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Mastercard Incorporated Class A (MA-US)**IT Services**

- We reiterate our Strong Buy rating on MA as it continues to report record results driven by a strong global macro environment together with strong consumer and positive retail spending trends.
- Business Performance continues to accelerate driven both a strong global macro environment and increasing transition to electronic payments.
- 2018 will continue to be another record year as MA continues to benefit from positive global macro-economic trends.
- MA continues to announce significant new business wins including new cobranded cards and growth in existing product offerings.
- MA's continues to grow its market share and competitive advantage through its ongoing investment and innovation in financial technology.
- MA continues to enhance shareholder return through its ongoing dividend increases and share repurchases.
- MA is on our Research Focus List and in our Focus Opportunity Portfolio.

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Company Note
Mastercard Incorporated Class A (MA-US)
 IT Services

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Research Action:

Reiterate rating

 Rating: **Strong Buy**

 Prior Rating: **Strong Buy**

 Price 08/14/2018: **\$203.88**

 52 Week High / **\$214.28**

 Low: **\$127.86**
Key Data: (TTM as of Jun-18)

 Excess Cash per Share: **\$7.28**

 Annual Dividend: **\$1.00**

 Dividend Yield: **0.49%**

 Avg. Volume (30 Day): **3.4M**

 Shares Outstanding: **1,038.1M**

 Float: **924.8M**

 Short Interest: **7.2M**

 SI % / Float **0.78%**

 Equity MV: **\$211,639.7M**

 Sales TTM: **\$13,955.0M**

 Beta: **0.92**

 EBITDAR: **\$8,817.0M**

 NOPAT: **\$5,542.2M**

 Total Invested Capital: **\$11,467.7M**

 Return on Capital: **49.79%**

 Cost of Capital: **6.89%**

 Economic Profit: **\$4,775.3M**

 Market Value Added: **\$202,301.4M**

 Current Operations Value: **\$80,438.0M**

 Future Growth Value: **\$133,331.1M**

- **We reiterate our Strong Buy rating on MA as it continues to report record results driven by a strong global macro environment together with strong consumer and positive retail spending trends.** MA is benefiting from the increase in global electronic payments as U.S. and other developed and developing economies around the world continue to transition to increased use of electronic payments. MA continues to win new customers and payment partnerships driven by its ongoing innovation and strong brand equity. MA continues to develop artificial intelligence (AI)-based technology to improve its safety and security, and to enhance the customer service and customer experience that has enabled it to become one of the most advanced payment technology service providers. We believe MA's strong brand equity and market-leading position together with its innovative ability and global opportunities will continue to drive greater Return on Capital, gains in Economic Profit, and increases in shareholder value creation. MA further enhances shareholder value through ongoing dividend increases and share repurchases. We believe further upside in the shares exists from current levels and continue to recommend purchase.
- **Business Performance continues to accelerate driven both a strong global macro environment and increasing transition to electronic payments.** For the 12 months ending June 2018, Net Sales Revenue increased 22.17% Y/Y from \$11.42 billion to record \$13.96 billion. We estimate a further increase of 16.9% to \$15.83 billion over the NTM as strong business momentum continues. Economic Operating Cash Flow (EBITDAR) increased 23.56% Y/Y from \$7.14 billion to \$8.82 billion over the LTM. We estimate a further increase of 11.9% to \$9.86 billion over the NTM. Net Operating Profit After Tax (NOPAT) increased 14.96% Y/Y from \$4.82 billion to \$5.54 billion over the LTM. We estimate a further increase of 31.26% to \$7.28 billion over the NTM. Return on Capital (ROC) increased from 47.34% to 49.79% over the LTM. We estimate an increase to 58.22% over the NTM. Economic Profit (EP) increased 13.96% Y/Y from \$4.19 billion to \$4.78 billion over the LTM. We estimate a further increase of 16.9% to \$5.58 billion over the NTM. MA's strong ability to drive increasing Economic Profit continues to drive greater shareholder value creation.

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- **2018 will continue to be another record year as MA continues to benefit from positive global macro-economic trends.** MA continues to benefit from synchronized global economic growth along with the ongoing secular shift to electronic payments as it gains from both card-based and other types of electronic transactions, including the significant growth of ACH (Automated Clearing House electronic network)-based transfers. MA also benefits from a record level of low unemployment and wage growth that is increasing consumers' spendable income. MA continues to experience revenue growth from other business lines outside of traditional credit card fees as well. MA earns revenue from ACH payment facilitation along with prepaid card program management, anti-fraud solutions, loyalty reward services, and its Masterpass digital wallet.
- **MA continues to announce significant new business wins including new cobranded cards and growth in existing product offerings.** PayPal's (PYPL-US, Non-Rated) Venmo officially introduced its own MasterCard cobranded debit card allowing Venmo users to pay anywhere MasterCard is accepted and which can also be used at ATMs to withdraw funds from the user's Venmo account balance. After an initial beta test with Visa (V-US, Non-Rated), PayPal chose to partner with MasterCard which highlights MA's strong technology platform and innovative ability. MA renewed its cobranding card offering with Hawaiian Airlines (HA-US, Non-rated). MasterCard also extended its commercial card agreement with J.P. Morgan Chase (JPM-US, Non-Rated) and won an LL Bean cobranded card away from Visa. MA's success in new product wins is driven by its innovative capability to include state-of-the-art technology that increases security and offers greater payment functionality.

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- **MA's continues to grow its market share and competitive advantage through its ongoing investment and innovation in financial technology.** With the launch of Masterpass, MA became the first network to deliver a digital payment service across all devices and all channels. MA is also investing in tokenization technology with its MasterCard Digital Enablement Service (MDSE) which facilitates contactless payments and digital secure remote payments. MA continued to expand the rollout of its tokenization service and added 500 new issuers in 21 new markets during calendar year 2017 for a total of 1,200 issuers in 46 markets. MA's token-based transactions increased over 500% during 2017. MA continues to develop and incorporate artificial intelligence (AI) throughout its global network to increase security, eliminate false turndowns, and improve customer service. AI can help enable MA to monitor transaction patterns to eliminate fraud and detect money laundering. MA has also introduced the world's first authentication technology using iris scanning to authenticate online purchases with mobile phones. MA is also working with wearable device manufacturers to enable contactless payment capabilities. Garmin (GRMN-US, Buy Rated) has partnered with MasterCard incorporating it in its Garmin Pay service on its leading line of Smart Wearables.
- **MA continues to enhance shareholder return through its ongoing dividend increases and share repurchases.** MA's strong balance sheet and cash flow continue to drive growth and the ongoing return of cash to shareholders. MA currently has \$7.6 billion, \$7.28 a share of excess cash, which together with our projected \$9.86 billion in Economic Operating Cash Flow over the NTM, continues to drive its ongoing investment in innovation along with making strategic acquisitions and returning significant amounts of cash to shareholders. In January, MA increased its quarterly dividend 13.6% from \$0.22 a share to \$0.25 a share. MA continues to repurchase a significant number of outstanding shares. In December 2017, MA announced an additional open market purchase of \$4 billion worth of shares. This follows similar announcements for the same dollar amount in 2015 and 2016. In 2017, MA repurchased \$3.73 billion worth of stock. This followed purchases of \$3.55 billion in 2016 and \$3.52 billion in 2015. So far this year MA has repurchased \$1.53 billion worth of stock and paid \$262 million in dividends.

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Mastercard Incorporated Class A (MA-US)**IT Services**

- **MA is on our Research Focus List and in our Focus Opportunity Portfolio.** We believe MA's leading industry position, strong brand equity, significant Return on Capital and expanding growth opportunities continue to enhance its ability to generate increasing Economic Profit and greater shareholder value creation. MA is one of our top choices as the best way to play the secular shift to electronic payments.

Investment Thesis

MA continues to benefit from the ongoing transition to electronic-based payments driven by safety, convenience, loyalty programs, and purchase protections that card-based payments offer. MA is one of the most technologically advanced and innovative companies in the payment processing space. We view MA as a financial technology company and not just a card issuer and payment facilitator. MA's significant brand equity and innovative ability continue to create an opportunity to drive growth and gain greater market share in the global electronic payments market. We believe MA continues to exhibit a very strong ability to generate increasing Returns on Capital and greater Economic Profit, significantly increasing shareholder value creation. MA's steady cash flow will continue to drive its history of returning cash to shareholders through ongoing dividend increases and share repurchases.

Company Overview

Mastercard, Inc. (MA-US) is the number-two global card network service provider, offering a range of services to financial institutions that support credit, debit, mobile, web-based and other types of electronic payments and related services in more than 150 currencies in 210 countries. MA's global transaction and electronic payment processing solutions include facilitating the authorization, clearing, and settlement process of electronic transactions, as well as processing cross-border and currency conversion transactions. MA's payment card brands including MasterCard, Maestro, and Cirrus. MA also operates the Cirrus ATM network.

MA reports revenue by the following business segments: Transaction Processing: (26% of revenue); Rebates & Incentives: (24% of revenue); Domestic Assessments: (21% of revenue); Cross-Border Volume: (17% of revenue); and Other Revenues: (12% of revenue).

MA reports revenue by two geographic segments: United States: (35% of revenue) and Other Countries (65% of revenue).

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Mastercard Incorporated Class A (MA-US)
IT Services
Financial Data

Report Basis	LTM	LTM	LTM	LTM	LTM	LTM	NTM	5 Yr	3 Yr	Current
Reported Period Ending	06/30/2013	06/30/2014	06/30/2015	06/30/2016	06/30/2017	06/30/2018	06/30/2019	Average	Average	Trend
Net Sales Revenue	\$7,819.0	\$8,893.0	\$9,539.0	\$10,187.0	\$11,423.0	\$13,955.0	\$15,830.0	\$10,799.4	\$11,855.0	\$14,892.5
Sales Growth	9.72%	13.74%	7.26%	6.79%	12.13%	22.17%	13.44%	12.42%	13.70%	17.80%
Sales Growth Trend	13.03%	12.13%	9.85%	6.98%	10.00%	18.15%	16.93%	11.42%	11.71%	17.54%
Operating Cash Flow (EBITDAR)	\$4,820.9	\$5,562.4	\$5,950.9	\$6,238.4	\$7,135.9	\$8,817.0	\$9,861.5	\$6,740.9	\$7,397.1	\$9,339.3
EBITDAR Margin	61.66%	62.55%	62.38%	61.24%	62.47%	63.18%	62.30%	62.36%	62.30%	62.74%
EBITDAR Growth	13.19%	15.38%	6.98%	4.83%	14.39%	23.56%	11.85%	13.03%	14.26%	17.70%
Net Operating Profit Before Tax (NOPBT)	\$4,541.9	\$5,235.4	\$5,539.9	\$5,794.4	\$6,666.9	\$8,272.0	\$9,208.8	\$6,301.7	\$6,911.1	\$8,740.4
NOPBT Margin	58.09%	58.87%	58.08%	56.88%	58.36%	59.28%	58.17%	58.29%	58.17%	58.72%
NOPBT Growth	13.09%	15.27%	5.81%	4.59%	15.06%	24.08%	11.33%	12.96%	14.58%	17.70%
Cash Operating Income Tax	\$1,378.0	\$1,647.0	\$1,382.2	\$1,448.9	\$1,845.8	\$2,729.8	\$1,933.9	\$1,810.7	\$2,008.1	\$2,331.8
Economic Tax Effective Rate	30.34%	31.46%	24.95%	25.00%	27.69%	33.00%	21.00%	28.42%	28.56%	27.00%
Net Operating Profit After Tax (NOPAT)	\$3,163.9	\$3,588.4	\$4,157.7	\$4,345.5	\$4,821.1	\$5,542.2	\$7,275.0	\$4,491.0	\$4,902.9	\$6,408.6
NOPAT Margin	40.46%	40.35%	43.59%	42.66%	42.21%	39.72%	45.96%	41.70%	41.53%	42.84%
NOPAT Growth	11.37%	13.42%	15.86%	4.52%	10.94%	14.96%	31.26%	11.94%	10.14%	23.11%
Cash & Equivalents	\$5,837.0	\$6,254.0	\$6,618.0	\$6,989.0	\$7,503.0	\$8,294.0	\$9,698.0	\$7,131.6	\$7,595.3	\$8,996.0
Total Assets	\$12,021.0	\$14,375.0	\$15,272.0	\$16,282.0	\$19,839.0	\$22,471.0	\$26,274.9	\$17,647.8	\$19,530.7	\$24,372.9
Non - Interest Bearing Liabilities (NIBLs)	\$4,752.0	\$6,302.0	\$7,021.0	\$6,814.0	\$8,223.0	\$10,821.0	\$12,652.8	\$7,836.2	\$8,619.3	\$11,736.9
Net Assets	\$7,258.0	\$8,025.0	\$8,219.0	\$9,436.0	\$11,520.0	\$11,557.0	\$13,513.4	\$9,751.4	\$10,837.7	\$12,535.2
Economic Asset Adjustments	\$15.6	(\$107.7)	(\$54.5)	(\$12.8)	\$59.1	(\$89.3)	(\$104.4)	(\$41.0)	(\$14.3)	(\$96.8)
Net Operating Assets	\$7,273.6	\$7,917.3	\$8,164.5	\$9,423.2	\$11,579.1	\$11,467.7	\$13,409.0	\$9,710.4	\$10,823.3	\$12,438.3
Debt & Debt Equivalents	\$92.6	\$1,607.3	\$1,647.5	\$3,510.2	\$5,552.1	\$6,041.7	\$7,064.5	\$3,671.8	\$5,034.7	\$6,553.1
Equity & Equivalents	\$7,018.0	\$6,266.0	\$6,404.0	\$5,837.0	\$5,852.0	\$5,257.0	\$6,146.9	\$5,923.2	\$5,648.7	\$5,701.9
Total Capital - Financing Sources	\$7,110.6	\$7,873.3	\$8,051.5	\$9,347.2	\$11,404.1	\$11,298.7	\$13,211.3	\$9,595.0	\$10,683.3	\$12,255.0
Capital Adjustments	(\$77.0)	(\$221.0)	(\$207.0)	(\$217.0)	(\$167.0)	(\$273.0)	(\$319.2)	(\$217.0)	(\$219.0)	(\$296.1)
Net Capital Financing Sources	\$7,033.6	\$7,652.3	\$7,844.5	\$9,130.2	\$11,237.1	\$11,025.7	\$12,892.1	\$9,378.0	\$10,464.3	\$11,958.9
Net Working Capital	(\$548.1)	(\$757.4)	(\$2,080.1)	(\$1,650.7)	(\$1,630.9)	(\$2,304.3)	(\$2,694.3)	(\$1,684.6)	(\$1,861.9)	(\$2,499.3)
Cost of Net Working Capital	(\$33.0)	(\$42.7)	(\$90.2)	(\$103.4)	(\$101.6)	(\$135.6)	(\$158.5)	(\$94.7)	(\$113.5)	(\$147.0)
% of Revenue	-0.42%	-0.48%	-0.95%	-1.01%	-0.89%	-0.97%	-1.00%	-0.86%	-0.96%	-0.99%
Operational Capital	\$15.6	(\$105.0)	(\$1,295.5)	(\$766.4)	(\$559.8)	(\$1,260.5)	(\$1,473.9)	(\$797.5)	(\$862.2)	(\$1,367.2)
Cost of Operational Capital	\$4.1	(\$2.9)	(\$44.5)	(\$57.1)	(\$41.1)	(\$62.7)	(\$73.3)	(\$41.7)	(\$53.6)	(\$68.0)
% of Revenue	0.05%	-0.03%	-0.47%	-0.56%	-0.36%	-0.45%	-0.46%	-0.37%	-0.46%	-0.46%
Productive Capital	\$1,702.6	\$2,181.0	\$1,506.5	\$1,829.6	\$3,325.2	\$2,756.5	\$3,223.1	\$2,319.7	\$2,637.1	\$2,989.8
Cost of Productive Capital	\$116.5	\$127.0	\$117.2	\$92.5	\$159.7	\$209.5	\$245.0	\$141.2	\$153.9	\$227.3
% of Revenue	1.49%	1.43%	1.23%	0.91%	1.40%	1.55%	1.50%	1.29%	1.27%	1.52%
Total Operating Capital	\$1,827.6	\$2,108.0	\$2,023.5	\$2,943.6	\$4,647.2	\$3,871.5	\$4,526.8	\$3,118.7	\$3,820.8	\$4,199.1
Cost of Total Operating Capital	\$113.6	\$128.7	\$131.4	\$137.7	\$235.1	\$293.5	\$343.2	\$185.3	\$222.1	\$318.3
% of Revenue	1.45%	1.45%	1.38%	1.35%	2.06%	2.10%	2.17%	1.67%	1.84%	2.14%
Non - Operating Capital	\$5,446.1	\$5,809.4	\$6,141.1	\$6,479.7	\$6,931.9	\$7,596.3	\$8,882.1	\$6,591.6	\$7,002.6	\$8,239.2
Cost of Non - Operating Capital	\$339.5	\$368.0	\$380.0	\$349.8	\$415.4	\$500.5	\$585.2	\$402.7	\$421.9	\$542.9
% of Revenue	4.34%	4.14%	3.98%	3.43%	3.64%	3.59%	3.70%	3.76%	3.55%	3.64%
Total Capital	\$7,273.6	\$7,917.3	\$8,164.5	\$9,423.2	\$11,579.1	\$11,467.7	\$13,409.0	\$9,710.4	\$10,823.3	\$12,438.3
Cost of Total Capital	\$453.0	\$496.7	\$511.3	\$487.4	\$650.5	\$794.0	\$928.4	\$588.0	\$643.9	\$861.2
% of Revenue	5.79%	5.59%	5.36%	4.78%	5.69%	5.69%	5.86%	5.42%	5.39%	5.78%
Cost of Capital (WACC)	6.71%	6.54%	6.36%	5.54%	6.19%	6.89%	6.89%	6.31%	6.21%	6.89%
Capital Structure										
Debt & Debt Equivalents	\$92.6	\$1,607.3	\$1,647.5	\$3,510.2	\$5,552.1	\$6,041.7	\$7,064.5	\$3,671.8	\$5,034.7	\$6,553.1
Debt & Debt Equivalents % of Market Value	0.14%	1.91%	1.55%	3.56%	4.16%	2.90%	2.90%	2.91%	3.43%	2.90%
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	\$67,134.9	\$82,558.2	\$104,334.3	\$94,956.4	\$127,998.8	\$202,453.9	\$236,725.1	\$122,460.3	\$141,803.0	\$219,589.5
Common Equity % of Market Value	99.86%	98.09%	98.45%	96.44%	95.84%	97.10%	97.10%	97.09%	96.57%	97.10%
Total Economic Market Value (MV)	\$67,227.5	\$84,165.5	\$105,981.8	\$98,466.6	\$133,550.9	\$208,495.6	\$243,789.5	\$126,132.1	\$146,837.7	\$226,142.6
Total %	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Excess Cash	\$5,446.1	\$5,809.4	\$6,141.1	\$6,479.7	\$6,931.9	\$7,596.3	\$8,882.1	\$6,591.6	\$7,002.6	\$8,239.2
Economic Enterprise Value	\$61,781.5	\$78,356.2	\$99,840.7	\$91,987.0	\$126,619.1	\$200,899.4	\$234,907.4	\$119,540.5	\$139,835.1	\$217,903.4
Average Capital	\$6,523.6	\$7,343.0	\$7,748.4	\$8,487.4	\$10,183.7	\$11,131.4	\$11,958.9	\$8,978.8	\$9,934.1	\$11,545.2
Capital Δ	\$1,020.1	\$618.7	\$192.2	\$1,285.7	\$2,106.9	(\$211.4)	\$1,866.4	\$798.4	\$1,060.4	\$827.5

Source: Company Data, Financial statements and Tigress Research

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Company Report – Research Update

Mastercard Incorporated Class A (MA-US)

IT Services

Financial Analysis

Report Basis	LTM	LTM	LTM	LTM	LTM	LTM	NTM	5 Yr	3 Yr	Current
Reported Period Ending	06/30/2013	06/30/2014	06/30/2015	06/30/2016	06/30/2017	06/30/2018	06/30/2019	Average	Average	Trend
Return on Market Value (NOPAT / MV)	4.71%	4.26%	3.92%	4.41%	3.61%	2.66%	3.11%	3.77%	3.56%	2.88%
Return on Enterprise Value (NOPAT / EV)	5.12%	4.58%	4.16%	4.72%	3.81%	2.76%	3.23%	4.01%	3.76%	2.99%
Return on Capital (NOPAT / Average Capital)	48.50%	48.87%	53.66%	51.20%	47.34%	49.79%	58.22%	50.17%	49.44%	54.00%
Cost of Capital (WACC)	6.71%	6.54%	6.36%	5.54%	6.19%	6.89%	6.89%	6.31%	6.21%	6.89%
Economic Return Spread	41.79%	42.33%	47.30%	45.66%	41.15%	42.90%	50.16%	43.87%	43.23%	46.53%
Capital Charge	\$437.5	\$480.2	\$492.7	\$470.4	\$630.8	\$767.0	\$896.8	\$568.2	\$622.7	\$831.9
Economic Profit (EP)	\$2,726.4	\$3,108.2	\$3,664.9	\$3,875.1	\$4,190.3	\$4,775.3	\$5,583.6	\$3,922.8	\$4,280.2	\$5,179.5
Economic Profit Improvement (EPI)	\$220.6	\$381.8	\$556.7	\$210.1	\$315.2	\$585.0	\$808.4	\$409.8	\$370.1	\$696.7
EP Growth	8.80%	14.00%	17.91%	5.73%	8.13%	13.96%	16.93%	11.95%	9.26%	15.44%
Economic Profit Margin on Sales	34.87%	34.95%	38.42%	38.04%	36.68%	34.22%	35.27%	36.46%	36.31%	34.75%
Economic Profit Per Share	\$2.18	\$2.57	\$3.15	\$3.42	\$3.82	\$4.48	\$5.23	\$3.48	\$3.90	\$4.85
GAAP Earnings Per Share	\$2.43	\$2.78	\$3.28	\$3.41	\$4.04	\$4.48	\$6.86	\$3.60	\$3.97	\$5.67
Excess Cash Per Share	\$4.50	\$4.99	\$5.40	\$5.90	\$6.48	\$7.28	\$8.52	\$6.01	\$6.55	\$7.90
Performance Drivers										
Sales Growth	9.72%	13.74%	7.26%	6.79%	12.13%	22.17%	13.44%	12.42%	13.70%	17.80%
Sales Growth Trend (ROC Sales Growth)	13.03%	12.13%	9.85%	6.98%	10.00%	18.15%	16.93%	11.42%	11.71%	17.54%
EBITDAR Margin	61.66%	62.55%	62.38%	61.24%	62.47%	63.18%	62.30%	62.36%	62.30%	62.74%
EBITDAR Growth	13.19%	15.38%	6.98%	4.83%	14.39%	23.56%	11.85%	13.03%	14.26%	17.70%
NOPBT Margin	58.09%	58.87%	58.08%	56.88%	58.36%	59.28%	58.17%	58.29%	58.17%	58.72%
NOPBT Growth	13.09%	15.27%	5.81%	4.59%	15.06%	24.08%	12.96%	12.96%	14.58%	17.70%
NOPAT Margin	40.46%	40.35%	43.59%	42.66%	42.21%	39.72%	45.96%	41.70%	41.53%	42.84%
NOPAT Growth	11.37%	13.42%	15.86%	4.52%	10.94%	14.96%	31.26%	11.94%	10.14%	23.11%
Economic Profit Margin on Sales (EP / Sales)	34.87%	34.95%	38.42%	38.04%	36.68%	34.22%	35.27%	36.46%	36.31%	34.75%
Economic Profit Growth	8.80%	14.00%	17.91%	5.73%	8.13%	13.96%	16.93%	11.95%	9.28%	15.44%
Economic Return Spread (ROC-WACC)	41.79%	42.33%	47.30%	45.66%	41.15%	42.90%	51.33%	43.87%	43.23%	47.11%
Economic Return Ratio (ROC / WACC)	723.16%	747.29%	843.81%	923.75%	764.28%	722.62%	844.95%	800.35%	803.55%	783.78%
Economic Profit Momentum (ΔEP/Capital)	3.14%	4.99%	7.10%	2.30%	2.81%	5.31%	6.27%	4.50%	3.47%	5.79%
Economic Profit Momentum Margin (ΔEP/Sales)	2.82%	4.29%	5.84%	2.06%	2.76%	4.19%	5.11%	3.83%	3.00%	4.65%
Capital Growth	16.96%	8.80%	2.51%	16.39%	23.08%	-1.88%	16.93%	9.78%	12.53%	7.52%
Capital Turns	1.11X	1.16X	1.22X	1.12X	1.02X	1.27X	1.23X	1.16X	1.13X	1.25X
EVC Acceleration Margin	3.10%	4.88%	6.26%	2.20%	3.09%	5.12%	5.79%	2.59%	3.43%	5.88%
EVC Acceleration Spread	3.82%	5.85%	7.58%	2.71%	3.71%	5.74%	7.26%	3.43%	4.12%	7.01%
Risk Factors										
Free Cash Flow (NOPAT - Δ Capital)	\$2,143.8	\$2,969.7	\$3,965.5	\$3,059.8	\$2,714.2	\$5,753.6	\$5,408.5	\$3,692.6	\$3,842.5	\$5,581.1
Free Cash Flow Rate (FCF / Capital)	30.48%	38.81%	50.55%	33.51%	24.15%	52.18%	41.95%	39.84%	36.62%	47.07%
Free Cash Flow Yield (FCF / MV)	3.19%	3.53%	3.74%	3.11%	2.03%	2.76%	2.22%	3.03%	2.63%	2.49%
Total Debt / Total Capital	1.32%	21.00%	21.00%	38.45%	49.41%	54.80%	54.80%	36.93%	47.55%	54.80%
Total Debt / EBITDAR	1.92%	28.90%	27.69%	77.81%	68.52%	71.64%	71.64%	51.84%	67.53%	70.08%
Excess Cash	\$5,446.1	\$5,809.4	\$6,141.1	\$6,479.7	\$6,931.9	\$7,596.3	\$0.0	\$6,591.6	\$7,002.6	\$3,798.1
Financial Leverage ((Total Debt - Excess Cash) / Pension Leverage (Net Pension Liability / MV))	-7.96%	-4.99%	-4.24%	-3.02%	-1.03%	-0.75%	2.90%	-2.81%	-1.60%	1.08%
Equity Risk Index (S&P 500 = 1.00)	0.92	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Stock Price Volatility	3.58	2.61	2.77	2.79	2.38	2.11	2.11	2.53	2.43	2.11
Sales Index (NL Sales)	8.96	9.09	9.16	9.23	9.34	9.54	9.67	9.27	9.37	9.61
Market Value Index (NL Market Value)	11.12	11.34	11.57	11.50	11.80	12.25	12.40	11.69	11.85	12.33
Size Index (NL Sales: MV)	10.04	10.22	10.37	10.36	10.57	10.90	11.04	10.48	10.61	10.97
Beta	0.88	0.89	0.89	0.88	0.88	0.88	0.88	0.88	0.88	0.88
TFP Adjusted Beta	0.92	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Stock Price Volatility	3.58	2.61	2.77	2.79	2.38	2.11	2.11	2.53	2.43	2.11
Valuation Measures										
Total Economic Market Value (MV)	\$67,227.5	\$84,165.5	\$105,981.8	\$98,466.6	\$133,550.9	\$208,495.6	\$243,789.5	\$126,132.1	\$146,837.7	\$226,142.6
Economic Enterprise Value	\$61,781.5	\$78,356.2	\$99,840.7	\$91,987.0	\$126,619.1	\$200,899.4	\$234,907.4	\$119,540.5	\$139,835.1	\$217,903.4
Equity Market Value	\$67,134.9	\$82,558.2	\$104,334.3	\$94,956.4	\$127,998.8	\$202,453.9	\$236,725.1	\$122,460.3	\$141,803.0	\$219,589.5
Total Capital	\$7,273.6	\$7,917.3	\$8,164.5	\$9,423.2	\$11,579.1	\$11,467.7	\$13,409.0	\$9,710.4	\$10,823.3	\$12,438.3
Market Value Created MVC (MV - Capital)	\$59,953.9	\$76,248.2	\$97,817.3	\$89,043.4	\$121,971.8	\$197,027.9	\$230,380.6	\$116,421.7	\$136,014.4	\$213,704.2
MVC Margin (MVC / Sales)	766.77%	857.40%	1025.45%	874.09%	1067.77%	1411.88%	1455.34%	1078.04%	1147.32%	1434.98%
MVC Spread (MVC / Capital)	824.26%	963.05%	1198.08%	944.94%	1053.38%	1718.11%	1718.11%	1198.94%	1256.68%	1718.11%
Current EVC Value (EP / WACC)	\$40,652.0	\$47,530.3	\$57,633.7	\$69,914.5	\$67,647.5	\$69,306.6	\$81,038.7	\$62,215.8	\$68,935.8	\$75,172.6
Current Operations Value COV	\$47,175.6	\$54,873.3	\$65,382.1	\$78,401.9	\$77,831.1	\$80,438.0	\$92,997.6	\$71,194.5	\$78,869.9	\$86,717.8
Current Operations Value Per Share	\$37.74	\$45.31	\$56.12	\$69.14	\$70.88	\$75.39	\$81.94	\$62.73	\$71.72	\$78.78
Future Growth Value (MVC - EVA Value)	\$20,051.9	\$29,292.2	\$40,599.7	\$20,064.7	\$55,719.8	\$128,057.7	\$150,791.9	\$54,937.6	\$67,967.8	\$139,424.8
Future Growth Value Reliance (FGV / MV)	29.83%	34.80%	38.31%	20.38%	41.72%	61.42%	61.85%	43.56%	46.29%	61.65%
Share Price	\$57.45	\$73.47	\$93.48	\$88.06	\$121.45	\$196.52	\$196.52	\$114.60	\$135.34	\$196.52
Dividend Yield	0.31%	0.53%	0.63%	0.83%	0.70%	0.49%				
Total Shareholder Return (TTM)	33.88%	28.42%	27.87%	-4.97%	38.62%	62.31%	0.00%	-41.69%	18.10%	45.20%
MV to IC Ratio	9.24X	10.63X	12.98X	10.45X	11.53X	18.18X	18.18X	12.99X	13.57X	18.18X
EV / EBITDAR Multiple	12.82X	14.09X	16.78X	14.75X	17.74X	22.79X	23.82X	17.73X	18.90X	23.33X
EV / NOPBIT Multiple	13.60X	14.97X	18.02X	15.88X	18.99X	24.29X	25.51X	18.97X	20.23X	24.93X
EV / NOPAT Multiple	19.53X	21.84X	24.01X	21.17X	26.26X	36.25X	32.29X	26.62X	28.52X	34.00X
EV / EP Multiple	22.66X	25.21X	27.24X	23.74X	30.22X	42.07X	42.07X	30.47X	32.67X	42.07X
Future Growth Value (% of MV)	29.83%	34.80%	38.31%	20.38%	41.72%	61.42%	61.85%	43.56%	46.29%	61.65%
Current Operations Value (% of MV)	70.17%	65.20%	61.69%	79.62%	58.28%	38.58%	38.15%	56.44%	53.71%	38.35%
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	1,250.0	1,211.0	1,165.0	1,134.0	1,098.0	1,067.0	1,135.0	1,135.0	1,099.7	1,101.0

Source: Company Data, Financial statements and Tigress Research

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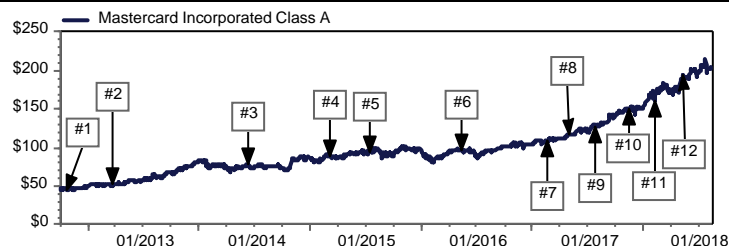
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Mastercard Incorporated Class A (MA-US)
IT Services
Ratings History

Mastercard Incorporated Class A (MA-US)				
Item #	Date	Research Action	Rating	Price
#12	05/11/2018	Reiterate Rating	Strong Buy	\$193.35
#11	02/08/2018	Reiterate Rating	Strong Buy	\$160.62
#10	11/13/2017	Reiterate Rating	Strong Buy	\$149.69
#9	07/28/2017	Reiterate Rating	Strong Buy	\$127.91
#8	05/04/2017	Reiterate Rating	Strong Buy	\$117.92
#7	02/21/2017	Reiterate Rating	Strong Buy	\$110.16
#6	05/13/2016	Reiterate Rating	Strong Buy	\$95.36
#5	07/15/2015	Reiterate Rating	Strong Buy	\$98.41
#4	03/10/2015	Reiterate Rating	Strong Buy	\$88.84
#3	06/10/2014	Reiterate Rating	Strong Buy	\$77.36
#2	03/25/2013	Reiterate Rating	Strong Buy	\$52.00
#1	10/25/2012	Initiation of Coverage	Strong Buy	\$44.94


Tigress Research Methodology Overview

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

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

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

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

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

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

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

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

Glossary of Key Terms and Measures

Excess Cash per Share: Excess Cash per Share is the amount of excess cash divided by basic shares outstanding. Excess Cash consists of all cash and short-term securities less operating cash needed to run the business. Operating Cash is 5% of TTM net sales revenue.

EBITDAR: Earnings Before Interest, Taxes, Depreciation, Amortization, and Restructuring and Rent Costs. This is especially important when comparing companies that use a significant amount of leased assets like restaurants and retailers.

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

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

Return on Capital: Return on Capital equals NOPAT divided by Total Invested Capital. It is a key measure of operating efficiency. ROC quantifies how well a company generates cash flow relative to the capital invested in its business.

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

Economic Profit: Economic Profit is the net operating income after tax less the opportunity cost of the total capital invested. It is the most important driver of shareholder value.

Current Operations Value: Current Operations Value is the portion of market value based on the discounted present value of the current earnings stream assuming it remains constant forever.

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

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

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Rating:	Meaning:	Rating Distribution (08/14/2018)			
		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.	51	43%	5	70%
Neutral:	Expect little or no outperformance opportunity over the next 12 months.	46	39%	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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Company:	Disclosure:
Mastercard Incorporated Class A (MA-US)	10, 14
Garmin Ltd.	14

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