%       | 4.63%       | 3.42%        | 3.75%        | 2.74%       | 3.74%         |            | 4.21%         | 3.65%       | 3.41%       | 3.97%         |
| Return on Enterprise Value (NOPAT / EV)             | 7.41%       | 6.32%       | 4.68%        | 4.73%        | 3.17%       | 4.22%         |            | 4.75%         | 4.63%       | 4.04%       | 4.49%         |
| Return on Capital (NOPAT / Average Capital)         | 21.00%      | 15.24%      | 13.05%       | 14.49%       | 14.17%      | 22.32%        |            | 23.32%        | 15.86%      | 16.99%      | 22.82%        |
| Cost of Capital (WACC)                              | 6.56%       | 6.38%       | 6.68%        | 6.67%        | 7.01%       | 6.30%         |            | 6.30%         | 6.61%       | 6.66%       | 6.30%         |
| Economic Return Spread                              | 14.44%      | 8.86%       | 6.37%        | 7.81%        | 7.16%       | 16.03%        |            | 18.04%        | 9.25%       | 10.33%      | 17.03%        |
| Capital Charge                                      | \$7,199.2   | \$7,696.0   | \$9,270.4    | \$11,575.8   | \$13,196.5  | \$12,183.6    |            | \$13,710.9    | \$10,784.5  | \$12,318.7  | \$12,947.3    |
| Economic Profit (EP)                                | \$15,861.1  | \$10,677.4  | \$8,834.8    | \$13,554.0   | \$13,480.4  | \$31,002.6    |            | \$34,888.8    | \$15,509.8  | \$19,345.7  | \$32,945.7    |
| Economic Profit Improvement (EPI)                   | (\$545.7)   | (\$5,183.7) | (\$1,842.6)  | \$4,719.2    | (\$73.6)    | \$17,522.2    |            | \$3,886.2     | \$3,028.3   | \$7,389.3   | \$10,704.2    |
| EP Growth   | -3.33%      | -32.68%     | -17.26%      | 53.42%       | -0.54%      | 129.98%       |            | 12.54%        | 26.58%      | 60.95%      | 71.26%        |
| Economic Profit Margin on Sales                     | 17.35%      | 11.86%      | 10.42%       | 14.50%       | 11.75%      | 23.93%        |            | 23.98%        | 14.49%      | 16.73%      | 23.95%        |
| Economic Profit Per Share                           | \$1.91      | \$1.31      | \$1.11       | \$1.75       | \$1.75      | \$4.04        |            | \$4.55        | \$1.99      | \$2.51      | \$4.29        |
| GAAP Earnings Per Share                             | \$2.58      | \$1.50      | \$2.11       | \$2.98       | \$2.44      | \$5.36        |            | \$5.48        | \$2.88      | \$3.59      | \$5.42        |
| Excess Cash Per Share                               | \$11.95     | \$13.29     | \$18.38      | \$18.05      | \$17.23     | \$17.40       |            | \$19.58       | \$16.87     | \$17.56     | \$18.49       |
| <b>Performance Drivers</b>                          |             |             |              |              |             |               |            |               |             |             |               |
| Sales Growth  | 13.98%      | -1.47%      | -5.83%       | 10.19%       | 22.79%      | 12.92%        |            | 12.28%        | 7.72%       | 15.30%      | 12.60%        |
| Sales Growth Trend (ROC Sales Growth)               | 12.75%      | 4.71%       | -4.09%       | 3.78%        | 17.75%      | 16.87%        |            | 12.54%        | 7.80%       | 12.80%      | 14.70%        |
| EBITDAR Margin                                      | 52.19%      | 51.14%      | 48.92%       | 55.78%       | 58.51%      | 61.35%        |            | 61.42%        | 55.14%      | 58.54%      | 61.38%        |
| EBITDAR Growth                                      | 8.79%       | -3.46%      | -9.91%       | 25.63%       | 28.79%      | 18.41%        |            | 18.41%        | 11.89%      | 24.28%      | 15.41%        |
| NOPBT Margin  | 32.24%      | 30.13%      | 25.21%       | 30.06%       | 34.70%      | 37.43%        |            | 39.07%        | 31.51%      | 34.06%      | 38.25%        |
| NOPBT Growth  | 3.68%       | -7.92%      | -21.20%      | 31.37%       | 41.76%      | 21.82%        |            | 17.18%        | 13.16%      | 31.65%      | 19.50%        |
| NOPAT Margin  | 25.23%      | 20.40%      | 21.35%       | 26.89%       | 23.25%      | 33.33%        |            | 34.48%        | 25.04%      | 27.82%      | 33.90%        |
| NOPAT Growth  | 0.07%       | -20.32%     | -1.46%       | 38.80%       | 6.16%       | 61.89%        |            | 16.15%        | 17.01%      | 35.61%      | 39.02%        |
| Economic Profit Margin on Sales (EP / Sales)        | 17.35%      | 11.86%      | 10.42%       | 14.50%       | 11.75%      | 23.93%        |            | 23.98%        | 14.49%      | 16.73%      | 23.95%        |
| Economic Profit Growth                              | -3.33%      | -32.68%     | -17.26%      | 53.42%       | -0.54%      | 129.98%       |            | 12.54%        | 26.58%      | 60.95%      | 71.26%        |
| Economic Return Spread (ROC-WACC)                   | 14.44%      | 8.86%       | 6.37%        | 7.81%        | 7.16%       | 16.03%        |            | 17.03%        | 9.25%       | 10.33%      | 16.53%        |
| Economic Return Ratio (ROC / WACC)                  | 320.32%     | 238.74%     | 195.30%      | 217.09%      | 202.15%     | 354.46%       |            | 370.32%       | 241.55%     | 257.90%     | 362.39%       |
| Economic Profit Momentum (ΔEP/Capital)              | -0.46%      | -4.23%      | -1.19%       | 2.46%        | -0.04%      | 8.66%         |            | 1.71%         | 1.13%       | 3.69%       | 5.18%         |
| Economic Profit Momentum Margin (ΔEP/Sales)         | -0.60%      | -5.76%      | -2.17%       | 5.05%        | -0.06%      | 13.52%        |            | 2.12%         | 2.12%       | 6.17%       | 8.10%         |
| Capital Growth                                      | 17.42%      | 3.25%       | 26.45%       | 23.96%       | -3.89%      | 9.67%         |            | 12.54%        | 11.89%      | 9.91%       | 11.10%        |
| Capital Turns                                       | 0.77X       | 0.74X       | 0.55X        | 0.49X        | 0.62X       | 0.64X         |            | 0.64X         | 0.61X       | 0.58X       | 0.64X         |
| EVC Acceleration Margin                             | -0.68%      | -5.67%      | -2.05%       | 5.56%        | -0.08%      | 15.27%        |            | 3.00%         | 2.08%       | 7.21%       | 9.51%         |
| EVC Acceleration Spread                             | -0.60%      | -4.72%      | -1.53%       | 3.40%        | -0.04%      | 9.31%         |            | 2.01%         | 1.41%       | 4.54%       | 5.78%         |
| <b>Risk Factors</b>                                 |             |             |              |              |             |               |            |               |             |             |               |
| Free Cash Flow (NOPAT - Δ Capital)                  | \$5,459.8   | \$14,512.2  | (\$14,290.1) | (\$11,986.1) | \$34,154.3  | \$25,336.8    |            | \$24,791.2    | \$9,545.4   | \$15,835.0  | \$25,064.0    |
| Free Cash Flow Rate (FCF / Capital)                 | 4.60%       | 11.85%      | -9.23%       | -6.24%       | 18.51%      | 12.52%        |            | 10.89%        | 5.48%       | 8.26%       | 11.70%        |
| Free Cash Flow Yield (FCF / MV)                     | 1.33%       | 3.65%       | -2.70%       | -1.79%       | 3.51%       | 2.19%         |            | 2.19%         | 0.97%       | 1.31%       | 2.05%         |
| Total Debt / Total Capital                          | 23.33%      | 35.28%      | 52.50%       | 49.76%       | 51.39%      | 46.27%        |            | 46.27%        | 47.04%      | 49.14%      | 46.27%        |
| Total Debt / EBITDAR                                | 58.00%      | 93.82%      | 196.00%      | 183.30%      | 141.25%     | 117.81%       |            | 117.95%       | 146.44%     | 147.45%     | 117.88%       |
| Excess Cash   | \$98,565.8  | \$106,290.2 | \$143,177.9  | \$139,141.8  | \$132,177.0 | \$132,841.5   |            | \$0.0         | \$130,725.7 | \$134,720.1 | \$66,420.8    |
| Financial Leverage ((Total Debt - Excess Cash) / E) | -17.31%     | -15.88%     | -11.68%      | -6.50%       | -3.84%      | -3.39%        |            | 8.11%         | -8.26%      | -4.58%      | 2.36%         |
| Pension Leverage (Net Pension Liability / MV)       | 0.00%       | 0.00%       | 0.00%        | 0.00%        | 0.00%       | 0.00%         |            | 0.00%         | 0.00%       | 0.00%       | 0.00%         |
| Equity Risk Index (S&P 500 = 1.00)                  | 1.03        | 1.03        | 1.03         | 1.03         | 1.03        | 1.03          |            | 1.03          | 1.03        | 1.03        | 1.03          |
| Stock Price Volatility                              | 2.95        | 3.35        | 3.52         | 2.34         | 2.44        | 2.68          |            | 2.68          | 2.87        | 2.48        | 2.68          |
| Sales Index (NL Sales)                              | 11.42       | 11.41       | 11.35        | 11.45        | 11.65       | 11.77         |            | 11.89         | 11.52       | 11.62       | 11.83         |
| Market Value Index (NL Market Value)                | 12.92       | 12.89       | 13.18        | 13.42        | 13.79       | 13.96         |            | 14.08         | 13.45       | 13.72       | 14.02         |
| Size Index (NL Sales: MV)                           | 12.17       | 12.15       | 12.26        | 12.43        | 12.72       | 12.87         |            | 12.98         | 12.49       | 12.67       | 12.92         |
| Beta  | 1.04        | 1.04        | 1.04         | 1.04         | 1.04        | 1.04          |            | 1.04          | 1.04        | 1.04        | 1.04          |
| TFP Adjusted Beta                                   | 1.03        | 1.03        | 1.03         | 1.03         | 1.03        | 1.03          |            | 1.03          | 1.03        | 1.03        | 1.03          |
| Stock Price Volatility                              | 2.95        | 3.35        | 3.52         | 2.34         | 2.44        | 2.68          |            | 2.68          | 2.87        | 2.48        | 2.68          |
| <b>Valuation Measures</b>                           |             |             |              |              |             |               |            |               |             |             |               |
| Total Economic Market Value (MV)                    | \$409,671.5 | \$397,201.0 | \$529,681.5  | \$670,265.1  | \$972,898.2 | \$1,155,197.5 |            | \$1,300,004.1 | \$745,048.6 | \$932,786.9 | \$1,227,600.8 |
| Economic Enterprise Value                           | \$311,105.7 | \$290,910.8 | \$386,503.6  | \$531,123.3  | \$840,721.2 | \$1,022,356.0 |            | \$1,150,510.6 | \$614,323.0 | \$798,066.8 | \$1,086,433.3 |
| Equity Market Value                                 | \$381,999.4 | \$353,990.6 | \$448,361.8  | \$574,722.6  | \$878,077.0 | \$1,061,550.9 |            | \$1,194,618.7 | \$663,340.6 | \$838,116.9 | \$1,128,084.8 |
| Total Capital                                       | \$124,925.1 | \$128,812.3 | \$161,539.6  | \$199,348.5  | \$192,325.1 | \$210,939.6   |            | \$237,381.3   | \$178,593.0 | \$200,871.1 | \$224,160.5   |
| Market Value Created MVC (MV - Capital)             | \$284,746.4 | \$268,388.6 | \$368,141.8  | \$470,916.6  | \$780,573.0 | \$944,257.9   |            | \$1,062,622.7 | \$566,455.6 | \$731,915.9 | \$1,003,440.3 |
| MVC Margin (MVC / Sales)                            | 311.53%     | 298.02%     | 434.11%      | 503.96%      | 680.30%     | 728.76%       |            | 730.45%       | 552.52%     | 650.10%     | 729.65%       |
| MVC Spread (MVC / Capital)                          | 227.93%     | 208.36%     | 227.90%      | 236.23%      | 405.86%     | 447.64%       |            | 447.64%       | 317.18%     | 364.37%     | 447.64%       |
| Current EVC Value (EP / WACC)                       | \$241,966.8 | \$167,259.9 | \$132,169.2  | \$203,079.4  | \$192,309.2 | \$492,244.3   |            | \$553,948.2   | \$234,639.3 | \$290,443.6 | \$523,096.2   |
| Current Operations Value COV                        | \$351,792.7 | \$287,816.6 | \$270,854.2  | \$376,520.0  | \$380,569.1 | \$685,690.1   |            | \$769,002.6   | \$397,516.9 | \$475,492.3 | \$727,346.4   |
| Current Operations Value Per Share                  | \$42.39     | \$35.20     | \$34.18      | \$48.61      | \$49.42     | \$89.36       |            | \$98.03       | \$50.68     | \$61.70     | \$93.75       |
| Future Growth Value (MVC - EVA Value)               | \$57,878.8  | \$109,384.3 | \$258,827.3  | \$293,745.1  | \$592,329.1 | \$469,507.4   |            | \$531,001.5   | \$347,531.7 | \$457,294.6 | \$500,254.4   |
| Future Growth Value Reliance (FGV / MV)             | 14.13%      | 27.54%      | 48.86%       | 43.83%       | 60.88%      | 40.64%        |            | 40.85%        | 46.65%      | 49.02%      | 40.75%        |
| Share Price   | \$46.36     | \$44.26     | \$57.60      | \$74.49      | \$114.37    | \$139.03      |            | \$139.03      | \$85.95     | \$109.30    | \$139.03      |
| Dividend Yield                                      | 2.48%       | 2.91%       | 2.55%        | 2.13%        | 1.50%       | 1.36%         |            | 1.36%         |             |             |               |
| Total Shareholder Return (TTM)                      | 41.78%      | -1.62%      | 32.69%       | 31.46%       | 55.04%      | 22.92%        |            | 0.00%         | -38.18%     | 27.16%      | 27.20%        |
| MV to IC Ratio                                      | 3.28X       | 3.08X       | 3.28X        | 3.36X        | 5.06X       | 5.48X         |            | 5.48X         | 4.17X       | 4.64X       | 5.48X         |
| EV / EBITDAR Multiple                               | 6.52X       | 6.32X       | 9.32X        | 10.19X       | 12.52X      | 12.86X        |            | 12.88X        | 10.73X      | 12.05X      | 12.87X        |
| EV / NOPBIT Multiple                                | 10.56X      | 10.72X      | 18.08X       | 18.91X       | 21.12X      | 21.08X        |            | 20.24X        | 18.62X      | 20.57X      | 20.63X        |
| EV / NOPAT Multiple                                 | 13.49X      | 15.83X      | 21.35X       | 21.14X       | 31.51X      | 23.67X        |            | 22.94X        | 23.36X      | 25.20X      | 23.28X        |
| EV / EP Multiple                                    | 19.61X      | 27.25X      | 43.75X       | 39.19X       | 62.37X      | 32.98X        |            | 32.98X        | 39.61X      | 41.25X      | 32.98X        |
| Future Growth Value (% of MV)                       | 14.13%      | 27.54%      | 48.86%       | 43.83%       | 60.88%      | 40.64%        |            | 40.85%        | 46.65%      | 49.02%      | 40.75%        |
| Current Operations Value (%) of MV                  | 85.87%      | 72.46%      | 51.14%       | 56.17%       | 39.12%      | 59.36%        |            | 59.15%        | 53.35%      | 50.98%      | 59.25%        |
| Market Value (COV + FGV %)                          | 100.00%     | 100.00%     | 100.00%      | 100.00%      | 100.00%     | 100.00%       |            | 100.00%       | 100.00%     | 100.00%     | 100.00%       |
| Basic Shares Outstanding                            | 8,299.0     | 8,177.0     | 7,925.0      | 7,746.0      | 7,700.0     | 7,673.0       |            | 7,844.2       | 7,844.2     | 7,706.3     | 7,758.6       |

Source: Company Data, Financial statements and Tigress Research

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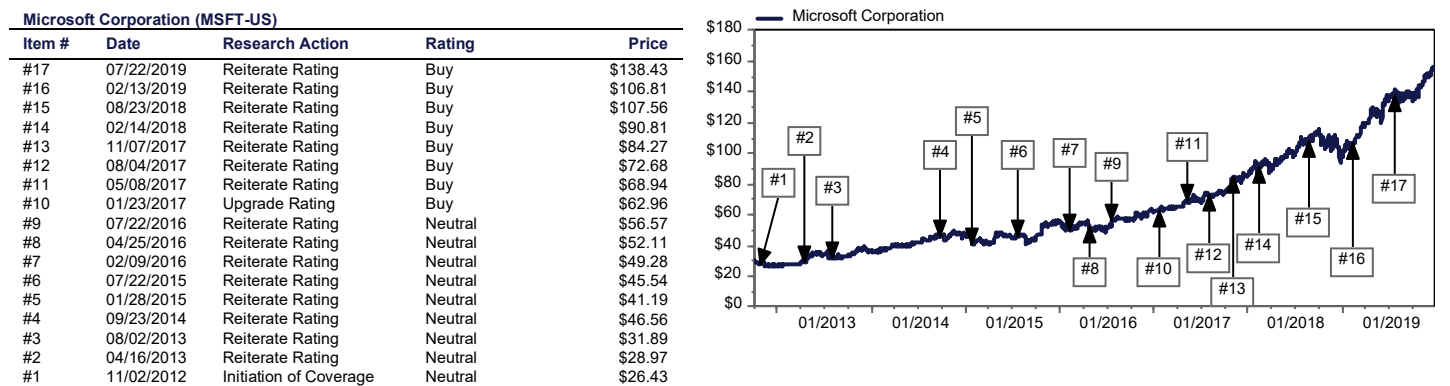
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**Microsoft Corporation (MSFT-US)**
**Software**
**Ratings History**

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We employ proprietary quantitative valuation models combined with dynamic fundamental analysis based on the principles of Economic Profit to formulate timely and insightful investment ratings, analysis, strategies, and recommendations.

We make key adjustments to reported financial data eliminating GAAP-based accounting distortions and measuring all companies on a cash operating basis.

Our proprietary research framework is a multi-factor model that scores and ranks companies based on their risk-adjusted ability to create Economic Profit relative to their current market value focusing on three key components:

**Business Performance:** Measuring economic profitability, growth and operating efficiency.

**Risk:** Measuring business sustainability, volatility, strength, and consistency.

**Valuation:** Linking business performance to market value. Measuring value created relative to capital employed and enterprise multiples of economic profit and cash flow.

We score and rank 24 key measurements of performance, risk, and value into relative market and industry investment recommendations.

**Glossary of Key Terms and Measures**

|                                  |   |
|----------------------------------|---|
| <b>Excess Cash per Share:</b>    | Excess Cash per Share is the amount of excess cash divided by basic shares outstanding. Excess Cash consists of all cash and short-term securities less operating cash needed to run the business. Operating Cash is 5% of TTM net sales revenue. |
| <b>EBITDAR:</b>                  | Earnings Before Interest, Taxes, Depreciation, Amortization, and Restructuring and Rent Costs. This is especially important when comparing companies that use a significant amount of leased assets like restaurants and retailers.               |
| <b>NOPAT:</b>                    | Net Operating Profit after Tax represents a company's after-tax cash operating profit excluding financing costs.  |
| <b>Total Invested Capital:</b>   | Total Invested Capital the total cash investment that shareholders and debt holders have made during the life of the company.   |
| <b>Return on Capital:</b>        | Return on Capital equals NOPAT divided by Total Invested Capital. It is a key measure of operating efficiency. ROC quantifies how well a company generates cash flow relative to the capital invested in its business.                            |
| <b>Cost of Capital:</b>          | Is the proportionately weighted cost of each category of capital – common equity, preferred equity and debt.  |
| <b>Economic Profit:</b>          | Economic Profit is the net operating income after tax less the opportunity cost of the total capital invested. It is the most important driver of shareholder value.  |
| <b>Current Operations Value:</b> | Current Operations Value is the portion of market value based on the discounted present value of the current earnings stream assuming it remains constant forever.  |
| <b>Future Growth Value:</b>      | Future Growth Value is the portion of market value based on un-earned Economic Profit   |

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**Rating Distribution (12/20/2019)**

| Rating:              | Meaning:   | Companies Under Coverage |     | Relationship Companies Under Coverage* |     |
|----------------------|--|--------------------------|-----|--|-----|
|                      |  | #                        | %   | #                                      | %   |
| <b>Strong Buy:</b>   | Expect significant price gains in the price of the stock relative to its industry peer group and general market over the next 12 months. | 16                       | 13% | 1                                      | 15% |
| <b>Buy:</b>          | Expect out-performance for the price of the stock relative to its industry peer group and general market over the next 12 months.        | 56                       | 46% | 5                                      | 70% |
| <b>Neutral:</b>      | Expect little or no outperformance opportunity over the next 12 months.  | 44                       | 37% | 1                                      | 15% |
| <b>Underperform:</b> | Expect underperformance for the price of the stock relative to its industry peer group and general market over the next 12 months.       | 5                        | 4%  | 0                                      | 0%  |
| <b>Sell:</b>         | Expect price decline or significant relative market and industry underperformance over the next 12 months.                               | 0                        | 0%  | 0                                      | 0%  |
| <b>Not Rated</b>     | No Current Research Rating   | NA                       | NA  | 65                                     | NA  |

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|       |     |      |    |      |
|-------|-----|------|----|------|
| Total | 121 | 100% | 72 | 100% |
|-------|-----|------|----|------|

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|---------------------------------|--------------------|
| Microsoft Corporation (MSFT-US) | 14                 |

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