

## Mastercard Incorporated Equity Report

Business Description:

Mastercard is a technology company in the global payments industry. It provides payment services to financial institutions, merchants, governments, digital partners, businesses and other types of organizations. Mastercard operates three brands: Mastercard, Maestro, and Cirrus. Mastercard's business is authorizing, clearing and settling payments throughout the world. They operate in 150 currencies and 210 countries. Mastercard's electronic payments technology enables a four-party payment system. The four parties are the account holder, the issuer (account holder's bank), the merchant, and the acquirer (the merchants bank). The system works as follows: an account holder purchases a good using a Mastercard branded card, this transaction is then authorized by their issuer. The issuer then pays the acquirer the transaction amount minus an interchange fee. The transaction is then deducted from the account holder's account and the acquirer pays the merchant the purchase amount minus a merchant discount rate. Interchange fees are not collected by Mastercard but rather they serve as a benefit to issuers for accepting Mastercard products. The merchant discount rate is paid to the acquirer to cover the cost of the interchange fee due to participating in this four-party system.

Though this four-party system is Mastercard's key product offering, Mastercard generates revenue based on the gross dollar volume (GDV) of activity on Mastercard branded products. Mastercard charges the financial institutions, such as banks, that offer their products, fees based on the GDV of transactions. Consumers are charged fees and rates set by their financial institutions, who then pay Mastercard, which is how they generate most of their revenue. These fees are divided into two categories on Mastercard's income statement: "domestic assessments" (40%) and "cross border volume fees" (33%). Domestic assessments are when the issuer and acquirer are in the same country, cross-border fees are when they are not. Another source of revenue comes from switched transaction fees charged to financial institutions. Switched transaction enable the routing of a transaction to the issuer for approval, the transaction completion between the issuer and acquirer, and the final settling of funds. Mastercard takes a small percentage during each step of the "switching" process: when the issuer gets authorization approval, the when transaction clears, and when the funds settle. These fees are accounted for on the income statement as "transaction processing fees" (50%). Mastercard's last revenue category is "other revenues" (24%), which flow from value-added products such as data analytics, loyalty platforms and consulting services. Rebates and incentives are rewards paid out to consumers for using Mastercard products and result in negative revenue of -48% on the income statement.

### Industry Trends & Drivers:

Three main industry drivers in the electronic payment industry are personal consumption expenditure (PCE), global shifts from checks and cash to electronic payments, and cybersecurity and privacy regulation.

#### **I. Electronic Payment Growth**

The global digital payments industry was valued at \$3885.57 billion in 2019 and is expected to grow to \$8686.68 billion by 2025 with a CAGR of 13.17%. Within the growth in the electronic payments space, the key area for growth is through cross border transactions. Within cross-border transactions, there are four main segments: C2C (consumer to consumer), C2B (consumer to business), B2C (business to consumer), and B2B (business to business). C2B revenue is increasing the fastest at a growth rate of 23% from 2013-2018. B2B is growing at 4% per year, with small and medium business transactions growing 2-3x this rate especially in emerging markets. This sustained growth in the electronic payments industry makes it a great time to invest in Mastercard as it is in a prime position to capitalize on the expansion of this industry.

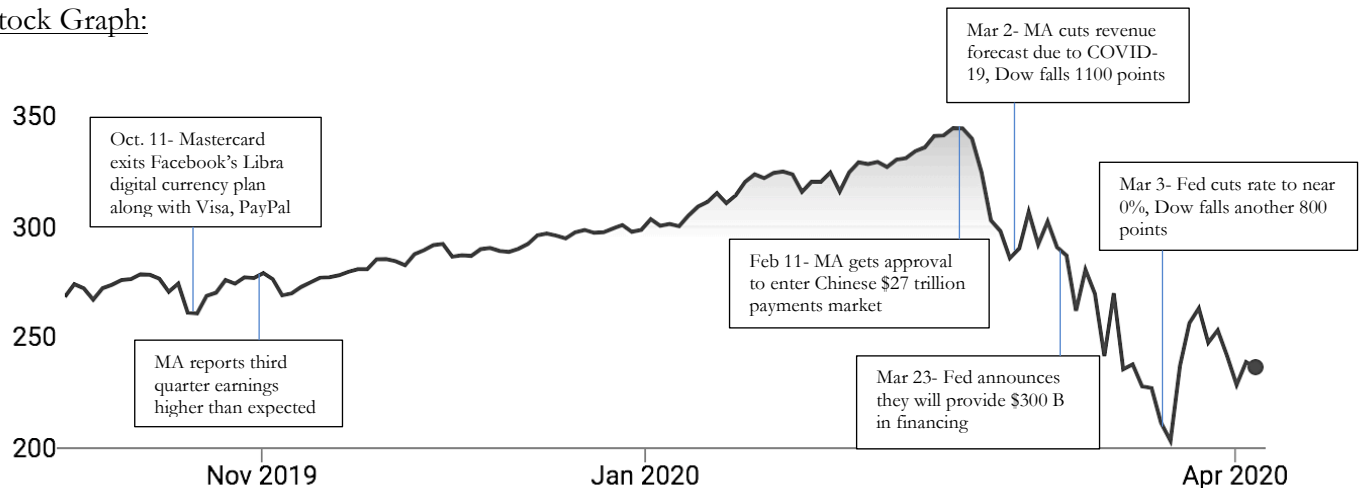
#### **II. Personal Consumption Expenditure**

PCE has reached a four-year low in March 2020 due to the coronavirus. The University of Michigan's Consumer Sentiment Index fell to 89.1 from 101.0 in February, the largest monthly decrease since October 2008. Rising unemployment has contributed to this uncertainty. The US Commerce Department said consumer spending increased by .2% in February as Americans spent more time indoors increasing gas and electricity bills. Though consumer spending is currently down, it is expected to rebound once global economies begin to reopen. Deloitte forecasts real consumer spending to decrease by 4.7% in 2020 but rise in 2021 by 1.9% and in 2022 by 5.1%. Consumer spending growth was 3% in 2018 and 2.6% in 2019. Mastercard's strong balance sheet and focus on e-commerce transactions will enable sustained cash flow growth despite the current economic turndown. Though PCE is down, it will largely rebound by 2021, making now an ideal time to invest in Mastercard.

#### **III. Cybersecurity Threats and Regulation**

A third driver is cybersecurity and privacy regulation. Increased complexity and improved technology of cyber criminals has caused an uptick in data breaches, which could have the potential to damage Mastercard's brand name and result in large lawsuit settlement fees. Capital One, one of Mastercard's competitors, was victim to a large security breach in 2019, which caused their stock price to fall 6% and took months to fully recover. Increased data breaches also have led to heightened regulation, such as the General Data Privacy Regulation in Europe and the California Consumer Privacy Act. Heightened regulations could result in large fines in the future that could momentarily damage Mastercard's business.

## Stock Graph:



## Investment Thesis:

Mastercard will be a successful investment with an upside of 28% due to initiatives to increase cross-border payment flows, growth of the digital payments industry into new geographic regions, and Mastercard's efforts to be the industry leader in cybersecurity through innovative technology solutions.

- 1. Mastercard currently owns 30% of the payments industry and will continue to be dominant through acquisitions and partnerships, enabling them to capture new payment flows and enhance payment flow speed between businesses, consumers and governments.**
  - Mastercard's pending acquisition of Nets Denmark for \$3.19 billion, their largest acquisition to date, will provide Mastercard with instant payment and clearing services in addition to e-billing solutions to further Mastercard's position as a multi-rail company, advancing beyond credit and debit card payments. Nets will allow Mastercard to enhance direct account-to-account (A2A) payments initially in Denmark and Nordic countries and eventually penetrating the rest of Mastercard's geographic regions.
    - Mastercard's chief product and innovation officer, Michael Miebach stated that the acquisition will further Mastercard's consolidated position as being the single stop for banks, merchants and governments, building on Vocalink, Transfast and Transactis to enhance real time payments and accessible billing solutions while expanding in the Nordic region.
    - Cross border payments will increase due to increased interaction among Nordic countries, resulting in increased cross-border revenues
  - Mastercard's partnership with P27 Nordic Payments Platform will allow them to deliver real-time payments solutions across Nordic countries, increasing cross-border transactions across this region.
    - This partnership will replace an old and inefficient payment infrastructure, allowing for instant payments at a low cost shared across nations in the partnership and heightened security standards.

- This new infrastructure will boost the economies of the partner nations by creating opportunities for future products and services.
- Javier Perez, President of Mastercard Europe, states that this partnership will enhance cross-border and multi-currency payment speed and help Mastercard become an industry leader in instant A2A payment flows.
- MA acquired Transfast in March 2019 to fulfill the needs of consumers and businesses to send money cross borders with speed, complementing the Mastercard Send technology.
  - Enhances Mastercard's global network as Transfast is dominant in cross-border transactions, reaching 90% of the world population's bank accounts
  - Stephen Grainger, Executive VP of Mastercard, says Transfast will allow for faster global payments, meet business's expectations for real-time payments, and access 90% of global GDP flows enabling Mastercard to capitalize on these cross-border payments, increasing revenue in this category.
- MA's investment in blockchain through a partnership with R3 will enhance the speed of cross-border B2B payments.
- MA predicts 2% of total revenue growth to come from these acquisitions in 2020.

**2. Mastercard will capitalize on the shift from cash and check based payments to digital payments in new geographic markets.**

- The shift to digital payment methods is growing the fastest in Asia Pacific and Africa at growth rates of 13.2% and 11.7% through 2023.
- Mastercard has put efforts into these areas to capture new payment flows by providing the digital infrastructure for InstaPay, a payment system in the Philippines, which provides payment clearing for real-time payments and switched transactions in addition to anti-money laundering tools.
- The combination of Mastercard's investments such as InstaPay in developing regions like South Asia with the high growth of digital payments in these areas will contribute to total revenue growth of an estimated 3% through 2023.

**3. Mastercard is investing in technologies to ensure a seamless consumer experience while simultaneously advancing the highest standards of cyber security and privacy for financial institutions, consumer and merchants.** These technologies will enable Mastercard to be the number one payments system of choice among all types of customers, which will allow for consistent revenue growth from value-added products, which include data analytics, risk management and loyalty programs. Preventing both fraudulent transactions and false fraud detection is imperative to Mastercard, as false declines cost merchants \$331 billion in 2018 and retailers are expected to lose \$130 billion in fraud transactions by 2024, which is lost revenue to Mastercard.

- Cybersecurity and fraud prevention
  - Mastercard will globally expand their Mastercard Identity Check program, which uses EMV 3D secure authentication standards, AI, and behavioral biometrics to verify customers.
  - MA launched Mastercard ThreatScan, which helps banks identify vulnerabilities in their payment authorization systems.

- MA is increasing the scale of Decision Intelligence, a fraud scoring technology, to reduce false card declines.
- MA acquired Ethoca in March 2019, which enables real-time information sharing between merchants and issuers to prevent delivery of funds when a fraudulent transaction has been identified. Ethoca's network includes 5000 merchants and 4000 financial institutions globally.
- MA acquired Risk Recon, a provider of AI and data analytics with cyber risk assessment capabilities to aid banks, merchants, corporations and governments secure their digital assets.
- MA expanded Secure Remote Checkout framework which provides a secure online checkout experience.
- Loyalty and consumer experience investments
  - MA acquired SessionM, a loyalty platform to enhance relationships with retailers and restaurants by providing personalized rewards and offers.
  - Francis Hondal, president of loyalty and engagement at Mastercard, says this acquisition will allow Mastercard to meet changing consumer demands for a digital experience, a shift that has become more apparent in the past few years, allowing MA to extend their consumer base and revenue streams.
  - MA acquired Transactis in May 2019 for \$57 million complementing Mastercard Bill Pay Exchange to make it easier to view and pay bills with cards and make ACH payments from bank accounts
    - 44% of bills in America are still completed by cash or check
    - Transactis makes it easy for consumers to view and pay their bills.
  - Mastercard has implemented Tap & Go contactless payments for retailers and transit systems for a faster in person experience.
  - Mastercard aims to provide token services in all cards by 2020 so that customers can store credentials with merchants without revealing card details.

Additional Reasons to Invest:

#### 4. Consistent revenue growth

- Mastercard's revenue has grown by between 17-20% each year for the past five years, which signals it will continue to bring in strong revenue flows. MA has outperformed the S&P over the past 6 years, as can be seen below:



## **5. Large market share in an industry with high barriers to entry**

- Mastercard holds 30% of the global payments industry, just behind Visa which owns 60%. These two companies have a duopoly of the payments industry, comprising of 90% of business within the industry.
- The global payments industry has high, nearly impenetrable, barriers to entry which include licensing laws, capital requirements, access to financing, and compliance and security concerns.
- Contributing to these barriers is the view held by policymakers that high competition in financial services leads to inefficiency, resulting in it being very difficult to enter the industry from a legal and compliance standpoint.

## **6. Strong leadership**

- Ajay Banga led Mastercard as CEO since 2010 when he was promoted from president and chief operating officer. Banga transformed Mastercard culturally and strategically.
- Michael Miebach, former Chief Product Officer of Mastercard will take Banga's place as CEO later this year. Mastercard executives have great confidence in Miebach, as he led Mastercard's acquisitions of Vocalink and Nets to capture more cross-border payment flows.

## **7. Effective marketing tactics**

- Advertising and sponsorships
  - Mastercard has implemented successful experimental marketing to engage consumers shifting away from traditional marketing. Mastercard has marketed the experience of their product through culinary experience, sports and the arts.
  - An example is the Priceless Tables initiative, which provides customer with an immersive digital culinary experience in Japan, Tanzania and the UK while also contributing to Stand Up To Cancer.
- Sporting events and charity-related marketing have turned Mastercard into a ubiquitous symbol across the globe.
  - Partner of the PGA tour, Major League Baseball, the Miami Open, Australian Open, and the Mastercard Memorial Cup among others.
  - Sponsor of the BRIT awards, the GRAMMYS, Carnegie Hall, and the New York City Ballet.

## **8. Mastercard has a strong balance sheet and is in a good liquidity position to combat the revenue loss risk from COVID-19.**

- In FY 2019, Mastercard had \$7.7 B worth of cash/equivalents
- \$6B unused line of credit

### Risks and Mitigants:

Three risks to Mastercard's future business operations include increased regulations of the payments industry, information security disruptions and privacy breaches, and geopolitical factors that would limit cross-border transactions, which comprise of 33% of Mastercard's revenue.

#### **I. Regulation of the payments industry**

Future regulations could include bills allowing for lower interchange rates for banks and financial institutions within the four-party system, which would decrease banks' incentive to participate in this system and cut Mastercard out of the transaction process. Additional regulation might include surcharges to merchants for using Mastercard products. Other legal regulation concerns data privacy and security. The EU has already toughened their regulations with the GDPR. Failure to comply with GDPR regulations would result in high fines, up to 4% of global annual turnover, which would damage MA's earnings. Facebook estimates \$3 billion in fines this year due to data violations of the Data Protection Commission (DPC) for storing user password's insecurely. Though it is likely these types of regulations spring up in the rest of the world following the success of the GDPR in the EU, Mastercard is well prepared to comply with these regulations and avoid fines. They have acquired several companies that focus on data location within the cloud and if they are fined for noncompliance, they have the liquidity and credit capabilities to handle the blow, limiting impact to their share price. Heightened regulations intensify the impact of a data breach as they enforce high fines and awareness about the breaches, which are damaging to earnings and brand image.

#### **II. Data security breaches**

Consumers have increasingly high expectations of privacy and data security, as has been recognized by Mastercard's executives. Any advances in fraudulent technology that makes data breaches more common would have an adverse effect on the payments industry. Financial transactions are largely conducted digitally, therefore increased efficiency of hackers and cyber terrorists will lead to a higher risk of data breaches in the future. Fortunately, security and privacy technology are Mastercard's biggest investment and they are currently more successful at preventing data breaches than their competitors. Such investments include ThreatScan, Decision Intelligence, Ethoca, and Risk Recon. These acquisitions will enable Mastercard to detect and limit fraudulent transactions as well increase data analytics on transactions so that Mastercard can have a clearer picture of the scope of fraudulent transactions.

#### **III. Global trade protectionist acts and sanctions**

Governments might act in ways to protect their domestic payment industry and switching providers, thereby eliminating Mastercard from certain geographies. These types of actions would likely result from a trade protectionism policy, anti-money laundering policy or, counter terrorist and anti-corruption economic sanctions. Some acts of this sort are already implemented such as the US Bank Secrecy Act, USA Patriot Act, and OFAC sanctions which currently limit Mastercard's business in Iran, Sudan, and Syria due to counter-terrorism sanctions and Crimea, Cuba, Iran, North Korea and Syria due to economic sanctions. Though this the risk that Mastercard has the least control over, Mastercard can attempt to strengthen their position in countries not likely to enforce these types of protectionist regulation by identifying these countries early on. Mastercard has done a good

job of this by focusing on penetrating the \$27 trillion Chinese payments industry with success, as they recently won approval to enter this market.

### Comparable Companies Analysis:

#### Mastercard (MA)

##### Comparable Companies Analysis

|                          | Market Cap (\$B) | EV/Sales | EV/EBITDA | EV/EBIT | EV/FCF TTM | P/B    | P/E    |
|--------------------------|------------------|----------|-----------|---------|------------|--------|--------|
| <b>Mastercard</b>        | \$ 264.69        | 15.73x   | 25.34x    | 27.66x  | 32.46x     | 44.92x | 33.17x |
| Visa                     | \$ 374.46        | 16.32    | 23.45     | 24.47   | 28.72      | 12.56  | 30.84  |
| PayPal                   | \$ 124.30        | 6.67     | 29.44     | 42.48   | 25.99      | 7.36   | 51.20  |
| American Express         | \$ 72.79         | 3.58     | -         | 9.31    | 9.24       | 3.15   | 11.31  |
| Discover                 | \$ 11.08         | 2.62     | -         | 4.72    | 5.09       | 0.98   | 3.98   |
| Capital One              | \$ 25.83         | -0.44 -  | -         | -1.01   | -0.77      | 0.45   | 5.13   |
| <b>Mean (weighted)</b>   | \$ 121.69        | 8.86x    | 26.45x    | 25.42x  | 21.32x     | 7.69x  | 31.12x |
| <b>Median (weighted)</b> | \$ 72.79         | 6.67x    | 26.45x    | 24.47x  | 25.99x     | 7.36x  | 30.84x |
| <b>Assumed Low</b>       | \$ 25.83         | 5.13x    | 24.95x    | 16.89x  | 17.61x     | 5.26x  | 21.08x |
| <b>Assumed High</b>      | \$ 124.30        | 11.50x   | 27.94x    | 33.47x  | 27.35x     | 9.96x  | 41.02x |

Sources: SEC Filings, Bloomberg

| (millions)                    | EV/Sales TTM      | EV/EBITDA TTM     | EV/EBIT TTM       | EV/FCF TTM        | P/B              | P/E             |
|-------------------------------|-------------------|-------------------|-------------------|-------------------|------------------|-----------------|
| Multiple                      | 6.67x             | 26.45x            | 24.47x            | 25.99x            | 7.36x            | 30.84x          |
| TTM Financial Metric          | 16,883.00         | 10,190.00         | 9,696.00          | 8,180.00          | 5,893.00         | 7.94            |
| <b>Enterprise Value</b>       | <b>112,609.61</b> | <b>269,474.55</b> | <b>237,264.64</b> | <b>212,590.31</b> | <b>43,372.48</b> |                 |
| Less: Total Debt              | 23,319.00         | 23,319.00         | 23,319.00         | 23,319.00         | 23,319.00        |                 |
| Plus: Cash & Cash Equivalents | 6,988.00          | 6,988.00          | 6,988.00          | 6,988.00          | 6,988.00         |                 |
| <b>Implied Equity Value</b>   | <b>96,278.61</b>  | <b>253,143.55</b> | <b>220,933.64</b> | <b>196,259.31</b> | <b>27,041.48</b> |                 |
| Shares Outstanding            | 996.00            | 996.00            | 996.00            | 996.00            | 996.00           |                 |
| <b>Implied Share Price</b>    | <b>\$96.67</b>    | <b>\$254.16</b>   | <b>\$221.82</b>   | <b>\$197.05</b>   | <b>\$27.15</b>   | <b>\$244.97</b> |
| 25th Percentile               | \$70.51           | \$238.84          | \$148.03          | \$128.27          | \$14.70          | 167.40396       |
| 75th Percentile               | \$178.45          | \$269.48          | \$309.47          | \$208.25          | \$42.53          | \$325.83        |

#### Notes:

Discover and Capital One's EV ratios have been excluded from the median calculation, as they have significantly smaller market caps than Visa, Mastercard, PayPal, or American Express. Further, Capital One has a negative enterprise value, which is not uncommon among financial institutions as they typically have large cash balances. However, their inclusion in this analysis resulted in very low implied share prices for Mastercard, in the low double digits, which is not an accurate prediction of the MA's share price under any market circumstances.



## Discounted Cash Flow Analysis:

| Mastercard (MA)                         |             | Beta Calculation - Average Compa |             |                   |                |
|---|-------------|----------------------------------|-------------|-------------------|----------------|
| <b>Weighted Average Cost of Capital</b> |             |                                  |             |                   |                |
| <b>Capital Structure</b>                |             |                                  |             |                   |                |
| Total Capital                           | 14,444      |                                  |             |                   |                |
| Debt/Equity                             | 1.45        |                                  |             |                   |                |
| <b>Cost of Debt</b>                     |             |                                  |             |                   |                |
| Cost-of-Debt (1)                        | 2.91%       |                                  |             |                   |                |
| Tax Rate                                | 17.00%      |                                  |             |                   |                |
| After-tax Cost of Debt                  | 2.42%       |                                  |             |                   |                |
| <b>Cost of Equity</b>                   |             |                                  |             |                   |                |
| Risk Free Rate (2)                      | 0.63%       |                                  |             |                   |                |
| Market Risk Premium (3)                 | 5.50%       |                                  |             |                   |                |
| Relevered Beta                          | 1.350       |                                  |             |                   |                |
| CAPM                                    | 8.06%       |                                  |             |                   |                |
| WACC                                    | 0.047285656 |                                  |             |                   |                |
|   |             | Unlevered Beta                   | D/E         | Marginal Tax Rate | Relevered Beta |
|   |             | 0.614                            | 1.45        | 17%               | 1.350          |
|   |             | Current Capital Structure        |             |                   |                |
|   |             | D/E                              | 1.44        |                   |                |
|   |             | D/TC                             | 0.59        |                   |                |
|   |             | E/TC                             | 0.409651066 |                   |                |

(1) Based on weighted average coupon rate  
(2) Interpolated yield on 10-year U.S. Treasury, sourced from Bloomberg, or Google it  
(3) S&P500 average return minus T. Bill average return (1928 - 2018)

| Mastercard (MA)                                  |            | Discounted Cash Flow Analysis |         |             |            |            |            |             |  |
|--|------------|-------------------------------|---------|-------------|------------|------------|------------|-------------|--|
|  | Historical |                               | CAGR    |             | Projected  |            |            | CAGR        |  |
|  | 2017       | 2018                          | 2019    | (2017-2019) | 2020       | 2021       | 2022       | (2020-2022) |  |
| <b>Sales</b>                                     | 12,497     | 14,950                        | 16,883  | 16.23%      | 18,304     | 20,707     | 23,861     | 14.17%      |  |
| % growth   | -          | 19.6%                         | 12.9%   |             | 8.4%       | 13.1%      | 15.2%      |             |  |
| Cost of Goods Sold                               | 0          | 0                             | 0       |             | 0          | 0          | 0          |             |  |
| <b>Gross Profit</b>                              | 12,497     | 14,950                        | 16,883  | 16.23%      | 18,304     | 20,707     | 23,861     | 14.17%      |  |
| % margin   | 100%       | 100%                          | 100%    |             | 100%       | 100%       | 100%       |             |  |
| Operating Expenses                               | 5,439      | 7,209                         | 6,697   |             | 7,352      | 8,421      | 9,823      |             |  |
| <b>EBITDA</b>                                    | 7,058      | 7,741                         | 10,186  | 20.13%      | 10,952     | 12,286     | 14,038     | 13.22%      |  |
| % margin   | 56%        | 52%                           | 60%     |             | 60%        | 59%        | 59%        |             |  |
| Depreciation & Amortization                      | 436        | 459                           | 522     |             | 566        | 640        | 738        |             |  |
| <b>EBIT</b>                                      | 6,622      | 7,282                         | 9,664   | 20.80%      | 10,386     | 11,646     | 13,300     | 13.16%      |  |
| % margin   | 53%        | 49%                           | 57%     |             | 57%        | 56%        | 56%        |             |  |
| Tax Expense                                      | 2,607      | 1,345                         | 1,613   |             | 1,749      | 1,968      | 2,254      |             |  |
| <b>Net Operating Profit After Tax (NOPAT)</b>    | 4,015      | 5,937                         | 8,051   | 41.61%      | 8,637      | 9,678      | 11,047     | 13.09%      |  |
| Plus: Depreciation & Amortization                | 436        | 459                           | 522     |             | 566        | 640        | 738        |             |  |
| Less: Capital Expenditures                       | 300        | 330                           | 422     |             | 458        | 518        | 596        |             |  |
| Less: Increase / Decrease in Net Working Capital | -1018      | -426                          | 420     |             | 393        | 692        | 1,221      |             |  |
| <b>Unlevered Free Cash Flow</b>                  | \$5,169    | \$6,492                       | \$7,731 | 22.30%      | \$8,353    | \$9,108    | \$9,967    | 0.09233805  |  |
| WACC   | 4.73%      |                               |         |             | 4.73%      | 4.73%      | 4.73%      |             |  |
| Discount Period                                  |            |                               |         |             | 0.5        | 1.5        | 2.5        |             |  |
| Discount Factor                                  |            |                               |         |             | 0.97716392 | 0.93       | 0.89       |             |  |
| <b>Present Value of Free Cash Flow</b>           | \$5,169    | \$6,492                       | \$7,731 |             | \$8,162.05 | \$8,498.22 | \$8,879.39 |             |  |

### Terminal Multiple Method

#### Calculation of Implied Share Price

|                               |                     |
|-------------------------------|---------------------|
| Enterprise Value              | \$356,283.79        |
| Less: Total Debt              | 23,319.00           |
| Less: Preferred Securities    | -                   |
| Less: Noncontrolling Interest | -                   |
| Plus: Cash & Cash Equivalents | 6,988.00            |
| <b>Implied Equity Value</b>   | <b>\$339,952.79</b> |

|                            |                 |
|----------------------------|-----------------|
| Shares Outstanding         | 996.00          |
| <b>Implied Share Price</b> | <b>\$341.32</b> |

### Gordon Growth Method

#### Calculation of Implied Share Price

|                               |                     |
|-------------------------------|---------------------|
| Enterprise Value              | \$433,935.63        |
| Less: Total Debt              | 23,319.00           |
| Less: Preferred Securities    | -                   |
| Less: Noncontrolling Interest | -                   |
| Plus: Cash & Cash Equivalents | 6,988.00            |
| <b>Implied Equity Value</b>   | <b>\$417,604.63</b> |

|                            |                 |
|----------------------------|-----------------|
| Shares Outstanding         | 996.00          |
| <b>Implied Share Price</b> | <b>\$419.28</b> |

|                                 |              |
|---------------------------------|--------------|
| Current Share Price             | \$ 259.97    |
| Terminal Multiple Method Weight | 40%          |
| Gordon Growth Method Weight     | 60%          |
| Implied Share Price             | \$388.10     |
| <b>Upside / Downside</b>        | <b>49.3%</b> |

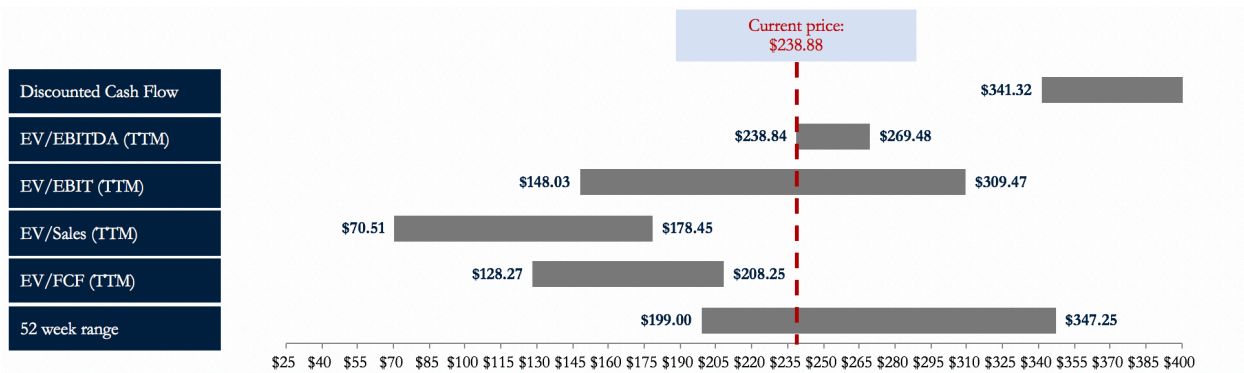
**Notes:**

Gordon growth method was weighted more than the Terminal Exit Multiples (60-40) method because the EBIT and EBITDA for the payments industry are extremely volatile right now. In the past two months, EV/EBITDA has fallen from 112x to 22x. Therefore, it is more accurate to weigh the Gordon Growth share price more heavily.

The only step in the operating model was .5% in SG&A growth. The reason for this is due to increased spending on marketing and advertising campaigns over the next few years.

For the Gordon Growth Method, I used a growth rate of 2.5%, due to Mastercard being a high-growth company in the payments technology sector.

Football Field:



|                      | Low      | Range   | High     | Implied  | Weight |
|----------------------|----------|---------|----------|----------|--------|
| Discounted Cash Flow | \$341.32 | \$77.96 | \$419.28 | \$388.10 | 0.72   |
| Comps EV/EBITDA      | \$238.84 | 30.64   | \$269.48 | \$254.16 | 0.07   |
| Comps EV/EBIT        | \$148.03 | 161.44  | \$309.47 | \$221.82 | 0.07   |
| Comps EV/Sales       | \$70.51  | 107.94  | \$178.45 | \$96.67  | 0.07   |
| Comps EV/FCF         | \$128.27 | \$79.98 | \$208.25 | \$197.05 | 0.07   |
| 52-week Range        | \$199.00 | 148.25  | \$347.25 |          |        |

|                      |        |                                       |          |
|----------------------|--------|---------------------------------------|----------|
| <b>Current Price</b> | 259.97 | <b>Combined Target Price</b>          | \$333.31 |
| Estimated Upside     | 28%    | This is your Estimated Stock Price ^^ |          |

**Notes:**

The DCF implied share price is weighted more heavily for the reasons stated above: EV multiples are currently volatile and Discover and Capital One have been omitted from these calculations.

## Income Statement:

### Mastercard (MA)

Operating Model (\$mm, fiscal year ending Dec. 31)

| Income Statement                      |                |                |                |                |                |                |                 |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
|                                       | 2016A          | 2017A          | 2018A          | 2019A          | 2020E          | 2021E          | 2022E           |
| Net Sales (\$mm)                      | 10,776.0       | 12,497.0       | 14,950.0       | 16,883.0       | 18,304.4       | 20,707.0       | 23,861.1        |
| Cost of Goods Sold                    | -              | -              | -              | -              | 0              | 0              | 0               |
| Gross Margin                          | 10,776.0       | 12,497.0       | 14,950.0       | 16,883.0       | 18304.38       | 20,707.0       | 23,861.1        |
| SG&A                                  | 5,015.0        | 5,875.0        | 7,668.0        | 7,219.0        | 7826.76771     | 8,854.1        | 10,202.8        |
| Add back Depreciation                 | (373.0)        | (436.0)        | (459.0)        | (522.0)        | -565.947187    | (640.2)        | (737.8)         |
| Operating Expenses                    | 4,642.0        | 5,439.0        | 7,209.0        | 6,697.0        | 7,260.8        | 8,213.9        | 9,465.0         |
| EBITDA                                | 6,134.0        | 7,058.0        | 7,741.0        | 10,186.0       | 11043.5595     | 12,493.2       | 14,396.1        |
| D&A                                   | 373.0          | 436.0          | 459.0          | 522.0          | 565.947187     | 640.2          | 737.8           |
| EBIT                                  | 5,761.0        | 6,622.0        | 7,282.0        | 9,664.0        | 10,477.6       | 11,852.9       | 13,658.4        |
| Other expense (income)                | 20.0           | (54.0)         | (108.0)        | (291.0)        | (151.0)        | (183.3)        | (208.4)         |
| Interest expense                      | 95.0           | 154.0          | 186.0          | 224.0          | 250.6          | 250.6          | 250.6           |
| EBT (Pre-Tax Income)                  | 5,646.0        | 6,522.0        | 7,204.0        | 9,731.0        | 10,378.0       | 11,785.6       | 13,616.2        |
| Tax Expense (Forecast future @ 21.0%) | 1,587.0        | 2,607.0        | 1,345.0        | 1,613.0        | 1,764.25       | 2003.5545      | 2314.74799      |
| <b>Net Income</b>                     | <b>4,059.0</b> | <b>3,915.0</b> | <b>5,859.0</b> | <b>8,118.0</b> | <b>8,613.7</b> | <b>9,782.1</b> | <b>11,301.4</b> |
| Income attributable to NCI            |                |                |                |                |                |                |                 |
| Net Income attributable to CS         | 4,059.0        | 3,915.0        | 5,859.0        | 8,118.0        | 8,613.7        | 9,782.1        | 11,301.4        |
| Shares Outstanding                    | 1,101.0        | 1,072.0        | 1,047.0        | 1,022.0        | 1,022.0        | 1,022.0        | 1,022.0         |
| <b>Operating EPS</b>                  | <b>\$3.69</b>  | <b>\$3.65</b>  | <b>\$5.60</b>  | <b>\$7.94</b>  | <b>\$8.43</b>  | <b>\$9.57</b>  | <b>\$11.06</b>  |
| Dividends                             | 800.0          | 942.0          | 1,104.0        | 1,345.0        | 1,427.1        | 1,620.7        | 1,872.4         |

## Balance Sheet:

| Balance Sheet                 |                 |                 |                 |                 |                 |                 |                 |
|-------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                               | 2016A           | 2017A           | 2018A           | 2019A           | 2020E           | 2021E           | 2022E           |
| Cash and Equivalents          | 6,721.0         | 5,933.0         | 6,682.0         | 6,988.0         | 7576.31982      | 8570.80274      | 9876.30839      |
| Accounts Receivable           | 1,416.0         | 1,969.0         | 2,276.0         | 2,514.0         | 2,725.7         | 3,083.4         | 3,553.1         |
| Other Current Assets          | 5,091.0         | 5,895.0         | 7,213.0         | 7,400.0         | 8023.0061       | 9076.12196      | 10458.5979      |
| <b>Current Assets</b>         | <b>13,228.0</b> | <b>13,797.0</b> | <b>16,171.0</b> | <b>16,902.0</b> | <b>18,325.0</b> | <b>20,730.4</b> | <b>23,888.0</b> |
| Accounts Payables & Accruals  | 4,649.0         | 5,573.0         | 6,875.0         | 6,892.0         | 7,500.0         | 8,500.0         | 9,500.0         |
| Unearned Revenue              | 1,937.0         | 2,428.0         | 3,269.0         | 4,084.0         | 4427.83202      | 5009.03812      | 5772.01538      |
| Current Portion of Debt       | -               | -               | 500.0           | -               | -               | -               | -               |
| Other Current Liabilities     | 620.0           | 792.0           | 949.0           | 928.0           | 1006.12833      | 1138.19475      | 1311.56471      |
| <b>Current Liabilities</b>    | <b>7,206.0</b>  | <b>8,793.0</b>  | <b>11,593.0</b> | <b>11,904.0</b> | <b>12,934.0</b> | <b>14,647.2</b> | <b>16,583.6</b> |
| Long Term Debt                | 5,180.0         | 5,424.0         | 5,834.0         | 8,527.0         | 8,527.0         | 8,527.0         | 8,527.0         |
| Other Liabilities             | 605.0           | 1,544.0         | 1,944.0         | 2,814.0         | 3,000.0         | 3,200.0         | 3,400.0         |
| <b>Noncurrent Liabilities</b> | <b>5,785.0</b>  | <b>6,968.0</b>  | <b>7,778.0</b>  | <b>11,341.0</b> | <b>11,527.0</b> | <b>11,727.0</b> | <b>11,927.0</b> |
| <b>Total Liabilities</b>      | <b>12,991.0</b> | <b>15,761.0</b> | <b>19,371.0</b> | <b>23,245.0</b> | <b>24,461.0</b> | <b>26,374.2</b> | <b>28,510.6</b> |
| <b>Total Equity</b>           | <b>5,684.0</b>  | <b>5,497.0</b>  | <b>5,418.0</b>  | <b>5,917.0</b>  | <b>5,917.0</b>  | <b>5,917.0</b>  | <b>5,917.0</b>  |
| Net Working Capital           | 6,022.0         | 5,004.0         | 4,578.0         | 4,998.0         | 5,391.0         | 6,083.1         | 7,304.4         |
| Change in Net Working Capital | N/A             | (1,018.0)       | (426.0)         | 420.0           | 393.019262      | 692.1           | 1,221.3         |
| Capital Expenditures          | 373.0           | 300.0           | 330.0           | 422.0           | 457.5           | 517.6           | 596.4           |



## Revenue Forecast:

| <b>Mastercard (MA)</b>     |   |                     |                     |                     |                     |                     |                     |                     |
|----------------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <i>Revenue Forecasting</i> |   |                     |                     |                     |                     |                     |                     |                     |
|                            | 2015A   | 2016A               | 2017A               | 2018A               | 2019A               | 2020E               | 2021E               | 2022E               |
| <b>Net Revenue</b>         | <b>\$9,667.0</b>  | <b>\$10,776.0</b>   | <b>\$12,497.0</b>   | <b>\$14,950.0</b>   | <b>\$16,883.0</b>   | <b>\$18,304.4</b>   | <b>\$20,707.0</b>   | <b>\$23,861.1</b>   |
| % $\Delta$                 | -   | 11.5%               | 16.0%               | 19.6%               | 12.9%               | 8.4%                | 13.1%               | 15.2%               |
| Domestic Assessments       | 4,086.0   | 4,411.0             | 5,130.0             | 6,138.0             | 6,781.0             | 7,323.5             | 8,348.8             | 9,684.6             |
| % of Revenue               | 42.3%   | 40.9%               | 41.0%               | 41.1%               | 40.2%               | 40.0%               | 40.3%               | 40.6%               |
| YoY Growth                 | -   | 8.0%                | 16.3%               | 19.6%               | 10.5%               | 8.0%                | 14.0%               | 16.0%               |
| Cross-border Volume Fe     | 3,225.0   | 3,568.0             | 4,174.0             | 4,954.0             | 5,606.0             | 5,942.4             | 6,655.4             | 7,653.8             |
| % of Revenue               | 33.4%   | 33.1%               | 33.4%               | 33.1%               | 33.2%               | 32.5%               | 32.1%               | 32.1%               |
| YoY Growth                 | -   | 10.6%               | 17.0%               | 18.7%               | 13.2%               | 6.0%                | 12.0%               | 15.0%               |
| Transaction Processing     | 4,345.0   | 5,143.0             | 6,188.0             | 7,391.0             | 8,469.0             | 9,485.3             | 10,813.2            | 12,543.3            |
| % of Revenue               | 44.9%   | 47.7%               | 49.5%               | 49.4%               | 50.2%               | 51.8%               | 52.2%               | 52.6%               |
| YoY Growth                 | -   | 18.4%               | 20.3%               | 19.4%               | 14.6%               | 12.0%               | 14.0%               | 16.0%               |
| Other Revenues             | 1,991.0   | 2,431.0             | 2,853.0             | 3,348.0             | 4,124.0             | 4,783.8             | 5,597.1             | 6,828.5             |
| % of Revenue               | 20.6%   | 22.6%               | 22.8%               | 22.4%               | 24.4%               | 26.1%               | 27.0%               | 28.6%               |
| YoY Growth                 | -   | 22.1%               | 17.4%               | 17.4%               | 23.2%               | 16.0%               | 17.0%               | 22.0%               |
| Rebates and Incentives     | (3,980.0)   | (4,777.0)           | (5,848.0)           | (6,881.0)           | (8,097.0)           | (9,230.6)           | (10,707.5)          | (12,849.0)          |
| % of Revenue               | -41.2%  | -44.3%              | (46.8%)             | (46.0%)             | (48.0%)             | (50.4%)             | (51.7%)             | (53.8%)             |
| YoY Growth                 | -   | 20.0%               | 22.4%               | 17.7%               | 17.7%               | 14.0%               | 16.0%               | 20.0%               |
| <b>Net Sales</b>           | <b>\$ 9,667.00</b>  | <b>\$ 10,776.00</b> | <b>\$ 12,497.00</b> | <b>\$ 14,950.00</b> | <b>\$ 16,883.00</b> | <b>\$ 18,304.38</b> | <b>\$ 20,707.05</b> | <b>\$ 23,861.15</b> |
| % growth                   | -   | 11.5%               | 16.0%               | 19.6%               | 12.9%               | 8.42%               | 13.1%               | 15.2%               |
| Sources:                   | SEC Filings (Forms 10-K, 10-Q, 8-K)                             |                     |                     |                     |                     |                     |                     |                     |
|                            | Company Guidance from Investor Presentations / Conference Calls |                     |                     |                     |                     |                     |                     |                     |
|                            | Credit Suisse Research Report (xx/xx/xxxx)                      |                     |                     |                     |                     |                     |                     |                     |
|                            | Guggenheim Partners Research Report (xx/xx/xxxx)                |                     |                     |                     |                     |                     |                     |                     |

### Notes:

In March 2020, Mastercard revised revenue growth forecasts for Q1 to be in the high single digits. Growth is currently expected to slow well into Q2 2020, bringing down growth rates for the fiscal year. Therefore, growth rates for all revenue categories are down in 2020. I predict cross-border volume to take the biggest hit, as travel and international purchases are very limited. However, due to Mastercard's investment in acquisitions to increase the speed and volume of cross border transactions, once global economies reopen, revenue in this category will bounce back to 12% in 2021 and 16% in 2022. Other revenues, which consist of the value-added products previously mentioned, will also grow over the next few years due to MA's investment in loyalty programs and the collection of data analytics. Because financial institutions do charge high fees to users of MA products, MA's spending on incentives such as rewards will increase from 2020-2022 in order to retain customers and show them that the fees are worth their products. I predict Rebates and Incentives to grow by 20% from FY 2021 to 2022.

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