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Synaptics Incorporated (SYNA-US)

Semiconductors

- We reiterate our Strong Buy rating on SYNA as it undergoes transition from mobile touch-based interfaces to focus on the significant growth in audio and proximity-based based interfaces for Internet-connected devices (IoT).
- Increasing market share penetration in connected devices will start to drive accelerating Business Performance.
- SYNA is best positioned to benefit from the growing need for secure IoT interface solutions.
- SYNA highlighted a number of new applications at this year's CES.
- SYNA continue to advance its lead in smart audio interfaces.
- SYNA continues to enhance its shareholder returns through ongoing stock repurchases.
- SYNA is on our Research Focus List and in our Focus Opportunity Portfolio.

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Company Note
Synaptics Incorporated (SYNA-US)
 Semiconductors

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Research Action:

Reiterate rating

Rating: Strong Buy
Prior Rating: Strong Buy
Price 01/23/2019: \$38.51
52 Week High / \$55.25
Low: \$33.54
Key Data: (TTM as of Sep-18)
Excess Cash per Share: \$5.18
Annual Dividend: \$0.00
Dividend Yield: 0.00%
Avg. Volume (30 Day): 0.5M
Shares Outstanding: 34.6M
Float: 34.0M
Short Interest: 6.3M
SI % / Float 18.66%
Equity MV: \$1,333.2M
Sales TTM: \$1,630.5M
Beta: 0.91
EBITDAR: \$481.2M
NOPAT: (\$18.3)M
Total Invested Capital: \$1,224.4M
Return on Capital: -1.52%
Cost of Capital: 6.35%
Economic Profit: (\$94.4)M
Market Value Added: \$606.8M
Current Operations Value: (\$287.7)M
Future Growth Value: \$2,118.9M

- **We reiterate our Strong Buy rating on SYNA as it undergoes transition from mobile touch-based interfaces to focus on the significant growth in audio and proximity-based based interfaces for Internet-connected devices (IoT).** SYNA is driving future growth with the ongoing ramp-up of its touch base interfaces, along with developing new interface technologies including proximity sensing and voice interface for use in the growing number of home and automotive connected appliances and other voice-space interfaces and applications. SYNA is increasing investments and development activities including the ongoing enhancement of its TDDI (touch and display driver integration) technology and development of OLED (organic light-emitting diode) technology. SYNA is also pursuing acquisitions and partnerships to increase its development capabilities and market opportunities for further integration in the expansion of IoT-based connected devices. We believe SYNA's innovative ability and market-leading position will continue to drive increased market penetration in physical and audio interface adoption, which will turnaround current flat Business Performance trends and begin to reaccelerate Business Performance growth. SYNA's new growth initiatives should start to drive 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.
- **Increasing market share penetration in connected devices will start to drive accelerating Business Performance.** For the 12 months ending September 2018, Net Sales Revenue declined 6.8% Y/Y from \$1.75 billion to \$1.63 billion. We forecast an increase of greater than 1% to \$1.65 billion over the NTM as the ongoing ramp-up and ASP of its COF, and all OLED display drivers, continue to increase along with significant gains in audio interface adoption. Economic Operating Cash Flow (EBITDAR) decreased slightly Y/Y from \$482.4 million to \$481.2 million over the LTM. We forecast an increase of 1.25% to \$487.2 million over the NTM. Net Operating Profit After Tax (NOPAT) declined from \$45 million to a loss of \$18.3 million over the LTM as SYNA continued to invest in the development of new IoT interface products. We forecast a turnaround and expect \$34.6 million in NOPAT over the NTM. We believe Return on Capital and Economic Profit will remain negative as SYNA continues to transition away from lower ASP mobile touch-based interfaces and into more higher ASP and value-added audio-based interfaces. As SYNA continues to improve its Return on Capital and Economic Profit, we believe there is an increasing opportunity for SYNA to drive significant shareholder value creation.

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- **SYNA is best positioned to benefit from the growing need for secure IoT interface solutions.** SYNA will continue to benefit from the ongoing integration of display and interface needs for all types of connected devices including home appliances, automobiles, and other new and emerging applications in addition to traditional touchpad and touchscreen mobile device interfaces. Voice-integrated interfaces are a key growth opportunity for both home control, automotive interface, and other ongoing needs where voice- or text-based passwords are not convenient or practical. In addition, TDDI is ramping up significantly in the ongoing adoption of more advanced automotive-based infotainment systems. Built-in communication systems and Bluetooth connectivity to smartphones in automobiles are becoming more reliant on voice-based commands to eliminate the need for drivers to remove their hands from steering wheels. SYNA has indicated that nine of the top automotive OEMs are currently working on sample audio and touch devices from SYNA. The ongoing ramp-up of more elaborate integrated infotainment systems in automobiles will be a significant growth opportunity for SYNA.
- **SYNA highlighted a number of new applications at this year's CES.** SYNA previewed number of new applications of SYNA's display, touch and fingerprint interfaces along with a number of new near and far field-based audio solutions. SYNA continues to increase its market share penetration in high-end PCs with optical fingerprint sensors and glass-based touchpads which help save space and improve performance. We also saw a number of enterprise systems with superior fingerprint sensors for single sign-on purposes for virtual networks. SYNA is also working on a Microsoft (MSFT-US, Buy Rated) sponsored application for fingerprint sensor applications for enterprise systems. SYNA expects a market penetration rate of over 30% by 2021, up from 12% in 2017, for fingerprint sensors in notebook PCs.
- **SYNA continue to advance its lead in smart audio interfaces.** SYNA recently introduced its first Smart Edge SoC (System-on-a-Chip) proprietary wake word engine for the next generation of voice recognition audio interfaces. The new AS3xx series is a comprehensive family of Smart Edge audio-interface solutions including SoCs comprising neural network acceleration, a proprietary wake word engine with support for custom wake words, and highly-advanced far field-based voice processing. SYNA continues to emerge as a key provider of secure ID authentication interfaces and voice recognition that will become more important as the ongoing introduction of voice-activated internet interfaces continues to grow. SYNA is partnering with audio manufacturers including Harman International and Anker, which are using SYNA's DSPs (Demand-Side Platform) to integrate Amazon's Alexa voice assistant into their devices.

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SYNA is also gaining ground in the smart-television and set-top box markets. Chinese consumer electronics maker TCL will use SYNA chips to integrate Alexa into its TVs.

- **SYNA continues to enhance its shareholder returns through ongoing stock repurchases.** SYNA continues to use its excess cash and cash flow to invent new technologies and ongoing new product introductions along with making strategic acquisitions and repurchasing stock. Currently, SYNA has \$181.8 million, \$5.18 per share, in excess cash along with our expected Economic Operating Cash Flow (EBITDAR) generation of \$487.2 million over the NTM. Since 2010, SYNA has repurchased close to \$1.1 billion worth of stock.
- **SYNA is on our Research Focus List and in our Focus Opportunity Portfolio.** SYNA will benefit significantly as one of the best ways to play the growing number of IoT devices. SYNA's innovative ability and leading position in the development of touch-based and voice-based interfaces will continue to increase its market penetration in all types of mobile, portable and IoT devices.

Investment Thesis

SYNA's industry-leading position and innovative capabilities will drive increasing penetration in human user interface solutions as it expands into new applications including voice recognition and proximity sensing. SYNA's AudioSmart Far-Field voice recognition technology can provide added security in voice-activated gateways such as Amazon's (AMZN-US, Buy Rated) Alexa and Google (GOOGL-US, Strong Buy Rated) Home where the use of a traditional password would not be practical. SYNA's pressure-sensitive touchpads and screens along with biometric fingerprint readers also increase security in mobile devices. SYNA is expanding beyond its traditional markets of portable computers and mobile devices into smart home applications, home appliances, and automotive applications that create secure human user interfaces to many IoT (Internet of Things) connected devices. The growing demand for secure human- interaction control interfaces for IoT devices will drive accelerating Business Performance and higher returns on capital, increasing Economic Profit and greater shareholder value creation.

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Company Overview

Synaptics, Inc. (SYNA-US) develops custom-designed user interface solutions that enable people to interact with mobile computing, communication, entertainment, and other electronic devices. Synaptics designs and manufactures pressure-sensitive touchpads and touchscreens with biometric capabilities that provide users the ability to use their finger for screen navigation, cursor movement, and a platform of interactive input along with fingerprint readers that provide added security.

Synaptics' human interface products are used in mobile phones, notebook and tablet computers, and other mobile devices. Its TouchPad is used in computer peripherals such as monitors and remote controls; its ClickPad replaces a mouse for laptops and notebooks; and its ClearPad provides touchscreen controls for mobile devices like smartphones and tablets along with smart home and automotive applications. Synaptics recently developed AudioSmart Far-Field voice recognition technology which will provide security for the growing use of audio interfaces.

In 2017, Synaptics acquired Conexant Systems and Marvell Technology Group's Multimedia Solutions business which collectively develop audio, video, and voice-processing solutions expanding its product portfolio and enabling the further development of audio interface-enabled products.

Synaptics operates and reports its revenue by three Business Segments: Mobile (63% of revenue); Internet of Things, IoT (22% of revenue); and Personal Computing (16% of revenue).

Synaptics reports its revenue by six Geographic Segments including: China (49% of revenue); Japan (22% of revenue); Taiwan (14% of revenue); United States (6% of revenue); South Korea (4% of revenue); and Other (5% of revenue).

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Synaptics Incorporated (SYNA-US)
Semiconductors
Financial Data

Report Basis	LTM	LTM	LTM	LTM	LTM	LTM	NTM	5 Yr	3 Yr	Current
Reported Period Ending	09/30/2013	09/30/2014	09/30/2015	09/30/2016	09/30/2017	09/30/2018	09/30/2019	Average	Average	Trend
Net Sales Revenue	\$759.2	\$1,007.7	\$1,890.3	\$1,583.1	\$1,749.4	\$1,630.5	\$1,649.9	\$1,572.2	\$1,654.3	\$1,640.2
Sales Growth	40.11%	32.74%	87.59%	-16.25%	10.50%	-6.80%	1.19%	21.56%	-4.18%	-2.80%
Sales Growth Trend	21.51%	35.69%	65.65%	25.28%	-0.20%	0.12%	-2.01%	25.31%	8.40%	-0.94%
Economic Operating Cash Flow (EBITDAR)	\$310.3	\$370.3	\$611.1	\$498.9	\$482.4	\$481.2	\$487.2	\$488.8	\$487.5	\$484.2
EBITDAR Margin	40.88%	36.75%	32.33%	31.51%	27.57%	29.51%	29.53%	31.53%	29.53%	29.52%
EBITDAR Growth	56.73%	19.33%	65.03%	-18.36%	-3.31%	-0.23%	1.25%	12.49%	-7.30%	0.51%
Net Operating Profit Before Tax (NOPBT)	\$141.2	\$129.2	\$154.6	\$83.1	\$67.2	(\$18.3)	\$43.8	\$83.1	\$44.0	\$12.8
NOPBT Margin	18.60%	12.82%	8.18%	5.25%	3.84%	-1.12%	2.65%	5.79%	2.65%	0.77%
NOPBT Growth	131.82%	-8.52%	19.67%	-46.28%	-19.15%	-127.22%	339.63%	-36.30%	-64.21%	106.21%
Cash Operating Income Tax	\$13.0	\$42.6	\$48.1	\$0.0	\$22.2	\$0.0	\$9.2	\$22.6	\$7.4	\$4.6
Economic Tax Effective Rate	9.22%	33.00%	31.13%	0.00%	33.00%	0.00%	21.00%	19.43%	11.00%	10.50%
Net Operating Profit After Tax (NOPAT)	\$128.2	\$86.6	\$106.5	\$87.9	\$45.0	(\$18.3)	\$34.6	\$61.5	\$38.2	\$8.2
NOPAT Margin	16.89%	8.59%	5.63%	5.55%	2.57%	-1.12%	2.10%	4.24%	2.33%	0.49%
NOPAT Growth	170.09%	-32.48%	23.01%	-17.48%	-48.79%	-140.62%	289.31%	-43.27%	-68.97%	74.34%
Cash & Equivalents	\$349.1	\$467.7	\$289.5	\$310.0	\$199.7	\$263.3	\$258.0	\$306.0	\$257.7	\$260.7
Total Assets	\$684.0	\$1,024.0	\$1,394.1	\$1,241.2	\$1,477.1	\$1,524.8	\$1,494.2	\$1,332.2	\$1,414.4	\$1,509.5
Non - Interest Bearing Liabilities (NIBLs)	\$145.1	\$285.3	\$414.1	\$283.5	\$272.2	\$335.8	\$329.1	\$318.2	\$297.2	\$332.4
Net Assets	\$538.9	\$738.7	\$980.0	\$957.7	\$1,204.9	\$1,189.0	\$1,165.1	\$1,014.1	\$1,117.2	\$1,177.1
Economic Asset Adjustments	\$8.5	\$12.7	\$50.3	\$21.9	\$12.7	\$35.4	\$34.6	\$26.6	\$23.3	\$35.0
Net Operating Assets	\$547.4	\$751.5	\$1,030.3	\$979.6	\$1,217.6	\$1,224.4	\$1,199.8	\$1,040.6	\$1,140.5	\$1,212.1
Debt & Debt Equivalents	\$10.0	\$11.8	\$259.3	\$241.1	\$449.7	\$466.2	\$456.8	\$285.6	\$385.6	\$461.5
Equity & Equivalents	\$521.5	\$717.8	\$705.7	\$698.8	\$745.8	\$710.1	\$695.9	\$715.6	\$718.2	\$703.0
Total Capital - Financing Sources	\$531.4	\$729.5	\$965.0	\$939.9	\$1,195.5	\$1,176.3	\$1,152.6	\$1,001.2	\$1,103.9	\$1,164.4
Capital Adjustments	\$0.9	\$1.0	\$31.6	\$9.0	\$1.1	\$24.3	\$23.8	\$13.4	\$11.5	\$24.1
Net Capital Financing Sources	\$532.3	\$730.5	\$996.6	\$948.9	\$1,196.6	\$1,200.6	\$1,176.5	\$1,014.6	\$1,115.3	\$1,188.5
Net Working Capital	\$130.1	\$108.6	\$265.0	\$248.4	\$284.3	\$307.3	\$301.2	\$242.7	\$280.0	\$304.2
Cost of Net Working Capital	\$6.6	\$6.9	\$10.6	\$9.6	\$14.8	\$18.8	\$18.4	\$12.1	\$14.4	\$18.6
% of Revenue	0.87%	0.68%	0.56%	0.61%	0.85%	1.15%	1.12%	0.77%	0.87%	1.13%
Operational Capital	\$199.0	\$216.8	\$401.1	\$370.6	\$415.4	\$429.3	\$420.7	\$366.7	\$405.1	\$425.0
Cost of Operational Capital	\$10.6	\$11.9	\$17.6	\$14.5	\$21.9	\$26.8	\$26.3	\$18.5	\$21.1	\$26.6
% of Revenue	1.39%	1.18%	0.93%	0.92%	1.25%	1.65%	1.59%	1.19%	1.27%	1.62%
Productive Capital	\$232.5	\$355.7	\$828.6	\$721.0	\$1,066.2	\$1,001.3	\$981.2	\$794.6	\$929.5	\$991.2
Cost of Productive Capital	\$12.9	\$16.9	\$33.7	\$29.1	\$49.7	\$65.7	\$64.4	\$39.0	\$48.2	\$65.0
% of Revenue	1.70%	1.68%	1.78%	1.84%	2.84%	4.03%	3.90%	2.43%	2.90%	3.96%
Total Operating Capital	\$236.2	\$334.2	\$835.3	\$748.7	\$1,105.3	\$1,042.6	\$1,021.7	\$813.2	\$965.5	\$1,032.1
Cost of Total Operating Capital	\$12.5	\$16.4	\$33.3	\$29.8	\$51.6	\$68.2	\$66.9	\$39.8	\$49.9	\$67.5
% of Revenue	1.65%	1.63%	1.76%	1.88%	2.95%	4.18%	4.05%	2.48%	3.00%	4.12%
Non - Operating Capital	\$311.2	\$417.3	\$195.0	\$230.8	\$112.2	\$181.8	\$178.1	\$227.4	\$175.0	\$180.0
Cost of Non - Operating Capital	\$20.8	\$20.9	\$17.4	\$8.0	\$9.5	\$9.3	\$9.2	\$13.0	\$9.0	\$9.2
% of Revenue	2.74%	2.08%	0.92%	0.51%	0.55%	0.57%	0.55%	0.92%	0.54%	0.56%
Total Capital	\$547.4	\$751.5	\$1,030.3	\$979.6	\$1,217.6	\$1,224.4	\$1,199.8	\$1,040.6	\$1,140.5	\$1,212.1
Cost of Total Capital	\$33.4	\$37.3	\$50.7	\$37.8	\$61.1	\$77.6	\$76.0	\$52.9	\$58.8	\$76.8
% of Revenue	4.39%	3.70%	2.68%	2.39%	3.50%	4.76%	4.61%	3.40%	3.55%	4.68%
Cost of Capital (WACC)	6.81%	5.74%	5.69%	3.76%	5.57%	6.35%	6.35%	5.42%	5.23%	6.35%
Capital Structure										
Debt & Debt Equivalents	\$10.0	\$11.8	\$259.3	\$241.1	\$449.7	\$466.2	\$456.8	\$285.6	\$385.6	\$461.5
Debt & Debt Equivalents % of Market Value	0.69%	0.44%	8.02%	10.57%	25.38%	22.66%	22.66%	11.87%	18.93%	22.66%
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	\$1,431.0	\$2,680.1	\$2,972.5	\$2,039.9	\$1,321.7	\$1,591.3	\$1,559.4	\$2,121.1	\$1,651.0	\$1,575.4
Common Equity % of Market Value	99.31%	99.56%	91.98%	89.43%	74.62%	77.34%	77.34%	88.13%	81.07%	77.34%
Total Economic Market Value (MV)	\$1,440.9	\$2,691.9	\$3,231.8	\$2,280.9	\$1,771.4	\$2,057.5	\$2,016.2	\$2,406.7	\$2,036.6	\$2,036.8
Total %	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Excess Cash	\$311.2	\$417.3	\$195.0	\$230.8	\$112.2	\$181.8	\$178.1	\$227.4	\$175.0	\$180.0
Economic Enterprise Value	\$1,129.8	\$2,274.6	\$3,036.8	\$2,050.1	\$1,659.2	\$1,875.7	\$1,838.1	\$2,179.3	\$1,861.7	\$1,856.9
Average Capital	\$476.4	\$631.4	\$863.5	\$972.7	\$1,072.7	\$1,198.6	\$1,188.5	\$947.8	\$1,081.3	\$1,193.5
Capital Δ	\$111.9	\$198.2	\$266.1	(\$47.7)	\$247.7	\$4.0	(\$24.1)	\$133.6	\$68.0	(\$10.1)

Source: Company Data, Financial statements and Tigress Research

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Company Report – Research Update

Synaptics Incorporated (SYNA-US)

Semiconductors

Financial Analysis

Report Basis	LTM	LTM	LTM	LTM	LTM	LTM	NTM	5 Yr	3 Yr	Current
Reported Period Ending	09/30/2013	09/30/2014	09/30/2015	09/30/2016	09/30/2017	09/30/2018	09/30/2019	Average	Average	Trend
Return on Market Value (NOPAT / MV)	8.90%	3.22%	3.29%	3.85%	2.54%	-0.89%	-0.87%	2.40%	1.83%	-0.88%
Return on Enterprise Value (NOPAT / EV)	11.35%	3.81%	3.51%	4.29%	2.71%	-0.97%	-0.95%	2.67%	2.01%	-0.96%
Return on Capital (NOPAT / Average Capital)	26.91%	13.71%	12.33%	9.03%	4.19%	-1.52%	-1.49%	7.55%	3.90%	-1.51%
Cost of Capital (WACC)	6.81%	5.74%	5.69%	3.76%	5.57%	6.35%	6.35%	5.42%	5.23%	6.35%
Economic Return Spread	20.10%	7.97%	6.64%	5.27%	-1.37%	-7.88%	-7.72%	2.13%	-1.33%	-7.80%
Capital Charge	\$32.4	\$36.3	\$49.1	\$36.6	\$59.7	\$76.1	\$74.6	\$51.6	\$57.5	\$75.4
Economic Profit (EP)	\$95.7	\$50.3	\$57.3	\$51.3	(\$14.7)	(\$94.4)	(\$92.5)	\$10.0	(\$19.3)	(\$93.5)
Economic Profit Improvement (EPI)	\$70.3	(\$45.4)	\$7.0	(\$6.0)	(\$66.0)	(\$79.7)	\$1.9	(\$38.0)	(\$50.8)	(\$38.9)
EP Growth	276.92%	-47.47%	14.00%	-10.53%	-128.68%	-541.71%	2.01%	-142.88%	-226.97%	-269.85%
Economic Profit Margin on Sales	12.61%	4.99%	3.03%	3.24%	-0.84%	-5.79%	-5.61%	0.93%	-1.13%	-5.70%
Economic Profit Per Share	\$2.93	\$1.45	\$1.55	\$1.40	(\$0.42)	(\$2.76)	(\$2.71)	\$0.24	(\$0.59)	(\$2.73)
GAAP Earnings Per Share	\$3.90	\$1.06	\$2.90	\$1.44	\$0.51	(\$2.75)	\$4.69	\$0.63	(\$0.27)	\$0.97
Excess Cash Per Share	\$9.44	\$11.28	\$5.30	\$6.63	\$3.35	\$5.18	\$5.07	\$6.35	\$5.05	\$5.13
Performance Drivers										
Sales Growth	40.11%	32.74%	87.59%	-16.25%	10.50%	-6.80%	1.19%	21.56%	-4.18%	-2.80%
Sales Growth Trend (ROC Sales Growth)	21.51%	35.69%	65.65%	25.28%	-0.20%	0.12%	-2.01%	25.31%	8.40%	-0.94%
EBITDAR Margin	40.88%	36.75%	32.33%	31.51%	27.57%	29.51%	29.53%	31.53%	29.53%	29.52%
EBITDAR Growth	56.73%	19.33%	65.03%	-18.36%	-3.31%	-0.23%	1.25%	12.49%	-7.30%	0.51%
NOPBT Margin	18.60%	12.82%	8.18%	5.25%	3.84%	-1.12%	2.65%	5.79%	2.65%	0.77%
NOPBT Growth	131.82%	-8.52%	19.67%	-46.28%	-19.15%	-127.22%	339.63%	-36.30%	-64.21%	106.21%
NOPAT Margin	16.89%	8.59%	5.63%	5.55%	2.57%	-1.12%	2.10%	4.24%	2.33%	0.49%
NOPAT Growth	170.09%	-32.48%	23.01%	-17.48%	-48.79%	-140.62%	289.31%	-43.27%	-68.97%	74.34%
Economic Profit Margin on Sales (EP / Sales)	12.61%	4.99%	3.03%	3.24%	-0.84%	-5.79%	-5.61%	0.93%	-1.13%	-5.70%
Economic Profit Growth	276.92%	-47.47%	14.00%	-10.53%	-128.68%	-541.71%	2.01%	-142.88%	-226.97%	-269.85%
Economic Return Spread (ROC-WACC)	20.10%	7.97%	6.64%	5.27%	-1.37%	-7.88%	-7.85%	2.13%	-1.33%	-7.86%
Economic Return Ratio (ROC / WACC)	395.08%	238.72%	216.70%	240.34%	75.36%	-24.00%	-23.52%	149.42%	97.23%	-23.76%
Economic Profit Momentum (ΔEP/Capital)	13.21%	-6.22%	0.71%	-0.64%	-5.52%	-6.64%	0.16%	-3.66%	-4.26%	-3.24%
Economic Profit Momentum Margin (ΔEP/Sales)	9.27%	-4.51%	0.37%	-0.38%	-3.77%	-4.89%	0.11%	-2.64%	-3.01%	-2.39%
Capital Growth	26.62%	37.23%	36.42%	-4.79%	26.11%	0.33%	-2.01%	19.06%	7.22%	-0.84%
Capital Turns	1.43X	1.38X	1.90X	1.67X	1.46X	1.36X	1.40X	1.55X	1.50X	1.38X
EVC Acceleration Margin	12.98%	-5.99%	0.70%	-0.32%	-4.17%	-4.56%	0.12%	-2.31%	-3.22%	-2.35%
EVC Acceleration Spread	18.66%	-9.54%	1.12%	-0.70%	-6.79%	-7.43%	0.16%	-3.20%	-5.34%	-3.60%
Risk Factors										
Free Cash Flow (NOPAT - Δ Capital)	\$16.3	(\$111.6)	(\$159.6)	\$135.6	(\$202.7)	(\$22.3)	\$58.7	(\$72.1)	(\$29.8)	\$18.2
Free Cash Flow Rate (FCF / Capital)	3.06%	-15.28%	-16.02%	14.29%	-16.94%	-1.85%	4.99%	-7.16%	-1.50%	1.57%
Free Cash Flow Yield (FCF / MV)	1.13%	-4.15%	-4.94%	5.94%	-11.44%	-1.08%	2.91%	-3.13%	-2.19%	0.91%
Total Debt / Total Capital	1.87%	1.61%	26.02%	25.40%	37.58%	38.83%	38.83%	25.89%	33.94%	38.83%
Total Debt / EBITDAR	3.21%	3.18%	42.43%	48.32%	93.22%	96.87%	93.75%	56.81%	79.47%	95.31%
Excess Cash	\$311.2	\$417.3	\$195.0	\$230.8	\$112.2	\$181.8	\$0.0	\$227.4	\$175.0	\$90.9
Financial Leverage ((Total Debt - Excess Cash) / Pension Leverage (Net Pension Liability / MV)	-20.90%	-15.06%	1.99%	0.45%	19.05%	13.82%	22.66%	4.05%	11.11%	18.24%
Equity Risk Index (S&P 500 = 1.00)	0.88	0.87	0.87	0.88	0.86	0.91	0.91	0.88	0.89	0.91
Stock Price Volatility	5.35	6.24	6.61	6.58	6.66	5.87	5.87	6.39	6.37	5.87
Sales Index (NL Sales)	6.63	6.92	7.54	7.37	7.47	7.40	7.41	7.34	7.41	7.40
Market Value Index (NL Market Value)	7.27	7.90	8.08	7.73	7.48	7.63	7.61	7.76	7.61	7.62
Size Index (NL Sales: MV)	6.95	7.41	7.81	7.55	7.47	7.51	7.51	7.55	7.51	7.51
Beta	0.82	0.81	0.81	0.82	0.80	0.87	0.87	0.82	0.83	0.87
TFP Adjusted Beta	0.88	0.87	0.87	0.88	0.86	0.91	0.91	0.88	0.89	0.91
Stock Price Volatility	5.35	6.24	6.61	6.58	6.66	5.87	5.87	6.39	6.37	5.87
Valuation Measures										
Total Economic Market Value (MV)	\$1,440.9	\$2,691.9	\$3,231.8	\$2,280.9	\$1,771.4	\$2,057.5	\$2,016.2	\$2,406.7	\$2,036.6	\$2,036.8
Economic Enterprise Value	\$1,129.8	\$2,274.6	\$3,036.8	\$2,050.1	\$1,659.2	\$1,875.7	\$1,838.1	\$2,179.3	\$1,861.7	\$1,856.9
Equity Market Value	\$1,431.0	\$2,680.1	\$2,972.5	\$2,039.9	\$1,321.7	\$1,591.3	\$1,559.4	\$2,121.1	\$1,651.0	\$1,575.4
Total Capital	\$547.4	\$751.5	\$1,030.3	\$979.6	\$1,217.6	\$1,224.4	\$1,199.8	\$1,040.6	\$1,140.5	\$1,212.1
Market Value Created MVC (MV - Capital)	\$893.5	\$1,940.4	\$2,201.5	\$1,301.4	\$553.8	\$833.1	\$816.4	\$1,366.0	\$896.1	\$824.8
MVC Margin (MVC / Sales)	117.70%	192.56%	116.47%	82.20%	31.66%	51.10%	49.48%	86.89%	54.17%	50.28%
MVC Spread (MVC / Capital)	163.23%	258.21%	213.68%	132.85%	45.49%	68.05%	68.05%	131.27%	78.57%	68.05%
Current EVC Value (EP / WACC)	\$1,405.6	\$875.9	\$1,007.7	\$1,365.1	(\$264.4)	(\$1,486.3)	(\$1,456.5)	\$183.7	(\$368.9)	(\$1,477.4)
Current Operations Value COV	\$1,882.0	\$1,507.3	\$1,871.3	\$2,337.9	\$808.4	(\$287.7)	(\$267.9)	\$1,131.5	\$712.4	(\$277.8)
Current Operations Value Per Share	\$57.63	\$43.36	\$50.71	\$63.88	\$23.23	(\$8.41)	(\$7.56)	\$31.92	\$20.24	(\$7.98)
Future Growth Value (MVC - EVA Value)	(\$441.1)	\$1,184.5	\$1,360.5	(\$56.9)	\$963.0	\$2,345.2	\$2,284.1	\$1,275.2	\$1,324.2	\$2,314.7
Future Growth Value Reliance (FGV / MV)	-30.61%	44.00%	42.10%	-2.50%	54.37%	113.98%	113.29%	52.98%	65.02%	113.64%
Share Price	\$44.25	\$73.20	\$82.46	\$58.58	\$39.18	\$45.62	\$45.62	\$59.81	\$47.79	\$45.62
Dividend Yield	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Shareholder Return (TTM)	84.22%	65.42%	12.65%	-28.96%	-33.12%	16.44%	0.00%	31.10%	-20.09%	-4.55%
MV to IC Ratio	2.63X	3.58X	3.14X	2.33X	1.45X	1.68X	1.68X	2.31X	1.79X	1.68X
EV / EBITDAR Multiple	3.64X	6.14X	4.97X	4.11X	3.44X	3.90X	3.77X	4.46X	3.82X	3.83X
EV / NOPBIT Multiple	8.00X	17.61X	19.64X	24.68X	24.71X	-102.62X	41.97X	26.21X	42.33X	145.52X
EV / NOPAT Multiple	8.81X	26.28X	28.52X	23.33X	36.88X	-102.62X	53.12X	35.42X	48.75X	227.51X
EV / EP Multiple	11.80X	45.22X	52.96X	39.96X	-112.77X	-19.87X	-19.87X	218.77X	-96.58X	-19.87X
Future Growth Value (% of MV)	-30.61%	44.00%	42.10%	-2.50%	54.37%	113.98%	113.29%	52.98%	65.02%	113.64%
Current Operations Value (% of MV)	130.81%	56.00%	57.90%	102.50%	45.63%	-13.98%	-13.29%	47.02%	34.98%	-13.64%
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	32.7	34.8	36.9	36.6	34.8	34.2	35.5	35.5	35.2	34.8

Source: Company Data, Financial statements and Tigress Research

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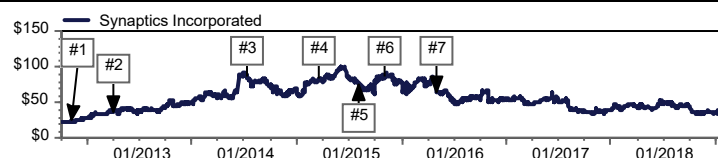
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Synaptics Incorporated (SYNA-US)
Semiconductors
Ratings History

Synaptics Incorporated (SYNA-US)				
Item #	Date	Research Action	Rating	Price
#7	05/04/2016	Reiterate Rating	Strong Buy	\$65.42
#6	11/03/2015	Upgrade Rating	Strong Buy	\$86.30
#5	08/04/2015	Reiterate Rating	Buy	\$76.67
#4	03/20/2015	Reiterate Rating	Buy	\$84.54
#3	07/11/2014	Downgrade Rating	Buy	\$88.18
#2	04/03/2013	Reiterate Rating	Strong Buy	\$38.17
#1	11/06/2012	Initiation of Coverage	Strong Buy	\$25.51


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

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

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

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

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

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

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

Glossary of Key Terms and Measures

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 (01/23/2019)			
		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	14%	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.	52	44%	5	70%
Neutral:	Expect little or no outperformance opportunity over the next 12 months.	43	38%	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 116 100% 72 100%

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Company:	Disclosure:
Synaptics Incorporated (SYNA-US)	14

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