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QUALCOMM Incorporated (QCOM-US)**Communications Equipment**

- We reiterate our Buy rating as QCOM's leadership position in global 5G broadband communications will continue to drive further shareholder gains.
- QCOM is ramping up to enable high-speed home and business internet access over cellular networks.
- 2020 should see further acceleration of growth, driven by increasing demand from new communication opportunities.
- QCOM remains the industry's leading and largest manufacturer of wireless chipsets based on baseband technology.
- QCOM's strong balance sheet and cash flow continue to drive investments in innovation and strategic acquisitions, along with enhancing shareholder returns through periodic dividend increases and share repurchases.

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Company Note
QUALCOMM Incorporated (QCOM-US)
Communications Equipment

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Research Action:

Reiterate rating

Rating: Buy

Prior Rating: Buy

Price 12/04/2019: \$82.08

52 Week High / Low: \$94.11 / \$49.10

Key Data: (TTM as of Sep-19)

Excess Cash per Share: \$9.89

Annual Dividend: \$2.48

Dividend Yield: 3.02%

Avg. Volume (30 Day): 11.4M

Shares Outstanding: 1,215.7M

Float: 1,214.2M

Short Interest: 18.0M

SI % / Float 1.49%

Equity MV: \$99,781.4M

Sales TTM: \$24,273.0M

Beta: 0.92

EBITDAR: \$15,673.1M

NOPAT: \$5,849.9M

Total Invested Capital: \$21,034.2M

Return on Capital: 31.59%

Cost of Capital: 5.41%

Economic Profit: \$4,847.9M

Market Value Added: \$95,042.2M

Current Operations Value: \$108,122.1M

Future Growth Value: \$7,954.3M

- We reiterate our Buy rating as QCOM's leadership position in global 5G broadband communications will continue to drive further shareholder gains.** QCOM recently reported strong Q4 and FY2019 results driven by MSM (Mobile Station Modem) shipment gains and high-speed 5G network rollout opportunities. QCOM continues to regain its leadership position in the communications chipset market with several technological achievements, new product launches, and new OEM partnership wins. QCOM should see an inflection point for its communication technologies (QCT) sometime in early FY2020 as the ongoing 5G rollout and increasing demand for communication connectivity drives increasing demand for its communication processors with over 150 5G design wins so far this year. QCOM is also ramping up its high-speed fixed line Internet access over cellular networks and has announced development partnerships with over 30 industry-leading OEMs to use QCOM processors for wireless Internet home and business gateways, along with applications including automotive in ADAS (Advanced Driver-Assistance Systems), and Cloud and Edge Computing. QCOM is currently in an industry-leading position as the only chipset manufacturer with 5G system-level solutions at the sub 6 GHz and millimeter wave bands. QCOM's innovative ability and market-leading position will continue to drive new customer wins in market share gains, driving a higher Return on Capital, increasing Economic Profit, and greater shareholder value creation. We believe significant upside exists from current levels and continue to recommend purchase.
- QCOM is ramping up to enable high-speed home and business internet access over cellular networks.** QCOM recently announced development partnerships with over 30 industry-leading electronic companies to use QCOM modems acting as wireless Internet home and business gateways. The new boxes will replace traditional cable modems and provide high-speed connectivity to the upcoming 5G network. The adoption of QCOM's chips for connectivity will utilize high-speed 5G networks to create a connectivity infrastructure for urban, suburban, and rural environments. There is market potential for over 300 million U.S. households that could use 5G connectivity for their home or business broadband needs. In emerging markets and rural areas where there is no existing wired infrastructure, and in developed markets where fixed lines cannot be upgraded to carry higher speeds cost-effectively, wireless connectivity can provide a cost-effective, high-speed solution.

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- **2020 should see further acceleration of growth, driven by increasing demand from new communication opportunities.** QCOM continues its comeback as it is best positioned to benefit from the global rollout of the 5G high-speed network. In November, QCOM held its first Analyst Day in over three years after overcoming a period of slowing smartphone sales, its legal dispute with Apple (AAPL-US, Strong Buy Rated), and an abandoned takeover attempt by Broadcom (AVGO-US, Non-Rated). QCOM has recovered from its low of \$50 in March of this year, driven by MSM (Mobile Station Modem) shipment gains and high-speed 5G network rollout opportunities. In October, at Microsoft's (MSFT-US, Buy Rated) new product launch event, MSFT announced its new Surface Pro X would use a custom QCOM-made SQ1 Snapdragon processor. QCOM also announced significant opportunities for its 5G high-speed connectivity in applications, including automotive in ADAS (Advanced Driver-Assistance Systems), in-car connectivity telematics and infotainment, many industrial and consumer applications including energy, gaming, healthcare, logistics, manufacturing, and retail, as well as AI applications and high-speed Edge Computing. QCOM also recently acquired the remaining interest in TDK's RF360 holdings, which produces RF Front-End (RFFE) filters, enabling QCOM to deliver a complete 4G/5G RFFE solution, providing its customers with end-to-end connectivity from modem to antenna. QCOM's new RFFE solution expands its 5G portfolio, enabling OEM customers to create thin form factor, high-performance, energy-efficient, 5G multimode mobile devices, further expanding QCOM's leadership over its competition.
- **QCOM remains the industry's leading and largest manufacturer of wireless chipsets based on baseband technology.** QCOM continues to regain its industry leadership with several key technological advancements along with new product launches. QCOM is redefining the computing and mobile ecosystem it originally pioneered with the launch of several new processors, including its QCA6390 connectivity SoC (System-on-a-Chip) processor. This innovative processor will deliver ultrahigh-speed performance for 5G connectivity and increase its competitive advantage. The QCA6390 chipset meets the needs for faster connectivity and data speed with integrated Wi-Fi 6 and Bluetooth 5.1 capabilities. The QCA6390 supports ultrahigh-definition (UHD) audio over wireless headphones, earbuds, and speakers along with best in class security and low power consumption, providing the flexibility and scalability needed for rapid 5G adoption in demand by leading OEMs. QCOM also introduced the QCS400 SoC series with low-power compute capabilities, designed to meet the needs for smart audio and IoT applications through the integration of optimized AI (Artificial intelligence) enabled solutions in a single, power-optimized, processor architecture.

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The QCS400 includes advanced audiovisual display capabilities, offering a superior voice-based user interface including AI-based automated speech recognition, multi-keyword far-field voice pickup, beamforming, and echo cancellation. The QCS400 also offers support for cloud-based voice-activated interfaces. With over 150 5G design wins to date, QCOM is currently the only chipset vendor with 5G system-level solutions across both sub six, gigahertz, and millimeter wave bands.

- **QCOM's strong balance sheet and cash flow continue to drive investments in innovation and strategic acquisitions, along with enhancing shareholder returns through periodic dividend increases and share repurchases.** As of September 2019, QCOM has \$11.83 billion, \$9.89 per share, in excess cash, and we expect it will generate \$12.95 billion in Economic Operating Cash Flow (EBITDAR) over the NTM. Since 2003, QCOM has returned close to \$90 billion in cash to shareholders through share repurchases and dividends paid. In FY2018, QCOM repurchased \$22.57 billion worth of stock under an accelerated repurchase plan. In FY2019, QCOM repurchased \$1.79 billion worth of stock and currently has \$7.1 billion remaining under its current stock repurchase authorization. QCOM also recently announced the formation of a \$200 million venture capital fund to invest in startup companies that are leveraging 5G technology for applications other than traditional smartphones.

Investment Thesis

QCOM continues to be the leading provider of wireless communications technology and the best way to play long projected growth trends in global connected IoT (Internet of Things) devices and the upcoming global 5G broadband network rollout. QCOM's royalty license model will continue to drive highly profitable revenue by enabling it to invest in the ongoing development of new communication technologies and strategic acquisitions. QCOM's innovative ability and market-leading position continues to drive a higher Return on Capital, increasing Economic Profit, and greater shareholder value creation. QCOM's significant cash position and substantial cash flow will continue to increase shareholder returns with periodic dividend increases and share repurchases.

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Company Overview

Qualcomm, Inc. (QCOM-US) pioneered wireless communications and is the world's leading manufacturer of digital wireless communications semiconductors and equipment. Qualcomm designs manufactures and markets digital wireless communication semiconductors and telecom products and services based on CDMA (Code Division Multiple Access) technology. Qualcomm's products include CDMA-based integrated circuits (ICs) and system software that enables wireless voice and data communications and global positioning system (GPS) products. Qualcomm's greatest investment potential going forward will be the inclusion of its key technology in the global rollout of the high-speed 5G broadband network.

Qualcomm is the leading supplier of communication chip technology to all major communication companies and communication equipment manufacturers. Qualcomm derives its revenue from both the sale of communication semiconductors and through licensing and royalty agreements with communication equipment manufacturers. While CDMA, marketed under its Snapdragon line of communications processors, is Qualcomm's leading technology, Qualcomm also manufactures products based on Orthogonal Frequency Division Multiple Access (OFDMA). OFDMA enables same-channel multiple access along with Wideband Code Division Multiple Access (WCDMA), enhancing the transmission of multimedia content.

Qualcomm operates and reports revenue in two Business Segments:

Qualcomm CDMA Technologies (QCT): (76% of revenues) develops and sells CDMA-based integrated circuit (IC) semiconductors and system software for wireless voice and data communications and GPS products. QCT's integrated circuits are used to enable wireless connectivity for mobile phones, wireless data access cards, and communications infrastructure equipment. QCT's products include semiconductors that enable CDMA2000 1X, 1xEV-DO, EV-DO Revision A, EV-DO Revision B, and UMB. Qualcomm also develops ICs that support GSM/GPRS, WCDMA, HSDPA, and HSUPA technologies.

Qualcomm Technology Licensing (QTL): (24% of revenues) drives revenues from licensing Qualcomm's intellectual property portfolio, including CDMAOne, CDMA2000 1X EV-DO/1xEV-DV, TD-SCDMA, and WCDMA technologies. QTL receives revenue from license fees and royalties based on global sales by licensees use of Qualcomm's intellectual property.

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Qualcomm reports revenue by five Geographic Regions: China/Hong Kong (48% of revenue); Ireland (12% of revenue); United States (11% of revenue); South Korea (10% of revenue); and Other Foreign Countries (19% of revenue). Though Qualcomm's customers include many US-based manufacturers of communication equipment, the majority of actual manufacturing takes place by Asian-based contract manufacturers.

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Company Report – Research Update

QUALCOMM Incorporated (QCOM-US)

Communications Equipment

Financial Data

| Report Basis | LTM | LTM | LTM | LTM | LTM | LTM | NTM | 5 Yr | 3 Yr | Current |
|--|-------------|-------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|-------------|
| Reported Period Ending | 09/28/2014 | 09/27/2015 | 09/25/2016 | 09/24/2017 | 09/30/2018 | 09/29/2019 | 09/30/2020 | Average | Average | Trend |
| Net Sales Revenue | \$26,487.0 | \$25,281.0 | \$23,554.0 | \$22,291.0 | \$22,731.0 | \$24,273.0 | \$21,838.1 | \$23,626.0 | \$23,098.3 | \$23,055.5 |
| Sales Growth | 6.52% | -4.55% | -6.83% | -5.36% | 1.97% | 6.78% | -10.03% | -1.60% | 1.13% | -1.62% |
| Sales Growth Trend | 15.93% | -0.12% | -5.92% | -5.95% | -0.96% | 4.86% | -3.31% | -1.62% | -0.68% | 0.78% |
| Operating Cash Flow (EBITDAR) | \$15,634.1 | \$14,818.0 | \$14,117.2 | \$12,785.3 | \$12,718.4 | \$15,673.1 | \$12,948.4 | \$14,022.4 | \$13,725.6 | \$14,310.8 |
| EBITDAR Margin | 59.03% | 58.61% | 59.94% | 57.36% | 55.95% | 64.57% | 59.29% | 59.29% | 59.29% | 61.93% |
| EBITDAR Growth | 8.93% | -5.22% | -4.73% | -9.43% | -0.52% | 23.23% | -17.38% | 0.66% | 4.42% | 2.92% |
| Net Operating Profit Before Tax (NOPBT) | \$8,946.1 | \$8,027.0 | \$7,433.2 | \$5,730.3 | \$5,378.4 | \$8,731.1 | \$6,212.1 | \$7,060.0 | \$6,613.3 | \$7,471.6 |
| NOPBT Margin | 33.78% | 31.75% | 31.56% | 25.71% | 23.66% | 35.97% | 28.45% | 29.73% | 28.45% | 32.21% |
| NOPBT Growth | 8.07% | -10.27% | -7.40% | -22.91% | -6.14% | 62.34% | -28.85% | 3.12% | 11.10% | 16.74% |
| Cash Operating Income Tax | \$1,269.9 | \$1,510.9 | \$1,230.3 | \$1,055.3 | \$1,774.9 | \$2,881.3 | \$1,304.5 | \$1,690.5 | \$1,903.8 | \$2,092.9 |
| Economic Tax Effective Rate | 14.19% | 18.82% | 16.55% | 18.42% | 33.00% | 33.00% | 21.00% | 23.96% | 28.14% | 27.00% |
| Net Operating Profit After Tax (NOPAT) | \$7,676.2 | \$6,516.1 | \$6,202.9 | \$4,675.0 | \$3,603.5 | \$5,849.9 | \$4,907.6 | \$5,369.5 | \$4,709.5 | \$5,378.7 |
| NOPAT Margin | 28.98% | 25.77% | 26.33% | 20.97% | 15.85% | 24.10% | 22.47% | 22.61% | 20.31% | 23.29% |
| NOPAT Growth | 11.01% | -15.11% | -4.81% | -24.63% | -22.92% | 62.34% | -16.11% | -1.03% | 4.93% | 23.21% |
| Cash & Equivalents | \$32,022.0 | \$30,947.0 | \$32,350.0 | \$38,578.0 | \$12,123.0 | \$13,047.0 | \$12,615.8 | \$25,409.0 | \$21,249.3 | \$12,831.4 |
| Total Assets | \$48,574.0 | \$50,796.0 | \$52,359.0 | \$65,486.0 | \$32,686.0 | \$32,957.0 | \$31,867.7 | \$46,856.8 | \$43,709.7 | \$32,412.3 |
| Non - Interest Bearing Liabilities (NIBLs) | \$8,606.0 | \$7,552.0 | \$7,900.0 | \$11,664.0 | \$14,307.0 | \$11,067.0 | \$10,701.2 | \$10,498.0 | \$12,346.0 | \$10,884.1 |
| Net Assets | \$39,971.0 | \$43,251.0 | \$44,469.0 | \$53,822.0 | \$18,379.0 | \$21,890.0 | \$21,166.5 | \$36,362.2 | \$31,363.7 | \$21,528.2 |
| Economic Asset Adjustments | (\$1,663.8) | (\$1,679.7) | (\$1,697.6) | (\$2,324.3) | (\$246.2) | (\$855.8) | (\$827.5) | (\$1,360.7) | (\$1,142.1) | (\$841.7) |
| Net Operating Assets | \$38,307.2 | \$41,571.3 | \$42,771.4 | \$51,497.7 | \$18,132.8 | \$21,034.2 | \$20,338.9 | \$35,001.5 | \$30,221.6 | \$20,686.6 |
| Debt & Debt Equivalents | \$277.2 | \$11,227.3 | \$12,062.4 | \$22,293.7 | \$16,747.8 | \$16,295.2 | \$15,756.6 | \$15,725.3 | \$18,445.6 | \$16,025.9 |
| Equity & Equivalents | \$39,169.0 | \$31,421.0 | \$31,778.0 | \$30,746.0 | \$928.0 | \$4,909.0 | \$4,746.7 | \$19,956.4 | \$12,194.3 | \$4,827.9 |
| Total Capital - Financing Sources | \$39,446.2 | \$42,648.3 | \$43,840.4 | \$53,039.7 | \$17,675.8 | \$21,204.2 | \$20,503.3 | \$35,681.7 | \$30,639.9 | \$20,853.8 |
| Capital Adjustments | (\$1,941.0) | (\$1,938.0) | (\$2,003.0) | (\$2,725.0) | (\$624.0) | (\$1,218.0) | (\$1,177.7) | (\$1,701.6) | (\$1,522.3) | (\$1,197.9) |
| Net Capital Financing Sources | \$37,505.2 | \$40,710.3 | \$41,837.4 | \$50,314.7 | \$17,051.8 | \$19,986.2 | \$19,325.6 | \$33,980.1 | \$29,117.6 | \$19,655.9 |
| Net Working Capital | \$966.4 | \$1,809.1 | \$883.7 | \$181.6 | (\$2,661.5) | \$374.7 | \$362.3 | \$117.5 | (\$701.8) | \$368.5 |
| Cost of Net Working Capital | \$76.1 | \$83.4 | \$83.9 | \$31.1 | (\$81.5) | (\$61.9) | (\$59.8) | \$11.0 | (\$37.4) | (\$60.8) |
| % of Revenue | 0.29% | 0.33% | 0.36% | 0.14% | -0.36% | -0.25% | -0.27% | 0.04% | -0.16% | -0.26% |
| Operational Capital | \$3,529.5 | \$4,529.3 | \$3,403.1 | \$3,725.3 | \$612.4 | \$3,635.9 | \$3,515.7 | \$3,181.2 | \$2,657.8 | \$3,575.8 |
| Cost of Operational Capital | \$244.9 | \$242.1 | \$247.2 | \$207.8 | \$142.5 | \$114.9 | \$111.1 | \$190.9 | \$155.1 | \$113.0 |
| % of Revenue | 0.92% | 0.96% | 1.05% | 0.93% | 0.63% | 0.47% | 0.51% | 0.81% | 0.68% | 0.49% |
| Productive Capital | \$10,597.5 | \$13,750.3 | \$12,582.1 | \$14,085.3 | \$10,065.4 | \$12,089.9 | \$11,690.2 | \$12,514.6 | \$12,080.2 | \$11,890.0 |
| Cost of Productive Capital | \$671.1 | \$731.3 | \$820.5 | \$777.5 | \$793.3 | \$599.3 | \$579.5 | \$744.4 | \$723.4 | \$589.4 |
| % of Revenue | 2.53% | 2.89% | 3.48% | 3.49% | 3.49% | 2.47% | 2.65% | 3.16% | 3.15% | 2.56% |
| Total Operating Capital | \$7,609.5 | \$11,888.3 | \$11,599.1 | \$14,034.3 | \$7,146.4 | \$9,200.9 | \$8,896.7 | \$10,773.8 | \$10,127.2 | \$9,048.8 |
| Cost of Total Operating Capital | \$456.8 | \$585.7 | \$731.8 | \$747.3 | \$695.8 | \$442.2 | \$427.6 | \$640.6 | \$628.4 | \$434.9 |
| % of Revenue | 1.72% | 2.32% | 3.11% | 3.35% | 3.06% | 1.82% | 1.96% | 2.73% | 2.75% | 1.89% |
| Non - Operating Capital | \$30,697.7 | \$29,683.0 | \$31,172.3 | \$37,463.5 | \$10,986.5 | \$11,833.4 | \$11,442.2 | \$24,227.7 | \$20,094.4 | \$11,637.8 |
| Cost of Non - Operating Capital | \$1,845.3 | \$1,813.7 | \$1,896.1 | \$2,001.0 | \$1,591.5 | \$617.3 | \$596.9 | \$1,583.9 | \$1,403.3 | \$607.1 |
| % of Revenue | 6.97% | 7.17% | 8.05% | 8.98% | 7.00% | 2.54% | 2.73% | 6.75% | 6.17% | 2.64% |
| Total Capital | \$38,307.2 | \$41,571.3 | \$42,771.4 | \$51,497.7 | \$18,132.8 | \$21,034.2 | \$20,338.9 | \$35,001.5 | \$30,221.6 | \$20,686.6 |
| Cost of Total Capital | \$2,302.1 | \$2,399.3 | \$2,627.9 | \$2,748.3 | \$2,287.3 | \$1,059.6 | \$1,024.5 | \$2,224.5 | \$2,031.7 | \$1,042.0 |
| % of Revenue | 8.69% | 9.49% | 11.16% | 12.33% | 10.06% | 4.37% | 4.69% | 9.48% | 8.92% | 4.53% |
| Cost of Capital (WACC) | 6.27% | 6.01% | 6.23% | 5.83% | 6.57% | 5.41% | 5.41% | 6.01% | 5.94% | 5.41% |
| Capital Structure | | | | | | | | | | |
| Debt & Debt Equivalents | \$277.2 | \$11,227.3 | \$12,062.4 | \$22,293.7 | \$16,747.8 | \$16,295.2 | \$15,756.6 | \$15,725.3 | \$18,445.6 | \$16,025.9 |
| Debt & Debt Equivalents % of Market Value | 0.22% | 11.84% | 11.54% | 22.48% | 13.66% | 14.89% | 14.89% | 14.82% | 16.71% | 14.89% |
| Preferred Equity | \$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% |
| Market Value of Common Equity | \$125,802.4 | \$83,619.4 | \$92,471.4 | \$76,888.3 | \$105,821.4 | \$93,155.9 | \$90,076.7 | \$90,391.3 | \$91,955.2 | \$91,616.3 |
| Common Equity % of Market Value | 99.78% | 88.16% | 88.46% | 77.52% | 86.34% | 85.11% | 85.11% | 85.18% | 83.29% | 85.11% |
| Total Economic Market Value (MV) | \$126,079.5 | \$94,846.7 | \$104,533.8 | \$99,182.1 | \$122,569.2 | \$109,451.1 | \$105,833.3 | \$106,116.5 | \$110,400.8 | \$107,642.2 |
| Total % | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Excess Cash | \$30,697.7 | \$29,683.0 | \$31,172.3 | \$37,463.5 | \$10,986.5 | \$11,833.4 | \$11,442.2 | \$24,227.7 | \$20,094.4 | \$11,637.8 |
| Economic Enterprise Value | \$95,381.9 | \$65,163.7 | \$73,361.5 | \$61,718.6 | \$111,582.7 | \$97,617.7 | \$94,391.1 | \$81,888.8 | \$90,306.4 | \$96,004.4 |
| Average Capital | \$35,895.0 | \$39,107.7 | \$41,273.8 | \$46,076.0 | \$33,683.3 | \$18,519.0 | \$19,655.9 | \$35,732.0 | \$32,759.4 | \$19,087.5 |
| Capital Δ | \$3,220.4 | \$3,205.1 | \$1,127.1 | \$8,477.4 | (\$33,262.9) | \$2,934.4 | (\$660.6) | (\$3,503.8) | (\$7,283.7) | \$1,136.9 |

Source: Company Data, Financial statements and Tigress Research

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Company Report – Research Update

QUALCOMM Incorporated (QCOM-US)

Communications Equipment

Financial Analysis

| Report Basis | LTM | LTM | LTM | LTM | LTM | LTM | NTM | 5 Yr | 3 Yr | Current |
|---|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Reported Period Ending | 09/28/2014 | 09/27/2015 | 09/25/2016 | 09/24/2017 | 09/30/2018 | 09/29/2019 | 09/30/2020 | Average | Average | Trend |
| Return on Market Value (NOPAT / MV) | 6.09% | 6.87% | 5.93% | 4.71% | 2.94% | 5.34% | 5.17% | 5.16% | 4.33% | 5.26% |
| Return on Enterprise Value (NOPAT / EV) | 8.05% | 10.00% | 8.46% | 7.57% | 3.23% | 5.99% | 5.79% | 7.05% | 5.60% | 5.89% |
| Return on Capital (NOPAT / Average Capital) | 21.39% | 16.66% | 15.03% | 10.15% | 10.70% | 31.59% | 24.97% | 16.82% | 17.48% | 28.28% |
| Cost of Capital (WACC) | 6.27% | 6.01% | 6.23% | 5.83% | 6.57% | 5.41% | 5.41% | 6.01% | 5.94% | 5.41% |
| Economic Return Spread | 15.12% | 10.65% | 8.80% | 4.32% | 4.13% | 26.18% | 25.31% | 10.81% | 11.54% | 25.75% |
| Capital Charge | \$2,250.6 | \$2,349.4 | \$2,572.0 | \$2,686.6 | \$2,212.9 | \$1,002.0 | \$968.8 | \$2,164.6 | \$1,967.2 | \$985.4 |
| Economic Profit (EP) | \$5,425.6 | \$4,166.8 | \$3,630.9 | \$1,988.3 | \$1,390.6 | \$4,847.9 | \$4,687.7 | \$3,204.9 | \$2,742.3 | \$4,767.8 |
| Economic Profit Improvement (EPI) | \$795.9 | (\$1,258.9) | (\$535.9) | (\$1,642.5) | (\$597.7) | \$3,457.3 | (\$160.2) | (\$115.5) | \$405.7 | \$1,648.5 |
| EP Growth | 17.19% | -23.20% | -12.86% | -45.24% | -30.06% | 248.62% | -3.31% | 27.45% | 57.77% | 122.66% |
| Economic Profit Margin on Sales | 20.48% | 16.48% | 15.42% | 8.92% | 6.12% | 19.97% | 21.47% | 13.38% | 11.67% | 20.72% |
| Economic Profit Per Share | \$3.22 | \$2.58 | \$2.45 | \$1.35 | \$0.95 | \$4.01 | \$3.87 | \$2.27 | \$2.10 | \$3.94 |
| GAAP Earnings Per Share | \$4.48 | \$3.25 | \$3.84 | \$1.67 | (\$3.32) | \$3.62 | \$4.12 | \$1.81 | \$0.66 | \$3.87 |
| Excess Cash Per Share | \$18.34 | \$19.06 | \$21.12 | \$25.38 | \$7.75 | \$9.89 | \$9.56 | \$16.64 | \$14.34 | \$9.72 |
| Performance Drivers | | | | | | | | | | |
| Sales Growth | 6.52% | -4.55% | -6.83% | -5.36% | 1.97% | 6.78% | -10.03% | -1.60% | 1.13% | -1.62% |
| Sales Growth Trend (ROC Sales Growth) | 15.93% | -0.12% | -5.92% | -5.95% | 4.86% | 4.86% | -3.31% | -1.62% | -0.68% | 0.78% |
| EBITDAR Margin | 59.03% | 58.61% | 59.94% | 57.36% | 55.95% | 64.57% | 59.29% | 59.29% | 59.29% | 61.93% |
| EBITDAR Growth | 8.93% | -5.22% | -4.73% | -0.52% | 23.23% | 23.23% | -17.38% | 0.66% | 4.42% | 9.92% |
| NOPBT Margin | 33.78% | 31.75% | 31.56% | 25.71% | 23.66% | 35.97% | 28.45% | 29.73% | 28.45% | 32.21% |
| NOPBT Growth | 8.07% | -10.27% | -7.40% | -22.91% | -6.14% | 62.34% | -28.85% | 3.12% | 11.10% | 16.74% |
| NOPAT Margin | 28.98% | 25.77% | 26.33% | 20.97% | 15.85% | 24.10% | 22.47% | 22.61% | 20.31% | 23.29% |
| NOPAT Growth | 11.01% | -15.11% | -4.81% | -24.63% | -22.92% | 62.34% | -16.11% | -1.03% | 4.93% | 23.11% |
| Economic Profit Margin on Sales (EP / Sales) | 20.48% | 16.48% | 15.42% | 8.92% | 6.12% | 19.97% | 21.47% | 13.38% | 11.67% | 20.72% |
| Economic Profit Growth | 17.19% | -23.20% | -12.86% | -45.24% | -30.06% | 248.62% | -3.31% | 27.45% | 57.77% | 122.66% |
| Economic Return Spread (ROC-WACC) | 15.12% | 10.65% | 8.80% | 4.32% | 4.13% | 26.18% | 19.56% | 10.81% | 11.54% | 22.87% |
| Economic Return Ratio (ROC / WACC) | 341.07% | 277.36% | 241.17% | 174.01% | 162.84% | 583.84% | 461.47% | 287.84% | 306.90% | 522.66% |
| Economic Profit Momentum (ΔEP/Capital) | 2.12% | -3.09% | -1.28% | -3.26% | -3.51% | 17.30% | -0.83% | 1.23% | 3.51% | 8.23% |
| Economic Profit Momentum Margin (ΔEP/Sales) | 3.00% | -4.98% | -2.28% | -7.37% | -3.62% | 14.24% | -0.73% | -0.60% | 1.42% | 6.75% |
| Capital Growth | 9.39% | 8.55% | 2.77% | 20.26% | -66.11% | 17.21% | -3.31% | -3.46% | -9.55% | 6.95% |
| Capital Turns | 0.71X | 0.62X | 0.56X | 0.44X | 1.33X | 1.21X | 1.13X | 0.83X | 1.00X | 1.17X |
| EVC Acceleration Margin | 3.20% | -4.75% | -2.12% | -6.97% | -2.68% | 15.21% | -0.66% | -0.53% | 1.72% | 7.14% |
| EVC Acceleration Spread | 2.38% | -3.51% | -1.37% | -3.98% | -1.30% | 10.26% | -0.87% | -0.59% | 1.14% | 5.03% |
| Risk Factors | | | | | | | | | | |
| Free Cash Flow (NOPAT - Δ Capital) | \$4,455.8 | \$3,311.0 | \$5,075.8 | (\$3,802.4) | \$36,866.5 | \$2,915.5 | \$5,568.2 | \$8,873.3 | \$11,993.2 | \$4,241.8 |
| Free Cash Flow Rate (FCF / Capital) | 11.88% | 8.13% | 12.13% | -7.56% | 216.20% | 14.59% | 28.81% | 48.70% | 74.41% | 21.70% |
| Free Cash Flow Yield (FCF / MV) | 3.53% | 3.49% | 4.86% | -3.83% | 30.08% | 2.66% | 5.26% | 7.45% | 9.64% | 3.96% |
| Total Debt / Total Capital | 0.74% | 27.58% | 28.83% | 44.31% | 98.22% | 81.53% | 81.53% | 56.09% | 74.69% | 81.53% |
| Total Debt / EBITDAR | 1.77% | 75.77% | 85.44% | 174.37% | 131.68% | 103.97% | 121.69% | 114.25% | 136.67% | 112.83% |
| Excess Cash | \$30,697.7 | \$29,683.0 | \$31,172.3 | \$37,463.5 | \$10,986.5 | \$11,833.4 | \$0.0 | \$24,227.7 | \$20,094.4 | \$5,916.7 |
| Financial Leverage ((Total Debt - Excess Cash) / Pension Leverage (Net Pension Liability / MV)) | -24.13% | -19.46% | -18.28% | -15.29% | 4.70% | 4.08% | 14.89% | -8.85% | -2.17% | 9.48% |
| Equity Risk Index (S&P 500 = 1.00) | 0.89 | 0.90 | 0.93 | 0.92 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Stock Price Volatility | 2.64 | 3.37 | 3.93 | 3.93 | 3.96 | 5.86 | 5.86 | 4.21 | 4.58 | 5.86 |
| Sales Index (NL Sales) | 10.18 | 10.14 | 10.07 | 10.01 | 10.03 | 10.10 | 9.99 | 10.07 | 10.05 | 10.04 |
| Market Value Index (NL Market Value) | 11.74 | 11.46 | 11.56 | 11.50 | 11.72 | 11.60 | 11.57 | 11.57 | 11.61 | 11.59 |
| Size Index (NL Sales: MV) | 10.96 | 10.80 | 10.81 | 10.76 | 10.87 | 10.85 | 10.78 | 10.82 | 10.83 | 10.82 |
| Beta | 0.84 | 0.86 | 0.89 | 0.87 | 0.89 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| TFP Adjusted Beta | 0.89 | 0.90 | 0.93 | 0.92 | 0.93 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Stock Price Volatility | 2.64 | 3.37 | 3.93 | 3.93 | 3.96 | 5.86 | 5.86 | 4.21 | 4.58 | 5.86 |
| Valuation Measures | | | | | | | | | | |
| Total Economic Market Value (MV) | \$126,079.5 | \$94,846.7 | \$104,533.8 | \$99,182.1 | \$122,569.2 | \$109,451.1 | \$105,833.3 | \$106,116.5 | \$110,400.8 | \$107,642.2 |
| Economic Enterprise Value | \$95,381.9 | \$65,163.7 | \$73,361.5 | \$61,718.6 | \$111,582.7 | \$97,617.7 | \$94,391.1 | \$81,888.8 | \$90,306.4 | \$96,004.4 |
| Equity Market Value | \$125,802.4 | \$83,619.4 | \$92,471.4 | \$76,888.3 | \$105,821.4 | \$93,155.9 | \$90,076.7 | \$90,391.3 | \$91,955.2 | \$91,616.3 |
| Total Capital | \$38,307.2 | \$41,571.3 | \$42,771.4 | \$51,497.7 | \$18,132.8 | \$21,034.2 | \$20,338.9 | \$35,001.5 | \$30,221.6 | \$20,686.6 |
| Market Value Created MVC (MV - Capital) | \$87,772.4 | \$53,275.4 | \$61,762.4 | \$47,684.3 | \$104,436.4 | \$88,416.9 | \$85,494.4 | \$71,115.1 | \$80,179.2 | \$86,955.6 |
| MVC Margin (MVC / Sales) | 331.38% | 210.73% | 262.22% | 213.92% | 459.44% | 364.26% | 391.49% | 301.00% | 347.12% | 377.16% |
| MVC Spread (MVC / Capital) | 229.13% | 128.15% | 144.40% | 92.59% | 575.95% | 420.35% | 420.35% | 203.18% | 265.30% | 420.35% |
| Current EVC Value (EP / WACC) | \$86,533.3 | \$69,360.1 | \$58,265.9 | \$34,100.4 | \$21,166.6 | \$89,603.1 | \$86,641.4 | \$53,325.9 | \$46,189.5 | \$88,122.3 |
| Current Operations Value COV | \$122,428.3 | \$108,467.9 | \$99,539.7 | \$80,176.4 | \$54,849.9 | \$108,122.1 | \$108,297.3 | \$89,057.9 | \$78,949.0 | \$107,209.7 |
| Current Operations Value Per Share | \$72.74 | \$67.04 | \$67.08 | \$54.28 | \$37.49 | \$89.36 | \$73.29 | \$61.40 | \$57.07 | \$80.60 |
| Future Growth Value (MVC - EVA Value) | \$3,651.2 | (\$13,621.2) | \$4,994.0 | \$19,005.6 | \$67,719.3 | \$1,328.9 | (\$464.0) | \$17,058.6 | \$31,451.8 | \$432.5 |
| Future Growth Value Reliance (FGV / MV) | 2.90% | -14.36% | 4.78% | 19.16% | 55.25% | 1.21% | -0.44% | 16.08% | 28.49% | 0.40% |
| Share Price | \$78.99 | \$64.67 | \$52.12 | \$56.91 | \$72.03 | \$76.07 | \$76.07 | \$64.36 | \$68.34 | \$76.07 |
| Dividend Yield | 1.95% | 2.78% | 3.88% | 3.87% | 3.30% | 3.26% | 3.26% | 3.26% | 3.26% | 3.26% |
| Total Shareholder Return (TTM) | 31.25% | -15.35% | -15.53% | 13.06% | 29.87% | 8.87% | 0.00% | -15.39% | 6.18% | 11.32% |
| MV to IC Ratio | 3.29X | 2.28X | 2.44X | 1.93X | 6.76X | 5.20X | 5.20X | 3.03X | 3.65X | 5.20X |
| EV / EBITDAR Multiple | 6.10X | 4.40X | 5.20X | 4.83X | 8.77X | 6.23X | 7.29X | 5.84X | 6.58X | 6.71X |
| EV / NOPBT Multiple | 10.66X | 8.12X | 9.87X | 10.77X | 20.75X | 11.18X | 15.19X | 11.60X | 13.66X | 12.85X |
| EV / NOPAT Multiple | 12.43X | 10.00X | 11.83X | 13.20X | 30.96X | 16.69X | 19.23X | 15.25X | 19.18X | 17.85X |
| EV / EP Multiple | 17.58X | 15.64X | 20.20X | 31.04X | 80.24X | 20.14X | 20.14X | 25.55X | 32.93X | 20.14X |
| Future Growth Value (% of MV) | 2.90% | -14.36% | 4.78% | 19.16% | 55.25% | 1.21% | -0.44% | 16.08% | 28.49% | 0.40% |
| Current Operations Value (% of MV) | 97.10% | 114.36% | 95.22% | 80.84% | 44.75% | 98.79% | 100.44% | 83.92% | 71.51% | 99.60% |
| 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 | 1,683.0 | 1,618.0 | 1,484.0 | 1,477.0 | 1,463.0 | 1,210.0 | 1,450.4 | 1,450.4 | 1,383.3 | 1,330.2 |

Source: Company Data, Financial statements and Tigress Research

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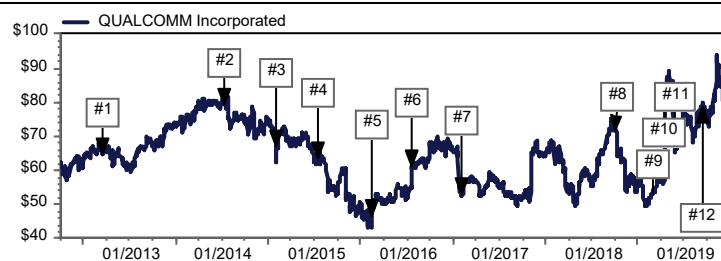
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QUALCOMM Incorporated (QCOM-US)
Communications Equipment
Ratings History

| QUALCOMM Incorporated (QCOM-US) | | | | |
|---------------------------------|------------|------------------------|------------|---------|
| Item # | Date | Research Action | Rating | Price |
| #12 | 09/17/2019 | Reiterate Rating | Buy | \$78.69 |
| #11 | 05/23/2019 | Reiterate Rating | Buy | \$58.26 |
| #10 | 04/17/2019 | Reiterate Rating | Buy | \$79.08 |
| #9 | 02/26/2019 | Reiterate Rating | Buy | \$69.42 |
| #8 | 09/28/2018 | Reiterate Rating | Buy | \$72.03 |
| #7 | 02/06/2017 | Reiterate Rating | Buy | \$52.88 |
| #6 | 07/22/2016 | Reiterate Rating | Buy | \$61.15 |
| #5 | 02/16/2016 | Reiterate Rating | Buy | \$46.73 |
| #4 | 07/15/2015 | Reiterate Rating | Buy | \$63.10 |
| #3 | 02/04/2015 | Reiterate Rating | Buy | \$66.96 |
| #2 | 07/11/2014 | Rating Downgrade | Buy | \$79.60 |
| #1 | 03/18/2013 | Initiation of Coverage | Strong Buy | \$64.56 |


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.

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 |

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| Rating: | Meaning: | Rating Distribution (12/04/2019) | | | |
|----------------------|--|----------------------------------|-----|--|-----|
| | | Companies Under Coverage | | Relationship Companies Under Coverage* | |
| | | # | % | # | % |
| Strong Buy: | 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% |
| Buy: | 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% |
| Neutral: | Expect little or no outperformance opportunity over the next 12 months. | 44 | 37% | 1 | 15% |
| 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 |

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

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Specific Disclosures for the companies that are the subject of this Report

| Company: | Disclosure: |
|---------------------------------|--------------------|
| QUALCOMM Incorporated (QCOM-US) | 14 |

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