

Company Note	2
Investment Thesis	4
Company Overview	5
Financial Data	6
Financial Analysis	7
Ratings History	8
Tigress Research Methodology Overview	8
Glossary of Key Terms and Measures	8
Contacts	9
Analyst Certification	9
Research Disclosures	9
Tigress Research Investment Rating Meanings and Distribution	9
Specific Disclosures for the companies that are the subject of this Report	10
Research Report Disclaimer	11
About Tigress Financial Partners LLC	11

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Microsoft Corporation (MSFT-US)

Software

- We reiterate our Buy rating on MSFT as Business Performance continues to accelerate driven by the ongoing success of Azure and office 365 adoption.
- MSFT continues to report strong Business Performance as it increases its total share of IT spending.
- MSFT's innovative cloud product offerings continue to transform the company as it collaborates with leading cloud service providers.
- MSFT will introduce Xbox One X; the most technologically advanced and powerful game console ever built in time for the holiday season.
- MSFT will introduce Xbox One X; the most technologically advanced and powerful game console ever built in time for the holiday season.
- MSFT strong cash flow and current cash position will continue to fund innovation and growth while enhancing shareholder return through ongoing 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 11/06/2017: \$84.47

52 Week High /

Low: \$86.20

\$57.28

Key Data: (TTM as of Sep-17)

Excess Cash per Share: \$18.05

Annual Dividend: \$1.68

Dividend Yield: 1.99%

Avg. Volume (30 Day): 21.4M

Shares Outstanding: 7,714.6M

Float: 7,598.4M

Equity MV: \$651,651.4M

Sales TTM: \$93,444.0M

Beta: 1.02

EBITDAR: \$52,002.0M

NOPAT: \$25,121.9M

Total Invested Capital: \$192,035.1M

Return on Capital: 14.48%

Cost of Capital: 6.53%

Economic Profit: \$13,796.1M

Market Value Added: \$555,195.4M

Current Operations Value: \$403,411.3M

Future Growth Value: \$343,819.2M

- **We reiterate our Buy rating on MSFT as Business Performance continues to accelerate driven by the ongoing success of Azure and office 365 adoption.** Microsoft dominates the desktop PC market with its Windows operating system and Office productivity suite. Microsoft has become the second largest hosted computing service provider with its Azure cloud platform. Microsoft is one of the three largest providers of gaming hardware and gaming services with its Xbox 360 console and Xbox 360 live multiplayer hosted platform. Ongoing cloud strength together with MSFT's dominant desktop and gaming along with increased operating efficiency will continue to drive increasing Return on Capital. We believe MSFT will continue to generate increasing Economic Profit and greater shareholder value creation. We believe further upside exists from current levels.
- **MSFT continues to report strong Business Performance as it increases its total share of IT spending.** For the LTM ending September 2017, Net Sales Revenue increased 9.98% Y/Y from \$84.97 billion to \$93.44 billion. We forecast a further increase of 15.83% to \$108.24 billion over the NTM. Economic Operating Cash Flow (EBITDAR) increased 24.95% Y/Y from \$41.62 billion to \$52.01 billion over the LTM. We forecast a further increase of 8.2% to \$56.27 billion over the NTM. Net Operating Profit After Tax (NOPAT) increased 26.9% Y/Y from \$18.22 billion to \$25.13 billion over the LTM. We forecast a further increase of 7.73% to \$27.07 billion over the NTM. Return on Capital increased from 13.13% to 14.48% over the LTM. We forecast a further increase to 16.43% over the NTM. Economic Profit increased 38.4% Y/Y from \$9.93 billion to \$13.74 billion over the LTM. We forecast a further increase of 13.5% to \$15.59 billion over the NTM.
- **MSFT's innovative cloud product offerings continue to transform the company as it collaborates with leading cloud service providers.** MSFT continues to enter into strategic partnerships with companies like Alphabet (GOOGL-US, Strong Buy Rated), Amazon (AMZN-US, Buy Rated), Oracle (ORCL-US, Non-rated), Salesforce (CRM-US, Non-rated) and others to offer hybrid cloud solutions. MSFT's partnership with infrastructure provider GoDaddy (GDDY-US, Non-rated) to focus on the small and medium-size business (SMB) market. Azure has grown to be the second largest cloud service provider after Amazon.

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- **MSFT innovative ability continues to drive growth and market share gains.** MSFT recently launched several new innovative AI features across Microsoft 365 including voice-activated commands through Cortina, inking, immersive 3D content story selling and mixed reality experiences. OneDrive now offers cloud sharing and co-authoring experiences on demand. Windows 10 now offers features that enable users to operate their PC with just their eyes. MSFT continues to gain an increasing share of total IT spending. Azure revenue grew 90% Y/Y as Compute usage more than doubled. MS Office 365 commercial now has over 120 million monthly active users. There are currently more than 530 million LinkedIn members. Windows 10 commercial monthly active devices grew over 90% Y/Y.
- **MSFT will introduce Xbox One X; the most technologically advanced and powerful game console ever built in time for the holiday season.** MSFT continues to integrate its gaming assets across PCs, mobile devices, and its console platform and continue to grow its over 53 million Xbox Live current users. MSFT will continue to grow its Xbox live user base by introducing expanded e-sports and streaming services.
- **MSFT strong cash flow and current cash position will continue to fund innovation and growth while enhancing shareholder return through ongoing dividend increases and share repurchases.** MSFT currently has over \$52 billion in Economic Operating Cash Flow (EBITDAR) along with \$139 billion or \$18 a share in excess cash. MSFT increases its dividend in the September quarter 8% from \$0.39 to 0.42 per quarter giving it a current yield of approximately 2%. In September 2016, MSFT announced an open market purchase of \$40 billion worth of stock.

Investment Thesis

MSFT continues to drive greater revenue through an evolving software as a service (SaaS) model through the launch of Office 365 and its 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 move 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 is 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 tablet and laptop along with 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 a number of online and media services including the MSN network, MSNBC, and Xbox 360 live with over 53 million active monthly users. Microsoft manufactures the world's leading business productivity software suite Microsoft Office 365.

Microsoft competes and sells its products globally with 50% of its revenue coming from the United States and the other 50% coming international sales. Microsoft's customers include the world's largest corporations, global governments, small business, 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 reports revenue under three operating segments: Productivity & Business Processes, Intelligent Cloud, and More Personal Computing.

Productivity & Business Processes: (31.5% of fiscal 2017 revenues) includes the Office business productivity suite and Dynamics CRM businesses. Microsoft hosted version of Office, Office 365 currently has over 27 million subscribers.

Intelligent Cloud: (28.4% of fiscal 2017 revenues) includes server, and enterprise products and services. At the end of fiscal 2017, Microsoft's commercial cloud annualized revenue run rate exceeded \$18.9 billion.

More Personal Computing: (40.1% of fiscal 2017 revenues) includes the Windows operating system, Xbox 360 game console, and Xbox 360 live online gaming platform its Bing search business.

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Microsoft Corporation (MSFT-US)
Software
Financial Data

Report Basis Reported Period Ending	LTM 09/30/2012	LTM 09/30/2013	LTM 09/30/2014	LTM 09/30/2015	LTM 09/30/2016	LTM 09/30/2017	NTM 09/30/2018	5 Yr Average	3 Yr Average	Current Trend
Net Sales Revenue	\$72,302.0	\$80,191.0	\$91,404.0	\$90,375.0	\$84,967.0	\$93,444.0	\$108,238.5	\$88,076.2	\$89,595.3	\$100,841.2
<i>Sales Growth</i>	1.46%	10.91%	13.98%	-1.13%	-5.98%	9.98%	15.83%	5.55%	0.96%	12.90%
<i>Sales Growth Trend</i>	4.50%	7.13%	12.75%	4.92%	-4.04%	3.59%	13.49%	4.87%	1.49%	8.54%
Operating Cash Flow (EBITDAR)	\$40,304.6	\$43,845.3	\$47,709.7	\$46,368.8	\$41,623.5	\$52,007.3	\$56,266.3	\$46,310.9	\$46,666.5	\$54,136.8
<i>EBITDAR Margin</i>	55.74%	54.68%	52.20%	51.31%	48.99%	55.66%	51.98%	52.56%	51.98%	53.82%
<i>EBITDAR Growth</i>	-1.30%	8.78%	8.81%	-2.81%	-10.23%	24.95%	8.19%	5.90%	3.97%	16.57%
Net Operating Profit Before Tax (NOPBT)	\$26,772.6	\$28,417.3	\$29,470.7	\$27,446.8	\$21,514.5	\$28,084.3	\$30,936.6	\$26,986.7	\$25,681.9	\$29,510.4
<i>NOPBT Margin</i>	37.03%	35.44%	32.24%	30.37%	25.32%	30.05%	28.58%	30.68%	28.58%	29.32%
<i>NOPBT Growth</i>	-5.53%	6.14%	3.71%	-6.87%	-21.61%	30.54%	10.16%	2.38%	0.69%	20.35%
Cash Operating Income Tax	\$6,255.9	\$5,378.0	\$6,408.3	\$8,860.7	\$3,296.0	\$2,957.7	\$3,867.1	\$5,380.1	\$5,038.1	\$3,412.4
<i>Economic Tax Effective Rate</i>	23.37%	18.93%	21.74%	32.28%	15.32%	10.53%	12.50%	19.76%	19.38%	11.52%
Net Operating Profit After Tax (NOPAT)	\$20,516.7	\$23,039.3	\$23,062.4	\$18,586.1	\$18,218.6	\$25,126.6	\$27,069.5	\$21,606.6	\$20,643.7	\$26,098.0
<i>NOPAT Margin</i>	28.38%	28.73%	25.23%	20.57%	21.44%	26.89%	25.01%	24.57%	22.97%	25.95%
<i>NOPAT Growth</i>	-13.20%	12.30%	0.10%	-19.41%	-1.98%	37.92%	7.73%	5.79%	5.51%	22.82%
Cash & Equivalents	\$76,682.0	\$92,667.0	\$103,136.0	\$110,793.0	\$147,418.0	\$143,814.0	\$163,214.8	\$119,565.6	\$134,008.3	\$153,514.4
Total Assets	\$121,876.0	\$142,348.0	\$169,656.0	\$172,896.0	\$212,524.0	\$249,097.0	\$282,700.6	\$189,304.2	\$211,505.7	\$265,898.8
Non - Interest Bearing Liabilities (NIBLs)	\$36,487.0	\$39,582.0	\$49,467.0	\$50,559.0	\$59,773.0	\$63,352.0	\$71,898.3	\$52,546.6	\$57,894.7	\$67,625.2
Net Assets	\$85,389.0	\$102,766.0	\$120,189.0	\$122,337.0	\$152,751.0	\$185,745.0	\$210,802.3	\$136,757.6	\$153,611.0	\$198,273.7
Economic Asset Adjustments	\$418.5	\$3,472.4	\$4,726.0	\$6,491.1	\$8,913.0	\$13,618.5	\$15,455.7	\$7,444.2	\$9,674.2	\$14,537.1
Net Operating Assets	\$85,807.5	\$106,238.4	\$124,915.0	\$128,828.1	\$161,664.0	\$199,363.5	\$226,258.0	\$144,201.8	\$163,285.2	\$212,810.8
Debt & Debt Equivalents	\$13,766.5	\$18,117.4	\$27,662.0	\$43,226.1	\$81,444.0	\$95,557.5	\$108,448.4	\$53,201.4	\$73,409.2	\$102,003.0
Equity & Equivalents	\$68,836.0	\$81,641.0	\$90,170.0	\$77,445.0	\$70,372.0	\$89,647.0	\$101,740.5	\$81,855.0	\$79,154.7	\$95,693.8
Total Capital - Financing Sources	\$82,602.5	\$99,758.4	\$117,832.0	\$120,671.1	\$151,816.0	\$185,204.5	\$210,189.0	\$135,056.4	\$152,563.9	\$197,696.8
Capital Adjustments	(\$1,398.0)	\$1,287.0	\$784.0	\$1,832.0	\$3,191.0	\$6,809.0	\$7,727.5	\$2,780.6	\$3,944.0	\$7,268.3
Net Capital Financing Sources	\$81,204.5	\$101,045.4	\$118,616.0	\$122,503.1	\$155,007.0	\$192,013.5	\$217,916.5	\$137,837.0	\$156,507.9	\$204,965.0
Net Working Capital	(\$3,275.9)	(\$3,048.5)	(\$5,061.8)	(\$5,256.3)	(\$12,075.7)	(\$7,381.8)	(\$8,377.6)	(\$6,564.8)	(\$8,237.9)	(\$7,879.7)
<i>Cost of Net Working Capital</i>	(\$93.7)	(\$218.5)	(\$269.7)	(\$321.3)	(\$517.9)	(\$638.7)	(\$724.9)	(\$393.2)	(\$492.6)	(\$681.8)
<i>% of Revenue</i>	-0.13%	-0.27%	-0.30%	-0.36%	-0.61%	-0.68%	-0.67%	-0.44%	-0.55%	-0.68%
Operational Capital	\$6,869.6	\$9,911.0	\$12,109.2	\$14,448.8	\$12,870.4	\$31,080.7	\$35,273.6	\$16,084.0	\$19,466.6	\$33,177.2
<i>Cost of Operational Capital</i>	\$524.2	\$579.7	\$732.2	\$826.9	\$816.3	\$1,442.7	\$1,637.3	\$879.6	\$1,028.6	\$1,540.0
<i>% of Revenue</i>	0.72%	0.72%	0.80%	0.91%	0.96%	1.54%	1.51%	0.99%	1.14%	1.53%
Productive Capital	\$24,758.6	\$27,560.0	\$38,883.2	\$36,335.8	\$34,299.4	\$76,067.7	\$86,329.4	\$42,629.2	\$48,901.0	\$81,198.6
<i>Cost of Productive Capital</i>	\$1,499.4	\$1,807.4	\$2,209.4	\$2,342.0	\$2,110.6	\$3,622.9	\$4,111.6	\$2,418.4	\$2,691.8	\$3,867.2
<i>% of Revenue</i>	2.07%	2.25%	2.42%	2.59%	2.48%	3.88%	3.80%	2.72%	2.98%	3.84%
Total Operating Capital	\$12,740.6	\$17,581.0	\$26,349.2	\$22,553.8	\$18,494.4	\$60,221.7	\$68,345.8	\$29,040.0	\$33,756.6	\$64,283.7
<i>Cost of Total Operating Capital</i>	\$801.7	\$1,047.5	\$1,460.8	\$1,522.6	\$1,226.5	\$2,583.9	\$2,932.5	\$1,568.3	\$1,777.7	\$2,758.2
<i>% of Revenue</i>	1.11%	1.31%	1.60%	1.68%	1.44%	2.77%	2.71%	1.76%	1.96%	2.74%
Non - Operating Capital	\$73,066.9	\$88,657.5	\$98,565.8	\$106,274.3	\$143,169.7	\$139,141.8	\$157,912.3	\$115,161.8	\$129,528.6	\$148,527.0
<i>Cost of Non - Operating Capital</i>	\$4,201.1	\$5,586.8	\$6,225.5	\$6,377.8	\$7,453.4	\$9,267.1	\$10,517.2	\$6,982.1	\$7,699.4	\$9,892.1
<i>% of Revenue</i>	5.81%	6.97%	6.81%	7.06%	8.77%	9.92%	9.72%	7.90%	8.58%	9.82%
Total Capital	\$85,807.5	\$106,238.4	\$124,915.0	\$128,828.1	\$161,664.0	\$199,363.5	\$226,258.0	\$144,201.8	\$163,285.2	\$212,810.8
<i>Cost of Total Capital</i>	\$5,002.8	\$6,634.3	\$7,686.3	\$7,900.4	\$8,679.9	\$11,851.0	\$13,449.7	\$8,550.4	\$9,477.1	\$12,650.3
<i>% of Revenue</i>	6.92%	8.27%	8.41%	8.74%	10.22%	12.68%	12.43%	9.66%	10.55%	12.55%
Cost of Capital (WACC)	6.20%	6.91%	6.65%	6.23%	5.98%	6.57%	6.57%	6.47%	6.26%	6.57%
Capital Structure										
Debt & Debt Equivalents	\$13,766.5	\$18,117.4	\$27,662.0	\$43,226.1	\$81,444.0	\$95,557.5	\$108,448.4	\$53,201.4	\$73,409.2	\$102,003.0
<i>Debt & Debt Equivalents % of Market Value</i>	5.23%	6.13%	6.75%	10.88%	15.37%	14.26%	14.26%	11.55%	13.79%	14.26%
Preferred Equity	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
<i>Preferred Equity % of Market Value</i>	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Market Value of Common Equity	\$249,489.9	\$277,220.9	\$381,999.4	\$353,990.6	\$448,361.8	\$574,722.6	\$652,253.7	\$407,259.1	\$459,025.0	\$613,488.2
<i>Common Equity % of Market Value</i>	94.77%	93.87%	93.25%	89.12%	84.63%	85.74%	85.74%	88.45%	86.21%	85.74%
Total Economic Market Value (MV)	\$263,256.4	\$295,338.3	\$409,661.4	\$397,216.7	\$529,805.9	\$670,280.1	\$760,702.1	\$460,460.5	\$532,434.2	\$715,491.1
<i>Total</i>	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Excess Cash	\$73,066.9	\$88,657.5	\$98,565.8	\$106,274.3	\$143,169.7	\$139,141.8	\$157,912.3	\$115,161.8	\$129,528.6	\$148,527.0
Economic Enterprise Value	\$190,189.5	\$206,680.9	\$311,095.6	\$290,942.5	\$386,636.2	\$531,138.3	\$602,789.9	\$345,298.7	\$402,905.7	\$566,964.1
Average Capital	\$76,332.6	\$91,124.9	\$109,830.7	\$120,559.5	\$138,755.1	\$173,510.3	\$204,965.0	\$126,756.1	\$144,275.0	\$189,237.7
<i>Capital Δ</i>	\$9,743.8	\$19,841.0	\$17,570.6	\$3,887.1	\$32,503.9	\$37,006.5	\$25,903.0	\$22,161.8	\$24,465.9	\$31,454.7

Source: Company Data, Financial statements and Tigress Research

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Company Report – Research Update

Microsoft Corporation (MSFT-US)

Software

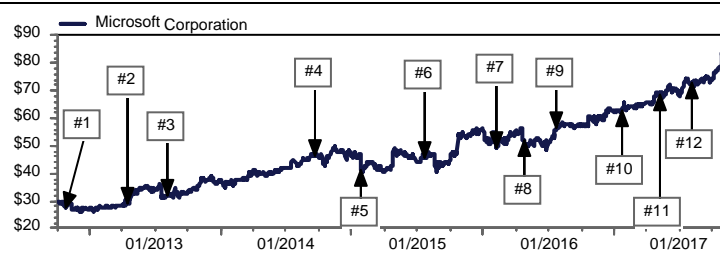
Financial Analysis

Report Basis	LTM	LTM	LTM	LTM	LTM	LTM	NTM	5 Yr	3 Yr	Current
Reported Period Ending	09/30/2012	09/30/2013	09/30/2014	09/30/2015	09/30/2016	09/30/2017	09/30/2018	Average	Average	Trend
Return on Market Value (NOPAT / MV)	7.79%	7.80%	5.63%	4.68%	3.44%	3.75%	4.25%	5.06%	3.96%	4.00%
Return on Enterprise Value (NOPAT / EV)	10.79%	11.15%	7.41%	6.39%	4.71%	4.73%	5.37%	6.88%	5.28%	5.05%
Return on Capital (NOPAT / Average Capital)	26.88%	25.28%	21.00%	15.42%	13.13%	14.48%	16.43%	17.86%	14.34%	15.46%
Cost of Capital (WACC)	6.20%	6.91%	6.65%	6.23%	5.98%	6.57%	6.57%	6.47%	6.26%	6.57%
Economic Return Spread	20.68%	18.37%	14.35%	9.19%	7.15%	7.92%	9.86%	11.40%	8.09%	8.45%
Capital Charge	\$4,733.8	\$6,295.9	\$7,304.2	\$7,507.4	\$8,292.0	\$11,391.2	\$12,927.9	\$8,158.1	\$9,063.5	\$12,159.5
Economic Profit (EP)	\$15,782.9	\$16,743.4	\$15,758.3	\$11,078.7	\$9,926.6	\$13,735.4	\$15,588.3	\$13,448.5	\$11,580.2	\$14,661.8
Economic Profit Improvement (EPI)	(\$3,511.2)	\$960.5	(\$985.1)	(\$4,679.5)	(\$1,152.1)	\$3,808.8	\$1,852.9	(\$409.5)	(\$674.3)	\$2,830.9
EP Growth	-18.20%	6.09%	-5.88%	-29.70%	-10.40%	38.37%	13.49%	-0.30%	-0.58%	25.93%
Economic Profit Margin on Sales	21.83%	20.88%	17.24%	12.26%	11.68%	14.70%	14.40%	15.35%	12.88%	14.55%
Economic Profit Per Share	\$1.88	\$2.00	\$1.90	\$1.35	\$1.25	\$1.77	\$2.01	\$1.66	\$1.46	\$1.89
GAAP Earnings Per Share	\$1.87	\$2.70	\$2.58	\$1.50	\$2.11	\$2.98	\$3.41	\$2.37	\$2.20	\$3.19
Excess Cash Per Share	\$8.70	\$10.63	\$11.95	\$13.29	\$18.38	\$18.05	\$20.49	\$14.46	\$16.57	\$19.27
Performance Drivers										
Sales Growth	1.46%	10.91%	13.98%	-1.13%	-5.98%	9.98%	15.83%	5.55%	0.96%	12.90%
Sales Growth Trend (ROC Sales Growth)	4.50%	7.13%	12.75%	4.92%	-4.04%	3.59%	13.49%	4.87%	1.49%	8.54%
EBITDAR Margin	55.74%	54.68%	52.20%	51.31%	48.99%	55.66%	51.98%	52.56%	51.98%	53.82%
EBITDAR Growth	-1.30%	8.78%	8.81%	-2.81%	-10.23%	24.95%	8.19%	5.90%	3.97%	16.57%
NOPBT Margin	37.03%	35.44%	32.24%	30.37%	25.32%	30.05%	28.58%	30.68%	28.58%	29.32%
NOPBT Growth	-5.53%	6.14%	3.71%	-6.87%	-21.61%	30.54%	10.16%	2.38%	0.69%	20.35%
NOPAT Margin	28.38%	28.73%	25.23%	20.57%	21.44%	26.89%	25.01%	24.57%	22.97%	25.95%
NOPAT Growth	-13.20%	12.30%	0.10%	-19.41%	-1.98%	37.92%	7.73%	5.79%	5.51%	22.82%
Economic Profit Margin on Sales (EP / Sales)	21.83%	20.88%	17.24%	12.26%	11.68%	14.70%	14.40%	15.35%	12.88%	14.55%
Economic Profit Growth	-18.20%	6.09%	-5.88%	-29.70%	-10.40%	38.37%	13.49%	-0.30%	-0.58%	25.93%
Economic Return Spread (ROC-WACC)	20.68%	18.37%	14.35%	9.19%	7.15%	7.92%	9.87%	11.40%	8.09%	8.89%
Economic Return Ratio (ROC / WACC)	433.41%	365.94%	315.74%	247.57%	219.71%	220.58%	250.34%	273.91%	229.29%	235.46%
Economic Profit Momentum (ΔEP/Capital)	-4.32%	0.95%	-0.83%	-3.82%	-0.74%	1.98%	0.85%	-0.49%	-0.86%	1.42%
Economic Profit Momentum Margin (ΔEP/Sales)	-4.86%	1.20%	-1.08%	-5.18%	-1.36%	4.08%	1.71%	-0.47%	-0.82%	2.89%
Capital Growth	13.64%	24.43%	17.39%	3.28%	26.53%	23.87%	13.49%	19.10%	17.89%	18.68%
Capital Turns	0.89X	0.79X	0.77X	0.74X	0.55X	0.49X	0.50X	0.67X	0.59X	0.49X
EVC Acceleration Margin	-4.93%	1.33%	-1.23%	-5.12%	-1.27%	4.48%	1.98%	-0.38%	-0.77%	3.16%
EVC Acceleration Spread	-5.50%	1.26%	-1.08%	-4.26%	-0.96%	2.74%	1.07%	-0.20%	-0.53%	1.96%
Risk Factors										
Free Cash Flow (NOPAT - Δ Capital)	\$10,773.0	\$3,198.3	\$5,491.9	\$14,699.0	(\$14,285.3)	(\$11,880.0)	\$1,166.5	(\$555.2)	(\$3,822.1)	(\$5,356.7)
Free Cash Flow Rate (FCF / Capital)	13.27%	3.17%	4.63%	12.00%	-9.22%	-6.19%	0.54%	0.88%	-1.13%	-2.83%
Free Cash Flow Yield (FCF / MV)	4.09%	1.08%	1.34%	3.70%	-2.70%	-1.77%	0.15%	0.33%	-0.26%	-0.81%
Total Debt / Total Capital	16.95%	17.93%	23.32%	35.29%	52.54%	49.77%	49.77%	35.77%	45.86%	49.77%
Total Debt / EBITDAR	34.16%	41.32%	57.98%	93.22%	195.67%	183.74%	192.74%	114.39%	157.54%	188.24%
Excess Cash	\$73,066.9	\$88,657.5	\$98,565.8	\$106,274.3	\$143,169.7	\$139,141.8	\$0.0	\$115,161.8	\$129,528.6	\$69,570.9
Financial Leverage ((Total Debt - Excess Cash) /	-22.53%	-23.88%	-17.31%	-15.87%	-11.65%	-11.65%	14.26%	-15.04%	-11.34%	3.88%
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)	1.02	1.02	1.03	1.02	1.03	1.02	1.02	1.02	1.02	1.02
Stock Price Volatility	2.89	3.25	3.10	3.35	3.55	2.44	2.44	3.14	3.12	2.44
Sales Index (NL Sales)	11.19	11.29	11.42	11.41	11.35	11.45	11.59	11.38	11.40	11.52
Market Value Index (NL Market Value)	12.48	12.60	12.92	12.89	13.18	13.42	13.54	13.00	13.16	13.48
Size Index (NL Sales: MV)	11.83	11.94	12.17	12.15	12.27	12.43	12.57	12.19	12.28	12.50
Beta	1.03	1.03	1.04	1.03	1.04	1.03	1.03	1.03	1.03	1.03
TFP Adjusted Beta	1.02	1.02	1.03	1.02	1.03	1.02	1.02	1.02	1.02	1.02
Stock Price Volatility	2.89	3.25	3.10	3.35	3.55	2.44	2.44	3.14	3.12	2.44
Valuation Measures										
Total Economic Market Value (MV)	\$263,256.4	\$295,338.3	\$409,661.4	\$397,216.7	\$529,805.9	\$670,280.1	\$760,702.1	\$460,460.5	\$532,434.2	\$715,491.1
Economic Enterprise Value	\$190,189.5	\$206,680.9	\$311,095.6	\$290,942.5	\$386,636.2	\$531,138.3	\$602,789.9	\$345,298.7	\$402,905.7	\$566,964.1
Equity Market Value	\$249,489.9	\$277,220.9	\$381,999.4	\$353,990.6	\$448,361.8	\$574,722.6	\$652,253.7	\$407,259.1	\$459,025.0	\$613,488.2
Total Capital	\$85,807.5	\$106,238.4	\$124,915.0	\$128,828.1	\$161,664.0	\$199,363.5	\$226,258.0	\$144,201.8	\$163,285.2	\$212,810.8
Market Value Created MVC (MV - Capital)	\$177,448.9	\$189,099.9	\$284,746.4	\$268,388.6	\$368,141.8	\$470,916.6	\$534,444.1	\$316,258.7	\$369,149.0	\$502,680.4
MVC Margin (MVC / Sales)	245.43%	235.81%	311.53%	296.97%	433.28%	503.96%	493.77%	359.07%	412.02%	498.49%
MVC Spread (MVC / Capital)	206.80%	178.00%	227.95%	208.33%	227.72%	236.21%	236.21%	219.32%	226.08%	236.21%
Current EVC Value (EP / WACC)	\$254,496.9	\$242,339.8	\$236,952.1	\$177,911.4	\$166,108.2	\$209,217.4	\$237,441.2	\$208,002.5	\$185,104.0	\$223,329.3
Current Operations Value COV	\$330,829.4	\$333,464.7	\$346,782.8	\$298,471.0	\$304,863.3	\$382,727.7	\$442,406.2	\$334,758.6	\$329,379.0	\$412,566.9
Current Operations Value Per Share	\$39.40	\$39.82	\$41.79	\$36.50	\$38.47	\$49.41	\$54.59	\$41.31	\$41.43	\$52.06
Future Growth Value (MVC - EVA Value)	(\$67,573.1)	(\$38,126.4)	\$62,878.5	\$98,745.8	\$224,942.6	\$287,552.5	\$318,295.9	\$125,701.8	\$203,055.3	\$302,924.2
Future Growth Value Reliance (FGV / MV)	-25.67%	-12.91%	15.35%	24.86%	42.46%	42.90%	41.84%	27.30%	38.14%	42.34%
Share Price	\$29.76	\$33.28	\$46.36	\$44.26	\$57.60	\$74.49	\$74.49	\$51.20	\$58.78	\$74.49
Dividend Yield	2.79%	2.91%	2.48%	2.91%	2.55%	2.13%	2.13%	2.13%	2.13%	2.13%
Total Shareholder Return (TTM)	22.36%	14.74%	41.78%	-1.62%	32.69%	31.46%	0.00%	-31.27%	14.82%	26.72%
MV to IC Ratio	3.07X	2.78X	3.28X	3.08X	3.28X	3.36X	3.36X	3.19X	3.26X	3.36X
EV / EBITDAR Multiple	4.72X	4.71X	6.52X	6.27X	9.29X	10.21X	10.71X	7.46X	8.63X	10.47X
EV / NOPBIT Multiple	7.10X	7.27X	10.56X	10.60X	17.97X	18.91X	19.48X	12.80X	15.69X	19.21X
EV / NOPAT Multiple	9.27X	8.97X	13.49X	15.65X	21.22X	21.14X	22.27X	15.98X	19.52X	21.72X
EV / EP Multiple	12.05X	12.34X	19.74X	26.26X	38.95X	38.67X	38.67X	25.68X	34.79X	38.67X
Future Growth Value (% of MV)	-25.67%	-12.91%	15.35%	24.86%	42.46%	42.90%	41.84%	27.30%	38.14%	42.34%
Current Operations Value (% of MV)	125.67%	112.91%	84.65%	75.14%	57.54%	57.10%	58.16%	72.70%	61.86%	57.66%
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	8,396.0	8,375.0	8,299.0	8,177.0	7,925.0	7,746.0	8,104.4	8,104.4	7,949.3	7,925.2

Source: Company Data, Financial statements and Tigress Research

Microsoft Corporation (MSFT-US)
Software
Ratings History

Microsoft Corporation (MSFT-US)				
Item #	Date	Research Action	Rating	Price
#12	08/04/2017	Reiterate Rating	Buy	\$72.68
#11	05/08/2017	Reiterate Rating	Buy	\$68.94
#10	01/23/2017	Upgrade Rating	Buy	\$62.96
#9	07/22/2016	Reiterate Rating	Neutral	\$56.57
#8	04/25/2016	Reiterate Rating	Neutral	\$52.11
#7	02/09/2016	Reiterate Rating	Neutral	\$49.28
#6	07/22/2015	Reiterate Rating	Neutral	\$45.54
#5	01/28/2015	Reiterate Rating	Neutral	\$41.19
#4	09/23/2014	Reiterate Rating	Neutral	\$46.56
#3	08/02/2013	Reiterate Rating	Neutral	\$31.89
#2	04/16/2013	Reiterate Rating	Neutral	\$28.97


Tigress Research Methodology Overview

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.

For more information on our research methodology, please review the *Tigress Investment Research Guide to Company Valuation and Analysis*.

Glossary of Key Terms and Measures

Excess Cash per Share: 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.

EBITDAR: 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.

NOPAT: Net Operating Profit after Tax represents a company's after-tax cash operating profit excluding financing costs.

Total Invested Capital: Total Invested Capital the total cash investment that shareholders and debt holders have made during the life of the company.

Return on Capital: 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.

Cost of Capital: Is the proportionately weighted cost of each category of capital – common equity, preferred equity and debt.

Economic Profit: 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.

Current Operations Value: 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.

Future Growth Value: Future Growth Value is the portion of market value based on un-earned Economic Profit

For more information on the key terms and measures, please review the *Tigress Investment Research Guide to Company Valuation and Analysis*.

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Rating:	Meaning:	Rating Distribution (11/06/2017)				
		Companies Under Coverage		Relationship Companies Under Coverage*		
		#	%	#	%	
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Buy:	Expect out-performance for the price of the stock relative to its industry peer group and general market over the next 12 months.	52	44%	4	66%	
Neutral:	Expect little or no outperformance opportunity over the next 12 months.	44	38%	1	17%	
Underperform:	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%	
Sell:	Expect price decline or significant relative market and industry underperformance over the next 12 months.	0	0%	0	0%	
Not Rated	No Current Research Rating	NA	NA	65	NA	
		Total	117	100%	71	100%

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Company:	Disclosure:
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Key	Disclosure:
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