mastercard

Annual Report 2016

Summary Consolidated Financial And Other Data

(in $ millions, except per share)	2016	2015	2014
		For the Years Ended December 31	
Statement of Operations			
Net Revenue	**$10,776**	$9,667	$9,441
Operating Expenses:			
General and Administrative	**3,714**	3,341	3,152
Advertising and Marketing	**811**	821	862
Depreciation and Amortization	**373**	366	321
Provision for Litigation Settlements	**117**	61	-
Total Operating Expenses	**5,015**	4,589	4,335
Operating Income	**5,761**	5,078	5,106
Total Other Expense	**(115)**	(120)	(27)
Income before Income Taxes	**5,646**	4,958	5,079
Income Tax Expense	**1,587**	1,150	1,462
Net Income	**$4,059**	$3,808	$3,617
Basic Earnings per Share	**$3.70**	$3.36	$3.11
Diluted Earnings per Share	**$3.69**	$3.35	$3.10
Balance Sheet Data (at period end)			
Cash, Cash Equivalents and Investment Securities – Current	**$8,335**	$6,738	$6,375
Total Assets	**18,675**	16,250	15,329
Equity	**5,684**	6,062	6,824
Operating Data Growth (local currency)			
Gross Dollar Volume [1]	**9%**	13%	13%
Gross Dollar Volume as adjusted for EU Regulation [1, 2]	**11%**	13%	14%
Cross-border Volume	**12%**	16%	16%
Switched Transactions [3]	**16%**	12%	12%

1 Gross Dollar Volume (GDV) generated by Maestro and Cirrus cards is not included. The data for GDV is provided by Mastercard customers and includes information with respect to Mastercard-branded transactions that are not processed by Mastercard and for which Mastercard does not earn significant revenues. All data is subject to revision and amendment by Mastercard's customers subsequent to the date of its release, of which revisions and amendments may be material.

2 Adjusted for Article 8 of the EU Interchange Fee Regulation related to card payments. See "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 for additional information.

3 Data represents all transactions processed by Mastercard, including PIN-based debit transactions, regardless of brand.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2016

Or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number: 001-32877

mastercard

Mastercard Incorporated
(Exact name of registrant as specified in its charter)

Delaware **(State or other jurisdiction of incorporation or organization)**	**13-4172551** **(IRS Employer Identification Number)**
2000 Purchase Street **Purchase, NY** **(Address of principal executive offices)**	**10577** **(Zip Code)**

(914) 249-2000
(Registrant's telephone number, including area code)

Title of each Class	Name of each exchange on which registered
Class A common stock, par value $0.0001 per share	**New York Stock Exchange**

Securities registered pursuant to Section 12(g): Class B common stock, par value $0.0001 per share

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files) Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check One):

Large accelerated filer ☒	Accelerated filer ☐
Non-accelerated filer ☐ (do not check if a smaller reporting company)	Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the registrant's Class A common stock, par value $0.0001 per share, held by non-affiliates (using the New York Stock Exchange closing price as of June 30, 2016, the last business day of the registrant's most recently completed second fiscal quarter) was approximately $94.8 billion. There is currently no established public trading market for the registrant's Class B common stock, par value $0.0001 per share. As of February 10, 2017, there were 1,058,599,678 shares outstanding of the registrant's Class A common stock, par value $0.0001 per share and 19,320,090 shares outstanding of the registrant's Class B common stock, par value $0.0001 per share.

Portions of the registrant's definitive proxy statement for the 2017 Annual Meeting of Stockholders are incorporated by reference into Part III hereof.

MASTERCARD INCORPORATED
FISCAL YEAR 2016 FORM 10-K ANNUAL REPORT
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In this Report on Form 10-K ("Report"), references to the "Company," "Mastercard," "we," "us" or "our" refer to the Mastercard brand generally, and to the business conducted by Mastercard Incorporated and its consolidated subsidiaries, including our operating subsidiary, Mastercard International Incorporated.

Forward-Looking Statements

This Report contains forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts may be forward-looking statements. When used in this Report, the words "believe", "expect", "could", "may", "would", "will", "trend" and similar words are intended to identify forward-looking statements. Examples of forward-looking statements include, but are not limited to, statements that relate to the Company's future prospects, developments and business strategies.

Many factors and uncertainties relating to our operations and business environment, all of which are difficult to predict and many of which are outside of our control, influence whether any forward-looking statements can or will be achieved. Any one of those factors could cause our actual results to differ materially from those expressed or implied in writing in any forward-looking statements made by Mastercard or on its behalf, including, but not limited to, the following factors:

- payments system-related legal and regulatory challenges (including interchange fees, surcharging and the extension of current regulatory activity to additional jurisdictions or products)
- the impact of preferential or protective government actions
- regulation of privacy, data protection and security
- regulation to which we are subject based on our participation in the payments industry (including payments oversight, anti-money laundering and economic sanctions, financial sector oversight, issuer practice regulation and regulation of internet and digital transactions)
- potential or incurred liability and limitations on business resulting from litigation
- the impact of competition in the global payments industry (including disintermediation and pricing pressure)
- the challenges relating to rapid technological developments and changes
- the impact of information security failures, breaches or service disruptions on our business
- issues related to our relationships with our financial institution customers (including loss of substantial business from significant customers, competitor relationships with our customers and banking industry consolidation)
- the impact of our relationships with other stakeholders, including merchants and governments
- exposure to loss or illiquidity due to settlement guarantees and other significant third-party obligations
- the impact of global economic and political events and conditions (including global financial market activity, declines in cross-border activity, negative trends in consumer spending and the effect of adverse currency fluctuation)
- reputational impact, including impact related to brand perception, account data breaches and fraudulent activity
- issues related to acquisition integration, strategic investments and entry into new businesses
- issues related to our Class A common stock and corporate governance structure

Please see a complete discussion of these risk factors in Part I, Item 1A - Risk Factors. We caution you that the important factors referenced above may not contain all of the factors that are important to you. Our forward-looking statements speak only as of the date of this Report or as of the date they are made, and we undertake no obligation to update our forward-looking statements.

PART I

ITEM 1. BUSINESS

Overview

Mastercard is a technology company in the global payments industry that connects consumers, financial institutions, merchants, governments and businesses worldwide, enabling them to use electronic forms of payment instead of cash and checks. As the operator of what we believe is the world's fastest payments network, we facilitate the switching (authorization, clearing and settlement) of payment transactions and deliver related products and services. We make payments easier and more efficient by creating a wide range of payment solutions and services using our family of well-known brands, including Mastercard®, Maestro® and Cirrus®. We also provide value-added offerings such as safety and security products, information services and consulting, issuer and acquirer processing and loyalty and reward programs. Our network is designed to ensure safety and security for the global payments system.

A typical transaction on our network involves four participants in addition to us: cardholder (an individual who holds a card or uses another device enabled for payment), merchant, issuer (the cardholder's financial institution) and acquirer (the merchant's financial institution). We do not issue cards, extend credit, determine or receive revenue from interest rates or other fees charged to cardholders by issuers, or establish the rates charged by acquirers in connection with merchants' acceptance of our branded cards. In most cases, cardholder relationships belong to, and are managed by, our financial institution customers.

We generate revenue by charging fees to issuers, acquirers and other stakeholders for providing transaction processing and other payment-related products and services, as well as by assessing customers based primarily on the dollar volume of activity, or gross dollar volume ("GDV"), on the cards and other devices that carry our brands.

Our Strategy

Our ability to grow our business is influenced by personal consumption expenditure growth, driving cash and check transactions toward electronic forms of payment, increasing our share in electronic payments and providing value-added products and services. We achieve our strategy by growing, diversifying and building our business.

***Grow*.** We focus on growing our core businesses globally, including growing our consumer credit, debit, prepaid and commercial products and solutions, increasing the number of payment transactions we switch.

***Diversify*.** We look to diversify our business and capabilities by focusing on:

- diversifying our customer base in new and existing markets by working with partners such as governments, merchants, technology companies (such as digital players and mobile providers) and other businesses
- encouraging use of our products and solutions in areas that provide new opportunities for electronic payments, such as transit, business-to-person transfers, business-to-business transfers and person-to-person transfers
- capturing more payment flows by adding automated clearing house (ACH) payments to our core card-based business via our pending acquisition of VocaLink Holdings Limited
- driving acceptance at merchants of all sizes
- broadening financial inclusion for the unbanked and underbanked

***Build*.** We build our business by:

- taking advantage of the opportunities presented by the evolving ways consumers interact and transact in the growing digital economy; and
- providing value-added services across safety and security, consulting, data analytics and loyalty.

We grow, diversify and build our business through a combination of organic growth and strategic investments, including acquisitions.

Strategic Partners. We work with a variety of stakeholders. We provide financial institutions with solutions to help them increase revenue by driving preference for Mastercard-branded products. We help merchants by delivering data-driven insights and other services that help them grow and create simple and secure purchase experiences regardless of how and where their customers shop. We partner with technology companies such as digital players and mobile providers to deliver digital payment solutions powered by our technology, expertise and security protocols. We help national and local governments drive increased financial inclusion and efficiency, reduce costs, increase transparency to reduce crime and corruption and advance social programs. For consumers, we provide better, safer and more convenient ways to pay.

Recent Business and Legal/Regulatory Developments

Digital Payments. We have launched and extended products and platforms that take advantage of the growing digital economy, where consumers are increasingly using technology to interact with merchants. Among our recent developments:

- In 2016, we further expanded the availability of Masterpass™, our global digital payments ecosystem. Masterpass provides an easy and secure way to shop by storing payment information in a secure connected wallet of the consumer's choice and enabling consumers to access that information to make a payment with a simple click or touch. In 2016, several of our largest issuing customers began automatically enabling consumer accounts in Masterpass using their online banking applications. We also began work to integrate Masterpass with mobile wallet solutions provided by technology companies such as digital players and mobile providers. Our network facilitates digital transactions online, in-app and in-store for consumers, merchants, issuers and other wallet providers.

- In 2016, we continued to use our digital technologies and security protocols to enhance the suite of digital token services available through our MasterCard Digital Enablement Service (MDES). In addition to leveraging MDES to tokenize Masterpass, we continued to expand our collaborations with all of our partners, such as enabling third-party token vaults compliant with EMV® (the global standard for chip technology) to tokenize Mastercard-branded cards.

- In 2016, we re-launched Mastercard Developers, a single gateway that enables developers, digital players, financial institutions, merchants and our other partners to innovate by accessing and integrating Mastercard technology via a diverse range of Application Programming Interfaces (APIs) across the payments, data and security spaces.

- In 2016, we continued to expand and scale Mastercard Send™, connecting more consumers, businesses and governments to facilitate the transfer of funds via financial institutions quickly and securely.

Safety and Security. Our focus on security is embedded in our products, our systems and our network, as well as our analytics to prevent fraud:

- In 2016, we launched Decision Intelligence™, a suite of security solutions that uses machine learning to leverage real-time insights from transactions to enhance approvals and reduce false declines. These solutions are designed to go beyond simply managing for fraud and to instead actively drive automated productive decisions and help issuers and retailers further improve the consumer shopping experience.

- In 2016, we expanded Mastercard Identity Check™, a suite of technology solutions that leverage biometrics to help authenticate a consumer's identity. These solutions are now available in the United States, Canada and numerous markets across Europe.

- We continue to lead the migration to EMV to bring its fraud prevention benefits to our U.S. customers, consumers and merchants. Building on our October 2015 introduction of a new liability hierarchy, in 2016 a significant number of merchants implemented EMV in the United States for payment transactions.

Financial Inclusion. We are focused on addressing financial inclusion, reaching people without access to an account that allows them to store and use money. In 2016, we worked with governments across several geographies to develop and roll out electronic payments solutions, social payment distribution mechanisms and digital identity solutions. We also worked with merchants globally to help drive acceptance necessary to support these inclusion efforts.

Brand. In 2016, we introduced an evolution of our brand identity for the first time in 20 years that reflects our corporate heritage while highlighting our focus on technology and payments in a more digitally-connected world.

Acquisitions and Investments. In 2016, we entered into a definitive agreement to acquire a controlling interest in VocaLink Holdings Limited (VocaLink). VocaLink operates systems for ACH payments and ATM switching platforms in the United Kingdom and other countries. ACH payments constitute a significant amount of all payments made by companies, businesses and governments. Adding ACH payments to our core card-based business will expand our ability to offer more electronic payment options to consumers, businesses and governments, and help us capture more payment flows. While we anticipate completing the acquisition by the middle of 2017, it is subject to regulatory approval and other customary closing conditions.

Capital Structure. In 2016, we completed a bond issuance in an aggregate principal amount of $2 billion as part of our capital planning.

Legal and Regulatory. We operate in a dynamic and rapidly evolving legal and regulatory environment, with heightened regulatory and legislative scrutiny and other legal challenges, particularly with respect to interchange fees (as discussed below under "Our Operations and Network"). Recent developments include:

- ***European Union***

  - In 2015, the European Commission issued a statement of objections related to the interregional interchange rates we set and our central acquiring rules within the European Economic Area (EEA). The statement of objections preliminarily concludes that these practices have anticompetitive effects, and the European Commission has indicated it intends to seek fines if it confirms these conclusions. Mastercard submitted a response in April 2016 and participated in a related oral hearing in May 2016.

  - In June 2016, under the European Union Interchange Fee Regulation adopted in 2015, we separated our scheme activities (i.e., brand, products, franchise and licensing) from our switching activities in terms of how we go to market, make decisions and organize our structure. We are awaiting standards to be developed by the European Banking Authority establishing the requirements with which payment card networks will need to comply as part of this separation.

- ***United States*** - In June 2016, the U.S. Court of Appeals for the Second Circuit reversed the approval of a settlement of an antitrust litigation among a class of merchants, Mastercard, Visa and a number of financial institutions. The court vacated the class action certification and sent the case back to the district court for further proceedings. The Court of Appeals' ruling was based primarily on whether the merchants were adequately represented by counsel in the settlement.

- ***United Kingdom***

  - Beginning in May 2012, a number of retailers filed claims or threatened litigation against Mastercard seeking damages for alleged anti-competitive conduct with respect to Mastercard's cross-border interchange fees and its U.K. and Ireland domestic interchange fees. In 2016, a tribunal in one of these cases issued a judgment against Mastercard for damages, and we entered into settlements with additional claimants. In January 2017, we received a favorable liability judgment on all significant matters in a separate action brought by ten of the claimants (who were seeking over $500 million in damages).

  - In September 2016, a proposed collective action was filed in the United Kingdom on behalf of U.K. consumers seeking damages for intra-EEA and domestic U.K. interchange fees that were allegedly passed on to consumers by merchants between 1992 and 2008.

- ***China*** - In 2016, People's Bank of China issued regulations providing the license application and operational requirements for network operators, including international networks such as ours, to process domestic payments in China. We are awaiting detailed implementation guidelines for this and other related regulations to be released to guide our participation in the market, including our ability to authorize, clear and settle transactions "on-soil" in China. In the meantime, we continue to work to expand issuance and acceptance of Mastercard-branded products in the Chinese market to support our existing cross-border business.

- ***Data Privacy*** - In 2016, the European Parliament passed the General Data Protection Regulation (GDPR), a new data protection regulation that will increase our compliance burden for using and processing personal and sensitive data of EEA residents. We have implemented a comprehensive approach to achieve compliance by the May 2018 deadline. Additionally, we have adopted an alternative method of data transfer considered to be fully compliant by all data protection authorities in the European Union in response to the European Court of Justice's 2015 invalidation of the EU-U.S. Safe Harbor treaty that had permitted the transfer of personal data between the European Union and the United States.

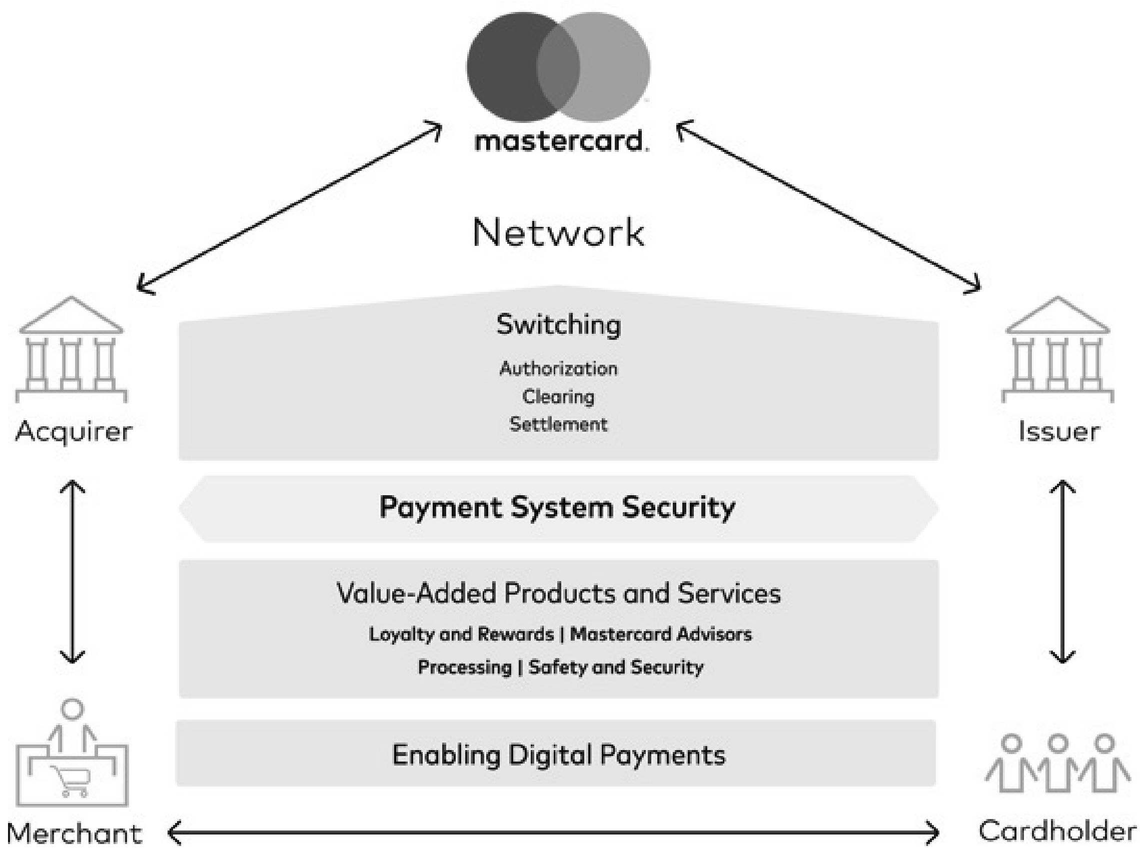
See Part I, Item 1A for a more detailed discussion of our legal and regulatory developments and risks.

Our Business

Our Operations and Network

We operate a unique and proprietary global payments network that links issuers and acquirers around the globe to facilitate the switching of transactions, permitting Mastercard cardholders to use their cards and other payment devices at millions of acceptance locations worldwide. Our network facilitates an efficient and secure means for receiving payments, a convenient, quick and secure payment method for consumers to access their funds and a channel for businesses to receive insight through information that is derived from our network. We authorize, clear and settle transactions through our network for our issuer customers in more than 150 currencies and in more than 210 countries and territories.

Typical Transaction. With a typical transaction involving four participants in addition to us, our network supports what is often referred to as a "four-party" payments network. The following diagram depicts a typical transaction on our network, and our role in that transaction:



In a typical transaction, a cardholder purchases goods or services from a merchant using a card or other payment device. After the transaction is authorized by the issuer, the issuer pays the acquirer an amount equal to the value of the transaction, minus the interchange fee (described below), and then posts the transaction to the cardholder's account. The acquirer pays the amount of the purchase, net of a discount (referred to as the "merchant discount" rate, as further described below), to the merchant.

- ***Interchange Fees.*** Interchange fees reflect the value merchants receive from accepting our products and play a key role in balancing the costs consumers and merchants pay. We do not earn revenues from interchange fees. Generally, interchange fees are collected from acquirers and paid to issuers to reimburse the issuers for a portion of the costs incurred by them in providing services that benefit all participants in the system, including acquirers and merchants, whose participation in the network enables increased sales to existing and new customers, efficiencies in the delivery of existing and new products, guaranteed payments and improved customer experience. We (or, alternatively, financial institutions) establish "default interchange fees" that apply when there are no other established settlement terms in place between an issuer and an acquirer. We administer the collection and remittance of interchange fees through the settlement process.

- ***Additional Four-Party System Fees.*** The merchant discount rate is established by the acquirer to cover its costs of both participating in the four-party system and providing services to merchants. The rate takes into consideration the amount of the interchange fee which the acquirer generally pays to the issuer. Additionally, acquirers may charge merchants processing and related fees in addition to the merchant discount rate, and issuers may also charge cardholders fees for the transaction, including, for example, fees for extending revolving credit.

Switched Transactions

- ***Authorization, Clearing and Settlement.*** Through our network, we enable the routing of a transaction to the issuer for its approval, facilitate the exchange of financial transaction information between issuers and acquirers after a successfully conducted transaction, and help to settle the transaction by facilitating the determination and exchange of funds between parties via settlement banks chosen by us and our customers.

- ***Cross-Border and Domestic.*** Our network switches transactions throughout the world when the merchant country and issuer country are different (cross-border transactions), providing cardholders with the ability to use, and merchants to accept, Mastercard cards and other payment devices across country borders. We also provide switched transaction services to customers in every region of the world where the merchant country and the issuer country are the same (domestic transactions). We switch approximately half of all transactions using Mastercard and Maestro-branded cards, including nearly all cross-border transactions. We switch the majority of Mastercard and Maestro-branded domestic transactions in the United States, United Kingdom, Canada, Brazil and a select number of other countries. Outside of these countries, most domestic transactions on our products are switched without our involvement.

Our Network Architecture. Our network features a globally integrated structure that provides scale for our issuers, enabling them to expand into regional and global markets. It features an intelligent architecture that enables the network to adapt to the needs of each transaction by blending two distinct network structures:

- a distributed (peer-to-peer) processing structure for transactions that require fast, reliable processing to ensure they are switched close to where the transaction occurred; and

- a centralized (hub-and-spoke) processing structure for transactions that require value-added processing, such as real-time access to transaction data for fraud scoring or rewards at the point-of-sale.

Our network's architecture enables us to connect all parties regardless of where or how the transaction is occurring. It has 24-hour a day availability and world-class response time.

Payments System Security. Our network and products are designed to ensure safety and security for the global payments system. The network incorporates multiple layers of protection, both for continuity purposes and to provide best-in-class security protection. We engage in multiple efforts to mitigate information security challenges, including maintaining an information security program, a business continuity program and insurance coverage, as well as regularly testing our systems to address potential vulnerabilities. We offer products and services to prevent, detect and respond to fraud and cyber-attacks and to ensure the safety of transactions made on Mastercard products.

As part of our multi-layered approach to protect the global payments system, we also work with issuers, acquirers, merchants, governments and payments industry associations to help develop and put in place standards for safe and secure transactions. These efforts include:

- continuing the migration in the U.S. to EMV, bringing its fraud prevention benefits to our U.S. customers, consumers and merchants

- developing an industry-open standard for tokenization

These technologies protect sensitive cardholder information for card and digital transactions by generating unique one-time use codes or credentials to an identified and verified individual to authenticate that the transaction is originating from a valid card or device.

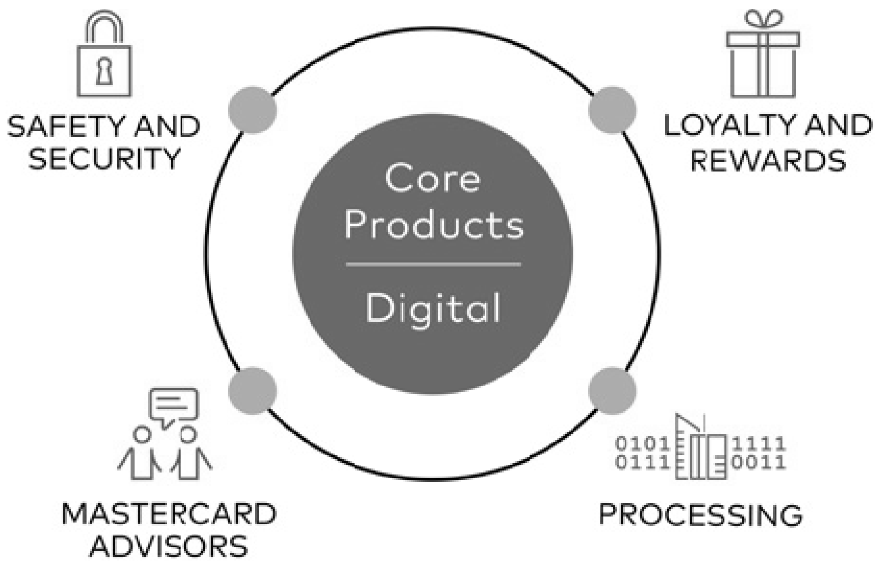
Digital Payments. Our network supports and enables our digital payment platforms, products and solutions, reflecting the growing digital economy where consumers are increasingly seeking to use their payment accounts to pay when, where and how they want.

Participation Standards. We establish, apply and enforce standards surrounding participation in the Mastercard payments system. We grant licenses that provide issuers, acquirers and other customers that meet specified criteria with certain rights, including access to the network and usage of cards and payment devices carrying our brands. As a condition of our licenses, issuers, acquirers and other customers agree to comply with our standards surrounding participation and brand usage and acceptance. We monitor areas of risk exposure and enforce our standards to combat fraudulent, illegal and brand-damaging activity. Issuers, acquirers and other customers are also required to report instances of fraud to us in a timely manner so that we can monitor trends and initiate action when appropriate.

Customer Risk. We guarantee the settlement of many of the transactions between our issuers and acquirers to ensure the integrity of our network. We refer to this as our settlement exposure. We do not, however, guarantee payments to merchants by their acquirer, or the availability of unspent prepaid cardholder account balances.

Our Products and Services

We provide a wide variety of products and solutions that support payment products that customers can offer to their cardholders. These services facilitate transactions on our network among cardholders, merchants, financial institutions and governments in markets globally.



The following chart provides GDV and number of cards featuring our brands in 2016 for select programs and solutions:

	Year Ended December 31, 2016		As of December 31, 2016	
	GDV in billions	% of Total GDV	Cards in millions	Percentage Increase from December 31, 2015
Mastercard Branded Programs [1,2]				
Consumer Credit	$ 2,135	44%	740	2%
Commercial Credit	400	8%	42	8%
Debit and Prepaid	2,293	47%	888	15%

[1] Excludes Maestro and Cirrus cards and volume generated by those cards.

[2] Article 8 of the EU Interchange Fee Regulation related to card payments, which became effective in June 2016, states that a network can no longer charges fees on domestic EEA payment transactions that do not use its payment brand. Prior to that, Mastercard collected a de minimis assessment fee in a few countries, particularly France, on transactions with Mastercard co-badged cards if the brands of domestic networks (as opposed to Mastercard) were used. As a result, the non-Mastercard co-badged volume is no longer being included. Please see “Item 7 Management’s Discussion and Analysis of Financial Condition and Results of Operations” for a further discussion.

Core Products

Consumer Credit and Charge. We offer a number of programs that enable issuers to provide consumers with cards that allow them to defer payment. These programs are designed to meet the needs of our customers around the world and address standard, premium and affluent consumer segments.

Debit. We support a range of payment products and solutions that allow our customers to provide consumers with convenient access to funds in deposit and other accounts. Our debit and deposit access programs can be used to make purchases and to obtain cash in bank branches, at ATMs and, in some cases, at the point of sale. Our branded debit programs consist of Mastercard (including standard, premium and affluent offerings), Maestro (the only PIN-based solution that operates globally) and Cirrus (our primary global cash access solution).

Prepaid. Prepaid programs involve a balance that is funded prior to use and can be accessed via a card or other payment device. We offer prepaid payment programs using any of our brands, which we support with processing products and services. Segments on which we focus include government programs such as Social Security payments, unemployment benefits and others; commercial programs such as payroll, health savings accounts, employee benefits and others; and consumer reloadable programs for individuals without formal banking relationships and non-traditional users of electronic payments.

We also provide prepaid program management services, primarily outside of the United States, that manage and enable switching and issuer processing for consumer and commercial prepaid travel cards for business partners such as financial institutions, retailers, telecommunications companies, travel agents, foreign exchange bureaus, colleges and universities, airlines and governments.

Commercial. We offer commercial payment products and solutions that help large corporations, mid-sized companies, small businesses and government entities streamline their procurement and payment processes, manage information and expenses (such as travel and entertainment) and reduce administrative costs. Our offerings and platforms include premium, travel, purchasing and fleet cards and programs; our SmartData tool that provides information reporting and expense management capabilities; and credit and debit programs targeted for small businesses.

Digital. Consumers continue to expand their use of varied digital devices, reflecting the growing digital economy where consumers are increasingly seeking to use their payment accounts to pay when, where and how they want. Leveraging our global innovations capability, we are developing platforms, products and solutions in digital payments. We do this in a number of ways, including:

- ***Creating Better Shopping and Selling Experiences.*** We are using our digital technologies and security protocols to develop solutions to make digital shopping and selling experiences (such as on smartphones and other connected devices) simpler, faster and safer for both consumers and merchants. These include our Masterpass digital payments ecosystem and the MDES suite of digital token services we offer, as well as other products. We also offer products that make it easier for merchants to accept payments and expand their customer base and are developing products and practices to facilitate acceptance via mobile devices.

- ***Engaging with New Partners.*** We enable consumers to use their smartphones securely to make digital payments through numerous active partnerships with mobile leaders and large digital companies around the world. Through Mastercard Developers, our API platform, developers, digital players, financial institutions, merchants and other partners can innovate by accessing our technology via a diverse range of APIs.

- ***Facilitating Money Transfers and Personal Payments.*** Through Mastercard Send, we provide money transfer and global remittance solutions to enable our customers to facilitate consumers sending and receiving money quickly and securely domestically and around the world. We continue to enhance our personal payments platforms, providing financial institutions connected to our network with additional opportunities for their customers to send funds domestically and globally.

We also focus on developing the future of payments and delivering additional consumer shopping safety and convenience through Mastercard Labs, our global innovation and development arm. Our efforts include incubating various ideas and hosting thought-leadership events to spur the next generation of innovative payment products.

Value-Added Products and Services

We provide additional products and services to our customers and stakeholders that enhance the value proposition of our core products and network.

Safety and Security. We offer products and services to prevent, detect and respond to fraud and cyber-attacks and to ensure the safety of transactions made on Mastercard products while enhancing the consumer experience. These include:

- internet authentication/verification solutions that leverage biometrics

- security solutions that leverage machine learning to enhance approvals and reduce false declines

- services assisting customers, merchants and third-party service providers in protecting against attacks and subsequent account data compromises

- fraud detection and management products and services

We have also worked with our financial institution customers to provide products to consumers globally with increased confidence through the benefit of "zero liability", or no responsibility for counterfeit or lost card losses in the event of fraud.

Processing. We extend our processing capabilities in the payments value chain in various regions and across the globe with an expanded suite of offerings, including:

- Issuer and acquirer solutions designed to provide customers with a complete processing solution to help them create differentiated products and services and allow quick deployment of payments portfolios across banking channels.

- Payment gateways that offer a single interface to provide e-commerce merchants with the ability to process secure online and in-app payments and offer value-added solutions, including outsourced electronic payments, fraud prevention and alternative payment options.

- Mobile gateways that facilitate transaction routing and processing for mobile-initiated transactions for our customers.

***Mastercard Advisors*.** Mastercard Advisors is our global professional services group that provides proprietary analysis, data-driven consulting and marketing services solutions to help clients optimize, streamline and grow their businesses, as well as deliver value to consumers. With analyses based on billions of transactions switched globally, we leverage anonymized and aggregated information and a consultative approach to help financial institutions, merchants, media companies, governments and other organizations grow their businesses or otherwise achieve efficiencies.

Our information services group provides a suite of data analytics and products (including reports, benchmarks, models and insights) that enable our customers to make better business decisions. Our consulting services group combines professional problem-solving skills with payments expertise to provide solutions that address the challenges and opportunities of clients with respect to payments. The managed services group provides solutions to enable data-driven acquisition of accounts, activation of portfolios, card conversions, marketing promotions activities and other customer management services.

***Loyalty and Rewards*.** We have built a scalable rewards platform that enables issuers to provide consumers with a variety of benefits and services, such as personalized offers and rewards, access to a global airline lounge network, global and local concierge services, individual insurance coverages, emergency card replacement, emergency cash advance services and a 24-hour cardholder service center. For merchants, we provide targeted offers and rewards campaigns and management services for publishing offers, as well as opportunities for holders of co-brand or loyalty cards and rewards program members to obtain reward points faster. We support these services with program management capabilities.

Brand

mastercard.

Our family of well-known brands includes Mastercard, Maestro and Cirrus. In 2016, we introduced an evolution of our brand identity for the first time in 20 years. This evolved brand reflects our corporate heritage while highlighting our focus on technology and payments in a more digitally-connected world. We manage and promote our brands through advertising, promotions and sponsorships, as well as digital, mobile and social media initiatives, in order to increase consumer preference for our brands and usage of our products. We sponsor a variety of sporting, entertainment and charity-related marketing properties to align with consumer segments important to us and our customers. Our advertising plays an important role in building brand visibility, usage and overall preference among cardholders globally. Our "Priceless®" advertising campaign, which has run in 54 languages in 113 countries worldwide, promotes Mastercard usage benefits and acceptance, markets Mastercard payment products and solutions and provides Mastercard with a consistent, recognizable message that supports our brand around the globe. We have extended Priceless to create experiences through four platforms to drive brand preference: Priceless Cities® provides cardholders across all of our regions with access to special experiences in various cities, Priceless Causes® provides cardholders with opportunities to support philanthropic causes, Priceless Specials® provides cardholders with merchant offers and discounts and Priceless Surprises® provides cardholders with unexpected and unique surprises.

Our Revenue Sources

We generate revenues primarily by assessing our customers based on GDV on the cards and other devices that carry our brands, from the fees we charge to our customers for providing transaction processing and from other payment-related products and services. Our net revenues are classified into five categories: domestic assessment fees, cross-border volume fees, transaction processing fees, other revenues and rebates and incentives (contra-revenue).

See "Management's Discussion and Analysis of Financial Condition and Results of Operations - Revenue" in Part II, Item 7 for more detail about our revenue, GDV, processed transactions and our other payment-related products and services.

Intellectual Property

We own a number of valuable trademarks that are essential to our business, including Mastercard, Maestro and Cirrus, through one or more affiliates. We also own numerous other trademarks covering various brands, programs and services offered by Mastercard to support our payment programs. Trademark and service mark registrations are generally valid indefinitely as long as they are used and/or properly maintained. Through license agreements with our customers, we authorize the use of our trademarks in connection with our customers' issuing and merchant acquiring businesses. In addition, we own a number of patents and patent applications relating to payments solutions, transaction processing, smart cards, contactless, mobile, electronic commerce, security systems and other matters, many of which are important to our business operations. Patents are of varying duration depending on the jurisdiction and filing date.

Competition

We compete in the global payments industry against all forms of payment including:

- cash and checks
- card-based payments, including credit, charge, debit, ATM and prepaid products, as well as limited-use products such as private label
- contactless, mobile and e-commerce payments, as well as cryptocurrency
- other electronic payments, including ACH payments, wire transfers, electronic benefits transfers and bill payments

We face a number of competitors both within and outside of the global payments industry:

- ***Cash and Check.*** Cash and check continue to represent the most widely used forms of payment, constituting approximately 85% of the world's retail payment transactions.
- ***General Purpose Payment Networks***. We compete worldwide with payment networks such as Visa, American Express and Discover, among others. Among global networks, Visa has significantly greater volume than we do. Outside of the United States, networks such as JCB in Japan and UnionPay in China have leading positions in their domestic markets. For example, UnionPay currently operates the sole domestic payment switch in China. In addition, several governments are promoting, or considering promoting, local networks for domestic processing. See "Risk Factors" in Part I, Item 1A for a discussion of the risks related to payments system regulation and government actions that may prevent us from competing effectively for a more detailed discussion.
- ***Debit and Local Networks.*** We compete with ATM and point-of-sale debit networks in various countries, such as Interlink®, Plus® and Visa Electron® (owned by Visa Inc.), Star® (owned by First Data Corporation), NYCE® (owned by FIS) and Pulse® (owned by Discover) in the United States; Interac in Canada; EFTPOS in Australia; and Bankserv in South Africa. In addition, in many countries outside of the United States, local debit brands serve as the main domestic brands, while our brands are used mostly to enable cross-border transactions (typically representing a small portion of overall transaction volume). Certain jurisdictions have also created domestic card schemes that are focused mostly on debit (including RuPay in India and MIR in Russia).

- ***Three-Party Payments Networks.*** Our competitors include operators of proprietary three-party payments networks, such as American Express and Discover, which have direct acquiring relationships with merchants and direct issuing relationships with account holders. These competitors have certain competitive advantages over four-party payments systems such as ours. Among other things, these networks do not require formal interchange fees to balance payment system costs between the issuing and acquiring sides of their business, even though they have the ability to internally transfer costs in a manner similar to interchange fees. As a result, to date, operators of three-party payments networks have avoided some of the regulatory and litigation challenges that we and other four-party networks face.

- ***Competition for Customer Business.*** We compete intensely with other payments networks for customer business. Globally, financial institutions typically issue both Mastercard and Visa-branded payment products, and we compete with Visa for business on the basis of individual portfolios or programs. In addition, a number of our customers issue American Express and/or Discover-branded payment cards in a manner consistent with a four-party system. We continue to face intense competitive pressure on the prices we charge our issuers and acquirers, and we seek to enter into business agreements with them through which we offer incentives and other support to issue and promote our payment products. We also compete for non-financial institution partners, such as merchants, governments and mobile providers.

- ***Third-Party Processors.*** We face competition and potential displacement from transaction processors throughout the world, such as First Data Corporation and Total System Services, Inc., which are seeking to enhance their networks that link issuers directly with point-of-sale devices for payment transaction authorization and processing services. We also face third-party competition driven by local regulations. For example, under the Second Payment Services Directive (PSD2), which is being finalized in Europe, new third-party processors will have open access to consumer account information at financial institutions, providing these entities the opportunity to process Mastercard transactions directly with issuers and acquirers.

- ***Alternative Payments Systems and New Entrants.*** As the global payments industry becomes more complex, we face increasing competition from alternative payment systems and emerging payment providers. Many of these providers have developed payments systems focused on online activity in e-commerce and mobile channels (in some cases, expanding to other channels), and may process payments using in-house account transfers, ACH payment networks or global or local networks. Examples include digital wallet providers (such as PayPal, Alipay and Amazon), mobile operator services, mobile phone-based money transfer and microfinancing services (such as mPesa), handset manufacturers and cryptocurrencies. In some circumstances, these providers can be a partner or customer, as well as a competitor.

- ***Value-Added Products and Services.*** We face competition from companies that provide alternatives to our value-added products and services, including information services and consulting firms that provide consulting services and insights to financial institutions, as well as companies that compete against us as providers of loyalty and program management solutions.

Our competitive advantages include our:

- globally recognized brands
- highly adaptable global acceptance network built over 50 years and that we believe is the world's fastest
- adoption of innovative products and digital solutions
- Masterpass global digital payments ecosystem
- safety and security solutions embedded in our network
- Mastercard Advisors group dedicated solely to the payments industry
- ability to serve a broad array of participants in global payments due to our expanded on-soil presence in individual markets and a heightened focus on working with governments
- world class talent

Government Regulation

General. Government regulation impacts key aspects of our business. We are subject to regulations that affect the payments industry in the many countries in which our cards and payment devices are used. See "Risk Factors" in Part I, Item 1A for more detail and examples.

Interchange Fees. Interchange fees associated with four-party payments systems like ours are being reviewed or challenged in various jurisdictions around the world via legislation to regulate interchange fees, competition-related regulatory proceedings, central bank regulation and litigation. Examples include statutes in the United States that cap debit interchange for certain regulated activities, European Union legislation capping consumer credit and debit interchange fees on payments issued and acquired within the EEA and interchange regulations by the Reserve Bank of Australia. For more detail, see our risk factors in "Risk Factors-Payments System Legal and Regulatory Challenges" in Part I, Item 1A. Also see Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8.

Payments System Regulation**.** Regulators in several countries around the world either have, or are seeking to establish, authority to regulate certain aspects of the payments systems in their countries. Such authority has resulted in regulation of various aspects of our business, including interchange fees in various jurisdictions (described above) and no-surcharging rules. In the European Union, legislation requires us to separate our scheme activities (brand, products, franchise and licensing) from our switched transactions and other processing in terms of how we go to market, make decisions and organize our structure. Additionally, several jurisdictions have created or granted authority to create new regulatory bodies that either have or would have the authority to regulate payment systems, including the United Kingdom's Payments Systems Regulator (PSR) (which has designated us as a payments system subject to regulation) and the National Bank of Belgium.

Preferential or Protective Government Actions. Some governments have taken action to provide resources, preferential treatment or other protection to selected domestic payments and processing providers, as well as to create their own national providers.

No-Surcharge Rules. We have historically implemented policies in certain regions that prohibit merchants from charging higher prices to consumers who pay using Mastercard products instead of other means. Authorities in several jurisdictions (including Australia and Canada) have acted to end or limit the application of these no-surcharge rules (or have indicated interest in doing so). Additionally, pursuant to the terms of settlement of the U.S. merchant class litigation, we have modified our no-surcharge rules to permit U.S. merchants to surcharge credit cards, subject to certain limitations.

Payments Oversight**.** Several central banks or similar regulatory bodies around the world have increased, or are seeking to increase, their formal oversight of the electronic payments industry. In some cases, these regulators could designate certain payments networks as "systemically important payment systems" or "critical infrastructure." This includes the Financial Stability Oversight Council ("FSOC") in the United States. Designated systems will be subject to new regulation, supervision and examination requirements. To date, Mastercard has not been designated "systemically important." However, certain jurisdictions have begun to employ elements of "systemically important" analysis in their review of Mastercard licenses or other applications, and may increasingly do so in the future.

Financial Sector Oversight. We are or may be subject to regulations related to our role in the financial industry and our relationship with our financial institution customers. For example, certain of our operations are periodically reviewed by the U.S. Federal Financial Institutions Examination Council under its authority to examine financial institutions' technology service providers. Additionally, the Consumer Financial Protection Bureau ("CFPB"), which has significant federal authority to regulate consumer financial products in the United States, has supervisory authority over companies such as Mastercard that provide services to financial institutions that are subject to the CFPB and that issue and acquire our consumer credit, deposit, payment and similar products.

Data Protection and Information Security. Aspects of our operations or business are subject to privacy and data protection laws in the United States, the European Union and elsewhere around the world. For example, in the United States, we and our customers are respectively subject to Federal Trade Commission and federal banking agency information safeguarding requirements under the Gramm-Leach-Bliley Act that require the maintenance of a written, comprehensive information security program. Due to constant changes to the nature of data, regulatory authorities around the world are considering numerous legislative and regulatory proposals concerning privacy and data protection. In addition, the interpretation and application of these privacy and data protection laws in the United States, Europe and elsewhere are often uncertain and in a state of flux. This includes the 2016 General Data Protection Regulation (GDPR) passed by the European Parliament, the 2015 ruling by the European Court of Justice that invalidated the EU-U.S. Safe Harbor treaty and the EU-U.S. Privacy Shield.

Anti-Money Laundering. Mastercard is subject to anti-money laundering ("AML") laws and regulations, including the USA PATRIOT Act. We have implemented a comprehensive AML program designed to prevent our payment network from being used to facilitate money laundering and other illicit activity. Our AML compliance program is comprised of policies, procedures and internal controls, including the designation of a compliance officer, and is designed to address these legal and regulatory requirements and assist in managing money laundering and terrorist financing risks.

Economic Sanctions. We are subject to regulations imposed by the U.S. Office of Foreign Assets Control ("OFAC") restricting financial transactions and other dealings with Crimea, Cuba, Iran, North Korea, Sudan and Syria and with persons and entities included in OFAC's list of Specially Designated Nationals and Blocked Persons (the "SDN List"). Iran, Sudan and Syria have been identified by the U.S. State Department as terrorist-sponsoring states. We have no offices, subsidiaries or affiliated entities located in these countries or in the Crimea region and do not license entities domiciled there. We have established a risk-based compliance program that includes policies, procedures and controls that are designed to prevent us from having unlawful business dealings with prohibited countries, regions, individuals or entities. This includes obligating issuers and acquirers to screen cardholders and merchants, respectively, against the SDN List.

Issuer Practice Regulation. Our customers are subject to numerous regulations and investigations applicable to banks and other financial institutions in their capacity as issuers and otherwise, impacting Mastercard as a consequence. Such regulations and investigations have been related to campus cards, bank overdraft practices, fees issuers charge to cardholders and the transparency of terms and conditions. Additionally, regulations such as PSD2 in Europe require financial institutions to provide new third-party processors and other service providers access to consumer account information at financial institutions, enabling them to initiate a transaction directly with consumers.

Regulation of Internet and Digital Transactions. Various jurisdictions have enacted or have proposed regulation related to internet transactions. For example, under the Unlawful Internet Gambling Enforcement Act in the United States, payment transactions must be coded and blocked for certain types of internet gambling transactions. The legislation applies to payments system participants, including Mastercard and our U.S. customers, and is implemented through a federal regulation. We may also be impacted by evolving laws surrounding gambling, including fantasy sports. Certain jurisdictions are also considering regulatory initiatives in digital-related areas that could impact us, such as cyber-security, copyright and trademark infringement and privacy.

Additional Regulatory Developments. Various regulatory agencies also continue to examine a wide variety of issues that could impact us, including evolving laws surrounding marijuana, prepaid payroll cards, virtual currencies, payment card add-on products, identity theft, account management guidelines, privacy, disclosure rules, security and marketing that would impact our customers directly.

Seasonality

See "Management's Discussion and Analysis of Financial Condition and Results of Operations-Seasonality" in Part II, Item 7.

Financial Information About Geographic Areas

See Note 21 (Segment Reporting) to the consolidated financial statements included in Part II, Item 8 for certain geographic financial information.

Employees

As of December 31, 2016, we employed approximately 11,900 persons, of whom approximately 6,600 were employed outside of the United States.

Additional Information

Mastercard Incorporated was incorporated as a Delaware corporation in May 2001. We conduct our business principally through our principal operating subsidiary, Mastercard International Incorporated ("Mastercard International"), a Delaware non-stock (or membership) corporation that was formed in November 1966. For more information about our capital structure, including our Class A common stock (our voting stock) and Class B common stock (our non-voting stock), see Note 13 (Stockholders' Equity) to the consolidated financial statements included in Part II, Item 8.

Website and SEC Reports

Our internet address is www.mastercard.com. From time to time, we may use our corporate website as a channel of distribution of material company information. Financial and other material information is routinely posted and accessible on the investor relations section of our corporate website. In addition, you may automatically receive e-mail alerts and other information about Mastercard by enrolling your e-mail address by visiting “E-Mail Alerts” in the investor relations section of our corporate website.

Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports are available for review, without charge, on the investor relations section of our corporate website as soon as reasonably practicable after they are filed with, or furnished to, the U.S. Securities and Exchange Commission (the “SEC”). The information contained on our corporate website is not incorporated by reference into this Report.

You may also read and copy any materials that we file with the SEC at its Public Reference Room at 100 F Street N.E., Washington, D.C. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. In addition, our filings are available electronically from the SEC at www.sec.gov.

ITEM 1A. RISK FACTORS

Legal and Regulatory

Payments Systems Challenges

Global regulatory, legislative and litigation focus on the payments industry may have a material adverse impact on our overall business and results of operations.

Interchange rates are a significant component of the costs that merchants pay in connection with the acceptance of payment cards. Although we do not earn revenues from interchange, interchange rates can impact the volume of transactions we see on our cards. If interchange rates are too high, merchants may stop accepting our products or route debit transactions away from our network. If interchange rates are too low, issuers may stop promoting our cards, eliminate or reduce loyalty rewards programs or other cardholder benefits (e.g. free checking, low interest rates on balances), or charge fees to cardholders (e.g. annual fees or late payment fees).

Historically, we have set interchange rates in the United States and certain other countries. In some jurisdictions, such as the United States and the European Union, however, interchange rates related to certain products and related practices are subject to regulatory activity and litigation that have limited our ability to establish these rates. Regulators, legislatures, and merchant groups in a number of countries have implemented or are seeking interchange rate reductions through legislation, competition and central bank regulation and litigation.

More broadly, regulators increasingly have been seeking to establish or expand their authority to regulate certain aspects of payments systems such as ours, beyond just interchange rates. These regulations have established, and could further expand, obligations or restrictions with respect to the types of products that we may offer to financial institutions for consumers, the countries in which our products and services may be used, the way we structure and operate our business and the types of consumers and merchants who can obtain or accept our cards. These obligations and restrictions may further increase and could conflict as more jurisdictions impose oversight of payment systems.

Examples of regulatory and legislative activity related to interchange fees and payments systems include:

- The European Union adopted its Interchange Fee Regulation in 2015 regulating electronic payments issued and acquired within the EEA, including caps on consumer credit and debit interchange fees and the separation of brand and processing (which Mastercard implemented in 2016).

- The European Commission issued a Statement of Objections in July 2015 related to our interregional interchange fees and central acquiring rules within the EEA, to which we have responded.

- Legislation regulating the level of domestic interchange rates has been enacted, or is being considered, in many jurisdictions. For example, debit interchange in the United States is capped by statute for certain regulated entities. Also, the Reserve Bank of Australia has proposed further reductions to debit interchange rates, as well as interchange rate caps on commercial and cross-border transactions.

- Several jurisdictions have created or granted authority to create new regulatory bodies that either have or would have the authority to regulate payment systems, including the United Kingdom and India (both of which have designated us as a payments system subject to regulation), as well as Belgium, Brazil, Mexico and Russia.

Merchants and consumers are also seeking interchange fee reductions and acceptance rule changes through litigation. Such litigation includes individual and/or class action suits filed by merchants against Mastercard, Visa and our customers in the United States (where approval of a 2012 settlement agreement was overturned by the U.S. Court of Appeals in 2016) and Canada, claims filed by retailers against Mastercard in the United Kingdom and other European jurisdictions and a collective action filed by consumers in the United Kingdom. See Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8 for more details regarding litigation and regulatory proceedings and inquiries related to interchange fees.

If issuers cannot collect, or we are forced to reduce, interchange rates, issuers may be less willing to participate in our four-party payments system, or may reduce the benefits offered in connection with the use of our products, reducing the attractiveness of our products to consumers. In particular, any changes to our interregional interchange fees as a result of the European Commission's Statement of Objections could impact our cross-border transaction activity disproportionately versus competitors that are not subject to similar reductions. These and other impacts could lower transaction volumes, and/or make proprietary three-party networks or other forms of payment more attractive. Issuers could reduce the benefits associated with our products or choose to charge higher fees to consumers to attempt to recoup a portion of the costs incurred for their services. In addition, issuers could seek to decrease the expense of their card and other payment programs by seeking a reduction in the fees that we charge to them, particularly if regulation has a disproportionate impact on Mastercard than on our competitors in terms of the fees we can charge. This could make our products less desirable to consumers, reduce the volume of transactions and our profitability, and limit our ability to innovate or offer differentiated products.

We are devoting substantial resources to defending our right to establish interchange rates in regulatory proceedings, litigation, and legislative activity. The potential outcome of any legislative, regulatory, or litigation action could have a more positive or negative impact on Mastercard relative to its competitors. If we are ultimately unsuccessful in defending our ability to establish interchange rates, any resulting legislation, regulation and/or litigation may have a material adverse impact on our overall business and results of operations. In addition, regulatory proceedings and litigation could result in Mastercard being fined and/or having to pay civil damages, the amount of which could be material.

Additionally, increased focus on regulation of payment systems may result in costly compliance burdens or otherwise increase our costs, which could materially and adversely impact our financial performance. Moreover, failure to comply with the laws and regulations to which we are subject could result in fines, sanctions or other penalties, which could materially and adversely affect our overall business and results of operations, as well as have an impact on our brand and reputation. In order to successfully compete in such an environment, we and our customers would each need to adjust our strategies accordingly.

Limitations on our ability to restrict merchant surcharging could materially and adversely impact our results of operations.

We have historically implemented policies, referred to as no-surcharge rules, in certain jurisdictions, including the United States, that prohibit merchants from charging higher prices to consumers who pay using Mastercard products instead of other means. Authorities in several jurisdictions have acted to end or limit the application of these no-surcharge rules (or indicated interest in doing so). Additionally, we have modified our no-surcharge rules to permit U.S. merchants to surcharge credit cards, subject to certain limitations. It is possible that over time merchants in some or all merchant categories in these jurisdictions may choose to surcharge as permitted by the rule change. This could result in consumers viewing our products less favorably and/or using alternative means of payment instead of electronic products, which could result in a decrease in our overall transaction volumes, and which in turn could materially and adversely impact our results of operations.

Current regulatory activity could be extended to additional jurisdictions or products, which could materially and adversely affect our overall business and results of operations.

Regulators around the world increasingly look at each other's approaches to the regulation of the payments and other industries. In some areas, such as interchange fees, we believe that regulators are increasingly cooperating on their approaches. Consequently, a development in any one country, state or region may influence regulatory approaches in other countries, states or regions. For example, a decision in Europe related to interchange fees could increase the possibility of additional competition authorities in European member states opening interchange fee proceedings. Similarly, new laws and regulations in a country, state or region involving one product may lead lawmakers there to extend the regulations to another product. For example, regulations affecting debit transactions could lead to regulation of other products (such as credit).

As a result, the risks to our business created by any one new law or regulation are magnified by the potential it has to be replicated in other jurisdictions or involve other products. These include matters like interchange rates, potential direct regulation of Mastercard's network fees and pricing, network standards and network exclusivity and routing agreements. Conversely, if widely varying regulations come into existence worldwide, we may have difficulty adjusting our products, services, fees and other important aspects of our business to meet the varying requirements. Either of these outcomes could materially and adversely affect our overall business and results of operations.

Preferential or Protective Government Actions

Preferential and protective government actions related to domestic payment services could adversely affect our ability to maintain or increase our revenues.

Governments in some countries, such as China, Russia and India, have acted, or in the future may act, to provide resources, preferential treatment or other protection to selected national payment and processing providers, or have created, or may in the future create, their own national provider. This action may displace us from, prevent us from entering into, or substantially restrict us from participating in, particular geographies, and may prevent us from competing effectively against those providers. For example:

- Governments in some countries are considering, or may consider, regulatory requirements that mandate processing of domestic payments either entirely in that country or by only domestic companies. In particular, we are currently excluded from domestic processing in China and are seeking market access, which is uncertain and subject to receiving a more detailed interpretation of final regulations issued in 2016 by the People's Bank of China. Additionally, Russia has amended its National Payments Systems laws to require all payment systems to process domestic transactions through a government-owned payment switch. As a result, all Mastercard domestic transactions in Russia are currently processed by that system instead of by Mastercard.

- Regional groups of countries, such as the Gulf Cooperation Countries in the Middle East and a number of countries in South East Asia, are considering, or may consider, efforts to restrict our participation in the processing of regional transactions.

Such developments prevent us from utilizing our global processing capabilities for domestic or regional customers. Our efforts to effect change in, or work with, these countries may not succeed. This could adversely affect our ability to maintain or increase our revenues and extend our global brand.

Privacy, Data Protection and Security

Regulation of privacy, data protection and security could increase our costs, as well as negatively impact our growth.

We are subject to regulations related to privacy, data protection and information security in the jurisdictions in which we do business. These regulations could result in negative impacts to our business. As we continue to develop products and services to meet the needs of a changing marketplace, we may expand our information profile through the collection of additional data across multiple channels. This expansion could amplify the impact of these regulations on our business. Regulation of privacy and data protection and information security may require changes to our data practices in regard to the collection, use, disclosure or security of personal and sensitive information. In addition, due to the European Parliament's passage of the General Data Protection Regulation and the European Court of Justice's invalidation of the Safe Harbor treaty, we are subject to enhanced compliance and operational requirements in the European Union. Failure to comply with these laws, regulations and requirements could result in fines, sanctions or other penalties, which could materially and adversely affect our results of operations and overall business, as well as have an impact on our reputation.

New requirements in these areas, either from new regulations or laws or any additions or changes (as well as the manner in which they could be interpreted or applied) may also increase our costs and could impact aspects of our business such as fraud monitoring, the development of information-based products and solutions and technology operations. In addition, these requirements may increase the costs to our customers of issuing payment products, which may, in turn, decrease the number of our cards and other payment devices that they issue. Moreover, due to account data compromise events, as well as the disclosure of the monitoring activities by certain governmental agencies, there has been heightened legislative and regulatory scrutiny around the world that could lead to further regulation and requirements. Any of these developments could materially and adversely affect our overall business and results of operations.

Regulation Related to Our Participation in the Payments Industry

Regulations affecting the global payments industry may materially and adversely affect our overall business and results of operations.

We are subject to regulations that affect the payments industry in the many jurisdictions in which our cards and other devices are used. Many of our customers are also subject to regulations applicable to banks and other financial institutions that, at times, consequently affect us. Regulation of the payments industry, including regulations applicable to us and our customers, has increased significantly in the last several years. See "Business-Government Regulation" in Part I, Item 1 for a detailed description of such regulation and related legislation. Examples include:

- ***Increased Payments Oversight*** - Several central banks or similar regulatory bodies around the world that have increased, or are seeking to increase, their formal oversight of the electronic payments industry are in some cases considering designating certain payments networks as "systemically important payment systems" or "critical infrastructure." As a result, Mastercard could be subject to new regulations relating to its payment, clearing and settlement activities (including risk management policies and procedures, collateral requirements, participant default policies and procedures, the ability to complete timely clearing and settlement of financial transactions, and capital and financial resource requirements). Also, Mastercard could be required to obtain prior approval for changes to its system rules, procedures or operations that could materially affect the level of risk presented by that payments system.

- ***Anti-Money Laundering and Economic Sanctions*** - We are subject to AML laws and regulations, including the USA PATRIOT Act in the United States, as well as the various economic sanctions programs administered by OFAC, including restrictions on financial transactions with certain countries and with persons and entities included on OFAC sanctions lists (including the SDN List). We have policies, procedures and controls designed to comply with applicable AML and OFAC sanctions requirements. We take measures to prevent transactions that do not comply with OFAC sanctions, including obligating our customers to screen cardholders and merchants against OFAC sanctions lists. However, despite these measures, it is possible that such transactions may be processed through our payments system. Activity such as money laundering or terrorist financing involving our cards could result in an enforcement action, and our reputation may suffer due to our customer's association with those countries, persons or entities or the existence of any such transaction. Any enforcement action or reputational damage could reduce the use and acceptance of our products and/or increase our costs, and thereby have a material adverse impact on our business. In addition, geopolitical events and resulting OFAC sanctions could lead jurisdictions affected by those sanctions to take actions in response that could adversely affect our business. For example, in response to the 2014 global sanctions imposed as a result of the Ukraine conflict, the Russian government amended its National Payments Systems laws requiring all payment systems to process domestic transactions through a government-owned payment switch. There is a risk that in the future other jurisdictions (or their sympathizers) may take similar or other actions in response to sanctions that could negatively impact us.

- ***Financial Sector Oversight*** - In the United States, the CFPB regulates consumer financial products, and can continue to do so by amending existing requirements or imposing new ones. The CFPB also has supervisory and independent examination authority as well as enforcement authority over certain financial institutions, their service providers, and other entities, which include us because of the services we provide to financial institutions that issue and acquire our products. It is not clear whether and/or to what extent the CFPB will regulate broader aspects of payment card networks.

- ***Issuer Practice Legislation and Regulation*** - Our financial institution customers are subject to numerous regulations, which impact us as a consequence. Existing or new regulations in these or other areas may diminish the attractiveness of our products to our customers. In addition to regulation and investigation of issuer practices, regulations such as PSD2 in Europe require financial institutions to provide new third-party processors and other service providers access to consumer account information and the ability to initiate transactions directly with the consumer. This could enable these entities to disintermediate issuers by providing value-added services directly to consumers, and disintermediate payment networks such as ours by routing transactions to other forms of payment.

- ***Regulation of Internet and Digital Transactions*** - Proposed legislation in various jurisdictions relating to Internet gambling and other digital areas such as cyber-security, copyright, trademark infringement and privacy could impose additional compliance burdens on us and/or our customers, including requiring us or our customers to monitor, filter, restrict, or otherwise oversee various categories of payment transactions.

Increased regulatory focus on us, such as in connection with the matters discussed above, may result in costly compliance burdens and/or may otherwise increase our costs. Similarly, increased regulatory focus on our customers may cause such customers to reduce the volume of transactions processed through our systems. Finally, failure to comply with the laws and regulations discussed above to which we are subject could result in fines, sanctions or other penalties. Each may individually or collectively materially and adversely affect our financial performance and/or our overall business and results of operations, as well as have an impact on our reputation.

Litigation

Liabilities we may incur for any litigation that has been or may be brought against us could materially and adversely affect our results of operations.

We are a defendant on a number of civil litigations and regulatory proceedings and investigations, including among others, those alleging violations of competition and antitrust law and those involving intellectual property claims. See Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8 for more details regarding the allegations contained in these complaints and the status of these proceedings. In the event we are found liable in any material litigations or proceedings, particularly in the event we may be found liable in a large class-action lawsuit or on the basis of an antitrust claim entitling the plaintiff to treble damages or under which we were jointly and severally liable, we could be subject to significant damages, which could have a material adverse impact on our overall business and results of operations.

Limitations on our business resulting from litigation or litigation settlements may materially and adversely affect our overall business and results of operations.

Certain limitations have been placed on our business in recent years because of litigation and litigation settlements, such as changes to our no-surcharge rule in the United States. Any future limitations on our business resulting from litigation or litigation settlements could impact our relationships with our customers, including reducing the volume of business that we do with them, which may materially and adversely affect our overall business and results of operations.

Business and Operations

Competition and Technology

Substantial and intense competition worldwide in the global payments industry may materially and adversely affect our overall business and results of operations.

The global payments industry is highly competitive. Our payment programs compete against all forms of payment, including cash and checks; electronic, mobile and e-commerce payment platforms; cryptocurrencies; ACH payment services; and other payments networks, which can have several competitive impacts on our business:

- Within the global general purpose payments industry, we face substantial and increasingly intense competition worldwide from systems such as Visa, American Express, Discover, UnionPay, JCB and PayPal among others.

- In certain jurisdictions, including the United States, Visa has greater volume, scale and market share than we do, which may provide significant competitive advantages. Visa's acquisition of Visa Europe in 2016 may provide it with additional competitive advantages.

- Some of our traditional competitors, as well as alternative payment service providers, may have substantially greater financial and other resources than we have, may offer a wider range of programs and services than we offer or may use more effective advertising and marketing strategies to achieve broader brand recognition or merchant acceptance than we have.

- Our ability to compete may also be affected by the outcomes of litigation, competition-related regulatory proceedings, central bank activity and legislative activity.

Certain of our competitors, including American Express, Discover, private-label card networks and certain alternative payments systems, operate three-party payments systems with direct connections to both merchants and consumers. These competitors may derive competitive advantages from their business models:

- Operators of three-party payments systems tend to have greater control over consumer and merchant customer service than operators of four-party payments systems such as ours, in which we must typically rely on our issuing and acquiring financial institution customers. Our inability to control end-to-end processing may put us at a competitive disadvantage by limiting our ability to introduce value-added products and services that are dependent upon us processing the underlying transactions.

- Even when competitors operate programs that utilize a four-party system, these competitors have generally not attracted the same level of regulatory or legislative scrutiny of their pricing and business practices as have operators of four-party payments systems such as ours.

If we continue to attract more regulatory scrutiny than these competitors because we operate a four-party system, or we are regulated because of the system we operate in a way in which our competitors are not, we could lose business to these competitors. See "Business-Competition" in Part I, Item 1.

If we are not able to differentiate ourselves from our competitors, drive value for our customers and/or effectively align our resources with our goals and objectives, we may not be able to compete effectively against these threats. Our competitors may also more effectively introduce their own innovative programs and services that adversely impact our growth. We also compete against new entrants that have developed alternative payments systems, e-commerce payments systems and payments systems for mobile devices, as well as physical store locations. A number of these new entrants rely principally on the Internet to support their services and may enjoy lower costs than we do, which could put us at a competitive disadvantage. Our failure to compete effectively against any of the foregoing competitive threats could materially and adversely affect our overall business and results of operations.

Disintermediation from stakeholders both within and outside of the payments value chain could harm our business.

As the payments industry continues to develop and change, we face disintermediation and related risks, including:

- Parties that process our transactions in certain countries may try to eliminate our position as an intermediary in the payment process. For example, merchants could process (and in some cases are processing) transactions directly with issuers. Additionally, processors could process transactions directly between issuers and acquirers. Large scale consolidation within processors could result in these processors developing bilateral agreements or in some cases processing the entire transaction on their own network, thereby disintermediating us.

- Regulation such as PSD2 in Europe may disintermediate us by enabling new third-party processors and other service providers opportunities to route payment transactions away from our network and towards other forms of payment.

- Although we partner with technology companies (such as digital players and mobile providers) that leverage our technology, platforms and network to deliver their products, they could develop platforms or networks that disintermediate us from digital payments and impact our ability to compete in the digital economy.

- Competitors, customers, technology companies, governments and other industry participants may develop products that compete with or replace value-added products and services we currently provide to support our switched transaction and payment offerings. These products could replace our own processing and payments offerings or could force us to change our pricing or practices for these offerings.

- Participants in the payments industry may merge, create joint ventures or form other business combinations that may strengthen their existing business services or create new payment services that compete with our services.

Our failure to compete effectively against any of the foregoing competitive threats could materially and adversely affect our overall business and results of operations.

Continued intense pricing pressure may materially and adversely affect our overall business and results of operations.

In order to increase transaction volumes, enter new markets and expand our Mastercard-branded cards and enabled payment devices, we seek to enter into business agreements with customers through which we offer incentives, pricing discounts and other support that promote our products. In order to stay competitive, we may have to increase the amount of these incentives and pricing discounts. Over the past several years, we have experienced continued pricing pressure. The demand from our customers for better pricing arrangements and greater rebates and incentives moderates our growth. We may not be able to continue our expansion strategy to process additional transaction volumes or to provide additional services to our customers at levels sufficient to compensate for such lower fees or increased costs in the future, which could materially and adversely affect our overall business and results of operations. In addition, increased pressure on prices increases the importance of cost containment and productivity initiatives in areas other than those relating to customer incentives.

In the future, we may not be able to enter into agreements with our customers if they require terms that we are unable or unwilling to offer, and we may be required to modify existing agreements in order to maintain relationships and to compete with others in the industry. Some of our competitors are larger and have greater financial resources than we do and accordingly may be able to charge lower prices to our customers. In addition, to the extent that we offer discounts or incentives under such agreements, we will need to further increase transaction volumes or the amount of services provided thereunder in order to benefit incrementally from such agreements and to increase revenue and profit, and we may not be successful in doing so, particularly in the current regulatory environment. Our customers also may implement cost reduction initiatives that reduce or eliminate payment product marketing or increase requests for greater incentives or greater cost stability. These factors could have a material adverse impact on our overall business and results of operations.

Rapid and significant technological developments and changes could negatively impact our overall business and results of operations or limit our future growth.

The payments industry is subject to rapid and significant technological changes, which can impact our business in several ways:

- Technological changes, including continuing developments of technologies in the areas of smart cards and devices, contactless and mobile payments, e-commerce and cryptocurrency and block chain technology, could result in new technologies that may be superior to, or render obsolete, the technologies we currently use in our programs and services. Moreover, these changes could result in new and innovative payment methods and programs that could place us at a competitive disadvantage and that could reduce the use of Mastercard products.

- We rely in part on third parties, including some of our competitors and potential competitors, for the development of and access to new technologies. The inability of these companies to keep pace with technological developments, or the acquisition of these companies by competitors, could negatively impact Mastercard offerings.

- Our ability to develop and adopt new services and technologies may be inhibited by industry-wide solutions and standards (such as those related to EMV, tokenization or other safety and security technologies), and by resistance from customers or merchants to such changes.

- Our ability to develop evolving systems and products may be inhibited by any difficulty we may experience in attracting and retaining technology experts.

- Our ability to adopt these technologies can also be inhibited by intellectual property rights of third parties. We have received, and we may in the future receive, notices or inquiries from patent holders (for example, other operating companies or non-practicing entities) suggesting that we may be infringing certain patents or that we need to license the use of their patents to avoid infringement. Such notices may, among other things, threaten litigation against us or our customers or demand significant license fees.

- Our ability to develop new technologies and reflect technological changes in our payments offerings will require resources, which may result in additional expenses.

- We work with technology companies (such as digital players and mobile providers) that use our technology to enhance payment safety and security and to deliver their payment-related products and services quickly and efficiently to consumers. Our inability to keep pace technologically could negatively impact the willingness of these customers to work with us, and could encourage them to use their own technology and compete against us.

We cannot predict the effect of technological changes on our business, and our future success will depend, in part, on our ability to anticipate, develop or adapt to technological changes and evolving industry standards. Failure to keep pace with these technological developments or otherwise bring to market products that reflect these technologies could lead to a decline in the use of our products, which could have a material adverse impact on our overall business and results of operations.

Information Security and Service Disruptions

Information security failures or breaches could disrupt our business, damage our reputation, increase our costs and cause losses.

Information security risks for payments and technology companies such as Mastercard have significantly increased in recent years in part because of the proliferation of new technologies, the use of the Internet and telecommunications technologies to conduct financial transactions, and the increased sophistication and activities of organized crime, hackers, terrorists and other external parties. These threats may derive from fraud or malice on the part of our employees or third parties, or may result from human error or accidental technological failure. These threats include cyber-attacks such as computer viruses, malicious code, phishing attacks or information security breaches.

Our operations rely on the secure processing, transmission and storage of confidential, proprietary and other information in our computer systems and networks. Our customers and other parties in the payments value chain, as well as our cardholders, rely on our digital technologies, computer and email systems, software and networks to conduct their operations. In addition, to access our products and services, our customers and cardholders increasingly use personal smartphones, tablet PCs and other mobile devices that may be beyond our control. We routinely are subject to cyber-threats and our technologies, systems and networks have been subject to cyber-attacks. Because of our position in the payments value chain, we believe that we are likely to continue to be a target of such threats and attacks. Additionally, geopolitical events and resulting government activity could also lead to information security threats and attacks by affected jurisdictions and their sympathizers.

To date, we have not experienced any material impact relating to cyber-attacks or other information security breaches. However, future attacks or breaches could lead to security breaches of the networks, systems or devices that our customers use to access our products and services, which in turn could result in the unauthorized disclosure, release, gathering, monitoring, misuse, loss or destruction of confidential, proprietary and other information (including account data information) or data security compromises. Such attacks or breaches could also cause service interruptions, malfunctions or other failures in the physical infrastructure or operations systems that support our businesses and customers (such as the lack of availability of our value-added systems), as well as the operations of our customers or other third parties. In addition, they could lead to damage to our reputation with our customers and other parties and the market, additional costs to Mastercard (such as repairing systems, adding new personnel or protection technologies or compliance costs), regulatory penalties, financial losses to both us and our customers and partners and the loss of customers and business opportunities. If such attacks are not detected immediately, their effect could be compounded.

We maintain an information security program, a business continuity program and insurance coverage (each reviewed by our Board of Directors and its Audit Committee), and our processing systems incorporate multiple levels of protection, in order to address or otherwise mitigate these risks. We also periodically test our systems to discover and address any potential vulnerabilities. Despite these mitigation efforts, there can be no assurance that we will be immune to these risks and not suffer material breaches and resulting losses in the future, or that our insurance coverage would be sufficient to cover all losses. Our risk and exposure to these matters remain heightened because of, among other things, the evolving nature of these threats, the prominent size and scale of Mastercard and our role in the global payments and technology industries, our plans to continue to implement our digital and mobile channel strategies and develop additional remote connectivity solutions to serve our customers and cardholders when and how they want to be served, our global presence, our extensive use of third-party vendors and future joint venture and merger and acquisition opportunities. As a result, information security and the continued development and enhancement of our controls, processes and practices designed to protect our systems, computers, software, data and networks from attack, damage or unauthorized access remain a priority for us. As cyber-threats continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any information security vulnerabilities. Any of the risks described above could materially adversely affect our overall business and results of operations.

Service disruptions that cause us to be unable to process transactions or service our customers could materially affect our overall business and results of operations.

Our transaction processing systems and other offerings may experience interruptions as a result of technology malfunctions, fire, weather events, power outages, telecommunications disruptions, terrorism, workplace violence, accidents or other catastrophic events. Our visibility in the global payments industry may also put us at greater risk of attack by terrorists, activists, or hackers who intend to disrupt our facilities and/or systems. Additionally, we rely on third-party service providers for the timely transmission of information across our global data network. Inadequate infrastructure in lesser-developed markets could also result in service disruptions, which could impact our ability to do business in those markets. If one of our service providers fails to provide the communications capacity or services we require, as a result of natural disaster, operational disruptions, terrorism, hacking or any other reason, the failure could interrupt our services. Although we maintain a business continuity program to analyze risk, assess potential impacts, and develop effective response strategies, we cannot ensure that our business would be immune to these risks, because of the intrinsic importance of our processing systems to our business, any interruption or degradation could adversely affect the perception of the reliability of products carrying our brands and materially adversely affect our overall business and our results of operations.

Financial Institution Customers and Other Stakeholder Relationships

Losing a significant portion of business from one or more of our largest financial institution customers could lead to significant revenue decreases in the longer term, which could have a material adverse impact on our business and our results of operations.

Most of our financial institution customer relationships are not exclusive and may be terminated by our customers. Our customers can reassess their commitments to us at any time in the future and/or develop their own competitive services. Accordingly, our business agreements with these customers may not reduce the risk inherent in our business that customers may terminate their relationships with us in favor of relationships with our competitors, or for other reasons, or might not meet their contractual obligations to us.

In addition, a significant portion of our revenue is concentrated among our five largest financial institution customers. Loss of business from any of our large customers could have a material adverse impact on our overall business and results of operations.

Exclusive/near exclusive relationships certain customers have with our competitors may have a material adverse impact on our business.

Certain customers have exclusive, or nearly-exclusive, relationships with our competitors to issue payment products, and these relationships may make it difficult or cost-prohibitive for us to do significant amounts of business with them to increase our revenues. In addition, these customers may be more successful and may grow faster than the customers that primarily issue our cards, which could put us at a competitive disadvantage. Furthermore, we earn substantial revenue from customers with nearly-exclusive relationships with our competitors. Such relationships could provide advantages to the customers to shift business from us to the competitors with which they are principally aligned. A significant loss of our existing revenue or transaction volumes from these customers could have a material adverse impact on our business.

Consolidation in the banking industry could materially and adversely affect our overall business and results of operations.

The banking industry has undergone substantial, accelerated consolidation in the past. Consolidations have included customers with a substantial Mastercard portfolio being acquired by institutions with a strong relationship with a competitor. If significant consolidation among customers were to continue, it could result in the substantial loss of business for us, which could have a material adverse impact on our business and prospects. In addition, one or more of our customers could seek to merge with, or acquire, one of our competitors, and any such transaction could also have a material adverse impact on our overall business. Consolidation could also produce a smaller number of large customers, which could increase their bargaining power and lead to lower prices and/or more favorable terms for our customers. These developments could materially and adversely affect our results of operations.

Our business significantly depends on the continued success and competitiveness of our issuing and acquiring customers and, in many jurisdictions, their ability to effectively manage or help manage our brands.

While we work directly with many stakeholders in the payments system, including merchants, governments and large digital companies and other technology companies, we are, and will continue to be, significantly dependent on our relationships with our issuers and acquirers and their respective relationships with cardholders and merchants to support our programs and services. We do not issue cards or other payment devices, extend credit to cardholders or determine the interest rates or other fees charged to cardholders using our products. Each issuer determines these and most other competitive payment program features. In addition, we do not establish the discount rate that merchants are charged for acceptance, which is the responsibility of our acquiring customers. As a result, our business significantly depends on the continued success and competitiveness of our issuing and acquiring customers and the strength of our relationships with them. In turn, our customers' success depends on a variety of factors over which we have little or no influence. If our customers become financially unstable, we may lose revenue or we may be exposed to settlement risk. See our risk factor in "Risk Factors - Settlement and Third-Party Obligation Risk" in this Part I, Item 1A with respect to how we guarantee certain third-party obligations for further discussion.

With the exception of the United States and a select number of other jurisdictions, most in-country (as opposed to cross-border) transactions conducted using Mastercard, Maestro and Cirrus cards are authorized, cleared and settled by our customers or other processors. Because we do not provide domestic processing services in these countries and do not, as described above, have direct relationships with cardholders, we depend on our close working relationships with our customers to effectively manage our brands, and the perception of our payments system, among consumers in these countries. We also rely on these customers to help manage our brands and perception among regulators and merchants in these countries, alongside our own relationships with them. From time to time, our customers may take actions that we do not believe to be in the best interests of our payments system overall, which may materially and adversely impact our business. If our customers' actions cause significant negative perception of the global payments industry or our brands, cardholders may reduce the usage of our programs, which could reduce our revenues and negatively impact our results of operations.

Merchants' continued focus on acceptance costs may lead to additional litigation and regulatory proceedings and increase our incentive program costs, which could materially and adversely affect our profitability.

Merchants are important constituents in our payments system. We rely on both our relationships with them, as well as their relationships with our issuer and acquirer customers, to continue to expand the acceptance of our cards and payment devices. We also work with merchants to help them enable new sales channels, create better purchase experiences, improve efficiencies, increase revenues and fight fraud. In the retail industry, there is a set of larger merchants with increasingly global scope and influence. We believe that these merchants are having a significant impact on all participants in the global payments industry, including Mastercard. Some large merchants have supported the legal, regulatory and legislative challenges to interchange fees that Mastercard has been defending, including the U.S. merchant litigations. See our risk factor in this Part I, Item 1A with respect to payments industry regulation, including interchange fees. The continued focus of merchants on the costs of accepting various forms of payment, including in connection with the growth of digital payments, may lead to additional litigation and regulatory proceedings.

Certain larger merchants are also able to negotiate incentives from us and pricing concessions from our issuer and acquirer customers as a condition to accepting our payment cards and devices. We also make payments to certain merchants to incentivize them to create co-branded payment programs with us. As merchants consolidate and become even larger, we may have to increase the amount of incentives that we provide to certain merchants, which could materially and adversely affect our results of operations. Competitive and regulatory pressures on pricing could make it difficult to offset the costs of these incentives. Additionally, if the rate of merchant acceptance growth slows our business could suffer.

Our work with governments exposes us to unique risks that could have a material impact on our business and results of operations.

As we increase our work with national, state and local governments, both indirectly through financial institutions and with them directly as our customers, we may face various risks inherent in associating or contracting directly with governments. These risks include, but are not limited to, the following:

- Governmental entities typically fund projects through appropriated monies. Changes in governmental priorities or other political developments, including disruptions in governmental operations, could impact approved funding and result in changes in the scope, or lead to the termination of, the arrangements or contracts we or financial institutions enter into with respect to our payment products and services.

- Our work with governments subjects us to U.S. and international anti-corruption laws, including the U.S. Foreign Corrupt Practices Act and the U.K. Bribery Act. A violation and subsequent judgment or settlement under these laws could subject us to substantial monetary penalties and damages and have a significant reputational impact.

- Working or contracting with governments, either directly or via our financial institution customers, can subject us to heightened reputational risks, including extensive scrutiny and publicity, as well as a potential association with the policies of a government as a result of a business arrangement with that government. Any negative publicity or negative association with a government entity, regardless of its accuracy, may adversely affect our reputation.

Settlement and Third-Party Obligations

Our role as guarantor exposes us to risk of loss or illiquidity.

We are a guarantor of certain third-party obligations, including those of:

- principal customers, which are customers that participate directly in Mastercard programs and are responsible for the settlement and other activities of their sponsored affiliate customers

- affiliate debit licensees

In this capacity, we are exposed to risk of loss or illiquidity:

- We may incur obligations in connection with transaction settlements if an issuer or acquirer fails to fund its daily settlement obligations due to technical problems, liquidity shortfalls, insolvency or other reasons.

- If a principal customer or affiliate debit licensee of Mastercard is unable to fulfill its settlement obligations to other customers, we may bear the loss.

- Although we are not obligated to do so, we may elect to keep merchants whole if an acquirer defaults on its merchant payment obligations, or to keep prepaid cardholders whole if an issuer defaults on its obligation to safeguard unspent prepaid funds.

Our gross settlement exposure for our brands was approximately $37 billion as of December 31, 2016.

We believe that we have sufficient liquidity to cover a settlement failure by our largest customer on its peak day (including the availability of our revolving credit facility and commercial paper program) and we are able to seek assignment of underlying receivables from a failed customer and may charge customers for settlement losses incurred during Mastercard's ordinary course activities. We also minimize the contingent risk of a settlement failure using various strategies, including monitoring our customers' financial condition, their economic and political operating environments and their compliance with our participation standards. However, the term and amount of our guarantee of obligations to principal customers is unlimited. As a result:

- Concurrent settlement failures of more than one of our larger customers or of several of our smaller customers either on a given day or over a condensed period of time may exceed our available resources and could materially and adversely affect our overall business and liquidity.

- Even if we have sufficient liquidity to cover a settlement failure, we may not be able to recover the cost of such a payment and may therefore be exposed to significant losses, which could materially and adversely affect our results of operations.

Financial institution customers in general are directly and indirectly impacted by economic conditions in global financial markets. These conditions subject us to risk that we may have to perform under our settlement guarantees. For more information on our settlement exposure and risk assessment and mitigation practices, see Note 19 (Settlement and Other Risk Management) to the consolidated financial statements included in Part II, Item 8.

Separately, Mastercard also provides guarantees to certain customers and other companies indemnifying them from losses stemming from our failure to perform with respect to our products and services or the failure of third parties to perform. Should an event occur that would trigger any significant indemnification obligation which we owe to any such customers or other companies, such an obligation could materially and adversely affect our overall business and results of operations.

Global Economic and Political Environment

Global financial market activity could result in a material and adverse impact on our overall business and results of operations.

Adverse economic trends (including distress in financial markets, turmoil in specific economies around the world and additional government intervention) have impacted the environment in which we operate. The condition of the economic environment may accelerate the timing of or increase the impact of risks to our financial performance. Such impact may include, but is not limited to, the following:

- Our customers may:
  - restrict credit lines to cardholders or limit the issuance of new Mastercard products to mitigate increasing cardholder defaults
  - implement cost reduction initiatives that reduce or eliminate payment card marketing or increase requests for greater incentives or greater cost stability
  - default on their settlement obligations, including as a result of sovereign defaults, causing a liquidity crisis for our other customers
- Consumer spending can be negatively impacted by:
  - declining economies, foreign currency fluctuations and the pace of economic recovery, which can change cross-border travel patterns, on which a significant portion of our revenues is dependent
  - low levels of consumer and business confidence typically associated with recessionary environments and those markets experiencing relatively high unemployment
- Government intervention (including the effect of laws, regulations and/or government investments on or in our financial institution customers), as well as uncertainty due to changing political regimes in executive, legislative and/or judicial branches of government, may have potential negative effects on our business and our relationships with customers or otherwise alter their strategic direction away from our products.
- Tightening of credit availability could impact the ability of participating financial institutions to lend to us under the terms of our credit facility.

Any of these developments could have a material adverse impact on our overall business and results of operations.

A decline in cross-border activity could adversely affect our results of operations.

We process substantially all cross-border transactions using Mastercard, Maestro and Cirrus-branded cards and generate a significant amount of revenue from cross-border volume fees and fees related to switched transactions. Revenue from processing cross-border and currency conversion transactions for our customers fluctuates with the levels and destinations of cross-border travel and our customers' need for transactions to be converted into their base currency. Cross-border activity may be adversely affected by world geopolitical, economic, weather and other conditions. These include the threat of terrorism and outbreaks of flu, viruses and other diseases. Additionally, any regulation of interregional interchange fees could negatively impact our cross-border activity, which could decrease the revenue we receive. Any such decline in cross-border activity could materially adversely affect our results of operations.

Negative trends in consumer spending could negatively impact our results of operations.

The global payments industry depends heavily upon the overall level of consumer, business and government spending. General economic conditions (such as unemployment, housing and changes in interest rates) and other political conditions (such as devaluation of currencies and government restrictions on consumer spending) in key countries in which we operate may adversely affect our financial performance by reducing the number or average purchase amount of transactions involving our payment cards and devices. Also, as we are headquartered in the United States, a negative perception of the United States could impact the perception of our company, which could adversely affect our business.

Adverse currency fluctuations and foreign exchange controls could negatively impact our results of operations.

During 2016, approximately 62% of our revenue was generated from activities outside the United States. This revenue (and the related expense) could be transacted in a non-functional currency or valued based on a currency other than the functional currency of the entity generating the revenues. Resulting exchange gains and losses are included in our net income. Our risk management activities provide protection with respect to adverse changes in the value of only a limited number of currencies and are based on estimates of exposures to these currencies.

In addition, some of the revenue we generate outside the United States is subject to unpredictable currency fluctuations (including devaluations of currencies) where the values of other currencies change relative to the U.S. dollar. If the U.S. dollar strengthens compared to currencies in which we generate revenue, this revenue may be translated at a materially lower amount than expected. Furthermore, we may become subject to exchange control regulations that might restrict or prohibit the conversion of our other revenue currencies into U.S. dollars.

The occurrence of currency fluctuations or exchange controls could have a material adverse impact on our results of operations.

Reputational Impact

Negative brand perception may materially and adversely affect our overall business.

Our brands and their attributes are key assets of our business. The ability to attract consumers to our branded products and retain them depends upon the external perception of us and our industry. Our business may be affected by actions taken by our customers that impact the perception of our brands. From time to time, our customers may take actions that we do not believe to be in the best interests of our brands, such as creditor practices that may be viewed as “predatory”. Additionally, large digital companies and other technology companies who are our customers use our network to build their own acceptance brands, which could cause consumer confusion and decrease the value of our brand. Moreover, adverse developments with respect to our industry or the industries of our customers may also, by association, impair our reputation, or result in greater regulatory or legislative scrutiny. We have also been pursuing the use of social media channels at an increasingly rapid pace. Under some circumstances, our use of social media, or the use of social media by others as a channel for criticism or other purposes, could also cause rapid, widespread reputational harm to our brands by disseminating rapidly and globally actual or perceived damaging information about us or our products. Such perception and damage to our reputation could have a material and adverse effect to our overall business.

Account data breaches could adversely affect our reputation and results of operations.

We, our issuers and acquirers, merchants and other third parties process, transmit or store cardholder account and other information in connection with payment cards and devices. In addition, our customers may sponsor (or we may certify as PCI-compliant) third-party processors to process transactions generated by cards carrying our brands and merchants may use third parties to provide services related to card use. A breach of the systems on which sensitive cardholder data and account information are processed, transmitted or stored could lead to fraudulent activity involving cards carrying our brands, damage our reputation and lead to claims against us, as well as subject us to regulatory actions. We routinely encounter account data compromise events, some of which have been high profile, involving merchants and third-party payment processors that process, store or transmit payment card data, which affect millions of Mastercard, Visa, Discover, American Express and other types of cardholders. These events typically involve external agents hacking the merchants’ or third-party processors’ systems and installing malware to compromise the confidentiality and integrity of those systems. Further data security breaches may subject us to reputational damage and/or lawsuits involving payment cards carrying our brands. Damage to our reputation or that of our brands resulting from an account data breach of either our systems or the systems of our customers, merchants and other third parties could decrease the use and acceptance of our cards and other payment devices, as well as the trend toward electronic payments, which in turn could have a material adverse impact on our transaction volumes, results of operations and prospects for future growth, or increase our costs by leading to additional regulatory burdens being imposed upon us.

In addition to reputational concerns, while most of the lawsuits resulting from account data breaches do not involve direct claims against us and while we have releases from many issuers and acquirers, we could still face damage claims, which, if upheld, could materially and adversely affect our results of operations.

Fraudulent activity could damage our reputation and encourage regulatory intervention, which could reduce the use and acceptance of our cards and other payment devices.

Criminals are using increasingly sophisticated methods to capture cardholder account information to engage in illegal activities such as counterfeiting or other fraud. Cards that use magnetic-stripe technology, still widely used in the United States, continue to raise heightened vulnerabilities to fraud relative to other technologies due to the static nature of the information on the magnetic stripe. Fraud is also more likely to occur in transactions where the card is not present, such as online commerce, which constitutes an increasing percentage of transactions. In addition, as outsourcing and specialization become commonplace in the payments industry, there are more third parties involved in processing transactions using our cards. While we are taking measures to mitigate risks associated with magnetic stripes (via increased migration to EMV) and making digital payments more secure through MDES, increased fraud levels involving our cards, or misconduct or negligence by third parties processing or otherwise servicing our cards, could lead to regulatory intervention, such as enhanced security requirements, as well as damage to our reputation. These occurrences could reduce the use and acceptance of our cards or increase our compliance costs, and thereby have a material adverse impact on our business.

Acquisitions

Acquisitions, strategic investments or entry into new businesses could disrupt our business and harm our results of operations or reputation.

Although we may continue to evaluate and/or make strategic acquisitions of, or acquire interests in joint ventures or other entities related to, complementary businesses, products or technologies, we may not be able to successfully partner with or integrate them, despite original intentions and focused efforts. In addition, such an integration may divert management's time and resources from our core business and disrupt our operations. Moreover, we may spend time and money on acquisitions or projects that do not meet our expectations or increase our revenue. To the extent we pay the purchase price of any acquisition in cash, it would reduce our cash reserves available to us for other uses, and to the extent the purchase price is paid with our stock, it could be dilutive to our stockholders. Furthermore, we may not be able to successfully finance the business following the acquisition as a result of costs of operations, including any litigation risk which may be inherited from the acquisition.

Any acquisition or entry into a new business could subject us to new regulations with which we would need to comply. This compliance could increase our costs, and we could be subject to liability or reputational harm to the extent we cannot meet any such compliance requirements. Our expansion into new businesses could also result in unanticipated issues which may be difficult to manage.

Class A Common Stock and Governance Structure

Provisions in our organizational documents and Delaware law could be considered anti-takeover provisions and have an impact on change-in-control.

Provisions contained in our amended and restated certificate of incorporation and bylaws and Delaware law could be considered anti-takeover provisions, including provisions that could delay or prevent entirely a merger or acquisition that our stockholders consider favorable. These provisions may also discourage acquisition proposals or have the effect of delaying or preventing entirely a change in control, which could harm our stock price. For example, subject to limited exceptions, our amended and restated certificate of incorporation prohibits any person from beneficially owning more than 15% of any of the Class A common stock or any other class or series of our stock with general voting power, or more than 15% of our total voting power. In addition:

- our stockholders are not entitled to the right to cumulate votes in the election of directors
- our stockholders are not entitled to act by written consent
- a vote of 80% or more of all of the outstanding shares of our stock then entitled to vote is required for stockholders to amend any provision of our bylaws
- any representative of a competitor of Mastercard or of the MasterCard Foundation (the "Foundation") is disqualified from service on our board of directors

The Foundation's substantial stock ownership, and restrictions on its sales, may impact corporate actions or acquisition proposals favorable to, or favored by, the other public stockholders.

As of February 10, 2017, the Foundation owned 112,834,232 shares of Class A common stock, representing approximately 10.7% of our general voting power. The Foundation may not sell or otherwise transfer its shares of Class A common stock prior to April 26, 2026, except to the extent necessary to satisfy its charitable disbursement requirements, for which purpose earlier sales are permitted. The directors of the Foundation are required to be independent of us and our customers. The ownership of Class A common stock by the Foundation, together with the restrictions on transfer, could discourage or make more difficult acquisition proposals favored by the other holders of the Class A common stock. In addition, because the Foundation is restricted from selling its shares for an extended period of time, it may not have the same interest in short or medium-term movements in our stock price as, or incentive to approve a corporate action that may be favorable to, our other stockholders.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

As of December 31, 2016, Mastercard and its subsidiaries owned or leased 158 commercial properties. We own our corporate headquarters, located in Purchase, New York. The building is approximately 500,000 square feet. There is no outstanding debt on this building. Our principal technology and operations center, a leased facility located in O'Fallon, Missouri, is also approximately 500,000 square feet. The term of the lease on this facility is 10 years, which commenced on March 1, 2009. Our leased properties in the United States are located in 11 states and in the District of Columbia. We also lease and own properties in 66 other countries. These facilities primarily consist of corporate and regional offices, as well as our operations centers.

We believe that our facilities are suitable and adequate for the business that we currently conduct. However, we periodically review our space requirements and may acquire or lease new space to meet the needs of our business, or consolidate and dispose of facilities that are no longer required.

ITEM 3. LEGAL PROCEEDINGS

Refer to Notes 10 (Accrued Expenses and Accrued Litigation) and 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Price Range of Common Stock

Our Class A common stock trades on the New York Stock Exchange under the symbol "MA". The following table sets forth the intra-day high and low sale prices for our Class A common stock for the four quarterly periods in each of 2016 and 2015. At February 10, 2017, we had 74 stockholders of record for our Class A common stock. We believe that the number of beneficial owners is substantially greater than the number of record holders because a large portion of our Class A common stock is held in "street name" by brokers.

	2016		2015	
	High	Low	High	Low
First Quarter	$ 95.83	$ 78.52	$ 93.00	$ 79.82
Second Quarter	100.00	87.59	96.31	85.37
Third Quarter	102.31	86.65	99.18	74.61
Fourth Quarter	108.93	99.51	101.76	88.92

There is currently no established public trading market for our Class B common stock. There were approximately 331 holders of record of our non-voting Class B common stock as of February 10, 2017, constituting approximately 1.8% of our total outstanding equity.

Dividend Declaration and Policy

During the years ended December 31, 2016 and 2015, we paid the following quarterly cash dividends per share on our Class A common stock and Class B Common stock:

	Dividend per Share	
	2016	2015
First Quarter	$ 0.19	$ 0.16
Second Quarter	0.19	0.16
Third Quarter	0.19	0.16
Fourth Quarter	0.19	0.16

On December 6, 2016, our Board of Directors declared a quarterly cash dividend of $0.22 per share paid on February 9, 2017 to holders of record on January 9, 2017 of our Class A common stock and Class B common stock. On February 7, 2017, our Board of Directors declared a quarterly cash dividend of $0.22 per share payable on May 9, 2017 to holders of record on April 7, 2017 of our Class A common stock and Class B common stock.

Subject to legally available funds, we intend to continue to pay a quarterly cash dividend on our outstanding Class A common stock and Class B common stock. However, the declaration and payment of future dividends is at the sole discretion of our Board of Directors after taking into account various factors, including our financial condition, operating results, available cash and current and anticipated cash needs.

Issuer Purchases of Equity Securities

On December 8, 2015, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $4 billion of its Class A common stock (the "December 2015 Share Repurchase Program"). This program became effective in February 2016. On December 6, 2016, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $4 billion of its Class A common stock (the "December 2016 Share Repurchase Program"). This program will become effective after completion of the December 2015 Share Repurchase Program.

During the fourth quarter of 2016, Mastercard repurchased a total of approximately 10.6 million shares for $1.1 billion at an average price of $103.51 per share of Class A common stock. The Company's repurchase activity during the fourth quarter of 2016 consisted of open market share repurchases and is summarized in the following table:

Period	Total Number of Shares Purchased	Average Price Paid per Share (including commission cost)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Dollar Value of Shares that may yet be Purchased under the Plans or Programs [1]
October 1 – 31	3,180,216	$ 102.05	3,180,216	$ 1,772,785,237
November 1 – 30	3,613,763	$ 104.71	3,613,763	$ 1,394,380,716
December 1 – 31	3,843,257	$ 103.60	3,843,257	$ 4,996,237,293
Total	10,637,236	$ 103.51	10,637,236	

[1] Dollar value of shares that may yet be purchased under the December 2015 Share Repurchase Program and the December 2016 Share Repurchase Program are as of the end of each period presented.

ITEM 6. SELECTED FINANCIAL DATA

The statement of operations data and the cash dividends declared per share presented below for the years ended December 31, 2016, 2015 and 2014, and the balance sheet data as of December 31, 2016 and 2015, were derived from the audited consolidated financial statements of Mastercard Incorporated included in Part II, Item 8. The statement of operations data and the cash dividends declared per share presented below for the years ended December 31, 2013 and 2012, and the balance sheet data as of December 31, 2014, 2013 and 2012, were derived from audited consolidated financial statements not included in this Report. The data set forth below should be read in conjunction with, and are qualified by reference to, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 and our consolidated financial statements and notes thereto included in Part II, Item 8.

	Years Ended December 31,				
	2016	2015	2014	2013	2012
	(in millions, except per share data)				
Statement of Operations Data:					
Net revenue	$ 10,776	$ 9,667	$ 9,441	$ 8,312	$ 7,391
Total operating expenses	5,015	4,589	4,335	3,809	3,454
Operating income	5,761	5,078	5,106	4,503	3,937
Net income	4,059	3,808	3,617	3,116	2,759
Basic earnings per share	3.70	3.36	3.11	2.57	2.20
Diluted earnings per share	3.69	3.35	3.10	2.56	2.19
Balance Sheet Data:					
Total assets	$ 18,675	$ 16,250	$ 15,329	$ 14,242	$ 12,462
Long-term debt	5,180	3,268	1,494	—	—
Equity	5,684	6,062	6,824	7,495	6,929
Cash dividends declared per share	$ 0.79	$ 0.67	$ 0.49	$ 0.29	$ 0.12

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with the consolidated financial statements and notes of Mastercard Incorporated and its consolidated subsidiaries, including Mastercard International Incorporated ("Mastercard International") (together, "Mastercard" or the "Company"), included elsewhere in this Report. In the fourth quarter of 2016, the Company began using the term "switched" transactions instead of "processed" transactions to differentiate our authorization, clearing and settlement activities from our issuer/acquirer processing activities. This change only relates to terminology; no previously reported amounts have changed. Percentage changes provided throughout "Management's Discussion and Analysis of Financial Condition and Results of Operations" were calculated on amounts rounded to the nearest thousand.

Non-GAAP Financial Information

Non-GAAP financial information is defined as a numerical measure of a company's performance that excludes or includes amounts so as to be different than the most comparable measure calculated and presented in accordance with accounting principles generally accepted in the United States ("GAAP"). See "Overview" for the tables that provide reconciliations of the non-GAAP operating results and growth to the most directly comparable GAAP measures. This Report contains non-GAAP financial measures that exclude the impact of the following special items ("Special Items"):

- In 2016 and 2015, the Company recorded provisions for litigation of $117 million ($85 million after tax, or $0.08 per diluted share) and $61 million ($44 million after tax, or $0.04 per diluted share), respectively, related to litigations with merchants in the U.K.

- In 2015, the Company recorded a settlement charge of $79 million ($50 million after tax, or $0.04 per diluted share) relating to the termination of its qualified U.S. defined benefit pension plan in general and administrative expenses (the "U.S. Employee Pension Plan Settlement Charge").

The provisions for litigation for both years discussed above relate to separate merchant litigations in the U.K. (collectively the "U.K. Merchant Litigation Provision"). See Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8 for further discussion. Mastercard excluded the U.K. Merchant Litigation Provision because its management monitors material litigation judgments and settlements separately from ongoing operations and evaluates ongoing performance without these amounts. The Company also excluded the U.S. Employee Pension Plan Settlement Charge because its management monitors significant one-time items separately from ongoing operations and evaluates ongoing performance without these amounts. For additional discussion regarding the U.S. Employee Pension Plan Settlement Charge, see Note 11 (Pension, Postretirement and Savings Plans) in Part II, Item 8.

Mastercard presents growth rates adjusted for the impact of foreign currency, which is a non-GAAP financial measure. For 2016, the Company presents currency-neutral growth rates, which are calculated by remeasuring the prior period's results using the current period's exchange rates for both the translational and transactional impacts on operating results. Prior to 2016, the impact of foreign currency on our operating results were presented to include only translational impacts. The impact of foreign currency translation represents the effect of translating operating results where the functional currency is different than our U.S. dollar reporting currency. The impact of the transactional foreign currency represents the effect of converting revenue and expenses occurring in a currency other than the functional currency. Mastercard's management believes the presentation of the impact of foreign currency provides relevant information.

Mastercard's management believes that the non-GAAP financial measures presented facilitate an understanding of Mastercard's operating performance and provide a meaningful comparison of its results between periods. Mastercard's management uses non-GAAP financial measures to, among other things, evaluate its ongoing operations in relation to historical results, for internal planning and forecasting purposes and in the calculation of performance-based compensation. The presentation of non-GAAP financial measures should not be considered in isolation or as a substitute for the Company's related financial results prepared in accordance with GAAP.

Overview

The following tables provide a summary of our operating results:

	For the Years Ended December 31,						Percent Increase (Decrease)		
	2016			2015					
	Actual	Special Items [1]	Non-GAAP	Actual	Special Items [1]	Non-GAAP	Actual	Special Items [1]	Non-GAAP
	(in millions, except per share data and percentages)								
Net revenue	$10,776	$ —	$10,776	$ 9,667	$ —	$ 9,667	11%	—%	11%
Operating expenses	$ 5,015	$ (117)	$ 4,898	$ 4,589	$ (140)	$ 4,449	9%	(1)%	10%
Operating income	$ 5,761	$ 117	$ 5,878	$ 5,078	$ 140	$ 5,218	13%	1%	13%
Operating margin	53.5%		54.5%	52.5%		54.0%			
Income tax expense	$ 1,587	$ 32	$ 1,619	$ 1,150	$ 45	$ 1,195	38%	3%	35%
Effective income tax rate	28.1%		28.1%	23.2%		23.4%			
Net income	$ 4,059	$ 85	$ 4,144	$ 3,808	$ 95	$ 3,903	7%	—%	6%
Diluted earnings per share	$ 3.69	$ 0.08	$ 3.77	$ 3.35	$ 0.08	$ 3.43	10%	—%	10%
Diluted weighted-average shares outstanding	1,101		1,101	1,137		1,137	(3)%		(3)%

	For the Years Ended December 31,				Percent Increase (Decrease)		
	2015			2014			
	Actual	Special Items [1]	Non-GAAP	Actual	Actual	Special Items [1]	Non-GAAP
	(in millions, except per share data and percentages)						
Net revenue	$ 9,667	—	$ 9,667	$ 9,441	2%	—%	2%
Operating expenses	$ 4,589	$ (140)	$ 4,449	$ 4,335	6%	3%	3%
Operating income	$ 5,078	$ 140	$ 5,218	$ 5,106	(1)%	(3)%	2%
Operating margin	52.5%		54.0%	54.1%			
Income tax expense	$ 1,150	$ 45	$ 1,195	$ 1,462	(21)%	(3)%	(18)%
Effective income tax rate	23.2%		23.4%	28.8%			
Net income	$ 3,808	$ 95	$ 3,903	$ 3,617	5%	(3)%	8%
Diluted earnings per share	$ 3.35	$ 0.08	$ 3.43	$ 3.10	8%	(3)%	11%
Diluted weighted-average shares outstanding	1,137		1,137	1,169	(3)%		(3)%

Note: Tables may not sum due to rounding.
[1] See "Non-GAAP Financial Information" for further information on Special Items.

We recorded net income of $4.1 billion, or $3.69 per diluted share in 2016 versus net income of $3.8 billion, or $3.35 per diluted share in 2015. Net income and diluted earnings per share increased 7% and 10%, respectively, in 2016 versus 2015.

Excluding the impact of Special Items, we had adjusted net income of $4.1 billion, or $3.77 per adjusted diluted share in 2016, versus adjusted net income of $3.9 billion, or $3.43 per adjusted diluted share in 2015. Adjusted net income increased 6%, or 7% on a currency-neutral basis, in 2016 versus 2015. In addition, adjusted earnings per diluted share increased 10%, or 11% on a currency-neutral basis, in 2016 versus 2015.

Key highlights for 2016 were as follows:

- Net revenue increased 11%, or 13% on a currency-neutral basis, in 2016 versus 2015, primarily driven by increases across revenue categories, partially offset by higher rebates and incentives. Switched transaction growth of 16%, cross border growth of 12% and gross dollar volume increase of 11%, on a local currency basis and adjusted for the impact of the recent EU regulation change, contributed to the net revenue growth.

- Operating expenses increased 9% in 2016 versus 2015. Excluding the impact of Special Items, adjusted operating expenses increased 10%, or 12% on a currency-neutral basis, in 2016 versus 2015. The increase was primarily due to higher personnel costs due to continued investment in our strategic initiatives, lapping the favorable impact of foreign exchange activity gains recognized in 2015 and higher data processing expenses.

- Total other expense decreased 5% in 2016 versus 2015, due to lower impairment charges and higher investment income in 2016, that were partially offset by higher interest expense from debt issued in 2015 and 2016.

- The effective income tax rate increased 4.9 percentage points to 28.1% in 2016 versus 23.2% in 2015, primarily due to lapping of the favorable impact of settlements with tax authorities and the recognition of U.S. foreign tax credit benefits in 2015.

Other financial highlights for 2016 were as follows:

- We generated net cash flows from operations of $4.5 billion in 2016, versus $4.0 billion in 2015.

- We completed a debt offering for an aggregate principal amount of $2 billion.

- We repurchased 37 million shares of our Class A common stock for $3.5 billion in 2016.

Business Environment

We process transactions from more than 210 countries and territories and in more than 150 currencies. Net revenue generated in the United States was 38% of total revenue in 2016 and 39% in 2015 and 2014, respectively. No individual country, other than the United States, generated more than 10% of total revenue in any such period, but differences in market growth, economic health and foreign exchange fluctuations in certain countries can have an impact on the proportion of revenue generated outside the United States over time. While the global nature of our business helps protect our operating results from adverse economic conditions in a single or a few countries, the significant concentration of our revenue generated in the United States makes our business particularly susceptible to adverse economic conditions in the United States.

The competitive and evolving nature of the global payments industry provides both challenges to and opportunities for the continued growth of our business. Adverse economic trends (including distress in financial markets, turmoil in specific economies around the world and additional government intervention) have impacted the environment in which we operate. Certain of our customers, merchants that accept our brands and cardholders who use our brands, have been directly impacted by these adverse economic conditions.

Mastercard's financial results may be negatively impacted by actions taken by individual financial institutions or by governmental or regulatory bodies. In addition, political instability or a decline in economic conditions in the countries in which the Company operates may accelerate the timing of or increase the impact of risks to our financial performance. As a result, our revenue or results of operations may be negatively impacted. Mastercard continues to monitor political and economic conditions around the world to identify opportunities for the continued growth of our business and to evaluate the evolution of the global payments industry. Notwithstanding recent encouraging trends, the extent and pace of economic recovery in various regions remains uncertain and the overall business environment may present challenges for Mastercard to grow its business.

For a full discussion of the various legal, regulatory and business risks that could impact our financial results, see "Risk Factors" in Part I, Item 1A.

Impact of Foreign Currency Rates

Our overall operating results are impacted by foreign currency translation, which represents the effect of translating operating results where the functional currency is different than our U.S. dollar reporting currency.

Our operating results can also be impacted by transactional foreign currency. The impact of the transactional foreign currency represents the effect of converting revenue and expense transactions occurring in a currency other than the functional currency. Changes in foreign currency exchange rates directly impact the calculation of gross dollar volume ("GDV") and gross euro volume ("GEV"), which are used in the calculation of our domestic assessments, cross-border volume fees and volume-related rebates and incentives. In most non-European regions, GDV is calculated based on local currency spending volume converted to U.S. dollars using average exchange rates for the period. In Europe, GEV is calculated based on local currency spending volume converted to euros using average exchange rates for the period. As a result, our domestic assessments, cross-border volume fees and volume-related rebates and incentives are impacted by the strengthening or weakening of the U.S. dollar versus non-European local currencies and the strengthening or weakening of the euro versus other European local currencies. For example, our billing in Australia is in the U.S. dollar, however, consumer spend in Australia is in the Australian dollar. The foreign currency transactional impact of converting Australian dollars to our U.S. dollar billing currency will have an impact on the revenue generated. The strengthening or weakening of the U.S. dollar is evident when GDV growth on a U.S. dollar-converted basis is compared to GDV growth on a local currency basis. In 2016, GDV on a U.S. dollar-converted basis increased 6%, while GDV on a local currency basis increased 9% versus 2015. In 2015, GDV on a U.S. dollar-converted basis increased 2%, while GDV on a local currency basis increased 13% versus 2014. Further, the impact from transactional foreign currency occurs in transaction processing revenue, other revenue and operating expenses when the local currency of these items are different than the functional currency.

The following table provides a summary of the foreign currency impact on growth for the following items in operating results for the years ended December 31, 2016, and 2015:

	Positive (Negative) Impact from Foreign Currency	
	2016[2]	2015[3]
Net revenue	(1)%	(6)%
Operating expenses [1]	1%	4%
Net income [1]	(1)%	(7)%

[1] Excludes the impact from Special Items.
[2] Represents the foreign currency translational and transactional impact versus 2015.
[3] Represents the foreign currency translational impact versus 2014.

In addition, the Company incurs foreign currency gains and losses from remeasuring monetary assets and liabilities that are in a currency other than the functional currency and from remeasuring foreign exchange derivative contracts ("Foreign Exchange Activity"). The impact of Foreign Exchange Activity has not been eliminated in our currency-neutral results (see "Non-GAAP Financial Information") and is recorded in general and administrative expenses. The Company attempts to manage foreign currency balance sheet remeasurement and cash flow risk through its foreign exchange risk management activities, which are discussed further in Note 20 (Foreign Exchange Risk Management) to the consolidated financial statements included in Part II, Item 8. Since the Company does not designate foreign currency derivatives as hedging instruments pursuant to the accounting standards for derivative instruments and hedging activities, it records gains and losses on foreign exchange derivatives on a current basis, with the associated offset being recognized as the exposures materialize.

The Company generates revenue and has financial assets in countries at risk for currency devaluation. While these revenues and financial assets are not material to Mastercard on a consolidated basis, they could be negatively impacted if a devaluation of local currencies occurs relative to the U.S. dollar.

Financial Results

Revenue

Revenue Description

Mastercard's business model involves four participants in addition to us: cardholders, merchants, issuers (the cardholders' financial institutions) and acquirers (the merchants' financial institutions). Our gross revenue is generated by assessing our customers based primarily on the dollar volume of activity on the cards and other devices that carry our brands and from the fees that we charge our customers for providing transaction processing and other payment-related products and services. Our revenue is based upon transactional information accumulated by our systems or reported by our customers. Our primary revenue billing currencies are the U.S. dollar, euro and Brazilian real.

The price structure for our products and services is complex and is dependent on the nature of volumes, types of transactions and type of products and services we offer to our customers. Our net revenue can be significantly impacted by the following:

- domestic or cross-border transactions
- signature-based or PIN-based transactions
- geographic region or country in which the transaction occurs
- volumes/transactions subject to tiered rates
- processed or not processed by Mastercard
- amount of usage of our other products or services
- amount of rebates and incentives provided to customers

The Company classifies its net revenue into the following five categories:

1. **Domestic assessments** are fees charged to issuers and acquirers based primarily on the dollar volume of activity on cards and other devices that carry our brands where the merchant country and the issuer country are the same. Domestic assessments include items such as card assessments, which are fees charged on the number of cards issued or assessments for specific purposes, such as acceptance development or market development programs.

2. **Cross-border volume fees** are charged to issuers and acquirers based on the dollar volume of activity on cards and other devices that carry our brands where the merchant country and the issuer country are different. In general, a cross-border transaction generates higher revenue than a domestic transaction since cross-border fees are higher than domestic fees, and may include fees for currency conversion.

3. **Transaction processing** revenue is earned for both domestic and cross-border transactions and is primarily based on the number of transactions. Transaction processing includes the following:

   - *Switched transactions* include the following products and services:

     - ➢ *Authorization* is the process by which a transaction is routed to the issuer for approval. In certain circumstances, such as when the issuer's systems are unavailable or cannot be contacted, Mastercard or others, on behalf of the issuer approve in accordance with either the issuer's instructions or applicable rules (also known as "stand-in").

     - ➢ *Clearing* is the determination and exchange of financial transaction information between issuers and acquirers after a transaction has been successfully conducted at the point of interaction. Mastercard clears transactions among customers through our central and regional processing systems.

     - ➢ *Settlement* is facilitating the exchange of funds between parties.

   - *Connectivity fees* are charged to issuers and acquirers for network access, equipment and the transmission of authorization and settlement messages. These fees are based on the size of the data being transmitted and the number of connections to the Company's network.

- *Other Processing fees* include issuer and acquirer processing solutions; payment gateways for e-commerce merchants; and mobile gateways for mobile initiated transactions.

4. **Other revenues:** Other revenues consist of other payment-related products and services and are primarily associated with the following:

   - *Consulting, data analytic and research fees* are primarily generated by Mastercard Advisors, the Company's professional advisory services group.
   - *Safety and security services fees* are for products and services we offer to prevent, detect and respond to fraud and to ensure the safety of transactions made on Mastercard products. We work with issuers, merchants and governments to help deploy standards for safe and secure transactions for the global payments system.
   - *Loyalty and rewards solutions fees* are charged to issuers for benefits provided directly to consumers with Mastercard-branded cards, such as access to a global airline lounge network, global and local concierge services, individual insurance coverages, emergency card replacement, emergency cash advance services and a 24-hour cardholder service center. For merchants, we provide targeted offers and rewards campaigns and management services for publishing offers, as well as opportunities for holders of co-brand or loyalty cards and rewards program members to obtain rewards points faster.
   - *Program management services* provided to prepaid card issuers consist of foreign exchange margin, commissions, load fees, and ATM withdrawal fees paid by cardholders on the sale and encashment of prepaid cards.
   - The Company also charges for a variety of other payment-related products and services, including account and transaction enhancement services, rules compliance and publications.

5. **Rebates and incentives (contra-revenue):** Rebates and incentives are provided to certain Mastercard customers and are recorded as contra-revenue.

Revenue Analysis

Gross revenue in 2016 and 2015 increased 14% and 7% versus 2015 and 2014, respectively. The increases in 2016 versus 2015 and 2015 versus 2014 were primarily driven by an increase in dollar volume of activity and number of transactions on cards carrying our brands, as well as growth in our Advisors business, which includes the impact of our data analytics business acquired in 2015, partially offset by the negative impact from foreign currency translation and the foreign currency impact on local billing.

Rebates and incentives in 2016 and 2015 increased 20% for both periods, versus 2015 and 2014. The increases in rebates and incentives in 2016 versus 2015 and 2015 versus 2014 were primarily due to the impact from new and renewed agreements and increased volumes, partially offset by the positive impact of foreign currency translation.

Our net revenue in 2016 and 2015 increased 11% and 2% versus 2015 and 2014, respectively.

The following table provides a summary of the trend in volume and transaction growth:

	Years Ended December 31,			
	2016		2015	
	Growth (USD)	Growth (Local)	Growth (USD)	Growth (Local)
Mastercard-branded GDV [1]	6%	9%	2 %	13%
Asia Pacific/Middle East/Africa	7%	11%	6 %	14%
Canada	6%	9%	— %	16%
Europe	5%	10%	(5)%	16%
Latin America	1%	15%	(11)%	15%
United States	6%	6%	8 %	8%
Cross-border Volume [1]		12%		16%
Switched Transactions Growth		16%		12%

[1] Excludes volume generated by Maestro and Cirrus cards.

In 2016, our GDV was impacted by new EU Interchange Fee Regulation related to card payments. The regulation was effective in June 2016 and required that we no longer collect fees on domestic European Economic Area payment transactions that do not use our network brand. Prior to that, Mastercard collected a de minimis assessment fee in a few countries, particularly France, on transactions with Mastercard co-badged cards if the brands of domestic networks (as opposed to Mastercard) were used. As a result, the non-Mastercard co-badged volume is no longer being included.

The following table reflects GDV growth rates for Europe and Worldwide Mastercard. For comparability purposes, we adjusted growth rates for the impact of Article 8 of the EU Interchange Fee Regulation related to card payments, to exclude the prior period co-badged volume processed by other networks.

	For the Years Ended December 31,	
	2016	2015
	Growth (Local)	
GDV [1]		
Worldwide as reported	9%	13%
Worldwide as adjusted for EU Regulation	11%	13%
Europe as reported	10%	16%
Europe as adjusted for EU Regulation	18%	19%

[1] Excludes volume generated by Maestro and Cirrus cards.

A significant portion of our revenue is concentrated among our five largest customers. In 2016, the net revenue from these customers was approximately $2.5 billion, or 23%, of total net revenue. The loss of any of these customers or their significant card programs could adversely impact our revenue. In addition, as part of our business strategy, Mastercard, among other efforts, enters into business agreements with customers. These agreements can be terminated in a variety of circumstances. See our risk factor in "Risk Factor - Business Risks" in Part I, Item 1A for further discussion.

The significant components of our net revenue were as follows:

	For the Years Ended December 31,			Percent Increase (Decrease)	
	2016	2015	2014	2016	2015
	(in millions, except percentages)				
Domestic assessments	$ 4,411	$ 4,086	$ 3,967	8%	3%
Cross-border volume	3,568	3,225	3,054	11%	6%
Transaction processing	5,143	4,345	4,035	18%	8%
Other revenues	2,431	1,991	1,688	22%	18%
Gross revenue	15,553	13,647	12,744	14%	7%
Rebates and incentives (contra-revenue)	(4,777)	(3,980)	(3,303)	20%	20%
Net revenue	$ 10,776	$ 9,667	$ 9,441	11%	2%

The following table summarizes the primary drivers of net revenue growth:

	For the Years Ended December 31,									
	Volume		Acquisitions		Foreign Currency		Other [3]		Total	
	2016	2015	2016	2015	2016[1]	2015[2]	2016	2015[4]	2016	2015
Domestic assessments	11%	12%	— %	—%	(2)%	(6)%	(1)%[5]	(3)%[5]	8%	3%
Cross-border volume	11%	14%	— %	—%	(3)%	(5)%	2 %	(3)%	11%	6%
Transaction processing	14%	11%	— %	—%	— %	(6)%	5 %	3 %	18%	8%
Other revenues	**	**	3 %	8%	— %	(6)%	19 %[6]	16 %[6]	22%	18%
Rebates and incentives	8%	6%	— %	—%	(2)%	(6)%	14 %[7]	20 %[7]	20%	20%
Net revenue	11%	12%	1 %	2%	(1)%	(6)%	1 %	(6)%	11%	2%

Note: Tables may not sum due to rounding
** Not applicable
1 Represents the foreign currency translational and transactional impact versus 2015.
2 Represents the foreign currency translational impact versus 2014.
3 Includes impact from pricing and other non-volume based fees.
4 Includes the foreign currency transactional impact versus 2014.
5 Includes impact of the allocation of revenue to service deliverables, which are recorded in other revenue when services are performed.
6 Includes impacts from Advisor fees, safety and security fees, loyalty and reward solution fees and other payment-related products and services.
7 Includes the impact from timing of new, renewed and expired agreements.

Operating Expenses

Our operating expenses are comprised of general and administrative, advertising and marketing, depreciation and amortization expenses and provisions for litigation settlements. Operating expenses increased 9% and 6% in 2016 and 2015, respectively, versus the prior year. Excluding the impact of the Special Items, adjusted operating expenses increased 10% and 3% in 2016 and 2015, respectively, primarily due to higher general and administrative expenses.

The components of operating expenses were as follows:

	For the Years Ended December 31,								
	2016			2015			Percent Increase (Decrease)		
	Actual	Special Items [1]	Non-GAAP	Actual	Special Items [1]	Non-GAAP	Actual	Special Items [1]	Non-GAAP
	(in millions, except percentages)								
General and administrative	$ 3,714	$ —	$ 3,714	$ 3,341	$ (79)	$ 3,262	11 %	(3)%	14 %
Advertising and marketing	811	—	811	821	—	821	(1)%	— %	(1)%
Depreciation and amortization	373	—	373	366	—	366	2 %	— %	2 %
Provision for litigation settlements	117	(117)	—	61	(61)	—	**		**
Total operating expenses	$ 5,015	$ (117)	$ 4,898	$ 4,589	$ (140)	$ 4,449	9 %	(1)%	10 %

	For the Years Ended December 31,						
	2015			2014	Percent Increase (Decrease)		
	Actual	Special Items [1]	Non-GAAP	Actual	Actual	Special Items [1]	Non-GAAP
	(in millions, except percentages)						
General and administrative	$ 3,341	$ (79)	$ 3,262	$ 3,152	6 %	3%	3 %
Advertising and marketing	821	—	821	862	(5)%	—%	(5)%
Depreciation and amortization	366	—	366	321	14 %	—%	14 %
Provision for litigation settlements	61	(61)	—	—	**		**
Total operating expenses	$ 4,589	$ (140)	$ 4,449	$ 4,335	6 %	3%	3 %

Note: Tables may not sum due to rounding.
** Not meaningful.
1 See "Non-GAAP Financial Information" for further information on Special Items.

The following table summarizes the primary drivers of changes in adjusted operating expenses in 2016 and 2015:

	For the Years Ended December 31,									
	Operational		Special Items[2]		Acquisitions		Foreign Currency		Total	
	2016	2015[1]	2016	2015	2016	2015	2016[3]	2015[4]	2016	2015
General and administrative	15%	(1)%	(3)%	3%	1%	7%	(1)%	(3)%	11 %	6 %
Advertising and marketing	—%	2 %	— %	—%	—%	—%	(1)%	(7)%	(1)%	(5)%
Depreciation and amortization	—%	4 %	— %	—%	4%	11%	(2)%	(1)%	2 %	14 %
Provision for litigation settlements	**	**	**	**	**	**	**	**	**	**
Total operating expenses	11%	1 %	(1)%	3%	1%	6%	(1)%	(4)%	9 %	6 %

Note: Table may not sum due to rounding.
** Not meaningful.
[1] Includes foreign currency transactional impact versus 2014.
[2] See "Non-GAAP Financial Information" for further information on Special Items.
[3] Represents the foreign currency translational and transactional impact versus 2015.
[4] Represents the foreign currency translational impact versus 2014.

General and Administrative

General and administrative expenses increased 11% in 2016 versus 2015 and increased 6% in 2015 versus 2014. Excluding the impact of the U.S. Employee Pension Plan Settlement Charge, adjusted general and administrative expenses increased 14% in 2016 versus 2015 and increased 3% in 2015 versus 2014. In 2016, adjusted general and administrative expenses increased primarily due to higher personnel cost and the lapping of the impact of foreign exchange activity gains in 2015, partially offset by improved cost controls. In 2015, the increase was due to acquisitions and higher data processing costs, partially offset by improved cost controls, the favorable impact of foreign currency translation, lapping of the impact of the restructuring charge taken in 2014 and foreign exchange activity gains.

The significant components of our general and administrative expenses were as follows:

	For the Years Ended December 31,			Percent Increase (Decrease)	
	2016	2015	2014	2016	2015
	(in millions, except percentages)				
Personnel	$ 2,225	$ 2,105	$ 2,064	6%	2%
Professional fees	337	310	307	9%	1%
Data processing and telecommunications	420	362	273	16%	33%
Foreign exchange activity	34	(82)	(30)	**	**
Other	698	646	538	8%	20%
General and administrative expenses	3,714	3,341	3,152	11%	6%
Special Item[1]	—	(79)	—		
Adjusted general and administrative expenses (excluding Special Item)[1]	$ 3,714	$ 3,262	$ 3,152	14%	3%

Note: Table may not sum due to rounding.
** Not meaningful.
[1] See "Non-GAAP Financial Information" for further information on Special Items.

The primary drivers of changes in general and administrative expenses in 2016 and 2015 were:

- Personnel expenses increased 6% in 2016 versus 2015 and 2% in 2015 versus 2014. These percentage changes include the impact of the U.S. Employee Pension Plan Settlement Charge of $79 million recorded in 2015, which decreased Personnel expense growth by 4 percentage points for 2016 and increased it by 4 percentage points for 2015. Excluding the impact of the U.S. Employee Pension Plan Settlement Charge, adjusted Personnel expense grew 10% for 2016 versus 2015 and decreased 2% for 2015 versus 2014. The adjusted 2016 increase was driven by a higher number of employees to support our continued investment in the areas of digital, services, data analytics and geographic expansion. The adjusted 2015 decrease was due to the lapping of the restructuring charge of $87 million recorded in 2014 and improved cost controls, partially offset by an increase in the number of employees resulting from our acquisitions.

- Professional fees consist primarily of third-party services, legal costs to defend our outstanding litigation and the evaluation of regulatory developments that impact our industry and brand. The increase in 2016 versus 2015 is primarily due to higher legal costs to defend litigation. Professional fees remained consistent in 2015 versus 2014.

- Data processing and telecommunication expense consists of expenses to support our global payments network infrastructure, expenses to operate and maintain our computer systems and other telecommunication system. These expenses increased in both 2016 and 2015 due to capacity growth of our business and higher third-party processing costs.

- Foreign exchange activity includes gains and losses on foreign exchange derivative contracts and the impact of remeasurement of assets and liabilities denominated in foreign currencies. See Note 20 (Foreign Exchange Risk Management) to the consolidated financial statements included in Part II, Item 8 for further discussion. During 2016, foreign exchange activity negatively impacted general and administrative expense growth by 4 percentage points versus the comparable period in 2015, due to the impact from foreign exchange derivative contracts and the lapping of balance sheet remeasurement gains in the prior year. In 2015 versus 2014, we recorded higher gains on derivative contracts, as well as balance sheet remeasurement gains related primarily to the devaluation of the Venezuelan bolivar.

- Other expenses include costs to provide loyalty and rewards solutions, travel and meeting expenses and rental expense for our facilities. Other expenses increased in 2016 primarily due to higher cardholder services and loyalty costs. Other expenses increased in 2015 primarily due to the impact of acquisitions and expenses incurred to support strategic development efforts including costs associated with loyalty and rewards programs.

Advertising and Marketing

In 2016, advertising and marketing expenses decreased 1% versus 2015, mainly due to lower sponsorship promotions in the current year. Advertising and marketing expenses decreased 5% in 2015, mainly due to the favorable impact from foreign currency translation and lower media spend, partially offset by higher sponsorship promotions to support our strategic initiatives. See Value-Added Solutions and Marketing sections included in Part I, Item 1 for further discussion of our marketing strategy.

Depreciation and Amortization

Depreciation and amortization expenses increased 2% in 2016 versus 2015 and increased 14% in 2015 versus 2014. The increase in 2016 was primarily due to higher depreciation from capital investments partially offset by certain intangibles becoming fully amortized. In 2015, the increase was primarily due to higher amortization of capitalized software costs and other intangibles associated with our acquisitions.

Provision for Litigation Settlements

During 2016 and 2015, the Company recorded pre-tax charges of $117 million and $61 million, respectively, related to litigations with merchants in the U.K. See Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8 for further discussion.

Other Income (Expense)

Other income (expense) is comprised primarily of investment income, interest expense, our share of income (losses) from equity method investments and other gains and losses. Total other expense decreased to $115 million in 2016 versus $120 million in 2015 due to lower impairment charges taken on certain investments and higher investment income in 2016, partially offset by higher interest expense from debt issued in 2015 and 2016. Total other expense increased in 2015 versus 2014 primarily due to impairment charges taken on certain investments in 2015 and higher interest expense resulting from incremental debt issued in 2014 and 2015.

Income Taxes

The effective income tax rates for the years ended December 31, 2016, 2015 and 2014 were 28.1%, 23.2% and 28.8%, respectively.

The effective income tax rate for 2016 was higher than the effective income tax rate for 2015 primarily due to benefits associated with the impact of settlements with tax authorities in multiple jurisdictions in 2015, the lapping of a discrete benefit relating to certain foreign taxes that became eligible to be claimed as credits in the United States in 2015, and a higher U.S. foreign tax credit benefit associated with the repatriation of current year foreign earnings in 2015. These items were partially offset by a more favorable geographic mix of taxable earnings in 2016.

The effective income tax rate for 2015 was lower than the effective income tax rate for 2014 primarily due to settlements with tax authorities in multiple jurisdictions. Further, the information gained related to these matters was considered in measuring uncertain tax benefits recognized for the periods subsequent to the periods settled. In addition, the recognition of other U.S. foreign tax credits and a more favorable geographic mix of taxable earnings also contributed to the lower effective tax rate in 2015.

The provision for income taxes differs from the amount of income tax determined by applying the U.S. federal statutory income tax rate of 35% to pretax income for the years ended December 31, as a result of the following:

	For the Years Ended December 31,					
	2016		2015		2014	
	Amount	Percent	Amount	Percent	Amount	Percent
	(in millions, except percentages)					
Income before income taxes	$ 5,646		$ 4,958		$ 5,079	
Federal statutory tax	1,976	35.0 %	1,735	35.0 %	1,778	35.0 %
State tax effect, net of federal benefit	22	0.4 %	27	0.5 %	29	0.6 %
Foreign tax effect	(188)	(3.3)%	(144)	(2.9)%	(108)	(2.1)%
Impact of foreign tax credits [1]	(141)	(2.5)%	(281)	(5.7)%	(183)	(3.6)%
Impact of settlements with tax authorities	—	— %	(147)	(2.9)%	—	— %
Other, net	(82)	(1.5)%	(40)	(0.8)%	(54)	(1.1)%
Income tax expense	$ 1,587	28.1 %	$ 1,150	23.2 %	$ 1,462	28.8 %

[1] Included within the impact of foreign tax credits were repatriation benefits of current year foreign earnings of $116 million, $172 million and $177 million, in addition to other foreign tax credit benefits which become eligible in the United States of $25 million, $109 million and $6 million for 2016, 2015 and 2014, respectively.

The Company's GAAP effective income tax rates for 2016 and 2015 were affected by the tax benefits related to the Special Items as previously discussed.

As of December 31, 2016, the Company's unrecognized tax benefits related to positions taken during the current and prior period were $169 million, all of which would reduce the Company's effective tax rate if recognized. See Note 17 (Income Taxes) to the consolidated financial statements included in Part II, Item 8 for further discussion. Within the next twelve months, we believe that the resolution of certain federal, foreign and state and local tax examinations is reasonably possible and that a change in estimate, reducing unrecognized tax benefits, may occur. It is not possible to provide a range of the potential change until the examinations progress further or the related statute of limitations expire. During 2015, the Company's unrecognized tax benefits related to tax positions taken during the current and prior periods decreased by $183 million. This decrease was primarily due to settlements with tax authorities in multiple jurisdictions. Further, the information gained related to these matters was considered in measuring uncertain tax benefits recognized for the periods subsequent to the periods settled.

During the fourth quarter of 2014, we implemented an initiative to better align our legal entity and tax structure with our operational footprint outside of the U.S. This initiative resulted in a one-time taxable gain in Belgium relating to the transfer of intellectual property to a related foreign entity in the United Kingdom. We believe this improved alignment will result in greater flexibility and efficiency with regard to the global deployment of cash, as well as ongoing benefits in our effective income tax rate. See Note 17 (Income Taxes) to the consolidated financial statements included in Part II, Item 8 for further discussion.

In 2010, in connection with the expansion of the Company's operations in the Asia Pacific, Middle East and Africa region, the Company's subsidiary in Singapore, Mastercard Asia Pacific Pte. Ltd. ("MAPPL"), received an incentive grant from the Singapore Ministry of Finance. See Note 17 (Income Taxes) to the consolidated financial statements included in Part II, Item 8 for further discussion.

Liquidity and Capital Resources

We need liquidity and access to capital to fund our global operations, credit and settlement exposure, capital expenditures, investments in our business and current and potential obligations. The Company generates the cash required to meet these needs through operations. The following table summarizes the cash, cash equivalents, investments and credit available to the Company at December 31:

	2016	2015
	(in billions)	
Cash, cash equivalents and investments [1]	$ 8.3	$ 6.7
Unused line of credit	3.8	3.8

[1] Investments include available-for-sale securities and short-term held-to-maturity securities. At December 31, 2016 and 2015, this amount excludes restricted cash related to the U.S. merchant class litigation settlement of $543 million and $541 million, respectively. This amount also excludes restricted security deposits held for customers of $991 million and $895 million at December 31, 2016 and 2015, respectively.

Cash, cash equivalents and investments held by our foreign subsidiaries (i.e., any entities where earnings would be subject to U.S. tax upon repatriation) was $3.8 billion and $3.3 billion at December 31, 2016 and 2015, respectively, or 45% and 48% as of such dates. It is our present intention to indefinitely reinvest historic undistributed accumulated earnings associated with our foreign subsidiaries as of December 31, 2016 outside of the United States (as disclosed in Note 17 (Income Taxes) to the consolidated financial statements included in Part II, Item 8), and our current plans do not require repatriation of these earnings. If these earnings are needed for U.S. operations or can no longer be indefinitely reinvested outside of the United States, the Company would be required to record a liability for such U.S. taxes for the historic undistributed accumulated earnings at that time. Such taxes would be due upon repatriation of such earnings to the United States.

Our liquidity and access to capital could be negatively impacted by global credit market conditions. The Company guarantees the settlement of many Mastercard, Cirrus and Maestro-branded transactions between our issuers and acquirers. See Note 19 (Settlement and Other Risk Management) to the consolidated financial statements in Part II, Item 8 for a description of these guarantees. Historically, payments under these guarantees have not been significant; however, historical trends may not be an indication of the future. The risk of loss on these guarantees is specific to individual customers, but may also be driven significantly by regional or global economic conditions, including, but not limited to the health of the financial institutions in a country or region.

Our liquidity and access to capital could also be negatively impacted by the outcome of any of the legal or regulatory proceedings to which we are a party. See our risk factor in “Risk Factors - Legal and Regulatory Risks” in Part I, Item 1A and Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8; and Part II, Item 7 (Business Environment) for additional discussion of these and other risks facing our business.

Cash Flow

The table below shows a summary of the cash flows from operating, investing and financing activities for the years ended December 31:

	2016	2015	2014
		(in millions)	
Cash Flow Data:			
Net cash provided by operating activities	$ 4,484	$ 4,043	$ 3,407
Net cash (used in) provided by investing activities	(1,167)	(715)	690
Net cash used in financing activities	(2,293)	(2,458)	(2,339)

Net cash provided by operating activities increased $441 million in 2016 versus 2015, primarily due to higher net income as adjusted for non-cash items and accrued expenses, partially offset by higher prepaid taxes. Net cash provided by operating activities in 2015 versus 2014, increased by $636 million, primarily due to lower prepaid taxes and higher net income, partially offset by timing of customer settlements.

Net cash used in investing activities increased $452 million in 2016 versus 2015, primarily due to lower sales and maturities of our investment securities, partially offset by cash used for acquisition activities in the prior year. The $1.4 billion decrease in investing activities in 2015 versus 2014 was primarily due to the higher proceeds from the sales and maturities of investment securities in 2014.

Net cash used in financing activities decreased $165 million in 2016 versus 2015, primarily due to higher proceeds from debt, partially offset by higher dividends paid. Net cash used in financing activities increased $119 million in 2015 versus 2014, primarily due to higher dividends paid and an increase in purchases of treasury stock in 2015, partially offset by increased proceeds from debt in 2015.

The table below shows a summary of select balance sheet data at December 31:

	2016	2015
	(in millions)	
Balance Sheet Data:		
Current assets	$ 13,228	$ 10,984
Current liabilities	7,206	6,269
Long-term liabilities	5,785	3,919
Equity	5,684	6,062

The Company believes that its existing cash, cash equivalents and investment securities balances, its cash flow generating capabilities, its borrowing capacity and its access to capital resources are sufficient to satisfy its future operating cash needs, capital asset purchases, outstanding commitments and other liquidity requirements associated with its existing operations and potential obligations.

Debt and Credit Availability

In November 2016, the Company issued $650 million aggregate principal amount of notes due 2021, $750 million aggregate principal amount of notes due 2026 and $600 million aggregate principal amount of notes due 2046 (collectively the "2016 USD Notes"). Including the 2016 USD Notes, our total debt outstanding as of December 31, 2016 was $5,239 million (collectively the "Notes"). The Company is not subject to any financial covenants under the Notes. The Notes are senior unsecured obligations and would rank equally with any future unsecured and unsubordinated indebtedness. The proceeds of the Notes are being used for general corporate purposes.

The Company has established a commercial paper program (the "Commercial Paper Program"), under which the Company is authorized to issue up to $3.75 billion in outstanding notes, with maturities up to 397 days from the date of issuance. In conjunction with the Commercial Paper Program, the Company has entered into a committed unsecured $3.75 billion revolving credit facility (the "Credit Facility") which expires in October 2021.

Borrowings under the Commercial Paper Program and the Credit Facility are to provide liquidity for general corporate purposes, including providing liquidity in the event of one or more settlement failures by the Company's customers. In addition, the Company may borrow and repay amounts under these facilities for business continuity purposes. Mastercard had no borrowings outstanding under the Commercial Paper Program or the Credit Facility at December 31, 2016 and 2015.

See Note 12 (Debt) to the consolidated financial statements included in Part II, Item 8 for further discussion on the Notes, the Commercial Paper Program and the Credit Facility.

In June 2015, the Company filed a universal shelf registration statement to provide additional access to capital, if needed. Pursuant to the shelf registration statement, the Company may from time to time offer to sell debt securities, preferred stock, Class A common stock, depository shares, purchase contracts, units or warrants in one or more offerings.

Dividends and Share Repurchases

Mastercard has historically paid quarterly dividends on its outstanding Class A common stock and Class B common stock. Subject to legally available funds, we intend to continue to pay a quarterly cash dividend. However, the declaration and payment of future dividends is at the sole discretion of our Board of Directors after taking into account various factors, including our financial condition, operating results, available cash and current and anticipated cash needs. The following table summarizes the annual, per share dividends paid in the years reflected:

	Years Ended December 31,		
	2016	2015	2014
	(in millions, except per share data)		
Cash dividend, per share	$ 0.76	$ 0.64	$ 0.44
Cash dividends paid	$ 837	$ 727	$ 515

On December 6, 2016, our Board of Directors declared a quarterly cash dividend of $0.22 per share paid on February 9, 2017 to holders of record on January 9, 2016 of our Class A common stock and Class B common stock. The aggregate amount of this dividend was $238 million.

On February 7, 2017, our Board of Directors declared a quarterly cash dividend of $0.22 per share payable on May 9, 2017 to holders of record on April 7, 2017 of our Class A common stock and Class B common stock. The aggregate amount of this dividend is estimated to be $237 million.

Shares in the Company's common stock that are repurchased are considered treasury stock. The timing and actual number of additional shares repurchased will depend on a variety of factors, including the operating needs of the business, legal requirements, price and economic and market conditions. In December 2016, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $4 billion of its Class A common stock. This program will become effective after completion of the share repurchase program authorized in December 2015.

The following table summarizes the Company's share repurchase authorizations of its Class A common stock through December 31, 2016, as well as historical purchases:

	Authorization Dates			
	December 2016	**December 2015**	**December 2014**	**Total**
	(in millions, except average price data)			
Board authorization	$ 4,000	$ 4,000	$ 3,750	$ 11,750
Remaining authorization at December 31, 2015	$ —	$ 4,000	$ 507	$ 4,507
Dollar-value of shares repurchased in 2016	$ —	$ 3,004	$ 507	$ 3,511
Remaining authorization at December 31, 2016	$ 4,000	$ 996	$ —	$ 4,996
Shares repurchased in 2016	—	31.2	5.7	36.9
Average price paid per share in 2016	$ —	$ 96.15	$ 89.76	$ 95.18

See Note 13 (Stockholders' Equity) to the consolidated financial statements included in Part II, Item 8 for further discussion.

Off-Balance Sheet Arrangements

Mastercard has no off-balance sheet debt, other than lease arrangements and other commitments as presented in the Future Obligations table that follows.

Future Obligations

The following table summarizes our obligations as of December 31, 2016 that are expected to impact liquidity and cash flow in future periods. We believe we will be able to fund these obligations through cash generated from operations and our cash balances.

	Payments Due by Period				
	Total	2017	2018 - 2019	2020 - 2021	2022 and thereafter
			(in millions)		
Debt	$ 5,239	$ —	$ 500	$ 650	$ 4,089
Interest on debt	1,547	131	258	243	915
Capital leases	7	5	2	—	—
Operating leases	247	66	93	49	39
Other long-term obligations [1]					
Sponsorship, licensing and other [2]	1,576	1,121	317	109	29
Employee benefits [3]	200	62	34	20	84
Total [4]	$ 8,816	$ 1,385	$ 1,204	$ 1,071	$ 5,156

[1] The table does not include the $722 million provision as of December 31, 2016 related to litigation in the U.S. and the U.K. since the payments are not fixed and determinable. See Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8 for further discussion.

[2] Included in the payments due in 2017 is £700 million (approximately $860 million as of December 31, 2016) related to a definitive agreement for the Company to acquire a controlling interest in VocaLink Holdings Limited ("VocaLink"). See Note 2 (Acquisitions) to the consolidated financial statements included in Part II, Item 8 for further discussion. Additional amounts primarily relate to sponsorships to promote the Mastercard brand. Future cash payments that will become due to our customers under agreements which provide pricing rebates on our standard fees and other incentives in exchange for transaction volumes are not included in the table because the amounts due are contingent on future performance. We have accrued $2.7 billion as of December 31, 2016 related to customer and merchant agreements.

[3] Amounts relate to severance liabilities along with expected funding requirements for defined benefit pension and postretirement plans.

[4] The Company has recorded a liability for unrecognized tax benefits of $169 million at December 31, 2016. Within the next twelve months, the Company believes that the resolution of certain federal, foreign and state and local examinations are reasonably possible and that a change in estimate, reducing unrecognized tax benefits, may occur. It is not possible to provide a range of the potential change until the examinations progress further or the related statute of limitations expire. These amounts have been excluded from the table since the settlement period of this liability cannot be reasonably estimated. The timing of these payments will ultimately depend on the progress of tax examinations with the various authorities.

Seasonality

The Company does not experience meaningful seasonality. No individual quarter in 2016, 2015 or 2014 accounted for more than 30% of net revenue.

Critical Accounting Estimates

The application of U.S. GAAP requires the Company to make estimates and assumptions about certain items and future events that directly affect the Company's reported financial condition. We have established detailed policies and control procedures to provide reasonable assurance that the methods used to make estimates and assumptions are well controlled and are applied consistently from period to period. The accounting estimates and assumptions discussed in this section are those that the Company considers to be the most critical to its financial statements. An accounting estimate is considered critical if both (a) the nature of the estimate or assumption is material due to the levels of subjectivity and judgment involved, and (b) the impact within a reasonable range of outcomes of the estimate and assumption is material to the Company's financial condition. Senior management has discussed the development, selection and disclosure of these estimates with the Audit Committee of the Company's Board of Directors. The Company's significant accounting policies, including recent accounting pronouncements, are described in Note 1 (Summary of Significant Accounting Policies) to the consolidated financial statements included in Part II, Item 8.

Revenue Recognition

Application of the various accounting principles in U.S. GAAP related to the measurement and recognition of revenue requires the Company to make judgments and estimates. Specifically, complex arrangements with nonstandard terms and conditions may require significant contract interpretation to determine the appropriate accounting. Domestic assessment revenue requires an estimate of our customers' performance in order to recognize this revenue. Rebates and incentives are recorded as a reduction to gross revenue based on these estimates. We consider various factors in estimating customer performance, including a review of specific transactions, historical experience with that customer and market and economic conditions. Differences between actual results and the Company's estimates are adjusted in the period the customer reports actual performance. If our customers' actual performance is not consistent with our estimates of their performance, net revenue may be materially different.

Loss Contingencies

The Company is currently involved in various claims and legal proceedings. The Company regularly reviews the status of each significant matter and assesses its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount can be reasonably estimated, the Company accrues a liability for the estimated loss. Significant judgment is required in both the determination of probability and whether an exposure is reasonably estimable. Our judgments are subjective based on the status of the legal or regulatory proceedings, the merits of our defenses and consultation with in-house and outside legal counsel. Because of uncertainties related to these matters, accruals are based only on the best information available at the time. As additional information becomes available, the Company reassesses the potential liability related to its pending claims and litigation and may revise its estimates. Due to the inherent uncertainties of the legal and regulatory process in the multiple jurisdictions in which we operate, our judgments may be materially different than the actual outcomes. See Note 18 (Legal and Regulatory Proceedings) to the consolidated financial statements included in Part II, Item 8 for further discussion.

Income Taxes

In calculating our effective income tax rate, we need to make estimates regarding the timing and amount of taxable and deductible items which will adjust the pretax income earned in various tax jurisdictions. Through our interpretation of local tax regulations, adjustments to pretax income for income earned in various tax jurisdictions are reflected within various tax filings. Although we believe that our estimates and judgments discussed herein are reasonable, actual results may be materially different than the estimated amounts.

We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. Significant judgment is required in determining the valuation allowance. We consider projected future taxable income and ongoing tax planning strategies in assessing the need for the valuation allowance. If it is determined that we are able to realize deferred tax assets in excess of the net carrying value or to the extent we are unable to realize a deferred tax asset, we would adjust the valuation allowance in the period in which such a determination is made, with a corresponding increase or decrease to earnings.

We record tax liabilities for uncertain tax positions taken, or expected to be taken, which may not be sustained or may only be partially sustained, upon examination by the relevant taxing authorities. We consider all relevant facts and current authorities in the tax law in assessing whether any benefit resulting from an uncertain tax position is more likely than not to be sustained and, if so, how current law impacts the amount reflected within these financial statements. If upon examination, we realize a tax benefit which is not fully sustained or is more favorably sustained, this would decrease or increase earnings in the period. In certain situations, the Company will have offsetting tax credits or taxes in other jurisdictions.

We do not record U.S. income tax expense for foreign earnings which we intend to reinvest indefinitely to expand our international operations. We consider business plans, planning opportunities, and expected future outcomes in assessing the needs for future expansion and support of our international operations. If our business plans change or our future outcomes differ from our expectations, U.S. income tax expense and our effective tax rate could increase or decrease in that period.

Valuation of Assets

The valuation of assets acquired in a business combination and asset impairment reviews require the use of significant estimates and assumptions. The acquisition method of accounting for business combinations requires the Company to estimate the fair value of assets acquired, liabilities assumed, and any non-controlling interest in the acquiree to properly allocate purchase price consideration. Impairment testing for assets, other than goodwill and indefinite-lived intangible assets, requires the allocation of cash flows to those assets or group of assets and if required, an estimate of fair value for the assets or group of assets.

We evaluate goodwill and indefinite-lived intangible assets for impairment on an annual basis or sooner if indicators of impairment exist. Goodwill is tested for impairment at the reporting unit level. The impairment evaluation utilizes a quantitative assessment using a two-step impairment test. The first step is to compare the reporting unit's carrying value, including goodwill, to the fair value. The Company uses its market capitalization for estimating the fair value of its reporting unit. If the fair value exceeds the carrying value, then no potential impairment is considered to exist. If the carrying value exceeds the fair value, the second step is performed to determine if the implied fair value of the reporting unit's goodwill exceeds the carrying value of the reporting unit. An impairment charge would be recorded if the carrying value exceeds the implied fair value.

The impairment test for indefinite-lived intangible assets consists of a qualitative assessment to evaluate all relevant events and circumstances that could affect the significant inputs used to determine the fair value of indefinite-lived intangible assets. In performing the qualitative assessment, we consider relevant events and conditions, including but not limited to, macroeconomic trends, industry and market conditions, overall financial performance, cost factors, company-specific events, and legal and regulatory factors. If the qualitative assessment indicates that it is more likely than not that the fair value of the indefinite-lived intangible asset is less than their carrying amounts, the Company must perform a quantitative impairment test.

The Company's estimates in the valuation of these assets are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable. These valuations require the use of management's assumptions, which would not reflect unanticipated events and circumstances that may occur.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk is the potential for economic losses to be incurred on market risk sensitive instruments arising from adverse changes in market factors such as interest rates, foreign currency exchange rates and equity price risk. Our exposure to market risk from changes in interest rates, foreign exchange rates and equity price risk is limited. Management establishes and oversees the implementation of policies governing our funding, investments and use of derivative financial instruments. We monitor risk exposures on an ongoing basis. The effect of a hypothetical 10% adverse change in foreign currency rates could result in a fair value loss of approximately $80 million on our foreign currency derivative contracts outstanding at December 31, 2016 related to the hedging program. A 100 basis point adverse change in interest rates would not have a material impact on the Company's investments at December 31, 2016 and 2015. In addition, there was no material equity price risk at December 31, 2016 or 2015.

Foreign Exchange Risk

Our settlement activities are subject to foreign exchange risk resulting from foreign exchange rate fluctuations. This risk is typically limited to the one business day between setting the foreign exchange rates and clearing the financial transactions. We enter into derivative contracts to manage risk associated with anticipated receipts and disbursements which are either transacted in a non-functional currency or valued based on a currency other than the functional currencies of the entity.

We may also enter into foreign currency derivative contracts to offset possible changes in value due to foreign exchange fluctuations of earnings, assets and liabilities denominated in currencies other than the functional currency of the entity. The objective of these activities is to reduce our exposure to transaction gains and losses resulting from fluctuations of foreign currencies against our functional and reporting currencies, principally the U.S. dollar and euro.

Foreign currency exposures are managed together through our foreign exchange risk management activities, which are discussed further in Note 20 (Foreign Exchange Risk Management) to the consolidated financial statements included in Part II, Item 8. The terms of the forward contracts are generally less than 18 months.

As of December 31, 2016, the majority of derivative contracts to hedge foreign currency fluctuations had been entered into with customers of Mastercard. Mastercard's derivative contracts are summarized below:

	December 31, 2016		December 31, 2015	
	Notional	Estimated Fair Value	Notional	Estimated Fair Value
	(in millions)			
Commitments to purchase foreign currency	$ 37	$ (2)	$ 232	$ 1
Commitments to sell foreign currency	777	18	1,430	12
Options to sell foreign currency	—	—	44	1

We also use foreign currency denominated debt to hedge a portion of our net investment in foreign operations against adverse movements in exchange rates, with changes in the value of the debt recorded within currency translation adjustment in accumulated other comprehensive income (loss). We have designated our euro-denominated debt as a net investment hedge for a portion of our net investment in European foreign operations. Our euro-denominated debt is vulnerable to changes in the euro to U.S. dollar exchange rates. The principal amounts of our euro-denominated debt as well as the effective interest rates and scheduled annual maturities of the principal is included in Note 12 (Debt) to the consolidated financial statements included in Part II, Item 8.

Interest Rate Risk

Our interest rate sensitive assets are our investments in fixed income securities, which we generally hold as available-for-sale investments. Our general policy is to invest in high quality securities, while providing adequate liquidity and maintaining diversification to avoid significant exposure. The fair value and maturity distribution of the Company's available-for-sale investments for fixed income securities as of December 31 was as follows:

			Maturity					
Financial Instrument	**Summary Terms**	**Fair Market Value at December 31, 2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022 and there-after**
				(in millions)				
Municipal securities	Fixed / Variable Interest	$ 59	$ 46	$ 10	$ 3	$ —	$ —	$ —
Government and agency securities	Fixed / Variable Interest	166	72	64	4	—	21	5
Corporate securities	Fixed / Variable Interest	855	317	220	180	119	19	—
Asset-backed securities	Fixed / Variable Interest	80	2	20	49	7	2	—
Total		$ 1,160	$ 437	$ 314	$ 236	$ 126	$ 42	$ 5

			Maturity					
Financial Instrument	**Summary Terms**	**Fair Market Value at December 31, 2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021 and there-after**
				(in millions)				
Municipal securities	Fixed / Variable Interest	$ 62	$ 48	$ 14	$ —	$ —	$ —	$ —
Government and agency securities	Fixed / Variable Interest	95	50	37	2	—	—	6
Corporate securities	Fixed / Variable Interest	645	210	308	123	3	—	1
Asset-backed securities	Fixed / Variable Interest	57	1	20	22	13	1	—
Total		$ 859	$ 309	$ 379	$ 147	$ 16	$ 1	$ 7

We also have time deposits that are classified as held-to-maturity securities. At December 31, 2016 and 2015, the cost which approximates fair value, of our short-term held-to-maturity securities was $452 million and $130 million, respectively. In addition, at December 31, 2016, the Company held $61 million of long-term held-to-maturity securities, which mature in 2018.

At December 31, 2016, we have U.S. dollar-denominated and euro-denominated debt, which is subject to interest rate risk. The principal amounts of this debt as well as the effective interest rates and scheduled annual maturities of the principal is included in Note 12 (Debt) to the consolidated financial statements included in Part II, Item 8. See "Future Obligations" for estimated interest payments due by period relating to the U.S. dollar-denominated and euro-denominated debt.

At December 31, 2016, we have the Commercial Paper Program and the Credit Facility which provide liquidity for general corporate purposes, including providing liquidity in the event of one or more settlement failures by our customers. Borrowing rates under the Commercial Paper Program are based on market conditions. Borrowings rates under the Credit Facility are variable rates, which are applied to the borrowing based on terms and conditions set forth in the agreement. See Note 12 (Debt) to the consolidated financial statements in Part II, Item 8 for additional information on the Credit Facility and the Commercial Paper Program. We had no borrowings under the Commercial Paper Program or the Credit Facility at December 31, 2016 and 2015.

Equity Price Risk

The Company did not have significant equity price risk as of December 31, 2016 and 2015.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

MASTERCARD INCORPORATED

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Mastercard Incorporated ("Mastercard") is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with accounting principles generally accepted in the United States of America. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. As required by Section 404 of the Sarbanes-Oxley Act of 2002, management has assessed the effectiveness of Mastercard's internal control over financial reporting as of December 31, 2016. In making its assessment, management has utilized the criteria set forth in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Management has concluded that, based on its assessment, Mastercard's internal control over financial reporting was effective as of December 31, 2016. The effectiveness of Mastercard's internal control over financial reporting as of December 31, 2016 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears on the next page.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders
of Mastercard Incorporated:

In our opinion, the accompanying consolidated balance sheet and the related consolidated statements of operations, of comprehensive income, of changes in equity and of cash flows present fairly, in all material respects, the financial position of Mastercard Incorporated and its subsidiaries at December 31, 2016 and December 31, 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on these financial statements, and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP

New York, New York
February 15, 2017

MASTERCARD INCORPORATED

CONSOLIDATED BALANCE SHEET

	December 31, 2016	December 31, 2015
	(in millions, except per share data)	
ASSETS		
Cash and cash equivalents	$ 6,721	$ 5,747
Restricted cash for litigation settlement	543	541
Investments	1,614	991
Accounts receivable	1,416	1,079
Settlement due from customers	1,093	1,068
Restricted security deposits held for customers	991	895
Prepaid expenses and other current assets	850	663
Total Current Assets	13,228	10,984
Property, plant and equipment, net	733	675
Deferred income taxes	307	317
Goodwill	1,756	1,891
Other intangible assets, net	722	803
Other assets	1,929	1,580
Total Assets	$ 18,675	$ 16,250
LIABILITIES AND EQUITY		
Accounts payable	$ 609	$ 472
Settlement due to customers	946	866
Restricted security deposits held for customers	991	895
Accrued litigation	722	709
Accrued expenses	3,318	2,763
Other current liabilities	620	564
Total Current Liabilities	7,206	6,269
Long-term debt	5,180	3,268
Deferred income taxes	81	79
Other liabilities	524	572
Total Liabilities	12,991	10,188
Commitments and Contingencies		
Stockholders' Equity		
Class A common stock, $0.0001 par value; authorized 3,000 shares, 1,374 and 1,370 shares issued and 1,062 and 1,095 outstanding, respectively	—	—
Class B common stock, $0.0001 par value; authorized 1,200 shares, 19 and 21 issued and outstanding, respectively	—	—
Additional paid-in-capital	4,183	4,004
Class A treasury stock, at cost, 312 and 275 shares, respectively	(17,021)	(13,522)
Retained earnings	19,418	16,222
Accumulated other comprehensive income (loss)	(924)	(676)
Total Stockholders' Equity	5,656	6,028
Non-controlling interests	28	34
Total Equity	5,684	6,062
Total Liabilities and Equity	$ 18,675	$ 16,250

The accompanying notes are an integral part of these consolidated financial statements.

MASTERCARD INCORPORATED

CONSOLIDATED STATEMENT OF OPERATIONS

	For the Years Ended December 31,		
	2016	2015	2014
	(in millions, except per share data)		
Net Revenue	$ 10,776	$ 9,667	$ 9,441
Operating Expenses			
General and administrative	3,714	3,341	3,152
Advertising and marketing	811	821	862
Depreciation and amortization	373	366	321
Provision for litigation settlements	117	61	—
Total operating expenses	5,015	4,589	4,335
Operating income	5,761	5,078	5,106
Other Income (Expense)			
Investment income	43	25	28
Interest expense	(95)	(61)	(48)
Other income (expense), net	(63)	(84)	(7)
Total other income (expense)	(115)	(120)	(27)
Income before income taxes	5,646	4,958	5,079
Income tax expense	1,587	1,150	1,462
Net Income	$ 4,059	$ 3,808	$ 3,617
Basic Earnings per Share	$ 3.70	$ 3.36	$ 3.11
Basic Weighted-Average Shares Outstanding	1,098	1,134	1,165
Diluted Earnings per Share	$ 3.69	$ 3.35	$ 3.10
Diluted Weighted-Average Shares Outstanding	1,101	1,137	1,169

The accompanying notes are an integral part of these consolidated financial statements.

MASTERCARD INCORPORATED

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

	For the Years Ended December 31,		
	2016	2015	2014
		(in millions)	
Net Income	$ 4,059	$ 3,808	$ 3,617
Other comprehensive income (loss):			
Foreign currency translation adjustments	(275)	(460)	(436)
Income tax effect	(11)	27	—
Foreign currency translation adjustments, net of income tax effect	(286)	(433)	(436)
Translation adjustments on net investment hedge	60	(40)	—
Income tax effect	(22)	14	—
Translation adjustments on net investment hedge, net of income tax effect	38	(26)	—
Defined benefit pension and other postretirement plans	(1)	(19)	(3)
Income tax effect	—	7	2
Defined benefit pension and other postretirement plans, net of income tax effect	(1)	(12)	(1)
Reclassification adjustment for defined benefit pension and other postretirement plans	(1)	80	7
Income tax effect	—	(29)	(3)
Reclassification adjustment for defined benefit pension and other postretirement plans, net of income tax effect	(1)	51	4
Investment securities available-for-sale	3	(11)	(5)
Income tax effect	(1)	—	1
Investment securities available-for-sale, net of income tax effect	2	(11)	(4)
Reclassification adjustment for investment securities available-for-sale	—	15	(1)
Income tax effect	—	—	—
Reclassification adjustment for investment securities available-for-sale, net of income tax effect	—	15	(1)
Other comprehensive income (loss), net of income tax effect	(248)	(416)	(438)
Comprehensive Income	$ 3,811	$ 3,392	$ 3,179

The accompanying notes are an integral part of these consolidated financial statements.

MASTERCARD INCORPORATED
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

	Total	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Common Stock		Additional Paid-In Capital	Class A Treasury Stock	Non-Controlling Interests
				Class A	Class B			
	(in millions, except per share data)							
Balance at December 31, 2013 . . .	$ 7,495	$ 10,121	$ 178	$ —	$ —	$ 3,762	$ (6,577)	$ 11
Net income.	3,617	3,617	—	—	—	—	—	—
Activity related to non-controlling interests.	23	—	—	—	—	—	—	23
Other comprehensive income (loss), net of tax	(438)	—	(438)	—	—	—	—	—
Cash dividends declared on Class A and Class B common stock, $0.49 per share	(569)	(569)	—	—	—	—	—	—
Purchases of treasury stock . . .	(3,424)	—	—	—	—	—	(3,424)	—
Share-based payments	120	—	—	—	—	114	6	—
Conversion of Class B to Class A common stock	—	—	—	—	—	—	—	—
Balance at December 31, 2014 . . .	6,824	13,169	(260)	—	—	3,876	(9,995)	34
Net income.	3,808	3,808	—	—	—	—	—	—
Activity related to non-controlling interests.	—	—	—	—	—	—	—	—
Other comprehensive income (loss), net of tax	(416)	—	(416)	—	—	—	—	—
Cash dividends declared on Class A and Class B common stock, $0.67 per share	(755)	(755)	—	—	—	—	—	—
Purchases of treasury stock . . .	(3,532)	—	—	—	—	—	(3,532)	—
Share-based payments	133	—	—	—	—	128	5	—
Conversion of Class B to Class A common stock	—	—	—	—	—	—	—	—
Balance at December 31, 2015 . . .	6,062	16,222	(676)	—	—	4,004	(13,522)	34
Net income.	4,059	4,059	—	—	—	—	—	—
Activity related to non-controlling interests.	(6)	—	—	—	—	—	—	(6)
Other comprehensive income (loss), net of tax	(248)	—	(248)	—	—	—	—	—
Cash dividends declared on Class A and Class B common stock, $0.79 per share	(863)	(863)	—	—	—	—	—	—
Purchases of treasury stock . . .	(3,503)	—	—	—	—	—	(3,503)	—
Share-based payments	183	—	—	—	—	179	4	—
Conversion of Class B to Class A common stock	—	—	—	—	—	—	—	—
Balance at December 31, 2016 . . .	$ 5,684	$ 19,418	$ (924)	$ —	$ —	$ 4,183	$(17,021)	$ 28

The accompanying notes are an integral part of these consolidated financial statements.

MASTERCARD INCORPORATED

CONSOLIDATED STATEMENT OF CASH FLOWS

	For the Years Ended December 31,		
	2016	2015	2014
		(in millions)	
Operating Activities			
Net income	$ 4,059	$ 3,808	$ 3,617
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization of customer and merchant incentives	860	764	691
Depreciation and amortization	373	366	321
Share-based payments	50	22	(15)
Deferred income taxes	(20)	(16)	(91)
Other	29	(81)	52
Changes in operating assets and liabilities:			
Accounts receivable	(338)	(35)	(164)
Income taxes receivable	(1)	(14)	(8)
Settlement due from customers	(10)	(98)	185
Prepaid expenses	(1,073)	(802)	(1,316)
Accrued litigation and legal settlements	17	(63)	(115)
Accounts payable	145	49	61
Settlement due to customers	66	(186)	(165)
Accrued expenses	520	325	389
Net change in other assets and liabilities	(193)	4	(35)
Net cash provided by operating activities	4,484	4,043	3,407
Investing Activities			
Purchases of investment securities available-for-sale	(957)	(974)	(2,385)
Purchases of investments held-to-maturity	(867)	(918)	—
Proceeds from sales of investment securities available-for-sale.	277	703	2,477
Proceeds from maturities of investment securities available-for-sale	339	542	1,358
Proceeds from maturities of investments held-to-maturity	456	857	—
Purchases of property, plant and equipment	(215)	(177)	(175)
Capitalized software	(167)	(165)	(159)
Acquisition of businesses, net of cash acquired	—	(584)	(525)
(Increase) decrease in restricted cash for litigation settlement	(2)	(1)	183
Other investing activities	(31)	2	(84)
Net cash (used in) provided by investing activities	(1,167)	(715)	690
Financing Activities			
Purchases of treasury stock	(3,511)	(3,518)	(3,386)
Proceeds from debt	1,972	1,735	1,530
Dividends paid	(837)	(727)	(515)
Tax benefit for share-based payments	48	42	54
Cash proceeds from exercise of stock options	37	27	28
Other financing activities	(2)	(17)	(50)
Net cash used in financing activities	(2,293)	(2,458)	(2,339)
Effect of exchange rate changes on cash and cash equivalents	(50)	(260)	(220)
Net increase in cash and cash equivalents	974	610	1,538
Cash and cash equivalents - beginning of period	5,747	5,137	3,599
Cash and cash equivalents - end of period	$ 6,721	$ 5,747	$ 5,137

The accompanying notes are an integral part of these consolidated financial statements.

Note 1. *Summary of Significant Accounting Policies*

Organization

Mastercard Incorporated and its consolidated subsidiaries, including Mastercard International Incorporated ("Mastercard International" and together with Mastercard Incorporated, "Mastercard" or the "Company"), is a technology company in the global payments industry that connects consumers, financial institutions, merchants, governments and businesses worldwide, enabling them to use electronic forms of payment instead of cash and checks. The Company facilitates the switching (authorization, clearing and settlement) of payment transactions, and delivers related products and services. The Company makes payments easier and more efficient by creating a wide range of payment solutions and services through a family of well-known brands, including Mastercard®, Maestro® and Cirrus®. The Company also provides value-added offerings such as safety and security products, information services and consulting, issuer and acquirer processing, and loyalty and reward programs. The Company's network is designed to ensure safety and security for the global payments system. A typical transaction on the Company's network involves four participants in addition to the Company: cardholder (an individual who holds a card or uses another device enabled for payment), merchant, issuer (the cardholder's financial institution) and acquirer (the merchant's financial institution). The Company's customers encompass a vast array of entities, including financial institutions and other entities that act as "issuers" and "acquirers", as well as merchants, governments and other businesses. The Company does not issue cards, extend credit, determine or receive revenue from interest rates or other fees charged to cardholders by issuers, or establish the rates charged by acquirers in connection with merchants' acceptance of the Company's branded cards.

Significant Accounting Policies

Consolidation and basis of presentation - The consolidated financial statements include the accounts of Mastercard and its majority-owned and controlled entities, including any variable interest entities ("VIEs") for which the Company is the primary beneficiary. Investments in VIEs for which the Company is not considered the primary beneficiary are not consolidated and are accounted for as equity method or cost method investments and recorded in other assets on the consolidated balance sheet. At December 31, 2016 and 2015, there were no significant VIEs which required consolidation and the investments were not considered material to the consolidated financial statements. Intercompany transactions and balances have been eliminated in consolidation. Certain prior period amounts have been reclassified to conform to the 2016 presentation. The Company follows accounting principles generally accepted in the United States of America ("GAAP").

Non-controlling interests represent the equity interest not owned by the Company and are recorded for consolidated entities in which the Company owns less than 100% of the interests. Changes in a parent's ownership interest while the parent retains its controlling interest are accounted for as equity transactions, and upon loss of control, retained ownership interests are remeasured at fair value, with any gain or loss recognized in earnings. For 2016, 2015 and 2014, income from non-controlling interests was de minimis and, as a result, amounts are included in the consolidated statement of operations within other income (expense).

The Company accounts for investments in common stock or in-substance common stock under the equity method of accounting when it has the ability to exercise significant influence over the investee, generally when it holds between 20% and 50% ownership in the entity. In addition, investments in flow-through entities such as limited partnerships and limited liability companies are also accounted for under the equity method when the Company has the ability to exercise significant influence over the investee, generally when the investment ownership percentage is equal to or greater than 5% of the outstanding ownership interest. The excess of the cost over the underlying net equity of investments accounted for under the equity method is allocated to identifiable tangible and intangible assets and liabilities based on fair values at the date of acquisition. The amortization of the excess of the cost over the underlying net equity of investments and Mastercard's share of net earnings or losses of entities accounted for under the equity method of accounting is included in other income (expense) on the consolidated statement of operations.

The Company accounts for investments in common stock or in-substance common stock under the cost method of accounting when it does not exercise significant influence, generally when it holds less than 20% ownership in the entity or when the interest in a limited partnership or limited liability company is less than 5% and the Company has no significant influence over the operation of the investee. Investments in companies that Mastercard does not control, but that are not in the form of common stock or in-substance common stock, are also accounted for under the cost method of accounting. Investments for which the equity method or cost method of accounting is used are recorded in other assets on the consolidated balance sheet.

Use of estimates - The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting periods. Future events and their effects cannot be predicted with certainty; accordingly, accounting estimates require the exercise of judgment. The accounting estimates used in the preparation of the Company's consolidated financial statements may change as new events occur, as more experience is acquired, as additional information is obtained and as the Company's operating environment changes. Actual results may differ from these estimates.

Revenue recognition - Revenue is recognized when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable, and collectibility is reasonably assured. Revenue is generally derived from transactional information accumulated by our systems or reported by our customers. The Company's revenue is based on the volume of activity on cards that carry the Company's brands, the number of transactions processed or the nature of other payment-related products and services.

Volume-based revenue (domestic assessments and cross-border volume fees) is recorded as revenue in the period it is earned, which is when the related volume is generated on the cards. Certain volume-based revenue is based upon information reported to us by our customers. Transaction-based revenue is primarily based on the number and type of transactions and is recognized as revenue in the same period as the related transactions occur. Other payment-related products and services are recognized as revenue in the same period as the related transactions occur or services are rendered.

Mastercard has business agreements with certain customers that provide for rebates or other support when the customers meet certain volume hurdles as well as other support incentives such as marketing, which are tied to performance. Rebates and incentives are recorded as a reduction of revenue either when the revenue is recognized by the Company or at the time the rebate or incentive is earned by the customer. Rebates and incentives are calculated based upon estimated performance and the terms of the related business agreements. In addition, Mastercard may make payments to a customer directly related to entering into an agreement, which are generally deferred and amortized over the life of the agreement on a straight-line basis.

Business combinations - The Company accounts for business combinations under the acquisition method of accounting. The Company measures the tangible and intangible identifiable assets acquired, liabilities assumed, and any non-controlling interest in the acquiree, at their fair values at the acquisition date. Acquisition-related costs are expensed as incurred and are included in general and administrative expenses. Any excess of purchase price over the fair value of net assets acquired, including identifiable intangible assets, is recorded as goodwill.

Goodwill and other intangible assets - Indefinite-lived intangible assets consist of goodwill and customer relationships. Finite-lived intangible assets consist of capitalized software costs, trademarks, tradenames, customer relationships and other intangible assets. Intangible assets with finite useful lives are amortized over their estimated useful lives, on a straight-line basis, which range from one to twenty years. Capitalized software includes internal and external costs incurred directly related to the design, development and testing phases of each capitalized software project.

Impairment of assets - Goodwill and indefinite-lived intangible assets are not amortized and are tested annually for impairment in the fourth quarter, or sooner when circumstances indicate an impairment may exist. Goodwill is tested for impairment at the reporting unit level. The impairment evaluation utilizes a quantitative assessment using a two-step impairment test. The first step is to compare the reporting unit's carrying value, including goodwill, to the fair value. If the fair value exceeds the carrying value, then no potential impairment is considered to exist. If the carrying value exceeds the fair value, the second step is performed to determine if the implied fair value of the reporting unit's goodwill exceeds the carrying value of the reporting unit. An impairment charge would be recorded if the carrying value exceeds the implied fair value. Impairment charges, if any, are recorded in general and administrative expenses.

The impairment test for indefinite-lived intangible assets consists of a qualitative assessment to evaluate relevant events and circumstances that could affect the significant inputs used to determine the fair value of indefinite-lived intangible assets. If the qualitative assessment indicates that it is more likely than not that indefinite-lived intangible assets are impaired, then a quantitative assessment is required.

Long-lived assets, other than goodwill and indefinite-lived intangible assets, are tested for impairment whenever events or circumstances indicate that their carrying amount may not be recoverable. If the carrying value of the asset cannot be recovered from estimated future cash flows, undiscounted and without interest, the fair value of the asset is calculated using the present value of estimated net future cash flows. If the carrying amount of the asset exceeds its fair value, an impairment is recorded.

Litigation - The Company is a party to certain legal and regulatory proceedings with respect to a variety of matters. The Company evaluates the likelihood of an unfavorable outcome of all legal or regulatory proceedings to which it is a party and accrues a loss contingency when the loss is probable and reasonably estimable. These judgments are subjective based on the status of the legal or regulatory proceedings, the merits of its defenses and consultation with in-house and external legal counsel. Legal costs are expensed as incurred and recorded in general and administrative expenses.

Settlement and other risk management - Mastercard's rules guarantee the settlement of many of the Mastercard, Cirrus and Maestro-branded transactions between its issuers and acquirers. Settlement exposure is the outstanding settlement risk to customers under Mastercard's rules due to the difference in timing between the payment transaction date and subsequent settlement. While the term and amount of the guarantee are unlimited, the duration of settlement exposure is short term and typically limited to a few days. In the event that Mastercard effects a payment on behalf of a failed customer, Mastercard may seek an assignment of the underlying receivables of the failed customer. Customers may be charged for the amount of any settlement loss incurred during the ordinary course activities of the Company.

The Company also enters into agreements in the ordinary course of business under which the Company agrees to indemnify third parties against damages, losses and expenses incurred in connection with legal and other proceedings arising from relationships or transactions with the Company. As the extent of the Company's obligations under these agreements depends entirely upon the occurrence of future events, the Company's potential future liability under these agreements is not determinable.

The Company accounts for each of its guarantees by recording the guarantee at its fair value at the inception or modification date through earnings.

Income taxes - The Company follows an asset and liability based approach in accounting for income taxes as required under GAAP. Deferred income tax assets and liabilities are recorded to reflect the tax consequences on future years of temporary differences between the financial statement carrying amounts and income tax bases of assets and liabilities. Deferred income taxes are displayed as separate line items on the consolidated balance sheet. In 2015, the Company early adopted accounting guidance issued by the Financial Accounting Standards Board ("FASB"), which requires all deferred income taxes to be recorded as non-current. Valuation allowances are provided against assets which are not more likely than not to be realized. The Company recognizes all material tax positions, including uncertain tax positions in which it is more likely than not that the position will be sustained based on its technical merits and if challenged by the relevant taxing authorities. At each balance sheet date, unresolved uncertain tax positions are reassessed to determine whether subsequent developments require a change in the amount of recognized tax benefit. The allowance for uncertain tax positions is recorded in other current and noncurrent liabilities on the consolidated balance sheet.

The Company records interest expense related to income tax matters as interest expense in its statement of operations. The Company includes penalties related to income tax matters in the income tax provision. The Company does not provide for U.S. federal income tax and foreign withholding taxes on undistributed earnings from non-U.S. subsidiaries when such earnings are intended to be reinvested indefinitely outside of the U.S.

Cash and cash equivalents - Cash and cash equivalents include certain investments with daily liquidity and with a maturity of three months or less from the date of purchase. Cash equivalents are recorded at cost, which approximates fair value.

Restricted cash - The Company classifies cash and cash equivalents as restricted when the cash is unavailable for withdrawal or usage for general operations. Restrictions may include legally restricted deposits, contracts entered into with others, or the Company's statements of intention with regard to particular deposits.

Fair value - The Company measures certain financial assets and liabilities at fair value on a recurring basis by estimating the price that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between market participants. The Company classifies these recurring fair value measurements into a three-level hierarchy ("Valuation Hierarchy").

The Valuation Hierarchy is based upon the transparency of inputs to the valuation of an asset or liability as of the measurement date. A financial instrument's categorization within the Valuation Hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The three levels of the Valuation Hierarchy are as follows:

- Level 1 - inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2 - inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in inactive markets and inputs that are observable for the asset or liability.
- Level 3 - inputs to the valuation methodology are unobservable and cannot be directly corroborated by observable market data.

Certain assets are measured at fair value on a nonrecurring basis. The Company's assets measured at fair value on a nonrecurring basis include property, plant and equipment, nonmarketable equity investments, goodwill and other intangible assets. These assets are subject to fair value adjustments in certain circumstances, such as when there is evidence of impairment.

The valuation methods for goodwill and other intangible assets acquired in business combinations involve assumptions concerning comparable company multiples, discount rates, growth projections and other assumptions of future business conditions. The Company uses discounted cash flows for estimating the fair value of its intangible assets and the Company's market capitalization for estimating the fair value of its reporting unit. As the assumptions employed to measure these assets are based on management's judgment using internal and external data, these fair value determinations are classified in Level 3 of the Valuation Hierarchy.

Investment securities - The Company classifies investments in debt and equity securities as available-for-sale. Available-for-sale securities that are available to meet the Company's current operational needs are classified as current assets. Available-for-sale securities that are not available to meet the Company's current operational needs are classified as non-current assets.

The investments in debt and equity securities are carried at fair value, with unrealized gains and losses, net of applicable taxes, recorded as a separate component of accumulated other comprehensive income (loss) on the consolidated statement of comprehensive income. Net realized gains and losses on debt and equity securities are recognized in investment income on the consolidated statement of operations. The specific identification method is used to determine realized gains and losses.

The Company evaluates its debt and equity securities for other-than-temporary impairment on an ongoing basis. When there has been a decline in fair value of a debt or equity security below the amortized cost basis, the Company recognizes an other-than-temporary impairment if: (1) it has the intent to sell the security; (2) it is more likely than not that it will be required to sell the security before recovery of the amortized cost basis; or (3) it does not expect to recover the entire amortized cost basis of the security. The credit loss component of the impairment would be recognized in other income (expense), net while the non-credit loss would remain in accumulated other comprehensive income (loss).

The Company classifies time deposits with maturities greater than 3 months as held-to-maturity. Held-to-maturity securities that mature within one year are classified as current assets while held-to-maturity securities with maturities of greater than one year are classified as non-current assets. Time deposits are carried at amortized cost on the consolidated balance sheet and are intended to be held until maturity.

Derivative financial instruments - The Company records all derivatives at fair value. The Company's foreign exchange forward and option contracts are included in Level 2 of the Valuation Hierarchy as the fair value of these contracts are based on inputs, which are observable based on broker quotes for the same or similar instruments. Changes in the fair value of derivative instruments are reported in current-period earnings. The Company's derivative contracts hedge foreign exchange risk and are not entered into for trading or speculative purposes. The Company did not have any derivative contracts accounted for under hedge accounting as of December 31, 2016 and 2015.

The Company has numerous investments in its foreign subsidiaries. The net assets of these subsidiaries are exposed to volatility in foreign currency exchange rates. The Company uses foreign currency denominated debt to hedge a portion of its net investment in foreign operations against adverse movements in exchange rates. The effective portion of the foreign currency gains and losses related to the foreign currency denominated debt are reported in accumulated other comprehensive income (loss) as part of the cumulative translation adjustment component of equity. The ineffective portion, if any, is recognized in earnings in the current period. The Company evaluates the effectiveness of the net investment hedge each quarter.

Settlement due from/due to customers - The Company operates systems for clearing and settling payment transactions among Mastercard customers. Net settlements are generally cleared daily among customers through settlement cash accounts by wire transfer or other bank clearing means. However, some transactions may not settle until subsequent business days, resulting in amounts due from and due to Mastercard customers.

Restricted security deposits held for Mastercard customers - Mastercard requires collateral from certain customers for settlement of their transactions. The majority of collateral for settlement is in the form of standby letters of credit and bank guarantees which are not recorded on the consolidated balance sheet. Additionally, Mastercard holds cash deposits and certificates of deposit from certain customers of Mastercard as collateral for settlement of their transactions, which are recorded as assets on the consolidated balance sheet. These assets are fully offset by corresponding liabilities included on the consolidated balance sheet.

Property, plant and equipment - Property, plant and equipment are stated at cost less accumulated depreciation and amortization. Depreciation and amortization is computed using the straight-line method over the estimated useful lives of the assets. Depreciation of leasehold improvements and amortization of capital leases is included in depreciation and amortization expense.

The useful lives of the Company's assets are as follows:

Asset Category	Estimated Useful Life
Buildings	30 years
Building equipment	10 - 15 years
Furniture and fixtures and equipment	2 - 5 years
Leasehold improvements	Shorter of life of improvement or lease term
Capital leases	Shorter of life of the asset or lease term

Leases - The Company enters into operating and capital leases for the use of premises and equipment. Rent expense related to lease agreements that contain lease incentives is recorded on a straight-line basis over the term of the lease.

Pension and other postretirement plans - The Company recognizes the funded status of its single-employer defined benefit pension plans or postretirement plans as assets or liabilities on its consolidated balance sheet and recognizes changes in the funded status in the year in which the changes occur through accumulated other comprehensive income (loss). The funded status is measured as the difference between the fair value of plan assets and the benefit obligation at December 31, the measurement date. The fair value of plan assets represents the current market value of the pension assets. Overfunded plans are aggregated and recorded in long-term other assets, while underfunded plans are aggregated and recorded as accrued expenses and long-term other liabilities.

Net periodic pension and postretirement benefit cost/(income) is recognized in general and administrative expenses in the consolidated statement of operations. These costs include service costs, interest cost, expected return on plan assets, amortization of prior service costs or credits and gains or losses previously recognized as a component of accumulated other comprehensive income (loss).

Defined contribution plans - The Company's contributions to defined contribution plans are recorded when employees render service to the Company. The charge is recorded in general and administrative expenses in the consolidated statement of operations.

Advertising and marketing - The cost of media advertising is expensed when the advertising takes place. Advertising production costs are expensed as incurred. Promotional items are expensed at the time the promotional event occurs. Sponsorship costs are recognized over the period of benefit.

Foreign currency remeasurement and translation - Monetary assets and liabilities are remeasured to functional currencies using current exchange rates in effect at the balance sheet date. Non-monetary assets and liabilities are recorded at historical exchange rates. Revenue and expense accounts are remeasured at the weighted-average exchange rate for the period. Resulting exchange gains and losses related to remeasurement are included in general and administrative expenses on the consolidated statement of operations.

Where a non-U.S. currency is the functional currency, translation from that functional currency to U.S. dollars is performed for balance sheet accounts using current exchange rates in effect at the balance sheet date and for revenue and expense accounts using a weighted-average exchange rate for the period. Resulting translation adjustments are reported as a component of accumulated other comprehensive income (loss).

Treasury stock - The Company records the repurchase of shares of its common stock at cost on the trade date of the transaction. These shares are considered treasury stock, which is a reduction to stockholders' equity. Treasury stock is included in authorized and issued shares but excluded from outstanding shares.

Share-based payments - The Company measures share-based compensation expense at the grant date, based on the estimated fair value of the award and uses the straight-line method of attribution, net of estimated forfeitures, for expensing awards over the requisite employee service period. The Company estimates the fair value of its non-qualified stock option awards ("Options") using a Black-Scholes valuation model. The fair value of restricted stock units ("RSUs") is determined and fixed on the grant date based on the Company's stock price, adjusted for the exclusion of dividend equivalents. The Monte Carlo simulation valuation model is used to determine the grant date fair value of performance stock units ("PSUs") granted. All share-based compensation expenses are recorded in general and administrative expenses.

Earnings per share - The Company calculates basic earnings per share ("EPS") by dividing net income by the weighted-average number of common shares outstanding during the year. Diluted EPS is calculated by dividing net income by the weighted-average number of common shares outstanding during the year, adjusted for the potentially dilutive effect of stock options and unvested stock units using the treasury stock method.

Recent accounting pronouncements

Goodwill impairment - In January 2017, the FASB issued accounting guidance to simplify how companies are required to test goodwill for impairment. Under this new guidance, step 2 of the goodwill impairment test has been eliminated. Step 2 of the goodwill impairment test required companies to determine the implied fair value of the reporting unit's goodwill. Under this new guidance, companies will perform their annual, or interim, goodwill impairment test by comparing the reporting unit's carrying value, including goodwill, to the fair value. An impairment charge would be recorded if the carrying value exceeds the reporting unit's fair value. The guidance is required to be applied prospectively and is effective for periods beginning after December 15, 2020, with early adoption permitted. The Company expects to early adopt this accounting guidance effective January 1, 2017. The Company does not expect any impact from the adoption of the new accounting guidance on its consolidated financial statements.

Restricted cash - In December 2016, the FASB issued accounting guidance to address diversity in the classification and presentation of changes in restricted cash on the statement of cash flows. Under this guidance, companies will be required to present restricted cash and restricted cash equivalents with cash and cash equivalents when reconciling the beginning-of-period and end-of-period amounts shown on the statement of cash flows. The guidance is required to be applied retrospectively and is effective for periods beginning after December 15, 2017, with early adoption permitted. The Company expects to adopt this accounting guidance effective January 1, 2018. Upon adoption of this standard, the Company will include restricted cash, which currently consists of restricted cash for litigation settlement and restricted security deposits held for customers in its reconciliation of beginning-of-period and end-of-period cash and cash equivalents on the statement of cash flows.

Intra-entity asset transfers - In October 2016, the FASB issued accounting guidance to simplify the accounting for income tax consequences of intra-entity transfers of assets other than inventory. Under this guidance, companies will be required to recognize the income tax consequences of an intra-entity asset transfer when the transfer occurs. The guidance must be applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the period of adoption. The guidance is effective for periods beginning after December 15, 2017 and early adoption is permitted. The Company expects to adopt this accounting guidance effective January 1, 2018. The Company is in the process of evaluating the impacts this guidance will have on its consolidated financial statements. However, the Company expects that it will recognize a cumulative-effect adjustment to retained earnings upon adoption of the new guidance related to any deferred income tax consequence from intra-entity asset transfers occurring before the date of adoption. See Note 17 (Income Taxes) for additional information related to intra-entity asset transfers that will be impacted by this guidance.

Share-based payments - In March 2016, the FASB issued accounting guidance related to share-based payments to employees. Under this guidance, companies will be required to recognize the tax effects of exercised or vested awards within the income statement, in the period in which they occur, rather than within additional paid-in-capital. In addition, the guidance changes the limit that companies are allowed to withhold for employees without triggering liability accounting and allows companies to make a policy election to either recognize forfeitures as they occur or estimate them. The guidance is effective for periods beginning after December 15, 2016 and early adoption is permitted. The required transition methods for each aspect of the guidance vary between prospective, retrospective and modified retrospective. The Company will adopt the accounting guidance effective January 1, 2017 and the impact on the tax provision during the period will be dependent upon several factors including, the amount and grant value of equity awards that either vest or are exercised, in addition to, Mastercard's share price on those dates. The requirement to recognize the tax effects of exercised or vested awards in the income statement, rather than within additional paid-in-capital, will be adopted prospectively. If this aspect of the new guidance had been in effect for each of the periods presented, the Company's tax provision in 2016, 2015 and 2014 would have been adjusted for a tax benefit of $48 million, $42 million and $54 million, respectively, in its income statement. The Company is in the process of evaluating the other potential effects this guidance will have on its consolidated financial statements.

Leases - In February 2016, the FASB issued accounting guidance that will change how companies account for and present lease arrangements. The guidance requires companies to recognize leased assets and liabilities for both capital and operating leases. The guidance is effective for periods after December 15, 2018 and early adoption is permitted. Companies are required to adopt the guidance using a modified retrospective method. The Company is in the process of evaluating the potential effects this guidance will have on its consolidated financial statements.

Debt issuance costs - In April 2015, the FASB issued accounting guidance that changed the current presentation of debt issuance costs on the consolidated balance sheet. This guidance moved debt issuance costs from the assets section of the consolidated balance sheet to the liabilities section as a direct deduction from the carrying amount of the debt issued. The Company adopted the accounting guidance effective January 1, 2016. The Company applied the guidance retrospectively and, as such, the December 31, 2015 consolidated balance sheet was adjusted to reflect the effects of the standard. This retrospective adjustment resulted in reductions of prepaid expenses and other current assets, other assets and long-term debt by $1 million, $18 million and $19 million, respectively. As of December 31, 2016, $33 million of debt issuance costs were classified as an offset to long-term debt.

Revenue recognition - In May 2014, the FASB issued accounting guidance that provides a single, comprehensive revenue recognition model for all contracts with customers and supersedes most of the existing revenue recognition requirements. Under this guidance, an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued accounting guidance that delayed the effective date of this standard by one year, making the guidance effective for fiscal years beginning after December 15, 2017. The new revenue guidance will impact the timing of recognition for certain of the Company's customer incentives. Under the new guidance, the Company will recognize certain customer incentives over the life of the contract as revenue is recognized versus as they are earned by the customer. The Company will adopt the new accounting guidance effective January 1, 2018. The accounting guidance permits either a full retrospective or a modified retrospective transition method. The Company expects to adopt the new guidance with the modified retrospective transition method. The Company is in the process of quantifying the potential effects this guidance will have on its consolidated financial statements.

Note 2. *Acquisitions*

On July 21, 2016, Mastercard entered into a definitive agreement to acquire a 92.4% controlling interest in VocaLink Holdings Limited ("VocaLink") for approximately £700 million (approximately $860 million as of December 31, 2016) after adjusting for cash and certain other estimated liabilities. VocaLink's existing shareholders have the potential for an earn-out of up to an additional £169 million (approximately $210 million as of December 31, 2016) if certain performance targets are met. Under the agreement, a majority of VocaLink's shareholders will retain 7.6% ownership for at least three years. VocaLink operates payments clearing systems and ATM switching platforms in the U.K., as well as several other regions. While the Company anticipates completing the transaction by the middle of 2017, it is subject to regulatory approval and other customary closing conditions.

In 2015, the Company acquired two businesses for $609 million in cash. For these acquisitions, the Company recorded $481 million as goodwill representing the aggregate excess of the purchase consideration over the fair value of the net assets acquired. In 2014, the Company acquired eight businesses, two of which were achieved in stages, with non-controlling interests acquired in previous years. One of the business combinations was a transaction for less than 100 percent of the equity interest. The total consideration transferred was $575 million, of which $509 million was recorded as goodwill.

A portion of the goodwill related to the 2015 and 2014 acquisitions is expected to be deductible for local tax purposes. The consolidated financial statements include the operating results of the acquired businesses from the dates of their respective acquisition. Pro forma information related to the acquisitions was not included because the impact on the Company's consolidated results of operations was not considered to be material.

Note 3. ***Earnings Per Share***

The components of basic and diluted EPS for common shares for each of the years ended December 31 were as follows:

	2016	2015	2014
	(in millions, except per share data)		
Numerator			
Net income	$ 4,059	$ 3,808	$ 3,617
Denominator			
Basic weighted-average shares outstanding	1,098	1,134	1,165
Dilutive stock options and stock units	3	3	4
Diluted weighted-average shares outstanding [1]	1,101	1,137	1,169
Earnings per Share			
Basic	$ 3.70	$ 3.36	$ 3.11
Diluted	$ 3.69	$ 3.35	$ 3.10

Note: Table may not sum due to rounding.
[1] For the years presented, the calculation of diluted EPS excluded a minimal amount of anti-dilutive share-based payment awards.

Note 4. ***Supplemental Cash Flows***

The following table includes supplemental cash flow disclosures for each of the years ended December 31:

	2016	2015	2014
		(in millions)	
Cash paid for income taxes, net of refunds	$ 1,579	$ 1,097	$ 2,036
Cash paid for interest	74	44	24
Cash paid for legal settlements	101	124	28
Non-cash investing and financing activities			
Dividends declared but not yet paid	238	212	184
Assets recorded pursuant to capital lease	3	10	8
Fair value of assets acquired, net of cash acquired	—	626	768
Fair value of liabilities assumed related to acquisitions	—	42	141

Note 5. ***Fair Value and Investment Securities***

Financial Instruments - Recurring Measurements

The Company classifies its fair value measurements of financial instruments into a three-level hierarchy (the "Valuation Hierarchy"). There were no transfers made among the three levels in the Valuation Hierarchy for 2016.

The distribution of the Company's financial instruments which are measured at fair value on a recurring basis within the Valuation Hierarchy was as follows:

	December 31, 2016			
	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Fair Value
	(in millions)			
Municipal securities	$ —	$ 59	$ —	$ 59
Government and agency securities [1]	49	117	—	166
Corporate securities	—	855	—	855
Asset-backed securities	—	80	—	80
Other	2	16	—	18
Total	$ 51	$ 1,127	$ —	$ 1,178

	December 31, 2015			
	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Fair Value
	(in millions)			
Municipal securities	$ —	$ 62	$ —	$ 62
Government and agency securities [1]	31	64	—	95
Corporate securities	—	645	—	645
Asset-backed securities	—	57	—	57
Other	2	14	—	16
Total	$ 33	$ 842	$ —	$ 875

[1] Excludes amounts held in escrow related to the U.S. merchant class litigation settlement of $543 million and $541 million at December 31, 2016 and December 31, 2015, respectively, which would be included in Level 1 of the Valuation Hierarchy. See Note 10 (Accrued Expenses and Accrued Litigation) and Note 18 (Legal and Regulatory Proceedings) for further details.

The fair value of the Company's available-for-sale municipal securities, government and agency securities, corporate securities and asset-backed securities are based on quoted prices for similar assets in active markets and are therefore included in Level 2 of the Valuation Hierarchy. The Company's foreign currency derivative asset and liability contracts have also been classified within Level 2 in the Other category of the Valuation Hierarchy, as the fair value is based on broker quotes for the same or similar derivative instruments. See Note 20 (Foreign Exchange Risk Management) for further details. The Company's U.S. government securities and marketable equity securities are classified within Level 1 of the Valuation Hierarchy as the fair values are based on unadjusted quoted prices for identical assets in active markets.

Financial Instruments - Non-Recurring Measurements

Certain financial instruments are carried on the consolidated balance sheet at cost, which approximates fair value due to their short-term, highly liquid nature. These instruments include cash and cash equivalents, restricted cash, time deposits, accounts receivable, settlement due from customers, restricted security deposits held for customers, accounts payable, settlement due to customers and accrued expenses. In addition, nonmarketable equity investments are measured at fair value on a nonrecurring basis for purposes of initial recognition and impairment testing.

Investments on the consolidated balance sheet include both available-for-sale and short-term held-to-maturity securities. Available-for-sale securities are measured at fair value on a recurring basis and are included in the Valuation Hierarchy table above. Short-term held-to-maturity securities are made up of time deposits with maturities of greater than three months and less than one year and are classified as Level 2 of the Valuation Hierarchy, but are not included in the table above due to their fair values not being measured on a recurring basis. At December 31, 2016 and December 31, 2015, the cost, which approximates fair value, of the Company's short-term held-to-maturity securities was $452 million and $130 million, respectively. In addition, at December 31, 2016, the Company held $61 million of long-term held-to-maturity securities included in other assets on the consolidated balance sheet, the cost of which approximates fair value, which are classified as Level 2 of the Valuation Hierarchy.

Debt

The Company estimates the fair value of its long-term debt based on market quotes for the debt instruments. Long-term debt is classified as Level 2 of the Valuation Hierarchy. At December 31, 2016, the carrying value and fair value of long-term debt was \$5.2 billion and \$5.3 billion, respectively. At December 31, 2015, the carrying value and fair value of long-term debt was \$3.3 billion.

Settlement and Other Guarantee Liabilities

The Company estimates the fair value of its settlement and other guarantees using market assumptions for relevant though not directly comparable undertakings, as the latter are not observable in the market given the proprietary nature of such guarantees. At December 31, 2016 and 2015, the carrying value and fair value of settlement and other guarantee liabilities were not material. Settlement and other guarantee liabilities are classified as Level 3 of the Valuation Hierarchy as their valuation requires substantial judgment and estimation of factors that are not currently observable in the market. For additional information regarding the Company's settlement and other guarantee liabilities, see Note 19 (Settlement and Other Risk Management).

Non-Financial Instruments

Certain assets are measured at fair value on a nonrecurring basis for purposes of initial recognition and impairment testing. The Company's non-financial assets measured at fair value on a nonrecurring basis include property, plant and equipment, goodwill and other intangible assets. These assets are subject to fair value adjustments in certain circumstances, such as when there is evidence of impairment.

Amortized Costs and Fair Values – Available-for-Sale Investment Securities

The major classes of the Company's available-for-sale investment securities, for which unrealized gains and losses are recorded as a separate component of other comprehensive income on the consolidated statement of comprehensive income, and their respective amortized cost basis and fair values as of December 31, 2016 and 2015 were as follows:

	December 31, 2016			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
	(in millions)			
Municipal securities	\$ 59	\$ —	\$ —	\$ 59
Government and agency securities	165	1	—	166
Corporate securities	853	3	(1)	855
Asset-backed securities	80	—	—	80
Other	2	—	—	2
Total	\$ 1,159	\$ 4	\$ (1)	\$ 1,162

	December 31, 2015			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
	(in millions)			
Municipal securities	\$ 62	\$ —	\$ —	\$ 62
Government and agency securities	94	1	—	95
Corporate securities	646	—	(1)	645
Asset-backed securities	57	—	—	57
Other	2	—	—	2
Total	\$ 861	\$ 1	\$ (1)	\$ 861

The Company's available-for-sale investment securities held at December 31, 2016, primarily carried a credit rating of A-, or better. The municipal securities are primarily comprised of tax-exempt bonds and are diversified across states and sectors. Government and agency securities include U.S. government bonds, U.S. government sponsored agency bonds and foreign government bonds with similar credit quality to that of the U.S. government bonds. Corporate securities are comprised of commercial paper and corporate bonds. The asset-backed securities are investments in bonds which are collateralized primarily by automobile loan receivables.

Investment Maturities:

The maturity distribution based on the contractual terms of the Company's investment securities at December 31, 2016 was as follows:

	Available-For-Sale	
	Amortized Cost	Fair Value
	(in millions)	
Due within 1 year	$ 437	$ 437
Due after 1 year through 5 years	715	718
Due after 5 years through 10 years	—	—
Due after 10 years	5	5
No contractual maturity [1]	2	2
Total	$ 1,159	$ 1,162

[1] Equity securities have been included in the No contractual maturity category, as these securities do not have stated maturity dates.

Investment Income

Investment income primarily consists of interest income generated from cash, cash equivalents and investments. Gross realized gains and losses are recorded within investment income on the Company's consolidated statement of operations. The gross realized gains and losses from the sales of available-for-sale securities for 2016, 2015 and 2014 were not significant.

Note 6. *Prepaid Expenses and Other Assets*

Prepaid expenses and other current assets consisted of the following at December 31:

	2016	2015
	(in millions)	
Customer and merchant incentives	$ 479	$ 345
Prepaid income taxes	118	72
Other	253	246
Total prepaid expenses and other current assets	$ 850	$ 663

Other assets consisted of the following at December 31:

	2016	2015
	(in millions)	
Customer and merchant incentives	$ 1,134	$ 810
Nonmarketable equity investments	132	166
Prepaid income taxes	325	352
Income taxes receivable	175	160
Other	163	92
Total other assets	$ 1,929	$ 1,580

Customer and merchant incentives represent payments made or amounts to be paid to customers and merchants under business agreements. Costs directly related to entering into such an agreement are generally deferred and amortized over the life of the agreement. Amounts to be paid for these incentives and the related liability were included in accrued expenses and other liabilities.

Non-current prepaid income taxes, included in the other asset table above, primarily consists of taxes paid in the fourth quarter of 2014 relating to the deferred charge resulting from the reorganization of our legal entity and tax structure to better align with our business footprint of our non-U.S. operations.

Note 7. *Property, Plant and Equipment*

Property, plant and equipment consisted of the following at December 31:

	2016	2015
	(in millions)	
Building, building equipment and land	$ 534	$ 503
Equipment	606	497
Furniture and fixtures	63	54
Leasehold improvements	133	112
Property, plant and equipment	1,336	1,166
Less: accumulated depreciation and amortization	(603)	(491)
Property, plant and equipment, net	$ 733	$ 675

As of December 31, 2016 and 2015, capital leases of $23 million and $20 million, respectively, were included in equipment. Accumulated amortization of these capital leases was $16 million and $9 million as of December 31, 2016 and 2015, respectively.

Depreciation and amortization expense for the above property, plant and equipment was $152 million, $131 million and $107 million for 2016, 2015 and 2014, respectively.

Note 8. *Goodwill*

The changes in the carrying amount of goodwill for the years ended December 31, 2016 and 2015 were as follows:

	2016	2015
	(in millions)	
Beginning balance	$ 1,891	$ 1,522
Additions	8	458
Foreign currency translation	(143)	(89)
Ending balance	$ 1,756	$ 1,891

The Company had no accumulated impairment losses for goodwill at December 31, 2016 or 2015. Based on annual impairment testing, the Company's goodwill is not impaired.

Note 9. *Other Intangible Assets*

The following table sets forth net intangible assets, other than goodwill, at December 31:

	2016			2015		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(in millions)					
Amortized intangible assets						
Capitalized software	$ 1,210	$ (768)	$ 442	$ 1,086	$ (625)	$ 461
Trademarks and tradenames	26	(22)	4	30	(23)	7
Customer relationships	283	(162)	121	318	(149)	169
Other	23	(22)	1	25	(19)	6
Total	1,542	(974)	568	1,459	(816)	643
Unamortized intangible assets						
Customer relationships	154	—	154	160	—	160
Total	$ 1,696	$ (974)	$ 722	$ 1,619	$ (816)	$ 803

The increase in the gross carrying amount of amortized intangible assets in 2016 was primarily related to capitalized software. Certain intangible assets, including amortizable and unamortizable customer relationships and trademarks and tradenames, are denominated in foreign currencies. As such, the change in intangible assets includes a component attributable to foreign currency translation. Based on the qualitative assessment performed in 2016, it was determined that the Company's indefinite-lived intangible assets were not impaired.

Amortization on the assets above amounted to $221 million, $235 million and $214 million in 2016, 2015 and 2014, respectively. The following table sets forth the estimated future amortization expense on amortizable intangible assets on the consolidated balance sheet at December 31, 2016 for the years ending December 31:

	(in millions)
2017	$ 213
2018	154
2019	108
2020	24
2021 and thereafter	69
	$ 568

Note 10. ***Accrued Expenses and Accrued Litigation***

Accrued expenses consisted of the following at December 31:

	2016	2015
	(in millions)	
Customer and merchant incentives	$ 2,286	$ 1,748
Personnel costs	496	473
Advertising	71	114
Income and other taxes	161	143
Other	304	285
Total accrued expenses	$ 3,318	$ 2,763

As of December 31, 2016 and 2015, the Company's provision for litigation was $722 million and $709 million, respectively. These amounts are not included in the accrued expenses table above and are separately reported as accrued litigation on the consolidated balance sheet. See Note 18 (Legal and Regulatory Proceedings) for further discussion of the U.S. merchant class litigation.

Note 11. ***Pension, Postretirement and Savings Plans***

Defined Contribution

The Company sponsors defined contribution retirement plans. The primary plan is the Mastercard Savings Plan, a 401(k) plan for substantially all of the U.S. employees, which is subject to the provisions of the Employee Retirement Income Security Act of 1974 ("ERISA"), as amended. In addition, the Company has several defined contribution plans outside of the U.S. The Company's total expense for its defined contribution plans was $73 million, $61 million and $57 million in 2016, 2015 and 2014, respectively.

Defined Benefit and Other Postretirement Plans

During the third quarter of 2015, the Company terminated its non-contributory, qualified, U.S. defined benefit pension plan (the "U.S. Employee Pension Plan"). The U.S. Employee Pension Plan participants had the option to receive a lump sum distribution or to participate in an annuity with a third-party insurance company. As a result of this termination, the Company settled its obligation for $287 million, which resulted in a pension settlement charge of $79 million recorded in general and administrative expense during 2015.

The Company maintains a postretirement plan providing health coverage and life insurance benefits for substantially all of its U.S. employees hired before July 1, 2007 ("U.S. Postretirement Plan"). The U.S. postretirement plan was unfunded and the Company's obligation was $59 million as of December 31, 2016 and 2015, and was recorded in Other Liabilities. The Company's total expense for its U.S. postretirement plan was not material to the Company's consolidated financial statements.

The Company sponsors pension and postretirement plans for non-U.S. employees ("non-U.S. plans") that cover various benefits specific to their country of employment. The Company recognizes the funded status of its defined benefit pension plans and other postretirement benefit plans, measured as the difference between the fair value of the plan assets and the projected benefit obligation, in the Consolidated Balance Sheet. The non-U.S. plans do not have a material impact on the Company's consolidated financial statements, individually or in the aggregate.

Note 12. *Debt*

In November 2016, the Company issued $2 billion aggregate principal amount of notes (the "2016 USD Notes"). Interest on the 2016 USD Notes is payable semi-annually.

In December 2015, the Company issued €1.65 billion ($1.74 billion as translated at the December 31, 2016 exchange rate) aggregate principal amount of notes (the "2015 Euro Notes"). Interest on the 2015 Euro Notes is payable annually.

In March 2014, the Company issued $1.5 billion aggregate principal amount of notes (the "2014 USD Notes"). Interest on the 2014 USD Notes is payable semi-annually.

The net proceeds, after deducting the original issue discount, underwriting discount and offering expenses, from the issuance of the 2016 USD Notes, the 2015 Euro Notes and the 2014 USD Notes, were $1.969 billion, $1.723 billion and $1.484 billion, respectively.

The Company is not subject to any financial covenants under the 2016 USD Notes, the 2015 Euro Notes and the 2014 USD Notes (collectively the "Notes"). The Notes may be redeemed in whole, or in part, at our option at any time for a specified make-whole amount. The Notes are senior unsecured obligations and would rank equally with any future unsecured and unsubordinated indebtedness. The proceeds of the Notes are to be used for general corporate purposes.

Long-term debt consisted of the following at December 31:

	Maturity Date	Aggregate Principal Amount	Stated Interest Rate	Effective Interest Rate	2016	2015
			(in millions, except percentages)			
2016 USD Notes	2021	$650	2.000%	2.236%	$ 650	$ —
	2026	$750	2.950%	3.044%	750	—
	2046	$600	3.800%	3.893%	600	—
2015 Euro Notes	2022	€700	1.100%	1.265%	738	763
	2027	€800	2.100%	2.189%	843	872
	2030	€150	2.500%	2.562%	158	164
2014 USD Notes	2019	$500	2.000%	2.178%	500	500
	2024	$1,000	3.375%	3.484%	1,000	1,000
					5,239	3,299
Less: Unamortized discount and debt issuance costs					(59)	(31)
Long-term debt					$ 5,180	$ 3,268

Scheduled annual maturities of the principal portion of long-term debt outstanding at December 31, 2016 are summarized below. Amounts exclude capital lease obligations disclosed in Note 16 (Commitments).

	(in millions)
2017 - 2018	$ —
2019	500
2020	—
2021	650
Thereafter	4,089
Total	$ 5,239

In November 2015, the Company established a commercial paper program (the "Commercial Paper Program"). Under the Commercial Paper Program, the Company is authorized to issue up to $3.75 billion in outstanding notes, with maturities up to 397 days from the date of issuance. The Commercial Paper Program is available in U.S. dollars.

In conjunction with the Commercial Paper Program, the Company entered into a committed unsecured $3.75 billion revolving credit facility (the "Credit Facility") in October 2015. The Credit Facility amended and restated the Company's prior credit facility. Borrowings under the Credit Facility are available in U.S. dollars and/or euros. In October 2016, the Company extended the Credit Facility for an additional year to October 2021. The extension did not result in any material changes to the terms and conditions of the Credit Facility. The facility fee and borrowing cost under the Credit Facility are based upon the Company's credit rating. At December 31, 2016, the applicable facility fee was 8 basis points on the average daily commitment (whether or not utilized). In addition to the facility fee, interest on borrowings under the Credit Facility would be charged at the London Interbank Offered Rate (LIBOR) plus an applicable margin of 79.5 basis points, or an alternative base rate. The Credit Facility contains customary representations, warranties, events of default and affirmative and negative covenants, including a financial covenant limiting the maximum level of consolidated debt to earnings before interest, taxes, depreciation and amortization (EBITDA). Mastercard was in compliance in all material respects with the covenants of the Credit Facility at December 31, 2016 and 2015. The majority of Credit Facility lenders are customers or affiliates of customers of Mastercard.

Borrowings under the Commercial Paper Program and the Credit Facility are used to provide liquidity for general corporate purposes, including providing liquidity in the event of one or more settlement failures by the Company's customers. The Company may borrow and repay amounts under the Commercial Paper Program and Credit Facility from time to time. Mastercard had no borrowings under the Credit Facility and the Commercial Paper Program at December 31, 2016 and 2015.

On June 15, 2015, the Company filed a universal shelf registration statement to provide additional access to capital, if needed. Pursuant to the shelf registration statement, the Company may from time to time offer to sell debt securities, preferred stock, Class A common stock, depository shares, purchase contracts, units or warrants in one or more offerings.

Note 13. *Stockholders' Equity*

Classes of Capital Stock

Mastercard's amended and restated certificate of incorporation authorizes the following classes of capital stock:

Class	Par Value Per Share	Authorized Shares (in millions)	Dividend and Voting Rights
A	$0.0001	3,000	One vote per share Dividend rights
B	$0.0001	1,200	Non-voting Dividend rights
Preferred	$0.0001	300	No shares issued or outstanding at December 31, 2016 and 2015, respectively. Dividend and voting rights are to be determined by the Board of Directors of the Company upon issuance.

Ownership and Governance Structure

Equity ownership and voting power of the Company's shares were allocated as follows as of December 31:

	2016		2015	
	Equity Ownership	General Voting Power	Equity Ownership	General Voting Power
Public Investors (Class A stockholders)	87.7%	89.3%	87.7%	89.4%
Principal or Affiliate Customers (Class B stockholders)	1.8%	—%	1.9%	—%
The MasterCard Foundation (Class A stockholders)	10.5%	10.7%	10.4%	10.6%

Class B Common Stock Conversions

Shares of Class B common stock are convertible on a one-for-one basis into shares of Class A common stock. Entities eligible to hold Mastercard's Class B common stock are defined in the Company's amended and restated certificate of incorporation (generally the Company's principal or affiliate customers), and they are restricted from retaining ownership of shares of Class A common stock. Class B stockholders are required to subsequently sell or otherwise transfer any shares of Class A common stock received pursuant to such a conversion.

The MasterCard Foundation

In connection and simultaneously with its 2006 initial public offering (the "IPO"), the Company issued and donated 135 million newly authorized shares of Class A common stock to The MasterCard Foundation (the "Foundation"). The Foundation is a private charitable foundation incorporated in Canada that is controlled by directors who are independent of the Company and its principal customers. Under the terms of the donation, the Foundation became able to resell the donated shares in May 2010 and to the extent necessary to meet charitable disbursement requirements dictated by Canadian tax law. Under Canadian tax law, the Foundation is generally required to disburse at least 3.5% of its assets not used in administration each year for qualified charitable disbursements. However, the Foundation obtained permission from the Canadian tax authorities to defer the giving requirements for up to ten years, which was extended in 2011 to fifteen years. The Foundation, at its discretion, may decide to meet its disbursement obligations on an annual basis or to settle previously accumulated obligations during any given year. The Foundation will be permitted to sell all of its remaining shares beginning twenty years and eleven months after the consummation of the IPO.

Stock Repurchase Programs

On February 5, 2013, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $2 billion of its Class A common stock (the "February 2013 Share Repurchase Program"), which became effective in March 2013.

On December 10, 2013, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $3.5 billion of its Class A common stock (the "December 2013 Share Repurchase Program"), which became effective in January 2014.

On December 2, 2014, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $3.75 billion of its Class A common stock (the "December 2014 Share Repurchase Program"), which became effective in January 2015.

On December 8, 2015, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $4 billion of its Class A common stock (the "December 2015 Share Repurchase Program"), which became effective in February 2016.

On December 6, 2016, the Company's Board of Directors approved a share repurchase program authorizing the Company to repurchase up to $4 billion of its Class A common stock (the "December 2016 Share Repurchase Program"). The December 2016 Share Repurchase Program will become effective after completion of the December 2015 Share Repurchase Program.

The following table summarizes the Company's share repurchase authorizations of its Class A common stock through December 31, 2016, as well as historical purchases:

	Authorization Dates					
	December 2016	December 2015	December 2014	December 2013	February 2013	Total
	(in millions, except average price data)					
Board authorization	$ 4,000	$ 4,000	$ 3,750	$ 3,500	$ 2,000	$ 17,250
Dollar-value of shares repurchased in 2014	$ —	$ —	$ —	$ 3,225	$ 161	$ 3,386
Remaining authorization at December 31, 2014	$ —	$ —	$ 3,750	$ 275	$ —	$ 4,025
Dollar-value of shares repurchased in 2015	$ —	$ —	$ 3,243	$ 275	$ —	$ 3,518
Remaining authorization at December 31, 2015	$ —	$ 4,000	$ 507	$ —	$ —	$ 4,507
Dollar-value of shares repurchased in 2016	$ —	$ 3,004	$ 507	$ —	$ —	$ 3,511
Remaining authorization at December 31, 2016	$ 4,000	$ 996	$ —	$ —	$ —	$ 4,996
Shares repurchased in 2014	—	—	—	42.6	1.9	44.5
Average price paid per share in 2014	$ —	$ —	$ —	$ 75.81	$ 83.22	$ 76.14
Shares repurchased in 2015	—	—	35.1	3.2	—	38.3
Average price paid per share in 2015	$ —	$ —	$ 92.39	$ 84.31	$ —	$ 91.70
Shares repurchased in 2016	—	31.2	5.7	—	—	36.9
Average price paid per share in 2016	$ —	$ 96.15	$ 89.76	$ —	$ —	$ 95.18
Cumulative shares repurchased through December 31, 2016	—	31.2	40.8	45.8	31.1	148.9
Cumulative average price paid per share	$ —	$ 96.15	$ 92.03	$ 76.42	$ 64.26	$ 82.29

The following table presents the changes in the Company's outstanding Class A and Class B common stock for the years ended December 31:

	Outstanding Shares	
	Class A	Class B
	(in millions)	
Balance at December 31, 2013	1,148.8	45.4
Purchases of treasury stock	(44.5)	—
Share-based payments	2.9	—
Conversion of Class B to Class A common stock	8.2	(8.2)
Balance at December 31, 2014	1,115.4	37.2
Purchases of treasury stock	(38.3)	—
Share-based payments	2.0	—
Conversion of Class B to Class A common stock	15.9	(15.9)
Balance at December 31, 2015	1,095.0	21.3
Purchases of treasury stock	(36.9)	—
Share-based payments	2.3	—
Conversion of Class B to Class A common stock	2.0	(2.0)
Balance at December 31, 2016	1,062.4	19.3

Note 14. ***Accumulated Other Comprehensive Income (Loss)***

The changes in the balances of each component of accumulated other comprehensive income (loss), net of tax, for the years ended December 31, 2016 and 2015 were as follows:

	Foreign Currency Translation Adjustments[1]	Translation Adjustments on Net Investment Hedge	Defined Benefit Pension and Other Postretirement Plans[2]	Investment Securities Available-for-Sale[3]	Accumulated Other Comprehensive Income (Loss)
			(in millions)		
Balance at December 31, 2014	$ (230)	$ —	$ (26)	$ (4)	$ (260)
Other comprehensive income (loss)	(433)	(26)	39	4	(416)
Balance at December 31, 2015	(663)	(26)	13	—	(676)
Other comprehensive income (loss)	(286)	38	(2)	2	(248)
Balance at December 31, 2016	$ (949)	$ 12	$ 11	$ 2	$ (924)

[1] During 2015, the increase in other comprehensive loss related to foreign currency translation adjustments was driven primarily by the devaluation of the euro and Brazilian real. During 2016, the increase in other comprehensive loss related to foreign currency translation adjustments was driven primarily by the devaluation of the British pound and euro.

[2] During 2015, $80 million of deferred costs ($51 million after-tax) related to the Company's defined benefit pension plan and other post retirement plans were reclassified to general and administrative expenses. The deferred costs were driven primarily by the termination of the Company's U.S. defined benefit plan (See Note 11 (Pension, Postretirement and Savings Plans)). During 2016, deferred gains related to the Company's postretirement plans, reclassified from accumulated other comprehensive income (loss) to earnings, were $1 million before and after tax.

[3] During 2015, $15 million of an unrealized loss (no tax impact) on a foreign denominated available-for-sale security was reclassified to other income (expense) due to an other-than-temporary impairment. During 2016, gains and losses on available-for-sale investment securities, reclassified from accumulated other comprehensive income (loss) to investment income, were not significant.

Note 15. ***Share-Based Payments***

In May 2006, the Company implemented the Mastercard Incorporated 2006 Long-Term Incentive Plan, which was amended and restated as of June 5, 2012 (the "LTIP"). The LTIP is a stockholder-approved plan that permits the grant of various types of equity awards to employees.

The Company has granted Options, RSUs and PSUs under the LTIP. The Options, which expire ten years from the date of grant, generally vest ratably over four years from the date of grant. The RSUs and PSUs generally vest after three years. The Company uses the straight-line method of attribution for expensing equity awards. Compensation expense is recorded net of estimated forfeitures. Estimates are adjusted as appropriate.

Upon termination of employment, a participant's unvested awards are forfeited. However, when a participant terminates employment due to disability or retirement more than six months after receiving the award, the participant retains all of their awards without providing additional service to the Company. Retirement eligibility is dependent upon age and years of service. Compensation expense is recognized over the shorter of the vesting periods stated in the LTIP or the date the individual becomes eligible to retire but not less than six months.

There are approximately 116 million shares of Class A common stock authorized for equity awards under the LTIP. Although the LTIP permits the issuance of shares of Class B common stock, no such shares have been authorized for issuance. Shares issued as a result of Option exercises and the conversions of RSUs and PSUs were funded primarily with the issuance of new shares of Class A common stock.

Stock Options

The fair value of each Option is estimated on the date of grant using a Black-Scholes option pricing model. The following table presents the weighted-average assumptions used in the valuation and the resulting weighted-average fair value per option granted for the years ended December 31:

	2016	2015	2014
Risk-free rate of return	1.3%	1.5%	1.5%
Expected term (in years)	5.00	5.00	5.00
Expected volatility	23.3%	20.6%	19.1%
Expected dividend yield	0.8%	0.7%	0.6%
Weighted-average fair value per Option granted	$ 18.58	$ 17.29	$ 14.29

The risk-free rate of return was based on the U.S. Treasury yield curve in effect on the date of grant. The expected term and the expected volatility were based on historical Mastercard information. The expected dividend yields were based on the Company's expected annual dividend rate on the date of grant.

The following table summarizes the Company's option activity for the year ended December 31, 2016:

	Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
	(in millions)		(in years)	(in millions)
Outstanding at January 1, 2016	8.1	$ 54		
Granted	1.7	$ 90		
Exercised	(1.3)	$ 30		
Forfeited/expired	(0.2)	$ 80		
Outstanding at December 31, 2016	8.3	$ 65	6.7	$ 321
Exercisable at December 31, 2016	4.3	$ 47	5.3	$ 243
Options vested and expected to vest at December 31, 2016	8.2	$ 64	6.7	$ 319

As of December 31, 2016, there was $30 million of total unrecognized compensation cost related to non-vested Options. The cost is expected to be recognized over a weighted-average period of 2.3 years.

Restricted Stock Units

The following table summarizes the Company's RSU activity for the year ended December 31, 2016:

	Units	Weighted-Average Grant-Date Fair Value	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
	(in millions)		(in years)	(in millions)
Outstanding at January 1, 2016	3.8	$ 71		
Granted	1.9	$ 91		
Converted	(1.4)	$ 52		
Forfeited	(0.2)	$ 84		
Outstanding at December 31, 2016	4.1	$ 86	1.4	$ 424
RSUs vested and expected to vest at December 31, 2016	3.9	$ 86	1.4	$ 406

The fair value of each RSU is the closing stock price on the New York Stock Exchange of the Company's Class A common stock on the date of grant, adjusted for the exclusion of dividend equivalents. Upon vesting, a portion of the RSU award may be withheld to satisfy the minimum statutory withholding taxes. The remaining RSUs will be settled in shares of the Company's Class A common stock after the vesting period. As of December 31, 2016, there was $148 million of total unrecognized compensation cost related to non-vested RSUs. The cost is expected to be recognized over a weighted-average period of 2.0 years.

Performance Stock Units

The following table summarizes the Company's PSU activity for the year ended December 31, 2016:

	Units	Weighted-Average Grant-Date Fair Value	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value
	(in millions)		(in years)	(in millions)
Outstanding at January 1, 2016	0.5	$ 72		
Granted	0.2	$ 92		
Converted	(0.3)	$ 56		
Outstanding at December 31, 2016	0.4	$ 90	1.3	$ 45
PSUs vested and expected to vest at December 31, 2016	0.4	$ 90	1.3	$ 44

Since 2013, PSUs containing performance and market conditions have been issued. Performance measures used to determine the actual number of shares that vest after three years include net revenue growth, EPS growth, and relative total shareholder return ("TSR"). Relative TSR is considered a market condition, while net revenue and EPS growth are considered performance conditions. The Monte Carlo simulation valuation model is used to determine the grant-date fair value.

Compensation expenses for PSUs are recognized over the requisite service period if it is probable that the performance target will be achieved and subsequently adjusted if the probability assessment changes. As of December 31, 2016, there was $11 million of total unrecognized compensation cost related to non-vested PSUs. The cost is expected to be recognized over a weighted-average period of 1.7 years.

Additional Information

The following table includes additional share-based payment information for each of the years ended December 31:

	2016	2015	2014
	(in millions, except weighted-average fair value)		
Share-based compensation expense: Options, RSUs and PSUs	$ 148	$ 122	$ 111
Income tax benefit recognized for equity awards	49	41	37
Income tax benefit related to Options exercised	31	19	20
Options:			
Total intrinsic value of Options exercised	86	57	60
RSUs:			
Weighted-average grant-date fair value of awards granted	91	88	76
Total intrinsic value of RSUs converted into shares of Class A common stock	122	135	173
PSUs:			
Weighted-average grant-date fair value of awards granted	92	99	78
Total intrinsic value of PSUs converted into shares of Class A common stock	25	24	28

Note 16. *Commitments*

At December 31, 2016, the Company had the following future minimum payments due under non-cancelable agreements:

	Total	Capital Leases	Operating Leases	Sponsorship, Licensing & Other
		(in millions)		
2017	$ 1,192	$ 5	$ 66	$ 1,121
2018	234	1	53	180
2019	178	1	40	137
2020	102	—	29	73
2021	56	—	20	36
Thereafter	68	—	39	29
Total	$ 1,830	$ 7	$ 247	$ 1,576

Included in the table above are capital leases with a net present value of minimum lease payments of $7 million. In addition, at December 31, 2016, $10 million of the future minimum payments in the table above for sponsorship, licensing and other agreements was accrued. Consolidated rental expense for the Company's leased office space was $62 million, $52 million and $48 million for 2016, 2015 and 2014, respectively. Consolidated lease expense for automobiles, computer equipment and office equipment was $19 million, $17 million and $17 million for 2016, 2015 and 2014, respectively. Included in the Sponsorship, Licensing & Other payments due in 2017 is £700 million (approximately $860 million as of December 31, 2016) related to a definitive agreement for the Company to acquire a controlling interest in VocaLink Holdings Limited ("VocaLink"). See Note 2 (Acquisitions) for further discussion.

Note 17. *Income Taxes*

The domestic and foreign components of income before income taxes for the years ended December 31 are as follows:

	2016	2015	2014
		(in millions)	
United States	$ 3,736	$ 3,399	$ 3,378
Foreign	1,910	1,559	1,701
Income before income taxes	$ 5,646	$ 4,958	$ 5,079

The total income tax provision for the years ended December 31 is comprised of the following components:

	2016	2015	2014
		(in millions)	
Current			
Federal	$ 1,074	$ 677	$ 977
State and local	36	45	47
Foreign	497	444	528
	1,607	1,166	1,552
Deferred			
Federal	(6)	4	(81)
State and local	(2)	(3)	(3)
Foreign	(12)	(17)	(6)
	(20)	(16)	(90)
Income tax expense	$ 1,587	$ 1,150	$ 1,462

Mastercard has not provided for U.S. federal income and foreign withholding taxes on approximately $4.0 billion of undistributed earnings from non-U.S. subsidiaries as of December 31, 2016 because such earnings are intended to be reinvested indefinitely outside of the United States. If these earnings were distributed, foreign tax credits may become available under current law to reduce the resulting U.S. income tax liability. However, it is not practicable to determine the amount of the tax and credits. The foreign earnings that the Company may repatriate to the United States in any year is limited to the amount of current year foreign earnings and are not made out of historic undistributed accumulated earnings. The amount of current year foreign earnings that are available for repatriation is determined after consideration of all foreign cash requirements including working capital needs, potential requirements for litigation and regulatory matters, and merger and acquisition activities, among others.

The provision for income taxes differs from the amount of income tax determined by applying the U.S. federal statutory income tax rate of 35% to pretax income for the years ended December 31, as a result of the following:

	2016		2015		2014	
	Amount	Percent	Amount	Percent	Amount	Percent
	(in millions, except percentages)					
Income before income taxes	$ 5,646		$ 4,958		$ 5,079	
Federal statutory tax	1,976	35.0 %	1,735	35.0 %	1,778	35.0 %
State tax effect, net of federal benefit	22	0.4 %	27	0.5 %	29	0.6 %
Foreign tax effect	(188)	(3.3)%	(144)	(2.9)%	(108)	(2.1)%
Impact of foreign tax credits [1]	(141)	(2.5)%	(281)	(5.7)%	(183)	(3.6)%
Impact of settlements with tax authorities	—	— %	(147)	(2.9)%	—	— %
Other, net	(82)	(1.5)%	(40)	(0.8)%	(54)	(1.1)%
Income tax expense	$ 1,587	28.1 %	$ 1,150	23.2 %	$ 1,462	28.8 %

[1] Included within the impact of foreign tax credits were repatriation benefits of current year foreign earnings of $116 million, $172 million and $177 million, in addition to other foreign tax credit benefits which become eligible in the United States of $25 million, $109 million and $6 million for 2016, 2015 and 2014, respectively.

Effective Income Tax Rate

The effective income tax rates for the years ended December 31, 2016, 2015 and 2014 were 28.1%, 23.2% and 28.8%, respectively. The effective income tax rate for 2016 was higher than the effective income tax rate for 2015 primarily due to benefits associated with the impact of settlements with tax authorities in multiple jurisdictions in 2015, the lapping of a discrete benefit relating to certain foreign taxes that became eligible to be claimed as credits in the United States in 2015, and a higher U.S. foreign tax credit benefit associated with the repatriation of current year foreign earnings in 2015. These items were partially offset by a more favorable geographic mix of taxable earnings in 2016.

The effective income tax rate for 2015 was lower than the effective income tax rate for 2014 primarily due to settlements with tax authorities in multiple jurisdictions. Further, the information gained related to these matters was considered in measuring uncertain tax benefits recognized for the periods subsequent to the periods settled. In addition, the recognition of other U.S. foreign tax credits and a more favorable geographic mix of taxable earnings also contributed to the lower effective tax rate in 2015.

During the fourth quarter of 2014, the Company implemented an initiative to better align its legal entity and tax structure with its operational footprint outside of the U.S. This initiative resulted in a one-time taxable gain in Belgium relating to the transfer of intellectual property to a related foreign entity in the United Kingdom. Management believes this improved alignment will result in greater flexibility and efficiency with regard to the global deployment of cash, as well as ongoing benefits in the Company's effective income tax rate. The Company recorded a deferred charge related to the income tax expense on intercompany profits that resulted from the transfer. The tax associated with the transfer is deferred and amortized utilizing a 25-year life. This deferred charge is included in other current assets and other assets on our consolidated balance sheet at December 31, 2016 in the amounts of $15 million and $325 million, respectively. The comparable amounts included in other current assets and other assets were $15 million and $352 million, respectively, at December 31, 2015, with the difference driven by changes in foreign exchange rates and current period amortization. The future accounting for this transfer will be impacted by the adoption of the recent accounting pronouncement for intra-entity asset transfers. The Company expects to adopt this accounting guidance effective January 1, 2018. The Company is in the process of evaluating the impacts this guidance will have on its consolidated financial statements. See Note 1 (Summary of Significant Accounting Policies) for additional information related to this guidance.

In 2010, in connection with the expansion of the Company's operations in the Asia Pacific, Middle East and Africa region, the Company's subsidiary in Singapore, Mastercard Asia Pacific Pte. Ltd. ("MAPPL") received an incentive grant from the Singapore Ministry of Finance. The incentive had provided MAPPL with, among other benefits, a reduced income tax rate for the 10-year period commencing January 1, 2010 on taxable income in excess of a base amount. The Company continued to explore business opportunities in this region, resulting in an expansion of the incentives being granted by the Ministry of Finance, including a further reduction to the income tax rate on taxable income in excess of a revised fixed base amount commencing July 1, 2011 and continuing through December 31, 2025. Without the incentive grant, MAPPL would have been subject to the statutory income tax rate on its earnings. For 2016, 2015 and 2014, the impact of the incentive grant received from the Ministry of Finance resulted in a reduction of MAPPL's income tax liability of $49 million, or $0.04 per diluted share, $47 million, or $0.04 per diluted share, and $40 million, or $0.03 per diluted share, respectively.

Deferred Taxes

Deferred tax assets and liabilities represent the expected future tax consequences of temporary differences between the carrying amounts and the tax basis of assets and liabilities. The components of deferred tax assets and liabilities at December 31 are as follows:

	2016	2015
	(in millions)	
Deferred Tax Assets		
Accrued liabilities	$ 174	$ 169
Compensation and benefits	273	242
State taxes and other credits	41	54
Net operating and capital losses	81	67
Other items	79	90
Less: Valuation allowance	(91)	(54)
Total Deferred Tax Assets	557	568
Deferred Tax Liabilities		
Prepaid expenses and other accruals	46	46
Intangible assets	105	136
Property, plant and equipment	155	118
Other items	25	30
Total Deferred Tax Liabilities	331	330
Net Deferred Tax Assets	$ 226	$ 238

The increase in the valuation allowance balance at December 31, 2016 from the December 31, 2015 balance is attributable to additional foreign losses and capital asset impairments in the United States. The recognition of the foreign losses is dependent upon the future taxable income in such jurisdictions and the ability under tax law in these jurisdictions to utilize net operating losses following a change in control. The recognition of losses with regard to the capital impairments is dependent upon the recognition of future capital gains in the United States. The 2015 valuation allowance related primarily to the Company's ability to recognize tax benefits associated with certain foreign net operating losses.

A reconciliation of the beginning and ending balance for the Company's unrecognized tax benefits for the years ended December 31, is as follows:

	2016	2015	2014
		(in millions)	
Beginning balance	$ 181	$ 364	$ 320
Additions:			
Current year tax positions	20	20	61
Prior year tax positions	13	10	19
Reductions:			
Prior year tax positions	(28)	(151)	(6)
Settlements with tax authorities	(2)	(53)	—
Expired statute of limitations	(15)	(9)	(30)
Ending balance	$ 169	$ 181	$ 364

The entire unrecognized tax benefits of $169 million, if recognized, would reduce the effective tax rate. During 2015, there was a reduction to the balance of the Company's unrecognized tax benefits. This was primarily due to settlements with tax authorities in multiple jurisdictions. Further, the information gained related to these matters was considered in measuring uncertain tax benefits recognized for the periods subsequent to the periods settled.

The Company is subject to tax in the United States, Belgium, Singapore, the United Kingdom and various other foreign jurisdictions, as well as state and local jurisdictions. Uncertain tax positions are reviewed on an ongoing basis and are adjusted after considering facts and circumstances, including progress of tax audits, developments in case law and closing of statutes of limitation. Within the next twelve months, the Company believes that the resolution of certain federal, foreign and state and local examinations are reasonably possible and that a change in estimate, reducing unrecognized tax benefits, may occur. While such a change may be significant, it is not possible to provide a range of the potential change until the examinations progress further or the related statutes of limitation expire. The Company has effectively settled its U.S. federal income tax obligations through 2008, with the exception of transfer pricing issues which are settled through 2011. With limited exception, the Company is no longer subject to state and local or foreign examinations by tax authorities for years before 2009.

It is the Company's policy to account for interest expense related to income tax matters as interest expense in its consolidated statement of operations, and to include penalties related to income tax matters in the income tax provision. For 2016, 2015 and 2014, the Company recorded tax-related interest income of $4 million, $3 million and $2 million, respectively, in its consolidated statement of operations. At December 31, 2016 and 2015, the Company had a net income tax-related interest payable of $9 million and $12 million, respectively, in its consolidated balance sheet. At December 31, 2016 and 2015, the amounts the Company had recognized for penalties payable in its consolidated balance sheet were not significant.

Note 18. *Legal and Regulatory Proceedings*

Mastercard is a party to legal and regulatory proceedings with respect to a variety of matters in the ordinary course of business. Some of these proceedings are based on complex claims involving substantial uncertainties and unascertainable damages. Accordingly, except as discussed below, it is not possible to determine the probability of loss or estimate damages, and therefore, Mastercard has not established reserves for any of these proceedings. When the Company determines that a loss is both probable and reasonably estimable, Mastercard records a liability and discloses the amount of the liability if it is material. When a material loss contingency is only reasonably possible, Mastercard does not record a liability, but instead discloses the nature and the amount of the claim, and an estimate of the loss or range of loss, if such an estimate can be made. Unless otherwise stated below with respect to these matters, Mastercard cannot provide an estimate of the possible loss or range of loss based on one or more of the following reasons: (1) actual or potential plaintiffs have not claimed an amount of monetary damages or the amounts are unsupportable or exaggerated, (2) the matters are in early stages, (3) there is uncertainty as to the outcome of pending appeals or motions, (4) there are significant factual issues to be resolved, (5) the existence in many such proceedings of multiple defendants or potential defendants whose share of any potential financial responsibility has yet to be determined, and/or (6) there are novel legal issues presented. Furthermore, except as identified with respect to the matters below, Mastercard does not believe that the outcome of any individual existing legal or regulatory proceeding to which it is a party will have a material adverse effect on its results of operations, financial condition or overall business. However, an adverse judgment or other outcome or settlement with respect to any proceedings discussed below could result in fines or payments by Mastercard and/or could require Mastercard to change its business practices. In addition, an adverse outcome in a regulatory proceeding could lead to the filing of civil damage claims and possibly result in significant damage awards. Any of these events could have a material adverse effect on Mastercard's results of operations, financial condition and overall business.

Interchange Litigation and Regulatory Proceedings

Mastercard's interchange fees and other practices are subject to regulatory and/or legal review and/or challenges in a number of jurisdictions, including the proceedings described below. When taken as a whole, the resulting decisions, regulations and legislation with respect to interchange fees and acceptance practices may have a material adverse effect on the Company's prospects for future growth and its overall results of operations, financial position and cash flows.

United States. In June 2005, the first of a series of complaints were filed on behalf of merchants (the majority of the complaints were styled as class actions, although a few complaints were filed on behalf of individual merchant plaintiffs) against Mastercard International, Visa U.S.A., Inc., Visa International Service Association and a number of financial institutions. Taken together, the claims in the complaints were generally brought under both Sections 1 and 2 of the Sherman Act, which prohibit monopolization and attempts or conspiracies to monopolize a particular industry, and some of these complaints contain unfair competition law claims under state law. The complaints allege, among other things, that Mastercard, Visa, and certain financial institutions conspired to set the price of interchange fees, enacted point of sale acceptance rules (including the no surcharge rule) in violation of antitrust laws and engaged in unlawful tying and bundling of certain products and services. The cases were consolidated for pre-trial proceedings in the U.S. District Court for the Eastern District of New York in MDL No. 1720. The plaintiffs filed a consolidated class action complaint that seeks treble damages.

In July 2006, the group of purported merchant class plaintiffs filed a supplemental complaint alleging that Mastercard's initial public offering of its Class A Common Stock in May 2006 (the "IPO") and certain purported agreements entered into between Mastercard and financial institutions in connection with the IPO: (1) violate U.S. antitrust laws and (2) constituted a fraudulent conveyance because the financial institutions allegedly attempted to release, without adequate consideration, Mastercard's right to assess them for Mastercard's litigation liabilities. The class plaintiffs sought treble damages and injunctive relief including, but not limited to, an order reversing and unwinding the IPO.

In February 2011, Mastercard and Mastercard International entered into each of: (1) an omnibus judgment sharing and settlement sharing agreement with Visa Inc., Visa U.S.A. Inc. and Visa International Service Association and a number of financial institutions; and (2) a Mastercard settlement and judgment sharing agreement with a number of financial institutions. The agreements provide for the apportionment of certain costs and liabilities which Mastercard, the Visa parties and the financial institutions may incur, jointly and/or severally, in the event of an adverse judgment or settlement of one or all of the cases in the merchant litigations. Among a number of scenarios addressed by the agreements, in the event of a global settlement involving the Visa parties, the financial institutions and Mastercard, Mastercard would pay 12% of the monetary portion of the settlement. In the event of a settlement involving only Mastercard and the financial institutions with respect to their issuance of Mastercard cards, Mastercard would pay 36% of the monetary portion of such settlement.

In October 2012, the parties entered into a definitive settlement agreement with respect to the merchant class litigation (including with respect to the claims related to the IPO) and the defendants separately entered into a settlement agreement with the individual merchant plaintiffs. The settlements included cash payments that were apportioned among the defendants pursuant to the omnibus judgment sharing and settlement sharing agreement described above. Mastercard also agreed to provide class members with a short-term reduction in default credit interchange rates and to modify certain of its business practices, including its No Surcharge Rule. Objections to the settlement were filed by both merchants and certain competitors, including Discover. Discover's objections included a challenge to the settlement on the grounds that certain of the rule changes agreed to in the settlement constitute a restraint of trade in violation of Section 1 of the Sherman Act. The court granted final approval of the settlement in December 2013, and objectors to the settlement appealed that decision to the U.S. Court of Appeals for the Second Circuit. In June 2016, the court of appeals vacated the class action certification, reversed the settlement approval and sent the case back to the district court for further proceedings. The court of appeals' ruling was based primarily on whether the merchants were adequately represented by counsel in the settlement.

Prior to the reversal of the settlement approval, merchants representing slightly more than 25% of the Mastercard and Visa purchase volume over the relevant period chose to opt out of the class settlement. Mastercard had anticipated that most of the larger merchants who opted out of the settlement would initiate separate actions seeking to recover damages, and over 30 opt-out complaints have been filed on behalf of numerous merchants in various jurisdictions. Mastercard has executed settlement agreements with a number of opt-out merchants. Mastercard believes these settlement agreements are not impacted by the ruling of the court of appeals. The defendants have consolidated all of these matters (except for one state court action in New Mexico) in front of the same federal district court that approved the merchant class settlement. In July 2014, the district court denied the defendants' motion to dismiss the opt-out merchant complaints for failure to state a claim. Deposition discovery in these actions and the class action commenced in December 2016.

As of December 31, 2016, Mastercard had accrued a liability of $705 million as a reserve for both the merchant class litigation and the filed and anticipated opt-out merchant cases. As of December 31, 2016 and December 31, 2015, Mastercard had $543 million and $541 million, respectively, in a qualified cash settlement fund related to the merchant class litigation and classified as restricted cash on its consolidated balance sheet. Mastercard believes the reserve for both the merchant class litigation and the filed and anticipated opt-out merchants represents its best estimate of its probable liabilities in these matters at December 31, 2016. The portion of the accrued liability relating to both the opt-out merchants and the merchant class litigation settlement does not represent an estimate of a loss, if any, if the matters were litigated to a final outcome. Mastercard cannot estimate the potential liability if that were to occur.

Canada. In December 2010, a proposed class action complaint was commenced against Mastercard in Quebec on behalf of Canadian merchants. That suit essentially repeated the allegations and arguments of a previously filed application by the Canadian Competition Bureau to the Canadian Competition Tribunal (dismissed in Mastercard's favor) concerning certain Mastercard rules related to point-of-sale acceptance, including the "honor all cards" and "no surcharge" rules. The Quebec suit sought compensatory and punitive damages in unspecified amounts, as well as injunctive relief. In the first half of 2011, additional purported class action lawsuits were commenced in British Columbia and Ontario against Mastercard, Visa and a number of large Canadian financial institutions. The British Columbia suit seeks compensatory damages in unspecified amounts, and the Ontario suit seeks compensatory damages of $5 billion on the basis of alleged conspiracy and various alleged breaches of the Canadian Competition Act. The British Columbia and Ontario suits also seek punitive damages in unspecified amounts, as well as injunctive relief, interest and legal costs. The Quebec suit was later amended to include the same defendants and similar claims as in the British Columbia and Ontario suits. Additional purported class action complaints have been commenced in Saskatchewan and Alberta with claims that largely mirror those in the British Columbia, Ontario and Quebec suits. With respect to the status of the proceedings: (1) several of the merchants' claims in the British Columbia case have been allowed to proceed on a class basis, and a trial date has been set for September 2018, (2) the British Columbia suit plaintiff is seeking to claim significant additional damages for the period subsequent to March 2010 (currently in front of the British Columbia Court of Appeal), (3) the class certification hearing in the Quebec suit is scheduled for November 2017 and (4) the Ontario, Saskatchewan and Alberta suits are temporarily suspended while the British Columbia suit proceeds.

Europe. In July 2015, the European Commission issued a Statement of Objections related to Mastercard's interregional interchange fees and central acquiring rules within the European Economic Area. The Statement of Objections, which follows an investigation opened in 2013, includes preliminary conclusions concerning the anticompetitive effects of these practices. The European Commission has indicated it intends to seek fines if these conclusions are subsequently confirmed. Although the Statement of Objections does not quantify the level of fines, it is possible that they could be substantial. In April 2016, Mastercard submitted a response to the Statement of Objections disputing the Commission's preliminary conclusions and participated in a related oral hearing in May 2016.

In the United Kingdom, beginning in May 2012, a number of retailers filed claims or threatened litigation against Mastercard seeking damages for alleged anti-competitive conduct with respect to Mastercard's cross-border interchange fees and its U.K. and Ireland domestic interchange fees (the "U.K. Merchant claimants"), with claimed purported damages exceeding $1 billion. The U.K. Merchant claimants (including all resolved matters) represent approximately 40% of Mastercard's U.K. interchange volume over the relevant damages period. Additional merchants have filed or threatened litigation with respect to interchange rates in Europe (the "Pan-European claimants") for purported damages exceeding $1 billion. In June 2015, Mastercard entered into a settlement with one of the U.K. Merchant claimants for $61 million, recorded as a provision for litigation settlement. Mastercard has submitted statements of defense to the remaining retailers' claims disputing liability and damages. Following the conclusion of a trial for liability and damages for one of the U.K. merchant cases, in July 2016, the tribunal issued a judgment against Mastercard for damages. Mastercard recorded a litigation provision of $107 million in the second quarter of 2016, that includes the amount of the judgment and estimated legal fees and costs. Mastercard has sought permission from the court to appeal this judgment. In the fourth quarter of 2016, Mastercard recorded a charge of $10 million relating to settlements with multiple U.K. Merchant claimants.

In January 2017, Mastercard received a liability judgment in its favor on all significant matters in a separate action brought by ten of the U.K. Merchant claimants, who had been seeking in excess of $500 million in damages. These claimants can request permission to appeal this decision. In light of this favorable judgment, Mastercard is not able to estimate a reasonably possible loss, if any, for settlements or judgments relating to the remaining U.K. Merchant claimant litigations.

In September 2016, a proposed collective action was filed in the United Kingdom on behalf of U.K. consumers seeking damages for intra-EEA and domestic U.K. interchange fees that were allegedly passed on to consumers by merchants between 1992 and 2008. The complaint, which seeks to leverage the European Commission's 2007 decision on intra-EEA interchange fees, claims damages in an amount that exceeds £14 billion (approximately $18 billion). In January 2017, the court heard argument on the plaintiffs' application for collective action, and the parties are awaiting a decision. At this time Mastercard is unable to estimate a probable loss for the matter, if any, and accordingly has not accrued for any loss.

ATM Non-Discrimination Rule Surcharge Complaints

In October 2011, a trade association of independent Automated Teller Machine ("ATM") operators and 13 independent ATM operators filed a complaint styled as a class action lawsuit in the U.S. District Court for the District of Columbia against both Mastercard and Visa (the "ATM Operators Complaint"). Plaintiffs seek to represent a class of non-bank operators of ATM terminals that operate in the United States with the discretion to determine the price of the ATM access fee for the terminals they operate. Plaintiffs allege that Mastercard and Visa have violated Section 1 of the Sherman Act by imposing rules that require ATM operators to charge non-discriminatory ATM surcharges for transactions processed over Mastercard's and Visa's respective networks that are not greater than the surcharge for transactions over other networks accepted at the same ATM. Plaintiffs seek both injunctive and monetary relief equal to treble the damages they claim to have sustained as a result of the alleged violations and their costs of suit, including attorneys' fees. Plaintiffs have not quantified their damages although they allege that they expect damages to be in the tens of millions of dollars.

Subsequently, multiple related complaints were filed in the U.S. District Court for the District of Columbia alleging both federal antitrust and multiple state unfair competition, consumer protection and common law claims against Mastercard and Visa on behalf of putative classes of users of ATM services (the "ATM Consumer Complaints"). The claims in these actions largely mirror the allegations made in the ATM Operators Complaint, although these complaints seek damages on behalf of consumers of ATM services who pay allegedly inflated ATM fees at both bank and non-bank ATM operators as a result of the defendants' ATM rules. Plaintiffs seek both injunctive and monetary relief equal to treble the damages they claim to have sustained as a result of the alleged violations and their costs of suit, including attorneys' fees. Plaintiffs have not quantified their damages although they allege that they expect damages to be in the tens of millions of dollars.

In January 2012, the plaintiffs in the ATM Operators Complaint and the ATM Consumer Complaints filed amended class action complaints that largely mirror their prior complaints. In February 2013, the district court granted Mastercard's motion to dismiss the complaints for failure to state a claim. On appeal, the Court of Appeals reversed the district court's order in August 2015 and sent the case back for further proceedings. In March 2016, certain of the plaintiffs in the ATM Operators Complaint filed a motion seeking a preliminary injunction enjoining the enforcement of the nondiscrimination rules pending the outcome of the litigation. In November 2016, the U.S. Supreme Court dismissed the appeal and returned the matter to the district court for further proceedings. The district court has scheduled briefing on the ATM operators' motion for a preliminary injunction.

U.S. Liability Shift Litigation

In March 2016, a proposed U.S. merchant class action complaint was filed in federal court in California alleging that Mastercard, Visa, American Express and Discover (the "Network Defendants"), EMVCo, and a number of issuing banks (the "Bank Defendants") engaged in a conspiracy to shift fraud liability for card present transactions from issuing banks to merchants not yet in compliance with the standards for EMV chip cards in the United States (the "EMV Liability Shift"), in violation of the Sherman Act and California law. Plaintiffs allege the damages would be the value of all chargebacks for which class members became liable as a result of the EMV Liability Shift on October 1, 2015. The plaintiffs seek treble damages, attorney's fees and costs and an injunction against future violations of governing law, and the defendants have filed a motion to dismiss. In September 2016, the court denied the Network Defendants' motion to dismiss the complaint, but granted such a motion for EMVCo and the Bank Defendants. The case against the Network Defendants is now proceeding with a trial currently scheduled for late 2017.

Note 19. *Settlement and Other Risk Management*

Mastercard's rules guarantee the settlement of many of the Mastercard, Cirrus and Maestro branded transactions between its issuers and acquirers ("settlement risk"). Settlement exposure is the outstanding settlement risk to customers under Mastercard's rules due to the difference in timing between the payment transaction date and subsequent settlement. While the term and amount of the guarantee are unlimited, the duration of settlement exposure is short term and typically limited to a few days. Gross settlement exposure is estimated using the average daily card volume during the quarter multiplied by the estimated number of days to settle. The Company has global risk management policies and procedures, which include risk standards, to provide a framework for managing the Company's settlement risk. Customer-reported transaction data and the transaction clearing data underlying the settlement exposure calculation may be revised in subsequent reporting periods.

In the event that Mastercard effects a payment on behalf of a failed customer, Mastercard may seek an assignment of the underlying receivables of the failed customer. Customers may be charged for the amount of any settlement loss incurred during the ordinary course activities of the Company.

The Company has global risk management policies and procedures aimed at managing the settlement exposure. These risk management procedures include interaction with the bank regulators of countries in which it operates, requiring customers to make adjustments to settlement processes, and requiring collateral from customers. As part of its policies, Mastercard requires certain customers that are not in compliance with the Company's risk standards in effect at the time of review to post collateral, typically in the form of cash, letters of credit, or guarantees. This requirement is based on management's review of the individual risk circumstances for each customer that is out of compliance. In addition to these amounts, Mastercard holds collateral to cover variability and future growth in customer programs. The Company may also hold collateral to pay merchants in the event of an acquirer failure. Although the Company is not contractually obligated under its rules to effect such payments to merchants, the Company may elect to do so to protect brand integrity. Mastercard monitors its credit risk portfolio on a regular basis and the adequacy of collateral on hand. Additionally, from time to time, the Company reviews its risk management methodology and standards. As such, the amounts of estimated settlement exposure are revised as necessary.

The Company's estimated settlement exposure from Mastercard, Cirrus and Maestro branded transactions was as follows:

	December 31, 2016	December 31, 2015
	(in millions)	
Gross settlement exposure	$ 37,202	$ 39,674
Collateral held for settlement exposure	(3,734)	(3,601)
Net uncollateralized settlement exposure	$ 33,468	$ 36,073

General economic and political conditions in countries in which Mastercard operates affect the Company's settlement risk. Many of the Company's financial institution customers have been directly and adversely impacted by political instability and uncertain economic conditions. These conditions present increased risk that the Company may have to perform under its settlement guarantee. This risk could increase if political, economic and financial market conditions deteriorate further. The Company's global risk management policies and procedures are revised and enhanced from time to time. Historically, the Company has experienced a low level of losses from financial institution failures.

Mastercard also provides guarantees to customers and certain other counterparties indemnifying them from losses stemming from failures of third parties to perform duties. This includes guarantees of Mastercard-branded travelers cheques issued, but not yet cashed of $397 million and $420 million at December 31, 2016 and 2015, respectively, of which $312 million and $332 million at December 31, 2016 and 2015, respectively, is mitigated by collateral arrangements. In addition, the Company enters into business agreements in the ordinary course of business under which the Company agrees to indemnify third parties against damages, losses and expenses incurred in connection with legal and other proceedings arising from relationships or transactions with the Company. Certain indemnifications do not provide a stated maximum exposure. As the extent of the Company's obligations under these agreements depends entirely upon the occurrence of future events, the Company's potential future liability under these agreements is not determinable. Historically, payments made by the Company under these types of contractual arrangements have not been material.

Note 20. *Foreign Exchange Risk Management*

The Company monitors and manages its foreign currency exposures as part of its overall risk management program which focuses on the unpredictability of financial markets and seeks to reduce the potentially adverse effects that the volatility of these markets may have on its operating results. A principal objective of the Company's risk management strategies is to reduce significant, unanticipated earnings fluctuations that may arise from volatility in foreign currency exchange rates principally through the use of derivative instruments.

Derivatives

The Company enters into foreign currency derivative contracts to manage risk associated with anticipated receipts and disbursements which are valued based on currencies other than the functional currencies of the entity. The Company may also enter into foreign currency derivative contracts to offset possible changes in value due to foreign exchange fluctuations of earnings, assets and liabilities. The objective of these activities is to reduce the Company's exposure to gains and losses resulting from fluctuations of foreign currencies against its functional currencies.

As of December 31, 2016, the majority of derivative contracts to hedge foreign currency fluctuations had been entered into with customers of Mastercard. Mastercard's derivative contracts are summarized below:

	December 31, 2016		December 31, 2015	
	Notional	Estimated Fair Value	Notional	Estimated Fair Value
	(in millions)			
Commitments to purchase foreign currency	$ 37	$ (2)	$ 232	$ 1
Commitments to sell foreign currency	777	18	1,430	12
Options to sell foreign currency	—	—	44	1
Balance sheet location				
Accounts receivable [1]		$ 29		$ 23
Other current liabilities [1]		(13)		(9)

[1] The fair values of derivative contracts are determined using a Level 2 Valuation Hierarchy and are presented on a gross basis on the consolidated balance sheet and are subject to enforceable master netting arrangements, which contain various netting and setoff provisions.

The amount of gain (loss) recognized in income for the contracts to purchase and sell foreign currency is summarized below:

	Year Ended December 31,		
	2016	2015	2014
		(in millions)	
Foreign currency derivative contracts			
General and administrative	$ (6)	$ 51	$ (78)

The fair value of the foreign currency derivative contracts generally reflects the estimated amounts that the Company would receive (or pay), on a pre-tax basis, to terminate the contracts. The terms of the foreign currency derivative contracts are generally less than 18 months. The Company had no deferred gains or losses related to foreign exchange contracts in accumulated other comprehensive income as of December 31, 2016 and 2015, as these contracts were not accounted for under hedge accounting.

The Company's derivative financial instruments are subject to both market and counterparty credit risk. Market risk is the risk of loss due to the potential change in an instrument's value caused by fluctuations in foreign currency exchange rates, interest rates and other related variables. The effect of a hypothetical 10% adverse change in foreign currency forward rates could result in a fair value loss of approximately $80 million on the Company's foreign currency derivative contracts outstanding at December 31, 2016 related to the hedging program. Counterparty credit risk is the risk of loss due to failure of the counterparty to perform its obligations in accordance with contractual terms. To mitigate counterparty credit risk, the Company enters into derivative contracts with selected financial institutions based upon their credit ratings and other factors. Generally, the Company does not obtain collateral related to derivatives because of the high credit ratings of the counterparties.

Net investment hedge

The Company uses foreign currency denominated debt to hedge a portion of its net investment in foreign operations against adverse movements in exchange rates, with changes in the value of the debt recorded within currency translation adjustment in accumulated other comprehensive income (loss). During the fourth quarter of 2015, the Company designated its €1.65 billion euro-denominated debt as a net investment hedge for a portion of its net investment in European foreign operations. As of December 31, 2016, the Company had a net foreign currency transaction pre-tax gain of $20 million in accumulated other comprehensive income (loss) associated with hedging activity. There was no ineffectiveness in the current period.

Note 21. *Segment Reporting*

Mastercard has concluded it has one operating and reportable segment, "Payment Solutions." Mastercard's President and Chief Executive Officer has been identified as the chief operating decision-maker. All of the Company's activities are interrelated, and each activity is dependent upon and supportive of the other. Accordingly, all significant operating decisions are based upon analysis of Mastercard at the consolidated level.

Revenue by geographic market is based on the location of the Company's customer that issued the card, as well as the location of the merchant acquirer where the card is being used. Revenue generated in the U.S. was approximately 38% of total revenue in 2016 and 39% in 2015 and 2014, respectively. No individual country, other than the U.S., generated more than 10% of total revenue in those periods.

Mastercard did not have any one customer that generated greater than 10% of net revenue in 2016, 2015 or 2014. The following table reflects the geographical location of the Company's property, plant and equipment, net, as of December 31:

	2016	2015	2014
		(in millions)	
United States	$ 504	$ 471	$ 450
Other countries	229	204	165
Total	$ 733	$ 675	$ 615

MASTERCARD INCORPORATED

SUMMARY OF QUARTERLY DATA (Unaudited)

	2016 Quarter Ended				
	March 31	June 30	September 30	December 31	2016 Total
	(in millions, except per share data)				
Net revenue	$ 2,446	$ 2,694	$ 2,880	$ 2,756	$ 10,776
Operating income	1,348	1,380	1,670	1,363	5,761
Net income	959	983	1,184	933	4,059
Basic earnings per share	$ 0.86	$ 0.89	$ 1.08	$ 0.86	$ 3.70
Basic weighted-average shares outstanding	1,109	1,098	1,096	1,087	1,098
Diluted earnings per share	$ 0.86	$ 0.89	$ 1.08	$ 0.86	$ 3.69
Diluted weighted-average shares outstanding	1,112	1,101	1,099	1,090	1,101

	2015 Quarter Ended				
	March 31	June 30	September 30	December 31	2015 Total
	(in millions, except per share data)				
Net revenue	$ 2,230	$ 2,390	$ 2,530	$ 2,517	$ 9,667
Operating income	1,351	1,251	1,369	1,107	5,078
Net income	1,020	921	977	890	3,808
Basic earnings per share	$ 0.89	$ 0.81	$ 0.86	$ 0.79	$ 3.36
Basic weighted-average shares outstanding	1,148	1,138	1,130	1,121	1,134
Diluted earnings per share	$ 0.89	$ 0.81	$ 0.86	$ 0.79	$ 3.35
Diluted weighted-average shares outstanding	1,152	1,141	1,133	1,124	1,137

Note: Tables may not sum due to rounding.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission and to ensure that information required to be disclosed is accumulated and communicated to management, including our President and Chief Executive Officer and our Chief Financial Officer, to allow timely decisions regarding disclosure. The President and Chief Executive Officer and the Chief Financial Officer, with assistance from other members of management, have reviewed the effectiveness of our disclosure controls and procedures as of December 31, 2016 and, based on their evaluation, have concluded that the disclosure controls and procedures were effective as of such date.

Internal Control over Financial Reporting

In addition, Mastercard Incorporated's management assessed the effectiveness of Mastercard's internal control over financial reporting as of December 31, 2016. Management's report on internal control over financial reporting is included in Part II, Item 8. PricewaterhouseCoopers LLP, an independent registered public accounting firm, has audited the consolidated financial statements included in this Annual Report on Form 10-K and, as part of their audit, has issued their report, included herein, on the effectiveness of our internal control over financial reporting.

Changes in Internal Control over Financial Reporting

There was no change in Mastercard's internal control over financial reporting that occurred during the three months ended December 31, 2016 that has materially affected, or is reasonably likely to materially affect, Mastercard's internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

Pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012, we hereby incorporate by reference herein the disclosure contained in Exhibit 99.1 of this Report.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item with respect to our directors and executive officers, code of ethics, procedures for recommending nominees, audit committee, audit committee financial experts and compliance with Section 16(a) of the Exchange Act will appear in our definitive proxy statement to be filed with the SEC and delivered to stockholders in connection with the Annual Meeting of Stockholders to be held on June 27, 2017 (the "Proxy Statement").

The aforementioned information in the Proxy Statement is incorporated by reference into this Report.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this Item with respect to executive officer and director compensation will appear in the Proxy Statement and is incorporated by reference into this Report.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item with respect to security ownership of certain beneficial owners and management equity and compensation plans will appear in the Proxy Statement and is incorporated by reference into this Report.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item with respect to transactions with related persons, the review, approval or ratification of such transactions and director independence will appear in the Proxy Statement and is incorporated by reference into this Report.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item with respect to auditors' services and fees will appear in the Proxy Statement and is incorporated by reference into this Report.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this Report:

1 Consolidated Financial Statements

See Index to Consolidated Financial Statements in Part II, Item 8.

2 Consolidated Financial Statement Schedules

None.

3 The following exhibits are filed as part of this Report or, where indicated, were previously filed and are hereby incorporated by reference:

Refer to the Exhibit Index included herein.

ITEM 16. SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

MASTERCARD INCORPORATED
(Registrant)

Date: February 15, 2017 By: /s/ AJAY BANGA
Ajay Banga
President and Chief Executive Officer
(Principal Executive Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated:

Date: February 15, 2017 By: /s/ AJAY BANGA
Ajay Banga
President and Chief Executive Officer; Director
(Principal Executive Officer)

Date: February 15, 2017 By: /s/ MARTINA HUND-MEJEAN
Martina Hund-Mejean
Chief Financial Officer
(Principal Financial Officer)

Date: February 15, 2017 By: /s/ ANDREA FORSTER
Andrea Forster
Corporate Controller
(Principal Accounting Officer)

Date: February 15, 2017 By: /s/ SILVIO BARZI
Silvio Barzi
Director

Date: February 15, 2017 By: /s/ DAVID R. CARLUCCI
David R. Carlucci
Director

Date: February 15, 2017 By: /s/ STEVEN J. FREIBERG
Steven J. Freiberg
Director

Date: February 15, 2017 By: /s/ JULIUS GENACHOWSKI
Julius Genachowski
Director

Date: February 15, 2017 By: /s/ RICHARD HAYTHORNTHWAITE
Richard Haythornthwaite
Chairman of the Board; Director

Date: February 15, 2017	By:	/s/ MERIT E. JANOW **Merit E. Janow** **Director**
Date: February 15, 2017	By:	/s/ NANCY J. KARCH **Nancy J. Karch** **Director**
Date: February 15, 2017	By:	/s/ OKI MATSUMOTO **Oki Matsumoto** **Director**
Date: February 15, 2017	By:	/s/ RIMA QURESHI **Rima Qureshi** **Director**
Date: February 15, 2017	By:	/s/ JOSÉ OCTAVIO REYES LAGUNES **José Octavio Reyes Lagunes** **Director**
Date: February 15, 2017	By:	/s/ JACKSON TAI **Jackson Tai** **Director**

EXHIBIT INDEX

Exhibit Number	Exhibit Description
3.1(a)	Amended and Restated Certificate of Incorporation of Mastercard Incorporated (incorporated by reference to Exhibit 3.1 to the Company’s Current Report on Form 8-K filed September 29, 2016 (File No. 001-32877)).
3.1(b)	Amended and Restated Bylaws of Mastercard Incorporated (incorporated by reference to Exhibit 3.1 to the Company’s Current Report on Form 8-K filed September 29, 2016 (File No. 001-32877)).
4.1	Indenture, dated as of March 31, 2014, between the Company and Deutsche Bank Trust Company Americas, as trustee (incorporated by reference to Exhibit 4.1 of the Company’s Current Report on Form 8-K filed on March 31, 2014 (File No. 001-32877)).
4.2	Officer’s Certificate of the Company, dated as of March 31, 2014 (incorporated by reference to Exhibit 4.2 of the Company’s Current Report on Form 8-K filed on March 31, 2014 (File No. 001-32877)).
4.3	Form of Global Note representing the Company’s 2.000% Notes due 2019 (included in Exhibit 4.2) (incorporated by reference to Exhibit 4.3 of the Company’s Current Report on Form 8-K filed on March 31, 2014 (File No. 001-32877)).
4.4	Form of Global Note representing the Company’s 3.375% Notes due 2024 (included in Exhibit 4.2) (incorporated by reference to Exhibit 4.4 of the Company’s Current Report on Form 8-K filed on March 31, 2014 (File No. 001-32877)).
4.5	Officer’s Certificate of the Company, dated as of December 1, 2015 (incorporated by reference to Exhibit 4.1 of the Company’s Current Report on Form 8-K filed on December 1, 2015 (File No. 001-32877)).
4.6	Form of Global Note representing the Company’s 1.100% Notes due 2022 (included in Exhibit 4.5) (incorporated by reference to Exhibit 4.2 of the Company’s Current Report on Form 8-K filed on December 1, 2015 (File No. 001-32877)).
4.7	Form of Global Note representing the Company’s 2.100% Notes due 2027 (included in Exhibit 4.5) (incorporated by reference to Exhibit 4.3 of the Company’s Current Report on Form 8-K filed on December 1, 2015 (File No. 001-32877)).
4.8	Form of Global Note representing the Company’s 2.500% Notes due 2030 (included in Exhibit 4.5) (incorporated by reference to Exhibit 4.4 of the Company’s Current Report on Form 8-K filed on December 1, 2015 (File No. 001-32877)).
4.9	Officer’s Certificate of the Company, dated as of November 21, 2016 (incorporated by reference to Exhibit 4.1 of the Company’s Current Report on Form 8-K filed on November 21, 2016 (File No. 001-32877)).
4.10	Form of Global Note representing the Company’s 2.000% Notes due 2021 (included in Exhibit 4.1) (incorporated by reference to Exhibit 4.2 of the Company’s Current Report on Form 8-K filed on November 21, 2016 (File No. 001-32877)).
4.11	Form of Global Note representing the Company’s 2.950% Notes due 2026 (included in Exhibit 4.1) (incorporated by reference to Exhibit 4.3 of the Company’s Current Report on Form 8-K filed on November 21, 2016 (File No. 001-32877)).
4.12	Form of Global Note representing the Company’s 2.950% Notes due 2046 (included in Exhibit 4.1) (incorporated by reference to Exhibit 4.4 of the Company’s Current Report on Form 8-K filed on November 21, 2016 (File No. 001-32877)).

10.1	$3,750,000,000 Amended and Restated Credit Agreement, dated as of October 21, 2015, among Mastercard Incorporated, the several lenders and agents from time to time party thereto, Citibank, N.A., as managing administrative agent and JPMorgan Chase Bank, N.A. as administrative agent (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed October 23, 2015 (File No. 001-32877)).
10.1.1	First Amendment to $3,750,000,000 Amended and Restated Credit Agreement, dated as of October 5, 2016, among Mastercard Incorporated, the several lenders and agents from time to time party thereto, Citibank, N.A., as managing administrative agent and JPMorgan Chase Bank, N.A. as administrative agent (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 10-Q filed October 28, 2016 (File No. 001-32877)).
10.2+	Employment Agreement between Mastercard International Incorporated and Ajay Banga, dated as of July 1, 2010 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed July 8, 2010 (File No. 001-32877)).
10.3+	Employment Agreement between Martina Hund-Mejean and Mastercard International, amended and restated as of December 24, 2012 (incorporated by reference to Exhibit 10.5 to the Company's Annual Report on Form 10-K filed February 14, 2013 (File No. 001-32877)).
10.4+	Description of Employment Arrangement with Gary Flood (incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K filed February 18, 2010 (File No. 001-32877)).
10.5+	Offer Letter between Ann Cairns and Mastercard International Incorporated, dated June 15, 2011 (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K filed February 16, 2012 (File No. 001-32877)).
10.5.1+	Contract of Employment between Mastercard UK Management Services Limited and Ann Cairns, dated July 6, 2011 (incorporated by reference to Exhibit 10.8.1 to the Company's Annual Report on Form 10-K filed February 16, 2012 (File No. 001-32877)).
10.5.2+	Deed of Employment between Mastercard UK Management Services Limited and Ann Cairns, dated July 6, 2011 (incorporated by reference to Exhibit 10.8.2 to the Company's Annual Report on Form 10-K filed February 16, 2012 (File No. 001-32877)).
10.6+	Mastercard International Senior Executive Annual Incentive Compensation Plan, as amended and restated effective June 9, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 10, 2015 (File No. 001-32877)).
10.7+	Mastercard International Incorporated Restoration Program, as amended and restated January 1, 2007 unless otherwise provided (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K filed February 19, 2009 (File No. 001-32877)).
10.8+	Mastercard Incorporated Deferral Plan, as amended and restated effective December 1, 2008 for account balances established after December 31, 2004 (incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K filed February 19, 2009 (File No. 001-32877)).
10.9+	Mastercard Incorporated 2006 Long Term Incentive Plan, amended and restated effective June 5, 2012 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed August 1, 2012 (File No. 001-32877)).
10.10+	Form of Restricted Stock Unit Agreement for awards under 2006 Long Term Incentive Plan (effective for awards granted on and subsequent to March 1, 2016) (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed April 28, 2016 (File No. 001-32877)).
10.11+	Form of Stock Option Agreement for awards under 2006 Long Term Incentive Plan (effective for awards granted on and subsequent to March 1, 2016) (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed April 28, 2016 (File No. 001-32877)).
10.12+	Form of Performance Unit Agreement for awards under 2006 Long Term Incentive Plan (effective for awards granted on and subsequent to March 1, 2016) (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed April 28, 2016 (File No. 001-32877)).

10.13+	Form of Mastercard Incorporated Long-Term Incentive Plan Non-Competition and Non-Solicitation Agreement for named executive officers (incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K filed February 16, 2012 (File No. 001-32877)).
10.14+	Amended and Restated Mastercard International Incorporated Executive Severance Plan, amended and restated as of June 5, 2012 (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed August 1, 2012 (File No. 001-32877)).
10.15+	Amended and Restated Mastercard International Incorporated Change in Control Severance Plan, amended and restated as of June 5, 2012 (incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q filed August 1, 2012 (File No. 001-32877)).
10.16	Schedule of Non-Employee Directors' Annual Compensation effective as of June 9, 2015 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed July 29, 2015 (File No. 001-32877)).
10.17	2006 Non-Employee Director Equity Compensation Plan, amended and restated effective as of June 5, 2012 (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed August 1, 2012 (File No. 001-32877)).
10.18	Form of Deferred Stock Unit Agreement for awards under 2006 Non-Employee Director Equity Compensation Plan, amended and restated effective June 5, 2012 (effective for awards granted on and subsequent to June 28, 2016) (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed July 28, 2016 (File No. 001-32877)).
10.19	Form of Restricted Stock Agreement for awards under 2006 Non-Employee Director Equity Compensation Plan, amended and restated effective June 5, 2012 (effective for awards granted on and subsequent to June 28, 2016) (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed July 28, 2016 (File No. 001-32877)).
10.20	Form of Indemnification Agreement between Mastercard Incorporated and certain of its directors (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed May 2, 2006 (File No. 000-50250)).
10.21	Form of Indemnification Agreement between Mastercard Incorporated and certain of its director nominees (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed May 2, 2006 (File No. 000-50250)).
10.22	Deed of Gift between Mastercard Incorporated and The Mastercard Foundation (incorporated by reference to Exhibit 10.28 to Pre-Effective Amendment No. 5 to the Company's Registration Statement on Form S-1 filed May 3, 2006 (File No. 333-128337)).
10.23	Settlement Agreement, dated as of June 4, 2003, between Mastercard International Incorporated and Plaintiffs in the class action litigation entitled In Re Visa Check/MasterMoney Antitrust Litigation (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed August 8, 2003 (File No. 000-50250)).
10.24	Stipulation and Agreement of Settlement, dated July 20, 2006, between Mastercard Incorporated, the several defendants and the plaintiffs in the consolidated federal class action lawsuit titled In re Foreign Currency Conversion Fee Antitrust Litigation (MDL 1409), and the California state court action titled Schwartz v. Visa Int'l Corp., et al. (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed November 1, 2006 (File No. 001-32877)).
10.25	Omnibus Agreement Regarding Interchange Litigation Judgment Sharing and Settlement Sharing, dated as of February 7, 2011, by and among Mastercard Incorporated, Mastercard International Incorporated, Visa Inc., Visa U.S.A. Inc., Visa International Service Association and Mastercard's customer banks that are parties thereto (incorporated by reference to Exhibit 10.33 to Amendment No.1 to the Company's Annual Report on Form 10-K/A filed on November 23, 2011).

10.25.1	Amendment to Omnibus Agreement Regarding Interchange Litigation Judgment Sharing and Settlement Sharing, dated as of August 25, 2014, by and among Mastercard Incorporated, Mastercard International Incorporated, Visa Inc., Visa U.S.A Inc., Visa International Service Association and Mastercard's customer banks that are parties thereto (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed October 30, 2014 (File No. 001-32877)).
10.25.2	Second Amendment to Omnibus Agreement Regarding Interchange Litigation Judgment Sharing and Settlement Sharing, dated as of October 22, 2015, by and among Mastercard Incorporated, Mastercard International Incorporated, Visa Inc., Visa U.S.A Inc., Visa International Service Association and Mastercard's customer banks that are parties thereto (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed October 29, 2015 (File No. 001-32877)).
10.26**	Mastercard Settlement and Judgment Sharing Agreement, dated as of February 7, 2011, by and among Mastercard Incorporated, Mastercard International Incorporated and Mastercard's customer banks that are parties thereto (incorporated by reference to Exhibit 10.34 to Amendment No.1 to the Company's Annual Report on Form 10-K/A filed on November 23, 2011).
10.26.1	Amendment to Mastercard Settlement and Judgment Sharing Agreement, dated as of August 26, 2014, by and among Mastercard Incorporated, Mastercard International Incorporated and Mastercard's customer banks that are parties thereto (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed October 30, 2014 (File No. 001-32877)).
10.26.2	Second Amendment to Mastercard Settlement and Judgment Sharing Agreement, dated as of October 22, 2015, by and among Mastercard Incorporated, Mastercard International Incorporated and Mastercard's customer banks that are parties thereto (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed October 29, 2015 (File No. 001-32877)).
10.27	Class Settlement Agreement, dated October 19, 2012, by and among Mastercard Incorporated and Mastercard International Incorporated; Visa, Inc., Visa U.S.A. Inc. and Visa International Service Association; the Class Plaintiffs defined therein; and the Customer Banks defined therein (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed October 31, 2012 (File No. 001-32877)).
12.1*	Computation of Ratio of Earnings to Fixed Charges.
21*	List of Subsidiaries of Mastercard Incorporated.
23.1*	Consent of PricewaterhouseCoopers LLP.
31.1*	Certification of Ajay Banga, President and Chief Executive Officer, pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Martina Hund-Mejean, Chief Financial Officer, pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Ajay Banga, President and Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Martina Hund-Mejean, Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
99.1*	Disclosure pursuant to Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema Document
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Label Linkbase Document

101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

+ Management contracts or compensatory plans or arrangements.

* Filed or furnished herewith.

** Exhibit omits certain information that has been filed separately with the U.S. Securities and Exchange Commission and has been granted confidential treatment.

The agreements and other documents filed as exhibits to this report are not intended to provide factual information or other disclosure other than with respect to the terms of the agreements or other documents themselves, and should not be relied upon for that purpose. In particular, any representations and warranties made by the Company in these agreements or other documents were made solely within the specific context of the relevant agreement or document and may not describe the actual state of affairs as of the date they were made or at any other time.

Mastercard Board of Directors

Richard Haythornthwaite [2, 3]
Chairman of the Board
Mastercard Incorporated,
Non-Executive Chairman
of Centrica PLC

Ajay Banga
President and
Chief Executive Officer
Mastercard Incorporated

Silvio Barzi [1, 3]
Former Senior Advisor
and Executive Officer
UniCredit Group

David R. Carlucci [2, 3]
Former Chairman and Chief
Executive Officer
IMS Health Incorporated

Steven J. Freiberg [1, 3 (Chair)]
Senior Advisor
The Boston Consulting Group

Julius Genachowski [1]
Managing Director and Partner
The Carlyle Group

Merit E. Janow [1, 2]
Dean, School of International
and Public Affairs
Columbia University

Nancy J. Karch [2 (Chair)]
Director Emeritus
McKinsey & Company

Oki Matsumoto [1]
Managing Director,
Chairman and CEO,
Monex Group, Inc.

Rima Qureshi [3]
President,
Ericsson North America
Senior Vice President,
Ericsson

José Octavio Reyes Lagunes [1 (Chair)]
Former Vice Chairman,
The Coca-Cola Export Corporation,
The Coca-Cola Company

Jackson Tai [2, 3]
Former Vice Chairman and
Chief Executive Officer
DBS Group and DBS Bank Ltd.

Mastercard Management Committee

Executive Officers

Ajay Banga
President and
Chief Executive Officer

Ann Cairns
President,
International Markets

Gary J. Flood
President, Global Products
and Solutions

Michael Fraccaro
Chief Human Resources
Officer

Martina Hund-Mejean
Chief Financial Officer

Edward McLaughlin
President, Operations
and Technology

Timothy Murphy
General Counsel and
Chief Franchise Officer

Craig Vosburg
President, North America

Additional Management Committee Members

Ajay Bhalla
President of Enterprise
Security Solutions

Gilberto Caldart
President, Latin America and
Caribbean Region

Hai Ling
Co-President, Asia/Pacific

Garry Lyons
Chief Innovation Officer

Walt Macnee
Vice Chairman and
Chairman of the Board,
Center for Inclusive Growth

Raghu Malhotra
President, Middle East and Africa

Michael Miebach
Chief Product Officer

Javier Perez
President, Europe Region

Raja Rajamannar
Chief Marketing and
Communications Officer

Ari Sarker
Co-President, Asia/Pacific

Andrea Scerch
President of Processing

Raj Seshadri
President, U.S. Issuers

Kevin Stanton
President, Advisors

(1) Human Resources and Compensation Committee

(2) Nominating and Corporate Governance Committee

(3) Audit Committee

Mastercard Information and Resources

Major Offices

Corporate Headquarters
2000 Purchase Street
Purchase, New York
10577 U.S.A.
1.914.249.2000

Mastercard Technologies Headquarters
St. Louis, Missouri, U.S.A.

Asia/Pacific Regional Headquarters
Singapore

Canada Regional Headquarters
Toronto, Ontario, Canada

Europe Regional Headquarters
Waterloo, Belgium

Latin America and Caribbean Regional Headquarters
Miami, Florida, U.S.A.

Middle East and Africa Regional Headquarters
Dubai, U.A.E.

North America Regional Headquarters
Purchase, New York, U.S.A.

Stockholder Information

Investor Relations
1.914.249.4565
investor.relations@mastercard.com

Stockholder Information
Copies of the company's Annual Report on Form 10-K as well as other periodic filings by the company with the U.S. Securities and Exchange Commission (SEC) are available on the Investor Relations section of our website at www.mastercard.com.

Visit our website, www.mastercard.com, for updated news releases, stock performance, financial reports, recent investments, investment community presentations, corporate governance and other investor information.

Contact the Mastercard Board of Directors
To communicate with the Board of Directors, any individual directors or any group or committee of directors, correspondence should be addressed to the Board of Directors or any such individual directors or group or committee of directors by either name or title. All such correspondence can be sent by e-mail to our Corporate Secretary at corporate.secretary@mastercard.com or by mail to Mastercard Incorporated, Board of Directors, 2000 Purchase Street, Purchase, New York 10577. Attention: Janet McGinness.

Annual Meeting of Stockholders
The 2017 Annual Meeting of Stockholders of Mastercard Incorporated will be held on Tuesday, June 27, at 8:30 a.m., at Mastecard corporate headquarters, 2000 Purchase Street, Purchase, New York.

Stock Listing and Symbol
New York Stock Exchange Symbol: MA

Transfer Agent
Stockholder correspondence:
Computershare
P.O. Box 505000
Louisville, KY 40233

Overnight correspondence:
Computershare
426 South 4th Street, Suite 1600
Louisville, KY 40202

For holders of Class A common stock:
U.S. Telephone: 1.800.837.7579
Non-U.S. Telephone: 1.201.680.6578

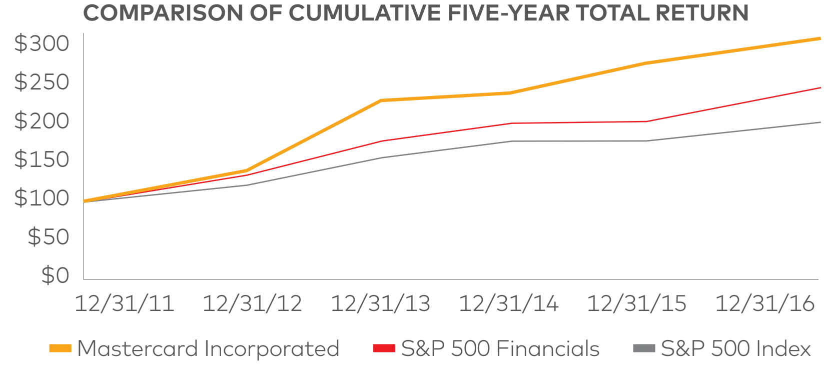
For holders of Class B common stock:
U.S. Telephone: 1.866.337.6318
Non-U.S. Telephone: 1.201.680.6656
Facsimile: 1.201.680.4671

Independent Registered Public Accounting Firm
PricewaterhouseCoopers LLP
New York, New York

Stock Performance

The graph to the right and the table below compare the cumulative total stockholder return of Mastercard Incorporated Class A common stock, the S&P 500 Index and the S&P 500 Financials for the five-year period shown on the graph. The graph assumes a $100 investment in our Class A common stock and each of the indices, and the reinvestment of dividends. Mastercard Incorporated's Class B common stock is not publicly traded or listed on any exchange or dealer quotation system.

COMPARISON OF CUMULATIVE FIVE-YEAR TOTAL RETURN



Total Return To Stockholders

(Includes reinvestment of dividends)

INDEXED RETURNS
Years Ended

Company / Index	Base Period 12/31/11	12/31/12	12/31/13	12/31/14	12/31/15	12/31/16
MasterCard Incorporated	100	132.09	225.42	233.81	266.05	284.37
S&P 500 Index	100	116.00	153.57	174.60	177.01	198.18
S&P 500 Financials	100	128.82	174.71	201.27	198.20	243.38

Source: S&P Capital IQ

We are proud to print our annual report entirely on Forest Stewardship Council™ (FSC®)-certified paper. FSC certification ensures that the paper in our annual report contains fiber from well-managed and responsibly harvested forests that meet strict environmental and socioeconomic standards.

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