

# Consumer Finance: Card Networks & Issuers

## Visa (V): Apple Pay, A Look Under The Hood

- **Highlights From Visa Senior Management Meeting** – We recently hosted investor meetings in San Francisco with members of Visa's senior mgt team including; Byron Pollitt (CFO), Jim McCarthy (Global Head of Innovation & Strategic Partnerships), Antonio Lucio (Chief Brand Officer) and Jack Carsky (IR). We came away from our meeting feeling incrementally more comfortable around Apple Pay's potential impact on Visa and the current payment ecosystem, particularly given networks integral role around tokenization. In this 6-page note, we provide investors with detailed answers to Apple Pay related questions around tokenization mechanics, PayPal/Google, debit implications, impact to banks, MCX, etc. On fundamentals, we sensed a slightly better tone on cross border rev's, as the CVIX FX volatility has picked up (though the USD has strengthened). We now expect V to provide 2015 guidance during the upcoming earnings call. Reiterate our Buy rating.
- **Apple Pay Could Transform Payments** – Mgt was optimistic on the long-term prospects for Apple Pay, similar to our own view as we see good merchant & consumer adoption over time. For merchants, economics are unchanged versus a physical POS swipe, as we confirmed that card present interchange rates will be applied, plus iPhones skew to the affluent. Banks may rebate up to 15 bps to Apple, yet a closer look reveals some benefits such as a potentially significant increase of in-app iPhone payments and the associated rev opportunities, acceleration of mobile banking, and more transaction volumes (micropayments/subways, etc). The more we look at the card networks critical role in tokenization it makes their model potentially stickier than we had thought as we shift to digital. The tokenization fees charged by networks (7c per "token created", charged by V as of 1/1/16) will add revenue, but given these are mostly not dynamic tokens, the accretion is modest.
- **Digital Payments Impact on Marketing** – Visa's strategic tilt towards merchants and focus on digital has permeated throughout the company to areas such as marketing. Of their total US marketing budget, Visa now spends >50% on digital forms of marketing/advertising. And their advertising will increasingly be focused directly on merchants, including upcoming NFL TV ads that highlight deals with specific retailers. While digital mktg can be expensive (i.e. hiring talent), mgt is shifting current \$'s to the digital strategy rather than raising the overall budget.
- **Cross Border Rev's & Fundamentals** – Cross border volumes/revenues have been a partial driver of V's stock underperformance vs broader market. On that, mgt recognized that FX volatility has improved (i.e. CVIX, Figure 1-2) and that Ramadan should help the Sept 30<sup>th</sup> ending qtr y/y growth rate. But as we show in Figure 4, the US dollar has strengthened a bit since June 30<sup>th</sup>, which remains a headwind for V's North/South American centric cross border volumes.

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See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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## Digging Into The Details on Apple Pay

In this note, we address key investor key questions around Apple Pay based on our management meeting with Visa and discussions we've had with other payments industry participants.

### Is Apple Pay A Threat To The Card Networks?

While we are always on the look-out for disintermediation risks, we came away from our meeting feeling more comfortable with the networks role around Apple Pay. We also have a better appreciation of how critical the networks were in facilitating Apple Pay and how tokenization furthers the importance of the networks in the payments ecosystem. Given the value add of tokenization, we also believe it could be a modest revenue stream for the networks.

### Why Might Apple Pay Succeed Where Others Have Failed?

We believe Apple Pay provides the tipping point needed to push the US market to NFC (tap and go). About 15-25% of merchants in the US have NFC today, though 80%+ of US point of sale terminal shipments are EMV and NFC enabled. Some merchants already have NFC but have disabled the functionality. In markets such as Australia, NFC penetration rates have reached north of 40% for Visa, which shows the consumer acceptance of this form of payment. In our view, we would not be surprised to see 80% of merchants have NFC by 2017 due to EMV and Apple, even higher on a % of spend basis.

Apple's approach to payments was structured attractively as it included the top card issuers and their plan not to retain transaction data nor include ACH was less threatening to the industry. Visa mgt believes Apple does not have any intention, even longer-term, to include ACH. Banks also like that their brand is prominently displayed when paying and they are still in control of the process. And V has developed functionality to enable smaller banks to quickly be added to Apple Pay. Also note that Apple Pay is not P2P money transfer as it is only C2B.

On a related note, we mention that Chase Paymentech, First Data, Cybersource (i.e., Global Payments) and Total System are all acquirers mentioned specifically in Apple's initial release.

### What Is Tokenization And How Does The Transaction Flow?

In an effort to reduce fraud as card credentials are loaded in more and more devices, the payments industry is introducing tokenization for ecommerce transactions. Tokenization simply uses a 16-digit digital number that is different than the actual card member's 16-digit account number. iPhone transactions at the physical POS (point of sale) will also utilize tokenization. The generation of the token cannot be mathematically reversed. These tokens will support multiple types of payments including one-time authorization, capture and settlement, recurring and subscription billing, credit and partial credit, split capture, reauthorization, and standard checkout.

The networks V and MA will be the gatekeepers of the tokenization vault and act as the central hub via the cloud. The networks have invested time and money to build out tokenization functionality which requires massive computing capacity and needs to be seamless. V will primarily charge 7c per token created beginning 1/1/16. The tokenization fee would be paid by bank issuers, which the bank can offset with lower fraud cost. Given that most of the tokens are not dynamic (rather they are

static), the intermediate revenue accretion to V will be modest. ([Visa Tokenization Pricing](#)).

Tokenization brings significant benefit to the payments ecosystem through reduced fraud and makes the chances of large breaches at merchants minimal. Visa will begin to roll out tokenization next month. They are also prepared to roll it out internationally and Visa Europe is prepared for tokenization as well.

The way tokenization will work for iPhone physical POS transactions is as follows. First, the iPhone would include a secure element (like any other smart phone) that will contain the 16-digit digital token number, protected by biometric TouchID. At the time the consumer inputs card information into Apple Wallet, there is some behind the scenes processing between Apple/the network/issuer that results in the creation of a persistent token (for each wallet/device combination). The iPhone, via NFC protocol, sends the transaction to the NFC enabled POS terminal which would then transmit it to V (or MA) through the merchant acquirer. V/MA would convert the digital code and send it through to the bank like a normal transaction. Note that the 16-digit number sent from the iPhone is static, but the iPhone also sends another field with a dynamic number.

If a consumer wants to add another credit/debit card to their iPhone, they would take a picture of it. Behind the scenes, Apple send information to V/MA, then the network would electronically ask the bank through a 3D secure protocol if they want to provision the new card for a token. The bank can either say yes or if they are not comfortable they could begin a more detailed authentication process such as texting, emailing or calling the cardholder.

Broadly speaking for an ecommerce (online) transaction, the tokenization process would start with the consumer entering their actual credentials into a digital wallet (Visa Check Out, Apple Pay, MasterPass, etc). But the wallet would not store the actual 16-digit account number that is entered, rather it stores a 16-digit digital token number. For a transaction, the network would receive the 16-digit digital number upon purchase and convert it to the cardholder's actual 16-digit account number via the vault and then pass it along to the issuing bank like a normal transaction.

### **Are Bank Card Issuers Getting A Bad Deal?**

It has been reported in the press that banks will rebate up to 15 bps to Apple for the iPhone physical POS transactions (potentially a tad less for debit). And bank issuers have publicly stated in press reports that these transactions will be lower yielding for them. While on the surface this appears to be a negative for the banks, keep in mind there are some less obvious benefits to the bank issuer.

First, Apple Pay will increase customer use of mobile banking, which has been an important push for banks. And the bank could provide real-time revenue generating offers to their customers. For example, after the iPhone transaction is completed at the POS, the consumer could see a pop-up offer from the bank next to their transaction confirmation. And Apple has enabled a smooth process for consumers to easily click into the banks mobile banking site from Apple Pay on their iPhone. And a potential surge of in-app transactions could also provide revenue opportunities for banks. Lastly, Apple Pay should disintermediate some level of cash and ACH transactions (i.e. micropayments) which will boost electronic volumes. Touch ID fingerprint technology will also help reduce fraud expense for

banks. Keep in mind, however, Touch ID is not an authentication process that goes to the app or bank. It is another secure element on the phone.

Importantly, through the tokenization process Visa will send over a new risk field that could include information helpful in reducing fraud. For example, the network could include GPS based information from the device that would enhance the risk scoring the network passes to the issuer. Today, Visa passes along a risk score to the issuer that helps in identifying fraud risk.

### **How Does Apple Pay Handle Debit?**

Apple Pay at the physical point of sale will include credit, signature debit and PIN debit. Credit and signature debit will be seamless and today no signature is required at many merchants for up to \$50 transactions. For PIN debit, the consumer would be prompted to also enter their 4-digit PIN number on the POS terminal, just as they would with a plastic debit card. Interestingly, we believe most if not all of the retailers that pre-signed up to accept Apple Pay have initially turned off their PIN debit function to make sure the payments are simple and frictionless for consumers.

Apple Pay will be Durbin Amendment compliant, with the two potential networks (front and back of card) shown to the merchant for their choice of routing. If it is a V card and the merchant chooses to route the PIN debit transaction over MA, then V would send the transaction to MA's token vault. It is our understanding that Apple Pay is in the process of trying to bring in other debit networks into the fold.

Many iPhone 6 users may initially add the card that is already in iTunes into their iPhone/digital wallet as the default card. It is our understanding that iTunes cards on file tend to skew towards debit. Outside of this dynamic, many industry professionals believe Apple Pay could end up driving more credit transactions. As we have noted, iPhone's tend to weight towards affluent consumers.

### **Huge "In-App" Opportunity From Apple Pay?**

V mgt seemed particularly positive on the potential for a significant increase of in-app transactions through Apple Pay, as it will remove much of the friction and therefore reduce abandonment rates. An example would be someone walking down the street and seeing an advertisement for flowers on a bus, so they click on a retailer's app to make the purchase via their iPhone, which would have Apple Pay's digital wallet loaded.

When a consumer makes a purchase in an app today, the payment process actually takes you to the retailer's browser page and can create a cumbersome experience with high abandonment rates. With Apple Pay included in the app, the app will query the chip on the phone and extract the 16-digit digital number into the app for easy payment. In-app purchases could fuel even more ecommerce transactions.

For an ecommerce transaction made with your iPhone (meaning in-app), the higher card-NOT-present interchange rate is charged and we believe network yields are higher as well. However, V mgt suggested that over time the interchange rate could be reduced for these types of ecommerce transactions if Touch ID technology proves out around fraud reduction, which could be a positive for merchants.

Given that Apple Pay will not be the merchant of record, it is not a threat in terms of aggregation. Today for iTunes V permits Apple (and others) to aggregate up to \$15 or sit on the transaction for up to 3-days. Aggregation in this case simply means grouping multiple transactions into one. So the network only gets one processing fee, not multiple processing fees.

Growth of in-app applications that incorporate Apple Pay as the digital wallet should not be a material threat to Visa Check Out (their digital wallet) as Check Out is mostly browser based and not in-app.

**How Does Apple Watch Impact Payments?** Consumers will be able to make payments with Apple Watch as it also includes NFC capability. However, there are some important considerations around watch payments. First, Apple Watch does not have GPS and the consumer will need to authenticate it for payments via their iPhone when they put the watch on that morning. If they take the watch off, it will need to be re-authenticated, based on our understanding. Apple Watch has a different secure element 16-digit digital number as well.

#### **What Does Apple Pay Mean For MCX/CurrentC?**

MCX (recently rebranded as CurrentC) was formed by a group of large merchants including Walmart and is an alternative payment system outside of the networks. While we had already been skeptical about the value proposition of CurrentC, to us Apple Pay seems to further undercut their initiative.

However, some large merchants such as Walmart have said they will not participate in Apple Pay due to their involvement in CurrentC – we believe the strategic intent behind CurrentC was to put pressure on interchange by fashioning a payments alternative and that reason has likely not diminished. Also, given Apple Pay is likely to skew towards an affluent customer, perhaps players like CurrentC do not lose much by initially not supporting Apple Pay. Clearly, as Apple Pay grows in use, the strategy of the CurrentC members may change. And Apple Pay's plan not to retain data should be viewed positively by the merchants involved in CurrentC.

From a merchant perspective, payments made with iPhone/Apple Pay at the physical point of sale have the same economics as if the customer made a purchase via card swipe (both have card present interchange). But we'll continue to closely monitor CurrentC as a risk to the networks given the significant amount of spend these participating merchants account for.

From a processor perspective, we note that FIS is the payment processing, routing and settlement engine behind CurrentC and its commitment and guidance includes the contractual minimum that CurrentC has committed to it on a multi-year basis. We do not believe this is at risk currently or for the interim future.

#### **Will Google/Samsung Make A Move, Perhaps With PayPal?**

While we are positive on the ultimate growth in acceptance for Apple Pay at the physical POS (and their online digital wallet), we believe competitors will be forced to counter Apple's smart phone advantage. We believe Apple has roughly a 35%-40% market share of US smart phone shipments. The biggest question to us is what does Google do? Google owns Android which is used in many smart phones around the world including Samsung. News reports have quoted a senior Samsung executive as saying they are cooperating with PayPal for smart watch payments.

It is easy to forget that Google's payments initiative is only a couple of years old and in this short interim, both the approach to mobile payments, the available technology and the ecosystem infrastructure to support mobile payments has grown dramatically. Besides many Android phones today have both NFC and biometric capability and so it is quite conceivable that Google could successfully piggyback off any Apple success in terms of consumer adoption. The key here is specifically the penetration of Android KitKat 4.4. The economics for Google are likely to be quite

different and probably based on a “use of data” model. Lastly, both Samsung and Google have tried to push NFC.

On the surface, PayPal (covered by Citi Analyst Mark May) seems disadvantaged by Apple Pay as Apple's digital wallet creates significant competition for PayPal online. However, given PayPal's customer base, brand recognition, payment expertise, perhaps it could be a positive if they make a strategic move to team up with players such as Google/Samsung now that NFC will be broadly accepted in the US.

A few complicating factors to keep in mind are that Android is more of an open system versus Apple and PayPal acts as the merchant of record and uses ACH. And in terms of Google, some retailers are fearful of their desire to capture data based on previous attempts into mobile payments. Other participants to watch are Amazon and Facebook. Another question is whether or not another player outside of Apple have the heft to force banks to pay up to 15 bps.

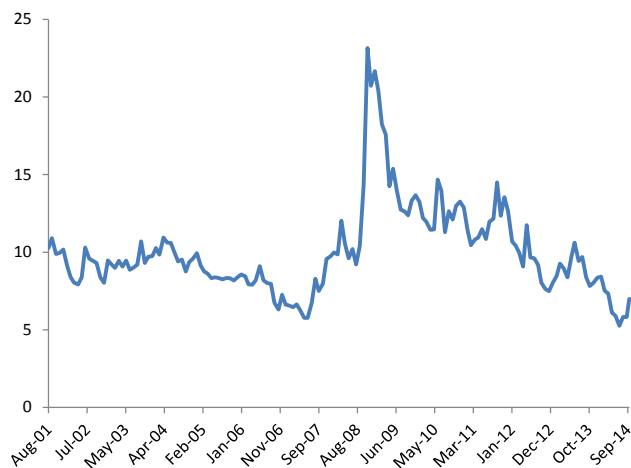
If you assume US payments grow from \$4T annually to \$5T over the next three years and using a 14 bps rate (assuming a tad lower yield for debit vs credit), the incremental revenue for Apple would be \$700 mm annually if they got 10% of all US payments or \$300 mm at 5%. This does not include potential revenues from growth of in-app opportunities or launches in other markets. Recent press reports suggest Apple is in discussions with Chinese payment market participants about playing a role in the Chinese domestic market.

#### **What Does Apple Pay / Digital Mean To Visa's Marketing Efforts?**

The trend towards digital payments has led to strategic changes throughout Visa including their marketing / advertising efforts. Visa has changed who they target for marketing and how the dollars are spent. In fact, over 50% of Visa's US budget is now directed to “digital/social marketing”. And they are spending money marketing directly with retailers for product offerings such as Visa Check Out. For example, instead of running a generic Visa TV add around the NFL, they might have a specific add that leverages their merchant partners such as Pizza Hut via Visa Check Out.

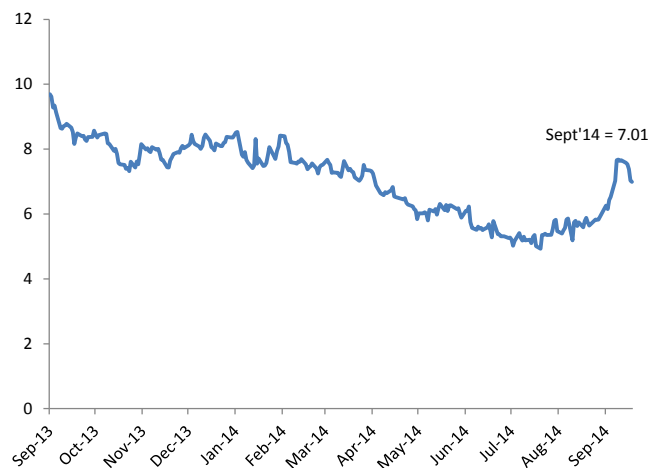
While recognizing that certain parts of the shift to digital are more expensive such as hiring specific tech talent, their overall budget is not increasing due to digital as they are just reallocating dollars. They are also increasingly working with social media players such as Facebook around data to follow the consumer's journey from intent to purchase (all within strict privacy rules).

Figure 1. Historical CVIX (2001-2014)



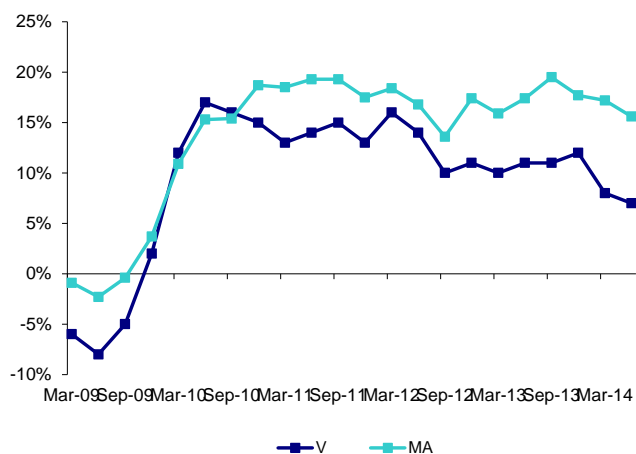
Source: Bloomberg & Citi Research

Figure 2. CVIX (Sept'13 – Sept'14)



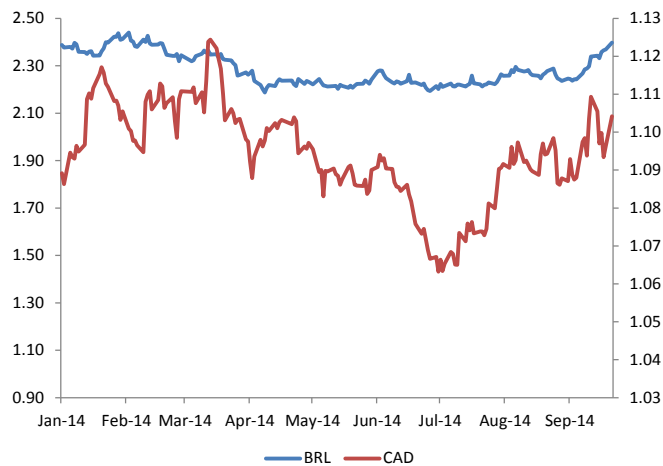
Source: Bloomberg & Citi Research

Figure 3. V & MA Historical Y/Y Cross-Border Growth



Source: Company Reports & Citi Research

Figure 4. YTD Performance USD/CAD and USD/BRL



Source: Bloomberg & Citi Research



Figure 5. First Data

Description	8/2013	9/2013	10/2013	11/2013	12/2013	1/2014	2/2014	3/2014	4/2014	5/2014	6/2014	7/2014	8/2014
<b>U.S. Dollar Volume Growth YoY% - SSS</b>	<b>4.1</b>	<b>2.1</b>	<b>3.3</b>	<b>2.3</b>	<b>3.4</b>	<b>2.5</b>	<b>2.4</b>	<b>3.1</b>	<b>4.1</b>	<b>4.2</b>	<b>3</b>	<b>3.9</b>	<b>3.9</b>
Credit	5.1	2.7	4.0	2.0	5.0	4.1	4.0	3.9	4.3	4.9	3.9	6.2	5.8
Pin Debit	4.5	2.9	3.5	4.4	2.5	3.5	2.7	1.1	4.1	4.2	3.3	3.9	3.4
Signature Debit	2.0	0.8	2.3	1.8	2.5	-0.2	0.7	4.3	4.6	3.7	2.0	0.4	1.9
Check	NA	NA	NA	NA	NA	-1.7	-3.3	-4.9	-2.7	-5.1	-1.2	-5.7	-5.9
Prepaid	NA	NA	NA	NA	NA	-0.6	2.5	-5.6	6.9	2.4	4.0	3.3	6.0
<b>U.S. Transaction Growth YoY% - SSS</b>	<b>4.4</b>	<b>3.6</b>	<b>4.2</b>	<b>3.5</b>	<b>3.1</b>	<b>2.1</b>	<b>2.2</b>	<b>2.7</b>	<b>3.5</b>	<b>3</b>	<b>2.1</b>	<b>2.4</b>	<b>2.7</b>
Credit	7.0	5.7	6.1	4.4	6.2	7.2	7.6	4.5	5.9	5.4	5.3	7.5	6.1
Pin Debit	4.9	4.6	4.9	5.4	3.4	3.1	2.5	2.2	4.4	3.4	2.8	3.1	2.3
Signature Debit	2.3	1.7	2.6	2.0	1.3	-1.7	-0.9	2.8	2	1.9	0	-1	1.5
<b>U.S. Average Ticket Growth YoY% - SSS</b>	<b>-0.3</b>	<b>-1.4</b>	<b>-0.9</b>	<b>-1.2</b>	<b>0.2</b>	<b>0.4</b>	<b>0.2</b>	<b>0.3</b>	<b>0.5</b>	<b>1.2</b>	<b>0.9</b>	<b>1.5</b>	<b>1.2</b>
Credit	-1.7	-2.8	-2.0	-2.3	-1.1	-2.9	-3.3	-0.6	-1.5	-0.5	-1.3	-1.2	-0.3
Pin Debit	-0.4	-1.6	-1.3	-1.0	-0.9	0.4	0.2	-1.1	-0.3	0.8	0.5	0.8	1
Signature Debit	-0.3	-0.9	-0.3	-0.2	1.2	1.5	1.6	1.4	2.6	1.8	2.0	1.4	0.4

Source: First Data, Company Reports and Citi Research

## Visa Inc.

(V.N; US\$213.88; 1)

### Valuation

Our 12-month target price for V is \$238. Our target price is based on ~22x our calendar 2015 EPS estimate of \$10.71. For our valuation, we compare V to MA as it is the only true comparable company, as MA operates the second-largest global credit card network and essentially has the same business model as V. We also consider other processing names such as GPN, HPY and TSS.

In terms of relative P/E, V trades at about 20x our calendar year 2015 estimate below MA at 21.3x but above with the average merchant processing peer at about 16.2x. We also note that relative to the S&P 500, V trades at a premium to the market multiple of 15.7x 2015 earnings.

### Risks

Changes in V's operating environment such as regulatory, economic, political, and market conditions are generally beyond the company's control. We note the following risks to our target price:

Positive risks: 1) consumer spending increases, 2) greater international growth, 3) improved debit growth, and 4) resolution of litigation/legislation risks (i.e. interchange).

Negative risks: 1) consumer expenditures could decline, 2) regulatory & legal risks in the US & abroad, 3) bank consolidation, and 4) settlement risk.

If the impact on the company from any of these factors proves to be greater than we anticipate, the stock will likely have difficulty achieving our target price. Likewise, if



any of these factors proves to have less an effect than we anticipate, the stock could materially outperform our target.

## MasterCard Inc.

(MA.N; US\$76.16; 1)

### Valuation

Our 12-month target price for MA is \$87. Our target price is based on approximately 24x our 2015 EPS estimate of \$3.64. We use a price-to-earnings (P/E) multiple as our primary valuation metric.

For our valuation, we compare MA to V as it is the only true comparable company, as MA operates the second-largest global credit card network and essentially has the same business model as V. We also consider other processing names such as GPN, HPY, and TSS.

Price-to-Earnings - Our \$87 target represents approximately 24x our 2015 estimate, a premium to the average forward P/E multiple of 18x over the past couple of years. The stock currently trades at 20.5x 2015.

In terms of relative P/E, MA trades at 20.5x our '15 estimate above V at about 19.7x. We also note that relative to the S&P 500, MA trades at a premium to the market multiple of 15.5x 2015 earnings.

### Risks

Changes in MA's operating environment such as regulatory, economic, political, and market conditions are generally beyond the company's control. We note the following risks to our target price:

Positive Risks: 1) Consumer Spending Increases, 2) Greater International Growth, 3) Improved Debit Growth, and 4) Resolution of Litigation/Legislation Risks (i.e. interchange).

Negative Risks: 1) Consumer Expenditures Could Decline, 2) Financial contagion spreading in Europe, 3) Regulatory & Legal Risks in the US & Abroad, and 4) Bank Consolidation.

If the impact on the company from any of these factors proves to be greater than we anticipate, the stock will likely have difficulty achieving our target price. Likewise, if any of these factors proves to have less an effect than we anticipate, the stock could materially outperform our target.

## Appendix A-1

### Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

### IMPORTANT DISCLOSURES

#### MasterCard Inc. (MA)

##### Ratings and Target Price History Fundamental Research

Analyst: Donald Fandetti, CFA



	Date	Rating	Target Price	Closing Price
1	8-Oct-11	Stock rating system changed		
2	8-Oct-11	*2	\$34.00	31.15
3	2-Nov-11	2	*36.00	35.77
4	9-Jan-12	2	*37.50	34.58
5	2-Feb-12	2	*41.00	38.16

\* Indicates change

	Date	Rating	Target Price	Closing Price
6	13-Apr-12	2	*43.70	44.05
7	21-Sep-12	*1	*52.50	45.95
8	7-Jan-13	1	*59.00	51.95
9	12-Jul-13	1	*70.00	59.89
10	31-Jul-13	1	*71.00	61.06

	Date	Rating	Target Price	Closing Price
11	31-Oct-13	1	*83.50	71.71
12	13-Jan-14	1	*96.50	81.00
13	2-Feb-14	1	*91.00	75.68
14	1-May-14	1	*87.00	74.22

Rating/target price changes above reflect Eastern Standard Time

#### MasterCard Inc. (MA)

##### Ratings and Target Price History Best Ideas Research Relative Call (3 Month)

Analyst: Donald Fandetti, CFA



\* Indicates change

Rating/target price changes above reflect Eastern Standard Time

## Visa Inc. (V)

### Ratings and Target Price History Fundamental Research

Analyst: Donald Fandetti, CFA



	Date	Rating	Target Price	Closing Price
1	8-Oct-11	Stock rating system changed		
2	8-Oct-11	*2	88.00	86.25
3	26-Oct-11	2	*92.00	92.02
4	9-Jan-12	2	*104.00	99.90
5	8-Feb-12	2	*115.00	108.35

\* Indicates change

	Date	Rating	Target Price	Closing Price
6	13-Apr-12	2	*123.00	123.16
7	11-Oct-12	2	*150.00	139.05
8	7-Jan-13	2	*168.00	157.89
9	6-Feb-13	2	*175.00	160.82
10	1-May-13	2	*181.00	166.02

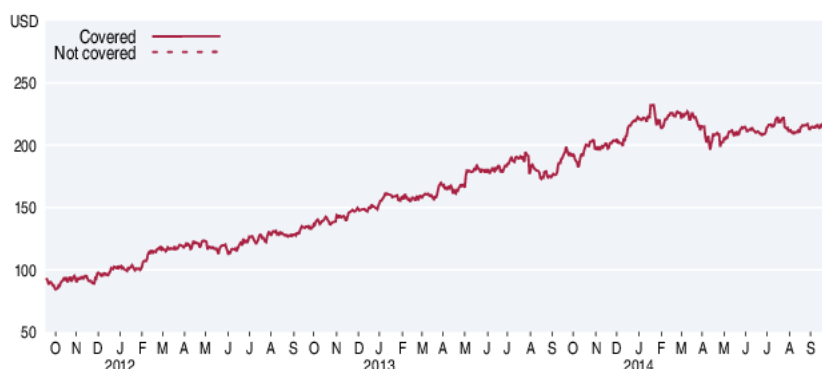
	Date	Rating	Target Price	Closing Price
11	12-Jul-13	2	*211.00	190.72
12	24-Jul-13	2	*212.00	186.75
13	13-Jan-14	*1	*265.00	218.90
14	24-Apr-14	1	*238.00	209.40

Rating/target price changes above reflect Eastern Standard Time

## Visa Inc. (V)

### Ratings and Target Price History Best Ideas Research Relative Call (3 Month)

Analyst: Donald Fandetti, CFA



\* Indicates change

Rating/target price changes above reflect Eastern Standard Time

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of MasterCard Inc

Citigroup Global Markets Inc. owns a position of 1 million USD or more in the debt securities of Visa Inc

Within the past 12 months, Citigroup Global Markets Inc. or its affiliates has acted as manager or co-manager of an offering of securities of MasterCard Inc..

Citigroup Global Markets Inc. or its affiliates has received compensation for investment banking services provided within the past 12 months from MasterCard Inc., Visa Inc..

Citigroup Global Markets Inc. or an affiliate received compensation for products and services other than investment banking services from MasterCard Inc., Visa Inc. in the past 12 months.

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Data current as of 30 Jun 2014

12 Month Rating			Relative Rating		
Buy	Hold	Sell	Buy	Hold	Sell

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