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Facebook, Inc. Class A (FB-US)

Internet Software & Services

- We reiterate our Strong Buy rating on FB as Business Performance continues to increase, driven by greater monthly and daily active users that continue to fuel increasing gains in advertising revenue.
- Business Performance remains strong driven by FB's ongoing ability to monetize its massive user base.
- FB's innovative capabilities and ongoing business investment will further drive revenue growth and greater profitability.
- Instagram continues to evolve as a key revenue driver.
- The opportunities to monetize Messenger, WhatsApp and oculus will become FB's next growth drivers.
- FB's massive balance sheet and strong cash flow will continue to drive growth.

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Company Note

Facebook, Inc. Class A (FB-US)

Internet Software & Services

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Research Action: Reiterate rating

Rating: Strong Buy
Prior Rating: Strong Buy
Price 08/09/2017: \$171.18

52 Week High / \$175.49 Low: \$113.55

Key Data: (TTM as of Jun-17)

Future Growth Value:

Excess Cash per Share: \$11.65 Annual Dividend: \$0.00 **Dividend Yield:** 0.00% Avg. Volume (30 Day): 19.5M **Shares Outstanding:** 2,902.3M Float: 2,863.0M **Equity MV:** \$496,820.8M Sales TTM: \$33.173.0M Beta: 1.10 EBITDAR: \$25,485.2M NOPAT: \$13,145.1M **Total Invested Capital:** \$66,665.1M Return on Capital: 22.36% Cost of Capital: 7.17% **Economic Profit:** \$8.929.2M Market Value Added: \$431,870.8M **Current Operations Value:** \$191,168.0M

\$307,367.9M

- We reiterate our Strong Buy rating on FB as Business Performance continues to increase, driven by greater monthly and daily active users that continue to fuel increasing gains in advertising revenue. FB's mobile and live video initiatives continue to develop further user engagement creating a more effective platform for advertisers. FB's ongoing implementation of new tools enables it to better monetize its massive user base. New revenue growth opportunities exist within its other subsidiaries which include Messenger, WhatsApp and Oculus. The ongoing implementation of augmented reality/virtual reality (AR/VR) and artificial intelligence (AI) technologies will continue to produce better user experiences and provide advertisers the ability to more efficiently target new customers. FB's innovative abilities should further enable it to realize greater revenue opportunities and yields from its massive user base. We believe significant upside in the shares exists from current levels as FB continues to drive increasing Economic Profit and greater shareholder value creation.
- ability to monetize its massive user base. For the LTM ending June 2017, net sales revenue increased 49.7% from \$22.16 billion to \$33.17 billion driven by increases in MAUs and DAUs leading to significant increases in advertising revenue. We forecast an increase of 34.2% to \$44.51 billion over the NTM. Economic Operating Cash Flow (EBITDAR) increased 53.2% Y/Y from \$16.64 billion to \$25.49 billion over the LTM. We forecast an increase of 34.2% to \$33.16 billion over the NTM. Net Operating Profit After Tax (NOPAT) increased 114% from \$6.14 billion to \$13.15 billion over the LTM. We forecast an increase of 30% to \$17.1 billion over the NTM. Return on Capital grew from 13.38% to 22.36% over the LTM. We forecast a further increase to 31.39% over the NTM. FB's strong ability to generate increasing Return on Capital will continue to generate greater Economic Profit.
- FB's innovative capabilities and ongoing business investment will further drive revenue growth and greater profitability. FB continues to invest in expanding its employee base, video content, new features and developing new tools for advertisers to more efficiently target and connect with its customers. In continuing with its mission to connect the world, FB has launched Facebook Communities to connect people with similar interests. This is another way FB enables its users to interact and share experiences.



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Facebook, Inc. Class A (FB-US)

Internet Software & Services

- Instagram continues to evolve as a key revenue driver. While FB does not break out actual contributions from Instagram, FB has expanded its dynamic ad platform to Instagram and added features like Live and Boomerang to Instagram Stories. The Instagram photo-sharing app now has over 700 million MAUs and 400 million DAUs. To drive more advertisers to use the Instagram platform, FB has created new tools to promote posts and evaluate performance and results directly within Instagram. Instagram's newest feature, Stories, now has 250 million DAUs. In January 2017, FB added the opportunity to imbed ads in Instagram Stories.
- The opportunities to monetize Messenger, WhatsApp and oculus will become FB's next growth drivers. Chatbots and "conversational commerce" will be the key to monetizing Messenger and WhatsApp. Over time, AI will train chatbots to create interactivity with end users. They can help answer questions, direct inquiries and fulfill information requests. FB has recently opened its Messenger app, which currently has over 1 billion users, to developers for the creation of chatbots. This would enable businesses to provide customer service and fulfill transactions. FB recently announced plans to open messenger to worldwide advertisers on a test basis. WhatsApp, with over 1 billion DAUs, further expands FB's mobile product lineup. To better monetize WhatsApp through advertising, FB eliminated subscription fees and will begin to incorporate "conversational commerce". FB views its acquisition of Oculus as the platform for its AR/VR efforts. In October 2016, FB announced a \$250 million investment to develop VR content for Oculus. It also announced a new, cheaper, standalone VR headset with inside-out tracking. Embedding AI and AR/VR technologies is how FB plans on expanding capabilities of its platform and optimizing the user experience as well as creating tools to eliminate fake news and ferret out inappropriate content.
- FB's massive balance sheet and strong cash flow will continue to drive growth. As of June 2017, FB has over \$33 billion, \$11.65 a share, in excess cash. In addition, we forecast Economic Operating Cash Flow (EBITDAR) of \$33 billion over the NTM, more than enough to continue funding growth in its employee base, new technology development and make strategic acquisitions. In January 2017, FB announced an open market purchase for \$6 billion worth of stock.



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Facebook, Inc. Class A (FB-US)

Internet Software & Services

Investment Thesis

FB's massive user base, strong brand equity and incredible innovative ability has made it the world's dominant social platform. FB's competitive advantage is its massive user base of over 2 billion MAUs, 1.3 billion DAUs and proprietary tools enabling advertisers to more effectively target their best potential customers. More advertisers continue to migrate to using social media and continue to allocate more advertising dollars to social media advertising continues to drive FB's massive revenue growth and profitability. FB's innovative ability to help advertisers' better target customers and ongoing increases in operating efficiency continue to drive increasing Return on Capital, greater Economic Profit and additional shareholder value creation.



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Facebook, Inc. Class A (FB-US)

Internet Software & Services

Company Overview

Facebook, Inc. (FA-US) is the world's largest social media platform with over 2 billion monthly active users (MAU) and over 1.3 billion daily active users (DAU). FB's web-based portal enables users to interact with their friends, family, coworkers and people with similar interests to exchange messages, share pictures and videos, play games, listen to music and interact with their favorite brands. Application developers can create apps and websites on the Facebook platform for users on both the paid and free use basis. Advertisers can target FB's massive user base as it provides them tools to better target customers with the highest level of interest in their products based on a user's likes and interactions. FB provides a platform to develop applications and create ads and videos that drive advertising revenue.

FB's revenues primarily comes from advertising, but it also earns fees on revenue generated by developers for use of the apps they create. FB provides an interactive platform for advertisers to better target customers with interest in their products by using both user referrals and likes as well as targeting people's interests. FB receives revenue from the display of impression-based ads and the delivery of clickbased ads on its website. FB's subsidiaries include the photo sharing app, Instagram; WhatsApp; and Messenger. Facebook earns most of its revenues (over 90%) by providing an interactive and engaging platform for advertisers. The company recognizes revenues from the display of impression-based ads and the delivery of click-based ads on its website. FB's value added proposition to advertisers is that it provides tools to target the best potential customers, which dramatically increases an advertisers ROI. FB recently launched the concept of "Communities" to better link people with like interests and further enable advertisers to target people with interest in their products. FB also continues to develop artificial intelligence (AI) to help advertisers and better optimize the user experience. FB's subsidiaries include photo sharing app, Instagram; WhatsApp; Messenger and Virtual Reality (VR) platform, Oculus.



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Facebook, Inc. Class A (FB-US)

Internet Software & Services

Financial Data

| Report Basis Reported Period Ending | LTM 06/30/2012 | LTM 06/30/2013 | LTM 06/30/2014 | LTM 06/30/2015 | LTM 06/30/2016 | LTM 06/30/2017 | NTM 06/30/2018 | 5 Yr Average | 3 Yr Average | Current Trend |
|--|--------------------------|-----------------------------|----------------------------|----------------------------|-------------------------|--------------------------------|-----------------------------|----------------------------|----------------------------|---|
| Net Sales Revenue | \$4,327.0 | \$6,118.0 | \$10,013.0 | \$14,639.0 | \$22,160.0 | \$33,173.0 | \$44,505.7 | \$17,220.6 | \$23,324.0 | \$38,839.4 |
| Sales Growth | 53.22% | 41.39% | 63.66% | 46.20% | 51.38% | 49.70% | 34.16% | 50.47% | 49.09% | 41.93% |
| Sales Growth Trend | 31.93% | 46.12% | 54.76% | 53.19% | 49.31% | 50.37% | 40.38% | 50.75% | 50.95% | 45.37% |
| Operating Cash Flow (EBITDAR) | \$1,949.4 | \$4,175.3 | \$7,323.0 | \$10,487.7 | \$16,635.5 | \$25,485.8 | \$33,162.6 | \$12,821.5 | \$17,536.3 | \$29,324.2 |
| EBITDAR Margin | 45.05% | 68.25% | 73.13% | 71.64% | 75.07% | 76.83% | 74.51% | 72.98% | 74.51% | 75.67% |
| EBITDAR Growth | 3.74% | 114.19% | 75.39% | 43.22% | 58.62% | 53.20% | 30.12% | 68.92% | 51.68% | 41.66% |
| Net Operating Profit Before Tax (NOPBT) | \$640.4 | \$1,938.3 | \$4,400.0 | \$4,829.7 | \$8,985.5 | \$15,888.8 | \$22,015.6 | \$7,208.5 | \$9,901.3 | \$18,952.2 |
| NOPBT Margin | 14.80% | 31.68% | 43.94% | 32.99% | 40.55% | 47.90% | 49.47% | 39.41% | 40.48% | 48.68% |
| NOPBT Growth | -56.11% | 202.69% | 127.00% | 9.77% | 86.05% | 76.83% | 38.56% | 100.47% | 57.55% | 57.69% |
| Cash Operating Income Tax | \$0.0 | \$639.7 | \$1,452.0 | \$1,593.8 | \$2,849.5 | \$2,743.2 | \$4,922.9 | \$1,855.6 | \$2,395.5 | \$3,833.0 |
| Economic Tax Effective Rate | 0.00% | 33.00% | 33.00% | 33.00% | 31.71% | 17.27% | 22.36% | 29.60% | 27.33% | 19.81% |
| Net Operating Profit After Tax (NOPAT) NOPAT Margin | \$640.4 14.80% | \$1,298.7 21.23% | \$2,948.0 29.44% | \$3,235.9 22.10% | \$6,136.0 27.69% | \$13,145.6 39.63% | \$17,092.7 38.41% | \$5,352.8 28.02% | \$7,505.8 29.81% | \$15,119.1 39. <i>0</i> 2% |
| NOPAT Waigin | -56.11% | 102.80% | 127.00% | 9.77% | 89.62% | 114.24% | 30.03% | 88.69% | 71.21% | 72.13% |
| NOTAT GIOWIT | -30.1170 | 102.0070 | 127.0070 | 3.1170 | 03.0270 | 117.27/0 | 30.0370 | 00.0370 | 71.2170 | 72.1370 |
| Cash & Equivalents | \$10,188.0 | \$10,252.0 | \$13,956.0 | \$14,125.0 | \$23,293.0 | \$35,452.0 | \$49,766.3 | \$19,415.6 | \$24,290.0 | \$42,609.2 |
| Total Assets | \$14,928.0 | \$15,724.0 | \$20,769.0 | \$44,130.0 | \$55,739.0 | \$73,843.0 | \$103,658.3 | \$42,041.0 | \$57,904.0 | \$88,750.6 |
| Non - Interest Bearing Liabilities (NIBLs) Net Assets | \$913.0 \$14.015.0 | \$1,208.0 \$14.516.0 | \$2,097.0 | \$4,331.0 | \$5,356.0 | \$7,362.0 | \$10,334.5 | \$4,070.8 | \$5,683.0 | \$8,848.3 |
| Economic Asset Adjustments | \$14,015.0 \$329.1 | \$14,516.0 \$640.5 | \$18,672.0 \$274.0 | \$39,799.0 \$1,045.7 | \$50,383.0 \$519.1 | \$66,481.0 \$181.4 | \$93,323.8 \$254.7 | \$37,970.2 \$532.1 | \$52,221.0 \$582.1 | \$79,902.4 \$218.0 |
| Net Operating Assets | \$14,344.1 | \$15,156.5 | \$18,946.0 | \$40,844.7 | \$50,902.1 | \$66,662.4 | \$93,578.4 | \$38,502.3 | \$52,803.1 | \$80,120.4 |
| Net Operating Assets | \$14,544.1 | \$15,150.5 | \$10,940.0 | \$40,044. <i>1</i> | \$30,90Z. I | \$00,002.4 | φ93,376.4 | φ30,302.3 | φ32,003. I | \$60,120.4 |
| Debt & Debt Equivalents | \$1,531.1 | \$2,927.5 | \$1,200.0 | \$1,336.7 | \$1,325.1 | \$1,712.4 | \$2,403.8 | \$1,700.3 | \$1,458.1 | \$2,058.1 |
| Equity & Equivalents | \$13,309.0 | \$12,349.0 | \$18,346.0 | \$39,452.0 | \$50,383.0 | \$66,481.0 | \$93,323.8 | \$37,402.2 | \$52,105.3 | \$79,902.4 |
| Total Capital - Financing Sources | \$14,840.1 | \$15,276.5 | \$19,546.0 | \$40,788.7 | \$51,708.1 | \$68,193.4 | \$95,727.6 | \$39,102.5 | \$53,563.4 | \$81,960.5 |
| Capital Adjustments | (\$496.0) | (\$120.0) | (\$600.0) | \$56.0 | (\$806.0) | (\$1,531.0) | (\$2,149.2) | (\$600.2) | (\$760.3) | (\$1,840.1) |
| Net Capital Financing Sources | \$14,344.1 | \$15,156.5 | \$18,946.0 | \$40,844.7 | \$50,902.1 | \$66,662.4 | \$93,578.4 | \$38,502.3 | \$52,803.1 | \$80,120.4 |
| Net Working Capital | \$1,290.4 | \$736.9 | \$1,093.7 | \$1,961.0 | \$2,681.0 | \$3,785.7 | \$5,314.2 | \$2,051.6 | \$2,809.2 | \$4,549.9 |
| Cost of Net Working Capital | \$44.9 | \$71.6 | \$67.5 | \$109.2 | \$151.0 | \$233.3 | \$327.6 | \$126.5 | \$164.5 | \$280.4 |
| % of Revenue | 1.04% | 1.17% | 0.67% | 0.75% | 0.68% | 0.70% | 0.74% | 0.79% | 0.71% | 0.72% |
| Operational Capital | \$3,678.5 | \$3,899.4 | \$4,663.7 | \$7,557.6 | \$9,863.1 | \$14,135.1 | \$19,842.3 | \$8,023.8 | \$10,518.6 | \$16,988.7 |
| Cost of Operational Capital | \$119.3 | \$267.5 | \$315.7 | \$436.8 | \$566.8 | \$865.9 | \$1,215.6 | \$490.5 | \$623.2 | \$1,040.7 |
| % of Revenue | 2.76% | 4.37% | 3.15% | 2.98% | 2.56% | 2.61% | 2.73% | 3.14% | 2.72% | 2.67% |
| Productive Capital | \$4,487.5 | \$5,530.4 | \$6,335.7 | \$29,187.6 | \$30,785.1 | \$34,450.1 | \$48,359.8 | \$21,257.8 | \$31,474.3 | \$41,404.9 |
| Cost of Productive Capital | <i>\$144.5</i> | \$353.6 | \$437.4 | \$1,269.7 | \$1,951.4 | \$2,353.9 | \$3,304.3 | \$1,273.2 | \$1,858.3 | \$2,829.1 |
| % of Revenue | 3.34% | 5.78% | 4.37% | 8.67% | 8.81% | 7.10% | 7.42% | 6.94% | 8.19% | 7.26% |
| Total Operating Capital | \$4,372.5 | \$5,210.4 | \$5,490.7 | \$27,451.6 | \$28,717.1 | \$32,869.1 | \$46,140.5 | \$19,947.8 | \$29,679.3 | \$39,504.8 |
| Cost of Total Operating Capital | \$141.1 | \$338.3 | \$394.5 | \$1,177.4 | \$1,827.6 | \$2,222.2 | \$3,119.5 | \$1,192.0 | \$1,742.4 | \$2,670.8 |
| % of Revenue | 3.26% | 5.53% | 3.94% | 8.04% | 8.25% | 6.70% | 7.01% | 6.49% | 7.66% | 6.85% |
| Non - Operating Capital | \$9,971.7 | \$9,946.1 \$703.1 | \$13,455.4 \$862.6 | \$13,393.1 \$959.6 | \$22,185.0 | \$33,793.4 \$2,019.9 | \$47,437.9 \$2,835.4 | \$18,554.6 | \$23,123.8 | \$40,615.6 \$2, <i>4</i> 27.6 |
| Cost of Non - Operating Capital % of Revenue | \$306.2 7.08% | \$703.1 11.49% | \$802.6 8.62% | \$959.6 6.56% | \$1,157.6 5.22% | \$2,019.9 6.09% | \$2,835.4 6.37% | \$1,140.6 7.60% | \$1,379.0 5.96% | 6.23% |
| Total Capital | \$14,344.1 | \$15,156.5 | \$18,946.0 | \$40,844.7 | \$50,902.1 | \$66,662.4 | \$93,578.4 | \$38,502.3 | \$52,803.1 | \$80,120.4 |
| Cost of Total Capital | \$447.4 | \$1,041.3 | \$1,257.1 | \$2,137.1 | \$2,985.2 | \$4,242.1 | \$5,954.9 | \$2,332.6 | \$3,121.5 | \$5,098.5 |
| % of Revenue | 10.34% | 17.02% | 12.55% | 14.60% | 13.47% | 12.79% | 13.38% | 14.09% | 13.62% | 13.08% |
| Cost of Capital (WACC) | 6.23% | 7.06% | 7.37% | 7.15% | 6.51% | 7.22% | 7.22% | 7.06% | 6.96% | 7.22% |
| Capital Structure | | | | | | | | | | |
| Debt & Debt Equivalents | \$1,531.1 | \$2,927.5 | \$1,200.0 | \$1,336.7 | \$1,325.1 | \$1,712.4 | \$2,403.8 | \$1,700.3 | \$1,458.1 | \$2,058.1 |
| Debt & Debt Equivalents % of Market Value | 7.21% | 6.30% | 0.89% | 0.69% | 0.50% | 0.48% | 0.48% | 0.85% | 0.53% | 0.48% |
| 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 | \$19,698.4 | \$43,530.6 | \$134,158.1 | \$192,876.6 | \$264,208.0 | \$357,034.9 | \$501,193.4 | \$198,361.7 | \$271,373.2 | \$429,114.2 |
| Common Equity % of Mark et Value | 92.79% | 93.70% | 99.11% | 99.31% | 99.50% | 99.52% | 99.52% | 99.15% | 99.47% | 99.52% |
| Total Economic Market Value (MV) | \$21,229.6 | \$46,458.1 | \$135,358.1 | \$194,213.3 | \$265,533.2 | \$358,747.3 | \$503,597.2 | \$200,062.0 | \$272,831.3 | \$431,172.3 |
| Total % | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% | 100.00% |
| Excess Cash | \$9,971.7 | \$9,946.1 | \$13,455.4 | \$13,393.1 | \$22,185.0 | \$33,793.4 | \$47,437.9 | \$18,554.6 | \$23,123.8 | \$40,615.6 |
| Economic Enterprise Value | \$11,257.9 | \$36,512.0 | \$121,902.8 | \$180,820.2 | \$243,348.2 | \$324,954.0 | \$456,159.3 | \$181,507.4 | \$249,707.5 | \$390,556.6 |
| Average Capital | \$7,180.6 | \$14,750.3 | \$17,051.3 | \$29,895.3 | \$45,873.4 | \$58,782.3 | \$80,120.4 | \$33,270.5 | \$44,850.3 | \$69,451.3 |
| Capital ∆ | \$14,327.1 | \$812.3 | \$3,789.5 | \$21,898.6 | \$10,057.5 | \$15,760.3 | \$26,916.0 | \$10,463.7 | \$15,905.5 | \$21,338.1 |
| Source: Company Data, Financial statements and Tigress R | Research | | | | | | | | | |

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Facebook, Inc. Class A (FB-US)

Internet Software & Services

Financial Analysis

| Report Basis Reported Period Ending | LTM 06/30/2012 | LTM 06/30/2013 | LTM 06/30/2014 | LTM 06/30/2015 | LTM 06/30/2016 | LTM 06/30/2017 | NTM 06/30/2018 | 5 Yr Average | 3 Yr Average | Current Trend |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--------------------|----------------------|----------------------|----------------------|
| Return on Market Value (NOPAT / MV) | 3.02% | 2.80% | 2.18% | 1.67% | 2.31% | 3.66% | 5.14% | 2.52% | 2.55% | 4.40% |
| Return on Enterprise Value (NOPAT / EV) | 5.69% | 3.56% | 2.42% | 1.79% | 2.52% | 4.05% | 5.68% | 2.87% | 2.79% | 4.86% |
| Return on Capital (NOPAT / Average Capital) | 8.92% | 8.80% | 17.29% | 10.82% | 13.38% | 22.36% | 31.39% | 14.53% | 15.52% | 26.88% |
| Cost of Capital (WACC) | 6.23% | 7.06% | 7.37% | 7.15% | 6.51% | 7.22% | 7.22% | 7.06% | 6.96% | 7.22% |
| Economic Return Spread | 2.69% | 1.74% | 9.92% | 3.68% | 6.87% | 15.15% | 21.26% | 7.47% | 8.56% | 18.20% |
| Capital Charge | \$447.4 | \$1,041.3 | \$1,257.1 | \$2,137.1 | \$2,985.2 | \$4,242.1 | \$5,954.9 | \$2,332.6 | \$3,121.5 | \$5,098.5 |
| Economic Profit (EP) | \$193.0 | \$257.4 | \$1,690.9 | \$1,098.8 | \$3,150.8 | \$8,903.5 | \$12,498.4 | \$3,020.3 | \$4,384.4 | \$10,700.9 |
| Economic Profit Improvment (EPI) | (\$1,266.0) | \$64.4 | \$1,433.5 | (\$592.1) | \$2,052.0 | \$5,752.7 | \$3,594.9 | \$1,742.1 | \$2,404.2 | \$4,673.8 |
| EP Growth Economic Profit Margin on Sales | -86.77% 4.46% | 33.35% 4.21% | 557.00% 16.89% | -35.01% 7.51% | 186.74% 14.22% | 182.58% 26.84% | 40.38% 28.08% | 184.93% 13.93% | 111.44% 16.19% | 111.48% 27.46% |
| Economic Profit Per Share | \$0.15 | \$0.13 | \$0.70 | \$0.42 | \$1.12 | \$3.11 | \$4.37 | \$1.10 | \$1.55 | \$3.74 |
| GAAP Earnings Per Share | \$0.28 | \$0.24 | \$0.94 | \$1.00 | \$2.12 | \$4.47 | \$5.69 | \$1.75 | \$2.53 | \$5.08 |
| Excess Cash Per Share | \$5.31 | \$4.13 | \$5.26 | \$4.79 | \$7.77 | \$11.65 | \$16.36 | \$6.72 | \$8.07 | \$14.01 |
| | | | | | | | | | | |
| Performance Drivers | | | | | | | | | | |
| Sales Growth | 53.22% | 41.39% | 63.66% | 46.20% | 51.38% | 49.70% | 34.16% | 50.47% | 49.09% | 41.93% |
| Sales Growth Trend (ROC Sales Growth) | 31.93% | 46.12% | 54.76% | 53.19% | 49.31% | 50.37% | 40.38% | 50.75% | 50.95% | 45.37% |
| EBITDAR Margin | 45.05% | 68.25% | 73.13% | 71.64% | 75.07% | 76.83% | 74.51% | 72.98% | 74.51% | 75.67% |
| EBITDAR Growth | 3.74% | 114.19% | 75.39% | 43.22% | 58.62% | 53.20% | 30.12% | 68.92% | 51.68% | 41.66% |
| NOPBT Margin | 14.80% | 31.68% | 43.94% | 32.99% | 40.55% | 47.90% | 49.47% | 39.41% | 40.48% | 48.68% |
| NOPBT Growth | -56.11% | 202.69% | 127.00% | 9.77% | 86.05% | 76.83% | 38.56% | 100.47% | 57.55% | 57.69% |
| NOPAT Margin NOPAT Growth | 14.80% -56.11% | 21.23% 102.80% | 29.44% 127.00% | 22.10% | 27.69% | 39.63% | 38.41% 30.03% | 28.02% 88.69% | 29.81% | 39.02% 72.13% |
| | -56.11% 4.46% | 102.80% 4.21% | 127.00% | 9.77% 7.51% | 89.62% 14.22% | 114.24% 26.84% | 30.03% 28.08% | 88.69% 13.93% | 71.21% 16.19% | 72.13% 27.46% |
| Economic Profit Margin on Sales (EP / Sales) Economic Profit Growth | 4.46% -86.77% | 4.21% 33.35% | 16.89% 557.00% | 7.51% -35.01% | 14.22% 186.74% | 26.84% 182.58% | 28.08% 40.38% | 13.93% | 16.19% 111.44% | 27.46% 111.48% |
| Economic Return Spread (ROC-WACC) | 2.69% | 1.74% | 9.92% | 3.68% | 6.87% | 15.15% | 24.18% | 7.47% | 8.56% | 19.66% |
| Economic Return Ratio (ROC / WACC) | 143.14% | 124.72% | 234.51% | 151.42% | 205.55% | 309.88% | 435.00% | 205.21% | 222.28% | 372.44% |
| Economic Profit Momentum (ΔΕΡ/Capital) | -8.83% | 0.42% | 7.57% | -1.45% | 4.03% | 8.63% | 3.84% | 3.84% | 3.74% | 6.24% |
| Economic Profit Momentum Margin (ΔΕΡ/Sales) | -29.26% | 1.05% | 14.32% | -4.04% | 9.26% | 17.34% | 8.08% | 7.59% | 7.52% | 12.71% |
| Capital Growth | 0.00% | 5.66% | 25.00% | 115.58% | 24.62% | 30.96% | 40.38% | 40.37% | 57.06% | 35.67% |
| Capital Turns | 0.30X | 0.40X | 0.53X | 0.36X | 0.44X | 0.50X | 0.48X | 0.44X | 0.43X | 0.49X |
| EVC Acceleration Margin | -44.83% 0.00% | 1.49% | 23.43% 9.72% | -5.91% -3.47% | 14.02% 6.86% | 25.96% 12.54% | 10.84% 6.12% | 3.91% 2.17% | 13.96% 7.23% | 20.04% |
| EVC Acceleration Spread | 0.00% | 0.90% | 9.72% | -3.47% | 0.00% | 12.54% | 0.12% | 2.17% | 7.23% | 10.42% |
| Risk Factors | | | | | | | | | | |
| Free Cash Flow (NOPAT - ∆ Capital) | (\$13,686.8) | \$486.3 | (\$841.5) | (\$18,662.7) | (\$3,921.5) | (\$2,614.7) | (\$9,823.3) | (\$5,110.8) | (\$8,399.6) | (\$6,219.0) |
| Free Cash Flow Rate (FCF / Capital) | -95.42% | 3.21% | -4.44% | -45.69% | -7.70% | -3.92% | -10.50% | -11.71% | -19.11% | -7.21% |
| Free Cash Flow Yield (FCF / MV) | -64.47% | 1.05% | -0.62% | -9.61% | -1.48% | -0.73% | -1.95% | -2.28% | -3.94% | -1.34% |
| Total Debt / Total Capital | 10.67% | 19.32% | 6.33% | 3.27% | 2.60% | 2.57% | 2.57% | 6.82% | 2.81% | 2.57% |
| Total Debt / EBITDAR | 78.55% | 70.11% | 16.39% | 12.74% | 7.97% | 6.72% | 7.25% | 22.79% | 9.14% | 6.98% |
| Excess Cash Financial Leverage ((Total Debt - Excess Cash) / | \$9,971.7 -39.76% | \$9,946.1 -15.11% | \$13,455.4 -9.05% | \$13,393.1 -6.21% | \$22,185.0 -7.86% | \$33,793.4 -8.94% | \$0.0 0.48% | \$18,554.6 -9.43% | \$23,123.8 -7.67% | \$16,896.7 -4.23% |
| 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) | 1.06 | 1.06 | 1.10 | 1.11 | 1.10 | 1.10 | 1.10 | 1.09 | 1.10 | 1.10 |
| Stock Price Volatility | 9.66 | 8.79 | 6.77 | 4.14 | 3.42 | 3.23 | 3.23 | 5.27 | 3.60 | 3.23 |
| Sales Index (NL Sales) | 8.37 | 8.72 | 9.21 | 9.59 | 10.01 | 10.41 | 10.70 | 9.59 | 10.00 | 10.56 |
| Market Value Index (NL Market Value) | 9.96 | 10.75 | 11.82 | 12.18 | 12.49 | 12.79 | 13.13 | 12.00 | 12.49 | 12.96 |
| Size Index (NL Sales: MV) | 9.17 | 9.73 | 10.51 | 10.88 | 11.25 | 11.60 | 11.92 | 10.80 | 11.24 | 11.76 |
| Beta | 1.08 | 1.08 | 1.16 | 1.17 | 1.15 | 1.15 | 1.15 | 1.14 | 1.15 | 1.15 |
| TFP Adjusted Beta | 1.06 | 1.06 | 1.10 | 1.11 | 1.10 | 1.10 | 1.10 | 1.09 | 1.10 | 1.10 |
| Stock Price Volatility | 9.66 | 8.79 | 6.77 | 4.14 | 3.42 | 3.23 | 3.23 | 5.27 | 3.60 | 3.23 |
| Valuation Measures | | | | | | | | | | |
| Total Economic Market Value (MV) | \$21,229.6 | \$46,458.1 | \$135,358.1 | \$194,213.3 | \$265,533.2 | \$358,747.3 | \$503,597.2 | \$200,062.0 | \$272,831.3 | \$431,172.3 |
| Economic Enterprise Value | \$11,257.9 | \$36,512.0 | \$121,902.8 | \$180,820.2 | \$243,348.2 | \$324,954.0 | \$456,159.3 | \$181,507.4 | \$249,707.5 | \$390,556.6 |
| Equity Market Value | \$19,698.4 | \$43,530.6 | \$134,158.1 | \$192,876.6 | \$264,208.0 | \$357,034.9 | \$501,193.4 | \$198,361.7 | \$271,373.2 | \$429,114.2 |
| Total Capital | \$14,344.1 | \$15,156.5 | \$18,946.0 | \$40,844.7 | \$50,902.1 | \$66,662.4 | \$93,578.4 | \$38,502.3 | \$52,803.1 | \$80,120.4 |
| Market Value Created MVC (MV - Capital) | \$6,885.4 | \$31,301.6 | \$116,412.1 | \$153,368.6 | \$214,631.0 | \$292,084.9 | \$410,018.8 | \$161,559.7 | \$220,028.2 | \$351,051.9 |
| MVC Margin (MVC / Sales) | 159.13% | 511.63% | 1162.61% | 1047.67% | 968.55% | 880.49% | 921.27% | 938.18% | 943.36% | 903.86% |
| MVC Spread (MVC / Capital) | 48.00% | 206.52% | 614.44% | 375.49% | 421.65% | 438.16% | 438.16% | 419.61% | 416.70% | 438.16% |
| Current EVC Value (EP / WACC) | \$3,097.9 | \$3,645.6 | \$22,934.9 | \$15,371.3 | \$48,417.7 | \$123,374.8 | \$173,189.3 | \$42,774.1 | \$63,015.8 | \$148,282.0 |
| Current Operations Value COV | \$10,278.5 | \$18,395.9 | \$39,986.2 | \$45,266.6 | \$94,291.1 | \$182,157.0 | \$253,309.7 | \$76,044.6 | \$107,866.2 | \$217,733.4 |
| Current Operations Value Per Share | \$7.94 | \$9.17 | \$16.52 | \$17.32 | \$33.64 | \$63.62 | \$99.68 | \$29.92 | \$39.08 | \$80.58 |
| Future Growth Value (MVC - EVA Value) | \$10,951.1 | \$28,062.2 | \$95,371.9 | \$148,946.7 | \$171,242.1 | \$176,590.3 | \$250,287.6 | \$124,017.4 | \$164,965.1 | \$213,438.9 |
| Future Growth Value Reliance (FGV / MV) Share Price | 51.58% \$31.10 | 60.40% \$24.88 | 70.46% \$67.29 | 76.69% \$85.77 | 64.49% \$114.28 | 49.22% \$150.98 | 49.70% \$150.98 | 61.99% \$88.64 | 60.46% \$117.01 | 49.50% \$150.98 |
| Dividend Yield | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | \$130.96 | φοσ.04 | φ117.01 | φ130.96 |
| Total Shareholder Return (TTM) | 0.00% | -19.99% | 170.46% | 27.46% | 33.25% | 32.11% | 0.00% | -41.29% | 32.01% | 29.03% |
| MV to IC Ratio | 1.48X | 3.07X | 7.14X | 4.75X | 5.22X | 5.38X | 5.38X | 5.20X | 5.17X | 5.38X |
| EV / EBITDAR Multiple | 5.78X | 8.74X | 16.65X | 17.24X | 14.63X | 12.75X | 13.76X | 14.16X | 14.24X | 13.32X |
| EV / NOPBIT Multiple | 17.58X | 18.84X | 27.71X | 37.44X | 27.08X | 20.45X | 20.72X | 25.18X | 25.22X | 20.61X |
| EV / NOPAT Multiple | 17.58X | 28.11X | 41.35X | 55.88X | 39.66X | 24.72X | 26.69X | 33.91X | 33.27X | 25.83X |
| EV / EP Multiple | 58.33X | 141.87X | 72.09X | 164.56X | 77.23X | 36.50X | 36.50X | 60.10X | 56.95X | 36.50X |
| Future Growth Value (% of MV) | 51.58% | 60.40% | 70.46% | 76.69% | 64.49% | 49.22% | 49.70% | 61.99% | 60.46% | 49.50% |
| Current Operations Value (% of MV) | 48.42% | 39.60% | 29.54% | 23.31% | 35.51% | 50.78% | 50.30% | 38.01% | 39.54% | 50.50% |
| 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 | 1,294.0 | 2,006.0 | 2,420.0 | 2,614.0 | 2,803.0 | 2,863.0 | 2,541.2 | 2,541.2 | 2,760.0 | 2,702.1 |

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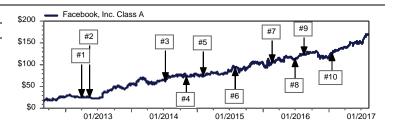
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Facebook, Inc. Class A (FB-US)

Internet Software & Services

Ratings History

| Item # | Date | Research Action | Rating | Price |
|--------|------------|------------------------|------------|----------|
| #10 | 01/23/2017 | Reiterate Rating | Strong Buy | \$128.93 |
| #9 | 08/16/2016 | Reiterate Rating | Strong Buy | \$123.30 |
| #8 | 06/30/2016 | Rating Upgrade | Strong Buy | \$114.28 |
| #7 | 02/19/2016 | Reiterate Rating | Buy | \$104.57 |
| #6 | 08/03/2015 | Reiterate Rating | Buy | \$94.14 |
| #5 | 02/04/2015 | Reiterate Rating | Buy | \$75.63 |
| #4 | 10/31/2014 | Rating Upgrade | Buy | \$74.99 |
| #3 | 07/09/2014 | Rating Downgrade | Neutral | \$64.97 |
| #2 | 05/14/2013 | Reiterate Rating | Buy | \$27.07 |
| #1 | 04/03/2013 | Initiation of Coverage | Buy | \$26.25 |



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

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 | Distribution | (08/09/2017) |
|--------|--------------|--------------|
| | | |

Relationship

| | niverse. The potential return is measured on a relative basis to the general market which is expresented by the S&P 500 and to the subject company's industry peer group as indicated. | | Companies Under Coverage | | | Companies Under Coverage* | | |
|---------------------------------------|--|-------|-----------------------------|------|----|---------------------------|--|--|
| Rating: | Meaning: | | # | % | # | % | | |
| 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 | 17% | | |
| Buy: | Expect out-performance for the price of the stock relative to its industry peer group and general market over the next 12 months. | | 54 | 44% | 4 | 66% | | |
| Neutral: | Expect little or no outperformance opportunity over the next 12 months. | | 46 | 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. | | 6 | 5% | 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 | | |
| Partners LLC or or investment banking | panies under research coverage are companies in which Tigress Financial ne of its affiliates has received compensation for investment banking or nonge services from the company, affiliated entities and / or its employees within the sor expects to do so within the next three months. | Total | 123 | 100% | 71 | 100% | | |

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