Discover Financial Services
Form 10-K
February 23, 2017
UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K
(Mark One)
x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the year ended December 31, 2016
o 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 001-33378
DISCOVER FINANCIAL SERVICES
(Exact name of registrant as specified in its charter)

Delaware	36-2517428
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2500 Lake Cook Road, Riverwoods, Illinois 60015	(224) 405-0900
(Address of principal executive offices, including zip code)	(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, par value $0.01 per share	New York Stock Exchange
Depositary Shares, each representing 1/40th interest in a share of Fixed Rate Non-Cumulative Perpetual Preferred Stock, Series B, par value $0.01 per share	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None
Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No o
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes o No x
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 x No o
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 x No o
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 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. o
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.

Large accelerated filer x	Accelerated filer o
Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

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

The aggregate market value of the common equity held by non-affiliates of the registrant on the last business day of the registrant's most recently completed second fiscal quarter was approximately $21,650,557,104.

As of February 17, 2017, there were 385,534,055 shares of the registrant's Common Stock, par value $0.01 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its annual stockholders' meeting to be held on May 11, 2017 are incorporated by reference in Part III of this Form 10-K.

DISCOVER FINANCIAL SERVICES
Annual Report on Form 10-K for the year ended December 31, 2016

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Except as otherwise indicated or unless the context otherwise requires, “Discover Financial Services,” “Discover,” “DFS,” “we,” “us,” “our,” and “the Company” refer to Discover Financial Services and its subsidiaries.
We own or have rights to use the trademarks, trade names and service marks that we use in conjunction with the operation of our business, including, but not limited to: Discover®, PULSE®, Cashback Bonus®, Discover Cashback Checking®, Discover® More® Card, Discover it®, Discover® Motiva℠ Card, Discover® Open Road® Card, Discover® Network, and Diners Club International®. All other trademarks, trade names and service marks included in this annual report on Form 10-K are the property of their respective owners.

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Part I.

Part I | Item 1. Business

Introduction

Discover Financial Services (the "Company") is a direct banking and payment services company. We were incorporated in Delaware in 1960. We are a bank holding company under the Bank Holding Company Act of 1956 as well as a financial holding company under the Gramm-Leach-Bliley Act and therefore are subject to oversight, regulation and examination by the Board of Governors of the Federal Reserve System (the “Federal Reserve”). We provide direct banking products and services and payment services through our subsidiaries. We offer our customers credit card loans, private student loans, personal loans, home equity loans and deposit products. We had $77.3 billion in loan receivables and $36.0 billion in deposits issued through direct-to-consumer channels and affinity relationships at December 31, 2016. We also operate the Discover Network, the PULSE network (“PULSE”) and Diners Club International (“Diners Club”). The Discover Network processes transactions for Discover-branded credit cards and provides payment transaction processing and settlement services. PULSE operates an electronic funds transfer network, providing financial institutions issuing debit cards on the PULSE network with access to ATMs domestically and internationally, as well as point-of-sale ("POS") terminals at retail locations throughout the U.S. for debit card transactions. Diners Club is a global payments network of licensees, which are generally financial institutions, that issue Diners Club branded charge cards and/or provide card acceptance services.

Available Information

We make available, free of charge through the investor relations page of our internet site www.discover.com, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements, Forms 3, 4 and 5 filed by or on behalf of directors and executive officers, and any amendments to those documents filed with or furnished to the Securities and Exchange Commission (the "SEC") pursuant to the Securities Exchange Act of 1934. These filings are available as soon as reasonably practicable after they are filed with or furnished to the SEC.

In addition, the following information is available on the investor relations page of our internet site: (i) our Corporate Governance Policies; (ii) our Code of Ethics and Business Conduct; and (iii) the charters of the Audit, Compensation and Leadership Development, Nominating and Governance, and Risk Oversight Committees of our Board of Directors. These documents are also available in print without charge to any person who requests them by writing or telephoning our principal executive offices: Discover Financial Services, Office of the Corporate Secretary, 2500 Lake Cook Road, Riverwoods, Illinois 60015, U.S.A., telephone number (224) 405-0900.

Operating Model

We manage our business activities in two segments: Direct Banking and Payment Services. Our Direct Banking segment includes consumer banking and lending products, specifically Discover-branded credit cards issued to individuals on the Discover Network and other consumer banking products and services, including private student loans, personal loans, home equity loans, and other consumer lending and deposit products. We announced the closure of our mortgage origination business in June 2015 as described in Note 3: Business Dispositions to our consolidated financial statements. Our Payment Services segment includes PULSE, Diners Club and our Network Partners business, which provides payment transaction processing and settlement services on the Discover Network.

We are principally engaged in providing products and services to customers in the United States, although the royalty and licensee revenue we receive from Diners Club licensees is mainly derived from sources outside of the United States. For quantitative information concerning our geographic distribution, see Note 5: Loan Receivables to our consolidated financial statements.

Below are descriptions of the principal products and services of each of our reportable segments. For additional financial information relating to our business and our operating segments, see Note 23: Segment Disclosures to our consolidated financial statements.

Direct Banking

Set forth below are descriptions of our credit cards, student loans, personal loans, home equity loans and deposit products. For additional information regarding the terms and conditions of these products, see "— Product Terms and Conditions."

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Credit Cards

We currently offer credit cards issued to consumers. Our credit card customers are permitted to "revolve" their balances and repay their obligations over a period of time and at an interest rate set forth in their cardmember agreements, which may be either fixed or variable. The interest that we earn on revolving credit card balances makes up approximately 83% of our total interest income. We also charge customers other fees as specified in the cardmember agreements. These fees may include fees for late payments, balance transfer transactions and cash advance transactions.

Our credit card customers' transactions in the U.S. are processed over the Discover Network. Where we have a direct relationship with a merchant, which is the case with respect to our large merchants representing a majority of Discover card sales volume, we receive discount and fee revenue from merchants. Discount and fee revenue is based on pricing that is set forth in contractual agreements with each such merchant and is based on a number of factors including industry practices, special marketing arrangements, competitive pricing levels and merchant size. Where we do not have a direct relationship with a merchant, we receive acquirer interchange and assessment fees from the merchant acquirer that settles transactions with the merchant. The amount of this fee is based on a standardized schedule and can vary based on the type of merchant.

Most of our cards offer the Cashback Bonus rewards program, the costs of which we record as a reduction of discount and interchange revenue. See "— Marketing — Rewards/Cashback Bonus" for further discussion of our programs offered.

The following chart* shows the Discover card transaction cycle as processed on the Discover Network:

Student Loans

Our private student loans are available to students attending eligible non-profit undergraduate and graduate schools. We also offer certain post-graduate loans, including consolidation, bar study and residency loans. We encourage students to borrow responsibly and maximize grants, scholarships and other free financial aid before taking student loans.

We currently offer fixed and variable rate private student loans originated by Discover Bank. We market our student loans online and through direct mail and email to existing and potential customers. We also work with school financial aid offices and high school guidance counselors to create awareness of our products with students and their families. Students can apply for our student loans online, by phone, or by mail, and we have dedicated staff within our call centers to service student loans. We invite applicants who qualify to apply with a creditworthy cosigner, which may improve the likelihood for loan approval and a lower interest rate.

As part of the loan approval process, all of our student loans, except for bar study, residency and private consolidation loans, are certified by and disbursed through the school to ensure students do not borrow more than the cost of attendance less other financial aid. Upon graduation, for variable rate loans originated before May 2014, students are generally eligible to receive a graduation reward. Students may redeem their graduation reward as a credit

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to the balance of any of their Discover student loans or as a direct deposit to a bank account. For all loans originated in May 2014 and after, students are generally eligible to receive a reward for achieving a specified grade point average during the academic period covered by the loan.

Personal Loans

Our personal loans are unsecured loans with fixed interest rates, terms and payments. These loans are primarily intended to help customers consolidate existing debt, although they can be used for other reasons. We generally market personal loans through direct mail advertising complemented by other marketing channels. Consumers can submit applications via phone, online or through the mail, and can service their accounts online or by phone.

Home Equity Loans

We offer closed-end home equity loans to help consumers improve their homes as well as payoff higher interest debt, although they can be used for other purposes. These loans are fixed term and fixed rate loans that provide consumers the stability of a fixed payment on their obligation while being secured against the equity in their homes. We market this product primarily to existing card customers through a mix of direct mail, internet advertising and email. Non-Discover customers can obtain information regarding Discover home equity products on our website and have the ability to apply over the phone.

Deposits

We obtain deposits from consumers directly or through affinity relationships ("direct-to-consumer deposits"). Additionally, we also obtain deposits through third-party securities brokerage firms that offer our deposits to their customers ("brokered deposits"). Our deposit products include certificates of deposit, money market accounts, online savings and checking accounts and Individual Retirement Arrangement certificates of deposit. We market our direct-to-consumer deposit products to our existing customer base and other prospective customers through the use of our website, mobile platform, print materials, direct mail, affinity arrangements with third parties and internet advertising. Customers can apply for, fund and service their deposit accounts online or via phone, where we have a dedicated U.S.-based staff within our call centers to service deposit accounts. For more information regarding our deposit products, see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Funding Sources — Deposits."

Payment Services

Set forth below are descriptions of PULSE, Diners Club and our Network Partners business, which provides among other services payment transaction processing and settlement services.

PULSE

Our PULSE network is one of the nation’s leading debit/ATM networks. PULSE links cardholders served by approximately 4,600 financial institutions to ATMs and POS terminals located throughout the United States. This includes more than 3,300 financial institutions with which PULSE has direct relationships and approximately 1,300 additional financial institutions through agreements PULSE has with other debit networks. PULSE also provides cash access at 1.9 million ATMs in more than 125 countries.

PULSE's primary source of revenue is transaction fees charged for switching and settling ATM, personal identification number ("PIN") POS debit and signature debit transactions initiated through the use of debit cards issued by participating financial institutions. In addition, PULSE offers a variety of optional products and services that produce income for the network, including signature debit transaction processing, debit card fraud detection and risk mitigation services, and connections to other regional and national electronic funds transfer networks.

When a financial institution joins the PULSE network, debit cards issued by that institution are eligible to be used at all of the ATMs and PIN POS debit terminals that participate in the PULSE network, and the PULSE mark can be used on that institution's debit cards and ATMs. In addition, financial institution participants may sponsor merchants, direct processors and independent sales organizations to participate in the PULSE PIN POS and ATM debit service. A participating financial institution assumes liability for transactions initiated through the use of debit cards issued by that institution, as well as for ensuring compliance with PULSE's operating rules and policies applicable to that institution's debit cards, ATMs and, if applicable, sponsored merchants, direct processors and independent sales organizations.

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When PULSE enters into a network-to-network agreement with another debit network, the other network's participating financial institutions' debit cards can be used at terminals in the PULSE network. PULSE does not have a direct relationship with these financial institutions and the other network bears the financial responsibility for transactions of those financial institutions' cardholders and for ensuring compliance with PULSE's operating rules.

Diners Club

Our Diners Club business maintains an acceptance network in 185 countries and territories through its relationships with over 90 licensees, which are generally financial institutions. We do not directly issue Diners Club cards to consumers, but grant our licensees the right to issue Diners Club branded cards and/or provide card acceptance services. Our licensees pay us royalties for the right to use the Diners Club brand, which is our primary source of Diners Club revenues. We also earn revenue from providing various support services to our Diners Club licensees, including processing and settlement of cross-border transactions. We also provide a centralized service center and internet services to our licensees.

When Diners Club cardholders use their cards outside the host country or territory of the issuing licensee, transactions are routed and settled over the Diners Club network through its centralized service center. In order to increase merchant acceptance in certain targeted countries and territories, we work with merchant acquirers to offer Diners Club and Discover acceptance to their merchants. These acquirers are granted licenses to market the Diners Club brands to existing and new merchants. As we continue to work toward achieving full card acceptance across our networks, Discover customers are using their cards at an increasing number of merchant and ATM locations that accept Diners Club cards around the world. Diners Club cardholders with cards issued by licensees outside of North America continue to use their cards on the Discover Network in North America and on the PULSE and Diners Club networks domestically and internationally, respectively.

Network Partners Business

We have agreements with a number of financial institutions, networks and commercial service providers for issuance of products or processing of payments on Discover networks. We refer to these financial institutions, networks and commercial service providers as "Network Partners." We may earn merchant discount and acquirer assessments net of issuer fees paid, in addition to other fees, for processing transactions for Network Partners. We also leverage our payments infrastructure in other ways, such as business-to-business payment processing.

The following chart* shows an example of Network Partners transaction cycle:

* * *

The discussion below provides additional detail concerning the supporting functions of our two segments. The credit card, student loan, personal loan, home equity loan and deposit products issued through our Direct Banking segment require significant investments in consumer portfolio risk management, marketing, customer service and related technology, whereas the operation of our Payment Services business requires that we invest in the technology to manage risk and service network partners, merchants and merchant acquirer relationships.

Credit Risk Management

Credit risk management is a critical component of our management and growth strategy. Credit risk refers to the risk of loss arising from borrower default when borrowers are unable or unwilling to meet their financial obligations to us. Our credit risk arising from consumer lending products is generally highly diversified across millions of accounts without significant individual exposures. We manage credit risk primarily based on customer segments and product types. See "— Risk Management" for more information regarding how we define and manage our credit and other risks.

Account Acquisition (New Customers)

We acquire new credit card customers through direct mail, internet, media advertising, merchant or partner relationships, or through unsolicited individual applications. We also acquire new student loan and personal loan customers through similar channels. In all cases we have a rigorous process for screening applicants.

To identify credit-worthy prospective customers, our credit risk management and marketing teams use proprietary analytical tools to match our product offerings with customer needs. We consider the prospective customer's financial stability, as well as ability and willingness to pay.

We assess the creditworthiness of each consumer loan applicant through evaluating an applicant’s credit information provided by credit bureaus and information from other sources. The assessment is performed using our credit scoring systems, both externally developed and proprietary. For our unsecured lending products, we also use experienced credit underwriters to supplement our automated decision-making processes. For our home equity products, experienced credit underwriters must review and approve each application.

Upon approval of a customer's application for one of our unsecured lending and home equity products, we assign a specific annual percentage rate using an analytically driven pricing framework that simultaneously provides competitive pricing for customers and seeks to maximize revenue on a risk-adjusted basis. For our credit card loans, we also assign a credit line based on risk level and expected return.

Portfolio Management (Existing Customers)

The revolving nature of our credit card loans requires that we regularly assess the credit risk exposure of such accounts. This assessment uses the individual's Discover account performance information as well as information from credit bureaus. We utilize statistical evaluation models to support the measurement and management of credit risk. At the individual customer level, we use custom risk models together with generic industry models as an integral part of the credit decision-making process. Depending on the duration of the customer's account, risk profile and other performance metrics, the account may be subject to a range of account management treatments, including transaction authorization limits and increases or decreases on credit limits. Our installment loans are billed according to an amortization schedule that is calculated at the time of the disbursement of the loan and at the time the loan enters repayment.

Customer Assistance

We provide our customers with a variety of tools to proactively manage their accounts, including electronic payment reminders and a website dedicated to customer education, as further discussed under the heading "— Customer Service." These tools are designed to limit a customer's risk of becoming delinquent. When a customer's account becomes delinquent or is at risk of becoming delinquent, we employ a variety of strategies to assist customers in becoming current on their accounts.

All monthly billing statements of accounts with past due amounts include a request for payment of such amounts. Customer assistance personnel generally initiate contact with customers within 30 days after any portion of their balance becomes past due. The nature and the timing of the initial contact, typically a personal call or letter, are determined by a review of the customer's prior account activity and payment habits.

We reevaluate our collection efforts, and consider the implementation of other techniques, as a customer becomes increasingly delinquent. We limit our exposure to delinquencies through controls within our process for authorizing transactions and credit limits and criteria-based account suspension and revocation. In situations involving

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customers with financial difficulties, we may enter into arrangements to extend or otherwise change payment schedules, lower interest rates and/or waive fees to aid customers in becoming current on their obligations to us. For more information see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Loan Quality — Modified and Restructured Loans."

Marketing

In addition to working with our credit risk management personnel on account acquisition and portfolio management, our marketing group provides other key functions, including product development, management of our Cashback Bonus and other rewards programs, protection product management, and brand and advertising management.

Product Development

In order to attract and retain customers and merchants, we continue to develop new programs, features and benefits and market them through a variety of channels, including mail, phone and online. Targeted marketing efforts may include balance transfer offers and reinforcement of our Cashback Bonus and other rewards programs. Through the development of a large prospect database, use of credit bureau data and use of a customer contact strategy and management system, we have been able to improve our modeling and customer engagement capabilities, which helps optimize product, pricing and channel selection.

Rewards / Cashback Bonus

Our cardmembers use several card products that allow them to earn their rewards based on how they want to use credit, as set forth below.

- Discover it card offers 5% Cashback Bonus in categories that change each quarter up to a quarterly maximum (signing up is required) and 1% Cashback Bonus on all other purchases, as well as other benefits.
- Discover it NHL card offers the same reward features as the Discover it card plus 10% off purchases at shopNHL.com and a team-branded credit card.
- Discover it Chrome card offers 2% Cashback Bonus at gas stations and restaurants on up to $1,000 in combined purchases each quarter and 1% Cashback Bonus on all other purchases, as well as other benefits.
- The Discover it Miles card offers 1.5 miles for every dollar spent on purchases, no annual fee and an annual credit of up to $30 for in-flight Wi-Fi charges.
- Discover it Secured card offers the same reward features as the Discover it Chrome card, as well as other benefits. This card requires the customer to provide a security deposit as collateral for the credit card account. Starting seven months after account opening, Discover reviews the account monthly to determine whether the security deposit can be returned. These reviews look for responsible credit use across all of the customer's cards and loans.
- Discover More card offers 5% Cashback Bonus in categories that change each quarter up to a quarterly maximum (signing up is required). Customers earn .25% Cashback Bonus on their first $3,000 on all other annual purchases and on all warehouse purchases, and 1% Cashback Bonus on purchases over $3,000.
- Discover Open Road card offers 2% Cashback Bonus on the first $250 in combined gas and restaurant purchases each billing period. Customers earn .25% Cashback Bonus on their first $3,000 on all other annual purchases and on all warehouse purchases, and 1% Cashback Bonus on purchases over $3,000.
- Discover Motiva card provides customers with Cashback Bonus equal to 5% of their interest charges each month for making on-time payments. Customers earn .25% Cashback Bonus on their first $3,000 on all other annual purchases and on all warehouse purchases, and 1% Cashback Bonus on purchases over $3,000.
- Miles by Discover customers receive two miles for every $1 on the first $3,000 in travel and restaurant purchases each year and one mile for every $1 on all other purchases.
- Discover Business card offers 5% Cashback Bonus on the first $2,000 spent in office supply purchases, 2% Cashback Bonus on the first $2,000 spent in gas purchases each year, .25% Cashback Bonus on the first $5,000 in annual purchases and up to 1% Cashback Bonus on all other purchases.

Protection Products

We currently service and maintain existing enrollments of the protection products detailed below for our credit card customers. Although we suspended new sales of these products to consumers at the end of 2012, we may resume offering similar products in the future.

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- Identity Theft Protection. The most comprehensive identity theft monitoring product includes an initial credit report, credit bureau report monitoring at the three major credit bureaus, prompt alerts to key changes to credit bureau files that help customers spot possible identity theft quickly, internet surveillance to monitor up to 20 credit and debit card numbers and social security numbers on suspicious websites, identity theft insurance up to $25,000 to cover certain out-of-pocket expenses due to identity theft, and access to knowledgeable professionals who can provide information about identity theft issues.
- Payment Protection. This product allows customers to suspend their payments for up to two years, depending on the qualifying event and product level, when certain qualifying life events occur. While on benefit, customers have no minimum monthly payment, and are not charged interest, late fees or the fees for the product. This product covers a variety of different events, such as unemployment, disability, natural disasters or other life events, such as marriage or birth of a child. Depending on the product and availability under state laws, outstanding balances up to $10,000 or $25,000, depending on product level are cancelled in the event of death.
- Wallet Protection. This product offers one-call convenience if a customer's wallet is lost or stolen, including requesting cancellation and replacement of the customer's credit and debit cards, monitoring the customer's credit bureau reports at the three major credit bureaus for 180 days and alerting them to key changes to their credit files, and providing up to $100 to replace the customer's wallet or purse.

Brand and Advertising Management

We maintain a full-service marketing department charged with delivering integrated mass and direct communications to foster customer engagement with our products and services. Our brand team utilizes consumer insights and market intelligence to define our mass communication strategy, create multi-channel advertising messages and develop marketing partnerships with sponsorship properties. This work is performed in house as well as with a variety of external agencies and vendors.

Customer Service

Our customers can contact our customer service personnel by calling 1-800-Discover. Our customers can also manage their accounts online or through applications for certain mobile devices. Our internet and mobile solutions offer a range of benefits, including:

- Online account services that allow customers to customize their accounts, choose how and when they pay their bills, view annual account summaries that assist them with budgeting, research transaction details, initiate transaction disputes and chat with or email a customer representative;
- Email and mobile text reminders that help customers avoid fees, keep their accounts secure and track big purchases or returns;
- Money management tools like the Spend Analyzer, Paydown Planner and Purchase Planner; and
- An online portal where customers automatically earn 5-20% Cashback Bonus when they shop at well-known online merchants using their Discover card.

Our student loan, personal loan, home equity and deposit product customers can utilize our online account services to manage their accounts, and to use interactive tools and calculators.

Processing Services

Our processing services cover four functional areas: card personalization/embossing, print/mail, remittance processing and document processing. Card personalization/embossing is responsible for the embossing and mailing of plastic credit cards for new accounts, replacements and reissues. Print/mail specializes in statement and letter printing and mailing for merchants and customers. Remittance processing, currently a function outsourced to third-party vendors, handles account payments and check processing. Document processing handles hard-copy forms, including new account applications.

Fraud Prevention

We monitor our customers' accounts to help prevent, detect, investigate and resolve fraud. Our fraud prevention processes are designed to protect the security of cards, applications and accounts in a manner consistent with our customers' needs to easily acquire and use our products. Prevention systems monitor the authorization of application information, verification of customer identity, sales, processing of convenience and balance transfer checks, and electronic transactions.

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Each credit card transaction is subject to screening, authorization and approval through a proprietary POS decision system and each deposit transaction is subject to screening and approval through a dynamic transaction evaluation and scoring methodology. We use a variety of techniques that help identify and halt fraudulent transactions, including adaptive models, rules-based decision-making logic, report analysis, data integrity checks and manual account reviews. We manage accounts identified by the fraud detection system through technology that integrates fraud prevention and customer service. Strategies are subject to regular review and enhancement to enable us to respond quickly to changing conditions as well as to protect our customers and our business from emerging fraud activity.

Product Terms and Conditions

Credit Cards

The terms and conditions governing our credit card products vary by product and change over time. Each credit card customer enters into a cardmember agreement governing the terms and conditions of the customer's account. Discover card's terms and conditions are generally uniform from state to state. We are allowed, to the extent permitted by law, to change any term of the cardmember agreement, including any finance charge, rate or fee, or add or delete any term of the cardmember agreement, with notice to the customer as required by law. The customer has the right to opt out of certain changes of terms and pay their balance off under the original terms. Each cardmember agreement provides that the account can be used for purchases, cash advances and balance transfers. Each Discover card account is assigned a credit limit when the account is initially opened. Thereafter, individual credit limits may be increased or decreased from time to time, at our discretion, based primarily on our evaluation of the customer's creditworthiness. We offer various features and services with the Discover card accounts, including the Cashback Bonus rewards programs described under "— Marketing — Rewards/Cashback Bonus."

All Discover card accounts generally have the same billing structure. We generally send a monthly billing statement to each customer who has an outstanding debit or credit balance. Customers also can waive their right to receive a physical copy of their bill, in which case they will receive email notifications of the availability of their billing statement online. Discover card accounts are grouped into multiple billing cycles for operational purposes. Each billing cycle has a separate billing date, on which we process and bill to customers all activity that occurred in the related accounts during a period of approximately 28 to 32 days that ends on the billing date.

Discover card accounts are assessed periodic finance charges using fixed and/or variable interest rates. Certain account balances, such as balance transfers, may accrue periodic finance charges at lower fixed rates for a specified period of time. Variable rates are indexed to the highest prime rate published in The Wall Street Journal on the last business day of the month. Periodic finance charges are calculated using the daily balance (including current transactions) method, which results in daily compounding of periodic finance charges, subject to a grace period on new purchases. The grace period provides that periodic finance charges are not imposed on new purchases, or any portion of a new purchase, that is paid by the due date on the customer's current billing statement if the customer paid the balance on his or her previous billing statement in full by the due date on that statement. Neither cash advances nor balance transfers are subject to a grace period.

Each customer with an outstanding debit balance on his or her Discover card account must generally make a minimum payment each month. If a customer exceeds his or her credit limit as of the last day of the billing period, we may include all or a portion of this excess amount in the customer's minimum monthly payment. A customer may pay the total amount due at any time. We also may enter into arrangements with delinquent customers to extend or otherwise change payment schedules, and to waive finance charges and/or fees, including re-aging accounts in accordance with regulatory guidance.

In addition to periodic finance charges, we may impose other charges and fees on Discover card accounts, including cash advance transaction fees, late fees where a customer has not made a minimum payment by the required due date, balance transfer fees and returned payment fees.

The Credit Card Accountability Responsibility and Disclosure Act of 2009 (the "CARD Act") required us to review, every six months, certain interest rates that were increased on accounts since January 1, 2009 to determine whether to reduce the interest rate based on the factors that prompted the increase or factors we currently consider in determining interest rates applicable to similar new credit card accounts. The amount of any rate decrease must be determined based upon our reasonable policies and procedures. Any reduced interest rate must be applied to the account not later than 45 days after completion of the review.

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Student Loans
The terms and conditions governing our student loans vary by product and are specified in the borrower's promissory note and disclosures. Each borrower signs a promissory note and accepts the loan terms during the application process. Student loans feature fixed or variable interest rates with zero origination fees, and borrowers can elect to make extra payments to pay their loans off faster without penalty. Student loans may include a deferment period, during which borrowers are not required to make payments while enrolled in school at least half time as determined by the school. This period begins on the date the loan is first disbursed and ends six to nine months (depending on loan type) after the borrower ceases to be enrolled in school at least half time. Additionally, the loans can feature potential rewards for good grades and we also offer an optional "In-School Payment" product that requires a student to make monthly payments while in school. The standard repayment period is 15 to 20 years, depending on the type of student loan. Borrowers can choose to receive electronic communications, in which case they will receive email notifications of the availability of their monthly billing statements online.
We calculate interest on a daily basis on the outstanding principal loan balance until the loan is paid in full. The interest rate will never be higher than 18%, as stated in the promissory note and disclosures. The variable interest rate we offer, is equal to a variable index (e.g., based on the prime rate or London Interbank Offered Rate ("LIBOR") plus a fixed margin assigned to the loan during origination. Variable interest rates may adjust quarterly if the index changes. In certain circumstances, we may offer borrower assistance programs including forbearance periods of up to 12 months over the life of the loan, short-term payment reductions or maturity extensions. We accrue interest when loans are in forbearance or in other payment assistance programs.
Personal Loans
The terms and conditions governing personal loans are set at the time the loan is accepted and generally do not change for the life of the loan. Personal loan account terms and conditions are generally uniform from state to state. All personal loan accounts generally have the same billing structure. Customers receive monthly statements approximately 20 days prior to payment due dates. The statement provides detail on all transactions processed since the last statement was generated, as well as a summary of the current amount due. Customers also can waive their right to receive physical copies of their bills, in which case they will receive email notifications of the availability of their billing statements online. Personal loan accounts are assessed periodic finance charges using simple interest. We may impose other charges, including late charges when a customer has not made a minimum payment by the required due date and a returned check charge. There is no prepayment penalty for repaying a personal loan balance in full prior to the scheduled maturity date. In certain circumstances, we may offer customers temporary and permanent assistance programs, which may reduce payments, extend loan terms and/or reduce the interest rate on loan balances.
Home Equity Loans
Home equity loans are fixed-rate loans that carry a monthly payment over the term of the loan and are secured by a first or second lien on a customer's home. The terms of the loan are set at closing. Customers are sent monthly statements approximately 20 days in advance of the payment due date. The statements provide the customer the allocation of any payments made since the last billing date as well as the payment due on the next scheduled payment date. The customer has the ability to view their account information as well as make payments online through the account center. Customers are also subject to additional charges, including late fees and returned payment charges. The customer has the ability to make larger than minimum payments on the loans and early payoffs are not currently subject to a prepayment penalty.
Deposits
We offer four main types of deposit products directly to consumers on a national basis: certificates of deposit, savings accounts, money market and checking accounts, though at the current time we are offering checking accounts only to existing credit card, personal loan or deposit customers. All of these deposits are insured by the Federal Deposit Insurance Corporation (the "FDIC") to the maximum permitted by law. Interest is compounded daily and credited to each account on a monthly basis, using the daily balance method. We do not pay interest generally on checking account balances, but instead offer cashback rewards for certain transactions. We offer a range of ownership options, including single, joint, trust and custodial. Deposit accounts are primarily funded through electronic funds transfer, check or wire transfer. Customers may service their accounts through a variety of convenient methods, including

online at www.discoverbank.com, mobile and tablet device applications, and by telephone.

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Certificates of deposit are offered on a full range of tenors from three months through ten years with interest rates that are fixed for the full period. We provide automatic renewal along with options on reinvestment or disbursement of interest. There are minimum balance requirements to open certificates of deposit and penalties for early withdrawals. Money market accounts are transactional accounts with minimum balance requirements. Money market account funds may be accessed through electronic funds transfer, checks, wire transfer and debit cards. Savings accounts may be accessed through electronic funds transfer, wire transfer and official checks. Money market accounts and savings accounts have limitations on withdrawal frequency, as required by law. Interest rates on money market accounts and savings accounts are subject to change at any time. Fees apply to some transactions and availability of funds varies based on product and method of funding.

We also issue certificates of deposit through select contracted brokerage firms. All of these deposits are also FDIC insured to the maximum allowed by law. All settlements occur through the Depository Trust Company. Tenors issued, interest and commission rates are determined weekly with tenor issuances of five months to ten years. Simple interest is applied to brokered certificates of deposit. At any given time, we may choose to not issue these certificates of deposit or to issue only certain tenors in a given week. Early redemption of these certificates occurs only in the event of death or adjudication of incompetence.

Discover Network Operations

We support our merchants through a merchant acquiring model that includes direct relationships with large merchants in the United States and arrangements with merchant acquirers generally for small- and mid-size merchants. In addition to our U.S.-based merchant acceptance locations, Discover Network cards also are accepted at many locations in Canada, Mexico, the Caribbean, China, Japan and a growing number of countries around the world on the Diners Club network, or through reciprocal acceptance arrangements made with international payment networks (i.e., network-to-network).

We maintain direct relationships with most of our large merchant accounts, which enables us to benefit from joint marketing programs and opportunities and to retain the entire discount revenue from the merchants. The terms of our direct merchant relationships are governed by merchant services agreements. These agreements are also accompanied by additional program documents that further define our network functionality and requirements, including operating regulations, technical specifications and dispute rules. To enable ongoing improvements in our network's functionality and in accordance with industry convention, we publish updates to our program documents on a semi-annual basis. Discover card transaction volume was concentrated among our top 100 merchants in the year ended December 31, 2016 with our largest merchant accounting for approximately 6% of total Discover card transaction volume.

In order to increase merchant acceptance, Discover Network services the majority of its small- and mid-size merchant portfolios through third-party merchant acquirers to allow such acquirers to offer a comprehensive payments processing package to such merchants. Merchants also can apply to our merchant acquirer partners directly to accept Discover Network cards through the acquirers' integrated payments solutions. Merchant acquirers provide merchants with consolidated servicing for Discover, Visa and MasterCard transactions, resulting in streamlined statements and customer service for merchants, and reduced costs for us. These acquirer partners also perform credit evaluations and screen applications against unacceptable business types and the Office of Foreign Asset Control Specifically Designated Nationals list.

Discover Network operates systems and processes that seek to ensure data integrity, prevent fraud and ensure compliance with our operating regulations. Our systems evaluate incoming transaction activity to identify abnormalities that require investigation and fraud mitigation. Designated Discover Network personnel are responsible for validating compliance with our operating regulations and law, including enforcing our data security standards and prohibitions against illegal or otherwise unacceptable activities. Discover Network is a founding and current member of the Payment Card Industry Security Standards Council, LLC, and is working to expand the adoption of the Council's security standards globally for merchants and service providers that store, transmit or process cardholder data.

Technology

We provide technology systems processing through a combination of owned and hosted data centers and the use of third-party vendors. These data centers support our payment networks, provide customers with access to their accounts and manage transaction authorizations, among other functions. Discover Network works with a number of vendors to maintain our connectivity in support of POS authorizations. This connectivity also enables merchants to receive timely payment for their Discover Network card transactions.

Our approach to technology development and management involves both third-party and in-house resources. We use third-party vendors for basic technology services (e.g., telecommunications, hardware and operating systems) as well as for processing and other services for our direct banking and payment services businesses. We subject each vendor to a formal approval process, which includes among other things a security assessment, to ensure that the vendor can assist us in maintaining a cost-effective and reliable technology platform. We use our in-house resources to build, maintain and oversee some of our technology systems. We believe this approach enhances our operations and improves cost efficiencies.

Seasonality

In our credit card business, we experience fluctuations in transaction volumes and the level of loan receivables as a result of higher seasonal consumer spending and payment patterns around the winter holidays, summer vacations and back-to-school periods. In our student loan business, our loan disbursements peak at the beginning of a school's academic semester or quarter. Although there is a seasonal impact to transaction volumes and the levels of credit card and student loan receivables, seasonal trends have not caused significant fluctuations in our results of operations or credit quality metrics between quarterly and annual periods.

Revenues in our Diners Club business are generally higher in the first half of the year as a result of Diners Club's tiered pricing system where licensees qualify for lower royalty rate tiers as cumulative volume grows during the course of the year.

Competition

We compete with other consumer financial services providers, including non-traditional providers such as financial technology firms and payment networks on the basis of a number of factors, including brand, reputation, customer service, product offerings, incentives, pricing and other terms. Our credit card business also competes on the basis of reward programs and merchant acceptance. We compete for accounts and utilization with cards issued by other financial institutions (including American Express, Bank of America, JPMorgan Chase and Citi) and, to a lesser extent, businesses that issue their own private label cards or otherwise extend credit to their customers. In comparison to our largest credit card competitors, our strengths include cash rewards, conservative portfolio management and strong customer service. Competition based on cash rewards programs, however, has increased in recent years. Our student loan product competes for customers with Sallie Mae and Wells Fargo, as well as other lenders that offer student loans. Our personal loan product competes for customers primarily with Wells Fargo, PNC and non-traditional lenders, including financial technology firms and peer to peer lenders. Our home equity product faces competition primarily from traditional branch lending institutions like Wells Fargo, JPMorgan Chase, U.S. Bank and PNC. Although our student and personal loan receivables have increased, our credit card receivables continue to represent most of our receivables. The credit card business is highly competitive. Some of our competitors offer a wider variety of financial products than we do, including automobile loans, which may currently position them better among customers who prefer to use a single financial institution to meet all of their financial needs. Some of our competitors enjoy greater financial resources, diversification and scale than we do, and are therefore able to invest more in initiatives to attract and retain customers, such as advertising, targeted marketing, account acquisitions and pricing offerings in interest rates, annual fees, reward programs and low-priced balance transfer programs. In addition, some of our competitors have assets such as branch locations and co-brand relationships that may help them compete more effectively. Another competitive factor in the credit card business is the increasing use of debit cards as an alternative to credit cards for purchases.

Because most domestically-issued credit cards, other than those issued on the American Express network, are issued on the Visa and MasterCard networks, most other card issuers benefit from the dominant market share of Visa and MasterCard. The former exclusionary rules of Visa and MasterCard limited our ability to attract merchants and credit and debit card issuers, contributing to Discover not being as widely accepted in the U.S. as Visa and MasterCard. Merchant acceptance of the Discover card has increased in the past several years, both in the number of merchants enabled for acceptance and the number of merchants actively accepting Discover. We continue to make investments in expanding Discover and Diners Club acceptance in key international markets where an acceptance gap exists.

In our payment services business, we compete with other networks for volume and to attract network partners to issue credit, debit and prepaid cards on the Discover, PULSE and Diners Club networks. We generally compete on the basis of customization of services and various pricing strategies, including incentives and rebates. We also compete on the basis of issuer fees, fees paid to networks (including switch fees), merchant acceptance, network functionality,

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customer perception of service quality, brand image, reputation and market share. The Diners Club and Discover networks' primary competitors are Visa, MasterCard and American Express, and PULSE's network competitors include Visa's Interlink, MasterCard's Maestro and First Data's STAR. American Express is a particularly strong competitor to Diners Club as both cards target international business travelers. As the payments industry continues to evolve, we are also facing increasing competition from new entrants to the market, such as online networks, telecom providers and other alternative payment providers, which leverage new technologies and a customer's existing deposit and credit card accounts and bank relationships to create payment or other fee-based solutions.

In our direct-to-consumer deposits business, we have acquisition and servicing capabilities similar to other direct competitors, including USAA, Ally Bank, American Express, Capital One (360), Sallie Mae and Barclays. We also compete with traditional banks and credit unions that source deposits through branch locations. We seek to differentiate our deposit product offerings on the basis of brand reputation, convenience, customer service and value.

For more information regarding the nature of and the risks we face in connection with the competitive environment for our products and services, see "Risk Factors — Strategic Business Risk."

Intellectual Property

We use a variety of methods, such as trademarks, patents, copyrights and trade secrets, to protect our intellectual property. We also place appropriate restrictions on our proprietary information to control access and prevent unauthorized disclosures. Our Discover, PULSE and Diners Club brands are important assets, and we take steps to protect the value of these assets and our reputation.

Employees

As of January 31, 2017, we employed approximately 15,549 individuals.

Risk Management

Our business exposes us to strategic (including reputational), credit, market, liquidity, operational, compliance and legal risks. We use an enterprise-wide risk management framework to identify, measure, monitor, manage and report risks that affect or could affect the achievement of our strategic, financial and other objectives.

Enterprise Risk Management Principles

Our enterprise risk management philosophy is expressed through five key principles that guide our approach to risk management: Comprehensiveness, Accountability, Independence, Defined Risk Appetite and Transparency.

Comprehensiveness

We seek to maintain a comprehensive risk management framework for managing risk enterprise-wide, including policies, risk management processes, monitoring and testing, and reporting. Our framework is designed to be comprehensive with respect to our reporting segments and their control and support functions, and across all risk types.

Accountability

We structure accountability across three lines of defense along the principles of risk management execution, oversight and independent validation. As the first line of defense, our business units seek to manage the risks to which they are exposed as a result of their activities, including those risks arising from activities that have been outsourced to third parties. The principles apply across all businesses and risk types and guide the definition of specific roles and responsibilities.

Independence

Our second and third lines of defense, which are comprised of risk and control functions, operate independent of the business units. The second line of defense includes our corporate risk management ("CRM") department, which is led by our Chief Risk Officer (“CRO”), who is appointed by our Board of Directors. The CRM department sets risk management standards and policies that are consistent with the size and complexity of our business, industry practices and applicable legal and regulatory requirements. The CRO is accountable for providing our Board of Directors and executive management with an independent perspective on: the risks to which we are exposed; how well management is identifying, assessing and managing risk; and the capabilities we have in place to manage risks across the enterprise. Our internal audit department, as the third line of defense, performs periodic, independent reviews and tests compliance with risk management policies, procedures and standards across the Company. It also periodically reviews the design and operating effectiveness of our risk management program and processes, including the independence and effectiveness of our CRM function, and reports the results to our Audit Committee of the Board of the Directors ("Audit Committee") and, where appropriate, the Risk Oversight Committee of the Board of Directors ("Risk Oversight Committee").

Defined Risk Appetite

We operate within a risk appetite framework approved by our Board of Directors, which guides an acceptable level of risk-taking, considering desired financial returns and other objectives. To that end, limits and escalation thresholds are set consistent with the risk appetite approved by our Board of Directors.

Transparency

We seek to provide transparency of exposures and outcomes, which is core to our risk culture and operating style. We provide this risk transparency through our risk committee structure and standardized processes for escalating issues and reporting. This is accomplished at several levels within the organization, including quarterly meetings held by our Risk Committee and quarterly reports to the Risk Oversight Committee, as well as regular reporting to our Risk subcommittees commensurate with the needs of our businesses. Further, our CRO is a member of the Company's Executive Committee.

Enterprise Risk Management Governance Structure

Our governance structure is based on the principle that each line of business is responsible for managing risks inherent in its business with appropriate oversight from our senior management and Board of Directors. Various committees are in place to oversee the management of risks across our Company. We seek to apply operating principles consistently to each committee. These operating principles are detailed in committee charters which are approved by the Risk Committee. Our banking subsidiaries have their own risk governance, compliance, auditing and other requirements. Our risk governance framework is implemented such that bank-level risk governance requirements are satisfied as well.

Board of Directors

Our Board of Directors (i) approves certain risk management policies, (ii) approves our capital targets and goals, (iii) approves our risk appetite framework, (iv) monitors our strategic plan, (v) appoints our CRO, and other risk governance function leaders, as appropriate, (vi) receives reports on any exceptions to the Enterprise Risk Management policy and (vii) receives and reviews regulatory examination reports. The Board of Directors receives reports from the Audit Committee and Risk Oversight Committee on risk management matters.

Risk Oversight Committee of our Board of Directors

Our Risk Oversight Committee is responsible for overseeing our risk management policies and the operations of our enterprise-wide risk management framework and our capital planning, liquidity risk management and resolution planning activities. The Committee is responsible for (i) approving and periodically reviewing our risk management policies, (ii) overseeing the operation of our policies and procedures establishing our risk management governance, risk management procedures, and our risk-control infrastructure, (iii) overseeing the operation of processes and systems for implementing and monitoring compliance with such policies and procedures, (iv) reviewing and making recommendations to the Board of Directors, as appropriate, regarding the Company's risk management framework, key risk management policies and the Company's risk appetite and tolerance, (v) receiving and reviewing regular reports from our CRO on risk management deficiencies and emerging risks, the status of and changes to risk exposures, policies, procedures and practices, and the steps management has taken to monitor and control risk exposures, (vi) receiving reports on compliance with our risk appetite and limit structure and risk management policies, procedures and controls, (vii) overseeing Capital Planning, Liquidity Risk Management and Resolution Planning related activities, and (viii) sharing information, liaising and meeting in joint session with the Audit Committee (which it may do through the Chairs of the Committees) as necessary or desirable to help ensure that the committees have received the information necessary to permit them to fulfill their duties and responsibilities with respect to oversight of risk management matters.

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Audit Committee of our Board of Directors

With respect to the enterprise risk management framework, our Audit Committee is responsible for the following: (i) discussing policies with respect to risk assessment and management, (ii) receiving and reviewing reports from our CRO and other members of management as the Committee deems appropriate on the guidelines and policies for assessing and managing our exposure to risks, the corporation's major financial risk exposures and the steps management has taken to monitor and control such exposures, and (iii) sharing information and liaising with the Risk Oversight Committee as necessary or desirable to help ensure that the committees have received the information necessary to permit them to fulfill their duties and responsibilities with respect to oversight of risk management matters.

Compensation and Leadership Development Committee of our Board of Directors

Our Compensation and Leadership Development Committee is responsible for overseeing risk management associated with the Company's compensation practices. The Committee receives reporting regarding the Company's compensation practices and evaluates whether these practices encourage excessive risk-taking. As a part of its reviews, the Committee obtains the input of our CRO and takes into account risk outcomes as well as other outcomes.

Risk Committee

Our Risk Committee is an executive management-level committee that establishes a comprehensive enterprise risk management program which includes (i) providing a regular forum for representatives of our different functional groups to identify and discuss key risk issues and to recommend to senior management actions that should be taken to manage the level of risk taken by the business lines, (ii) establishing and overseeing an enterprise-wide approach to risk management through the development of our Enterprise Risk Management Policy and the associated oversight framework for the identification, measurement, monitoring, management and reporting of enterprise risk, (iii) communicating our risk appetite and philosophy, including establishing limits and thresholds for managing enterprise-wide risks, and (iv) reviewing, on a periodic basis, our aggregate enterprise-wide risk exposures and the effectiveness of risk identification, measurement, monitoring, management and reporting policies and procedures, and related controls within the lines of business.

Our Risk Committee has formed and designated a number of committees to assist it in carrying out its responsibilities. These committees, made up of representatives from senior levels of management, escalate issues to our Risk Committee as guided by escalation thresholds. These risk management committees include the Discover Bank Credit Committee, Asset/Liability Management Committees (Discover Financial Services and Discover Bank), the Counterparty Credit Committee, the New Initiatives Committee, the Operational Risk Committee, the Capital Planning Committee and the Compliance Committee.

Chief Executive Officer

The Chief Executive Officer ("CEO") is ultimately responsible for risk management within our Company. In that capacity, the CEO establishes a risk management culture throughout the Company and ensures that businesses operate in accordance with this risk culture.

Business Unit Heads

Our business unit heads are responsible for managing risk associated with pursuit of their strategic, financial and other business objectives. Business unit heads are responsible for (i) complying with all risk limits and risk policies, (ii) identifying risks and implementing appropriate controls, (iii) explicitly considering risk when developing strategic plans, budgets and new products, (iv) implementing appropriate controls when pursuing business strategies and objectives, (v) ensuring business units implement business unit processes, controls and monitoring to support corporate model risk management standards such as documentation standards and reporting standards, (vi) coordinating with CRM to produce relevant, sufficient, accurate and timely risk reporting that is consistent with the processes and methodology established by CRM, (vii) ensuring sufficient financial resources and qualified personnel are deployed to control the risks inherent in the business activities, and (viii) designating, in consultation with the CRO, a Business Risk Officer to assist with the above and to perform the specific duties described below.

Business Risk Officers work in conjunction with the business unit head to implement a business risk management program that satisfies business unit needs and adheres to corporate policy, standards and risk architecture.

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Chief Risk Officer

As a member of the Company's senior management team, the CRO chairs our Risk Committee. In addition, the CRO has oversight responsibility to establish the CRM function with capabilities to exercise its mandate across all risk categories. Our CRO reports directly to our Risk Oversight Committee and administratively to the CEO. Our CRO provides an independent view on the key risks to which our Company is exposed to our Risk Committee, our Audit Committee, our Risk Oversight Committee and our Board of Directors.

Corporate Risk Management

The CRM department is led by the CRO and supports business units by providing objective oversight of our risk profile to help ensure that risks are managed, aggregated and reported to our Risk Committee, our Risk Oversight Committee and our Audit Committee. The CRM department participates in our Risk Committee and sub-committee meetings to provide an enterprise-wide perspective on risk, governance matters, policies and risk thresholds. The CRM department is comprised of operational, consumer credit, counterparty credit, and market and liquidity risk oversight functions. In addition, the CRM department has enterprise risk management, corporate compliance, third-party risk management, model risk management, regulatory program office and risk and insurance management frameworks to manage potential risk that might arise within these respective areas.

Credit Risk Management

Credit Risk Management is responsible for (i) developing, validating and implementing credit policy criteria and predictive loan origination and servicing models in order to optimize the profitability of Company lending activities, (ii) ensuring adherence to our credit risk policies and approval limits, and that departmental policies, procedures, and internal controls are consistent with the standards defined by the Company, (iii) ensuring that we manage credit risk within approved limits, and (iv) monitoring performance for both new and existing consumer loan products and portfolios.

Law Department

The CRM department collaborates and coordinates closely with other risk and control functions in exercising its oversight responsibilities, in particular with the Law department. This department plays a significant role in managing our legal risk by, among other things, identifying, interpreting and advising on legal and regulatory risks. Our Law department participates in meetings of the Risk Committee and the sub-committees of the Risk Committee in order to advise on legal risks and to inform the committees of any relevant legislative and regulatory developments.

Internal Audit Department

Our Internal Audit Department performs periodic, independent reviews and testing of compliance with risk management policies and standards across the Company, as well as assessments of the design and operating effectiveness of these policies and standards. The Internal Audit Department also validates that risk management controls are functioning as intended by reviewing and evaluating the design and operating effectiveness of the CRM program and processes, including the independence and effectiveness of the CRM function. The results of such reviews are reported to our Audit Committee.

Risk Categories

We are exposed to a broad set of risks in the course of our business activities due to both internal and external factors, which we segment into six major risk categories. The first five are defined to be broadly consistent with guidance published by the Federal Reserve and the Basel Committee on Banking Supervision (“BCBS”): credit, market, liquidity, operational, and compliance/legal risk. We recognize the sixth, strategic risk, as a separate risk category. We evaluate the potential impact of a risk event on the Company by assessing the financial impact, the impact to our reputation, the legal and regulatory impact, and the client/customer impact. In addition, we have established various policies to help govern these risks.

Credit Risk

Our credit risk arises from the potential that a borrower or counterparty will fail to perform on an obligation. Our credit risk includes consumer credit risk and counterparty credit risk. Consumer credit risk is primarily incurred by Discover Bank through the issuance of (i) unsecured credit including credit cards, student loans and personal loans and (ii) secured credit including secured credit cards, deposit secured loans and home equity loans. Counterparty credit risk

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is incurred through a number of activities including settlement, certain marketing programs, treasury and asset/liability management, network incentive programs, vendor relationships and insurers.

Our counterparty credit risk arises in the following forms: (i) direct exposure, in which we have formally extended credit to a counterparty in the form of a cash payment, (ii) settlement activity, in which a credit relationship is created through differences in payment timing, (iii) contingencies, in which a credit relationship may develop due to insurance or guarantees, and (iv) accounting losses, in which a counterparty default would generate a non-cash write-off, as would be the case with prepaid expenses or corporate insurance premiums we pay to third-party insurers.

Our Counterparty Credit Committee is responsible for the enterprise-wide approach to counterparty credit risk management through development of the Counterparty Credit Risk Management Policy and the associated oversight framework for the identification, measurement, monitoring, managing and reporting of counterparty credit risk.

Market Risk

Market risk is the risk to our financial condition resulting from adverse movements in market rates or prices, such as interest rates, foreign exchange rates, credit spreads or equity prices. Given the nature of our business activities, we are exposed to various types of market risk; in particular interest rate risk, foreign exchange risk and other risks that arise through the management of our investment portfolio. Interest rate risk is more significant relative to other market risk exposures and results from potential mismatches in the repricing term of assets and liabilities (yield curve risk) and volatility in reference rates used to reprice floating-rate structures (basis risk). Foreign exchange risk is primarily incurred through exposure to currency movements across a variety of business activities and is derived, specifically, from the timing differences between transaction authorizations and settlement.

Liquidity Risk

Liquidity risk is the risk that we will be unable to meet our obligations as they become due because of an inability to liquidate assets or obtain adequate funding, or an inability to easily unwind or offset specific exposures without significantly lowering market prices because of inadequate market depth or market disruptions.

Operational Risk

Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk is inherent in all our businesses. Operational risk categories incorporate all of the operational loss event-type categories set forth by the BCBS, which include the following: (i) fraud (internal and external), (ii) employment practices and workplace safety, (iii) clients, products and business practices, (iv) damage to physical assets, (v) business disruption and system failures, and (vi) execution, delivery and process management.

Compliance and Legal Risk

Compliance risk is the operational risk of legal or regulatory sanctions, financial loss or damage to reputation resulting from failure to comply with laws, regulations, rules, other regulatory requirements, or codes of conduct and other standards of self-regulatory organizations applicable to us.

Legal risk arises from the potential that unenforceable contracts, lawsuits or adverse judgments can disrupt or otherwise negatively affect our operations or condition. These risks are inherent in all of our businesses. Both compliance and legal risk are subsets of operational risk but are recognized together as a separate and complementary risk category by us given their importance and the specific capabilities and resources we deploy to manage these risk types effectively.

Compliance and legal risk exposures are actively and primarily managed by our business units in conjunction with our compliance and law departments. Our compliance program governs the management of compliance risk. Our Risk Committee and Compliance Committee oversee our compliance and legal risk management. Specifically, the Law department is responsible for providing advice, interpreting and identifying developments regarding laws, regulations, regulatory guidance and litigation, and setting standards for communicating relevant changes to Corporate Compliance, the Business and Internal Audit. The Law department also identifies and communicates legal risk associated with new products and business practices.

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Strategic Risk

Strategic risk can arise from: adverse business decisions; improper implementation of decisions; or a failure to anticipate and respond to industry changes, create and maintain a competitive business model, and attract and profitably serve clients.

Our Risk Committee actively manages strategic risk through the development, implementation and oversight of our business strategies, including the development of budgets and business plans. Our business units take on and are accountable for managing strategic risk in pursuit of their objectives.

Enterprise Risk Management Framework

Our enterprise risk management principles are executed through a risk management framework that is based upon industry standards for managing risk and controls. While the detailed activities vary by risk type, there are common process elements that apply across risk types. We seek to apply these elements consistently in the interest of effective and efficient risk management. This framework seeks to link risk processes and infrastructure with the appropriate risk oversight to create a risk management structure that raises risk awareness, reduces impact of potential risk events, improves business decision-making and increases operational efficiency.

Risk Identification

We seek to identify potential exposures that could adversely affect our ability to successfully implement strategies and achieve objectives. To ensure that the full scale and scope of risk exposures from firm-wide activities are identified, we seek to identify risk exposures based on (i) significant enterprise-level risks that are strategic, systemic, or emerging in nature, (ii) granular risk exposures from on-balance sheet and off-balance sheet positions, including concentrations, and (iii) risk exposures from initiatives focused on new, expanded, customized, or modified products, services, and processes.

Risk exposures identified through these three approaches are consolidated to create a comprehensive risk inventory. This inventory is leveraged by a number of processes within the Company including stress scenario design, capital planning, risk appetite setting, and risk modeling. The risk inventory is reviewed and approved at least annually by the Risk Committee while the sub-committees review the risks mapped to the relevant risk categories for transparency and comprehensive coverage of risk exposures.

Risk Measurement

Our risk measurement process seeks to ensure that the identified risk exposures are appropriately assessed. Risk measurement techniques appropriate to the risk category, econometric modeling, statistical analysis, peer benchmarking, and qualitative assessments are employed to measure our material risk exposures.

Risk Monitoring

Our risks are monitored through an integrated monitoring framework consisting of risk appetite metrics and key risk indicators ("KRIs"). These metrics are established to monitor changes in our risk exposures and external environment. Risk appetite metrics are used to monitor the overall risk profile of the Company by setting risk boundaries and expectations through quantitative limits and qualitative expressions. We use KRIs to monitor our risk profile through direct or indirect alignment with the risk appetite limits.

These metrics enable monitoring of risk by business management and by measuring risk and performance data against risk appetite and KRI escalation thresholds that are updated periodically. Escalation procedures are in place to notify the appropriate governance committees in the event of any actual risk limit breaches or potential upcoming breaches.

Risk Management

We have policies and a defined governance structure in place to manage risks. In the event of a risk exposure exceeding established thresholds, management determines appropriate response actions. Responses which may be taken by the Board of Directors, the Risk Oversight Committee, the Audit Committee, the Risk Committee, sub-committees or the CRO, or business units may include (i) actions to directly mitigate or resolve risk, (ii) actions to terminate any activities resulting in an undesired or unintended risk position, or (iii) actions to prevent, avoid or modify an undesired risk position (or activity prior to its occurrence), risk reduction, risk sharing or risk acceptance.

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Risk Reporting

As the constituents primarily responsible for proactively managing the risks to which they are exposed, our business units and risk and control functions periodically report to the governance committees. The CRM function is responsible for independent reporting on risk matters to various constituencies across the Company on a periodic basis. The CRM department periodically provides risk management reporting to the Risk Committee, the Audit Committee, the Risk Oversight Committee and the Board of Directors.

Stress Testing

We use stress testing to better understand the range of potential risks and their impacts to which the Company is exposed. A stress testing framework is employed to provide a comprehensive, integrated and forward-looking assessment of material risks and vulnerabilities. Stress test results inform on business strategy, risk appetite setting, and decisions related to capital actions, contingency capital plans, liquidity buffer, contingency funding plans and balance sheet positioning. Our stress testing framework utilizes a risk inventory, which covers our risk exposures across our defined risk categories. The risk inventory provides a comprehensive view of our vulnerabilities capturing current and emerging risks from management's view, granular risks relevant to business units and emerging risks associated with new initiatives.

Risk Management Review of Compensation

We believe in a pay for performance philosophy which considers performance across the Company, business segments and individual performance, as appropriate, and the long-term interests of our shareholders and the safety and soundness of the Company. We design compensation to be competitive relative to our peers to attract, retain and motivate our employees. In addition to being competitive in the markets in which we compete for talent and encouraging employees to achieve objectives set out by our management, our compensation programs are designed to balance an appropriate mix of compensation components to align the interests of employees with the long-term interests of shareholders and the safety and soundness of the Company.

The design and administration of our compensation programs provide incentives that seek to appropriately balance risk and financial results in a manner that does not incentivize employees to take imprudent risks, is compatible with effective controls and enterprise-wide risk management, and is supported by strong corporate governance, including oversight by our Board of Directors and the Compensation and Leadership Development Committee of our Board of Directors.

Risk Appetite and Strategic Limit Structure

Risk appetite is defined as the aggregate level in the type of risks we are willing to accept or avoid in order to achieve our strategic objectives. Risk appetite expressions are consistent with the Company's aspirations, mission statement and core values, and also serve as tools to preclude business activities that could have a negative impact on our reputation.

Our risk appetite statement consists of both quantitative limits and qualitative expressions under baseline and stress scenarios to recognize a range of possible outcomes and set boundaries for proactive management of risks. Baseline scenario limits focus on achieving business performance and earnings objectives, while the stress scenario limits focus on maintaining capital and franchise resiliency under stress conditions featuring combined impacts of macroeconomic and idiosyncratic shocks. These limits and expressions are revised at least annually or as warranted by changes in business strategy, risk profile and external environment.

Management and our CRM department monitor approved limits and escalation triggers to ensure that the business is operating within the approved risk appetite. Risk limits are monitored and reported on to various risk sub-committees, the Risk Committee and our Board of Directors, as appropriate. Through ongoing monitoring of risk exposures, management seeks to be able to identify appropriate risk response and mitigation strategies in order to react dynamically to changing conditions.

Capital Planning

Risk exposures identified through the risk identification process across risk categories and risk types are consolidated to create a comprehensive risk inventory. This inventory is leveraged by a number of processes within the Company including stress scenario design, capital planning, risk appetite setting and risk modeling. The risk inventory is reviewed and approved at least annually by the Capital Planning Committee along with the Risk Committee and sub-

committees to ensure transparency and comprehensive coverage of risk exposures. Our capital planning and management framework encompasses forecasting capital levels, establishing capital targets, monitoring capital adequacy against targets, maintaining appropriate contingency capital plans and identifying strategic options to deploy excess capital.

Supervision and Regulation

General

Our operations are subject to extensive regulation, supervision and examination under U.S. federal, state and foreign laws and regulations. As a bank holding company under the Bank Holding Company Act of 1956 and a financial holding company under the Gramm-Leach-Bliley Act, we are subject to the supervision, examination and regulation of the Federal Reserve. As a large provider of consumer financial services, we are subject to the supervision, examination and regulation of the Consumer Financial Protection Bureau (the "CFPB").

We operate two banking subsidiaries, each of which is in the United States. Discover Bank, our main banking subsidiary, offers credit card loans, student loans, personal loans and home equity loans as well as certificates of deposit, savings and checking accounts and other types of deposit accounts. Discover Bank is chartered and regulated by the Office of the Delaware State Bank Commissioner (the "Delaware Commissioner"), and is also regulated by the FDIC, which insures its deposits up to applicable limits and serves as the bank's primary federal banking regulator. Our other bank, Bank of New Castle, is also chartered and regulated by the Delaware Commissioner and insured and regulated by the FDIC.

Bank Holding Company Regulation

Permissible activities for a bank holding company include owning a bank as well as those activities that are so closely related to banking as to be a proper incident thereto, such as consumer lending and other activities that have been approved by the Federal Reserve by regulation or order. Certain servicing activities are also permissible for a bank holding company if conducted for or on behalf of the bank holding company or any of its affiliates. Impermissible activities for bank holding companies include activities that are related to commerce such as retail sales of nonfinancial products.

A financial holding company and the non-bank companies under its control are permitted to engage in activities considered financial in nature, incidental to financial activities, or complementary to financial activities, if the Federal Reserve determines that such activities pose no risk to the safety or soundness of depository institutions or the financial system in general. Being a financial holding company under the Gramm-Leach-Bliley Act requires that the depository institutions that we control meet certain criteria, including capital, management and Community Reinvestment Act requirements. In addition, under the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act") we are required to meet certain capital and management criteria to maintain our status as a financial holding company. Failure to meet the criteria for financial holding company status results in restrictions on new financial activities or acquisitions and could require discontinuance of existing activities that are not generally permissible for bank holding companies.

Federal Reserve regulations and the Federal Deposit Insurance Act (the "FDIA"), as amended by the Dodd-Frank Act, require that bank holding companies serve as a source of strength to each subsidiary bank and commit resources to support each subsidiary bank. This support may be required at times when a bank holding company may not be able to provide such support without adversely affecting its ability to meet other obligations.

The Dodd-Frank Act addresses risks to the economy and the payments system, especially those posed by large systemically significant financial firms. Bank holding companies with $50 billion or more in total consolidated assets, including Discover, are considered systemically significant under the Dodd-Frank Act and are subject to heightened prudential standards established by the Federal Reserve. Regulatory developments, findings and ratings could negatively impact our business strategies or require us to: limit or change our business practices, restructure our products in ways that we may not currently anticipate, limit our product offerings, invest more management time and resources in compliance efforts, limit the fees we can charge for services, or limit our ability to pursue certain business opportunities and obtain related required regulatory approvals. For additional information regarding bank regulatory limitations on acquisitions and investments, see "— Acquisitions and Investments." See Note 20: Litigation and Regulatory Matters to our consolidated financial statements for more information on recent matters affecting

Discover. Regulatory developments could also impact our strategies, the value of our assets, or otherwise adversely affect our businesses. For more information regarding the regulatory environment and developments under the Dodd-Frank Act,

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see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments" and “Risk Factors."

Capital, Dividends and Share Repurchases

We, Discover Bank and Bank of New Castle are subject to capital adequacy guidelines adopted by federal banking regulators, which include maintaining minimum capital and leverage ratios for capital adequacy and higher ratios to be deemed "well-capitalized" for other regulatory purposes. We and our subsidiary banks are each required to maintain Tier 1 and total capital equal to at least 6% and 8% of our total risk-weighted assets, respectively. We and our subsidiary banks are also required to maintain a minimum "leverage ratio" (Tier 1 capital to adjusted total assets) of 4% and a common equity Tier 1 capital ratio (common equity Tier 1 capital to total risk-weighted assets) of 4.5%. Further, under the Federal Reserve's annual capital plan requirements, Discover Financial Services is required to demonstrate that under stress scenarios we will maintain each of the minimum capital ratios on a pro-forma basis throughout the nine quarter planning horizon.

In addition to the supervisory minimum levels of capital described above, Federal Reserve rules applicable to Discover Financial Services require maintenance of the following minimum capital ratios to be considered "well-capitalized" for certain purposes under Regulation Y (12 CFR 225): (i) a Tier 1 risk-based capital ratio of 6% and (ii) a total risk-based capital ratio of 10%. Our banking subsidiaries are required by the FDIC's Prompt Corrective Action rules to maintain the following minimum capital ratios to be considered "well-capitalized": (i) a common equity Tier 1 capital ratio of 6.5%; (ii) a Tier 1 risk-based capital ratio of 8%; (iii) a total risk-based capital ratio of 10%; and (iv) a Tier 1 leverage ratio of 5%. At December 31, 2016, Discover Financial Services met all requirements to be deemed "well-capitalized" pursuant to the applicable regulations. For related information regarding our bank subsidiaries see "—FDIA" below.

There are various federal and state law limitations on the extent to which our banking subsidiaries can provide funds to us through dividends, loans or otherwise. These limitations include minimum regulatory capital requirements, federal and state banking law requirements concerning the payment of dividends out of net profits or surplus, affiliate transaction limits and general federal and state regulatory oversight to prevent unsafe or unsound practices. In general, federal and applicable state banking laws prohibit, without first obtaining regulatory approval, insured depository institutions, such as our banking subsidiaries, from making dividend distributions if such distributions are not paid out of available earnings or would cause the institution to fail to meet applicable capital adequacy standards. For more information, see "— FDIA" below.

Additionally, we are required to submit an annual capital plan to the Federal Reserve that includes an assessment of our expected uses and sources of capital over the nine quarter planning horizon. In April 2016, we submitted our annual capital plan to the Federal Reserve under the Federal Reserve’s Comprehensive Capital Analysis and Review ("CCAR") program, which included planned dividends and share repurchases over the nine quarter planning horizon. In June 2016, we received non-objection from the Federal Reserve with respect to our proposed capital actions through June 30, 2017. On August 19, 2016, we received a non-objection from the Federal Reserve with respect to the repurchase of up to an additional $100 million of shares of our common stock. This amount was in addition to the $1.95 billion of share repurchases included in our 2016 capital plan. In April 2017, we will be submitting our annual capital plan to the Federal Reserve under the Federal Reserve’s CCAR program, which includes planned dividends and share repurchases over the nine quarter planning horizon. Our ability to make capital distributions, including our ability to pay dividends or repurchase shares of our common stock, is subject to the Federal Reserve's review and non-objection of the actions that we proposed in our annual capital plan. In addition, Discover Financial Services is required to publish company-run stress tests results twice each year in accordance with Federal Reserve rules and Discover Bank is required to publish company-run stress test results under FDIC rules.

For more information, including additional conditions and limits on our ability to pay dividends and repurchase our stock, see "Risk Factors — Credit, Market and Liquidity Risk — We may be limited in our ability to pay dividends on and repurchase our stock" and "— We are a holding company and depend on payments from our subsidiaries," "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Capital" and Note 18: Capital Adequacy to our consolidated financial statements.

FDIA

The FDIA imposes various requirements on insured depository institutions. For example, the FDIA requires, among other things, the federal banking agencies to take "prompt corrective action" in respect of depository institutions

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that do not meet minimum capital requirements. The FDIA sets forth the following five capital tiers: "well-capitalized," "adequately capitalized," "undercapitalized," "significantly undercapitalized" and "critically undercapitalized." A depository institution's capital tier will depend upon how its capital levels compare with various relevant capital measures and certain other factors that are established by regulation. At December 31, 2016, Discover Bank and Bank of New Castle met all applicable requirements to be deemed "well-capitalized."

The FDIA also prohibits any depository institution from making any capital distributions (including payment of a dividend) or paying any management fee to its parent holding company if the depository institution would thereafter be "undercapitalized." "Undercapitalized" institutions are subject to growth limitations and are required to submit a capital restoration plan. For a capital restoration plan to be acceptable, among other things, the depository institution's parent holding company must guarantee that the institution will comply with the capital restoration plan.

If a depository institution fails to submit an acceptable capital restoration plan, it is treated as if it is "significantly undercapitalized." "Significantly undercapitalized" depository institutions may be subject to a number of requirements and restrictions, including orders to sell sufficient voting stock to become "adequately capitalized," requirements to reduce total assets, and cessation of receipt of deposits from correspondent banks. "Critically undercapitalized" institutions are subject to the appointment of a receiver or conservator.

Each of our banking subsidiaries may also be held liable by the FDIC for any loss incurred, or reasonably expected to be incurred, due to the default of the other U.S. banking subsidiary and for any assistance provided by the FDIC to the other U.S. banking subsidiary that is in danger of default.

The FDIA prohibits insured banks from accepting brokered deposits or offering interest rates on any deposits significantly higher than the prevailing rate in the bank's normal market area or nationally (depending upon where the deposits are solicited), unless it is "well-capitalized," or it is "adequately capitalized" and receives a waiver from the FDIC. A bank that is less than "well-capitalized" is generally prohibited from paying an interest rate on deposits in excess of 75 basis points over the national market average. There are no such restrictions under the FDIA on a bank that is "well-capitalized." As of December 31, 2016, Discover Bank and Bank of New Castle each met the FDIC's definition of a "well-capitalized" institution for purposes of accepting brokered deposits. An inability to accept brokered deposits in the future could materially adversely impact our funding costs and liquidity. For more information, see “Risk Factors — Credit, Market and Liquidity Risk — An inability to accept or maintain deposits in the future could materially adversely affect our liquidity position and our ability to fund our business.”

The FDIA also affords FDIC insured depository institutions, such as Discover Bank and Bank of New Castle, the ability to "export" interest rates permitted under the laws of the state where the bank is located. Discover Bank and Bank of New Castle are both located in Delaware and, therefore, charge interest on loans to out-of-state borrowers at rates permitted under Delaware law, regardless of the usury limitations imposed by the state laws of the borrower's residence. Delaware law does not limit the amount of interest that may be charged on loans of the type offered by Discover Bank or Bank of New Castle. This flexibility facilitates the current nationwide lending activities of Discover Bank and Bank of New Castle.

The FDIA subjects Discover Bank to deposit insurance assessments. Under the Dodd-Frank Act, in order to bolster the reserves of the Deposit Insurance Fund, the minimum reserve ratio set by the FDIC was increased to 1.35%. In 2011, the FDIC set a reserve ratio of 2%, 65 basis points above the statutory minimum. The FDIC also amended its deposit insurance regulations with two changes. First, the FDIC implemented a provision of the Dodd-Frank Act that changed the assessment base for deposit insurance premiums from one based on domestic deposits to one based on average consolidated total assets minus average tangible equity. Second, the FDIC revised the risk-based assessment system for all large insured depository institutions (generally, institutions with at least $10 billion in total assets, including Discover Bank) to one based on a scorecard method. Further increases may occur in the future. The Dodd-Frank Act removed the statutory cap for the reserve ratio, leaving the FDIC free to set a cap in the future.

Acquisitions and Investments

Since we are a bank holding company, and Discover Bank and Bank of New Castle are insured depository institutions, we are subject to banking laws and regulations that limit the types of acquisitions and investments that we can make. In addition, certain permitted acquisitions and investments that we seek to make are subject to the prior review and approval of our banking regulators, including the Federal Reserve and FDIC. Our banking regulators have broad discretion on whether to approve proposed acquisitions and investments. In deciding whether to approve a proposed acquisition, federal bank regulators will consider, among other factors, the effect of the acquisition on competition, our financial condition, and our future prospects, including current and projected capital ratios and levels; the competence, experience, and integrity of our management and our record of compliance with laws and regulations; the convenience and needs of the communities to be served, including our record of compliance under the Community Reinvestment Act; and our effectiveness in combating money laundering. Therefore, results of supervisory activities of the banking regulators, including examination results and ratings, can impact whether regulators approve proposed acquisitions and investments. Supervisory actions related to anti-money laundering and related laws and regulations will limit for a period of time our ability to enter into certain types of acquisitions and make certain types of investments. For more information on recent matters affecting Discover, see Note 20: Litigation and Regulatory Matters to our consolidated financial statements. For information on the challenging regulatory environment, see "Risk Factors."

In addition, certain acquisitions of our voting stock may be subject to regulatory approval or notice under U.S. federal or Delaware state law. Investors are responsible for ensuring that they do not, directly or indirectly, acquire shares of our stock in excess of the amount that can be acquired without regulatory approval under the Change in Bank Control Act, the Bank Holding Company Act and the Delaware Change in Bank Control provisions, which prohibit any person or company from acquiring control of us without, in most cases, the prior written approval of each of the FDIC, the Federal Reserve and the Delaware Commissioner.

Consumer Financial Services

The relationship between us and our U.S. customers is regulated extensively under federal and state consumer protection laws. Federal laws include the Truth in Lending Act, the Equal Credit Opportunity Act, the Fair Credit Reporting Act, the Gramm-Leach-Bliley Act, the CARD Act and the Dodd-Frank Act. These and other federal laws, among other things, prohibit unfair, deceptive and abusive trade practices, require disclosures of the cost of credit, provide substantive consumer rights, prohibit discrimination in credit transactions, regulate the use of credit report information, provide financial privacy protections, require safe and sound banking operations, restrict our ability to raise interest rates, and subject us to substantial regulatory oversight. The CFPB has rulemaking and interpretive authority under the Dodd-Frank Act and other federal consumer financial services laws, as well as broad supervisory, examination and enforcement authority over large providers of consumer financial products and services, such as Discover. For more information, see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments — Consumer Financial Services."

State and, in some cases, local laws also may regulate in these areas, as well as in the areas of collection practices, and may provide other additional consumer protections. Moreover, our U.S. subsidiaries are subject to the Servicemembers Civil Relief Act (the "SCRA") as well as the Military Lending Act (the "MLA"), which protects persons called to active military service and their dependents from undue hardship resulting from their military service. The SCRA applies to all debts incurred prior to the commencement of active duty (including credit card and other open-end debt) and limits the amount of interest, including service and renewal charges and any other fees or charges (other than bona fide insurance) that is related to the obligation or liability. The MLA applies to several of our financial products, including credit cards, private student loans and personal loans. Among other requirements, it imposes an interest rate cap for loans made to active duty servicemembers and their dependents, requires additional disclosures, and prohibits Discover from requiring MLA protected consumers to submit disputes to arbitration. The requirements of the SCRA and the MLA apply to our student loan and personal loan products as of October 3, 2016 and will apply to our credit card products beginning on October 3, 2017.

Violations of applicable consumer protection laws can result in significant potential liability in litigation by customers, including civil monetary penalties, actual damages, restitution and attorneys' fees. Federal banking regulators, as well as state attorneys general and other state and local consumer protection agencies, also may seek to enforce consumer protection requirements and obtain these and other remedies. Further violations may cause federal banking regulators to deny, or delay approval of, potential acquisitions and investments. See "— Acquisitions and Investments."

We are subject to additional laws and regulations affecting mortgage lenders. Federal, state and, in some instances, local laws apply to mortgage lending activities. These laws generally regulate the manner in which mortgage lending and lending-related activities are conducted, including advertising and other consumer disclosures, payments for services and recordkeeping requirements. These laws include the Real Estate Settlement Procedures Act, the Fair Credit Reporting Act, the Truth in Lending Act, the Equal Credit Opportunity Act, the Fair Housing Act, the Home Mortgage Disclosure Act and various state laws. The CFPB has indicated that the mortgage industry is an area of supervisory focus and that it will concentrate its examination and rulemaking efforts on the variety of mortgage-related topics required under the Dodd-Frank Act, including the steering of consumers to less favorable products,

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discrimination, abusive or unfair lending practices, predatory lending, origination disclosures, minimum mortgage underwriting standards, mortgage loan origination compensation and servicing practices. The CFPB has published several final rules impacting the mortgage industry. For more information, see “Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments — Consumer Financial Services — Mortgage Lending.”

Payment Networks

We operate the Discover and PULSE networks, which deliver switching and settlement services to financial institutions and other program participants for a variety of ATM, POS and other electronic banking transactions. These operations are regulated by certain federal and state banking, privacy and data security laws. Moreover, the Discover and PULSE networks are subject to examination under the oversight of the Federal Financial Institutions Examination Council, an interagency body composed of the federal bank regulators and the National Credit Union Association. In addition, as our payments business has expanded globally through Diners Club, we are subject to government regulation in countries in which our networks operate or our cards are used, either directly or indirectly through regulation affecting Diners Club network licensees. Changes in existing federal, state or international regulation could increase the cost or risk of providing network services, change the competitive environment, or otherwise materially adversely affect our operations. The legal environment regarding privacy and data security is particularly dynamic, and any unpermitted disclosure of confidential customer information could have a material adverse impact on our business, including loss of consumer confidence.

The Dodd-Frank Act contains several provisions that are relevant to the business practices, network transaction volume, revenue and prospects for future growth of PULSE, our debit card network business. The Dodd-Frank Act requires that merchants control the routing of debit transactions, and that interchange fees received by certain payment card issuers on debit card transactions be “reasonable and proportional” to the issuer's cost in connection with such transactions, as determined by the Federal Reserve. The Dodd-Frank Act also requires the Federal Reserve to restrict debit card networks and issuers from requiring debit card transactions to be processed solely on a single payment network or two or more affiliated networks, or from requiring that transactions be routed over certain networks. For information regarding related impacts on our debit card business, see “Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments — Payment Networks.”

Money Laundering & Terrorist Financing Prevention Program

We maintain an enterprise-wide program designed to comply with all applicable anti-money laundering and anti-terrorism laws and regulations, including the Bank Secrecy Act and the USA PATRIOT Act of 2001. This program includes policies, procedures, training and other internal controls designed to mitigate the risk of money laundering or terrorist financing posed by our products, services, customers and geographic locale. These controls include procedures and processes to detect and report suspicious transactions, perform customer due diligence, and meet all recordkeeping and reporting requirements related to particular transactions involving currency or monetary instruments. The program is coordinated by a compliance officer and undergoes an annual independent audit to assess its effectiveness. Our program is typically reviewed on an annual basis by federal banking regulators. In May 2015, Discover Financial Services entered into a written agreement with the Federal Reserve Bank of Chicago to resolve matters related to the Federal Reserve’s examination of Discover Financial Services’ anti-money laundering and related compliance programs. Discover Financial Services agreed to, among other things, enhance its anti-money laundering and related compliance programs. This agreement follows the Consent Order that Discover Bank entered into in June 2014 with the FDIC to resolve matters related to the FDIC’s examination of Discover Bank’s anti-money laundering and related compliance programs. In the Consent Order, Discover Bank agreed to, among other things, enhance its anti-money laundering and related compliance programs. See Note 20: Litigation and Regulatory Matters to our consolidated financial statements for more information. For additional information regarding bank regulatory limitations on acquisitions and investments, see "— Acquisitions and Investments."

Sanctions Programs

We have a program designed to comply with applicable economic and trade sanctions programs, including those administered and enforced by the U.S. Department of the Treasury's Office of Foreign Assets Control. These sanctions are usually targeted against foreign countries, terrorists, international narcotics traffickers and those believed to be involved in the proliferation of weapons of mass destruction. These regulations generally require either the blocking of accounts or other property of specified entities or individuals, but they may also require the rejection of

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certain transactions involving specified entities or individuals. We maintain policies, procedures and other internal controls designed to comply with these sanctions programs.

Executive Officers of the Registrant

Set forth below is information concerning our executive officers, each of whom is a member of our Executive Committee.

Name	Age	Position
David W. Nelms	56	Chairman and Chief Executive Officer
Roger C. Hochschild	52	President and Chief Operating Officer
R. Mark Graf	52	Executive Vice President, Chief Financial Officer
Kathryn McNamara Corley	57	Executive Vice President, General Counsel and Secretary
Brian D. Hughes	49	Executive Vice President, Chief Risk Officer
Julie A. Loeger	53	Executive Vice President, Chief Marketing Officer
Carlos M. Minetti	54	Executive Vice President, President of Consumer Banking
Diane E. Offereins	59	Executive Vice President, President - Payment Services
James V. Panzarino	64	Executive Vice President, President - Credit and Card Operations
R. Douglas Rose	48	Senior Vice President and Chief Human Resources Officer
Glenn P. Schneider	55	Executive Vice President and Chief Information Officer

David W. Nelms is our Chairman and Chief Executive Officer. He has held the role of Chief Executive Officer since February 2004 and assumed the role of Chairman in January 2009. Mr. Nelms served as President and Chief Operating Officer from 1998 to 2004. Prior to joining us, Mr. Nelms worked at MBNA America Bank from 1991 to 1998, most recently as Vice Chairman. Mr. Nelms holds a Bachelor's degree in Mechanical Engineering from the University of Florida and an M.B.A. from Harvard Business School.

Roger C. Hochschild is our President and Chief Operating Officer. He has held this role since March 2004. Mr. Hochschild was Executive Vice President, Chief Administrative Officer and Chief Strategic Officer (2001 to 2004) and Executive Vice President, Chief Marketing Officer - Discover (1998 to 2001) of our former parent company Morgan Stanley. Mr. Hochschild holds a Bachelor's degree in Economics from Georgetown University and an M.B.A. from the Amos Tuck School at Dartmouth College.

R. Mark Graf is our Executive Vice President, Chief Financial Officer. He has held this role since April 2011. In his role, he is also responsible for the Comprehensive Capital Analysis and Review and Resolution Planning program offices. He was also Chief Accounting Officer until December 2012. Prior to joining us, Mr. Graf was an investment advisor with Aquiline Capital Partners, a private equity firm specializing in investments in the financial services industry. From 2006 to 2008, Mr. Graf was a partner at Barrett Ellman Stoddard Capital. Mr. Graf was Executive Vice President and Chief Financial Officer for Fifth Third Bank from 2004 to 2006, after having served as its Treasurer from 2001 to 2004. He holds a Bachelor's degree in Economics from the Wharton School of the University of Pennsylvania.

Kathryn McNamara Corley is our Executive Vice President, General Counsel and Secretary. She has held this role since February 2008. Previously, she served as Senior Vice President, General Counsel and Secretary (1999 to 2008).

Prior to becoming General Counsel, Ms. Corley was Managing Director for our former parent company Morgan Stanley's global government and regulatory relations. Ms. Corley holds a Bachelor's degree in Political Science from the University of Southern California and a J.D. from Antonin Scalia Law School at George Mason University.
Brian D. Hughes is our Executive Vice President, Chief Risk Officer. He has held this role since December 2016 and been Chief Risk Officer since May 2016 and is responsible for Corporate Risk Management, Model Risk Management, and Compliance, including the AML/BSA compliance program. Mr. Hughes joined Discover in 2012 as Senior Vice President and has held leadership positions in Credit Risk Management, Deposit Products and Cardmember Marketing. Prior to joining us, Mr. Hughes held leadership roles at HSBC North America (2004-2012) and Booz & Co. (1993-2004). He holds a Bachelor's degree in Electrical Engineering from the University of Illinois and an M.B.A. from the Booth School of Business at The University of Chicago.

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Julie A. Loeger is our Executive Vice President, Chief Marketing Officer. She has held this role since December 2015. From April 2015 to December 2015, she served as Senior Vice President, Chief Marketing Officer. Ms. Loeger joined Discover in 1991 and has held leadership positions in many areas, including Rewards, Portfolio Marketing, Acquisition, Brand Management and Product Development. Prior to joining Discover, she held various marketing positions at Anheuser Busch, Inc. She holds a Bachelor's of Business Administration degree in Finance from The University of Texas at San Antonio, an M.B.A. from Loyola University Chicago and attended the executive program at The Amos Tuck School at Dartmouth College.
Carlos M. Minetti is our Executive Vice President, President of Consumer Banking. He has held this role since February 2014. Previously, he served as Executive Vice President, President - Consumer Banking and Operations (2010 to 2014), Executive Vice President, Cardmember Services and Consumer Banking (2007 to 2010), and Executive Vice President for Cardmember Services, and Chief Risk Officer (2001 to 2007). Prior to joining us, Mr. Minetti worked in card operations and risk management for American Express from 1987 to 2000, most recently as Senior Vice President. Mr. Minetti holds a Bachelor's degree in Industrial Engineering from Texas A & M University and an M.B.A. from the Booth School of Business at The University of Chicago.
Diane E. Offereins is our Executive Vice President, President - Payment Services. She has held this role since April 2010. Previously, she served as Executive Vice President, Payment Services (2008 to 2010) and Executive Vice President and Chief Technology Officer (1998 to 2010). In 2006, she assumed leadership of the PULSE network. Prior to joining us, Ms. Offereins worked at MBNA America Bank from 1993 to 1998, most recently as Senior Executive Vice President. Ms. Offereins holds a Bachelor's degree in Accounting from Loyola University New Orleans.
James V. Panzarino is our Executive Vice President, President - Credit and Card Operations. He has held this role since December 2014. Previously, he served as Executive Vice President and Chief Credit and Card Operations Officer (2014), Executive Vice President and Chief Credit Risk Officer (2009 to 2013), Senior Vice President and Chief Credit Risk Officer (2006 to 2009), and Senior Vice President, Cardmember Assistance (2003 to 2006). Prior to joining us, Mr. Panzarino was Vice President of External Collections and Recovery at American Express from 1998 to 2002. Mr. Panzarino holds a Bachelor's degree in Business Management and Communication from Adelphi University.
R. Douglas Rose is our Senior Vice President and Chief Human Resources Officer. He has held this role since April 2013. Prior to joining us, he served as Vice President, Human Resources at United Airlines from 2009 to 2013. He was also Senior Vice President, Human Resources at Capital One and a Human Resources consultant for Hewitt Associates. Mr. Rose holds a Bachelor's degree in Communications from the University of Pennsylvania and a Master's degree from the University of Michigan.
Glenn P. Schneider is our Executive Vice President and Chief Information Officer. He has held this role since January 2015. Previously, he served as Senior Vice President and Chief Information Officer (2008 to 2015), Senior Vice President, Application Development (2003 to 2008), and Vice President, Marketing Applications (1998 to 2003). Prior to joining us in 1993, Mr. Schneider worked for Kemper Financial Services as a Programmer. He holds a Bachelor's degree in Economics/Computer Science with a minor in Statistics from Northern Illinois University.

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Item 1A. Risk Factors
You should carefully consider each of the following risks described below and all of the other information in this annual report on Form 10-K in evaluating us. Our business, financial condition, cash flows and/or results of operations could be materially adversely affected by any of these risks. The trading price of our common stock could decline due to any of these risks. This annual report on Form 10-K also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks faced by us described below and elsewhere in this annual report on Form 10-K. See “Special Note Regarding Forward-Looking Statements,” which immediately follows the risks below.
Current Economic and Regulatory Environment
Economic conditions could have a material adverse effect on our business, results of operations and financial condition.
As a provider of consumer financial services, our business, results of operations and financial condition are subject to the United States and global economic environment. Several factors point to signs that the economy has continued to improve in certain respects, however, the improvement has not been as rapid or wide spread as prior recoveries. A customer's ability and willingness to repay us can be negatively impacted by economic conditions and other payment obligations. We are continuing to experience a period of historical lows in our delinquency and charge-off rates and we expect that these rates will be increasing over time. The over 30 days delinquency rate for total loan receivables was 1.97% at December 31, 2016, up from 1.67% at December 31, 2015. The full-year net charge-off rate for total loan receivables was 2.16% for the year ended December 31, 2016, up from 2.01% for the year ended December 31, 2015.

Economic conditions also can reduce the usage of credit cards in general and the average purchase amount of transactions industry-wide, including our cards, which reduces interest income and transaction fees. We rely heavily on interest income from our credit card business to generate earnings. Our interest income from credit card loans was $7.2 billion for the year ended December 31, 2016, which was 79% of net revenues (defined as net interest income plus other income), compared to $6.6 billion for the year ended December 31, 2015, which was 76% of net revenues. Economic conditions combined with a competitive marketplace could result in slow loan growth, resulting in reduced revenue from our core direct banking business.
Financial regulatory developments have and will continue to significantly impact the environment for the financial services industry, which could adversely impact our business, results of operations and financial condition.
The Dodd-Frank Act contains comprehensive provisions governing the practices and oversight of financial institutions and other participants in the financial markets. The Dodd-Frank Act regulates financial firms, including Discover, through a variety of measures, including increased capital and liquidity requirements, limits on leverage and enhanced supervisory authority. Federal banking regulators have issued and continue to propose new regulations and supervisory guidance under the Dodd-Frank Act and otherwise, and have been increasing their examination and enforcement activities. We expect regulators to continue addressing concerns through public enforcement actions against financial institutions or non-public supervisory actions or findings.

While the new Presidential Administration and the congressional majorities in the U.S. Senate and House of Representatives support reducing the regulatory burden, including changes to the Dodd-Frank Act that could reduce regulatory burdens, the prospects for significant modifications are uncertain.

The impact of the evolving regulatory environment on our business and operations depends upon a number of factors including the supervisory priorities and actions of the Federal Reserve, the FDIC and the CFPB, the actions of our competitors and other marketplace participants, and the behavior of consumers. Regulatory developments, findings and ratings have and could continue to negatively impact our business strategies or require us to: limit, exit or change our business practices, restructure our products in ways that we may not currently anticipate, limit our product offerings, invest more management time and resources in compliance efforts, limit the fees we can charge for services, or limit our ability to pursue certain business opportunities and obtain related required regulatory approvals. For example, the Federal Reserve and the FDIC enforcement actions related to our anti-money laundering program have caused us to change our processes and incur significant expenses. For additional information regarding bank regulatory limitations on acquisitions and investments, see "Business — Supervision and Regulation — Acquisitions and Investments." See also Note 20: Litigation and Regulatory Matters to our consolidated financial statements for more information on recent

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matters affecting Discover. Regulatory developments could also impact our strategies, the value of our assets, or otherwise adversely affect our businesses.

Compliance expectations and expenditures have increased significantly for Discover and other financial services firms, and could continue to increase as regulators remain focused on controls and operational processes and we introduce new products or enter into new business arrangements. We may face additional compliance and regulatory risk to the extent that we enter into new business arrangements with third-party service providers, alternative payment providers or other industry participants. The additional expense, time and resources needed to comply with ongoing regulatory requirements may adversely impact our business and results of operations.

For more information regarding the regulatory environment and developments potentially impacting Discover, see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments."

Strategic Business Risk

We face competition in the credit card market from other consumer financial services providers, and we may not be able to compete effectively, which could result in fewer customers and lower account balances and could materially adversely affect our financial condition, cash flows and results of operations.

The consumer financial services business is highly competitive. We compete with other consumer financial services providers, including non-traditional providers such as financial technology firms, on the basis of a number of factors, including brand, reputation, customer service, product offerings, incentives, pricing and other terms. Competition in credit cards is also based on merchant acceptance and the value provided to the customer by rewards programs. Many credit card issuers have instituted rewards programs that are similar to ours, and, in some cases, could be viewed as more attractive to customers than our programs. These competitive factors affect our ability to attract and retain customers, increase usage of our products and maximize the revenue generated by our products. In addition, because most domestically-issued credit cards, other than those issued by American Express, are issued on the Visa and MasterCard networks, most other card issuers benefit from the dominant position and marketing and pricing power of Visa and MasterCard. The competitive marketplace could result in slower loan growth, resulting in reduced revenue from our core direct banking business. If we are unable to compete successfully, or if competing successfully requires us to take aggressive actions in response to competitors' actions, our financial condition, cash flows and results of operations could be materially adversely affected.

We incur considerable expenses in competing with other consumer financial services providers, and many of our competitors have greater financial resources than we do, which may place us at a competitive disadvantage and negatively affect our financial results.

We incur considerable expenses in competing with other consumer financial services providers to attract and retain customers and increase usage of our products. A substantial portion of these expenses relates to marketing expenditures and rewards programs. We incurred expenses of $731 million and $745 million for marketing and business development for the years ended December 31, 2016 and 2015, respectively. Rewards costs, amounted to $1.4 billion and $1.3 billion for the years ended December 31, 2016 and 2015, respectively. We expect the competitive intensity in the rewards space to continue which could result in an increase in the rewards rate. Our consumer financial services products compete primarily on the basis of pricing, terms and service. Because of the highly competitive nature of the credit card-issuing business, a primary method of competition among credit card issuers, including us, has been to offer rewards programs, low introductory interest rates, attractive standard purchase rates and balance transfer programs that offer a favorable annual percentage rate or other financial incentives for a specified length of time on account balances transferred from another credit card.

Competition is intense in the credit card industry, and customers may frequently switch credit cards or transfer their balances to another card. We expect to continue to invest in initiatives to remain competitive in the consumer financial services industry, including the launch of new cards and features, brand awareness initiatives, targeted marketing, online and mobile enhancements, e-wallet participation, customer service improvements, credit risk management and operations enhancements, and infrastructure efficiencies. There can be no assurance that any of the expenses we incur or incentives we offer to attempt to acquire and maintain accounts and increase usage of our products will be effective. In addition, to the extent that we offer new products, features or services to remain competitive, we may be subject to increased operational or other risks.

Furthermore, many of our competitors are larger than we are, have greater financial resources than we do, have more breadth in consumer banking products, and/or have lower funding and operating costs than we have and expect to have, and have assets such as branch locations and co-brand relationships, that may be appealing to certain customers. For example, larger credit card issuers, which have greater resources than we do, may be better positioned to fund appealing rewards, marketing and advertising programs. We may be at a competitive disadvantage as a result of the greater financial resources, diversification and scale of many of our competitors.

Our expenses directly affect our earnings results. Many factors can influence the amount of our expenses, as well as how quickly they may increase. Our ongoing investments in infrastructure, which may be necessary to maintain a competitive business, integrate newly-acquired businesses, and establish scalable operations, increase our expenses. In addition, as our business develops, changes or expands, additional expenses can arise as a result of a reevaluation of business strategies, management of outsourced services, asset purchases, structural reorganization, compliance with new laws or regulations or the acquisition of new businesses. If we are unable to successfully manage our expenses, our financial results will be negatively affected.

We face competition from other operators of payment networks and alternative payment providers, and we may not be able to compete effectively, which could result in reduced transaction volume, limited merchant acceptance of our cards, limited issuance of cards on our networks by third parties and materially reduced earnings from our payment services business.

We face substantial and increasingly intense competition in the payments industry, both from traditional players and new, emerging alternative payment providers. For example, we compete with other payment networks to attract network partners to issue credit and debit cards and other card products on the Discover, PULSE and Diners Club networks. Competition with other operators of payment networks is generally based on issuer fees, fees paid to networks (including switch fees), merchant acceptance, network functionality and other economic terms. Competition is also based on customer perception of service quality, brand image, reputation and market share. Further, we are facing increased competition from alternative payment providers, who may create innovative network or other arrangements with our primary competitors or other industry participants, which could adversely impact our costs, transaction volume and ability to grow our business.

Many of our competitors are well established, larger than we are and/or have greater financial resources or scale than we do. These competitors have provided financial incentives to card issuers, such as large cash signing bonuses for new programs, funding for and sponsorship of marketing programs and other bonuses. Visa and MasterCard each enjoy greater merchant acceptance and broader global brand recognition than we do. Although we have made progress in merchant acceptance, we have not achieved global market parity with Visa and MasterCard. In addition, Visa and MasterCard have entered into long-term arrangements with many financial institutions that may have the effect of discouraging those institutions from issuing cards on the Discover Network or issuing debit cards on the PULSE network. Some of these arrangements are exclusive, or nearly exclusive, which further limits our ability to conduct material amounts of business with these institutions. If we are unable to remain competitive on issuer fees and other incentives, we may be unable to offer adequate pricing to network partners while maintaining sufficient net revenues.

We also face competition as merchants put pressure on transaction fees. Increasing merchant fees or acquirer fees could adversely affect our effort to increase merchant acceptance of credit cards issued on the Discover Network and may cause merchant acceptance to decrease. This, in turn, could adversely affect our ability to attract network partners and our ability to maintain or grow revenues from our proprietary network. In addition, competitors' settlements with merchants and related actions, including pricing pressures and/or surcharging, could negatively impact our business practices. In response to the Dodd-Frank Act, competitor actions related to the structure of merchant and acquirer fees and merchant and acquirer transaction routing strategies have adversely affected and are expected to continue to adversely affect our PULSE network's business practices, network transaction volume, revenue and prospects for future growth, and entry into new product markets. Visa has entered into arrangements with some merchants and acquirers that has, and is expected to continue to have, the effect of discouraging those merchants and acquirers from routing debit transactions to PULSE. In addition, the Dodd-Frank Act's network participation requirements and competitor actions negatively impact PULSE’s ability to enter into exclusivity arrangements, which affects PULSE’s business practices and may materially adversely affect its network transaction volume and revenue. PULSE filed a lawsuit against Visa in late 2014 with respect to these competitive concerns, which will significantly impact expenses for the payment services segment. PULSE's transaction processing revenue was $155 million and $159 million for the years ended December 31, 2016 and 2015, respectively.

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American Express is also a strong competitor, with international acceptance, high transaction fees and an upscale brand image. Internationally, American Express competes in the same market segments as Diners Club. We may face challenges in increasing international acceptance on our networks, particularly if third parties that we rely on to issue Diners Club cards, increase card acceptance and market our brands do not perform to our expectations.

In addition, if we are unable to maintain sufficient network functionality to be competitive with other networks, or if our competitors develop better data security solutions or more innovative products and services than we do, our ability to retain and attract network partners and maintain or increase the revenues generated by our proprietary card-issuing business or our PULSE business may be materially adversely affected. Additionally, competitors may develop data security solutions which, as a consequence of the competitors' market power, we may be forced to use. As a result, those competitors could subject us to adverse restrictions and our business may be adversely affected.

Our business depends upon relationships with issuers, merchant acquirers and licensees, which are generally financial institutions. The economic and regulatory environment and increased consolidation in the financial services industry decrease our opportunities for new business and may result in the termination of existing business relationships if a business partner is acquired or goes out of business. In addition, as a result of this environment, financial institutions may have decreased interest in engaging in new card issuance opportunities or expanding existing card issuance relationships, which would inhibit our ability to grow our payment services business. We continue to face substantial and intense competition in the payments industry, which impacts our revenue margins, transaction volume and business strategies.

If we are unsuccessful in maintaining our international network business and achieving meaningful global card acceptance, we may be unable to grow our international network business.

We continue to make progress toward, but have not completed, achieving global card acceptance across the Diners Club network, the Discover Network and PULSE since we acquired the Diners Club network and related assets in 2008. This would allow Discover customers to use their cards at merchant and ATM locations that accept Diners Club cards around the world and would allow Diners Club customers to use their cards on the Discover Network in North America and on the PULSE network both domestically and internationally.

Our international network business depends upon the cooperation, support and continuous operation of the network licensees that issue Diners Club cards and that maintain a merchant acceptance network. As is the case for other card payment networks, our Diners Club network does not issue cards or determine the terms and conditions of cards issued by the network licensees. If we are unable to continue our relationships with network licensees or if the network licensees are unable to continue their relationships with merchants, our ability to maintain or increase revenues and to remain competitive would be adversely affected due to the potential deterioration in customer relationships and related demand that could result. Further, Citigroup continues to own and operate network licensees generating a portion of Diners Club network sales volume. If one or more licensees were to experience a significant impairment of their business or were to cease doing business for economic, regulatory or other reasons, we would face the adverse effects of business interruption in a particular market, including loss of volume, acceptance and revenue, and exposure to potential reputational risk. If similar conditions arise in the future, we may deploy resources and incur expenses in order to sustain network acceptance. Such conditions previously resulted in our acquisition of Diners Club Italy (which we have since sold) and financial assistance to our Slovenian licensee. Additionally, interruption of network licensee relationships could have an adverse effect on the acceptance of Discover cards when they are used on the Diners Club network outside of North America.

Also, as we have non-amortizable intangible assets that resulted from the purchase of Diners Club, if we are unable to maintain or increase revenues due to the reasons described above, we may be exposed to an impairment loss on the Diners Club acquisition that, when recognized, could have a material adverse impact on our consolidated financial condition and results of operations. The long-term success of our international network business depends upon achieving meaningful global card acceptance, which has included and may continue to include higher overall costs or longer timeframes than anticipated.

The success of our student loan strategy depends upon our ability to manage the risks of our student loan portfolio and the student lending environment. If we fail to do so, we may be unable to sustain and grow our student loan portfolio.

Our private student loan portfolio has grown from $1.0 billion at November 30, 2010 to $9.0 billion at December 31, 2016. The long-term success of our student loan strategy depends upon our ability to manage the credit risk, pricing, funding, operations and expenses of our student loan portfolio, as well as grow student loan originations. Our student loan strategy is also impacted by external factors such as the overall economic environment, a challenging regulatory environment for private student loans and a competitive marketplace. For more information on the regulatory environment, see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments — Consumer Financial Services — Private Student Loans" and Note 20: Litigation and Regulatory Matters to our consolidated financial statements. Slow economic recovery combined with government and regulatory focus on higher education costs, student lending and competitive factors, such as the need to offer fixed interest rates and competition from non-traditional lenders such as financial technology firms, may present challenges to managing and growing our private student loan business in the future, and could cause us to restructure our private student loan product in ways that we may not currently anticipate. In addition, changes that adversely affect the private student loan market generally may negatively impact the profitability and growth of our student loan portfolio.

Acquisitions or strategic investments that we pursue may not be successful and could disrupt our business, harm our financial condition or reduce our earnings.

We may consider or undertake strategic acquisitions of, or material investments in, businesses, products, portfolios of loans or technologies in the future. We may not be able to identify suitable acquisition or investment candidates, or even if we do identify suitable candidates, they may be difficult to finance, expensive to fund and there is no guarantee that we can obtain any necessary regulatory approvals or complete the transactions on terms that are favorable to us. We generally must receive federal regulatory approvals before we can acquire a bank, bank holding company, deposits or certain assets or businesses. For additional information regarding bank regulatory limitations on acquisitions and investments, see "Business — Supervision and Regulation — Acquisitions and Investments."

To the extent we pay the purchase price of any strategic acquisition of or investment in cash, it may have an adverse effect on our financial condition; similarly, if the purchase price is paid with our stock, it may be dilutive to our stockholders. In addition, we may assume liabilities associated with a business acquisition or investment, including unrecorded liabilities that are not discovered at the time of the transaction, and the repayment or settlement of those liabilities may have an adverse effect on our financial condition.

We may not be able to successfully integrate the personnel, operations, businesses, products, or technologies of an acquisition or investment. Integration may be particularly challenging if we enter into a line of business in which we have limited experience and the business operates in a difficult legal, regulatory or competitive environment. We may find that we do not have adequate operations or expertise to manage the new business. The integration of any acquisition or investment may divert management's time and resources from our core business, which could impair our relationships with our current employees, customers and strategic partners and disrupt our operations. Acquisition and Investments also may not perform to our expectations for various reasons, including the loss of key personnel, customers or vendors. If we fail to integrate acquisitions or investments or realize the expected benefits, we may lose the return on these acquisitions or investments or incur additional transaction costs, and our business, reputation and financial condition may be harmed as a result.

Credit, Market and Liquidity Risk

Our business depends on our ability to manage our credit risk, and failing to manage this risk successfully may result in high charge-off rates, which would materially adversely affect our business, profitability and financial condition.

We seek to grow our loan receivables while maintaining quality credit performance. Our success depends on our ability to manage our credit risk while attracting new customers with profitable usage patterns. We select our customers, manage their accounts and establish terms and credit limits using proprietary scoring models and other analytical techniques that are designed to set terms and credit limits to appropriately compensate us for the credit risk we accept, while encouraging customers to use their available credit. The models and approaches we use may not accurately predict future charge-offs due to, among other things, inaccurate assumptions. While we continually seek to improve our assumptions and models, we may make modifications that unintentionally cause them to be less predictive or we may incorrectly interpret the data produced by these models in setting our credit policies.

Our ability to manage credit risk and avoid high charge-off rates may be adversely affected by economic conditions that may be difficult to predict. At December 31, 2016 and 2015, $813 million, or 1.05%, and $684 million, or 0.94%, of our loan receivables were non-performing (defined as loans over 90 days delinquent and accruing interest plus loans not accruing interest). We are continuing to experience a period of historical lows in our delinquency and charge-off rates and we expect that these rates will be increasing over time. There can be no assurance that our underwriting and portfolio management strategies will permit us to avoid high charge-off levels, or that our allowance for loan losses will be sufficient to cover actual losses.

A customer's ability and willingness to repay us can be negatively impacted by increases in their payment obligations to other lenders and by restricted availability of credit to consumers generally. Our collection operations may not compete effectively to secure more of customers' diminished cash flow than our competitors. In addition, we may fail to quickly identify customers who are likely to default on their payment obligations and reduce our exposure by closing credit lines and restricting authorizations, which could adversely impact our financial condition and results of operations. Our ability to manage credit risk also may be adversely affected by legal or regulatory changes (such as restrictions on collections, bankruptcy laws, minimum payment regulations and re-age guidance), competitors' actions and consumer behavior, as well as inadequate collections staffing, techniques and models.

We continue to expand our marketing of our personal loan, private student loan and home equity loan products. A customer's ability and willingness to repay personal loans, private student loans and home equity loans may be more significantly impacted than other consumer loans by other debts or increases in their payment obligations to other lenders and by restricted availability of credit to consumers generally. There can be no assurance that we will be able to grow these products in accordance with our strategies, manage our credit and other risks associated with these products, or generate sufficient revenue to cover our expenses in these markets. Our failure to manage our credit and other risks may materially adversely affect our profitability and our ability to grow these products, limiting our ability to further diversify our business.

Adverse market conditions or an inability to effectively manage our liquidity risk could negatively impact our ability to meet our liquidity and funding needs, which could materially adversely impact our business operations and overall financial condition.

We must effectively manage the liquidity risk to which we are exposed. We require liquidity in order to meet cash requirements such as day-to-day operating expenses, extensions of credit on our consumer loans and required payments of principal and interest on our borrowings. Our primary sources of liquidity and funding are payments on our loan receivables, deposits, and proceeds from securitization transactions and securities offerings. We may maintain too much liquidity, which can be costly and limit financial flexibility, or we may be too illiquid, which could result in financial distress during a liquidity stress event. Our liquidity portfolio had a balance of approximately $12.6 billion as of December 31, 2016, compared to $12.1 billion as of December 31, 2015. Our total contingent liquidity sources amounted to $42.8 billion as of each of the years ended December 31, 2016 and 2015. As of December 31, 2016, our total contingent liquidity sources consisted of $12.6 billion in our liquidity portfolio, $24.2 billion in incremental Federal Reserve discount window capacity, and $6.0 billion of undrawn capacity in private securitizations.

In the event that our current sources of liquidity do not satisfy our needs, we would be required to seek additional financing. The availability of additional financing will depend on a variety of factors such as market conditions, the general availability of credit to the financial services industry, new regulatory restrictions and requirements, and our credit ratings. Disruptions, uncertainty or volatility in the capital, credit or deposit markets, such as the volatility experienced in the capital and credit markets during the financial crisis of 2007, may limit our ability to repay or replace maturing liabilities in a timely manner. As such, we may be forced to delay raising funding or be forced to issue or raise funding at undesirable terms and/or costs, which could decrease profitability and significantly reduce financial flexibility. Regulations such as the liquidity coverage ratio, which requires firms to hold a minimum level of high-quality assets, may increase the cost of funding and impact funding availability and are described more fully in "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments." Further, in disorderly financial markets or for other reasons, it may be difficult or impossible to liquidate some of our investments to meet our liquidity needs.

There can be no assurance that significant disruption and volatility in the financial markets will not occur in the future. Likewise, adverse developments with respect to financial institutions and other third parties with whom we maintain important financial relationships could negatively impact our funding and liquidity. If we are unable to continue to fund our assets through deposits or access capital markets on favorable terms, or if we experience an increase in our borrowing costs or otherwise fail to manage our liquidity effectively, our liquidity, operating results, financial results and condition may be materially adversely affected.

An inability to accept or maintain deposits in the future could materially adversely affect our liquidity position and our ability to fund our business.

We obtain deposits from consumers either directly or through affinity relationships and through third-party securities brokerage firms that offer our deposits to their customers. We had $36.0 billion in deposits acquired directly or through affinity relationships and $16.0 billion in deposits originated through securities brokerage firms as of December 31, 2016, compared to $30.9 billion and $16.6 billion, respectively, as of December 31, 2015. Competition from other financial services firms that use deposit funding, the rates and services we offer on our deposit products, and our ability to maintain a high level of customer experience may affect deposit renewal rates, costs or availability. Changes we make to the rates offered on our deposit products may affect our profitability (through funding costs) and our liquidity (through volumes raised). In addition, our ability to maintain existing or obtain additional deposits may be impacted by factors, including factors beyond our control, such as: perceptions about our financial strength or quality of deposit servicing or online banking generally, which could reduce the number of consumers choosing to place deposits with us; third parties continuing or entering into affinity relationships with us; disruptions in technology services or the internet, generally; or third-party securities brokerage firms continuing to offer our deposit products. Our ability to obtain deposit funding and offer competitive interest rates on deposits is also dependent on capital levels of our bank subsidiaries. The FDIA in certain circumstances prohibits insured banks, such as our subsidiary Discover Bank, from accepting brokered deposits (as defined in the FDIA) and applies other restrictions, such as a cap on interest rates we may pay. See “Business — Supervision and Regulation” and Note 18: Capital Adequacy to our consolidated financial statements for more information. While Discover Bank met the FDIC's definition of “well-capitalized” as of December 31, 2016, and has no restrictions regarding acceptance of brokered deposits or setting of interest rates, there can be no assurance that it will continue to meet this definition. Additionally, our regulators can adjust the requirements to be "well-capitalized" at any time and have authority to place limitations on our deposit businesses, including the interest rate we pay on deposits.

If we are unable to securitize our receivables, it may have a material adverse effect on our liquidity, cost of funds and overall financial condition.

We use the securitization of credit card receivables, which involves the transfer of receivables to a trust and the issuance by the trust of beneficial interests to third-party investors, as a significant source of funding as well as for contingent liquidity. Our average level of credit card securitized borrowings from third parties was $15.8 billion and $15.7 billion for the years ended December 31, 2016 and 2015, respectively. There can be no assurance that there will not be future disruptions in the credit card securitization market similar to those experienced during the financial crisis. Our ability to raise funding through the securitization market also depends, in part, on the credit ratings of the securities we issue from our securitization trusts. If we are not able to satisfy rating agency requirements to maintain the ratings of asset-backed securities issued by our trusts, it could limit our ability to access the securitization markets. Additional factors affecting the extent to which we may securitize our credit card receivables in the future include the overall credit quality of our receivables, the costs of securitizing our receivables, the demand for credit card asset-backed securities, and the legal, regulatory, accounting and tax requirements governing securitization transactions and asset-backed securities, generally. For example, the implementation of the Basel Committee on Banking Supervision's revised securitization framework for banks by the member countries by the beginning of 2019 could negatively impact the pricing and/or volume of our asset-backed securities issuances. A prolonged inability to securitize our credit card receivables, or an increase in the costs of such issuances, may have a material adverse effect on our liquidity, cost of funds and overall financial condition.

The occurrence of events that result in the early amortization of our existing credit card securitization transactions or an inability to delay the accumulation of principal collections in our credit card securitization trusts would materially adversely affect our liquidity.

Our liquidity would be materially adversely affected by the occurrence of events that could result in the early amortization of our existing credit card securitization transactions. Our credit card securitizations are structured as “revolving transactions” that do not distribute to securitization investors their share of monthly principal payments received on the underlying receivables during the revolving period, and instead use those principal payments to fund the purchase of new receivables. The occurrence of an “early amortization event” may result in termination of the revolving periods of our securitization transactions, which would require us to repay the affected outstanding securitized borrowings out of principal collections without regard to the original payment schedule. Early amortization events include, for example, insufficient cash flows in the securitized pool of receivables to meet contractual requirements (i.e. excess spread less than zero) and certain breaches of representations, warranties or covenants in the

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agreements relating to the securitization. For more information on excess spread, see Note 6: Credit Card and Student Loan Securitization Activities to our consolidated financial statements. An early amortization event would negatively impact our liquidity, and require us to rely on alternative funding sources, which may or may not be available at the time. An early amortization event also could impact our ability to access the undrawn conduit facilities that we maintain for contingent liquidity purposes.

Our credit card securitization structure includes a requirement that we accumulate principal collections into a restricted account in the amount of scheduled maturities on a pro rata basis over the 12 months prior to a security's maturity date. We have the option under our credit card securitization documents to shorten this accumulation period, subject to the satisfaction of certain conditions. Historically, we have exercised this option to shorten the accumulation period to one month prior to maturity. If we were to determine that the payment rate on the underlying receivables would not support a one-month accumulation period, we would need to begin accumulating principal cash flows earlier than we have historically. A lengthening of the accumulation period would negatively impact our liquidity, requiring management to implement mitigating measures. During periods of significant maturity levels, absent management actions, the lengthening of the accumulation period could materially adversely affect our financial condition.

A downgrade in the credit ratings of our securities could materially adversely affect our business and financial condition.

We, along with Discover Bank, are regularly evaluated by the ratings agencies, and their ratings for our long-term debt and other securities, including asset-backed securities issued by our securitization trusts, are based on a number of factors that may change from time to time, including our financial strength as well as factors that may not be within our control. Factors that affect our unsecured credit ratings include, but are not limited to, the macroeconomic environment in which we operate and the credit ratings of the U.S. government, the credit quality and performance of our assets, the amount and quality of our capital, the level and stability of our earnings, and the structure and amount of our liquidity. In addition to these factors, the ratings of our asset-backed securities are also based on the quality of the underlying receivables and the credit enhancement structure of the trusts. Downgrades in our ratings or those of Discover Bank or our trusts could materially adversely affect our cost of funds, access to capital and funding, and overall financial condition. There can be no assurance that we will be able to maintain our current credit ratings or that our credit ratings will not be lowered or withdrawn.

We may not be successful in managing the investments in our liquidity investment portfolio and investment performance may deteriorate due to market fluctuations, which would adversely affect our business and financial condition.

We must effectively manage the risks of the investments in our liquidity investment portfolio, which is comprised of cash and cash equivalents and high-quality liquid investments. The value of our investments may be adversely affected by market fluctuations including changes in interest rates, prices, prepayment rates, credit risk premiums and overall market liquidity. Also, investments backed by collateral could be adversely impacted by changes in the value of the underlying collateral. In addition, economic conditions may cause certain of the obligors, counterparties and underlying collateral on our investments to incur losses of their own or default on their obligations to us due to bankruptcy, lack of liquidity, operational failure or other reasons, thereby increasing our credit risk exposure to these investments. These risks could result in a decrease in the value of our investments, which could negatively impact our financial condition. These risks could also restrict our access to funding. While the securities in our investment portfolio are currently limited to obligations of high-quality sovereign and government-sponsored issuers, we may choose to expand the range our investments over time, which may result in greater fluctuations in market value. While we expect these investments to be readily convertible into cash and do not believe they present a material increase to our risk profile or will have a material impact on our risk-based capital ratios, they are subject to certain market fluctuations that may reduce the ability to fully convert them into cash.

Changes in the level of interest rates could materially adversely affect our earnings.

Changes in interest rates cause our net interest income to increase or decrease, as certain of our assets and liabilities carry interest rates that fluctuate with market benchmarks. External factors may cause interest rates to increase. Tighter Federal Reserve monetary policy and rising interest rates would increase the cost of borrowing for consumers, businesses and governments. Higher interest rates could negatively impact Discover's customers as total debt service payments would increase, impede Discover's ability to grow its consumer lending businesses, and increase the cost of our funding, which would put Discover at a disadvantage as compared to competitors that have less expensive funding sources.

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Some of our consumer loan receivables bear interest at a fixed rate or do not earn interest, and we are not able to increase the rate on those loans to offset any higher cost of funds, which could materially reduce earnings. At the same time, our variable rate loan receivables, which are based on the prime rate, may not change at the same rate as our floating-rate borrowings or may be subject to a cap, subjecting us to basis risk. The majority of our floating-rate borrowings and interest rate derivatives are generally based on the one-month LIBOR rate. If the one-month LIBOR rate were to increase without a corresponding increase in the prime rate, our earnings would be negatively impacted. While the majority of our existing certificates of deposit bear interest at fixed rates that do not fluctuate with market benchmarks, we have used derivative instruments to hedge the fixed rates associated with some of these certificates of deposit. However, the costs of new deposits fluctuate with interest rates. Moreover, although certificates of deposit we issue directly to consumers are subject to early withdrawal penalties, these penalties may not fully mitigate early withdrawal behavior in a rising interest rate environment.

Interest rates may also adversely impact our delinquency and charge-off rates. Many consumer lending products bear interest rates that fluctuate with certain base lending rates published in the market, such as the prime rate and LIBOR. As a result, higher interest rates often lead to higher payment requirements by consumers under obligations to us and other lenders, which may reduce their ability to remain current on their obligations to us and thereby lead to loan delinquencies and additions to our loan loss provision, which could materially adversely affect our earnings.

We continually monitor interest rates and have a number of tools, including the composition of our investments, liability terms and interest rate derivatives, to manage our interest rate risk exposure. Changes in market assumptions regarding future interest rates could significantly impact our interest rate risk strategy, our financial position and results of operations. If our interest rate risk management strategies are not appropriately monitored or executed, these activities may not effectively mitigate our interest rate sensitivity or have the desired impact on our results of operations or financial condition. For information related to interest rate risk sensitivities, see "Quantitative and Qualitative Disclosures About Market Risk."

We may be limited in our ability to pay dividends on and repurchase our stock.

In the year ended December 31, 2016, we increased our quarterly common stock dividend to $0.30 per share and repurchased approximately 8% of our outstanding common stock under our share repurchase program. The declaration and payment of future dividends, as well as the amount thereof, are subject to the discretion of our Board of Directors. The amount and size of any future dividends and share repurchases will depend upon the Federal Reserve's non-objection to our annual capital plan, and our results of operations, financial condition, capital levels, cash requirements, future prospects, regulatory review and other factors as further described in "Business — Supervision and Regulation — Capital, Dividends and Share Repurchases." Holders of our shares of common stock are subject to the prior dividend rights of holders of our preferred stock or the depositary shares representing such preferred stock outstanding, and if full dividends have not been declared and paid on all outstanding shares of our preferred stock in any dividend period, no dividend may be declared or paid on or set aside for payment on our common stock. Banking laws and regulations and our banking regulators may limit or prohibit our payment of dividends on or our repurchase of our stock at any time. There can be no assurance that we will declare and pay any dividends on or repurchase our stock in the future.

We are a holding company and depend on payments from our subsidiaries.

Discover Financial Services, our parent holding company, depends on dividends, distributions and other payments from its subsidiaries, particularly Discover Bank, to fund dividend payments, share repurchases, payments on its obligations, including debt obligations, and to provide funding and capital as needed to its operating subsidiaries. Banking laws and regulations and our banking regulators may limit or prohibit our transfer of funds freely, either to or from our subsidiaries, at any time. These laws, regulations and rules may hinder our ability to access funds that we may need to make payments on our obligations or otherwise achieve strategic objectives. For more information, see "Business — Supervision and Regulation — Capital, Dividends and Share Repurchases."

Operational and Other Risk

Our risk management framework and models for managing risks may not be effective in mitigating our risk of loss.

Our risk management framework seeks to identify and mitigate risk and appropriately balance risk and return. We have established processes and procedures intended to identify, measure, manage, monitor and report the types of risk to which we are subject, including credit risk, market risk, liquidity risk, operational risk, compliance and legal risk, and strategic risk. We seek to monitor and control our risk exposure through a framework of policies, procedures, limits and reporting requirements.

Management of our risks in some cases depends upon the use of analytical and/or forecasting models. We use a variety of models to manage and inform decision-making with respect to customers, and for the measurement of risk including credit, market and operational risks and for our finance and treasury functions. Models used by Discover can vary in their complexity and are designed to identify, measure and mitigate risks at various levels such as loan-level, portfolio segments, entire portfolios and products. These models use a set of computational rules to generate numerical estimates of uncertain values to be used for assessment of price, financial forecasts, and estimates of credit, interest rate, market and operational risk. All models carry some level of uncertainty that introduces risks in the estimates.

If the models that we use to mitigate risks are inadequate, we may incur increased losses. In addition, there may be risks that exist, or that develop in the future, that we have not appropriately anticipated, identified or mitigated. If our risk management framework and models do not effectively identify or mitigate our risks, we could suffer unexpected losses and our financial condition and results of operations could be materially adversely affected.

If our security systems, or those of third parties, containing information about us, our customers or third parties with which we do business, are compromised, our business could be disrupted and we may be subject to significant financial exposure, liability and damage to our reputation.

Our direct banking and network operations rely heavily on the secure processing, storage and transmission of confidential information about us, our customers and third parties with which we do business. Information security risks for financial institutions have increased and continue to increase in part because of the proliferation of new technologies, the use of the internet, mobile and telecommunications technologies to conduct financial transactions, and the increased sophistication and activities of organized crime, activists, hackers, terrorist organizations, nation state actors and other external parties. Those parties may also attempt to fraudulently induce employees, customers or other users of our systems to disclose sensitive information in order to gain access to our data or that of our customers. Our technologies, systems, networks and software, and those of other financial institutions, have been, and are likely to continue to be, the target of increasingly frequent cyber-attacks, malicious code, computer viruses, denial of service attacks, phishing and social engineering, other remote access attacks, and physical attacks that could result in unauthorized access, misuse, loss or destruction of data (including confidential customer information), account takeovers, unavailability of service or other events. These types of threats may derive from human error, fraud or malice on the part of external or internal parties, or may result from accidental technological failure.

Despite our efforts to ensure the integrity of our systems through our information security and business continuity programs, we may not be able to anticipate or to implement effective preventive measures against all known and unknown security threats or breaches or events of these types, especially because the techniques used change frequently and are becoming increasingly more sophisticated or are not recognized until launched, and because:

- Security attacks can originate from a wide variety of sources and geographic locations and may be undetected for a period of time.
- We rely on many third-party service providers and network participants, including merchants, and, as such, a security breach or cyber-attack affecting one of these third parties could impact us. For example, the financial services industry continues to see attacks against the environments where personal and identifiable information is handled. For additional information see the risk factor "— We rely on third parties to deliver services. If we face difficulties managing our relationships with third-party service providers, our revenue or results of operations could be materially adversely affected."
- To access our products and services, our customers may use computers and mobile devices that are beyond our security control systems.

We are subject to increasingly more risk related to security systems as we increase acceptance of the Discover card internationally, expand our suite of online direct banking products, enhance our mobile payment technologies, acquire new or outsource some of our business operations, expand our internal usage of web-based products and applications, and otherwise attempt to keep pace with rapid technological changes in the financial services industry. Our efforts to mitigate this risk increase our expenses. While we continue to invest in our information security defenses (including cybersecurity defenses), if our security systems or those of third parties are penetrated or circumvented such that the confidentiality, integrity and availability of information about us, our customers, transactions processed on our networks or third parties with which we do business is compromised, we could be subject to significant liability that may not be covered by insurance, including significant legal and financial exposure, actions by our regulators, damage to our reputation, or a loss of confidence in the security of our systems, products and services that could materially adversely affect our business. For additional information on risks in this area, see the risk factors below regarding fraudulent activity, the introduction of new products and services, the use of third parties for outsourcing, technology generally, and laws and regulations addressing consumer privacy and data use and security.

If we cannot remain organizationally effective, we will be unable to address the opportunities and challenges presented by our strategy and the increasingly dynamic and competitive economic and regulatory environment.

To remain organizationally effective, we must effectively empower, integrate and deploy our management and operational resources and incorporate global and local business, regulatory and consumer perspectives into our decisions and processes. In order to execute on our strategy to be the leading direct bank and payments partner, we must develop and implement innovative and efficient technology solutions and marketing initiatives while effectively managing legal, regulatory, compliance, security, operational and other risks as well as expenses. Examples include the implementation of a broader rollout of our checking product, the expansion of our new core banking platform beyond deposits and personal loans, and a structure for a more competitive global network business. If we fail to develop and implement these solutions, we may be unable to expand quickly and the results of our expansion may be unsatisfactory. In addition, if we are unable to make decisions quickly, assess our opportunities and risks, execute our strategy, and implement new governance, managerial and organizational processes as needed in this increasingly dynamic and competitive economic and regulatory environment, our financial condition, results of operations, relationships with our business partners, banking regulators, customers and shareholders, and ultimately our prospects for achieving our long-term strategies, may be negatively impacted.

We may be unable to increase or sustain Discover card usage, which could impair growth in, or lead to diminishing, average balances and total revenue.

A key element of our business strategy is to increase the usage of the Discover card by our customers, including making it their primary card, and thereby increase our revenue from transaction and service fees and interest income. However, our customers' use and payment patterns may change because of social, legal and economic factors, and customers may decide to use debit cards or other payment products instead of credit cards, not increase card usage, or pay their balances within the grace period to avoid finance charges. We face challenges from competing card products in our attempts to increase credit card usage by our existing customers. Our ability to increase card usage also is dependent on customer satisfaction, which may be adversely affected by factors outside of our control, including competitors' actions and legislative/regulatory changes. Existing legal and regulatory restrictions limit pricing changes that may impact an account throughout its lifecycle, which may reduce our capability to offer lower price promotions to drive account usage and customer engagement. As part of our strategy to increase usage, we have been increasing the number of merchants who accept cards issued on the Discover Network. If we are unable to continue increasing merchant acceptance or fail to improve awareness of existing merchant acceptance of our cards, our ability to grow usage of Discover cards may be hampered. As a result of these factors, we may be unable to increase or sustain credit card usage, which could impair growth in or lead to diminishing average balances and total revenue.

Our transaction volume is concentrated among large merchants, and a reduction in the number of large merchants that accept cards on the Discover Network or PULSE network or the rates they pay could materially adversely affect our business, financial condition, results of operations and cash flows.

Discover card transaction volume was concentrated among our top 100 merchants in 2016, with our largest merchant accounting for approximately 6% of that transaction volume. Transaction volume on the PULSE network was also concentrated among the top 100 merchants in 2016, with our largest merchant accounting for approximately 16% of PULSE transaction volume. These merchants could seek to negotiate better pricing or other financial incentives by conditioning their continued participation in the Discover Network and/or PULSE network on a change in the terms of their economic participation. Loss of acceptance at our largest merchants would decrease transaction volume, negatively impact our brand, and could cause customer attrition. In addition, some of our merchants, primarily our remaining small- and mid-size merchants, are not contractually committed to us for any period of time and may cease to participate in the Discover Network at any time on short notice.

Actual or perceived limitations on acceptance of credit cards issued on the Discover Network or debit cards issued on the PULSE network could adversely affect the use of Discover cards by existing customers and the attractiveness of the Discover card to prospective customers. Also, we may have difficulty attracting and retaining network partners if we are unable to add or retain acquirers or merchants who accept cards issued on the Discover or PULSE networks. As a result of these factors, a reduction in the number of our merchants or the rates they pay could materially adversely affect our business, financial condition, results of operations and cash flows.

Our business, financial condition and results of operations may be adversely affected by merchants' increasing focus on the fees charged by credit card and debit card networks.

Merchant acceptance and fees are critical to the success of both our card-issuing and payment processing businesses. Merchants are concerned with the fees charged by credit card and debit card networks. They seek to negotiate better pricing or other financial incentives as a condition of continued participation in the Discover Network and PULSE network. During the past few years, merchants and their trade groups have filed numerous lawsuits against Visa, MasterCard, American Express and their card-issuing banks, claiming that their practices toward merchants, including issuer fees, violate federal antitrust laws. There can be no assurance that they will not in the future bring legal proceedings against other credit card and debit card issuers and networks, including us. Merchants also may promote forms of payment with lower fees, such as ACH-based payments, or seek to impose surcharges at the point of sale for use of credit or debit cards. Merchant groups have also promoted federal and state legislation that would restrict issuer practices or enhance the ability of merchants, individually or collectively, to negotiate more favorable fees. The heightened focus by merchants on the fees charged by credit card and debit card networks, together with the Dodd-Frank Act and recent industry litigation, which would allow merchants to encourage customers to use other payment methods or cards and may increase merchant surcharging, could lead to reduced transactions on, or merchant acceptance of, Discover Network or PULSE network cards or reduced fees, any of which could adversely affect our business, financial condition and results of operations.

Political, economic or other instability in a country or geographic region, or other unforeseen or catastrophic events, could adversely affect our international business activities and reduce our revenue.

Natural disasters or other catastrophic events, including terrorist attacks, may have a negative effect on our business and infrastructure, including our information technology systems. Our Diners Club network, concentrated primarily on serving the global travel industry, could be adversely affected by international conditions that may result in a decline in consumer or business travel activity. Armed conflict, public health emergencies, natural disasters, political instability or terrorism may have a significant negative effect on travel activity and related revenue. Although a regionalized event or condition may primarily affect one of our network participants, it may also affect our overall network and card activity and our resulting revenue. Overall network and card transaction activity may decline as a result of concerns about safety or disease or may be limited because of economic conditions that result in spending on travel to decline. The impact of such events and other catastrophes on the overall economy may also adversely affect our financial condition or results of operations.

Fraudulent activity associated with our products or our networks could cause our brands to suffer reputational damage, the use of our products to decrease and our fraud losses to be materially adversely affected.

We are subject to the risk of fraudulent activity associated with merchants, customers and other third parties handling customer information. The risk of fraud continues to increase for the financial services industry in general. We incurred fraud losses and other charges of $98 million and $112 million for the years ended December 31, 2016 and 2015, respectively. Credit and debit card fraud, identity theft and related crimes are prevalent and perpetrators are growing ever more sophisticated. Our resources and fraud prevention tools may be insufficient to accurately predict and prevent fraud. Additionally, our risk of fraud continues to increase as acceptance of the Discover card grows internationally and we expand our direct banking business and introduce new products and features. Our financial condition, the level of our fraud charge-offs and other results of operations could be materially adversely affected if fraudulent activity were to significantly increase. High-profile fraudulent activity could negatively impact our brand and reputation. In addition, significant increases in fraudulent activity could lead to regulatory intervention (such as mandatory card reissuance) and reputational and financial damage to our brands, which could negatively impact the use of our deposit accounts, cards and networks and thereby have a material adverse effect on our business. Further, fraudulent activity may result in lower license fee revenue from our Diners Club licensees.

The financial services and payment services industries are rapidly evolving, and we may be unsuccessful in introducing new products or services on a large scale in response to these changes.

Technological changes continue to significantly impact the financial services and payment services industries, such as continuing development of technologies in the areas of smart cards, radio frequency and proximity payment devices, electronic wallets and mobile commerce, among others. For example, the industry migration to evolving security (referred to as “EMV”) standards in 2015 and 2016 represented a fundamental change in how payment transactions are processed and how customers use their cards. There continue to be risks in migrating to EMV standards which may have adverse implications for both our card-issuing and network businesses. For example, we may be unsuccessful in shifting certain types of fraud liability to merchants that do not comply with or adopt EMV standards. The increasingly competitive mobile, e-wallet and tokenization spaces are expected to bring risks and opportunities in 2017 to both our card-issuing and payments businesses.

The effect of technological changes on our business is unpredictable. We depend, in part, on third parties for the development of and access to new technologies. We expect that new services and technologies relating to the payments business will continue to appear in the market, and these new services and technologies may be superior to, or render obsolete, the technologies that we currently use in our products and services. Rapidly evolving technologies and new entrants in mobile and emerging payments pose a risk to Discover both as a card issuer and to the payments business. As a result, our future success may be dependent on our ability to identify and adapt to technological changes and evolving industry standards and to provide payment solutions for our customers, merchants and financial institution customers.

Difficulties or delays in the development, production, testing and marketing of new products or services may be caused by a number of factors including, among other things, operational, capital and regulatory constraints. The occurrence of such difficulties may affect the success of our products or services, and developing unsuccessful products and services could result in financial losses as well as decreased capital availability. In addition, the new products and services offered may not be attractive to consumers and merchant and financial institution customers. Also, success of a new product or service may depend upon our ability to deliver it on a large scale, which may require a significant capital investment that we may not be in a position to make. If we are unable to successfully introduce and maintain new income-generating products and services while also managing our expenses, it may impact our ability to compete effectively and materially adversely affect our business and earnings.

We rely on third parties to deliver services. If we face difficulties managing our relationships with third-party service providers, our revenue or results of operations could be materially adversely affected.

We depend on third-party service providers for many aspects of the operation of our business. For example, we depend on third parties for software and systems development, the timely transmission of information across our data transportation network, and for other telecommunications, processing, remittance, technology-related and other services in connection with our direct banking and payment services businesses. If a service provider fails to provide the services that we require or expect, or fails to meet contractual requirements, such as service levels or compliance with applicable laws, the failure could negatively impact our business by adversely affecting our ability to process customers' transactions in a timely and accurate manner, otherwise hampering our ability to serve our customers, or subjecting us to litigation and regulatory risk for poor vendor oversight. Such a failure could adversely affect the perception of the reliability of our networks and services, and the quality of our brands, and could materially adversely affect our revenues and/or our results of operations.

We rely on technology to deliver services. If key technology platforms become obsolete, or if we experience disruptions, including difficulties in our ability to process transactions, our revenue or results of operations could be materially adversely affected.

Our ability to deliver services to our customers and run our business in compliance with applicable laws and regulations may be affected by the functionality of our technology systems. The implementation of technology changes and upgrades to maintain current and integrated systems may result in compliance issues and may, at least temporarily, cause disruptions to our business, including, but not limited to, systems interruptions, transaction processing errors and system conversion delays, all of which could have a negative impact on us. In addition, our transaction processing systems and other operational systems may encounter service interruptions at any time due to system or software failure, natural disaster or other reasons. Such services could be disrupted at any of our primary or back-up facilities or our other owned or leased facilities. Third parties to whom we outsource the maintenance and development of certain technological functionality may experience errors or disruptions that could adversely impact us and over which we may have limited control. In addition, there is no assurance that we will be able to sustain our investment in new technology to avoid obsolescence of critical systems and applications. A failure to maintain current technology, systems and facilities or to control third-party risk, could cause disruptions in the operation of our business, which could materially adversely affect our transaction volumes, revenues, reputation and/or our results of operations.

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Merchant defaults may adversely affect our business, financial condition, cash flows and results of operations.

As an issuer and merchant acquirer in the United States on the Discover Network, and as a holder of certain merchant agreements internationally for the Diners Club network, we may be contingently liable for certain disputed credit card sales transactions that arise between customers and merchants. If a dispute is resolved in the customer's favor, we will cause a credit or refund of the amount to be issued to the customer and charge back the transaction to the merchant or merchant acquirer. If we are unable to collect this amount from the merchant or merchant acquirer, we will bear the loss for the amount credited or refunded to the customer. Where the purchased product or service is not provided until some later date following the purchase, such as an airline ticket, the likelihood of potential liability increases. For the years ended December 31, 2016 and 2015 losses related to merchant chargebacks were not material.

Our success is dependent, in part, upon our executive officers and other key employees. If we are unable to recruit, retain and motivate key officers and employees to manage our business well, our business could be materially adversely affected.

Our success depends, in large part, on our ability to recruit, retain and motivate key officers and employees to manage our business. Our senior management team has significant industry experience and would be difficult to replace. We believe we are in a critical period of competition in the financial services and payments industry. The market for qualified individuals is highly competitive, and we may not be able to attract and retain qualified personnel or candidates to replace or succeed members of our senior management team or other key personnel or it may be expensive to do so. We may be subject to restrictions under future legislation or regulation limiting executive compensation. For example, the federal banking agencies have previously issued guidance on incentive compensation policies at banking organizations and may issue additional rules relating to such activities in the future. See "Management's Discussion and Analysis of Financial Condition — Regulatory Environment and Developments." These requirements could negatively impact our ability to compete with other companies in recruiting and retaining key personnel and offer incentives that motivate our key personnel to perform and may require us to extensively restructure certain of our existing incentive compensation practices. If we are unable to recruit, retain and motivate key personnel to manage our business well, our business could be materially adversely affected.

Damage to our reputation could damage our business.

In recent years, financial services companies have experienced increased reputational risk as consumers protest and regulators scrutinize business and compliance practices of such companies. Maintaining a positive reputation is critical to attracting and retaining customers, investors and employees. Damage to our reputation can therefore cause significant harm to our business and prospects. Harm to our reputation can arise from numerous sources, including, among others, employee misconduct, litigation or regulatory outcomes, failing to deliver minimum standards of service and quality, compliance failures, and the activities of customers, business partners and counterparties. Social media also can cause harm to our reputation. By its very nature, social media can reach a wide audience in a very short amount of time, which presents unique corporate communications challenges. Negative or ‘wrong’ type of publicity generated through unexpected social media coverage can damage Discover’s reputation and brand. Negative publicity regarding us, whether or not true, may result in customer attrition and other harm to our business prospects.

We may be unsuccessful in promoting and protecting our brands or protecting our other intellectual property, or third parties may allege that we are infringing their intellectual property rights.

The Discover, PULSE and Diners Club brands have substantial economic and goodwill value. Our success is dependent on our ability to promote and protect these brands and our other intellectual property. Our ability to attract and retain customers is highly dependent upon the external perception of our company and brands. Our brands are licensed for use to business partners and network participants, some of whom have contractual obligations to promote and develop our brands. For example, the Discover card brand is now being issued by certain Diners Club licensees in their local markets. If our business partners do not adhere to contractual standards, engage in improper business practices, or otherwise misappropriate, use or diminish the value of our brands or our other intellectual property, we may suffer reputational and financial damage. If we will not be able to adequately protect our brands, our proprietary information and other intellectual property, our business success may be adversely affected. In addition, third parties may allege that our marketing, processes or systems may infringe their intellectual property rights. Given the potential risks and uncertainties of such claims, our business could be adversely affected by having to pay significant monetary damages, technology development expenses or licensing fees, and we may have to alter our business practices or be prevented from competing effectively.

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Laws, regulations, and supervisory guidance and practices, or the application thereof, may adversely affect our business, financial condition and results of operations.

We must comply with an array of banking, consumer lending and payment services laws and regulations in all of the jurisdictions in which we operate as described more fully in “Business — Supervision and Regulation” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments.” Regulatory developments, findings and ratings could negatively impact our business strategies or require us to: limit or change our business practices, restructure our products in ways that we may not currently anticipate, limit our product offerings, invest more management time and resources in compliance efforts, limit the fees we can charge for services, or limit our ability to pursue certain business opportunities and obtain related required regulatory approvals. For additional information regarding bank regulatory limitations on acquisitions and investments, see "Business — Supervision and Regulation — Acquisitions and Investments." See Note 20: Litigation and Regulatory Matters to our consolidated financial statements for more information on recent matters affecting Discover and the second risk factor in this section regarding the regulatory environment for the businesses in which we engage.

In addition, we are subject to inquiries and enforcement actions from state attorney general offices and regulation by the Federal Trade Commission, state banking regulators and the U.S. Department of Justice, as well as the SEC and New York Stock Exchange in our capacity as a public company. We also are subject to the requirements of entities that set and interpret the accounting standards (such as the FASB, the SEC, banking regulators and our independent registered public accounting firm) who may add new requirements or change their interpretations on how standards should be applied. A specific example of this is the proposed accounting standards update related to estimation of loan loss reserves. In June 2016, the FASB issued new guidance that will require lenders and financial institutions to adopt a current expected credit loss ("CECL") model to evaluate impairment of loans and financial instruments. The model requires evaluation of impairment based on an estimate of life of loan losses whereas rules currently in effect require utilization of an incurred loss model. The Company is required to put the CECL model in place for the 2020 fiscal year. See Note 1: Background and Basis of Presentation — Recently Issued Accounting Pronouncements to our consolidated financial statements for more information on the new guidance and its potential impact and reporting of our financial condition and results of operations. This and other guidance not yet issued could potentially materially impact how we record and report our financial condition and results of operations, or could have an impact on regulatory capital.

Failure to comply with laws, regulations and standards could lead to adverse consequences such as financial, structural, reputational and operational penalties, including receivership, litigation exposure and fines (as described further below). Failure to comply with anti-corruption and other laws can expose us and/or individual employees to potentially severe criminal and civil penalties. Specifically, we are subject to anti-corruption laws and regulations, including the U.S. Foreign Corrupt Practices Act and other laws, that prohibit the making or offering of improper payments. Legislative, regulatory and tax code changes could impact the profitability of our business activities, require us to limit or change our business practices or our product offerings, or expose us to additional costs (including increased compliance costs). Significant changes in laws and regulations may have a more adverse effect on our results of operations than on the results of our larger, more diversified competitors.

Current and proposed laws and regulations addressing consumer privacy and data use and security could affect the competitiveness of our products and increase our costs.

Legal or regulatory pronouncements relating to consumer privacy, data use and security affect our business. We are subject to a number of laws concerning consumer privacy and data use and security. Due to recent consumer data compromise events in the United States, which resulted in unauthorized access to millions of customers data, these areas continue to be a focus of the executive administration, Congress, state legislators and banking regulators. Developments in this area, such as new laws, regulations, regulatory guidance, litigation or enforcement actions, could result in new or different requirements on Discover and other card issuers or networks that could increase costs or adversely affect the competitiveness of our credit card or debit card products. See the discussion on recent security developments in “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments” for more information. In addition, failure to comply with the privacy and data use and security laws and regulations to which we are subject, including by reason of inadvertent disclosure of confidential information, could result in litigation, fines, sanctions, penalties or other adverse consequences and loss of consumer confidence, which could materially adversely affect our results of operations, overall business and reputation.

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Litigation and regulatory actions could subject us to significant fines, penalties and/or requirements resulting in increased expenses.

Businesses in the consumer banking and payment services industries have historically been subject to significant legal actions, including class action lawsuits and commercial, shareholder and patent litigation. Many of these actions have included claims for substantial compensatory, statutory or punitive damages. While we have historically relied on our arbitration clause in agreements with customers to limit our exposure to consumer class action litigation, there can be no assurance that we will continue to be successful in enforcing our arbitration clause in the future. Legal challenges to the enforceability of these clauses have led most card issuers, and may cause us, to discontinue their use. There have been bills pending in Congress to directly or indirectly prohibit the use of pre-dispute arbitration clauses in some or all consumer banking products. Also, the Dodd-Frank Act authorized the CFPB to conduct a study on pre-dispute arbitration clauses and, based on the study, potentially limit or ban arbitration clauses. On May 5, 2016 the CFPB issued its proposed arbitration rule that would (i) effectively ban providers of consumer financial services from using arbitration clauses to prevent class action cases and (ii) require records of all other arbitrations to be provided to the CFPB for potential publication on its website. The timing and provisions of any final rule are uncertain at this time. Further, from time to time, we are involved in pending legal actions challenging the use of our arbitration clause. In addition, we have been and may again be involved in various actions or proceedings brought by governmental regulatory and enforcement agencies, which could harm our reputation, require us to change our business activities and product offerings, or subject us to significant fines, penalties, customer restitution or other requirements, resulting in increased expenses. For example, complying with our agreements with the Federal Reserve and the FDIC consent order related to our anti-money laundering program have caused us to incur significant expenses. See Note 20: Litigation and Regulatory Matters to our consolidated financial statements for more information on current matters affecting Discover.

Special Note Regarding Forward-Looking Statements

This annual report on Form 10-K and materials we have filed or will file with the SEC (as well as information included in our other written or oral statements) contain or will contain certain statements that are forward-looking within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are not guarantees of future performance and involve certain risks, uncertainties and assumptions that are difficult to predict. Actual outcomes and results may differ materially from those expressed in, or implied by, our forward-looking statements. Words such as “expects,” “anticipates,” “believes,” “estimates” and other similar expressions or future or conditional verbs such as “will,” “should,” “would” and “could” are intended to identify such forward-looking statements. You should not rely solely on the forward-looking statements and should consider all uncertainties and risks throughout this annual report on Form 10-K, including those described under “Risk Factors.” The statements are only as of the date they are made, and we undertake no obligation to update any forward-looking statement.

Possible events or factors that could cause results or performance to differ materially from those expressed in our forward-looking statements include the following:

- changes in economic variables, such as the availability of consumer credit, the housing market, energy costs, the number and size of personal bankruptcy filings, the rate of unemployment, the levels of consumer confidence and consumer debt, and investor sentiment (including potential impacts resulting from the new Presidential Administration);
- the impact of current, pending and future legislation, regulation, supervisory guidance, and regulatory and legal actions, including, but not limited to, those related to financial regulatory reform, consumer financial services practices, anti-corruption and funding, capital and liquidity;
- the actions and initiatives of current and potential competitors;
- our ability to manage our expenses;
- our ability to successfully achieve card acceptance across our networks and maintain relationships with network participants and merchants;
- our ability to sustain and grow our card, private student loan and personal loan products;
- our ability to increase or sustain Discover card usage or attract new customers;
-

difficulty obtaining regulatory approval for, financing, closing, transitioning, integrating or managing the expenses of acquisitions of or investments in new businesses, products or technologies;

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- our ability to manage our credit risk, market risk, liquidity risk, operational risk, compliance and legal risk, and strategic risk;
- the availability and cost of funding and capital;
- access to deposit, securitization, equity, debt and credit markets;
- the impact of rating agency actions;
- the level and volatility of equity prices, commodity prices and interest rates, currency values, investments, other market fluctuations and other market indices;
- losses in our investment portfolio;
- limits on our ability to pay dividends and repurchase our common stock;
- limits on our ability to receive payments from our subsidiaries;
- fraudulent activities or material security breaches of key systems;
- our ability to remain organizationally effective;
- the effect of political, economic and market conditions, geopolitical events and unforeseen or catastrophic events;
- our ability to introduce new products or services;
- our ability to manage our relationships with third-party vendors;
- our ability to maintain current technology and integrate new and acquired systems;
- our ability to collect amounts for disputed transactions from merchants and merchant acquirers;
- our ability to attract and retain employees;
- our ability to protect our reputation and our intellectual property; and
- new lawsuits, investigations or similar matters or unanticipated developments related to current matters.

We routinely evaluate and may pursue acquisitions of or investments in businesses, products, technologies, loan portfolios or deposits, which may involve payment in cash or our debt or equity securities.

The foregoing review of important factors should not be construed as exclusive and should be read in conjunction with the other cautionary statements that are included in this annual report on Form 10-K. These factors expressly qualify all subsequent oral and written forward-looking statements attributable to us or persons acting on our behalf. Except for any ongoing obligations to disclose material information as required under U.S. federal securities laws, we do not have any intention or obligation to update forward-looking statements after we distribute this annual report on Form 10-K, whether as a result of new information, future developments or otherwise.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We have eight principal properties located in seven states in the United States. As of January 31, 2017, we owned four principal properties, which included our corporate headquarters, two call centers and a processing center, and we leased four principal properties, which included two call centers, our PULSE headquarters and a Student Loan Corporation office. The call centers, processing center and Student Loan Corporation offices largely support our Direct Banking segment; the PULSE headquarters is used by our Payment Services segment; and our corporate headquarters is used by both our Direct Banking and Payment Services segments. Each of our call centers and our processing center are operating at and being utilized to a reasonable capacity. We believe our principal facilities are both suitable and adequate to meet our current and projected needs. We also have ten leased offices located outside the United States, eight of which are used to support our Diners Club operations, part of our Payment Services segment, and two leased offices in China that support our Direct Banking segment.

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Item 3. Legal Proceedings
For a description of legal proceedings, see Note 20: Litigation and Regulatory Matters to our consolidated financial statements.
Item 4. Mine Safety Disclosures
None.

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Part II.

Part II | Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Common Stock Market Prices and Dividends

Our common stock is traded on the New York Stock Exchange ("NYSE") (ticker symbol DFS). The approximate number of record holders of our common stock as of February 17, 2017 was 52,227.

The following table sets forth the quarterly high and low sales prices of a share of our common stock as reported by the NYSE and the cash dividends we declared per share of our common stock during the quarter indicated:

	Stock Price		Cash Dividends
	High	Low	Declared
Quarter Ended:			
March 31, 2015	$66.02	$54.02	$ 0.24
June 30, 2015	$60.57	$56.17	$ 0.28
September 30, 2015	$59.88	$50.36	$ 0.28
December 31, 2015	$58.08	$50.20	$ 0.28
Quarter Ended:			
March 31, 2016	$53.09	$42.86	$ 0.28
June 30, 2016	$58.10	$49.98	$ 0.28
September 30, 2016	$60.29	$51.67	$ 0.30
December 31, 2016	$73.62	$53.91	$ 0.30

In the third quarter of 2016, we increased our quarterly common stock dividend from $0.28 per share to $0.30 per share and maintained a $0.30 per share dividend for the fourth quarter of 2016. Although we expect to continue our policy of paying regular cash dividends, we cannot assure that we will do so in the future. For more information, including conditions and limits on our ability to pay dividends, see "Business — Supervision and Regulation — Capital, Dividends and Share Repurchases," "Risk Factors — Credit, Market and Liquidity Risk — We may be limited in our ability to pay dividends on and repurchase our stock" and "— We are a holding company and depend on payments from our subsidiaries," "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Capital" and Note 18: Capital Adequacy to our consolidated financial statements.

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Issuer Purchases of Equity Securities

The table below sets forth information regarding purchases of our common stock related to our share repurchase program and employee transactions that were made by us or on our behalf during the most recent quarter:

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan or Program(1)	Maximum Dollar Value of Shares that may yet be purchased under the Plans or Programs(1)
October 1-31, 2016				
Repurchase program(1)	2,856,389	$ 56.01	2,856,389	$ 1,824,040,754
Employee transactions(2)	590	$ 56.40	N/A	N/A
November 1-30, 2016				
Repurchase program(1)	2,603,428	$ 61.29	2,603,428	$ 1,664,470,142
Employee transactions(2)	1,588	$ 56.06	N/A	N/A
December 1-31, 2016				
Repurchase program(1)	2,230,992	$ 70.60	2,230,992	$ 1,506,958,397
Employee transactions(2)	349	$ 68.89	N/A	N/A
Total				
Repurchase program(1)	7,690,809	$ 62.03	7,690,809	$ 1,506,958,397
Employee transactions(2)	2,527	$ 57.91	N/A	N/A

(1) On July 14, 2016, our Board of Directors approved a share repurchase program authorizing the repurchase of up to $2.5 billion of our outstanding shares of common stock. This program expires on October 31, 2017 and may be terminated at any time.

(2) Reflects shares withheld (under the terms of grants under employee stock compensation plans) to offset tax withholding obligations that occur upon the delivery of outstanding shares underlying restricted stock units or upon the exercise of stock options.

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Stock Performance Graph

The following graph compares the cumulative total stockholder return (rounded to the nearest whole dollar) of our common stock, the S&P 500 Stock Index and the S&P 500 Financials Index for the period from November 30, 2011 through December 31, 2016. The graph assumes an initial investment of $100 on November 30, 2011. The cumulative returns include stock price appreciation and assume full reinvestment of dividends. This graph does not forecast future performance of our common stock.

	Discover Financial Services	S&P 500 Index	S&P 500 Financials Index
November 30, 2011	$ 100.00	$ 100.00	$ 100.00
November 30, 2012	$ 175.12	$ 113.57	$ 122.70
December 31, 2012(1)	$ 162.11	$ 114.37	$ 128.28
December 31, 2013	$ 236.63	$ 148.23	$ 170.89
December 31, 2014	$ 278.16	$ 165.11	$ 193.27
December 31, 2015	$ 225.77	$ 163.91	$ 186.55
December 31, 2016	$ 310.08	$ 179.54	$ 224.13

(1) In 2013, we changed fiscal years creating a one month transition period in December 2012.

Item 6. Selected Financial Data

The following table presents our selected financial data and operating statistics. The statement of income data for the calendar years ended December 31, 2016, 2015 and 2014, and the statement of financial condition data as of December 31, 2016 and 2015 have been derived from our audited consolidated financial statements included elsewhere in this annual report on Form 10-K. The statement of income data for the fiscal years ended December 31, 2013, November 30, 2012, and the one month ended December 31, 2012, and the statement of financial condition data as of December 31, 2014, 2013, and 2012, and November 30, 2012 have been derived from audited consolidated financial statements not included elsewhere in this annual report on Form 10-K.

In December 2012, our Board of Directors approved a change in our fiscal year end from November 30 to December 31 of each year. This fiscal year change was effective January 1, 2013. As a result of the change, we had a one month transition period in December 2012. The results for the one month ended December 31, 2012 is included in this table.

Discover Financial Services
Selected Financial Data

	For the Calendar Years Ended December 31,				For the Fiscal Year Ended November 30, 2012	For the One Month Ended December 31, 2012
	2016	2015	2014	2013		
	(dollars in millions, except per share amounts)					
Statement of Income Data:						
Interest income	$8,616	$7,945	$7,596	$7,064	$6,703	$595
Interest expense	1,398	1,263	1,134	1,146	1,331	103
Net interest income	7,218	6,682	6,462	5,918	5,372	492
Other income	1,881	2,057	2,015	2,306	2,281	200
Revenue net of interest expense	9,099	8,739	8,477	8,224	7,653	692
Provision for loan losses	1,859	1,512	1,443	1,086	848	178
Other expense	3,584	3,615	3,340	3,194	3,052	240
Income before income tax expense	3,656	3,612	3,694	3,944	3,753	274
Income tax expense	1,263	1,315	1,371	1,474	1,408	104
Net income	$2,393	$2,297	$2,323	$2,470	$2,345	$170
Net income allocated to common stockholders	$2,339	$2,246	$2,270	$2,414	$2,318	$168
Statement of Financial Condition Data (as of):						
Loan receivables	$77,254	$72,385	$69,969	$65,771	$61,017	$62,598
Total assets	$92,308	$86,799	$82,998	$79,340	$75,283	$73,491
Total stockholders' equity	$11,323	$11,275	$11,134	$10,809	$9,778	$9,873
Allowance for loan losses	$2,167	$1,869	$1,746	$1,648	$1,725	$1,788
Long-term borrowings	$25,443	$24,650	$22,477	$20,474	$19,729	$17,666
Per Share of Common Stock:						
Basic EPS from continuing operations	$5.77	$5.14	$4.91	$4.97	$4.47	$0.34
Diluted EPS from continuing operations	$5.77	$5.13	$4.90	$4.96	$4.46	$0.34
Weighted-average shares outstanding (000's)	405,301	436,855	462,115	485,492	518,428	497,881
Weighted-average shares outstanding (fully diluted) (000's)	405,687	437,498	463,412	486,861	519,620	498,994
Dividends declared per share of common stock	$1.16	$1.08	$0.92	$0.60	$0.40	$0.14
Common stock dividend payout ratio	20.10 %	21.01 %	18.73 %	12.07 %	8.95 %	41.48 %
Ratios:						
Return on average total equity	21 %	21 %	21 %	24 %	26 %	21 %
Return on average assets	3 %	3 %	3 %	3 %	3 %	3 %
Average stockholders' equity to average total assets	13 %	14 %	14 %	14 %	13 %	14 %

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Selected Financial Data (continued)

	For the Calendar Years Ended December 31,				For the Fiscal Year Ended November 30, 2012	For the One Month Ended December 31, 2012
	2016	2015	2014	2013		
	(dollars in millions)					
Selected Statistics:						
Total Loan Receivables						
Loan receivables	$77,254	$72,385	$69,969	$65,771	$61,017	$62,598
Average loan receivables	$72,280	$69,061	$65,853	$61,820	$58,043	$61,877
Interest yield	11.78 %	11.40 %	11.40 %	11.28 %	11.38 %	11.21 %
Net principal charge-off rate	2.16 %	2.01 %	2.04 %	1.98 %	2.29 %	2.19 %
Delinquency rate (over 30 days)	1.97 %	1.67 %	1.66 %	1.64 %	1.75 %	1.69 %
Delinquency rate (over 90 days)	0.87 %	0.76 %	0.78 %	0.77 %	0.83 %	0.82 %
Credit Card Loans						
Credit card loan receivables	$61,522	$57,896	$56,128	$53,150	$49,642	$51,135
Average credit card loan receivables	$57,238	$54,846	$52,600	$49,816	$47,301	$50,494
Interest yield	12.50 %	12.08 %	12.09 %	12.00 %	12.16 %	11.92 %
Net principal charge-off rate	2.34 %	2.22 %	2.27 %	2.21 %	2.62 %	2.47 %
Delinquency rate (over 30 days)	2.04 %	1.72 %	1.73 %	1.72 %	1.86 %	1.79 %
Delinquency rate (over 90 days)	0.97 %	0.85 %	0.85 %	0.84 %	0.91 %	0.90 %
Personal Loans						
Personal loan receivables	$6,481	$5,490	$5,007	$4,191	$3,272	$3,296
Average personal loan receivables	$5,895	$5,245	$4,592	$3,706	$2,944	$3,290
Interest yield	12.19 %	12.04 %	12.36 %	12.52 %	12.35 %	12.43 %
Net principal charge-off rate	2.55 %	2.15 %	2.04 %	2.13 %	2.33 %	2.52 %
Delinquency rate (over 30 days)	1.12 %	0.89 %	0.79 %	0.70 %	0.76 %	0.77 %
Delinquency rate (over 90 days)	0.29 %	0.27 %	0.22 %	0.21 %	0.23 %	0.23 %
Private Student Loans (excluding PCI)						
Private student loan receivables	$6,393	$5,647	$4,850	$3,969	$3,000	$3,072
Average private student loan receivables	$6,042	$5,272	$4,450	$3,561	$2,557	$3,021
Interest yield	7.35 %	7.16 %	7.02 %	7.07 %	7.20 %	7.22 %
Net principal charge-off rate	1.10 %	1.07 %	1.29 %	1.30 %	0.73 %	0.81 %
Delinquency rate (over 30 days)	2.22 %	1.91 %	1.80 %	1.66 %	1.07 %	1.22 %
Delinquency rate (over 90 days)	0.55 %	0.43 %	0.52 %	0.46 %	0.27 %	0.29 %

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Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our audited consolidated financial statements and related notes included elsewhere in this annual report on Form 10-K. Some of the information contained in this discussion and analysis constitutes forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences include, but are not limited to, those discussed below and elsewhere in this annual report on Form 10-K particularly under "Risk Factors" and "Special Note Regarding Forward-Looking Statements," which immediately follows "Risk Factors." Unless otherwise specified, references to Notes to our consolidated financial statements are to the Notes to our audited consolidated financial statements as of December 31, 2016 and 2015 and for years ended December 31, 2016, 2015 and 2014.

Introduction and Overview

Discover Financial Services ("DFS") is a direct banking and payment services company. We provide direct banking products and services and payment services through our subsidiaries. We offer our customers credit card loans, private student loans, personal loans, home equity loans and deposit products. We also operate the Discover Network, the PULSE network ("PULSE") and Diners Club International ("Diners Club"). The Discover Network processes transactions for Discover-branded credit cards and provides payment transaction processing and settlement services. PULSE operates an electronic funds transfer network, providing financial institutions issuing debit cards on the PULSE network with access to ATMs domestically and internationally, as well as point-of-sale ("POS") terminals at retail locations throughout the U.S. for debit card transactions. Diners Club is a global payments network of licensees, which are generally financial institutions, that issue Diners Club branded charge cards and/or provide card acceptance services.

Our primary revenues consist of interest income earned on loan receivables and fees earned from customers, merchants and issuers. The primary expenses required to operate our business include funding costs (interest expense), loan loss provisions, customer rewards and expenses incurred to grow, manage and service our loan receivables and networks. Our business activities are funded primarily through consumer deposits, securitization of loan receivables and the issuance of unsecured debt.

Change in Fiscal Year

In December 2012, our Board of Directors approved a change in our fiscal year end from November 30 to December 31 of each year. This fiscal year change was effective January 1, 2013. As a result of the change, we had a one month transition period in December 2012. The results for the one month ended December 31, 2012 is included in this section.

2016 Highlights

- Net income was $2.4 billion, or $5.77 per diluted share, compared to $2.3 billion, or $5.13 per diluted share, in the prior year.
- Net interest income increased 8.0% compared to the prior year.
- Total loans grew $4.9 billion, or 6.7%, from the prior year to $77.3 billion.
- Net charge-off rate for total loans increased 15 basis points from the prior year to 2.16% and the total loans delinquency rate for loans over 30 days past due increased 30 basis points to 1.97%.
- Credit card loans grew $3.6 billion, or 6.3%, to $61.5 billion and Discover card sales volume increased 2.5% from the prior year.
- Net charge-off rate for credit card loans increased 12 basis points from the prior year to 2.34% and the credit card delinquency rate for loans over 30 days past due increased 32 basis points to 2.04%.
- Payment Services transaction dollar volume for the segment was $180.4 billion, down 5% from the prior year.
- We repurchased approximately 34 million shares, or 8%, of our outstanding common stock for $1.9 billion.

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2015 and 2014 Highlights

- Net income was $2.3 billion, or $5.13 and $4.90, respectively, per diluted share in both 2015 and 2014. Return on equity was 21% in both 2015 and 2014.
- During 2015, our net interest income increased 3.4% compared to 2014.
- Total loans grew $2.4 billion in 2015, or 3.5%, from 2014 to $72.4 billion.
- Net charge-off rate for our total loans decreased 3 basis points in 2015 from 2014 to 2.01% and the total loans delinquency rate for loans over 30 days past due increased 1 basis point to 1.67%.
- During 2015, our credit card loans grew $1.8 billion, or 3.1%, to $57.9 billion and Discover card sales volume increased 2.5% from 2014.
- Net charge-off rate for our credit card loans decreased 5 basis points in 2015 from 2014 to 2.22% and the credit card delinquency rate for loans over 30 days past due decreased 1 basis point to 1.72%.
- During 2015, our Payment Services transaction dollar volume for the segment was $189.7 billion, down 6% from 2014.
- We repurchased approximately 29 million shares, or 6%, of our outstanding common stock for $1.7 billion in 2015.
- We incurred a $178 million charge to earnings in 2014 to enhance our rewards program by allowing easier redemption of rewards, which resulted in the elimination of our current estimate of customer rewards forfeiture.
- We repurchased approximately 25 million shares, or 5%, of our outstanding common stock for $1.5 billion during the year ended December 31, 2014.

Outlook

We continue to focus on deploying capital through disciplined and profitable organic loan growth across all products as well as through our quarterly dividends and share repurchase program. We are pursuing new card accounts and wallet share gains with existing customers through investments in marketing and rewards as well as new card features. We target total loan growth in 2017 to be in the range of 5.5% to 7.5% for the year.

We expect total expenses in 2017 to increase year over year as we continue to invest in marketing and infrastructure to support growth strategies, and in our compliance and risk management programs. Competition intensity in rewards is expected to result in a higher rewards rate for 2017 as we continue to leverage rewards to support growth.

The total charge-off rate in 2017 is expected to be modestly higher and we expect to continue to add to the loan loss reserve due to loan growth and seasoning of accounts. We expect net interest margin to slightly increase in 2017 driven by our asset positioning as well as anticipated benefits from additional prime rate increases.

In our payments segment, we have stabilized volumes at the end of 2016, and will continue to pursue new ways to drive volume growth in 2017. We continue to leverage our network to support our card-issuing business and we expect intense competition to continue to impact our payments segment.

Regulatory Environment and Developments

In recent years, federal banking regulators have implemented and continue to propose and finalize new regulations and supervisory guidance, including under the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act"), and have increased their examination and enforcement action activities. The Dodd-Frank Act creates a framework for regulation of large systemically significant financial firms, including Discover, through a variety of measures, including increased capital and liquidity requirements, limits on leverage and enhanced supervisory authority. The Dodd-Frank Act contains comprehensive provisions governing the practices and oversight of financial institutions and other participants in the financial markets. We expect regulators to continue taking formal enforcement actions against financial institutions in addition to addressing concerns through non-public supervisory actions or findings. While the new Congress and Administration have expressed support for Dodd-Frank modifications that could reduce regulatory burdens through a variety of channels including executive actions, rulemaking and legislation, prospects for the enactment of significant changes are uncertain.

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The impact of the evolving regulatory environment on our business and operations depends upon a number of factors including supervisory priorities and actions, our actions and those of our competitors and other marketplace participants and the behavior of consumers. Regulatory developments, enforcement actions, findings and ratings could affect supervisory priorities, actions, and rule-making as well as negatively impact our business strategies, require us to limit or change our business practices, limit our product offerings, invest more management time and resources in compliance efforts, limit the fees we can charge for services, limit our ability to pursue certain business opportunities and obtain related required regulatory approvals, or change how we compensate certain of our employees. For example, from April to May 2016, federal banking regulators issued an interagency notice of proposed rulemaking on incentive compensation arrangements that replaces rules proposed in 2011 and incorporates consideration of supervisory experience with the 2010 Interagency Guidance on Sound Incentive Compensation Policies ("2010 Guidance"). Unlike the principles-based 2010 Guidance, the proposed rules are prescriptive in nature and would require an extensive restructuring of certain incentive compensation practices for “senior executive officers” and “significant risk takers.” Any changes to our business or compensation structure arising out of this rule could impact our ability to attract, hire or retain certain personnel. Comments on the proposed rules were due July 22, 2016. The timing and substance of the final rule are unknown. For additional information regarding bank regulatory limitations on acquisitions and investments, see "Business — Supervision and Regulation — Acquisitions and Investments." For more information on recent matters affecting Discover, see Note 20: Litigation and Regulatory Matters to our consolidated financial statements. Regulatory developments, enforcement actions, findings and ratings also could impact our strategies, the value of our assets, or otherwise adversely affect our businesses.
Increasing cybersecurity threats and incidents regarding unauthorized access to consumer information have resulted in a continued focus by federal banking regulators, Congress and state legislators on measures to enhance data security. The Cybersecurity Act of 2015 establishes a framework to facilitate and encourage confidential sharing of cybersecurity information among private sector and federal government entities and provides certain liability shields for cybersecurity information sharing. The Federal Financial Institutions Examination Council recently revised examiner guidance for evaluating the adequacy of a financial institution's information security program and associated risk management practices. In addition, in October 2016, federal banking regulators issued an advanced notice of proposed rulemaking that provides for enhanced cyber risk management standards to increase the operational resilience of large financial services firms and reduce the systemic impact of a cybersecurity event. The timing and final form of any final rule is uncertain at this time. Legislation at various levels of government has also been proposed to address security breach notification. These developments could ultimately result in the imposition of requirements on Discover and other card issuers or networks that could increase costs or adversely affect the competitiveness of our credit card or debit card products but it is too early to know their impact.

Compliance expenditures have increased significantly for Discover and other financial services firms, and we expect them to continue to increase as regulators remain focused on controls and operational processes. We may face additional compliance and regulatory risk to the extent that we enter into new business arrangements with third-party service providers, alternative payment providers or other industry participants. The additional expense, time and resources needed to comply with ongoing regulatory requirements may adversely impact our business and results of operations.

Consumer Financial Services

The Consumer Financial Protection Bureau ("the CFPB") regulates consumer financial products and services, as well as certain financial services providers, including Discover. The CFPB has rulemaking and interpretive authority under the Dodd-Frank Act and other federal consumer financial services laws, as well as broad supervisory, examination and enforcement authority over designated financial service providers. The CFPB’s regulatory authority includes the exercise of rulemaking, supervision and enforcement powers with respect to “unfair, deceptive or abusive acts or practices” and consumer access to fair, transparent and competitive financial products and services. The CFPB's policy priorities for 2017, as in recent years, include a focus on several financial products of the type we offer (e.g. credit cards and student loans). Under its rulemaking authority, the CFPB recently issued proposed regulations that would significantly limit the use of pre-dispute arbitration agreements and class action waivers. For more information, see

Note 20: Litigation and Regulatory Matters to our consolidated financial statements.
In addition, the CFPB publishes regular Complaint Reports and Supervisory Highlights about specific products, services and practices. The CFPB also maintains an online consumer complaint portal that shows the nature of each consumer's complaint and the financial services provider's responses, such as whether the requested relief was provided. The complaint portal allows consumers' narratives of their complaints to be included, although the Bureau does not verify the accuracy of the narratives. On July 29, 2016 the CFPB proposed to replace the dispute function on

the portal, whereby the customer can dispute a company’s response to the complaint, with a survey that will allow the customer to provide feedback on the financial services provider's handling of the complaint. The CFPB seeks to implement this survey in 2017. In addition to conducting regular examinations of regulated financial services providers the CFPB regularly collects account level information about certain financial products (e.g. credit cards) from Discover and other large financial services providers. The CFPB's analysis of complaint and account level data, together with its supervisory examinations, can inform future decisions about its regulatory and examination priorities, and influence consumers' decisions about doing business with financial services providers.

Credit Cards

The cost and availability of credit, credit disclosures and consumer experience with debt collectors continue to be an area of focus of the CFPB. We anticipate that the CFPB will propose debt collection regulations that may apply to our lending business in 2017. The CFPB had published an outline of proposals addressing the collection of debts by parties other than the original lender and is expected to publish a guideline in the near future for entities collecting their own debts. The rules are intended to ensure that debt collectors have sufficient information to collect the related debt, prevent unfair, deceptive and abusive acts and practices, inform consumers of their rights and provide interpretations on certain sections of the Fair Debt Collections Practices Act. Courts and legislators also have been focused on the debt collection practices of consumer financial services providers. The ultimate impact of this increased scrutiny is uncertain at this time.

Private Student Loans

There continues to be legislative and regulatory focus on the private student loan market, including by the CFPB, the Federal Deposit Insurance Corporation (the "FDIC") and some state legislatures and state attorneys general. This regulatory focus has resulted in an increase in supervisory examinations of Discover related to private student loans. On July 22, 2015, the CFPB issued a consent order with respect to certain student loan servicing practices of Discover Bank, The Student Loan Corporation and Discover Products, Inc. See Note 20: Litigation and Regulatory Matters to our consolidated financial statements for more information.

Recent areas of regulatory attention include servicing, payments and collection practices, originations at for-profit schools, and other matters. In September 2016, California enacted a student loan servicing law that imposes new licensing, servicing, reporting and regulatory oversight requirements on non-bank servicers. The enactment of new legislation or the adoption of new regulations or guidance may increase the complexity and expense of servicing student loans. Legislators and regulators may take additional actions that impact the student loan market in the future, which could cause us to change our private student loan products or servicing practices in ways that we may not currently anticipate.

Mortgage Lending

The mortgage industry continues to be an area of supervisory focus and the CFPB has stated that it will concentrate its examinations on the variety of mortgage-related topics including steering consumers to less favorable products, discrimination, abusive or unfair lending practices, predatory lending, origination disclosures, minimum mortgage underwriting standards, mortgage loan origination compensation and servicing practices. The CFPB has recently published several final rules impacting the mortgage industry. For example, on August 4, 2016, the CFPB issued final rules amending its 2013 mortgage servicing rules to expand the obligations of servicers and resolve some ambiguities. These changes will generally take effect in 2017. The CFPB has also recently proposed changes to the rules for integrated mortgage origination disclosures and expects to issue a final rule on or before April 1, 2017.

Payment Networks

The Dodd-Frank Act contains several provisions impacting the debit card market, including network participation requirements and interchange fee limitations. The changing debit card environment, including competitor actions related to merchant and acquirer pricing and transaction routing strategies, has adversely affected and is expected to continue to adversely affect our PULSE network's business practices, network transaction volume, revenue and prospects for future growth. We continue to closely monitor competitor pricing strategies in order to assess their impact on our business and on competition in the marketplace. The U.S. Department of Justice is examining some of these competitor pricing strategies. In addition, PULSE filed a lawsuit against Visa in late 2014 with respect to these competitive concerns, which will significantly impact expenses for the payment services segment. In addition, the

Dodd-Frank Act's network participation requirements impact PULSE's ability to enter into exclusivity arrangements, which affects PULSE's current business practices and may materially adversely affect its network transaction volume and revenue.

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European interchange fee regulation entered into force in June 2015. The regulation, among other things, caps interchange fees of "four-party" networks such as Visa and MasterCard. However, the regulation provides that “three-party” networks should be treated as “four-party” networks when they license third-party providers to issue cards and/or acquire merchants or when they issue cards with a co-brand partner or through an agent. This means the caps apply to elements of the financial arrangements agreed to between Diners Club and each of our stand-alone acquirers in Western Europe. The caps took effect in December 2015. The regulation excludes commercial card transactions from the scope of the caps. The regulation also contains a number of business rules, which we have, to the extent applicable, implemented in our Diners Club business.

There are additional initiatives in Europe that may have an impact on our Diners Club business, including revisions to the Payment Services Directive ("PSD2") and the new General Data Protection Regulation ("GDPR"). The PSD2 was published in the Official Journal of the EU in December 2015. Each European Union member state will transpose the PSD2 into its national law, and in January 2018 the PSD2 will enter into force. Among other terms, the PSD2 includes provisions that once transposed into local law will regulate surcharging and network access requirements, which may result in differential surcharging of Diners Club cards and may impact Diners Club licensing arrangements in Europe. The European Parliament's Civil Liberties, Justice and Home Affairs Committee approved the final draft of the GDPR in December 2015. The final GDPR, was published in the Official Journal of the European Union on May 4, 2016. Organizations have two years to prepare before the legislation comes into force on May 25, 2018. We are analyzing the impact of the final GDPR on our business and preparing for its implementation.

The Chinese State Council previously announced that foreign payments companies would be able to participate in the Chinese domestic market and be eligible to apply for a license to operate a Bank Card Clearing Institution ("BCCI") in China. In June 2016 the People’s Bank of China, in conjunction with the China Banking Regulatory Commission, promulgated the Administrative Measures on BCCIs, but implementation guidelines are yet to be published. We are analyzing any potential impact on our business strategy in China.

Capital, Liquidity and Funding

Capital

Discover Financial Services and Discover Bank are subject to regulatory capital requirements that became effective January 1, 2015 under final rules issued by the Board of Governors of the Federal Reserve System (the "Federal Reserve") and the FDIC to implement the provisions under the Basel Committee’s December 2010 framework (referred to as “Basel III”). The final capital rules ("Basel III rules") require minimum risk-based capital and leverage ratios and define what constitutes capital for purposes of calculating those ratios. In addition, the Basel III rules establish a capital conservation buffer above the regulatory minimum capital requirements, which must consist entirely of Common Equity Tier 1 ("CET1") capital and result in higher required minimum ratios by up to 2.5%. The new capital conservation buffer requirement became effective on January 1, 2016; however, the buffer threshold amounts are subject to a gradual phase-in period. In 2016, the highest capital conservation buffer threshold was 0.625%, which will rise to 1.25% for the 2017 calendar year. The full 2.5% buffer requirement will not be fully phased-in until January 2019. A banking organization is subject to limitations on paying dividends, engaging in share repurchases and paying discretionary bonuses if its capital level falls below any of the minimum capital requirements, taking into account the applicable capital conservation buffer thresholds. Based on our current capital composition and levels and business plans, we are and expect to continue to be in compliance with the requirements for the foreseeable future. For additional information, see "— Liquidity and Capital Resources — Capital."

The Basel Committee has recently proposed revisions to its standardized approach to measuring credit risk for purposes of calculating regulatory capital requirements. The proposed revisions include a provision that would, for the first time, require banking organizations to include a percentage of “unconditionally cancellable commitments” in risk-weighted asset calculations. This change could require credit card issuers, such as Discover, to substantially increase the amount of capital they hold against unused credit card lines. If the Basel Committee were to adopt the revisions as proposed, they would become applicable to Discover only if implemented within the United States by the domestic federal bank regulatory agencies, and made applicable to "Standardized Approach" banks. Those agencies have publicly acknowledged the Basel Committee’s proposals, indicating that the revisions “would apply primarily to large, internationally active banking organizations.”

Liquidity

We are subject to the Federal Reserve's final rule implementing certain enhanced prudential standards under the Dodd-Frank Act for large U.S. bank holding companies, including enhanced liquidity and risk management

requirements, which became effective January 1, 2015. The final rule prescribes a broad range of qualitative liquidity risk management practices.
Additionally, we are subject to the U.S. liquidity coverage ratio rule issued by federal banking regulators in 2014, which became effective on January 1, 2016. This new quantitative requirement is designed to promote the short-term resilience of the liquidity risk profile of large and internationally active banking organizations in the United States. The rule requires covered banks to maintain an amount of high-quality liquid assets sufficient to cover projected net cash outflows during a prospective 30-day calendar period under an acute, hypothetical liquidity stress scenario. Given our current asset size, we are subject to a modified liquidity coverage ratio requirement which requires a lower level of high-quality liquid assets to meet the minimum ratio requirement due to adjustments to the net cash outflow amount. Under the rule's transition period, we were required to maintain a liquidity ratio of 90% in 2016, which will increase to 100% in 2017. As of December 31, 2016, our liquidity coverage ratio was in excess of the applicable regulatory requirement. On December 19, 2016, the Federal Reserve issued a final rule that will require banking institutions subject to the liquidity coverage ratio rule to publish quarterly public disclosures regarding the company’s liquidity risk profile and components of its liquidity coverage ratio calculation. Discover will be required to publish its first disclosure under the rule beginning the fourth quarter of 2018.
In April 2016, the federal banking agencies issued a notice of proposed rulemaking to implement, within the United States, the long-term liquidity standards previously issued at the international level by the Basel Committee on Banking Supervision. The proposed rule would impose a new quantitative liquidity requirement called the Net Stable Funding Ratio (“NSFR”) to ensure that covered banking organizations maintain stable funding to meet their funding needs over a one year time horizon. The NSFR is intended to complement the shorter-term liquidity coverage ratio requirement. Under the proposed rule, we would be subject to a less stringent “modified” NSFR requirement. If adopted as a final rule, the minimum NSFR requirements would take effect on January 1, 2018.
On January 30, 2017, the Federal Reserve finalized amendments to its capital plan and stress test rules for certain bank holding companies with total consolidated assets between $50 billion and $250 billion, including Discover. Under the final rule, the Federal Reserve may only object to a large and noncomplex bank holding company’s capital plan submission, including Discover's, if the Federal Reserve determines that the company “has not demonstrated an ability to maintain capital above each minimum regulatory capital ratio on a pro forma basis under expected and stressful conditions throughout the planning horizon.” The final rule also eliminates certain reporting requirements for large and noncomplex institutions and reduces the de minimis threshold under which a well-capitalized bank holding company can increase capital distributions during a non-object period without a reassessment from regulators. The final rule is expected to become effective on March 5, 2017. We are currently assessing the impact that this regulatory change will have on our capital planning and stress testing processes.

Results of Operations

The discussion below provides a summary of our results of operations for the year ended December 31, 2016 compared to our results of operations for the year ended December 31, 2015 and year ended December 31, 2014. The discussion also provides information about our loan receivables as of December 31, 2016 compared to December 31, 2015 and December 31, 2014.

Segments

We manage our business activities in two segments: Direct Banking and Payment Services. In compiling the segment results that follow, our Direct Banking segment bears all corporate overhead costs that are not specifically associated with a particular segment and all costs associated with Discover Network marketing, servicing and infrastructure, with the exception of an allocation of direct and incremental costs driven by our Payment Services segment.

Direct Banking

Our Direct Banking segment includes Discover-branded credit cards issued to individuals on the Discover Network and other consumer products and services, including private student loans, personal loans, home equity loans, and other consumer lending and deposit products. The majority of Direct Banking revenues relate to interest income earned on the segment's loan products. Additionally, our credit card products generate substantially all of our revenues related to discount and interchange, protection products and loan fee income.

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Payment Services

Our Payment Services segment includes PULSE, an automated teller machine, debit and electronic funds transfer network; Diners Club, a global payments network; and our Network Partners business, which provides payment transaction processing and settlement services on the Discover Network. The majority of Payment Services revenues relate to transaction processing revenue from PULSE and royalty and licensee revenue (included in other income) from Diners Club.

The following table presents segment data (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Direct Banking			
Interest income			
Credit card	$7,155	$6,626	$6,359
Private student loans	444	378	312
PCI student loans	185	220	260
Personal loans	719	631	568
Other	113	90	97
Total interest income	8,616	7,945	7,596
Interest expense	1,398	1,263	1,134
Net interest income	7,218	6,682	6,462
Provision for loan losses	1,858	1,512	1,440
Other income	1,611	1,779	1,700
Other expense	3,422	3,437	3,117
Income before income tax expense	3,549	3,512	3,605
Payment Services			
Provision for loan losses	1	—	3
Other income	270	278	315
Other expense	162	178	223
Income before income tax expense	107	100	89
Total income before income tax expense	$3,656	$3,612	$3,694

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The following table presents information on transaction volume (in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Network Transaction Volume			
PULSE Network	$138,003	$150,145	$165,851
Network Partners	13,833	12,965	9,446
Diners Club(1)	28,601	26,567	26,970
Total Payment Services	180,437	189,677	202,267
Discover Network—Proprietary(2)	126,144	122,726	119,471
Total Volume	$306,581	$312,403	$321,738
Transactions Processed on Networks			
Discover Network	2,125	2,033	2,020
PULSE Network	3,456	3,890	4,283
Total	5,581	5,923	6,303
Credit Card Volume			
Discover Card Volume(3)	$132,324	$127,825	$125,111
Discover Card Sales Volume(4)	$121,423	$118,442	$115,518

(1) Diners Club volume is derived from data provided by licensees for Diners Club branded cards issued outside North America and is subject to subsequent revision or amendment.
(2) Represents gross proprietary sales volume on the Discover Network.
(3) Represents Discover card activity related to net sales, balance transfers, cash advances and other activity.
(4) Represents Discover card activity related to net sales.

Direct Banking

For the Year Ended December 31, 2016 compared to the Year Ended December 31, 2015

Our Direct Banking segment reported pretax income of $3.5 billion for the years ended December 31, 2016 and 2015. Loan receivables totaled $77.3 billion at December 31, 2016, which was up from $72.4 billion at December 31, 2015, due to growth in credit card loans and other loan portfolios, partially offset by a decrease in purchased credit-impaired ("PCI") student loan balances. Discover card sales volume was $121.4 billion for the year ended December 31, 2016, which was an increase of 2.5% as compared to the year ended December 31, 2015. This volume growth was driven primarily by an increase in discretionary spending partially offset by the impact of lower gas prices.

Interest income increased over the prior year due to loan growth and higher yields. Interest expense increased during the year ended December 31, 2016 as compared to the year ended December 31, 2015 primarily due to higher market rates and funding mix.

At December 31, 2016 and December 31, 2015, our delinquency rate for credit card loans over 30 days past due was 2.04% and 1.72%, respectively. For the year ended December 31, 2016, our net charge-off rate on credit card loans increased as compared to the year ended December 31, 2015. In addition, higher levels of net charge-offs and loan balances led to an increase in the provision for loan loss dollars for the year ended December 31, 2016, as compared to the year ended December 31, 2015. For a more detailed discussion on provision for loan losses, see "— Loan Quality — Provision and Allowance for Loan Losses."

Total other income decreased for the year ended December 31, 2016 as compared to the year ended December 31, 2015 primarily due to the cessation of our mortgage banking operations in 2015 and a decrease in discount and interchange revenue driven by higher rewards, partially offset by higher transaction volume. A reduction in protection products revenue, which reflects the impact of our no longer selling these products and eliminating related retention efforts, also contributed to the decline in total other income.

Total other expense decreased for the year ended December 31, 2016 as compared to the year ended December 31, 2015. The decrease was primarily driven by completion of look back related anti-money laundering

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remediation expenses in the second quarter of 2016 and a decrease in other expenses and marketing and business development costs, offset by an increase in compliance activities costs and employee compensation and benefits. The decrease in other expense was primarily driven by exit charges related to the closure of our mortgage origination business in 2015, lower fraud losses and increased fraud recoveries. The increase in employee compensation and benefits costs was primarily due to higher salaries as well as growth in overall headcount driven in part by regulatory and compliance needs.

For the Year Ended December 31, 2015 compared to the Year Ended December 31, 2014

Our Direct Banking segment reported pretax income of $3.5 billion for the year ended December 31, 2015 as compared to pretax income of $3.6 billion for the year ended December 31, 2014.

Loan receivables totaled $72.4 billion at December 31, 2015, which was up from $69.9 billion at December 31, 2014, due to growth in credit card loans and other loan portfolios, partially offset by a decrease in PCI student loan balances. Discover card sales volume was $118.4 billion for the year ended December 31, 2015, which was an increase of 2.5% as compared to the year ended December 31, 2014. This volume growth was driven primarily by an increase in discretionary spending partially offset by the impact of lower gas prices.

Interest income rose over the prior year due to growth in credit card, personal and private student loans, partially offset by lower yields on personal loans, as well as a decrease in PCI student loan balances. Interest expense increased during the year ended December 31, 2015 as compared to the year ended December 31, 2014 primarily due to increases in unsecured debt to fund loan growth.

At December 31, 2015 and December 31, 2014, our delinquency rate for credit card loans over 30 days past due was 1.72% and 1.73%, respectively. For the year ended December 31, 2015, our net charge-off rate on credit card loans decreased as compared to the year ended December 31, 2014, however higher levels of net charge-offs and higher loan balances led to an increase in the provision for loan loss dollars for the year ended December 31, 2015, as compared to the year ended December 31, 2014. For a more detailed discussion on provision for loan losses, see "— Loan Quality — Provision and Allowance for Loan Losses."

Total other income increased for the year ended December 31, 2015 as compared to the year ended December 31, 2014 primarily due to the combination of a one-time charge from the reversal of the customer rewards forfeiture accrual, after cashback reward terms were changed in 2014 and an increase in transaction volume, which increased discount and interchange revenue. The increase in total other income was partially offset by the loss of revenue related to mortgage banking operations due to the closure of our mortgage origination business and lower protection products revenue reflecting our no longer selling these products and eliminating related retention efforts.

Total other expense increased for the year ended December 31, 2015 as compared to the year ended December 31, 2014. The increase was primarily driven by higher professional fees and higher employee compensation and benefit costs partially offset by the mortgage business goodwill impairment recorded in 2014 with no similar 2015 charge. The increase in professional fees was driven by anti-money laundering and related compliance program expenses. The growth in employee compensation costs resulted from growth in overall headcount driven in part by regulatory and compliance needs. Also contributing to the increase in total other expense is an increase in other expense related to the closure of our mortgage origination business.

Payment Services

For the Year Ended December 31, 2016 compared to the Year Ended December 31, 2015

Our Payment Services segment reported pretax income of $107 million for the year ended December 31, 2016 as compared to pretax income of $100 million for the year ended December 31, 2015, primarily due to a decrease in other expense partially offset by a decrease in other income. The decrease in other expense was primarily driven by lower expenses in 2016 related to the sale of Diners Club Italy in 2015. The decrease in other income was due to a reduction in transaction processing revenue resulting from lower POS transactions.

A weakening of the global economy or negative impacts in foreign currency may adversely affect our financial condition or results of operations in our Payment Services segment. We continue to work with our Diners Club licensees with regard to their ability to maintain financing sufficient to support business operations. We may continue to provide additional support in the future, including loans, facilitating transfer of ownership, or acquiring assets or licenses, which

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may cause us to incur losses. The licensees that we currently consider to be of concern accounted for approximately 4% of Diners Club revenue for the year ended December 31, 2016.

For the Year Ended December 31, 2015 compared to the Year Ended December 31, 2014

Our Payment Services segment reported pretax income of $100 million for the year ended December 31, 2015 as compared to pretax income of $89 million the year ended December 31, 2014, primarily due to a decrease in other expense partially offset by a decrease in other income. The other expense decline was primarily driven by expenses for Diners Club associated with recording Diners Club Italy as held for sale in 2014 and the associated fair value adjustment. The decrease in other income was primarily driven by a reduction in transaction processing revenue from PULSE associated with the loss of two large third-party issuers.

Transaction dollar volume decreased $12.6 billion for the year ended December 31, 2015 as compared to the year ended December 31, 2014, primarily driven by declines in PULSE network volume. The number of transactions processed on the PULSE network decreased for the year ended December 31, 2015 as compared to the year ended December 31, 2014.

A weakening of the global economy or negative impacts in foreign currency may adversely affect our financial condition or results of operations in our Payment Services segment. We continue to work with our Diners Club licensees with regard to their ability to maintain financing sufficient to support business operations. The licensees that we considered to be of concern accounted for approximately 5% of Diners Club revenue for the year ended December 31, 2015.

Critical Accounting Estimates

In preparing our consolidated financial statements in conformity with accounting principles generally accepted in the United States (“GAAP”), management must make judgments and use estimates and assumptions about the effects of matters that are uncertain. For estimates that involve a high degree of judgment and subjectivity, it is possible that different estimates could reasonably be derived for the same period. For estimates that are particularly sensitive to changes in economic or market conditions, significant changes to the estimated amount from period to period are also possible. Management believes the current assumptions and other considerations used to estimate amounts reflected in our consolidated financial statements are appropriate. However, if actual experience differs from the assumptions and other considerations used in estimating amounts in our consolidated financial statements, the resulting changes could have a material effect on our consolidated results of operations and, in certain cases, could have a material effect on our consolidated financial condition. Management has identified the estimates related to our allowance for loan losses, the evaluation of goodwill and other non-amortizable intangible assets for potential impairment, the accrual of income taxes, and estimates of future cash flows associated with PCI loans as critical accounting estimates.

Allowance for Loan Losses

We base our allowance for loan losses on several analyses that help us estimate incurred losses as of the balance sheet date. In deriving this estimate, we consider the collectibility of principal, interest and fees associated with our loan receivables. While our estimation process includes historical data and analysis, there is a significant amount of judgment applied in selecting inputs and analyzing the results produced to determine the allowance. We use a migration analysis to estimate the likelihood that a loan will progress through the various stages of delinquency. Management also estimates loss emergence by using other analyses to estimate losses incurred from non-delinquent accounts. The considerations in these analyses include past and current loan performance, loan seasoning and growth, current risk management practices, account collection strategies, economic conditions, bankruptcy filings, policy changes and forecasting uncertainties. Given the same information, others may reach different reasonable estimates. If management used different assumptions in estimating incurred net loan losses, the impact to the allowance for loan losses could have a material effect on our consolidated financial condition and results of operations. For example, a 10% change in management's estimate of incurred net loan losses could have resulted in a change of approximately $217 million in the allowance for loan losses at December 31, 2016, with a corresponding change in the provision for loan losses. See "— Loan Quality" and Note 2: Summary of Significant Accounting Policies to our consolidated financial statements for further details about our allowance for loan losses.

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Goodwill

We recognize goodwill when the purchase price of an acquired business exceeds the total of the fair values of the acquired net assets. As required by GAAP, we test goodwill for impairment annually, or more often if indicators of impairment exist. In evaluating goodwill for impairment, management must estimate the fair value of the reporting unit(s) to which the goodwill relates. Because market data concerning acquisitions of comparable businesses typically are not readily obtainable, other valuation techniques such as earnings multiples and cash flow models are used in estimating the fair values of these reporting units. In applying these techniques, management considers historical results, business forecasts, market and industry conditions and other factors. We may also consult independent valuation experts where needed in applying these valuation techniques. The valuation methodologies we use involve assumptions about business performance, revenue and expense growth, capital expenditures, discount rates and other assumptions that are judgmental in nature.

At December 31, 2016, we reported goodwill of $255 million associated with our PULSE network. The estimated fair value of the PULSE reporting unit was more than three times its carrying value as of October 1, 2016, and there are no present conditions that we believe would cause the fair value of this reporting unit to fall below its carrying value. However, competitive pressures leading to significant declines in revenue, significant increases in the cost of equity, deteriorating economic conditions, or other events adversely impacting the assumptions used by management in the valuation, could cause the fair value of the reporting unit or the associated goodwill to decline in the future which could result in an impairment loss. At December 31, 2016, based on the annual impairment testing performed, there was no impairment identified. See Note 8: Goodwill and Intangible Assets to our consolidated financial statements for further details about goodwill and the related impairment testing.

Income Taxes

We are subject to the income tax laws of the jurisdictions where we have business operations, primarily the United States, its states and municipalities. We must make judgments and interpretations about the application of these inherently complex tax laws when determining the provision for income taxes and must also make estimates about when in the future certain items will affect taxable income in the various taxing jurisdictions. Disputes over interpretations of the tax laws may be settled with the taxing authority upon examination or audit. We regularly evaluate the likelihood of assessments in each of the taxing jurisdictions resulting from current and subsequent years' examinations, and tax reserves are established as appropriate.

Changes in the estimate of income taxes can occur due to tax rate changes, interpretations of tax laws, the status and resolution of examinations by the taxing authorities, and newly enacted laws and regulations that impact the relative merits of tax positions taken. When such changes occur, the effect on our consolidated financial condition and results of operations can be significant. See Note 16: Income Taxes to our consolidated financial statements for additional information about income taxes.

Purchased Credit-Impaired Loans

The estimate of expected future cash flows on PCI loans determines the amount of interest income we can recognize in future periods and impacts whether a loan loss reserve must be established for these loans. We reevaluate, by pool, the amount and timing of expected cash flows quarterly using updated loan portfolio characteristics as well as assumptions regarding expected borrower default and prepayment behavior. Because estimates of expected future cash flows on PCI loans involve assumptions and significant judgment, it is reasonably possible that others could derive different estimates than ours for the same periods. In addition, changes in estimates from one period to the next can have a significant impact on our consolidated financial condition and results of operations. A decrease in expected cash flows involving an increase in estimated credit losses would result in an immediate charge to earnings for the recognition of a loan loss provision. Increases or decreases in expected cash flows related solely to changes in estimated prepayments or to changes in variable interest rate indices would result in prospective yield adjustments over the remaining life of the loans. An increase in expected cash flows due to a reduction in expected credit losses would result first in the reversal of any previously established loan loss reserve on PCI loans through an immediate credit to earnings and then, if needed, a prospective adjustment to yield over the remaining life of the loans.

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Earnings Summary

The following table outlines changes in our consolidated statements of income (dollars in millions):

	For the Years Ended December 31,			2016 vs. 2015 increase (decrease)		2015 vs. 2014 increase (decrease)	
	2016	2015	2014	$	%	$	%
Interest income	$8,616	$7,945	$7,596	$671	8 %	$349	5 %
Interest expense	1,398	1,263	1,134	135	11 %	129	11 %
Net interest income	7,218	6,682	6,462	536	8 %	220	3 %
Provision for loan losses	1,859	1,512	1,443	347	23 %	69	5 %
Net interest income after provision for loan losses	5,359	5,170	5,019	189	4 %	151	3 %
Other income	1,881	2,057	2,015	(176)	(9)%	42	2 %
Other expense	3,584	3,615	3,340	(31)	(1)%	275	8 %
Income before income tax expense	3,656	3,612	3,694	44	1 %	(82)	(2)%
Income tax expense	1,263	1,315	1,371	(52)	(4)%	(56)	(4)%
Net income	$2,393	$2,297	$2,323	$96	4 %	$(26)	(1)%

Net Interest Income

The tables that follow this section have been provided to supplement the discussion below and provide further analysis of net interest income, net interest margin and the impact of rate and volume changes on net interest income. Net interest income represents the difference between interest income earned on our interest-earning assets and the interest expense incurred to finance those assets. We analyze net interest income in total by calculating net interest margin (net interest income as a percentage of average total loan receivables) and net yield on interest-bearing assets (net interest income as a percentage of average total interest-earning assets). We also separately consider the impact of the level of loan receivables and the related interest yield and the impact of the cost of funds related to each of our funding sources, along with the income generated by our liquidity portfolio, on net interest income.

Our interest-earning assets consist of: (i) cash and cash equivalents, primarily related to amounts on deposit with the Federal Reserve Bank of Philadelphia, (ii) restricted cash, (iii) other short-term investments, (iv) investment securities and (v) loan receivables. Our interest-bearing liabilities consist primarily of deposits, both direct-to-consumer and brokered, and long-term borrowings, including amounts owed to securitization investors. Net interest income is influenced by the following:

- The level and composition of loan receivables, including the proportion of credit card loans to other loans, as well as the proportion of loan receivables bearing interest at promotional rates as compared to standard rates;
- The credit performance of our loans, particularly with regard to charge-offs of finance charges, which reduce interest income;
- The terms of long-term borrowings and certificates of deposit upon initial offering, including maturity and interest rate;
- The level and composition of other interest-bearing assets and liabilities, including our liquidity portfolio;
- Changes in the interest rate environment, including the levels of interest rates and the relationships among interest rate indices, such as the prime rate, the Federal Funds rate and the London Interbank Offered Rate;
- The effectiveness of interest rate swaps in our interest rate risk management program; and
- The difference between the carrying amount and future cash flows expected to be collected on PCI loans.

For the Year Ended December 31, 2016 compared to the Year Ended December 31, 2015

Net interest income increased for the year ended December 31, 2016 as compared to the year ended December 31, 2015 primarily driven by loan growth and higher net interest margin. Net interest margin increased due to higher

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yields on total loan receivables. The increase in total loan receivables yields was primarily driven by higher credit card yields resulting from the portfolio mix and the prime rate increase. Interest income increased over the prior year due to loan growth and higher yields. Interest expense increased during the year ended December 31, 2016 as compared to the year ended December 31, 2015 primarily due to higher market rates and funding mix.

For the Year Ended December 31, 2015 compared to the Year Ended December 31, 2014

Net interest income increased for the year ended December 31, 2015 as compared to the year ended December 31, 2014 primarily driven by higher loan volumes, net of related increases in borrowings. Interest income rose over the prior year due to growth in credit card, personal and private student loans, partially offset by lower yields on personal loans, as well as a decrease in PCI student loan balances. Interest expense increased during the year ended December 31, 2015 as compared to the year ended December 31, 2014 primarily due to increases in unsecured debt to fund loan growth.

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Average Balance Sheet Analysis
(dollars in millions)

	For the Years Ended December 31,								
	2016			2015			2014		
	Average Balance	Rate	Interest	Average Balance(1)	Rate(1)	Interest	Average Balance(1)	Rate(1)	Interest
Assets									
Interest-earning assets									
Cash and cash equivalents	$10,806	0.52 %	$56	$9,840	0.26 %	$26	$7,228	0.25 %	$18
Restricted cash	540	0.37 %	2	631	0.14 %	1	763	0.08 %	1
Other short-term investments	518	0.86 %	4	—	— %	—	—	— %	—
Investment securities	2,445	1.55 %	38	2,876	1.71 %	49	4,000	1.67 %	67
Loan receivables(2)									
Credit card(3)	57,238	12.50%	7,155	54,846	12.08%	6,626	52,600	12.09%	6,359
Personal loans	5,895	12.19%	719	5,245	12.04%	631	4,592	12.36%	568
Private student loans	6,042	7.35 %	444	5,272	7.16 %	378	4,450	7.02 %	312
PCI student loans	2,841	6.51 %	185	3,385	6.51 %	220	3,916	6.64 %	260
Mortgage loans held for sale	—	— %	—	93	3.63 %	3	118	3.92 %	5
Other	264	5.01 %	13	220	4.90 %	11	177	3.49 %	6
Total loan receivables	72,280	11.78%	8,516	69,061	11.40%	7,869	65,853	11.40%	7,510
Total interest-earning assets	86,589	9.95 %	8,616	82,408	9.64 %	7,945	77,844	9.76 %	7,596
Allowance for loan losses	(1,938)			(1,782)			(1,645)		
Other assets	4,349			4,332			4,160		
Total assets	$89,000			$84,958			$80,359		
Liabilities and Stockholders' Equity									
Interest-bearing liabilities									
Interest-bearing deposits									
Time deposits(4)	$24,833	1.77 %	439	$26,415	1.62 %	427	$26,569	1.67 %	443
Money market deposits(5)	6,939	1.08 %	75	7,280	0.98 %	71	7,624	0.91 %	70
Other interest-bearing savings deposits	16,725	1.04 %	173	12,538	1.00 %	125	10,617	0.96 %	101
Total interest-bearing deposits(6)	48,497	1.42 %	687	46,233	1.35 %	623	44,810	1.37 %	614
Borrowings									
Short-term borrowings	2	0.63 %	—	84	1.41 %	1	111	1.59 %	2
Securitized borrowings(4)(5)	16,784	2.06 %	346	16,893	1.95 %	329	16,654	1.78 %	297
Other long-term borrowings(4)	8,430	4.32 %	365	6,650	4.65 %	310	4,163	5.32 %	221
Total borrowings	25,216	2.82 %	711	23,627	2.71 %	640	20,928	2.48 %	520
Total interest-bearing liabilities	73,713	1.90 %	1,398	69,860	1.81 %	1,263	65,738	1.72 %	1,134
Other liabilities and stockholders' equity	15,287			15,098			14,621		
Total liabilities and stockholders' equity	$89,000			$84,958			$80,359		
Net interest income			$7,218			$6,682			$6,462
Net interest margin(7)		9.99 %			9.68 %			9.81 %	
Net yield on interest-bearing assets(8)		8.34 %			8.11 %			8.30 %	
Interest rate spread(9)		8.05 %			7.83 %			8.04 %	

(1)

Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 and 2014 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation to our consolidated financial statements for additional information.

(2) Average balances of loan receivables include non-accruing loans, which are included in the yield calculations. If the non-accruing loan balances were excluded, there would not be a material impact on the amounts reported above.

(3) Interest income on credit card loans includes $193 million, $192 million and $192 million of amortization of balance transfer fees for the years ended December 31, 2016, 2015 and 2014, respectively.

(4) Includes the impact of interest rate swap agreements used to change a portion of fixed-rate funding to floating-rate funding.

(5) Includes the impact of interest rate swap agreements used to change a portion of floating-rate funding to fixed-rate funding.

(6) Includes the impact of FDIC insurance premiums and Large Institution Surcharge.

(7) Net interest margin represents net interest income as a percentage of average total loan receivables.

(8) Net yield on interest-bearing assets represents net interest income as a percentage of average total interest-earning assets.

(9) Interest rate spread represents the difference between the rate on total interest-earning assets and the rate on total interest-bearing liabilities.

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Rate/Volume Variance Analysis(1)
(dollars in millions)

	Year Ended December 31, 2016 vs. Year Ended December 31, 2015			Year Ended December 31, 2015 vs. Year Ended December 31, 2014		
	Volume	Rate	Total	Volume	Rate	Total
Increase/(decrease) in net interest income due to changes in:						
Interest-earning assets						
Cash and cash equivalents	$ 3	$ 27	$ 30	$ 7	$ 1	$ 8
Restricted cash	—	1	1	—	—	—
Other short-term investments	4	—	4	—	—	—
Investment securities	(7)	(4)	(11)	(19)	1	(18)
Loan receivables:						
Credit card	294	235	529	271	(4)	267
Personal loans	80	8	88	78	(15)	63
Private student loans	56	10	66	59	7	66
PCI student loans	(35)	—	(35)	(35)	(5)	(40)
Mortgage loans held for sale	(2)	(1)	(3)	(1)	(1)	(2)
Other	2	—	2	2	3	5
Total loan receivables	395	252	647	374	(15)	359
Total interest income	395	276	671	362	(13)	349
Interest-bearing liabilities						
Interest-bearing deposits						
Time deposits	(27)	39	12	(3)	(13)	(16)
Money market deposits	(3)	7	4	(3)	4	1
Other interest-bearing savings deposits	43	5	48	19	5	24
Total interest-bearing deposits	13	51	64	13	(4)	9
Borrowings						
Short-term borrowings	(1)	—	(1)	(1)	—	(1)
Securitized borrowings	(2)	19	17	4	28	32
Other long-term borrowings	78	(23)	55	119	(30)	89
Total borrowings	75	(4)	71	122	(2)	120
Total interest expense	88	47	135	135	(6)	129
Net interest income	$ 307	$ 229	$ 536	$ 227	$ (7)	$ 220

(1) The rate/volume variance for each category has been allocated on a consistent basis between rate and volume variances between the years ended December 31, 2016, 2015 and 2014 based on the percentage of the rate or volume variance to the sum of the two absolute variances.

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Loan Quality

Loan receivables consist of the following (dollars in millions):

	December 31,					November 30,
	2016	2015	2014	2013	2012	2012
Loan portfolio						
Credit card loans	$61,522	$57,896	$56,128	$53,150	$51,135	$49,642
Other loans:						
Personal loans	6,481	5,490	5,007	4,191	3,296	3,272
Private student loans	6,393	5,647	4,850	3,969	3,072	3,000
Mortgage loans held for sale(1)	—	—	122	148	355	322
Other	274	236	202	135	38	37
Total other loans	13,148	11,373	10,181	8,443	6,761	6,631
PCI loans(2)	2,584	3,116	3,660	4,178	4,702	4,744
Total loan receivables	77,254	72,385	69,969	65,771	62,598	61,017
Allowance for loan losses	(2,167)	(1,869)	(1,746)	(1,648)	(1,788)	(1,725)
Net loan receivables	$75,087	$70,516	$68,223	$64,123	$60,810	$59,292

(1) On June 16, 2015, we announced the closing of our mortgage origination business. Pursuant to that announcement, we sold all mortgage loans held for sale in our portfolio and ceased originating new mortgages. See Note 3: Business Dispositions to our consolidated financial statements for more information.

(2) Represents PCI private student loans. See Note 5: Loan Receivables to our consolidated financial statements for more information regarding PCI loans.

Provision and Allowance for Loan Losses

Provision for loan losses is the expense related to maintaining the allowance for loan losses at an appropriate level to absorb the estimated probable losses in the loan portfolio at each period end date. While establishing the estimate for probable losses requires management judgment, the factors that influence the provision for loan losses include:

- The impact of general economic conditions on the consumer, including unemployment levels, bankruptcy trends and interest rate movements;
- Changes in consumer spending and payment behaviors;
- Changes in our loan portfolio, including the overall mix of accounts, products and loan balances within the portfolio and maturation of the loan portfolio;
- The level and direction of historical and anticipated loan delinquencies and charge-offs;
- The credit quality of the loan portfolio, which reflects, among other factors, our credit granting practices and effectiveness of collection efforts; and
- Regulatory changes or new regulatory guidance.

In determining the allowance for loan losses, we estimate probable losses separately for segments of the loan portfolio that have similar risk characteristics. We use a migration analysis to estimate the likelihood that a loan will progress through the various stages of delinquency. We use other analyses to estimate losses incurred from non-delinquent accounts which adds to the identification of loss emergence. We use these analyses together as a basis for determining our allowance for loan losses.

The provision for loan losses is the amount of expense realized after considering the level of net charge-offs in the period and the required amount of allowance for loan losses at the balance sheet date. For the year ended December 31, 2016, the provision for loan losses increased by $347 million, or 23%, as compared to the year ended December 31, 2015. For the year ended December 31, 2015, the provision for loan losses increased by $69 million, or 5%, as compared to the year ended December 31, 2014. The increase in both periods was primarily due to higher levels of net charge-offs combined with larger builds of the allowance for loan losses as compared to the prior year.

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The allowance for loan losses was $2.2 billion at December 31, 2016, which reflects a $298 million reserve build over the amount of the allowance for loan losses at December 31, 2015. The reserve build, which relates primarily to credit card loans along with builds in personal and student loan reserves, was due to loan growth and seasoning of the portfolio. At December 31, 2016, the level of allowance related to other loans remained relatively flat as compared to December 31, 2015.

The allowance for loan losses was $1.9 billion at December 31, 2015, which reflected a $123 million reserve build over the amount of the allowance for loan losses at December 31, 2014. The reserve build, which primarily relates to credit card loans, was mainly due to loan growth and seasoning of the portfolio. At December 31, 2015, the level of the allowance related to personal loans increased as compared to December 31, 2014 also due to loan growth and continued seasoning of the portfolio. At December 31, 2015, the level of allowance attributable to student loans increased as compared to December 31, 2014 primarily due to a PCI student loan impairment recorded as a result of revisions to credit loss assumptions for the underlying loans. At December 31, 2015, the level of allowance related to other loans was unchanged as compared to December 31, 2014.

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The following tables provide changes in our allowance for loan losses for the periods presented (dollars in millions):

	For the Calendar Year Ended December 31, 2016				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,554	$ 155	$ 143	$ 17	$1,869
Additions					
Provision for loan losses	1,579	196	82	2	1,859
Deductions					
Charge-offs	(1,786)	(172)	(76)	—	(2,034)
Recoveries	443	21	9	—	473
Net charge-offs	(1,343)	(151)	(67)	—	(1,561)
Balance at end of period	$1,790	$ 200	$ 158	$ 19	$2,167

	For the Calendar Year Ended December 31, 2015				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,474	$ 120	$ 135	$ 17	$1,746
Additions					
Provision for loan losses	1,300	147	64	1	1,512
Deductions					
Charge-offs	(1,660)	(129)	(65)	(1)	(1,855)
Recoveries	440	17	9	—	466
Net charge-offs	(1,220)	(112)	(56)	(1)	(1,389)
Balance at end of period	$1,554	$ 155	$ 143	$ 17	$1,869

	For the Calendar Year Ended December 31, 2014				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,406	$ 112	$ 113	$ 17	$1,648
Additions					
Provision for loan losses	1,259	102	79	3	1,443
Deductions					
Charge-offs	(1,636)	(105)	(62)	(3)	(1,806)
Recoveries	445	11	5	—	461
Net charge-offs	(1,191)	(94)	(57)	(3)	(1,345)
Balance at end of period	$1,474	$ 120	$ 135	$ 17	$1,746

(1) Includes both PCI and non-PCI private student loans.

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The following tables provide changes in our allowance for loan losses for the periods presented (dollars in millions):

	For the Calendar Year Ended December 31, 2013				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,613	$ 99	$ 75	$ 1	$1,788
Additions					
Provision for loan losses	893	92	84	17	1,086
Deductions					
Charge-offs	(1,604)	(86)	(48)	(1)	(1,739)
Recoveries	504	7	2	—	513
Net charge-offs	(1,100)	(79)	(46)	(1)	(1,226)
Balance at end of period	$1,406	$ 112	$ 113	$ 17	$1,648

	For the One Month Ended December 31, 2012				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,554	$ 97	$ 73	$ 1	$1,725
Additions					
Provision for loan losses	165	9	4	—	178
Deductions					
Charge-offs	(146)	(8)	(2)	—	(156)
Recoveries	40	1	—	—	41
Net charge-offs	(106)	(7)	(2)	—	(115)
Balance at end of period	$1,613	$ 99	$ 75	$ 1	$1,788

	For the Fiscal Year Ended November 30, 2012				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$2,070	$ 82	$ 53	$—	$2,205
Additions					
Provision for loan losses	724	84	39	1	848
Deductions					
Charge-offs	(1,817)	(73)	(19)	—	(1,909)
Recoveries	577	4	—	—	581
Net charge-offs	(1,240)	(69)	(19)	—	(1,328)
Balance at end of period	$1,554	$ 97	$ 73	$ 1	$1,725

(1) Includes both PCI and non-PCI private student loans.

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Net Charge-offs

Our net charge-offs include the principal amount of losses charged off less principal recoveries and exclude charged-off and recovered interest and fees and fraud losses. Charged-off and recovered interest and fees are recorded in interest income and loan fee income, respectively, which is effectively a reclassification of the provision for loan losses, while fraud losses are recorded in other expense. Credit card loan receivables are charged off at the end of the month during which an account becomes 180 days contractually past due. Personal loans and private student loans, which are closed-end consumer loan receivables, are generally charged off at the end of the month during which an account becomes 120 days contractually past due. Generally, customer bankruptcies and probate accounts are charged off at the end of the month 60 days following the receipt of notification of the bankruptcy or death but not later than the 180-day or 120-day contractual time frame.

The following table presents amounts and rates of net charge-offs of key loan products (dollars in millions):

	For the Calendar Years Ended December 31,								For the Fiscal Year Ended November 30, 2012		For the One Month Ended December 31, 2012	
	2016		2015		2014		2013					
	$	%	$	%	$	%	$	%	$	%	$	%
Credit card loans	$1,343	2.34%	$1,220	2.22%	$1,191	2.27%	$1,100	2.21%	$1,240	2.62%	$106	2.47%
Personal loans	$151	2.55%	$112	2.15%	$94	2.04%	$79	2.13%	$69	2.33%	$7	2.52%
Private student loans (excluding PCI[(1)])	$67	1.10%	$56	1.07%	$57	1.29%	$46	1.30%	$19	0.73%	$2	0.81%

(1) Charge-offs for PCI loans did not result in a charge to earnings during any of the years presented and are therefore excluded from the calculation. See Note 5: Loan Receivables to our consolidated financial statements for more information regarding the accounting for charge-offs on PCI loans.

The net charge-off rate on our credit card loans, personal loans and private student loans increased by 12 basis points, 40 basis points and 3 basis points for the year ended December 31, 2016 as compared to the year ended December 31, 2015 as a result of seasoning of the portfolio and continued loan growth.

The net charge-off rate on our credit card loans decreased by 5 basis points for the year ended December 31, 2015 as compared to the year ended December 31, 2014 as a result of lower bankruptcy filings partially offset by lower recoveries. The net charge-off rate on our personal loans grew by 11 basis points for the year ended December 31, 2015 as compared to the same period in 2014 driven by higher charge-offs as a result of continued loan growth and seasoning of the portfolio. The net charge-off rate on our private student loans excluding PCI loans decreased by 22 basis points for the year ended December 31, 2015 as compared to the same period in 2014 resulting from continued favorable economic conditions.

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Delinquencies

Delinquencies are an indicator of credit quality at a point in time. A loan balance is considered delinquent when contractual payments on the loan become 30 days past due.

The following table presents the amounts and delinquency rates of key loan products that are 30 and 90 days or more delinquent, loan receivables that are not accruing interest, regardless of delinquency and restructured loans (dollars in millions):

	Calendar Years Ended December 31,										One Month Ended	
	2016		2015		2014		2013		November 30, 2012		December 31, 2012	
	$	%	$	%	$	%	$	%	$	%	$	%
Loans 30 or more days delinquent												
Credit card loans	$1,252	2.04%	$995	1.72%	$971	1.73%	$912	1.72%	$925	1.86%	$917	1.79%
Personal loans	$74	1.12%	$49	0.89%	$40	0.79%	$29	0.70%	$25	0.76%	$26	0.77%
Private student loans (excluding PCI loans[(1)])	$141	2.22%	$108	1.91%	$87	1.80%	$66	1.66%	$32	1.07%	$37	1.22%
Loans 90 or more days delinquent												
Credit card loans	$597	0.97%	$490	0.85%	$480	0.85%	$447	0.84%	$451	0.91%	$460	0.90%
Personal loans	$19	0.29%	$15	0.27%	$11	0.22%	$8	0.21%	$8	0.23%	$8	0.23%
Private student loans (excluding PCI loans[(1)])	$35	0.55%	$24	0.43%	$25	0.52%	$18	0.46%	$8	0.27%	$9	0.29%
Loans not accruing interest	$216	0.29%	$224	0.32%	$183	0.28%	$200	0.33%	$198	0.35%	$192	0.33%
Restructured loans												
Credit card loans[(2)]	$1,085	1.76%	$1,019	1.76%	$1,037	1.85%	$1,123	2.11%	$1,332	2.68%	$1,309	2.56%
Personal loans[(3)]	$81	1.25%	$68	1.24%	$55	1.10%	$31	0.74%	$21	0.64%	$21	0.65%
Private student loans(excluding PCI loans[(1)])[(4)]	$86	1.35%	$48	0.85%	$38	0.78%	$28	0.71%	$15	0.50%	$16	0.53%

(1) Excludes PCI loans which are accounted for on a pooled basis. Since a pool is accounted for as a single asset with a single composite interest rate and aggregate expectation of cash flows, the past-due status of a pool, or that of the individual loans within a pool, is not meaningful. Because we are recognizing interest income on a pool of loans, it is all considered to be performing.

(2) Restructured credit card loans include $60 million, $44 million, $44 million, $43 million, $54 million and $56 million at December 31, 2016, 2015, 2014, 2013 and 2012, and November 30, 2012, respectively, that are also included in loans over 90 days delinquent or more.

(3) Restructured personal loans include $2 million, $4 million, $3 million, $2 million, $2 million and $1 million at December 31, 2016, 2015, 2014, 2013 and 2012, and November 30, 2012, respectively, that are also included in loans over 90 days delinquent or more.

(4) Restructured private student loans include $3 million, $3 million, $5 million, $3 million, $2 million and $2 million at December 31, 2016, 2015, 2014, 2013,and 2012, and November 30, 2012, respectively, that are also included in

loans over 90 days delinquent or more.

The 30-day and 90-day delinquency rates for credit card loans, personal loans and private student loans at December 31, 2016 increased as compared to December 31, 2015 primarily due to seasoning of the portfolio and continued loan growth.

Credit card loan 30-day and 90-day delinquency rates at December 31, 2015 remained stable compared to December 31, 2014. Personal loans 30-day and 90-day delinquency rates at December 31, 2015 increased slightly as compared to December 31, 2014 due to seasoning of the loan portfolio. Private student loans 30-day delinquency rates at December 31, 2015 increased as compared to December 31, 2014 as a result of continued seasoning of the student loan portfolio as more loans have entered repayment. Private student loans 90-day delinquency rates at December 31, 2015 decreased slightly as compared to December 31, 2014. The overall trend is relatively flat.

The restructured credit card and personal loan balances increased at December 31, 2016 as compared to December 31, 2015 due to continued loan growth. The restructured private student loan balance increased at

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December 31, 2016 as compared to December 31, 2015 as a result of enhanced analysis beginning in the third quarter of 2016 to determine whether certain student loans should be accounted for as troubled debt restructurings.
The restructured credit card loan balance decreased at December 31, 2015 as compared to December 31, 2014 due to continued improvement in customer credit performance. The restructured personal and private student loan balances increased at December 31, 2015 as compared to December 31, 2014 as a result of continued growth and seasoning of these loan portfolios.
Maturities and Sensitivities of Loan Receivables to Changes in Interest Rates
Our loan portfolio had the following maturity distribution[(1)] (dollars in millions):

	Due One Year or Less	Due After One Year Through Five Years	Due After Five Years	Total
At December 31, 2016				
Credit card loans	$18,006	$32,618	$10,898	$61,522
Personal loans	1,858	4,379	244	6,481
Private student loans (excluding PCI)	164	1,313	4,916	6,393
PCI loans	261	921	1,402	2,584
Other loans	25	72	177	274
Total loan portfolio	$20,314	$39,303	$17,637	$77,254

(1) Because of the uncertainty regarding loan repayment patterns, the above amounts have been calculated using contractually required minimum payments. Historically, actual loan repayments have been higher than such minimum payments and, therefore, the above amounts may not necessarily be indicative of our actual loan repayments.

At December 31, 2016, approximately $38.0 billion of our loan portfolio due after one year had interest rates tied to an index and approximately $18.9 billion were fixed-rate loans.
Modified and Restructured Loans
We have loan modification programs that provide for temporary or permanent hardship relief for our credit card loans to borrowers experiencing financial difficulties. The temporary hardship program primarily consists of a reduced minimum payment and an interest rate reduction, both lasting for a period no longer than 12 months. The permanent modification program involves changing the structure of the loan to a fixed payment loan with a maturity no longer than 60 months and reducing the interest rate on the loan. The permanent modification program does not normally provide for the forgiveness of unpaid principal, but may allow for the reversal of certain unpaid interest or fee assessments. We also make permanent loan modifications for customers who request financial assistance through external sources, such as a consumer credit counseling agency program. These loans continue to be subject to the original minimum payment terms and do not normally include waiver of unpaid principal, interest or fees. Credit card loans included in temporary and permanent programs are accounted for as troubled debt restructurings. For additional information regarding the accounting treatment for these loans as well as amounts recorded in the financial statements related to these loans, see Note 5: Loan Receivables to our consolidated financial statements.
For personal loan customers, in certain situations we offer various payment programs, including temporary and permanent programs. The temporary programs normally consist of a reduction of the minimum payment for a period of no longer than 12 months with the option of a final balloon payment required at the end of the loan term or an extension of the maturity date with the total term not exceeding nine years. Further, in certain circumstances, the interest rate on the loan is reduced. The permanent programs involve changing the terms of the loan in order to pay off the outstanding balance over a longer term and also in certain circumstances reducing the interest rate on the loan.

Similar to the temporary programs, the total term may not exceed nine years. We also allow permanent loan modifications for customers who request financial assistance through external sources, similar to our credit card customers discussed above. Payments are modified based on the new terms agreed upon with the credit counseling agency. Personal loans included in temporary and permanent programs are accounted for as troubled debt restructurings.

At December 31, 2016, there was $5.8 billion of private student loans in repayment, which includes both PCI and non-PCI loans to students who are not in deferment. To assist student loan borrowers who are experiencing

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temporary financial difficulties but are willing to resume making payments, we may offer hardship forbearance or programs that include payment deferral, temporary payment reduction, temporary interest rate reduction or extended terms. A modified loan typically meets the definition of a troubled debt restructuring based on the cumulative length of the concession period and an evaluation of the credit quality of the borrower based on FICO scores. Prior to the third quarter of 2016, only a second forbearance when the borrower was 30 days or greater delinquent was considered a troubled debt restructuring. As a result, the student loan balances being accounted for as troubled debt restructurings increased, although it did not lead to significant changes in the balance of the overall allowance for loan losses. Borrower performance after using payment programs or forbearance is monitored and we believe the programs help to prevent defaults and are useful in assisting customers experiencing financial difficulties. We plan to continue to use payment programs and forbearance and, as a result, we expect to have additional loans classified as troubled debt restructurings in the future.

Other Income

The following table presents the components of other income for the periods presented (dollars in millions):

	For the Years Ended December 31,			2016 vs. 2015 (decrease) increase		2015 vs. 2014 increase (decrease)	
	2016	2015	2014	$	%	$	%
Discount and interchange revenue[1]	$1,055	$1,117	$979	$(62)	(6)%	$138	14%
Protection products	239	261	314	(22)	(8)%	(53)	(17)%
Loan fee income	343	335	334	8	2%	1	—%
Transaction processing revenue	155	159	182	(4)	(3)%	(23)	(13)%
Gain on investments	—	9	4	(9)	(100)%	5	125%
Gain on origination and sale of mortgage loans	—	68	81	(68)	(100)%	(13)	(16)%
Other income	89	108	121	(19)	(18)%	(13)	(11)%
Total other income	$1,881	$2,057	$2,015	$(176)	(9)%	$42	2%

(1) Net of rewards, including Cashback Bonus rewards, of $1.4 billion, $1.3 billion and $1.4 billion for the years ended December 31, 2016, 2015 and 2014, respectively. In 2014, we made certain changes to our customer rewards program, eliminating forfeitures. These changes resulted in a one-time expense of $178 million due to the reversal of the estimate for customer rewards forfeiture, a contra-account to accrued expenses and other liabilities. The impact of actual forfeitures on discount and interchange revenue is not material for the years ended December 31, 2016 and 2015. Actual forfeitures resulted in additional discount and interchange revenue and total other income of $36 million for the year ended December 31, 2014.

Discount and Interchange Revenue

Discount and interchange revenue includes discount revenue and acquirer interchange net of interchange paid to network partners. We earn discount revenue from fees charged to merchants with whom we have entered into card acceptance agreements for processing credit card purchase transactions. We earn acquirer interchange revenue primarily from merchant acquirers on all Discover Network card transactions and certain Diners Club transactions made by credit card customers at merchants with whom merchant acquirers have entered into card acceptance agreements for processing credit card purchase transactions. We incur an interchange cost to card-issuing entities that have entered into contractual arrangements to issue cards on the Discover Network and on certain transactions on the Diners Club network. This cost is contractually established and is based on the card-issuing organization's transaction volume and is reported as a reduction to discount and interchange revenue. We offer our customers various reward programs, including the Cashback Bonus reward program, pursuant to which we pay certain customers a percentage of their purchase amounts based on the type and volume of the customer's purchases. Reward costs are recorded as a reduction to discount and interchange revenue. Discount and interchange revenue decreased for the year ended December 31, 2016 as compared to the year ended December 31, 2015, primarily driven by higher rewards partially offset by higher transaction volume. Discount and interchange revenue increased for the year ended December 31, 2015 as compared to the year ended December 31, 2014, primarily driven by lower prior year reward costs as a result of the rewards redemption policy change in 2014. Also contributing to the increase was higher gross discount and interchange revenue resulting from higher sales volume.

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Protection Products
We earn revenue related to fees received for providing ancillary products and services, including payment protection and identity theft protection services, to customers. The amount of revenue recorded is generally based on either a percentage of a customer's outstanding balance or a flat fee and is recognized as earned. Protection product revenue decreased for the years ended December 31, 2016 and 2015 as compared to the previous year, reflecting the impact of our no longer selling these products and eliminating related retention efforts.
Transaction Processing Revenue
Transaction processing revenue represents switch fees charged to financial institutions and merchants for processing ATM, debit and POS transactions over the PULSE network, as well as various participation and membership fees. Switch fees are charged on a per transaction basis. Transaction processing revenue decreased for the years ended December 31, 2016 and 2015 as compared to the previous year, due to lower POS transactions.
Gain on Origination and Sale of Mortgage Loans
Gain on sale of mortgage loans consists of the net gain on the origination and sale of loans as well as the net gain on the related interest rate lock commitments and the net gain or loss on forward delivery contracts. There was no revenue related to mortgage banking operations for the year ended December 31, 2016. Revenue related to mortgage banking operations declined for the year ended December 31, 2015 as compared to the year ended December 31, 2014 due to the closure of our mortgage origination business.
Other Income
Other income includes royalty revenues earned by Diners Club, merchant fees, revenue from the transition services agreement related to the acquisition of Student Loan Corporation, revenue from merchants related to reward programs, revenues from network partners and other miscellaneous revenue items. Other income decreased for the year ended December 31, 2016 as compared to the year ended December 31, 2015 primarily due to a gain on sale of securities in 2015. Other income decreased for the year ended December 31, 2015 as compared to the year ended December 31, 2014 primarily due to decreased revenue for Diners Club resulting from the sale of Diners Club Italy in October 2015.
Other Expense
The following table represents the components of other expense for the periods presented
(dollars in millions):

	For the Years Ended December 31,			2016 vs. 2015 increase (decrease)		2015 vs. 2014 increase	
	2016	2015	2014	$	%	$	%
Employee compensation and benefits	$1,379	$1,327	$1,242	$52	4 %	$85	7 %
Marketing and business development	731	745	735	(14)	(2)%	10	1 %
Information processing and communications	339	349	346	(10)	(3)%	3	1 %
Professional fees	605	610	450	(5)	(1)%	160	36%
Premises and equipment	95	95	92	—	— %	3	3 %
Other expense	435	489	475	(54)	(11)%	14	3 %
Total other expense	$3,584	$3,615	$3,340	$(31)	(1)%	$275	8 %

Total other expense decreased $31 million for the year ended December 31, 2016 as compared to the year ended December 31, 2015. The decrease was primarily driven by completion of look back related anti-money laundering remediation expenses in the second quarter of 2016 and a decrease in other expenses and marketing and business development costs, offset by an increase in compliance activities costs and employee compensation and benefits. The decrease in other expense was primarily driven by exit charges related to the closure of our mortgage origination business in 2015, lower fraud losses and increased fraud recoveries. The increase in employee compensation and benefits costs was primarily due to higher salaries as well as growth in overall headcount driven in part by regulatory and compliance needs.

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Total other expense increased $275 million for the year ended December 31, 2015 as compared to the year ended December 31, 2014. The increase was primarily driven by higher employee compensation and benefit costs and higher professional fees. The growth in employee compensation costs resulted from growth in overall headcount driven in part by regulatory and compliance needs and the increase in professional fees was driven by anti-money laundering and related compliance program expenses. Also contributing to the increase in total other expense is an increase in other expense related to the closure of our mortgage origination business.

Income Tax Expense

The following table reconciles our effective tax rate to the U.S. federal statutory income tax rate:

	For the Years Ended December 31,								
	2016			2015			2014		
U.S. federal statutory income tax rate	35.0		%	35.0		%	35.0		%
U.S. state, local and other income taxes, net of U.S. federal income tax benefits	2.7			2.5			2.8		
Tax credits	(1.8		)	(1.0		)	(0.6		)
Other	(1.4		)	(0.1		)	(0.1		)
Effective income tax rate	34.5		%	36.4		%	37.1		%
Income tax expense	$	1,263		$	1,315		$	1,371	

For the year ended December 31, 2016, income tax expense decreased $52 million, or 4.0%, and the effective income tax rate decreased 1.9% as compared to the year ended December 31, 2015. The decrease in rates is primarily due to certain tax credits, the settlement with the United States Congress Joint Committee on Taxation and the resolution of certain federal and state tax matters.

Income tax expense decreased $56 million, or 4.1%, reflecting a decrease in pretax income, and a decline in the effective tax rate 0.7% for the year ended December 31, 2015 as compared to the year ended December 31, 2014. These changes are due to favorable adjustments to unrecognized tax benefits from resolving certain tax matters, and a one-time adjustment in 2014 to deferred taxes on limited partnership investments with no similar adjustment in 2015.

Liquidity and Capital Resources

Funding and Liquidity

We seek to maintain stable, diversified and cost-effective funding sources and a strong liquidity profile in order to fund our business and repay or refinance our maturing obligations under both normal operating conditions and periods of economic or financial stress. In managing our liquidity risk, we seek to maintain a prudent liability maturity profile and ready access to an ample store of primary and contingent liquidity sources. Our primary funding sources include deposits, sourced directly from consumers or through brokers, public term asset-backed securitizations and other short-term and long-term borrowings. Our primary liquidity sources include a liquidity portfolio comprised of highly liquid, unencumbered assets, including cash and cash equivalents and investment securities, and private term asset-backed securitizations. In addition, we have unused capacity with the Federal Reserve discount window which provides another source of contingent liquidity.

Funding Sources

Deposits

We offer deposit products to customers through two channels: (i) through direct marketing, internet origination and affinity relationships ("direct-to-consumer deposits"); and (ii) indirectly through contractual arrangements with securities brokerage firms ("brokered deposits"). Direct-to-consumer deposits include certificates of deposit, money market accounts, online savings and checking accounts and IRA certificates of deposit, while brokered deposits include certificates of deposit and sweep accounts. At December 31, 2016, we had $36.0 billion of direct-to-consumer deposits and $16.0 billion of brokered and other deposits.

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Credit Card Securitization Financing

We use the securitization of credit card receivables as a source of funding. We access the asset-backed securitization market using the Discover Card Master Trust I ("DCMT") and the Discover Card Execution Note Trust ("DCENT"), through which we issue DCENT DiscoverSeries notes both publicly and through private transactions. From time to time, we may add credit card receivables to these trusts to create sufficient funding capacity for future securitizations while managing seller’s interest. We retain significant exposure to the performance of trust assets through holdings of the seller's interest and subordinated security classes of DCENT.

The securitization structures include certain features designed to protect investors. The primary feature relates to the availability and adequacy of cash flows in the securitized pool of receivables to meet contractual requirements, the insufficiency of which triggers early repayment of the securities. We refer to this as "economic early amortization," which is based on excess spread levels. Excess spread is the amount by which income received by a trust during a collection period, including interest collections, fees and interchange, exceeds the fees and expenses of the trust during such collection period, including interest expense, servicing fees and charged-off receivables. In the event of an economic early amortization, which would occur if the excess spread fell below 0% on a three-month rolling average basis, we would be required to repay the affected outstanding securitized borrowings using available collections received by the trust (the period of ultimate repayment would be determined by the amount and timing of collections received). An early amortization event would negatively impact our liquidity, and require us to utilize our available non-securitization related contingent liquidity or rely on alternative funding sources, which may or may not be available at the time. As of December 31, 2016, the DiscoverSeries three-month rolling average excess spread was 13.48%.

We may elect to add receivables to the restricted pool of receivables subject to certain requirements. We elected to add receivables to the restricted pool of receivables as of the end of second quarter 2016. The addition increased the capacity to issue notes to investors or draw on commitments through privately placed securitizations, and resulted in a decrease in receivables pledged at the Federal Reserve discount window. No accounts were added to those restricted for securitization investors for the remainder of the year. For additional information regarding the seller's interest requirement, see Note 6: Credit Card and Student Loan Securitization Activities to our consolidated financial statements.

At December 31, 2016, we had $15.6 billion of outstanding public asset-backed securities and $5.2 billion of outstanding subordinated asset-backed securities that had been issued to our wholly-owned subsidiaries.

The following table summarizes expected contractual maturities of the investors’ interests in credit card securitizations excluding those that have been issued to our wholly-owned subsidiaries (dollars in millions):

At December 31, 2016	Total	Less Than One Year	One Year Through Three Years	Four Years Through Five Years	After Five Years
Scheduled maturities of long-term borrowings - owed to credit card securitization investors	$15,562	$4,698	$ 9,233	$ 1,631	$ —

The triple-A rating of DCENT Class A Notes issued to date has been based, in part, on an FDIC rule which created a safe harbor that provides that the FDIC, as conservator or receiver, will not, using its power to disaffirm or repudiate contracts, seek to reclaim or recover assets transferred in connection with a securitization, or recharacterize them as assets of the insured depository institution, provided such transfer satisfies the conditions for sale accounting treatment under previous GAAP. Although the implementation of the Financial Accounting Standards Board Accounting Standards Codification Topic 860, Transfers and Servicing, no longer qualified certain transfers of assets for sale accounting treatment, the FDIC approved a final rule that preserved the safe-harbor treatment applicable to revolving trusts and master trusts, including DCMT, so long as those trusts would have satisfied the original FDIC safe harbor if evaluated under GAAP pertaining to transfers of financial assets in effect prior to December 1, 2009. Other legislative and regulatory developments may, however, impact our ability and/or desire to issue asset-backed

securities in the future.
Other Long-Term Borrowings—Student Loans
At December 31, 2016, we had $879 million of remaining principal balance outstanding on securitized debt assumed as part of the acquisition of Student Loan Corporation. Principal and interest payments on the underlying student loans will reduce the balance of these secured borrowings over time.

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Other Long-Term Borrowings—Corporate and Bank Debt

The following table provides a summary of Discover Financial Services (Parent Company) and Discover Bank outstanding fixed-rate debt (dollars in millions):

	Principal Amount Outstanding
At December 31, 2016	
Discover Financial Services (Parent Company) fixed-rate senior notes, maturing 2017-2025	$ 2,090
Discover Financial Services (Parent Company) fixed-rate retail notes maturing 2017-2031	$ 169
Discover Bank fixed-rate senior bank notes, maturing 2018-2026	$ 6,077
Discover Bank fixed-rate subordinated bank notes, maturing 2019-2020	$ 696

Certain Discover Financial Services senior notes require us to offer to repurchase the notes at a price equal to 101% of their aggregate principal amount plus accrued and unpaid interest in the event of a change of control involving us and a corresponding ratings downgrade to below investment grade.

Short-Term Borrowings

As part of our regular funding strategy, we may from time to time borrow short-term funds in the Federal Funds market or the repurchase (“repo”) market through repurchase agreements. Federal Funds are short-term, unsecured loans between banks or other financial entities with a Federal Reserve account. Funds borrowed in the repo market are short-term, collateralized loans usually secured with highly-rated investment securities such as U.S. Treasury bills or notes, or federal agency mortgage bonds or debentures. At December 31, 2016, there were no outstanding balances under the Federal Funds market or repurchase agreements.

Additional Funding Sources

Private Asset-Backed Securitizations

We have access to committed undrawn borrowing capacity through privately placed asset-backed securitizations. At December 31, 2016, we had total committed capacity of $6.0 billion, none of which was drawn. While we may utilize funding from these private securitizations from time to time for normal business operations, their committed nature also makes them a reliable contingency funding source. Therefore, we reserve some undrawn capacity, informed by our liquidity stress testing results, for potential contingency funding needs. We also seek to ensure the stability and reliability of these securitizations by staggering their maturity dates, renewing them approximately one year prior to their scheduled maturity dates and periodically performing draws as operational tests.

Federal Reserve

Discover Bank has access to the Federal Reserve Bank of Philadelphia’s discount window. As of December 31, 2016, Discover Bank had $24.2 billion of available borrowing capacity through the discount window based on the amount and type of assets pledged. We have no borrowings outstanding under the discount window and reserve this capacity as a source of contingent liquidity.

Funding Uses

Our primary uses of funds include the extensions of loans and credit, primarily through Discover Bank, the purchase of investment securities for our liquidity portfolio, working capital and debt and capital service. We assess funding uses and liquidity needs under both the normal course of business and hypothetical adverse environments, considering primary uses of funding, such as on-balance sheet loans, and contingency uses of funding, such as the need to post additional collateral for derivatives positions. In order to anticipate funding needs under adverse environments, we maintain liquidity stress scenarios that assess the impact of a range of unusual business events, such as severe economic recessions, financial market disruptions, adverse operational or reputational events and other forms of stress.

Credit Ratings

Our borrowing costs and capacity in certain funding markets, including securitizations and unsecured senior and subordinated debt, may be affected by the credit ratings of DFS, Discover Bank and the securitization trusts.

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Downgrades in these credit ratings could result in higher interest expense on our unsecured debt and asset securitizations, as well as higher collateral enhancement requirements for both our public and private asset securitization. In addition to increased funding costs, deterioration in credit ratings could reduce our borrowing capacity in the unsecured debt and asset securitization capital markets.

We also maintain agreements with certain of our derivative counterparties that contain provisions that require DFS and Discover Bank to maintain an investment grade credit rating from specified major credit rating agencies. Because the credit rating of DFS did not meet the specified thresholds, we had posted $4 million of collateral with our counterparties at December 31, 2016. Discover Bank's credit rating met specified thresholds set by its counterparties. However, if Discover Bank’s credit ratings were reduced by one ratings notch, Discover Bank would be required to post additional collateral, which, as of December 31, 2016, would have been $51 million.

A credit rating is not a recommendation to buy, sell or hold securities, may be subject to revision or withdrawal at any time by the assigning rating organization, and each rating should be evaluated independently of any other rating. Our credit ratings are summarized in the following table:

	Moody’s Investors Service	Standard & Poor’s	Fitch Ratings
Discover Financial Services			
Senior unsecured debt	Ba1	BBB-	BBB+
Outlook for Discover Financial Services senior unsecured debt	Stable	Stable	Stable
Discover Bank			
Senior unsecured debt	Baa3	BBB	BBB+
Outlook for Discover Bank senior unsecured debt	Stable	Stable	Stable
Subordinated debt	Ba1	BBB-	BBB
Discover Card Execution Note Trust			
Class A[(1)]	Aaa(sf)	AAA(sf)	AAA(sf)

(1) An “sf” in the rating denotes rating agency identification for structured finance product ratings.

Liquidity

We seek to ensure that we have adequate liquidity to sustain business operations, fund asset growth and satisfy debt obligations under both normal and stress conditions. In addition to the funding sources discussed in the previous section, we also maintain highly liquid, unencumbered assets in our liquidity portfolio that we expect to be able to convert to cash quickly and with little loss of value using either the repo market or outright sales.

We maintain a liquidity risk and funding management policy which outlines the overall framework and general principles for managing liquidity risk across our businesses. The policy is approved by the Board of Directors with the implementation responsibilities delegated to the Asset and Liability Management Committee (the “ALCO”). We seek to balance the trade-offs between maintaining too much liquidity, which may be costly, with having too little liquidity, which could cause financial distress. Liquidity risk is centrally managed by the ALCO, which is chaired by our Treasurer and has cross-functional membership. The ALCO monitors the liquidity risk profiles of DFS and Discover Bank and oversees any actions Corporate Treasury may take to ensure that we maintain ready access to our funding sources and sufficient liquidity to meet current and projected financial obligations. In addition, the ALCO and our Board of Directors regularly review our compliance with our liquidity limits at DFS and Discover Bank, which are established in accordance with the liquidity risk appetite articulated by our Board.

We employ a variety of metrics to monitor and manage liquidity. We utilize early warning indicators (“EWIs”) to detect the initial phases of liquidity stress events and a reporting and escalation process that is designed to be consistent with regulatory guidance. The EWIs include both idiosyncratic and systemic measures, and are monitored on a daily basis and reported to the ALCO regularly. A warning from one or more of these indicators triggers prompt review and decision-making by our senior management team, and in certain instances may lead to the convening of a senior-level response team and activation of our contingency funding plan.

In addition, we conduct liquidity stress testing regularly and ensure contingency funding is in place to address

potential liquidity shortfalls. We evaluate a range of stress scenarios that are designed in accordance with regulatory requirements, including idiosyncratic, systemic and a combination of such events, that could impact funding sources and our ability to meet liquidity needs. These scenarios measure the projected liquidity position at DFS and Discover Bank across a range of time horizons by comparing estimated contingency funding needs to available contingent liquidity.

Our primary liquidity sources include our liquidity portfolio and private securitizations with unused borrowing capacity, which we could utilize to satisfy liquidity needs during normal and stress conditions. We seek to maintain sufficient liquidity to be able to satisfy all maturing obligations and fund business operations for at least 12 months in a severe stress environment. In addition, we have unused capacity with the Federal Reserve discount window which provides a source of contingent liquidity.

At December 31, 2016, our liquidity portfolio is comprised of highly liquid, unencumbered assets, including cash and cash equivalents and investment securities. Cash and cash equivalents were primarily in the form of deposits with the Federal Reserve. Investment securities primarily included debt obligations of the U.S. Treasury and residential mortgage-backed securities issued by U.S. government housing agencies. These investments are considered highly liquid, and we expect to have the ability to raise cash by selling them, utilizing repurchase agreements or, pledging certain of these investments to access secured funding. The size and composition of our liquidity portfolio may fluctuate based upon the size of our Statement of Financial Condition as well as operational requirements and market conditions.

At December 31, 2016, our liquidity portfolio and undrawn credit facilities were $42.8 billion, which was $70 million higher than the balance at December 31, 2015. During the year ended December 31, 2016, the average balance of our liquidity portfolio was $13.6 billion.

	December 31,	
	2016	2015
	(dollars in millions)	
Liquidity portfolio		
Cash and cash equivalents[(1)]	$ 11,103	$ 9,121
Investment securities[(2)]	1,532	2,956
Total liquidity portfolio	12,635	12,077
Private asset-backed securitizations[(3)]	6,000	6,750
Primary liquidity sources	18,635	18,827
Federal Reserve discount window[(3)]	24,194	23,932
Total liquidity portfolio and undrawn credit facilities	$ 42,829	$ 42,759

(1) Cash in the process of settlement and restricted cash are excluded from cash and cash equivalents for liquidity purposes.

(2) Excludes $73 million and $7 million of U.S. Treasury securities that have been pledged as swap collateral in lieu of cash as of December 31, 2016 and December 31, 2015, respectively.

(3) See " — Additional Funding Sources" for additional information.

Bank Holding Company Liquidity

The primary uses of funds at the unconsolidated DFS level include debt service obligations (interest payments and return of principal) and capital management activities, which include dividends on capital instruments and the periodic repurchase of shares of our common stock. Our primary sources of funds at the bank holding company level include the proceeds from the issuance of unsecured debt and preferred stock in the capital markets, as well as dividends from our subsidiaries, particularly Discover Bank. Under periods of idiosyncratic or systemic stress, the bank holding company could lose or experience impaired access to the capital markets. In addition, our regulators have the discretion to restrict dividend payments from Discover Bank to the bank holding company.

We utilize a measure referred to as Number of Months of Pre-Funding to determine the length of time Discover Financial Services can meet upcoming funding obligations including common and preferred dividend payments and debt service obligations using existing cash resources. At December 31, 2016, Discover Financial Services had

sufficient cash resources to fund the dividend and debt service payments for more than 18 months.
We structure our debt maturity schedule to minimize the amount of debt maturing at the bank holding company level within a short period of time. See Note 10: Long-Term Borrowings to our consolidated financial statements for

further information regarding our debt. Our ALCO and Board of Directors regularly review our compliance with our liquidity limits as a bank holding company, which are established in accordance with the liquidity risk appetite articulated by our board.

Capital

Our primary sources of capital are from the earnings generated by our businesses and common and preferred stock issuances in the capital markets. We seek to manage capital to a level and composition sufficient to support the risks of our businesses, meet regulatory requirements, meet rating agency targets and debt investor expectations and support future business growth. Within these constraints, we are focused on deploying capital in a manner that provides attractive returns to our stockholders. The level, composition and utilization of capital are influenced by changes in the economic environment, strategic initiatives, and legislative and regulatory developments.

Under regulatory capital requirements adopted by the Federal Reserve and the FDIC, Discover Financial Services, along with Discover Bank, must maintain minimum levels of capital. Failure to meet minimum capital requirements can result in the initiation of certain mandatory and possibly additional discretionary actions by regulators that, if undertaken, could limit our business activities and have a direct material effect on our financial position and results. We must meet specific capital requirements that involve quantitative measures of assets, liabilities and certain off-balance sheet items, as calculated under regulatory guidance and regulations. Capital amounts and classification are also subject to qualitative judgments by the regulators about components, risk weightings and other factors. Current or future legislative or regulatory initiatives may require us to hold more capital in the future.

In 2013, the Federal Reserve, the Office of the Comptroller of the Currency and the FDIC issued the Basel III rules applicable to Discover Financial Services and Discover Bank. Under those rules, Discover Financial Services and Discover Bank are classified as "Standardized Approach" entities, defined as U.S. banking organizations with consolidated total assets over $50 billion but not exceeding $250 billion and consolidated total on-balance sheet foreign exposures less than $10 billion. Additional phase-in requirements related to components of the final capital rules will become effective through 2019. The Basel III rules include new minimum and "well-capitalized" risk-based capital and leverage ratios, effective January 1, 2015, and refine the definition of what constitutes "capital" for purposes of calculating those ratios of which certain requirements are subject to phase-in periods through the end of 2018 (the "transition period"). During the transition period, the effects of the changes to capital (i.e. certain deductions and adjustments) are recognized in 20% increments from 2015 through 2018. For example, one of the deductions from CET1 capital, goodwill and intangibles, was subject to a 40% of total deduction in 2015 that increased to 60% in 2016 and so on, until reaching 100% deduction of total in 2018. For additional information regarding the risk-based capital and leverage ratios, see Note 18: Capital Adequacy to our consolidated financial statements.

The Basel III rules also introduce a new capital conservation buffer on top of the minimum risk-weighted asset ratios. The buffer is designed to absorb losses during periods of economic stress. The calculation of the buffer started to phase in beginning on January 1, 2016 at the rate of 0.625% and will increase by 0.625% on each subsequent January 1 until it reaches the maximum 2.5% on January 1, 2019. When the capital conservation buffer is fully phased-in on January 1, 2019, this will effectively result in minimum ratios of (i) CET1 to risk-weighted assets of at least 7.0%, (ii) Tier 1 capital to risk-weighted assets of at least 8.5% and (iii) Total capital to risk-weighted assets of at least 10.5%. Banking institutions with a capital ratio below the required amount will face constraints on dividends, equity repurchases and compensation based on the amount of the shortfall.

Another main component of the Basel III rules is a prescribed standardized approach for calculating risk-weighted assets that expands the risk-weight range from 0% to 100% (under Basel I) to 0% to 1,250% (under Basel III). The new range is intended to be more risk-sensitive and the risk-weight assigned depends on the nature of the asset in question.

The Basel III rules provide for a number of the deductions from and adjustments to CET1, to the extent that any one such category exceeds 10% of CET1 or all such categories in the aggregate exceed 15%.

Basel III also requires additional disclosures relating to market discipline. This series of disclosures is commonly referred to as “Pillar 3.” The objective is to increase transparency of capital requirements for banking organizations. We are required to make prescribed regulatory disclosures on a quarterly basis regarding our capital structure, capital adequacy, risk exposures and risk-weighted assets. The Pillar 3 disclosures are made publicly available, on our website, as a stand-alone report called "Basel III Regulatory Capital Disclosures."

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At December 31, 2016, Discover Financial Services and Discover Bank met the requirements for "well-capitalized" status under Regulation Y and the prompt corrective action rules, respectively, exceeding the regulatory minimums to which they were subject under the applicable rules.

As discussed in Note 18: Capital Adequacy to our consolidated financial statements, we are subject to a CET1 capital ratio requirement under the Basel III rules. We believe that providing an estimate of our capital position based on the Basel III fully phased-in rules is important to complement the existing capital ratios and for comparability to other financial institutions. In addition, we disclose tangible common equity, which represents common equity less goodwill and intangibles. Management believes that common stockholders' equity excluding goodwill and intangibles is a more meaningful measure to investors of our true net asset value. As of December 31, 2016, the CET1 capital ratio calculated under Basel III fully phased-in rules and tangible common equity are not formally defined by U.S. GAAP or codified in the federal banking regulations and, as such, they are considered to be non-GAAP financial measures. Other financial services companies may also disclose this ratio and metric and definitions may vary, so we advise users of this information to exercise caution in comparing this ratio and metric for different companies.

The following table provides a reconciliation of total common stockholders' equity (a U.S. GAAP financial measure) to tangible common equity as of December 31, 2016 (dollars in millions):

	December 31, 2016	December 31, 2015
Total common stockholders' equity[1]	$ 10,763	$ 10,715
Less: Goodwill	(255)	(255)
Less: Intangible assets, net	(166)	(168)
Tangible common equity	$ 10,342	$ 10,292

(1) Total common stockholders' equity is calculated as total stockholders' equity less preferred stock.

The following table provides a reconciliation of CET1 capital calculated under Basel III transition rules to CET1 capital and risk-weighted assets calculated under fully phased-in Basel III rules (dollars in millions):

	December 31, 2016
Common equity Tier 1 capital (Basel III transition)	$ 10,592
Adjustments related to capital components during transition[1]	(52)
Common equity Tier 1 capital (Basel III fully phased-in)	$ 10,540
Risk-weighted assets (Basel III fully phased-in)[2]	$ 80,033
Common equity Tier 1 capital ratio (Basel III fully phased-in)	13.2 %

(1) Adjustments related to capital components for fully phased-in Basel III include the phase-in of the intangible asset exclusion.

(2) Key differences under fully phased-in Basel III rules in the calculation of risk-weighted assets include higher risk weighting for past-due loans and unfunded commitments.

Additionally, we are required to submit an annual capital plan to the Federal Reserve that includes an assessment of our expected uses and sources of capital over a nine quarter planning horizon. In April 2016, we submitted our annual capital plan to the Federal Reserve under the Federal Reserve's Comprehensive Capital Analysis and Review program, which included planned dividends and share repurchases over the nine quarter planning horizon. In June 2016, we received non-objection from the Federal Reserve with respect to our proposed capital actions through June 30, 2017. On August 19, 2016, we received a non-objection from the Federal Reserve with respect to the repurchase of up to an additional $100 million of shares of our common stock. This amount is in addition to the $1.95 billion of share repurchases included in our 2016 capital plan. Our ability to make capital distributions, including our ability to pay dividends on or repurchase shares of our common stock, will continue to be subject to the Federal Reserve's review

and non-objection of the actions that we propose each year in our annual capital plan.
Also in June 2016, the Federal Reserve published the results of its annual supervisory stress tests for bank holding companies with $50 billion or more in total consolidated assets, including Discover Financial Services. At that same time, we published company-run stress test results for Discover Financial Services and Discover Bank. Discover Financial Services is required to publish company-run stress tests results twice each year in accordance with Federal Reserve rules and Discover Bank is required to publish bank-run stress test results under FDIC rules. We published our most recent mid-year stress test results on October 6, 2016.

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We recently declared a quarterly cash dividend on our common stock of $0.30 per share, payable on February 23, 2017 to holders of record on February 9, 2017, which is consistent with the dividend amount that we paid in the third and fourth quarters of 2016. We also recently declared a quarterly cash dividend on our preferred stock of $16.25 per share, equal to $0.40625 per depositary share, payable on March 6, 2017 to holders of record on February 17, 2017, which was the same as the amount paid on our preferred stock in each of the prior four quarters.

On July 14, 2016, our Board of Directors approved a share repurchase program authorizing the repurchase of up to $2.5 billion of our outstanding shares of common stock. The program expires on October 31, 2017 and may be terminated at any time. This program replaced the prior $2.2 billion program, which had $158 million of remaining authorization. During the year ended December 31, 2016, we repurchased approximately 34 million shares, or 8%, of our outstanding common stock for $1.9 billion. We expect to continue to make share repurchases under our repurchase program from time to time based on market conditions and other factors, subject to legal and regulatory requirements and restrictions. Share repurchases under the program may be made through a variety of methods, including open market purchases, privately negotiated transactions or other purchases, including block trades, accelerated share repurchase transactions, or any combination of such methods.

The amount and size of any future dividends and share repurchases will depend upon our results of operations, financial condition, capital levels, cash requirements, future prospects and other factors. The declaration and payment of future dividends, as well as the amount thereof, are subject to the discretion of our Board of Directors. Holders of our shares of common stock are subject to the prior dividend rights of holders of our preferred stock or the depositary shares representing such preferred stock outstanding, and if full dividends have not been declared and paid on all outstanding shares of preferred stock in any dividend period, no dividend may be declared or paid or set aside for payment on our common stock. In addition, as noted above, banking laws and regulations and our banking regulators may limit our ability to pay dividends and make share repurchases, including limitations on the extent to which our banking subsidiaries can provide funds to us through dividends, loans or otherwise. Further, also noted above, current or future regulatory initiatives may require us to hold more capital in the future. There can be no assurance that we will declare and pay any dividends or repurchase any shares of our common stock in the future. For more information, including conditions and limits on our ability to pay dividends and repurchase our stock, see "Business — Supervision and Regulation — Capital, Dividends and Share Repurchases," "Risk Factors — Credit, Market and Liquidity Risk — We may be limited in our ability to pay dividends on and repurchase our stock" and "— We are a holding company and depend on payments from our subsidiaries" and Note 18: Capital Adequacy to our consolidated financial statements.

Certain Off-Balance Sheet Arrangements

Guarantees

Guarantees are contracts or indemnification agreements that contingently require us to make payments to a guaranteed party based on changes in an underlying asset, liability, or equity security of a guaranteed party, rate or index. Also included in guarantees are contracts that contingently require the guarantor to make payments to a guaranteed party based on another entity’s failure to perform under an agreement. Our guarantees relate to transactions processed on the Discover Network and certain transactions processed by PULSE and Diners Club. See Note 19: Commitments, Contingencies and Guarantees to our consolidated financial statements for further discussion regarding our guarantees.

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Contractual Obligations and Contingent Liabilities and Commitments

In the normal course of business, we enter into various contractual obligations that may require future cash payments. Contractual obligations include deposits, long-term borrowings, operating and capital lease obligations, interest payments on fixed-rate debt, purchase obligations and other liabilities. Our future cash payments associated with our contractual obligations are summarized below (dollars in millions):

		Payments Due By Period			
	Total	Less Than One Year	One Year Through Three Years	Four Years Through Five Years	More Than Five Years
At December 31, 2016					
Deposits[1][2]	$51,992	$36,984	$ 8,390	$ 4,005	$2,613
Borrowings[3]	25,443	5,100	11,256	4,121	4,966
Operating leases	76	13	20	15	28
Interest payments on fixed-rate debt	2,314	529	813	457	515
Purchase obligations[4]	914	473	337	94	10
Other liabilities[5]	268	16	84	51	117
Total contractual obligations	$81,007	$43,115	$ 20,900	$ 8,743	$8,249

(1) Deposits do not include interest payments because payment amounts and timing cannot be reasonably estimated as certain deposit accounts have early withdrawal rights and the option to roll interest payments into the balance.

(2) Deposits due in less than one year include deposits with indeterminate maturities.

(3) See Note 10: Long-Term Borrowings to our consolidated financial statements for further discussion. Total future payment of interest charges for the floating-rate notes is estimated to be $464 million as of December 31, 2016, utilizing the current interest rates as of that date.

(4) Purchase obligations for goods and services include payments under, among other things, consulting, outsourcing, data, advertising, sponsorship, software license, telecommunications agreements and global acceptance contracts. Purchase obligations also include payments under rewards program agreements with merchants. Purchase obligations at December 31, 2016 reflect the minimum purchase obligation under legally binding contracts with contract terms that are both fixed and determinable. These amounts exclude obligations for goods and services that already have been incurred and are reflected on our consolidated statement of financial condition.

(5) Other liabilities include our expected future contributions to our pension plan, the contingent liability associated with our equity method securities and a commitment to purchase certain when-issued mortgage-backed securities under an agreement with the Delaware State Housing Authority as part of our community reinvestment initiatives.

As of December 31, 2016 our consolidated statement of financial condition reflects a liability for unrecognized tax benefits of $158 million and approximately $52 million of accrued interest and penalties. Since the ultimate amount and timing of any future cash settlements cannot be predicted with reasonable certainty, the estimated income tax obligations about which there is uncertainty have been excluded from the contractual obligations table. See Note 16: Income Taxes to our consolidated financial statements for further information concerning our tax obligations.

We extend credit for consumer loans, primarily arising from agreements with customers for unused lines of credit on certain credit cards, provided there is no violation of conditions established in the related agreement. At December 31, 2016, our unused commitments were approximately $192.6 billion. These commitments, substantially all of which we can terminate at any time and which do not necessarily represent future cash requirements, are periodically reviewed based on account usage, customer creditworthiness and loan qualification. In addition, in the ordinary course of business, we guarantee payment on behalf of subsidiaries relating to contractual obligations with external parties. The activities of the subsidiaries covered by any such guarantees are included in our consolidated financial statements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market risk refers to the risk that a change in the level of one or more market prices, rates, indices, correlations or other market factors will result in losses for a position or portfolio. We are exposed to market risk primarily from changes in interest rates.

Interest Rate Risk

We borrow money from a variety of depositors and institutions in order to provide loans to our customers, as well as invest in other assets and our business. These loans and other assets earn interest, which we use to pay interest on the money borrowed. Our net interest income and, therefore, earnings, will be negatively affected if the interest rate earned on assets increases at a slower pace than increases to the interest rate we owe on our borrowings. Changes in

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interest rates and competitor responses to those changes may influence customer payment rates, loan balances or deposit account activity. We may face higher-cost alternative sources of funding as a result, which has the potential to decrease earnings.

Our interest rate risk management policies are designed to measure and manage the potential volatility of earnings that may arise from changes in interest rates by having a financing portfolio that reflects the mix of variable and fixed-rate assets. To the extent that asset and related financing repricing characteristics of a particular portfolio are not matched effectively, we may utilize interest rate derivative contracts, such as swap agreements, to achieve our objectives. Interest rate swap agreements effectively convert the underlying asset or liability from fixed to floating rate or from floating to fixed rate. See Note 22: Derivatives and Hedging Activities to our consolidated financial statements for information on our derivatives activity.

We use an interest rate sensitivity simulation to assess our interest rate risk exposure. For purposes of presenting the possible earnings effect of a hypothetical, adverse change in interest rates over the 12-month period from our reporting date, we assume that all interest rate sensitive assets and liabilities will be impacted by a hypothetical, immediate 100 basis point increase in interest rates relative to market consensus expectations as of the beginning of the period. The sensitivity is based upon the hypothetical assumption that all relevant types of interest rates that affect our results would increase instantaneously, simultaneously and to the same degree.

Our interest rate sensitive assets include our variable rate loan receivables and the assets that make up our liquidity portfolio. We have restrictions on our ability to mitigate interest rate risk by adjusting rates on existing balances and competitive actions may restrict our ability to increase the rates that we charge to customers for new loans. At December 31, 2016, the majority of our credit card and student loans were at variable rates. Assets with rates that are fixed at period end but which will mature, or otherwise contractually reset to a market-based indexed rate or other fixed rate prior to the end of the 12-month period, are considered to be rate sensitive. The latter category includes certain revolving credit card loans that may be offered at below-market rates for an introductory period, such as balance transfers and special promotional programs, after which the loans will contractually reprice in accordance with our normal market-based pricing structure. For purposes of measuring rate sensitivity for such loans, only the effect of the hypothetical 100 basis point change in the underlying market-based indexed rate has been considered. For assets that have a fixed interest rate but which contractually will, or are assumed to, reset to a market-based indexed rate or other fixed rate during the next 12 months, earnings sensitivity is measured from the expected repricing date. In addition, for all interest rate sensitive assets, earnings sensitivity is calculated net of expected loan losses which for purposes of this analysis are assumed to remain unchanged relative to our baseline expectations over the analysis horizon.

Interest rate sensitive liabilities are assumed to be those for which the stated interest rate is not contractually fixed for the next 12-month period. Thus, liabilities that vary with changes in a market-based index, such as Federal Funds or LIBOR, which will reset before the end of the 12-month period, or liabilities whose rates are fixed at the fiscal period end but which will mature and are assumed to be replaced with a market-based indexed rate prior to the end of the 12-month period, also are considered to be rate sensitive. For these fixed-rate liabilities, earnings sensitivity is measured from the expected maturity date.

Assuming an immediate 100 basis point increase in the interest rates affecting all interest rate sensitive assets and liabilities at December 31, 2016, we estimate that net interest income over the following 12-month period would increase by approximately $201 million, or 3%. Assuming an immediate 100 basis point increase in the interest rates affecting all interest rate sensitive assets and liabilities at December 31, 2015, we estimated that net interest income over the following 12-month period would increase by approximately $217 million, or 3%. We have not provided an estimate of any impact on net interest income of a decrease in interest rates as many of our interest rate sensitive assets and liabilities are tied to interest rates that are already at or near their historical minimum levels (i.e., Prime and LIBOR) and, therefore, could not materially decrease further assuming U.S. market interest rates continue to remain above zero percent. Sustained negative interest rates for an economy the size and complexity of the United States would likely lead to broad macroeconomic impacts that are difficult to foresee. While there is a possibility that U.S market interest rates could fall below zero percent, this has not historically occurred in the United States. Net interest income sensitivity requires assumptions to be made regarding market conditions, consumer behavior, and the overall growth and composition of the balance sheet. These assumptions are inherently uncertain and, as a result, actual earnings may differ from the simulated earnings presented above. Our actual earnings are dependent on multiple factors including, but not limited to, the direction and timing of changes in interest rates the movement of short-term versus long-term rates, balance sheet design, competitor actions which may affect pricing decisions in our loans and deposits, and strategic actions undertaken by management.

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Item 8. Financial Statements and Supplementary Data
REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM
To the Board of Directors and Stockholders of
Discover Financial Services
Riverwoods, IL

We have audited the internal control over financial reporting of Discover Financial Services (the “Company”) as of December 31, 2016, based on the criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company’s management is responsible 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 Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel 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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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 the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated statement of financial condition, and the related consolidated statements of income, comprehensive income, changes in stockholders’ equity, and cash flows as of and for the year ended December 31, 2016 of the Company and our report dated February 22, 2017 expressed an unqualified opinion on those financial statements.

Chicago, Illinois
February 22, 2017

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Discover Financial Services
Riverwoods, IL

We have audited the accompanying consolidated statements of financial condition of Discover Financial Services (the “Company”) as of December 31, 2016 and 2015, and the related consolidated statements of income, comprehensive income, changes in stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2016. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Discover Financial Services as of December 31, 2016 and 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.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2016, based on the criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 22, 2017 expressed an unqualified opinion on the Company's internal control over financial reporting.

Chicago, Illinois
February 22, 2017

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DISCOVER FINANCIAL SERVICES
Consolidated Statements of Financial Condition

	December 31, 2016	December 31, 2015
	(dollars in millions, except share amounts)	
Assets		
Cash and cash equivalents	$11,914	$9,572
Restricted cash	95	99
Investment securities (includes $1,605 and $2,963 at fair value at December 31, 2016 and 2015, respectively)	1,757	3,084
Loan receivables:		
Loan receivables	77,254	72,385
Allowance for loan losses	(2,167)	(1,869)
Net loan receivables	75,087	70,516
Premises and equipment, net	734	693
Goodwill	255	255
Intangible assets, net	166	168
Other assets	2,300	2,412
Total assets	$92,308	$86,799
Liabilities and Stockholders' Equity		
Deposits:		
Interest-bearing deposit accounts	$51,461	$47,094
Non-interest bearing deposit accounts	531	437
Total deposits	51,992	47,531
Long-term borrowings	25,443	24,650
Accrued expenses and other liabilities	3,550	3,343
Total liabilities	80,985	75,524
Commitments, contingencies and guarantees (Notes 16, 19, and 20)		
Stockholders' Equity:		
Common stock, par value $0.01 per share; 2,000,000,000 shares authorized; 562,414,040 and 560,679,352 shares issued at December 31, 2016 and 2015, respectively	5	5
Preferred stock, par value $0.01 per share; 200,000,000 shares authorized; 575,000 shares issued and outstanding and aggregate liquidation preference of $575 at December 31, 2016 and 2015, respectively	560	560
Additional paid-in capital	3,962	3,885
Retained earnings	15,130	13,250
Accumulated other comprehensive loss	(161)	(160)
Treasury stock, at cost; 173,648,023 and 139,000,423 shares at December 31, 2016 and 2015, respectively	(8,173)	(6,265)
Total stockholders' equity	11,323	11,275
Total liabilities and stockholders' equity	$92,308	$86,799

Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation for additional information.

The table below presents the carrying amounts of certain assets and liabilities of Discover Financial Services' consolidated variable interest entities ("VIEs") which are included in the consolidated statements of financial condition above. The assets in the table below include those assets that can only be used to settle obligations of the consolidated VIEs. The liabilities in the table below include third-party liabilities of consolidated VIEs only and exclude intercompany balances that eliminate in consolidation. The liabilities also exclude amounts for which creditors have recourse to the general credit of Discover Financial Services.

	December 31,	
	2016	2015
	(dollars in millions)	
Assets		
Restricted cash	$95	$99
Loan receivables	$33,016	$30,551
Allowance for loan losses allocated to securitized loan receivables	$(955)	$(811)
Other assets	$4	$5
Liabilities		
Long-term borrowings	$16,411	$16,735
Accrued expenses and other liabilities	$15	$12

See Notes to Consolidated Financial Statements.

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DISCOVER FINANCIAL SERVICES
Consolidated Statements of Income

	For the Years Ended December 31,		
	2016	2015	2014
	(dollars in millions, except per share amounts)		
Interest income:			
Credit card loans	$7,155	$6,626	$6,359
Other loans	1,361	1,243	1,151
Investment securities	38	49	67
Other interest income	62	27	19
Total interest income	8,616	7,945	7,596
Interest expense:			
Deposits	687	623	614
Short-term borrowings	—	1	2
Long-term borrowings	711	639	518
Total interest expense	1,398	1,263	1,134
Net interest income	7,218	6,682	6,462
Provision for loan losses	1,859	1,512	1,443
Net interest income after provision for loan losses	5,359	5,170	5,019
Other income:			
Discount and interchange revenue, net	1,055	1,117	979
Protection products revenue	239	261	314
Loan fee income	343	335	334
Transaction processing revenue	155	159	182
Gain on investments	—	9	4
Gain on origination and sale of mortgage loans	—	68	81
Other income	89	108	121
Total other income	1,881	2,057	2,015
Other expense:			
Employee compensation and benefits	1,379	1,327	1,242
Marketing and business development	731	745	735
Information processing and communications	339	349	346
Professional fees	605	610	450
Premises and equipment	95	95	92
Other expense	435	489	475
Total other expense	3,584	3,615	3,340
Income before income tax expense	3,656	3,612	3,694
Income tax expense	1,263	1,315	1,371
Net income	$2,393	$2,297	$2,323
Net income allocated to common stockholders	$2,339	$2,246	$2,270
Basic earnings per common share	$5.77	$5.14	$4.91
Diluted earnings per common share	$5.77	$5.13	$4.90

See Notes to the Consolidated Financial Statements.

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DISCOVER FINANCIAL SERVICES
Consolidated Statements of Comprehensive Income

	For the Years Ended December 31,		
	2016	2015	2014
	(dollars in millions)		
Net income	$2,393	$2,297	$2,323
Other comprehensive (loss) income, net of taxes			
Unrealized (loss) gain on available-for-sale investment securities, net of tax	(3)	(23)	4
Unrealized gain (loss) on cash flow hedges, net of tax	7	(13)	(20)
Unrealized pension plan (loss) gain, net of tax	(5)	14	(53)
Foreign currency translation adjustments, net of tax	—	—	(1)
Other comprehensive loss	(1)	(22)	(70)
Comprehensive income	$2,392	$2,275	$2,253

See Notes to the Consolidated Financial Statements.

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DISCOVER FINANCIAL SERVICES
Consolidated Statements of Changes in Stockholders' Equity

	Preferred Stock		Common Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Treasury Stock	Total Stockholders' Equity
	Shares	Amount	Shares	Amount					
	(dollars in millions, shares in thousands)								
Balance at December 31, 2013	575	$ 560	555,350	$ 5	$ 3,687	$ 9,611	$ (68)	$ (2,986)	$ 10,809
Net income	—	—	—	—	—	2,323	—	—	2,323
Other comprehensive income	—	—	—	—	—	—	(70)	—	(70)
Purchases of treasury stock	—	—	—	—	—	—	—	(1,564)	(1,564)
Common stock issued under employee benefit plans	—	—	62	—	3	—	—	—	3
Common stock issued and stock-based compensation expense	—	—	2,782	—	100	—	—	—	100
Dividends — common stock ($0.92 per share)	—	—	—	—	—	(430)	—	—	(430)
Dividends — preferred stock ($65.00 per share)	—	—	—	—	—	(37)	—	—	(37)
Balance at December 31, 2014	575	560	558,194	5	3,790	11,467	(138)	(4,550)	11,134
Net income	—	—	—	—	—	2,297	—	—	2,297
Other comprehensive loss	—	—	—	—	—	—	(22)	—	(22)
Purchases of treasury stock	—	—	—	—	—	—	—	(1,715)	(1,715)
Common stock issued under employee benefit plans	—	—	83	—	4	—	—	—	4
Common stock issued and stock-based compensation expense	—	—	2,402	—	91	—	—	—	91
Dividends — common stock ($1.08 per share)	—	—	—	—	—	(477)	—	—	(477)
Dividends — preferred stock ($65.00 per share)	—	—	—	—	—	(37)	—	—	(37)
Balance at December 31, 2015	575	560	560,679	5	3,885	13,250	(160)	(6,265)	11,275
Net income	—	—	—	—	—	2,393	—	—	2,393
Other comprehensive loss	—	—	—	—	—	—	(1)	—	(1)
Purchases of treasury stock	—	—	—	—		—	—	(1,908)	(1,908)
Common stock issued under employee benefit plans	—	—	81	—	4	—	—	—	4
Common stock issued and stock-based compensation expense	—	—	1,654	—	73	—	—	—	73
Dividends — common stock ($1.16 per share)	—	—	—	—	—	(476)	—	—	(476)
Dividends — preferred stock ($65.00 per share)	—	—	—	—	—	(37)	—	—	(37)
Balance at December 31, 2016	575	$ 560	562,414	$ 5	$ 3,962	$ 15,130	$ (161)	$ (8,173)	$ 11,323

See Notes to the Consolidated Financial Statements.

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DISCOVER FINANCIAL SERVICES
Consolidated Statements of Cash Flows

	For the Years Ended December 31,		
	2016	2015	2014
	(dollars in millions)		
Cash flows from operating activities			
Net income	$2,393	$2,297	$2,323
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for loan losses	1,859	1,512	1,443
Depreciation and amortization	351	391	369
Amortization of deferred revenues and accretion of accretable yield on acquired loans	(395)	(432)	(474)
Net loss (gain) on origination and sale of loans, investments, and other assets	57	(26)	(56)
Proceeds from sale of mortgage loans originated for sale	—	2,714	2,811
Net principal disbursed on mortgage loans originated for sale	—	(2,519)	(2,700)
Other, net	113	(8)	275
Changes in assets and liabilities:			
Increase in other assets	(187)	(237)	(238)
Increase in accrued expenses and other liabilities	234	162	73
Net cash provided by operating activities	4,425	3,854	3,826
Cash flows from investing activities			
Maturities and sales of available-for-sale investment securities	1,342	1,517	1,460
Purchases of available-for-sale investment securities	—	(677)	(390)
Maturities of held-to-maturity investment securities	24	17	10
Purchases of held-to-maturity investment securities	(56)	(37)	(53)
Net principal disbursed on loans originated for investment	(5,978)	(3,479)	(5,095)
Purchases of other investments	(51)	(51)	(60)
Decrease in restricted cash	4	7	76
Proceeds from sale of premises and equipment	—	1	—
Purchases of premises and equipment	(179)	(168)	(145)
Proceeds from sale of subsidiaries	—	2	—
Net cash used for investing activities	(4,894)	(2,868)	(4,197)
Cash flows from financing activities			
Net decrease in short-term borrowings	—	(113)	(27)
Proceeds from issuance of securitized debt	3,070	2,975	5,049
Maturities and repayment of securitized debt	(3,419)	(3,634)	(4,678)
Proceeds from issuance of other long-term borrowings	1,122	2,789	1,646
Proceeds from issuance of common stock	7	5	5
Purchases of treasury stock	(1,908)	(1,715)	(1,564)
Net increase in deposits	4,453	1,510	1,137
Dividends paid on common and preferred stock	(514)	(515)	(467)
Net cash provided by financing activities	2,811	1,302	1,101
Net increase in cash and cash equivalents	2,342	2,288	730
Cash and cash equivalents, at beginning of period	9,572	7,284	6,554
Cash and cash equivalents, at end of period	$11,914	$9,572	$7,284

SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION:

Cash paid during the period for:			
Interest expense	$1,211	$1,070	$933
Income taxes, net of income tax refunds	$1,300	$1,341	$1,388

See Notes to the Consolidated Financial Statements.

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Notes to the Consolidated Financial Statements

1. Background and Basis of Presentation

Description of Business

Discover Financial Services ("DFS" or the "Company") is a direct banking and payment services company. The Company is a bank holding company under the Bank Holding Company Act of 1956 as well as a financial holding company under the Gramm-Leach-Bliley Act and therefore is subject to oversight, regulation and examination by the Board of Governors of the Federal Reserve System (the "Federal Reserve"). The Company provides direct banking products and services and payment services through its subsidiaries. The Company offers its customers credit card loans, private student loans, personal loans, home equity loans and deposit products. The Company also operates the Discover Network, the PULSE network ("PULSE") and Diners Club International ("Diners Club"). The Discover Network processes transactions for Discover-branded credit cards and provides payment transaction processing and settlement services. PULSE operates an electronic funds transfer network, providing financial institutions issuing debit cards on the PULSE network with access to ATMs domestically and internationally, as well as point-of-sale ("POS") terminals at retail locations throughout the U.S. for debit card transactions. Diners Club is a global payments network of licensees, which are generally financial institutions, that issue Diners Club branded charge cards and/or provide card acceptance services.

The Company's business segments are Direct Banking and Payment Services. The Direct Banking segment includes Discover-branded credit cards issued to individuals on the Discover Network and other consumer products and services, including private student loans, personal loans, home equity loans, and other consumer lending and deposit products. The majority of Direct Banking revenues relate to interest income earned on the segment's loan products. Additionally, the Company's credit card products generate substantially all revenues related to discount and interchange, protection products and loan fee income.

The Payment Services segment includes PULSE, an automated teller machine, debit and electronic funds transfer network; Diners Club, a global payments network; and the Company's Network Partners business, which provides payment transaction processing and settlement services on the Discover Network. The majority of Payment Services revenues relate to transaction processing revenue from PULSE and royalty and licensee revenue from Diners Club.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP"). The preparation of financial statements in conformity with GAAP requires the Company to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and related disclosures. These estimates are based on information available as of the date of the consolidated financial statements. The Company believes that the estimates used in the preparation of the consolidated financial statements are reasonable. Actual results could differ from these estimates.

Change in Accounting Principle

In April 2015, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2015-03, Interest—-Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, which makes the presentation of debt issuance costs consistent with that of debt discounts and premiums. This ASU requires that debt issuance costs related to a recognized liability be presented in the balance sheet as a direct deduction from the carrying amount of that liability. Before becoming effective for the Company on January 1, 2016, these costs were recorded as deferred charges presented in other assets on the consolidated statements of financial condition. The guidance requires retrospective application in the financial statements. As such, some balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of a related liability. The impact of adopting this ASU was a reduction of other assets of $137 million, a reduction of long-term borrowings of $74 million and a reduction of deposits of $63 million at December 31, 2015 when compared with the same 2015 balances not reflecting the debt issuance cost guidance. There was no impact to the consolidated statements of income.

Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. The Company's policy is to consolidate all entities in which it owns more than 50% of the outstanding voting stock

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unless it does not control the entity. However, the Company did not have a controlling voting interest in any entity other than its wholly-owned subsidiaries in the periods presented in the accompanying consolidated financial statements.

It is also the Company's policy to consolidate any variable interest entity ("VIE") for which the Company is the primary beneficiary, as defined by GAAP. On this basis, the Company consolidates the Discover Card Master Trust I ("DCMT") and the Discover Card Execution Note Trust ("DCENT") as well as three student loan securitization trusts acquired in 2010. The Company is deemed to be the primary beneficiary of each of these trusts since it is, for each, the trust servicer and the holder of both the residual interest and the majority of the most subordinated interests. Because of those involvements, the Company has, for each trust, i) the power to direct the activities that most significantly impact the economic performance of the trust, and ii) the obligation (or right) to absorb losses (or receive benefits) of the trust that could potentially be significant. The Company has determined that it was not the primary beneficiary of any other VIE during the years ended December 31, 2016, 2015 and 2014.

For investments in any entities in which the Company owns 50% or less of the outstanding voting stock but in which the Company has significant influence over operating and financial decisions, the Company applies the equity method of accounting. The Company also applies the equity method to its investments in qualified affordable housing projects and similar tax credit partnerships. In cases where the Company's equity investment is less than 20% and significant influence does not exist, such investments are carried at cost.

Recently Issued Accounting Pronouncements

In November 2016, the FASB issued ASU No. 2016-18, Statement of Cash Flows (Topic 230): Restricted Cash. Whereas restricted cash balances have traditionally been excluded from the statement of cash flows, this ASU requires restricted cash and restricted cash equivalents to be included within the beginning and ending totals of cash, cash equivalents and restricted cash, presented on the statement of cash flows for the respective comparative reporting periods. Restricted cash and restricted cash equivalent inflows and outflows with external parties are required to be classified within the operating, investing, and/or financing activity sections of the statement of cash flows whereas transfers between cash and cash equivalents and restricted cash and restricted cash equivalents should no longer be presented on the statement of cash flows. ASU 2016-18 also requires the nature of the restrictions to be disclosed to help provide information about the sources and uses of these balances during a reporting period and a reconciliation of the cash, cash equivalents and restricted cash totals on the statement of cash flows to the related balance sheet line items when cash, cash equivalents, and restricted cash are presented in more than one line item on the balance sheet. The reconciliation can be presented either on the face of the statement of cash flows or in the notes to the financial statements and must be provided for each period that a balance sheet is presented. The ASU will become effective for the Company on January 1, 2018, with early adoption permitted, and is not expected to have a material impact to the Company’s statement of cash flows.

In June 2016, the FASB issued ASU No. 2016-13, Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments. This ASU eliminates the incurred loss threshold for initial recognition in current GAAP and replaces it with the expected loss concept. For all loans carried at amortized cost, companies will be required to measure their allowance for loan losses based on management’s current estimate of all expected credit losses over the remaining contractual term of the assets. Because it eliminates the incurred loss trigger, the new accounting guidance will require companies, upon the origination of a loan, to record their estimate of all expected credit losses on that loan through an immediate charge to earnings. The estimate of loan losses must be based on historical experience, current conditions and reasonable and supportable forecasts. The ASU does not mandate the use of any specific method for estimating credit loss, permitting companies to use judgment in selecting the approach that is most appropriate in their circumstances.

The new rules are expected to affect the Company’s allowance for loan losses as a result of: (1) the requirement to measure the allowance based on all losses expected to occur over the remaining life of the loans receivable rather than including only losses deemed to be related to a past event or current condition, and (2) the reclassification of the non-accretable credit adjustment, currently embedded in the Company’s purchased credit-impaired ("PCI") student loan portfolio, into the allowance for loan losses. The separate measurement guidance applicable today for loans modified in a troubled debt restructuring will also be affected. Both troubled debt restructurings and PCI assets, which the ASU refers to as purchased credit-deteriorated (“PCD”), will still be subject to certain separate disclosure requirements. Measurement of credit impairment of available-for-sale debt securities will remain unchanged under the new rules, but any such impairment will be recorded through an allowance, rather than a direct write-down of the security.

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The ASU will become effective for the Company on January 1, 2020, with early adoption permitted no sooner than January 1, 2019. Upon adoption, a cumulative effect adjustment to retained earnings will be recorded as of the beginning of the first reporting period in which the guidance is effective in an amount necessary to adjust the allowance for loan losses to equal the current estimate of expected losses on financial assets held at that date. Additionally, upon adoption, the carrying value of PCD loans will be increased through an offsetting addition to the allowance for loan losses for the amount of expected credit losses on those loans, to be evaluated and adjusted on a periodic basis, and any non-credit premium or discount will be amortized or accreted to interest income from that point forward over the remaining life of PCD loans. Management is evaluating the standard, initiating implementation efforts across the Company, and planning for loss modeling requirements consistent with lifetime expected loss estimates. Adoption of the standard could have a potentially material impact on how the Company records and reports its financial condition and results of operations, and on regulatory capital. The extent of the impact upon adoption will likely depend on the characteristics of the Company's loan portfolio and economic conditions at that date, as well as forecasted conditions thereafter.

In March 2016, the FASB issued ASU No. 2016-09, Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting. This ASU requires excess tax benefits and tax deficiencies, which arise due to differences between the measure of compensation expense for GAAP accounting purposes and the amount deductible for tax purposes, to be recorded directly through the income statement as a component of income tax expense. Under current GAAP, these differences are generally recorded in additional paid-in capital and thus have no impact on net income today. The change in treatment of excess tax benefits and tax deficiencies will also impact the computation of diluted earnings per share, and the cash flows associated with those items will be classified as operating activities on the statement of cash flows. The ASU permits certain elective changes associated with stock compensation accounting. For example, companies can elect to account for forfeitures of awards as they occur rather than projecting forfeitures in the accrual of compensation expense. In addition, the ASU increases the proportion of shares an employer is permitted (though not required) to withhold on behalf of an employee to satisfy the employee's income tax burden on a share-based award without causing the award to become subject to liability accounting. This ASU became effective for the Company on January 1, 2017. The impact to net income and earnings per share that will result from the treatment of excess tax benefits after adoption of ASU 2016-09 will depend on the difference between the market price of Company stock between the grant dates and subsequent vesting dates of share-based awards, and this impact could be positive or negative depending on how the Company's stock price moves. The Company will continue to incorporate estimated forfeitures in the accrual of compensation expense. If the Company elects to permit employees to request withholdings of shares in excess of the statutory minimum to cover personal tax liabilities, it will have no financial statement impact. The Company has no plans to make any change concerning this practice at this time.

In March 2016, the FASB issued ASU No. 2016-08, Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net). The guidance in this ASU provides clarification on the principal versus agent concept in relation to revenue recognition guidance issued as part of ASU 2014-09, Revenue from Contracts with Customers (Topic 606). Topic 606 requires a company to determine whether it is a principal or an agent in a transaction in which another party is involved in providing goods or services to a customer by evaluating the nature of its promise to the customer. ASU 2016-08 provides clarification for identifying the good, service or right being transferred in a revenue transaction and identifies the principal as the party that controls the good, service or right prior to its transfer to the customer. The ASU provides further clarity on how to evaluate control in this context. This guidance will become effective for the Company on January 1, 2018 and management is evaluating the impact of these changes as part of its overall evaluation of ASU 2014-09, discussed below.

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The guidance will require lessees to capitalize most leases on their balance sheet whereas under current GAAP only capital leases are recognized on the lessee's balance sheet. Leases which today are identified as capital leases will generally be identified as financing leases under the new guidance but otherwise their accounting treatment will remain relatively unchanged. Leases identified today as operating leases will generally remain in that category under the new standard, but both a right-of-use asset and a liability for remaining lease payments will now be required to be recognized on the balance sheet for this type of lease. The manner in which expenses associated with all leases are reported on the income statement will remain mostly unchanged. Lessor accounting also remains substantially unchanged by the new standard. The new guidance will become effective for the Company on January 1, 2019, and management does not anticipate it to have a material impact on the consolidated financial statements.

In January 2016, the FASB issued ASU No. 2016-01, Financial Instruments—Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities. The ASU will have limited impact on the

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Company since it does not change the guidance for classifying and measuring investments in debt securities or loans. The standard requires entities to measure certain cost-method equity investments at fair value with changes in value recognized in net income. Equity investments that do not have readily determinable fair values will be carried at cost, less any impairment, plus or minus changes resulting from any observable price changes in orderly transactions for an identical or similar investment of the same issuer. This ASU requires public entities to use the exit price notion when measuring the fair value of financial instruments for disclosure purposes and requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset (i.e., securities or loans) on the balance sheet or the accompanying notes to the financial statements. This ASU will become effective for the Company on January 1, 2018 and is not expected to have a material impact to the financial statements.

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers (Topic 606). The guidance in this ASU supersedes existing revenue recognition requirements in Topic 605, Revenue Recognition, including an assortment of transaction-specific and industry-specific rules. This ASU establishes a principles-based model under which revenue from a contract is allocated to the distinct performance obligations within the contract and recognized in income as each performance obligation is satisfied. ASU Topic 606 does not apply to rights or obligations associated with financial instruments (for example, interest income from loans or investments, or interest expense on debt), and therefore the Company’s net interest income should not be affected. The Company’s revenue from discount and interchange, protection products, transaction processing and certain fees are within the scope of these rules. Throughout 2015, management followed the discussions of the FASB and evaluated the conclusions published by its Transition Resource Group ("TRG"), specifically those pertaining to how the new revenue recognition rules should be interpreted for credit card arrangements, loyalty programs and transaction processing arrangements. Those discussions support the conclusion that timing and measurement of fee revenues associated with the Company’s credit card arrangements and costs associated with the Company’s credit card reward programs will not be impacted by the new rules. The FASB TRG discussions and guidance also support the conclusion that the timing and measurement of revenue associated with the Company’s transaction processing services, including discount and interchange and other transaction processing fees, will remain substantially unchanged under the new accounting model. This conclusion covers the vast majority of the Company’s revenue that is within the scope of the new standard. While management continues to evaluate the remaining in-scope revenue items to determine what, if any, impact the rules will have on their accounting and reporting, no material impacts are expected. The new revenue recognition model will become effective for the Company on January 1, 2018. Upon adoption in 2018, the Company will record an adjustment, if needed, to retained earnings as of the beginning of the year of initial application, which can be either the earliest comparative period presented, with all periods presented under the new rules, or January 1, 2018, without restating prior periods presented. Because little if any change in timing or measurement of the Company’s revenue is expected to occur under the new standard, management does not expect to present any restated prior period amounts when the standard becomes effective in 2018.

2. Summary of Significant Accounting Policies

Cash and Cash Equivalents

Cash and cash equivalents is defined by the Company as cash on deposit with banks, including time deposits and other highly liquid investments, with maturities of 90 days or less when purchased. Cash and cash equivalents included $1.2 billion and $0.9 billion of cash and due from banks and $10.7 billion and $8.6 billion of interest-earning deposits in other banks at December 31, 2016 and 2015, respectively.

Restricted Cash

Restricted cash includes cash for which the Company's ability to withdraw funds at any time is contractually limited. Restricted cash is generally designated for specific purposes arising out of certain contractual or other obligations.

Investment Securities

At December 31, 2016, investment securities consisted of U.S. Treasury obligations, mortgage-backed securities issued by government agencies and debt instruments issued by states and political subdivisions of states. Investment securities that the Company has the positive intent and ability to hold to maturity are classified as held-to-maturity and are reported at amortized cost. All other investment securities are classified as available-for-sale, as the Company does not hold investment securities for trading purposes. Available-for-sale investment securities are reported at fair value with unrealized gains and losses, net of tax, reported as a component of accumulated other comprehensive income ("AOCI") included in stockholders' equity. The Company estimates the fair value of available-for-sale investment securities as more fully discussed in Note 21: Fair Value Measurements and Disclosures. The amortized cost for each held-to-maturity and available-for-sale investment security is adjusted for amortization of premiums or accretion of discounts, as appropriate. Such amortization or accretion is included in interest income. The Company evaluates its unrealized loss positions for other-than-temporary impairment in accordance with GAAP applicable for investments in debt and equity securities. Realized gains and losses and the credit loss portion of other-than-temporary impairments related to investment securities are determined at the individual security level and are reported in other income.

Loan Receivables

Loan receivables consist of credit card receivables, other loans and PCI loans. Loan receivables also include unamortized net deferred loan origination fees and costs (also see "— Significant Revenue Recognition Accounting Policies — Loan Interest and Fee Income"). Credit card loan receivables are reported at their principal amounts outstanding and include uncollected billed interest and fees and are reduced for unearned revenue related to balance transfer fees (also see "— Significant Revenue Recognition Accounting Policies — Loan Interest and Fee Income"). Other loans consist of student loans, personal loans and other loans and are reported at their principal amounts outstanding. For student loans, principal amounts outstanding also include accrued interest that has been capitalized. The Company's loan receivables are deemed to be held for investment at origination or acquisition because management has the intent and ability to hold them for the foreseeable future. Cash flows associated with loans originated or acquired for investment are classified as cash flows from investing activities, regardless of a subsequent change in intent.

Purchased Credit-Impaired Loans

PCI loans are loans acquired at prices which reflected a discount related to deterioration in individual loan credit quality since origination. The Company's PCI loans are comprised entirely of acquired private student loans.

The PCI student loans were aggregated into pools based on common risk characteristics at the time of their acquisition. Loans were grouped primarily on the basis of origination date as loans originated in a particular year generally reflect the application of common origination strategies and/or underwriting criteria. Each pool is accounted for as a single asset and each has a single composite interest rate, total contractual cash flows and total expected cash flows.

Interest income on PCI loans is recognized on the basis of expected cash flows rather than contractual cash flows. The total amount of interest income recognizable on a pool of PCI loans (i.e., its accretable yield) is the difference between the carrying amount of the loan pool and the future cash flows expected to be collected without regard to whether the expected cash flows represent principal or interest collections. Interest is recognized on an effective yield basis over the life of the loan pool.

The initial estimates of the fair value of the PCI student loans included the impact of expected credit losses, and therefore, no allowance for loan losses was recorded as of the purchase dates. The difference between contractually required cash flows and cash flows expected to be collected, as measured at the acquisition dates, is not permitted to be accreted. Charge-offs are absorbed by this non-accretable difference and do not result in a charge to earnings. However, as noted below, a charge to provision expense may be necessary to the extent that expected credit losses increase after the acquisition date.

The estimate of cash flows expected to be collected is evaluated each reporting period to ensure it reflects management's latest expectations of future credit losses and borrower prepayments, and interest rates in effect in the current period. To the extent expected credit losses increase after the acquisition dates, the Company will record an allowance for loan losses through the provision for loan losses, which will reduce net income. Changes in expected cash flows related to changes in prepayments or interest rate indices for variable rate loans generally are recorded prospectively as adjustments to interest income.

To the extent that a significant increase in cash flows due to lower expected losses is deemed probable, the Company will first reverse any previously established allowance for loan losses and then increase the amount of remaining accretable yield. The increase to yield would be recognized prospectively over the remaining life of the loan pool. An increase in the accretable yield would reduce the remaining non-accretable difference available to absorb subsequent charge-offs. Disposals of loans, which may include sales of loans or receipt of payments in full from the borrower or charge-offs, result in removal of the loans from their respective pools.

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Delinquent Loans and Charge-Offs

The entire balance of an account is contractually past due if the minimum payment is not received by the specified date on the customer's billing statement. Delinquency is reported on loans that are 30 days or more past due.

Credit card loans are charged off at the end of the month during which an account becomes 180 days past due. Closed-end consumer loan receivables are charged off at the end of the month during which an account becomes 120 days contractually past due. Customer bankruptcies and probate accounts are charged off at the end of the month 60 days following the receipt of notification of the bankruptcy or death, but not later than the 180-day or 120-day time frame described above. Receivables associated with alleged or potential fraudulent transactions are adjusted to their net realizable value upon receipt of notification of such fraud through a charge to other expense and are subsequently written off at the end of the month 90 days following notification, but not later than the contractual 180-day or 120-day time frame described above. The Company's charge-off policies are designed to comply with guidelines established by the Federal Financial Institutions Examination Council (“FFIEC”).

The Company's net charge-offs include the principal amount of loans charged off less principal recoveries and exclude charged-off interest and fees, recoveries of interest and fees and fraud losses.

The practice of re-aging an account also may affect loan delinquencies and charge-offs. A re-age is intended to assist delinquent customers who have experienced financial difficulties but who demonstrate both an ability and willingness to repay. Accounts meeting specific criteria are re-aged when the Company and the customer agree on a temporary repayment schedule that may include concessionary terms. With re-aging, the outstanding balance of a delinquent account is returned to a current status. Customers may also qualify for a workout re-age when either a longer term or permanent hardship exists. The Company's re-age practices are designed to comply with FFIEC guidelines.

Allowance for Loan Losses

The Company maintains an allowance for loan losses at a level that is appropriate to absorb probable losses inherent in the loan portfolio. The estimate of probable incurred losses considers uncollectible principal, interest and fees associated with the Company's loan receivables. The allowance is evaluated quarterly for appropriateness and is maintained through an adjustment to the provision for loan losses. Charge-offs of principal amounts of loans outstanding are deducted from the allowance and subsequent recoveries of such amounts increase the allowance. Charge-offs of loan balances representing unpaid interest and fees result in a reversal of interest and fee income, respectively, which is effectively a reclassification of provision of loan losses (also see “— Significant Revenue Recognition Accounting Policies — Loan Interest and Fee Income”).

The Company calculates its allowance for loan losses by estimating probable losses separately for classes of the loan portfolio with similar loan characteristics, which generally results in segmenting the portfolio by loan product type. The Company bases its allowance for loan losses on several analyses that help estimate incurred losses as of the balance sheet date. While the Company's estimation process includes historical data and analysis, there is a significant amount of judgment applied in selecting inputs and analyzing the results produced by the models to determine the allowance. For substantially all of its loan receivables, the Company uses a migration analysis to estimate the likelihood that a loan will progress through the various stages of delinquency. The Company uses other analyses to estimate losses incurred on non-delinquent and bankrupt accounts. The considerations in these analyses include past and current loan performance, loan growth and seasoning, current risk management practices, account collection strategies, economic conditions, bankruptcy filings, policy changes and forecasting uncertainties. Consideration of past and current loan performance includes the post-modification performance of loans modified in a troubled debt restructuring. For the majority of its portfolio, the Company estimates its allowance for loan losses on a pooled basis, which includes loans that are delinquent and/or no longer accruing interest and/or certain loans that have defaulted from a loan modification program.

As part of certain collection strategies, the Company may modify the terms of loans to customers experiencing financial hardship. Temporary and permanent modifications on credit card and personal loans, as well as temporary modifications on student loans and certain grants of student loan forbearance are accounted for as troubled debt restructurings. The Company considers a modified loan in which a concession has been granted to the borrower to be a troubled debt restructuring based on the cumulative length of the concession period and credit quality of the borrower.

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Loan receivables, other than PCI loans, that have been modified under a troubled debt restructuring are evaluated separately from the pools of receivables that are subject to the collective analyses described above. Loan receivables modified in a troubled debt restructuring are recorded at their present values with impairment measured as the difference between the recorded investment in the loan and the discounted present value of cash flows expected to be collected. Consistent with the Company's measurement of impairment of modified loans on a pooled basis, the discount rate used for credit card loans in internal programs is the average current annual percentage rate applied to non-impaired credit card loans, which approximates what would have applied to the pool of modified loans prior to modification. The discount rate used for credit card loans in external programs reflects a rate that is consistent with rates offered to cardmembers not in a program that have similar risk characteristics. For student and personal loans, the discount rate used is the average contractual rate prior to modification. Changes in the present value are recorded in the provision for loan losses. All of the Company's troubled debt restructurings, which are evaluated collectively on an aggregated (by loan type) basis, have a related allowance for loan losses.

Premises and Equipment, net

Premises and equipment, net, are stated at cost less accumulated depreciation and amortization, which is computed using the straight-line method over the estimated useful lives of the assets. Buildings are depreciated over a period of 39 years. The costs of leasehold improvements are capitalized and depreciated over the lesser of the remaining term of the lease or the asset's estimated useful life, typically ten years. Furniture and fixtures are depreciated over a period of five to ten years. Equipment is depreciated over three to ten years. Capitalized leases, consisting of computers and processing equipment, are depreciated over three and six years, respectively. Maintenance and repairs are immediately expensed, while the costs of improvements are capitalized.

Purchased software and capitalized costs related to internally developed software are amortized over their useful lives of three to ten years. Costs incurred during the application development stage related to internally developed software are capitalized. Costs are expensed as incurred during the preliminary project stage and post implementation stage. Once the capitalization criteria as defined in GAAP have been met, external direct costs incurred for materials and services used in developing or obtaining internal-use computer software and payroll and payroll-related costs for employees who are directly associated with the internal-use computer software project (to the extent those employees devoted time directly to the project) are capitalized. Amortization of capitalized costs begins when the software is ready for its intended use. Capitalized software is included in premises and equipment, net in the Company's consolidated statements of financial condition. See Note 7: Premises and Equipment for further information about the Company's premises and equipment.

Cloud computing arrangements involving the licensing of software that meet certain criteria are recognized as the acquisition of software. Such assets are measured at the present value of the license obligation, if the license is to be paid over time, in addition to any capitalized upfront costs and amortized over the life of the arrangement. Cloud computing arrangements that do not meet the criteria to be recognized as acquired software are accounted for as service contracts. To date, none of the Company’s cloud computing arrangements have met the criteria to be recognized as acquired software.

Goodwill

Goodwill is recorded as part of the Company's acquisitions of businesses when the purchase price exceeds the fair value of the net tangible and separately identifiable intangible assets acquired. The Company's goodwill is not amortized, but rather is subject to an impairment test at the reporting unit level annually as of October 1, or between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. The Company's reported goodwill relates to PULSE, which it acquired in 2005. The Company's goodwill impairment analysis is a two-step test. In the first step, the fair value of the reporting unit is compared to its carrying value. If the fair value of the reporting unit exceeds its carrying value including goodwill, goodwill is not impaired. If the carrying value including goodwill exceeds its fair value, goodwill is potentially impaired and the second step of the test becomes necessary. In the second step, the implied fair value of goodwill is derived and compared to the carrying amount of goodwill. The implied fair value of goodwill is the excess of the fair value of the reporting unit over the sum of the fair values of all identifiable assets less the liabilities associated with the reporting unit. If the carrying value of goodwill allocated to the reporting unit exceeds its implied fair value, an impairment charge is recorded for the excess. No impairment was identified during the impairment test conducted at October 1, 2016.

Intangible Assets
The Company's identifiable intangible assets consist of both amortizable and non-amortizable intangible assets. The Company's amortizable intangible assets consist primarily of acquired customer relationships and certain trade name intangibles. All of the Company's amortizable intangible assets are carried at net book value and are amortized over their estimated useful lives. The amortization periods approximate the periods over which the Company expects to generate future net cash inflows from the use of these assets. The Company's policy is to amortize intangibles in a manner that reflects the pattern in which the projected net cash inflows to the Company are expected to occur, where such pattern can be reasonably determined, as opposed to the straight-line basis. This method of amortization typically results in a greater portion of the intangible asset being amortized in the earlier years of its useful life.
All of the Company's amortizable intangible assets, as well as other amortizable or depreciable long-lived assets such as premises and equipment, are subject to impairment testing when events or conditions indicate that the carrying value of an asset may not be fully recoverable from future cash flows. A test for recoverability is done by comparing the asset's carrying value to the sum of the undiscounted future net cash inflows expected to be generated from the use of the asset over its remaining useful life. Impairment exists if the sum of the undiscounted expected future net cash inflows is less than the carrying amount of the asset. Impairment would result in a write-down of the asset to its estimated fair value. The estimated fair values of these assets are based on the discounted present value of the stream of future net cash inflows expected to be derived over the remaining useful lives of the assets. If an impairment write-down is recorded, the remaining useful life of the asset will be evaluated to determine whether revision of the remaining amortization or depreciation period is appropriate.
The Company's non-amortizable intangible assets consist of the international transaction processing rights and brand-related intangibles included in the acquisition of Diners Club as well as the trade names acquired in The Student Loan Corporation acquisition. These assets are deemed to have indefinite useful lives and are therefore not subject to amortization. All of the Company's non-amortizable intangible assets are subject to a test for impairment annually as of October 1, or more frequently if events or changes in circumstances indicate that the asset might be impaired. As required by GAAP, if the carrying value of a non-amortizable intangible asset is in excess of its fair value, the asset must be written down to its fair value through the recognition of an impairment charge to earnings. In contrast to amortizable intangibles, there is no test for recoverability associated with the impairment test for non-amortizable intangible assets. No impairment was identified during the impairment test conducted at October 1, 2016.
Stock-based Compensation
The Company measures the cost of employee services received in exchange for an award of stock-based compensation based on the grant-date fair value of the award. The cost, net of estimated forfeitures, is recognized over the requisite service period, except for awards granted to retirement-eligible employees, which are fully expensed on the grant date. No compensation cost is recognized for awards that are subsequently forfeited.
Advertising Costs
The Company expenses television advertising costs in the period in which the advertising is first aired and all other advertising costs as incurred. Advertising costs are recorded in marketing and business development and were $196 million, $198 million and $194 million for the years ended December 31, 2016, 2015 and 2014, respectively.
Income Taxes
Income tax expense is provided for using the asset and liability method, under which deferred tax assets and liabilities are determined based on the temporary differences between the financial statement and income tax bases of assets and liabilities using currently enacted tax rates. Deferred tax assets are recognized when their realization is determined to be more likely than not. Uncertain tax positions are measured at the highest amount of tax benefit for which realization is judged to be more likely than not. Tax benefits that do not meet these criteria are unrecognized tax benefits. See Note 16: Income Taxes for more information about the Company's income taxes.
Financial Instruments Used for Asset and Liability Management
The Company utilizes derivative financial instruments to manage its various exposures to changes in fair value of certain assets and liabilities, variability in future cash flows arising from changes in interest rates or other types of forecasted transactions, and changes in foreign exchange rates. All derivatives are carried at their estimated fair values on the Company’s consolidated statements of financial condition. Derivatives having gross positive fair values,

inclusive

of net accrued interest receipts or payments, are recorded in other assets. Derivatives with gross negative fair values, inclusive of net accrued interest payments or receipts, are recorded in accrued expenses and other liabilities. The methodologies used to estimate the fair values of these derivative financial instruments are described in Note 21: Fair Value Measurements and Disclosures. Collateral receivable or payable amounts associated with derivatives are not offset against the fair value of these derivatives, but are recorded separately in other assets or deposits, respectively. Certain of these instruments are designated and qualify for hedge accounting. A hedge is deemed effective to the extent that the change in fair value, cash flow, or net investment of the hedged item is offset by changes in the hedging instrument. If the change in the hedging instrument is more or less than the change in fair value, cash flow, or net investment of the hedged item, the difference is referred to as the ineffective portion of the hedge. Under cash flow hedge accounting, the effective portion of the change in the fair value of these derivative instruments is recognized in other comprehensive income ("OCI"). The change in fair value of these derivative instruments relating to the ineffective portion is recognized immediately in other income. Amounts accumulated in OCI are reclassified to earnings in the period during which the hedged items affect income. The ineffective portion of the change in fair value of the derivatives, if any, is recognized directly in earnings. Amounts are reclassified out of AOCI into earnings when a hedged net investment is either sold or substantially liquidated. Under fair value hedge accounting, changes in both (i) the fair values of the derivative instruments and (ii) the fair values of the hedged items relating to the risks being hedged, including net differences, if any (i.e., ineffectiveness), are recorded in interest expense. Certain other derivatives are not designated as hedges or do not qualify for hedge accounting; changes in the fair value of these derivatives are recorded in other income. These transactions are discussed in more detail in Note 22: Derivatives and Hedging Activities.

Accumulated Other Comprehensive Income

The Company records unrealized gains and losses on available-for-sale securities, changes in the fair value of cash flow hedges, and certain pension and foreign currency translation adjustments in OCI on an after-tax basis where applicable. Details of other comprehensive income, net of tax, are presented in the statement of comprehensive income, and a rollforward of AOCI is presented in the statement of changes in stockholders' equity and Note 14: Accumulated Other Comprehensive Income.

Significant Revenue Recognition Accounting Policies

Loan Interest and Fee Income

Interest on loans is comprised largely of interest on credit card loans and is recognized based upon the amount of loans outstanding and their contractual interest rate. Interest on credit card loans is included in loan receivables when billed to the customer. The Company accrues unbilled interest revenue each month from a customer's billing cycle date to the end of the month. The Company applies an estimate of the percentage of loans that will revolve in the next cycle in the estimation of the accrued unbilled portion of interest revenue that is included in accrued interest receivable on the consolidated statements of financial condition. Interest on other loan receivables is accrued monthly in accordance with their contractual terms and recorded in accrued interest receivable, which is included in other assets, in the consolidated statements of financial condition. Interest related to PCI loans is discussed in Note 5: Loan Receivables.

The Company recognizes fees (except balance transfer fees and certain product fees) on loan receivables in interest income or loan fee income as the fees are assessed. Balance transfer fees and certain product fees are recognized in interest income or loan fee income ratably over the periods to which they relate. Balance transfer fees are accreted to interest income over the life of the related balance. As of December 31, 2016 and 2015, deferred revenues related to balance transfer fees, recorded as a reduction of loan receivables, were $41 million and $36 million, respectively. Loan fee income consists of fees on credit card loans and includes late, cash advance, returned check and other miscellaneous fees and is reflected net of waivers and charge-offs.

Direct loan origination costs on credit card loans are deferred and amortized on a straight-line basis over a one year period and recorded in interest income from credit card loans. Direct loan origination costs on other loan receivables are deferred and amortized over the life of the loan using the interest method and are recorded in interest income from other loans. As of December 31, 2016 and 2015, the remaining unamortized deferred costs related to loan origination were $74 million and $58 million, respectively, and were recorded in loan receivables.

The Company accrues interest and fees on loan receivables until the loans are paid or charged off, except in instances of customer bankruptcy, death or fraud, where no further interest and fee accruals occur following notification. Credit card and closed-end consumer loan receivables are placed on non-accrual status upon receipt of notification of the bankruptcy or death of a customer or suspected fraudulent activity on an account. Upon completion of the fraud investigation, non-fraudulent credit card and closed-end consumer loan receivables may resume accruing interest. Payments received on non-accrual loans are allocated according to the same payment hierarchy methodology applied to loans that are accruing interest. When loan receivables are charged off, unpaid accrued interest and fees are reversed against the income line items in which they were originally recorded in the consolidated statements of income. Charge-offs and recoveries of amounts which relate to capitalized interest on student loans are treated as principal charge-offs and recoveries, affecting the provision for loan losses rather than interest income. The Company considers uncollectible interest and fee revenues in assessing the adequacy of the allowance for loan losses.

Interest income from loans individually evaluated for impairment, including loans accounted for as troubled debt restructurings, is accounted for in the same manner as other accruing loans. Cash collections on these loans are allocated according to the same payment hierarchy methodology applied to loans that are not in such programs.

Discount and Interchange Revenue

The Company earns discount revenue from fees charged to merchants with whom the Company has entered into card acceptance agreements primarily for processing credit card purchase transactions. The Company earns acquirer interchange revenue from merchant acquirers on all Discover Network, Diners Club and PULSE transactions made by credit and debit cardholders at merchants with whom merchant acquirers have entered into card acceptance agreements for processing payment card transactions. The Company pays issuer interchange to network partners who have entered into contractual arrangements to issue cards on the Company's networks as compensation for risk and other operating costs. The discount revenue or acquirer interchange is recognized as revenue, net of any associated issuer interchange cost, at the time the transaction is captured.

Customer Rewards

The Company offers its customers various reward programs, including the Cashback Bonus reward program, pursuant to which the Company pays certain customers a reward equal to a percentage of their credit card purchase amounts based on the type and volume of the customer's purchases. The liability for customer rewards, which is included in accrued expenses and other liabilities on the consolidated statements of financial condition, is recorded on an individual customer basis and is accumulated as qualified customers earn rewards through their ongoing credit card purchase activity or other defined actions. The Company recognizes customer rewards costs as a reduction of the related revenue, if any. In instances where a reward is not associated with a revenue-generating transaction, such as when a reward is given for opening an account, the reward cost is recorded as an operating expense. For the years ended December 31, 2016, 2015 and 2014, rewards costs, adjusted for estimated forfeitures, if any, amounted to $1.4 billion, $1.3 billion and $1.4 billion, respectively. The liability for customer rewards was $1.4 billion at December 31, 2016 and 2015, respectively, and is included in accrued expenses and other liabilities on the consolidated statements of financial condition.

Protection Products

The Company earns revenue related to fees received for marketing products or services that are ancillary to the Company's credit card and personal loans to its customers, including payment protection products and identity theft protection services. The amount of revenue recorded is based on the terms of the agreements and contracts with the third parties that provide these services. The Company recognizes this income over the customer agreement or contract period as earned.

Transaction Processing Revenue

Transaction processing revenue represents fees charged to financial institutions and merchant acquirers/processors for processing ATM and debit POS transactions over the PULSE network and is recognized at the time the transactions are processed. Transaction processing revenue also includes network participant revenue earned by PULSE related to fees charged for maintenance, support, information processing and other services provided to financial institutions, processors and other participants in the PULSE network. These revenues are recognized in the period that the related transactions occur or services are rendered.

Royalty and Licensee Revenue

The Company earns revenue from licensing fees for granting the right to use the Diners Club brand and processing fees for providing various services to Diners Club licensees, which are referred to together as royalty and

licensee revenue. Royalty revenue is recognized in the period that the cardholder volume used to calculate the royalty fee is generated. Processing fees are recognized in the month that the services are provided. Royalty and licensee revenue is included in other income on the consolidated statements of income.

Incentive Payments

The Company makes certain incentive payments under contractual arrangements with financial institutions, Diners Club licensees, merchants, acquirers and certain other customers. These payments are generally classified as contra-revenue unless a specifically identifiable benefit is received by the Company in consideration for the payment and the fair value of such benefit can be reasonably estimated. If no such benefit is identified, then the entire payment is classified as contra-revenue and included in the consolidated statements of income in the line item where the related revenues are recorded. If the payment gives rise to an asset because it is expected to directly or indirectly contribute to future net cash inflows, it is deferred and recognized over the expected benefit period. The unamortized portion of the deferred incentive payments included in other assets on the consolidated statements of financial condition was $25 million and $21 million at December 31, 2016 and 2015, respectively.

3. Business Dispositions

On June 16, 2015, the Company announced the closing of the mortgage origination business it acquired in 2012, which was part of its Direct Banking segment. The disposition represented the exiting of an ancillary business and did not have a major impact on the Company's operations.

4. Investments

The Company's investment securities consist of the following (dollars in millions):

	December 31,		
	2016	2015	2014
U.S. Treasury securities[1]	$674	$1,273	$1,330
U.S. government agency securities	—	494	1,033
States and political subdivisions of states	2	7	10
Residential mortgage-backed securities - Agency[2]	1,081	1,310	1,576
Total investment securities	$1,757	$3,084	$3,949

(1) Includes $73 million, $7 million and $16 million of U.S. Treasury securities pledged as swap collateral as of December 31, 2016, 2015 and 2014, respectively.

(2) Consists of residential mortgage-backed securities issued by Fannie Mae, Freddie Mac and Ginnie Mae.

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The amortized cost, gross unrealized gains and losses, and fair value of available-for-sale and held-to-maturity investment securities are as follows (dollars in millions):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
At December 31, 2016				
Available-for-Sale Investment Securities[1]				
U.S. Treasury securities	$ 676	$ —	$ (2)	$ 674
Residential mortgage-backed securities - Agency	934	2	(5)	931
Total available-for-sale investment securities	$ 1,610	$ 2	$ (7)	$ 1,605
Held-to-Maturity Investment Securities[2]				
States and political subdivisions of states	$ 2	$ —	$ —	$ 2
Residential mortgage-backed securities - Agency[3]	150	1	(1)	150
Total held-to-maturity investment securities	$ 152	$ 1	$ (1)	$ 152
At December 31, 2015				
Available-for-Sale Investment Securities[1]				
U.S. Treasury securities	$ 1,277	$ 1	$ (6)	$ 1,272
U.S. government agency securities	492	2	—	494
Residential mortgage-backed securities - Agency	1,195	6	(4)	1,197
Total available-for-sale investment securities	$ 2,964	$ 9	$ (10)	$ 2,963
Held-to-Maturity Investment Securities[2]				
U.S. Treasury securities[4]	$ 1	$ —	$ —	$ 1
States and political subdivisions of states	7	—	—	7
Residential mortgage-backed securities - Agency[3]	113	1	—	114
Total held-to-maturity investment securities	$ 121	$ 1	$ —	$ 122

(1) Available-for-sale investment securities are reported at fair value.
(2) Held-to-maturity investment securities are reported at amortized cost.
(3) Amounts represent residential mortgage-backed securities that were classified as held-to-maturity as they were entered into as a part of the Company's community reinvestment initiatives.
(4) At December 31, 2015, amount represents securities pledged as collateral to a government-related merchant for which transaction settlement occurs beyond the normal 24-hour period. Beginning in the third quarter of 2016, collateral is no longer required.

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The following table provides information about investment securities with aggregate gross unrealized losses and the length of time that individual investment securities have been in a continuous unrealized loss position (dollars in millions):

	Number of Securities in a Loss Position	Less than 12 months Fair Value	Unrealized Losses
December 31, 2016			
Available-for-Sale Investment Securities			
U.S. Treasury securities	1	$674	$ (2)
Residential mortgage-backed securities - Agency	19	$586	$ (5)
Held-to-Maturity Investment Securities			
Residential mortgage-backed securities - Agency	31	$61	$ (1)
December 31, 2015			
Available-for-Sale Investment Securities			
U.S. Treasury securities	1	$670	$ (6)
Residential mortgage-backed securities - Agency	15	$486	$ (4)

There were no investment securities in a continuous unrealized loss position for more than 12 months at December 31, 2016 and 2015, respectively. There were no losses related to other-than-temporary impairments during the years ended December 31, 2016, 2015 and 2014.

The following table provides information about proceeds from sales, recognized gains and losses and net unrealized gains and losses on available-for-sale securities (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Proceeds from the sales of available-for-sale investment securities	$—	$899	$1,220
Gains on sales of available-for-sale investment securities	$—	$8	$4
Net unrealized (losses) gains recorded in OCI, before tax	$(4)	$(37)	$5
Net unrealized (losses) gains recorded in OCI, after-tax	$(3)	$(23)	$4

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Maturities and weighted-average yields of available-for-sale debt securities and held-to-maturity debt securities are provided in the tables below (dollars in millions):

	One Year or Less	After One Year Through Five Years	After Five Years Through Ten Years	After Ten Years	Total
At December 31, 2016					
Available-for-Sale—Amortized Cost					
U.S. Treasury securities	$ —	$ 676	$ —	$ —	$676
Residential mortgage-backed securities - Agency	—	—	285	649	934
Total available-for-sale investment securities	$ —	$ 676	$ 285	$ 649	$1,610
Held-to-Maturity—Amortized Cost					
State and political subdivisions of states	$ —	$ —	$ —	$ 2	$2
Residential mortgage-backed securities - Agency	—	—	—	150	150
Total held-to-maturity investment securities	$ —	$ —	$ —	$ 152	$152
Available-for-Sale—Fair Values					
U.S. Treasury securities	$ —	$ 674	$ —	$ —	$674
Residential mortgage-backed securities - Agency	—	—	284	647	931
Total available-for-sale investment securities	$ —	$ 674	$ 284	$ 647	$1,605
Held-to-Maturity—Fair Values					
State and political subdivisions of states	$ —	$ —	$ —	$ 2	$2
Residential mortgage-backed securities - Agency	—	—	—	150	150
Total held-to-maturity investment securities	$ —	$ —	$ —	$ 152	$152

	One Year or Less	After One Year Through Five Years	After Five Years Through Ten Years	After Ten Years	Total
At December 31, 2016					
Available-for-Sale—Weighted-Average Yields(1)					
U.S Treasury securities	—%	0.91 %	— %	— %	0.91%
Residential mortgage-backed securities - Agency	—%	— %	1.55 %	2.06 %	1.91%
Total available-for-sale investment securities	—%	0.91 %	1.55 %	2.06 %	1.49%
Held-to-Maturity—Weighted-Average Yields					
State and political subdivisions of states	—%	— %	— %	4.73 %	4.73%
Residential mortgage-backed securities	—%	— %	— %	2.68 %	2.68%
Total held-to-maturity investment securities	—%	— %	— %	2.71 %	2.71%

(1) The weighted-average yield for available-for-sale investment securities is calculated based on the amortized cost.

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The following table presents interest on investment securities (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Taxable interest	$38	$ 49	$ 66
Tax exempt interest	—	—	1
Total income from investment securities	$38	$ 49	$ 67

Other Investments

As a part of the Company's community reinvestment initiatives, the Company has made equity investments in certain limited partnerships and limited liability companies that finance the construction and rehabilitation of affordable rental housing, as well as stimulate economic development in low to moderate income communities. These investments are accounted for using the equity method of accounting and are recorded within other assets. The related commitment for future investments is recorded in accrued expenses and other liabilities within the consolidated statements of financial condition. The portion of each investment's operating results allocable to the Company is recorded in other expense within the consolidated statements of income. The Company earns a return primarily through the receipt of tax credits allocated to the affordable housing projects and the community revitalization projects. These investments are not consolidated as the Company does not have a controlling financial interest in the entities. As of December 31, 2016 and 2015, the Company had outstanding investments in these entities of $326 million and $328 million, respectively, and related contingent liabilities of $64 million and $57 million, respectively. Of the above outstanding equity investments, the Company had $270 million and $238 million of investments related to affordable housing projects, which had $64 million and $57 million related contingent liabilities as of December 31, 2016 and 2015, respectively.

5. Loan Receivables

The Company has three loan portfolio segments: credit card loans, other loans and PCI student loans.

The Company's classes of receivables within the three portfolio segments are depicted in the table below (dollars in millions):

	December 31,	
	2016	2015
Loan receivables		
Credit card loans[1]	$61,522	$57,896
Other loans		
Personal loans	6,481	5,490
Private student loans	6,393	5,647
Other	274	236
Total other loans	13,148	11,373
PCI loans[2]	2,584	3,116
Total loan receivables	77,254	72,385
Allowance for loan losses	(2,167)	(1,869)
Net loan receivables	$75,087	$70,516

(1) Amounts include $20.8 billion and $21.6 billion underlying investors' interest in trust debt at December 31, 2016 and 2015, respectively, and $10.8 billion and $7.2 billion in seller's interest at December 31, 2016 and 2015, respectively. The increase in the seller's interest from December 31, 2015 to December 31, 2016 is due in part to the addition of randomly-selected accounts to the credit card loan receivables restricted for securitization investors in order to increase excess seller's interest and related securitization capacity. See Note 6: Credit Card and Student Loan Securitization Activities for further information.

(2) Amounts include $1.4 billion and $1.7 billion of loans pledged as collateral against the notes issued from the Student Loan Corporation ("SLC") securitization trusts at December 31, 2016 and 2015, respectively. See Note 6: Credit Card and Student Loan Securitization Activities.

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Credit Quality Indicators

The Company regularly reviews its collection experience (including delinquencies and net charge-offs) in determining its allowance for loan losses.

Information related to the delinquent and non-accruing loans in the Company's loan portfolio is shown below by each class of loan receivables except for PCI student loans, which is shown under the heading "— Purchased Credit-Impaired Loans" (dollars in millions):

	30-89 Days Delinquent	90 or More Days Delinquent	Total Past Due	90 or More Days Delinquent and Accruing	Total Non-accruing(1)
At December 31, 2016					
Credit card loans(2)	$ 655	$ 597	$1,252	$ 544	$ 189
Other loans					
Personal loans(3)	55	19	74	18	8
Private student loans (excluding PCI)(4)	106	35	141	35	—
Other	1	1	2	—	19
Total other loans (excluding PCI)	162	55	217	53	27
Total loan receivables (excluding PCI)	$ 817	$ 652	$1,469	$ 597	$ 216
At December 31, 2015					
Credit card loans(2)	$ 505	$ 490	$995	$ 422	$ 198
Other loans					
Personal loans(3)	34	15	49	13	6
Private student loans (excluding PCI)(4)	84	24	108	25	—
Other	—	1	1	—	20
Total other loans (excluding PCI)	118	40	158	38	26
Total loan receivables (excluding PCI)	$ 623	$ 530	$1,153	$ 460	$ 224

(1) The Company estimates that the gross interest income that would have been recorded in accordance with the original terms of non-accruing credit card loans was $31 million, $30 million and $27 million for the years ended December 31, 2016, 2015 and 2014, respectively. The Company does not separately track the amount of gross interest income that would have been recorded in accordance with the original terms of loans. This amount was estimated based on customers' current balances and most recent interest rates.

(2) Credit card loans that are 90 or more days delinquent and accruing interest include $58 million and $42 million of loans accounted for as troubled debt restructurings at December 31, 2016 and 2015, respectively.

(3) Personal loans that are 90 or more days delinquent and accruing interest include $2 million and $4 million of loans accounted for as troubled debt restructurings at both December 31, 2016 and 2015, respectively.

(4) Private student loans that are 90 or more days delinquent and accruing interest include $3 million of loans accounted for as troubled debt restructurings at December 31, 2016 and 2015.

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Information related to the net charge-offs in the Company's loan portfolio is shown below by each class of loan receivables except for PCI student loans, which is shown under the heading "— Purchased Credit-Impaired Loans" (dollars in millions):

	For the Years Ended December 31,					
	2016		2015		2014	
	Net Charge-offs	Net Charge-off Rate(1)	Net Charge-offs	Net Charge-off Rate(1)	Net Charge-offs	Net Charge-off Rate(1)
Credit card loans	$1,343	2.34 %	$1,220	2.22 %	$1,191	2.27 %
Other loans						
Personal loans	151	2.55 %	112	2.15 %	94	2.04 %
Private student loans (excluding PCI)	67	1.10 %	56	1.07 %	57	1.29 %
Other	—	— %	1	0.79 %	3	0.76 %
Total other loans	218	1.78 %	169	1.57 %	154	1.63 %
Net charge-offs (excluding PCI)	$1,561	2.24 %	$1,389	2.12 %	$1,345	2.17 %
Net charge-offs (including PCI)	$1,561	2.16 %	$1,389	2.01 %	$1,345	2.04 %

(1) Net charge-off rate represents net charge-off dollars (annualized) divided by average loans for the reporting period.

As part of credit risk management activities, on an ongoing basis the Company reviews information related to the performance of a customer's account with the Company as well as information from credit bureaus, such as FICO or other credit scores, relating to the customer's broader credit performance. FICO scores are generally obtained at origination of the account and are refreshed monthly or quarterly thereafter to assist in predicting customer behavior. Historically, the Company has noted that a significant portion of delinquent accounts have FICO scores below 660.

The following table provides the most recent FICO scores available for the Company's customers as a percentage of each class of loan receivables:

	Credit Risk Profile by FICO Score	
	660 and Above	Less than 660 or No Score
At December 31, 2016		
Credit card loans	82 %	18 %
Personal loans	96 %	4 %
Private student loans (excluding PCI)(1)	95 %	5 %
At December 31, 2015		
Credit card loans	83 %	17 %
Personal loans	96 %	4 %
Private student loans (excluding PCI)(1)	96 %	4 %

(1) PCI loans are discussed under the heading "— Purchased Credit-Impaired Loans."

For private student loans, additional credit risk management activities include monitoring the amount of loans in forbearance. Forbearance allows borrowers experiencing temporary financial difficulties and willing to make payments the ability to temporarily suspend payments. Eligible borrowers have a lifetime cap on forbearance of 12 months. At December 31, 2016 and 2015, there were $19 million and $31 million, respectively, of private student loans, including PCI, in forbearance, respectively, representing 0.3% and 0.5%, respectively of total student loans in repayment and forbearance.

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Allowance for Loan Losses

The following tables provide changes in the Company's allowance for loan losses for the periods presented (dollars in millions):

	For the Year Ended December 31, 2016				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,554	$ 155	$ 143	$ 17	$1,869
Additions					
Provision for loan losses	1,579	196	82	2	1,859
Deductions					
Charge-offs	(1,786)	(172)	(76)	—	(2,034)
Recoveries	443	21	9	—	473
Net charge-offs	(1,343)	(151)	(67)	—	(1,561)
Balance at end of period	$1,790	$ 200	$ 158	$ 19	$2,167

	For the Year Ended December 31, 2015				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,474	$ 120	$ 135	$ 17	$1,746
Additions					
Provision for loan losses	1,300	147	64	1	1,512
Deductions					
Charge-offs	(1,660)	(129)	(65)	(1)	(1,855)
Recoveries	440	17	9	—	466
Net charge-offs	(1,220)	(112)	(56)	(1)	(1,389)
Balance at end of period	$1,554	$ 155	$ 143	$ 17	$1,869

	For the Year Ended December 31, 2014				
	Credit Card	Personal Loans	Student Loans(1)	Other	Total
Balance at beginning of period	$1,406	$ 112	$ 113	$ 17	$1,648
Additions					
Provision for loan losses	1,259	102	79	3	1,443
Deductions					
Charge-offs	(1,636)	(105)	(62)	(3)	(1,806)
Recoveries	445	11	5	—	461
Net charge-offs	(1,191)	(94)	(57)	(3)	(1,345)
Balance at end of period	$1,474	$ 120	$ 135	$ 17	$1,746

(1) Includes both PCI and non-PCI private student loans.

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Net charge-offs of principal are recorded against the allowance for loan losses, as shown in the preceding table. Information regarding net charge-offs of interest and fee revenues on credit card and other loans is as follows (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Interest and fees accrued subsequently charged off, net of recoveries (recorded as a reduction of interest income)	$275	$278	$283
Fees accrued subsequently charged off, net of recoveries (recorded as a reduction to other income)	$69	$71	$69

The following tables provide additional detail of the Company's allowance for loan losses and recorded investment in its loan portfolio by impairment methodology (dollars in millions):

	Credit Card	Personal Loans	Student Loans(1)	Other Loans	Total
At December 31, 2016					
Allowance for loans evaluated for impairment as					
Collectively evaluated for impairment in accordance with ASC 450-20	$1,623	$ 179	$ 105	$ 3	$1,910
Evaluated for impairment in accordance with ASC 310-10-35(2)(3)	167	21	18	16	222
Acquired with deteriorated credit quality, evaluated in accordance with ASC 310-30	—	—	35	—	35
Total allowance for loan losses	$1,790	$ 200	$ 158	$ 19	$2,167
Recorded investment in loans evaluated for impairment as					
Collectively evaluated for impairment in accordance with ASC 450-20	$60,437	$ 6,400	$ 6,307	$ 219	$73,363
Evaluated for impairment in accordance with ASC 310-10-35(2)(3)	1,085	81	86	55	1,307
Acquired with deteriorated credit quality, evaluated in accordance with ASC 310-30	—	—	2,584	—	2,584
Total recorded investment	$61,522	$ 6,481	$ 8,977	$ 274	$77,254
At December 31, 2015					
Allowance for loans evaluated for impairment as					
Collectively evaluated for impairment in accordance with ASC 450-20	$1,394	$ 140	$ 92	$ 1	$1,627
Evaluated for impairment in accordance with ASC 310-10-35(2)(3)	160	15	15	16	206
Acquired with deteriorated credit quality, evaluated in accordance with ASC 310-30	—	—	36	—	36
Total allowance for loan losses	$1,554	$ 155	$ 143	$ 17	$1,869
Recorded investment in loans evaluated for impairment as					
Collectively evaluated for impairment in accordance with ASC 450-20	$56,877	$ 5,422	$ 5,599	$ 179	$68,077
Evaluated for impairment in accordance with ASC 310-10-35(2)(3)	1,019	68	48	57	1,192
Acquired with deteriorated credit quality, evaluated in accordance with ASC 310-30	—	—	3,116	—	3,116
Total recorded investment	$57,896	$ 5,490	$ 8,763	$ 236	$72,385

(1) Includes both PCI and non-PCI private student loans.

(2) Loan receivables evaluated for impairment in accordance with Accounting Standards Codification ("ASC") 310-10-35 include credit card loans, personal loans and student loans collectively evaluated for impairment in accordance with ASC Subtopic 310-40, Receivables, which consists of modified loans accounted for as troubled debt restructurings. Other loans are individually evaluated for impairment and generally do not represent troubled debt restructurings.

(3) The unpaid principal balance of credit card loans was $935 million and $869 million at December 31, 2016 and 2015 respectively. The unpaid principal balance of personal loans was $79 million and $67 million at December 31, 2016 and 2015, respectively. The unpaid principal balance of student loans was $84 million and $47 million at December 31, 2016 and 2015, respectively. All loans accounted for as troubled debt restructurings have a related allowance for loan losses.

Troubled Debt Restructurings

The Company has internal loan modification programs that provide relief to credit card, personal loan and student loan borrowers who are experiencing financial hardship. The internal loan modification programs include both temporary and permanent programs which vary by product. External loan modification programs are also available for credit card and personal loans. Temporary and permanent modifications on credit card and personal loans, as well as temporary modifications on student loans and certain grants of student loan forbearance, result in the loans being considered individually impaired. In addition, loans that defaulted or graduated from modification programs or forbearance are considered to be individually impaired.

For credit card customers, the temporary hardship program primarily consists of a reduced minimum payment and an interest rate reduction, both lasting for a period no longer than 12 months. The permanent workout program involves changing the structure of the loan to a fixed payment loan with a maturity no longer than 60 months and reducing the interest rate on the loan. The permanent modification program does not normally provide for the forgiveness of unpaid principal, but may allow for the reversal of certain unpaid interest or fee assessments. The Company also makes permanent loan modifications for customers who request financial assistance through external sources, such as a consumer credit counseling agency program. These loans typically receive a reduced interest rate but continue to be subject to the original minimum payment terms and do not normally include waiver of unpaid principal, interest or fees. Credit card loans included in temporary and permanent programs are accounted for as troubled debt restructurings.

For personal loan customers, in certain situations the Company offers various payment programs, including temporary and permanent programs. The temporary programs normally consist of a reduction of the minimum payment for a period of no longer than 12 months with the option of a final balloon payment required at the end of the loan term or an extension of the maturity date with the total term not exceeding nine years. Further, in certain circumstances the interest rate on the loan is reduced. The permanent program involves changing the terms of the loan in order to pay off the outstanding balance over a longer term and also in certain circumstances reducing the interest rate on the loan. Similar to the temporary programs, the total term may not exceed nine years. The Company also allows permanent loan modifications for customers who request financial assistance through external sources, similar to the credit card customers discussed above. Payments are modified based on the new terms agreed upon with the credit counseling agency. Personal loans included in temporary and permanent programs are accounted for as troubled debt restructurings.

To assist student loan borrowers who are experiencing temporary financial difficulties but are willing to resume making payments, the Company may offer hardship forbearance or programs that include payment deferral, temporary payment reduction, temporary interest rate reduction or extended terms. A modified loan typically meets the definition of a troubled debt restructuring based on the cumulative length of the concession period and an evaluation of the credit quality of the borrower based on FICO scores. Prior to the third quarter of 2016, only a second forbearance when the borrower was 30 days or greater delinquent was considered a troubled debt restructuring. As a result, the student loan balances being accounted for as troubled debt restructurings increased, although it did not lead to significant changes in the balance of the overall allowance for losses.

The Company monitors borrower performance after using payment programs or forbearance and the Company believes the programs help to prevent defaults and are useful in assisting customers experiencing financial difficulties. The Company plans to continue to use payment programs and forbearance and, as a result, expects to have additional loans classified as troubled debt restructurings in the future.

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Additional information about modified loans classified as troubled debt restructurings is shown below (dollars in millions):

	Average recorded investment in loans	Interest income recognized during period loans were impaired[(1)]	Gross interest income that would have been recorded with original terms[(2)]
For the Year Ended December 31, 2016			
Credit card loans[(3)]	$ 1,035	$ 88	$ 77
Personal loans	$ 73	$ 8	$ 3
Private student loans[(4)]	$ 63	$ 4	$ —
For the Year Ended December 31, 2015			
Credit card loans[(3)]	$ 1,018	$ 82	$ 75
Personal loans	$ 62	$ 7	$ 2
Private student loans[(4)]	$ 43	$ 3	N/A
For the Year Ended December 31, 2014			
Credit card loans[(3)]	$ 1,069	$ 84	$ 77
Personal loans	$ 48	$ 5	$ 1
Private student loans[(4)]	$ 32	$ 3	N/A

(1) The Company does not separately track interest income on loans in modification programs. Amounts shown are estimated by applying an average interest rate to the average loans in the various modification programs.

(2) The Company does not separately track the amount of additional gross interest income that would have been recorded if the loans in modification programs had not been restructured and interest had instead been recorded in accordance with the original terms. Amounts shown are estimated by applying the difference between the average interest rate earned on non-impaired loans and the average interest rate earned on loans in the modification programs to the average loans in the modification programs.

(3) Includes credit card loans that were modified in troubled debt restructurings, but are no longer enrolled in a troubled debt restructuring program due to noncompliance with the terms of the modification or successful completion of a program. The average balance of credit card loans that were no longer enrolled in a troubled debt restructuring program was $282 million, $261 million and $252 million, respectively, for the years ended December 31, 2016, 2015 and 2014.

(4) As a result of the updates implemented in the third quarter of 2016, some student loans accounted for as troubled debt restructurings have additional gross income that would have been recorded if the loans in modification programs had not been restructured and interest had instead been recorded in accordance with the original terms. For the year ended December 31, 2016, the gross income that would have been recorded with original terms for student loans in modification programs was not material.

In order to evaluate the primary financial effects that resulted from credit card loans entering into a loan modification program during the years ended December 31, 2016, 2015 and 2014, the Company quantified the amount by which interest and fees were reduced during the periods. During the years ended December 31, 2016, 2015 and 2014, the Company forgave approximately $34 million, $44 million and $42 million, respectively, of interest and fees as a result of accounts entering into a credit card loan modification program.

The following table provides information on loans that entered a loan modification program during the period (dollars in millions):

	For the Years Ended December 31,					
	2016		2015		2014	
	Number of Accounts	Balances	Number of Accounts	Balances	Number of Accounts	Balances
Accounts that entered a loan modification program during the period						
Credit card loans	95,881	$ 565	83,479	$ 493	80,484	$ 485
Personal loans	4,606	$ 52	4,243	$ 50	3,528	$ 42
Private student loans	2,792	$ 49	1,362	$ 20	1,453	$ 21

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The following table presents the carrying value of loans that experienced a payment default during the period that had been modified in a troubled debt restructuring during the 15 months preceding the end of each period (dollars in millions):

	For the Years Ended December 31,					
	2016		2015		2014	
	Number of Accounts	Aggregated Outstanding Balances Upon Default	Number of Accounts	Aggregated Outstanding Balances Upon Default	Number of Accounts	Aggregated Outstanding Balances Upon Default
Troubled debt restructurings that subsequently defaulted						
Credit card loans[(1)(2)]	23,388	$ 123	18,299	$ 96	17,558	$ 92
Personal loans[(2)]	940	$ 11	644	$ 7	433	$ 5
Private student loans[(3)]	777	$ 12	1,103	$ 16	1,155	$ 18

(1) Terms revert back to the pre-modification terms for customers who default from a temporary program and charging privileges remain revoked in most cases.

(2) For credit card loans and personal loans, a customer defaults from a modification program after two consecutive missed payments. The outstanding balance upon default is generally the loan balance at the end of the month prior to default.

(3) For student loans, defaults have been defined as loans that are 60 or more days delinquent. The outstanding balance upon default is generally the loan balance at the end of the month prior to default.

Of the account balances that defaulted as shown above for the years ended December 31, 2016, 2015 and 2014, approximately 37%, 40% and 35%, respectively, of the total balances were charged off at the end of the month in which they defaulted. For accounts that have defaulted from a loan modification program and have not been subsequently charged off, the balances are included in the allowance for loan losses analysis discussed above under "—Allowance for Loan Losses."

Purchased Credit-Impaired Loans

Purchased loans with evidence of credit deterioration since origination for which it is probable that not all contractually required payments will be collected are considered impaired at acquisition and are reported as PCI loans. The private student loans acquired in the SLC transaction as well as the additional acquired private student loan portfolio comprise the Company's only PCI loans at December 31, 2016 and 2015. Total PCI student loans had an outstanding balance of $2.7 billion and $3.3 billion, including accrued interest, and a related carrying amount of $2.6 billion and $3.1 billion, as of December 31, 2016 and 2015, respectively.

The following table provides changes in accretable yield for the acquired loans during each period (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Balance at beginning of period	$965	$1,341	$1,580
Accretion into interest income	(185)	(220)	(260)
Other changes in expected cash flows	16	(156)	21
Balance at end of period	$796	$965	$1,341

Periodically the Company updates the estimate of cash flows expected to be collected based on management's latest expectations of future credit losses, borrower prepayments and certain other assumptions that affect cash flows. No provision expense was recorded during the years ended December 31, 2016 and 2014. During the year ended December 31, 2015, the Company recorded $8 million of provision expense due to higher expected losses on its pools.

The allowance for PCI loan losses at December 31, 2016 and 2015 was $35 million and $36 million, respectively. For the year ended December 31, 2016, the increase in the rates on variable loans during the first half of 2016 resulted in an increase in accretable yield. For the year ended December 31, 2015, the changes to the expected cash flow assumptions resulted in a decrease in accretable yield due primarily to changes in expected future prepayments based on model updates and assumptions changes as well as actual borrower prepayments. For the year ended December 31, 2014, the change in expected cash flow assumptions resulted in an increase related to expected life of the loans. Changes to accretable yield are recognized prospectively as an adjustment to yield over the remaining life of the pools.

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At December 31, 2016, the 30 or more days delinquency and 90 or more days delinquency rates on PCI student loans (which include loans not yet in repayment) were 2.88% and 0.87%, respectively. At December 31, 2015, the 30 or more days delinquency and 90 or more days delinquency rates on PCI student loans (which include loans not yet in repayment) were 2.53% and 0.88%, respectively. These rates include private student loans that are greater than 120 days delinquent that are covered by an indemnification agreement or insurance arrangements through which the Company expects to recover a substantial portion of the loan. The net charge-off rate on PCI student loans for the years ended December 31, 2016, 2015 and 2014 was 0.52%, 0.55% and 0.64%, respectively.

Geographical Distribution of Loans

The Company originates credit card loans throughout the United States. The geographic distribution of the Company's credit card loan receivables was as follows (dollars in millions):

	December 31,					
	2016			2015		
	$	%		$	%	
California	$5,317	8.6	%	$4,947	8.5	%
Texas	5,156	8.4		4,781	8.3	
New York	4,295	7.0		4,061	7.0	
Florida	3,793	6.2		3,463	6.0	
Illinois	3,350	5.4		3,170	5.5	
Pennsylvania	3,233	5.3		3,071	5.3	
Ohio	2,646	4.3		2,511	4.3	
New Jersey	2,282	3.7		2,163	3.7	
Georgia	1,793	2.9		1,687	2.9	
Michigan	1,744	2.8		1,661	2.9	
Other States	27,913	45.4		26,381	45.6	
Total credit card loans	$61,522	100.0	%	$57,896	100.0	%

The Company originates personal loans, student loans and other loans, and has PCI loans throughout the United States. The geographic distribution of personal, student, other and PCI loan receivables was as follows (dollars in millions):

	December 31,					
	2016			2015		
	$	%		$	%	
New York	$1,792	11.4	%	$1,743	12.0	%
California	1,420	9.0		1,312	9.1	
Pennsylvania	1,128	7.2		1,059	7.3	
Illinois	961	6.1		865	6.0	
Texas	927	5.9		804	5.5	
New Jersey	813	5.2		737	5.1	
Florida	666	4.2		578	4.0	
Ohio	637	4.0		584	4.0	
Massachusetts	568	3.6		559	3.9	
Michigan	542	3.4		524	3.6	
Other States	6,278	40.0		5,724	39.5	
Total other loans (including PCI loans)	$15,732	100.0	%	$14,489	100.0	%

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6. Credit Card and Student Loan Securitization Activities

Credit Card Securitization Activities

The Company accesses the term asset securitization market through DCMT and DCENT, which are trusts into which credit card loan receivables are transferred (or, in the case of DCENT, into which beneficial interests in DCMT are transferred) and from which DCENT issues notes to investors.

The DCENT debt structure consists of four classes of securities (DiscoverSeries Class A, B, C and D notes), with the most senior class generally receiving a triple-A rating. In order to issue senior, higher rated classes of notes, it is necessary to obtain the appropriate amount of credit enhancement, generally through the issuance of junior, lower rated or more highly subordinated classes of notes. The subordinated classes are held by wholly-owned subsidiaries of Discover Bank. The Company is exposed to credit-related risk of loss associated with trust assets as of the balance sheet date through the retention of these subordinated interests. The estimated probable incurred loss is included in the allowance for loan losses estimate.

The Company's credit card securitizations are accounted for as secured borrowings and the trusts and Discover Funding LLC are treated as consolidated subsidiaries of the Company. The Company's retained interests in the assets of the trusts, consisting of investments in DCENT notes held by subsidiaries of Discover Bank, constitute intercompany positions which are eliminated in the preparation of the Company's consolidated statements of financial condition.

Upon transfer of credit card loan receivables to the trust, the receivables and certain cash flows derived from them become restricted for use in meeting obligations to the trusts' creditors. Further, the transferred credit card loan receivables are owned by the trust and are not available to third-party creditors of the Company. The trusts have ownership of cash balances that also have restrictions, the amounts of which are reported in restricted cash. Investment of trust cash balances is limited to investments that are permitted under the governing documents of the trusts and which have maturities no later than the related date on which funds must be made available for distribution to trust investors. With the exception of the seller's interest in trust receivables, the Company's interests in trust assets are generally subordinate to the interests of third-party investors and, as such, may not be realized by the Company if needed to absorb deficiencies in cash flows that are allocated to the investors in the trusts' debt.

The carrying values of these restricted assets, which are presented on the Company's consolidated statements of financial condition as relating to securitization activities, are shown in the table below (dollars in millions):

	December 31,	
	2016	2015
Restricted cash	$23	$19
Investors' interests held by third-party investors	15,625	15,625
Investors' interests held by wholly-owned subsidiaries of Discover Bank	5,189	6,017
Seller's interest	10,812	7,231
Loan receivables(1)	31,626	28,873
Allowance for loan losses allocated to securitized loan receivables(1)	(928)	(783)
Net loan receivables	30,698	28,090
Other(2)	4	5
Carrying value of assets of consolidated variable interest entities	$30,725	$28,114

(1) The Company maintains its allowance for loan losses at an amount sufficient to absorb probable losses inherent in all loan receivables, which includes all loan receivables in the trusts. Therefore, credit risk associated with the transferred receivables is fully reflected on the Company's balance sheet in accordance with GAAP.

(2) Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation for additional information.

The debt securities issued by the consolidated trusts are subject to credit, payment and interest rate risks on the transferred credit card loan receivables. To protect investors, the securitization structures include certain features that could result in earlier-than-expected repayment of the securities. The primary investor protection feature relates to the availability and adequacy of cash flows in the securitized pool of receivables to meet contractual requirements. Insufficient cash flows would trigger the early repayment of the securities. This is referred to as the “economic early amortization” feature.

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Investors are allocated cash flows derived from activities related to the accounts comprising the securitized pool of receivables, the amounts of which reflect finance charges billed, certain fee assessments, allocations of merchant discount and interchange, and recoveries on charged-off accounts. From these cash flows, investors are reimbursed for charge-offs occurring within the securitized pool of receivables and receive a contractual rate of return and Discover Bank is paid a servicing fee as servicer. Any cash flows remaining in excess of these requirements are reported to investors as excess spread. An excess spread rate of less than 0% for a contractually specified period, generally a three-month average, would trigger an economic early amortization event. In such an event, the Company would be required to seek immediate sources of replacement funding. Apart from the restricted assets related to securitization activities, the investors and the securitization trusts have no recourse to the Company’s other assets or the Company's general credit for a shortage in cash flows.

Through its wholly-owned indirect subsidiary, Discover Funding LLC, the Company is required to maintain a contractual minimum level of receivables in the trust in excess of the face value of outstanding investors’ interests. This excess is referred to as the minimum seller’s interest. The required minimum seller’s interest in the pool of trust receivables, which is included in credit card loan receivables restricted for securitization investors, is set at approximately 7% in excess of the total investors’ interests (which includes interests held by third parties as well as those interests held by the Company). If the level of receivables in the trust was to fall below the required minimum, the Company would be required to add receivables from the unrestricted pool of receivables, which would increase the amount of credit card loan receivables restricted for securitization investors. A decline in the amount of the excess seller’s interest could occur if balance repayments and charge-offs exceeded new lending on the securitized accounts or as a result of changes in total outstanding investors’ interests. Seller's interest is impacted by seasonality as higher balance repayments tend to occur in the first calendar year quarter. If the Company could not add enough receivables to satisfy the requirement, an early amortization (or repayment) of investors’ interests would be triggered. The Company retains significant exposure to the performance of trust assets through holdings of the seller's interest and subordinated security classes of DCENT. The Company may elect to add receivables to the restricted pool of receivable subject to certain requirements. The Company also has the right to remove a random selection of accounts, which would serve to decrease the amount of credit card loan receivables restricted for securitization investors, subject to certain requirements including that the minimum seller's interest is still met. The Company elected to add receivables to the restricted pool of receivables as of the end of second quarter 2016. No accounts were added to those restricted for securitization investors for the remainder of the year.

In addition to performance measures associated with the transferred credit card loan receivables or the inability to add receivables to satisfy the seller's interest requirement, there are other events or conditions which could trigger an early amortization event, such as non-payment of principal at expected maturity. As of December 31, 2016, no economic or other early amortization events have occurred.

The table below provides information concerning investors’ interests and related excess spread (dollars in millions):

	Investors’ Interests(1)	Number of Series Outstanding	3-Month Rolling Average Excess Spread	
At December 31, 2016				
Discover Card Execution Note Trust (DiscoverSeries notes)	$ 20,814	36	13.48	%

(1) Investors’ interests include third-party interests and subordinated interests held by wholly-owned subsidiaries of Discover Bank.

The Company continues to own and service the accounts that generate the loan receivables held by the trusts. Discover Bank receives servicing fees from the trusts based on a percentage of the monthly investor principal balance outstanding. Although the fee income to Discover Bank offsets the fee expense to the trusts and thus is eliminated in consolidation, failure to service the transferred loan receivables in accordance with contractual requirements could lead to a termination of the servicing rights and the loss of future servicing income, net of related expenses.

Student Loan Securitization Activities

The Company’s student loan securitizations are accounted for as secured borrowings and the trusts are treated as consolidated subsidiaries of the Company. Trust receivables underlying third-party investors’ interests are recorded in PCI loans, and the related debt issued by the trusts is reported in long-term borrowings. The assets of the Company’s consolidated VIEs are restricted from being sold or pledged as collateral for other borrowings and the cash flows from these restricted assets may be used only to pay obligations of the trusts.

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Currently there are three trusts from which securities were issued to investors. Principal payments on the long-term secured borrowings are made as cash is collected on the underlying loans that are used as collateral on the secured borrowings. The Company does not have access to cash collected by the securitization trusts until cash is released in accordance with the trust indenture agreements and, for certain securitizations, no cash will be released to the Company until all outstanding trust borrowings have been repaid. Similar to the credit card securitizations, the Company continues to own and service the accounts that generate the student loan receivables held by the trusts and receives servicing fees from the trusts based on either a percentage of the principal balance outstanding or a flat fee per borrower. Although the servicing fee income offsets the fee expense related to the trusts and thus is eliminated in consolidation, failure to service the transferred loan receivables in accordance with contractual requirements could lead to a termination of the servicing rights and the loss of future servicing income, net of related expenses.

Under terms of all the trust arrangements, the Company has the option, but not the obligation, to provide financial support to the trusts, but has never provided such support. A substantial portion of the credit risk associated with the securitized loans has been transferred to third parties under private credit insurance or indemnification arrangements.

The carrying values of these restricted assets, which are presented on the Company's consolidated statements of financial condition as relating to securitization activities, are shown in the table below (dollars in millions):

	December 31,	
	2016	2015
Restricted cash	$72	$80
Student loan receivables[(1)]	1,390	1,678
Allowance for loan losses allocated to securitized loan receivables[(1)]	(27)	(28)
Net student loan receivables	1,363	1,650
Carrying value of assets of consolidated variable interest entities	$1,435	$1,730

(1) The Company maintains its allowance for loan losses on PCI loans sufficient to absorb probable decreases in cash flows that were previously expected. Therefore, credit risk associated with the transferred receivables is fully reflected on the Company's balance sheet in accordance with GAAP.

7. Premises and Equipment

A summary of premises and equipment, net is as follows (dollars in millions):

	December 31,	
	2016	2015
Land	$42	$42
Buildings and improvements	617	607
Capitalized equipment leases	2	2
Furniture, fixtures and equipment	847	804
Software	449	477
Premises and equipment	1,957	1,932
Less: Accumulated depreciation	(1,045)	(979)
Less: Accumulated amortization of software	(178)	(260)
Premises and equipment, net	$734	$693

Depreciation expense, which includes amortization of assets recorded under capital leases, was $77 million, $81 million and $78 million for the years ended December 31, 2016, 2015 and 2014, respectively. Amortization expense on capitalized software was $57 million, $53 million and $48 million for the years ended December 31, 2016, 2015 and 2014, respectively.

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8. Goodwill and Intangible Assets

Goodwill

As of December 31, 2016 and 2015, the Company had goodwill of $255 million related to PULSE, part of the Payment Services segment. The Company conducted its annual goodwill impairment test as of October 1, 2016 and 2015 and no impairment charges were identified.

Intangible Assets

The Company's amortizable intangible assets consisting of customer relationships and trade names resulted from various acquisitions and are primarily included in the Payment Services segment.

Non-amortizable intangible assets consist of trade name intangibles recognized in the acquisition of SLC, along with international transaction processing rights and trade name intangibles which are primarily included in the Payment Services segment. The Company conducted its annual impairment test of intangible assets as of October 1, 2016 and 2015 and no impairment charges were identified.

The following table summarizes the Company's intangible assets (dollars in millions):

		December 31,					
		2016			2015		
	Weighted-Average Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
Amortizable intangible assets							
Customer relationships	16 years	$66	$ 60	$ 6	$69	$ 61	$ 8
Trade name and other	25 years	8	3	5	8	3	5
Total amortizable intangible assets		74	63	11	77	64	13
Non-amortizable intangible assets							
Trade names	N/A	132	—	132	132	—	132
International transaction processing rights	N/A	23	—	23	23	—	23
Total non-amortizable intangible assets		155	—	155	155	—	155
Total intangible assets		$229	$ 63	$ 166	$232	$ 64	$ 168

Amortization expense related to the Company's intangible assets was $3 million, $4 million and $10 million for the years ended December 31, 2016, 2015 and 2014, respectively.

The following table presents expected intangible asset amortization expense for the next five years based on intangible assets at the end of the current period (dollars in millions):

Year	Amount
2017	$ 2
2018	$ 2

2019	$	2
2020	$	1
2021	$	—

9. Deposits

The Company offers its deposit products to customers through two channels: (i) through direct marketing, internet origination and affinity relationships ("direct-to-consumer deposits"); and (ii) indirectly through contractual arrangements with securities brokerage firms ("brokered deposits"). Direct-to-consumer deposits include certificates of

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deposit, money market accounts, online savings and checking accounts and IRA certificates of deposit, while brokered deposits include certificates of deposit and sweep accounts.

The following table provides a summary of interest-bearing deposit accounts (dollars in millions):

	December 31,	
	2016	2015
Certificates of deposit in amounts less than $100,000[1]	$20,225	$20,491
Certificates of deposit in amounts $100,000 or greater[2]	5,864	5,228
Savings deposits, including money market deposit accounts	25,372	21,375
Total interest-bearing deposits[1]	$51,461	$47,094

(1) Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation for additional information.

(2) Includes $1.4 billion and $1.1 billion in certificates of deposit greater than $250,000, the Federal Deposit Insurance Corporation ("FDIC") insurance limit, as of December 31, 2016 and December 31, 2015, respectively.

The following table summarizes certificates of deposit in amounts of $100,000 or greater by contractual maturity (dollars in millions):

Maturity Period	December 31, 2016
Three months or less	$ 860
Over three months through six months	617
Over six months through twelve months	1,594
Over twelve months	2,793
Total	$ 5,864

The following table summarizes certificates of deposit maturing over the next five years and thereafter (dollars in millions):

Year	December 31, 2016
2017	$ 11,081
2018	5,605
2019	2,785
2020	2,264
2021	1,741
Thereafter	2,613
Total	$ 26,089

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10. Long-Term Borrowings

Long-term borrowings consist of borrowings having original maturities of one year or more. The following table provides a summary of the Company's long-term borrowings and weighted-average interest rates on outstanding balances (dollars in millions):

	December 31, 2016				December 31, 2015
	Maturity	Interest Rate	Weighted-Average Interest Rate	Outstanding Amount	Outstanding Amount
Securitized Debt					
Fixed-rate asset-backed securities(1)(8)	2017-2021	1.22%-5.65%	2.05%	$ 9,868	$ 9,152
Floating-rate asset-backed securities(2)(3)(8)	2017-2019	1.00%-1.24%	1.11%	5,694	6,440
Total Discover Card Master Trust I and Discover Card Execution Note Trust(8)				15,562	15,592
Floating-rate asset-backed securities(4)(5)(6)(7)	2031-2042	1.05%-4.50%	2.47%	849	1,143
Total SLC Private Student Loan Trusts				849	1,143
Total long-term borrowings - owed to securitization investors(8)				16,411	16,735
Discover Financial Services (Parent Company)					
Fixed-rate senior notes(1)(8)	2017-2025	3.75%-10.25%	4.74%	2,090	2,066
Fixed-rate retail notes(8)	2017-2031	2.85%-4.40%	3.71%	169	39
Discover Bank					
Fixed-rate senior bank notes(1)(8)	2018-2026	2.00%-4.25%	3.21%	6,077	5,115
Fixed-rate subordinated bank notes(8)	2019-2020	7.00%-8.70%	7.49%	696	695
Total long-term borrowings(8)				$ 25,443	$ 24,650

(1) The Company uses interest rate swaps to hedge portions of these long-term borrowings against changes in fair value attributable to changes in London Interbank Offered Rate ("LIBOR"). Use of these interest rate swaps impacts carrying value of the debt. See Note 22: Derivatives and Hedging Activities.

(2) Discover Card Execution Note Trust floating-rate asset-backed securities include issuances with the following interest rate terms: 1-month LIBOR + 30 to 54 basis points and 3-month LIBOR + 20 basis points as of December 31, 2016.

(3) The Company uses interest rate swaps to manage its exposure to changes in interest rates related to future cash flows resulting from interest payments on a portion of these long-term borrowings. There is no impact on debt carrying value from use of these interest rate swaps. See Note 22: Derivatives and Hedging Activities.

(4) SLC Private Student Loan Trusts floating-rate asset-backed securities include issuances with the following interest rate terms: 3-month LIBOR + 17 to 45 basis points, Prime rate + 75 to 100 basis points and 1-month LIBOR + 350 basis points as of December 31, 2016.

(5) The Company acquired an interest rate swap related to the securitized debt assumed in the SLC transaction. The swap does not qualify for hedge accounting and has no impact on debt carrying value. See Note 22: Derivatives and Hedging Activities.

(6) Repayment of this debt is dependent upon the timing of principal and interest payments on the underlying student loans. The dates shown represent final maturity dates.

(7)

Includes $274 million of senior notes maturing in 2031, $505 million of senior and subordinated notes maturing in 2036 and $70 million of senior notes maturing in 2042 as of December 31, 2016.

(8) Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation for additional information.

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The following table summarizes long-term borrowings maturing over each of the next five years and thereafter (dollars in millions):

Year	Amount
2017	$5,100
2018	5,266
2019	5,990
2020	3,082
2021	1,039
Thereafter	4,966
Total	$25,443

The Company has access to committed undrawn capacity through private securitizations to support the funding of its credit card loan receivables. As of December 31, 2016, the total commitment of secured credit facilities through private providers was $6.0 billion, none of which was drawn at December 31, 2016. Access to the unused portions of the secured credit facilities is subject to the terms of the agreements with each of the providers which have various expirations in calendar year 2018. Borrowings outstanding under each facility bear interest at a margin above LIBOR or the asset-backed commercial paper costs of each individual conduit provider. The terms of each agreement provide for a commitment fee to be paid on the unused capacity, and include various affirmative and negative covenants, including performance metrics and legal requirements similar to those required to issue any term securitization transaction.

11. Stock-Based Compensation Plans

The Company has two stock-based compensation plans: the Discover Financial Services Omnibus Incentive Plan ("Omnibus Plan") and the Discover Financial Services Directors' Compensation Plan ("Directors' Compensation Plan").

Omnibus Plan

The Omnibus Plan, which is stockholder approved, provides for the award of stock options, stock appreciation rights, restricted stock, restricted stock units (“RSUs”), performance stock units (“PSUs”) and other stock-based and/or cash awards (collectively, “awards”). Currently, the Company does not have any stock options, stock appreciation rights or restricted stock outstanding. The total number of shares that may be granted is 45 million shares, subject to adjustments for certain transactions as described in the Omnibus Plan document. Shares granted under the Omnibus Plan may be the following: (i) authorized but unissued shares, and (ii) treasury shares that the Company acquires in the open market, in private transactions or otherwise.

Directors' Compensation Plan

The Directors' Compensation Plan, which is stockholder approved, permits the grant of RSUs to non-employee directors. Under the Directors' Compensation Plan, the Company may issue awards of up to a total of 1,000,000 shares of common stock to non-employee directors. Shares of stock that are issuable pursuant to the awards granted under the Directors' Compensation Plan may be authorized but unissued shares, treasury shares or shares that the Company acquires in the open market. Annual awards for eligible directors are calculated by dividing $130,000 (effective January 1, 2017, $140,000) by the fair market value of a share of stock on the date of grant and are subject to a restriction period whereby 100% of such units shall vest on the one year anniversary of the date of grant. RSUs include the right to receive dividend equivalents in the same amount and at the same time as dividends paid to all Company common shareholders.

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Stock-Based Compensation

The following table details the compensation cost, net of forfeitures (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
RSUs	$41	$ 34	$ 33
PSUs	23	22	27
Total stock-based compensation expense	$64	$ 56	$ 60
Income tax benefit	$24	$ 21	$ 22

RSUs

The following table sets forth the activity related to vested and unvested RSUs:

	Number of Units	Weighted-Average Grant-Date Fair Value	Aggregate Intrinsic Value (in millions)
RSUs at December 31, 2015	2,917,163	$ 39.97	$ 156
Granted	881,984	$ 48.86	
Conversions to common stock	(786,603)	$ 44.03	
Forfeited	(80,491)	$ 51.39	
RSUs at December 31, 2016	2,932,053	$ 41.24	$ 211

The following table sets forth the activity related to unvested RSUs:

	Number of Units	Weighted-Average Grant-Date Fair Value
Unvested RSUs at December 31, 2015[(1)]	1,448,245	$ 50.67
Granted	881,984	$ 48.86
Vested	(827,797)	$ 45.92
Forfeited	(80,491)	$ 51.39
Unvested RSUs at December 31, 2016[(1)]	1,421,941	$ 52.27

(1) Unvested RSUs represent awards where recipients have yet to satisfy either explicit vesting terms or retirement-eligibility requirements.

Compensation cost associated with RSUs is determined based on the number of units granted and the fair value on the date of grant. The fair value is amortized on a straight-line basis, net of estimated forfeitures over the requisite service period for each separately vesting tranche of the award. The requisite service period is generally the vesting period.

The following table summarizes the total intrinsic value of the RSUs converted to common stock and the total grant-date fair value of RSUs vested (dollars in millions, except weighted-average grant-date fair value amounts):

	For the Years Ended December 31,		
	2016	2015	2014
Intrinsic value of RSUs converted to common stock	$38	$71	$72

Grant-date fair value of RSUs vested	$38	$38	$30
Weighted-average grant-date fair value of RSUs granted	$48.86	$56.71	$54.01

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As of December 31, 2016 and 2015, there was $26 million and $28 million, respectively, of total unrecognized compensation cost related to non-vested RSUs. The cost is expected to be recognized over a weighted-average period of 1.3 years and 1.5 years.

RSUs provide for accelerated vesting if there is a change in control or upon certain terminations (as defined in the Omnibus Plan or the award certificate). RSUs include the right to receive dividend equivalents in the same amount and at the same time as dividends paid to all Company common shareholders.

PSUs

The following table sets forth the activity related to vested and unvested PSUs:

	Number of Units	Weighted-Average Grant-Date Fair Value	Aggregate Intrinsic Value (in millions)
PSUs at December 31, 2015	1,171,385	$ 48.21	$ 63
Granted	476,117	$ 48.59	
Conversions to common stock	(516,341)	$ 38.89	
Forfeited	(35,707)	$ 53.98	
PSUs at December 31, 2016	1,095,454	$ 52.58	$ 79

The following table sets forth the activity related to unvested PSUs:

	Number of Units	Weighted-Average Grant-Date Fair Value
Unvested PSUs at December 31, 2015	1,171,385	$ 48.21
Granted	476,117	$ 48.59
Vested	(516,341)	$ 38.89
Forfeited	(35,707)	$ 53.98
Unvested PSUs at December 31, 2016[(1)(2)(3)]	1,095,454	$ 52.58

(1) Includes 333,063 PSUs granted in 2014 that are earned based on the Company's achievement of EPS during the three-year performance period which ends December 31, 2016 and are subject to the requisite service period which ended February 1, 2017.

(2) Includes 306,917 PSUs granted in 2015 that are earned based on the Company's achievement of EPS during the three-year performance period which ends December 31, 2017 and are subject to the requisite service period which ends February 1, 2018.

(3) Includes 455,474 PSUs granted in 2016 that may be earned based on the Company's achievement of EPS during the three-year performance period which ends December 31, 2018 and are subject to the requisite service period which ends February 1, 2019.

Compensation cost associated with PSUs is determined based on the number of instruments granted, the fair value on the date of grant and the performance factor. The fair value is amortized on a straight-line basis, net of estimated forfeitures, over the requisite service period. Each PSU outstanding at December 31, 2016 is a restricted stock instrument that is subject to additional conditions and constitutes a contingent and unsecured promise by the Company to pay up to 1.5 shares per unit of the Company's common stock on the conversion date for the PSU, contingent on the number of PSUs to be issued. PSUs have a performance period of three years and a vesting period of three years. The requisite service period of an award, having both performance and service conditions, is the longest of the explicit, implicit and derived service periods.

As of December 31, 2016, there was $23 million of total unrecognized compensation cost related to non-vested PSUs. The cost is expected to be recognized over a weighted-average period of 1.2 years. As of December 31, 2015, there was $22 million of total unrecognized compensation cost related to non-vested PSUs. The cost is expected to be recognized over a weighted-average period of 0.9 years.

PSUs provide for accelerated vesting if there is a change in control or upon certain terminations (as defined in the Omnibus Plan or the award certificate). PSUs include the right to receive dividend equivalents which will accumulate and pay out in cash, if at all, if and when the underlying shares are issued.

Stock Options

Option awards are granted with an exercise price equal to the fair market value of one share of the Company's common stock at the date of grant; these types of awards expire ten years from the grant date and may be subject to restrictions on transfer, vesting requirements, which are set at the discretion of the Compensation and Leadership Development Committee of the Company's Board of Directors, or cancellation under specified circumstances. Stock awards also may be subject to similar restrictions determined at the time of grant under this plan. Certain option awards provide for accelerated vesting if there is a change in control or upon certain terminations (as defined in the Omnibus Plan or the award certificate).

At December 31, 2016, all the Company's stock options were fully vested and exercised. The Company had 93,712 options outstanding at December 31, 2015 with a weighted-average exercise price of $26.68 and a weighted-average remaining contractual term of 0.95 years. Cash received from the exercise of stock options and income tax benefit realized from the exercise of stock options was not material for the years ended December 31, 2016 and 2015. The intrinsic value of options exercised was not material for the years ended December 31, 2016, 2015 and 2014. As of December 31, 2016 and 2015 there was no unrecognized compensation cost related to non-vested stock options granted under the Company's Omnibus Plan, as all these options have vested.

The Company utilized the Black-Scholes pricing model to estimate the fair value of each option at its date of grant. The fair value was amortized on a straight-line basis, net of estimated forfeitures, over the requisite service periods of the awards, which is generally the vesting period. Use of a valuation model requires management to make certain assumptions with respect to selected model inputs. Since all options were granted prior to the Company's spin-off from Morgan Stanley, the expected option life of stock options and the expected dividend yield of stock were determined based upon Morgan Stanley's historical experience. The expected stock price volatility was determined based upon Morgan Stanley's historical stock price data over a time period similar to the expected option life. The risk-free interest rate was based on U.S. Treasury Strips with a remaining term equal to the expected life assumed at the date of grant.

12. Employee Benefit Plans

The Company sponsors the Discover Financial Services Pension Plan (the "Discover Pension Plan"), which is a non-contributory defined benefit plan that is qualified under Section 401(a) of the Internal Revenue Code, for eligible employees in the U.S. Effective December 31, 2008, the Discover Pension Plan was amended to discontinue the accrual of future benefits. The Company also sponsors the Discover Financial Services 401(k) Plan (the “Discover 401(k) Plan”), which is a defined contribution plan that is qualified under Section 401(a) of the Internal Revenue Code, for its eligible U.S. employees.

Discover Pension Plan

The Discover Pension Plan generally provides retirement benefits that are based on each participant's years of credited service prior to 2009 and on compensation specified in the Discover Pension Plan. The Company's policy is to fund at least the amounts sufficient to meet minimum funding requirements under the Employee Retirement Income Security Act of 1974, as amended.

Net Periodic Benefit Cost

Net periodic benefit cost expensed by the Company included the following components (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Service cost, benefits earned during the period	$—	$ —	$ —
Interest cost on projected benefit obligation	23	23	22
Expected return on plan assets	(25)	(24)	(23)
Net amortization	4	5	3
Net periodic benefit cost	$2	$ 4	$ 2

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Accumulated Other Comprehensive Income
Pretax amounts recognized in AOCI that have not yet been recognized as components of net periodic benefit cost consist of (dollars in millions):

	December 31, 2016
Prior service credit	$ 4
Net loss	(254)
Total	$ (250)

Benefit Obligations and Funded Status
The following table provides a reconciliation of the changes in the benefit obligation and fair value of plan assets as well as a summary of the Discover Pension Plan's funded status (dollars in millions):

	For the Years Ended December 31, 2016	2015
Reconciliation of benefit obligation		
Benefit obligation at beginning of year	$528	$570
Service cost	—	—
Interest cost	23	23
Employee contributions	—	—
Actuarial loss (gain)	13	(48)
Plan amendments	—	—
Benefits paid	(18)	(17)
Benefit obligation at end of year	546	528
Reconciliation of fair value of plan assets		
Fair value of plan assets at beginning of year	378	401
Actual return on plan assets	21	(6)
Employer contributions	—	—
Employee contributions	—	—
Benefits paid	(18)	(17)
Fair value of plan assets at end of year	381	378
Unfunded status (recorded in accrued expenses and other liabilities)	$(165)	$(150)

Assumptions
The following table presents the assumptions used to determine the benefit obligation:

	December 31, 2016	2015
Discount rate	4.29%	4.50%

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The following table presents the assumptions used to determine net periodic benefit cost:

	For the Years Ended December 31,		
	2016	2015	2014
Discount rate	4.50%	4.08%	4.93%
Expected long-term rate of return on plan assets	6.50%	6.50%	6.50%

The expected long-term rate of return on plan assets was estimated by computing a weighted-average return of the underlying long-term expected returns on the different asset classes, based on the target asset allocations. Asset class return assumptions are created by integrating information on past capital market performance, current levels of key economic indicators and the market insights of investment professionals. Individual asset classes are analyzed as part of a larger system, acknowledging both the interaction between asset classes and the influence of larger macroeconomic variables such as inflation and economic growth on the entire structure of capital markets. Medium and long-term economic outlooks for the U.S. and other major industrial economies are forecast in order to understand the range of possible economic scenarios and evaluate their likelihood. Historical relationships between key economic variables and asset class performance patterns are analyzed using empirical models. Finally, comprehensive asset class performance projections are created by blending descriptive asset class characteristics with capital market insight and the initial economic analyses. The expected long-term return on plan assets is a long-term assumption that generally is expected to remain the same from one year to the next but is adjusted if there is a material change in the target asset allocation and/or significant changes in fees and expenses paid by the Discover Pension Plan.

Discover Pension Plan Assets

The targeted asset allocation for 2017 by asset class is 45% and 55% for equity securities and fixed income securities, respectively. The Discover Financial Services Retirement Plan Investment Committee (the “Investment Committee”) determined the asset allocation targets for the Discover Pension Plan based on its assessment of business and financial conditions, demographic and actuarial data, funding characteristics and related risk factors. Other relevant factors, including industry practices and long-term historical and prospective capital market returns were considered as well.

The Discover Pension Plan return objectives provide long-term measures for monitoring the investment performance against growth in the pension obligations. The overall allocation is expected to help protect the Discover Pension Plan's funded status while generating sufficiently stable real returns (net of inflation) to help cover current and future benefit payments and to improve the Discover Pension Plan's funded status. Total Discover Pension Plan portfolio performance is assessed by comparing actual returns with relevant benchmarks, such as the Standard & Poor's (“S&P”) 500 Index, the S&P 500 Total Return Index, the Russell 2000 Index and the MSCI All Country World Index.

Both the equity and fixed income portions of the asset allocation use a combination of active and passive investment strategies and different investment styles. The fixed income asset allocation consists of longer duration fixed income securities in order to help reduce plan exposure to interest rate variation and to better correlate assets with obligations. The longer duration fixed income allocation is expected to help stabilize the funding status ratio over the long term.

The asset mix of the Discover Pension Plan is reviewed by the Investment Committee on a regular basis. The asset allocation strategy will change over time in response to changes in the Discover Pension Plan's funded status.

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Fair Value Measurements

The Discover Pension Plan's assets are stated at fair value. Quoted market prices in active markets are the best evidence of fair value and are used as the basis for the measurement, if available. If a quoted market price is not available, the estimate of the fair value is based on the best information available in the circumstances. The table below presents information about the Discover Pension Plan assets. All of the Company's pension plan assets were categorized as Level 2 assets within the fair value hierarchy, as defined by ASC 820, as of the end of the current period. For a description of the fair value hierarchy, see Note 21: Fair Value Measurements and Disclosures. (dollars in millions):

	December 31, 2016			2015		
	Amount	Net Asset Allocation		Amount	Net Asset Allocation	
Assets						
Domestic small/mid cap equity fund	$33	9	%	$31	8	%
Emerging markets equity fund	32	9		26	7	
Global low volatility equity fund	20	5		21	6	
International core equity fund	47	12		45	12	
Domestic large cap equity fund	49	13		50	13	
Long duration fixed income fund	195	51		201	53	
Stable value fund	1	—		1	—	
Temporary investment fund	4	1		3	1	
Total assets	$381	100	%	$378	100	%

The investments that are categorized as Level 2 assets primarily consist of fixed income securities and common collective trusts. The common collective trust investment vehicles are valued using the Net Asset Value ("NAV") provided by the administrator of the fund. The NAV is quoted on a private market that is not active; however, the unit price is based on underlying investments that are traded on an active market. The fair value of the stable value product is calculated as the present value of future cash flows.

There were no transfers between Levels 1 and 2 within the fair value hierarchy for the years ended December 31, 2016 and 2015.

Cash Flows

The Company does not expect to make any contributions to the Discover Pension Plan for 2017.

Expected benefit payments associated with the Discover Pension Plan for the next five years and in aggregate for the years thereafter are as follows (dollars in millions):

	December 31, 2016
2017	$ 16
2018	$ 17
2019	$ 17
2020	$ 18
2021	$ 19
Following five years thereafter	$ 117

Discover 401(k) Plan

Under the Discover 401(k) Plan, eligible U.S. employees receive 401(k) matching contributions. Eligible employees also receive fixed employer contributions. The pretax expense associated with the Company contributions for the years ended December 31, 2016, 2015 and 2014 was $59 million, $56 million and $52 million, respectively.

13. Common and Preferred Stock

Preferred Stock

The Company has 575,000 shares of Fixed Rate Non-Cumulative Perpetual Preferred Stock, Series B (the "preferred stock"), outstanding with a par value of $0.01 per share that were issued on October 16, 2012. Each share of preferred stock has a liquidation preference of $1,000 and is represented by 40 depositary shares. Net proceeds received from the preferred stock issuance totaled approximately $560 million. The preferred stock is redeemable at the Company's option, subject to regulatory approval, either (1) in whole or in part on any dividend payment date on or after December 1, 2017 or (2) in whole but not in part, at any time within 90 days following a regulatory capital event (as defined in the certificate of designations for the preferred stock), in each case at a redemption price equal to $1,000 per share of preferred stock plus declared and unpaid dividends. Any dividends declared on the preferred stock will be payable quarterly in arrears at a rate of 6.50% per annum.

Stock Repurchase Program

On July 14, 2016, the Company's Board of Directors approved a share repurchase program authorizing the repurchase of up to $2.5 billion of its outstanding shares of common stock. The program expires on October 31, 2017 and may be terminated at any time. During the year ended December 31, 2016, the Company repurchased 34,043,379 shares for $1.9 billion.

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14. Accumulated Other Comprehensive Income

Changes in each component of AOCI were as follows (dollars in millions):

	Unrealized Gain (Loss) on Available-for-Sale Investment Securities, Net of Tax	Loss on Cash Flow Hedges, Net of Tax	Foreign Currency Translation Adjustments, Net of Tax[1]	Pension Plan Loss, Net of Tax	AOCI
For the Year Ended December 31, 2014					
Balance at December 31, 2013	$ 19	$ 13	$ 1	$ (101)	$ (68)
Net change	4	(20)	(1)	(53)	(70)
Balance at December 31, 2014	$ 23	$ (7)	$ —	$ (154)	$ (138)
For the Year Ended December 31, 2015					
Balance at December 31, 2014	$ 23	$ (7)	$ —	$ (154)	$ (138)
Net change	(23)	(13)	—	14	(22)
Balance at December 31, 2015	$ —	$ (20)	$ —	$ (140)	$ (160)
For the Year Ended December 31, 2016					
Balance at December 31, 2015	$ —	$ (20)	$ —	$ (140)	$ (160)
Net change	(3)	7	—	(5)	(1)
Balance at December 31, 2016	$ (3)	$ (13)	$ —	$ (145)	$ (161)

(1) Includes unrealized gains/losses on hedge of net investment in foreign subsidiary, net of tax benefit and net gains on foreign currency translation adjustments.

The table below presents each component of OCI before reclassifications and amounts reclassified from AOCI for each component of OCI before- and after-tax (dollars in millions):

	Before Tax	Tax Benefit (Expense)	Net of Tax
For the Year Ended December 31, 2016			
Available-for-Sale Investment Securities			
Net unrealized holding losses arising during the period	$ (4)	$ 1	$ (3)
Net change	$ (4)	$ 1	$ (3)
Cash Flow Hedges			
Net unrealized losses arising during the period	$ (23)	$ 8	$ (15)
Amounts reclassified from AOCI	35	(13)	22
Net change	$ 12	$ (5)	$ 7
Pension Plan			
Unrealized losses arising during the period	$ (9)	$ 4	$ (5)
Net change	$ (9)	$ 4	$ (5)

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The table below presents each component of OCI before reclassifications and amounts reclassified from AOCI for each component of OCI before- and after-tax (dollars in millions):

	Before Tax	Tax Benefit (Expense)	Net of Tax
For the Year Ended December 31, 2015			
Available-for-Sale Investment Securities			
Net unrealized holding losses arising during the period	$(29)	$ 11	$(18)
Amounts reclassified from AOCI	(8)	3	(5)
Net change	$(37)	$ 14	$(23)
Cash Flow Hedges			
Net unrealized losses arising during the period	$(67)	$ 25	$(42)
Amounts reclassified from AOCI	46	(17)	29
Net change	$(21)	$ 8	$(13)
Foreign Currency Translation Adjustments			
Net unrealized gains arising during the period	$2	$ —	$2
Amounts reclassified from AOCI	(2)	—	(2)
Net change	$—	$ —	$—
Pension Plan			
Unrealized losses arising during the period	$22	$ (8)	$14
Net change	$22	$ (8)	$14
For the Year Ended December 31, 2014			
Available-for-Sale Investment Securities			
Net unrealized holding gains arising during the period	$9	$ (3)	$6
Amounts reclassified from AOCI	(4)	2	(2)
Net change	$5	$ (1)	$4
Cash Flow Hedges			
Net unrealized losses arising during the period	$(69)	$ 26	$(43)
Amounts reclassified from AOCI	38	(15)	23
Net change	$(31)	$ 11	$(20)
Foreign Currency Translation Adjustments			
Net unrealized losses arising during the period	$(1)	$ —	$(1)
Net change	$(1)	$ —	$(1)
Pension Plan			
Unrealized losses arising during the period	$(84)	$ 31	$(53)
Net change	$(84)	$ 31	$(53)

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15. Other Expense

Total other expense includes the following components (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Postage	$81	$84	$84
Fraud losses and other charges[(1)]	98	112	134
Supplies	41	37	23
Credit-related inquiry fees	18	20	19
Litigation expense	9	18	—
Incentive expense	24	27	50
Other expense	164	191	165
Total other expense	$435	$489	$475

(1) Includes fair value adjustment of $21 million resulting from recording Diners Club Italy as held for sale for the year ended December 31, 2014.

16. Income Taxes

Income tax expense consisted of the following (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Current			
U.S. federal	$1,066	$1,245	$1,215
U.S. state and local	149	143	167
Total	1,215	1,388	1,382
Deferred			
U.S. federal	45	(69)	(7)
U.S. state and local	3	(4)	(4)
Total	48	(73)	(11)
Income tax expense	$1,263	$1,315	$1,371

The following table reconciles the Company’s effective tax rate to the U.S. federal statutory income tax rate:

	For the Years Ended December 31,		
	2016	2015	2014
U.S. federal statutory income tax rate	35.0 %	35.0 %	35.0 %
U.S. state, local and other income taxes, net of U.S. federal income tax benefits	2.7	2.5	2.8
Tax credits	(1.8)	(1.0)	(0.6)
Other	(1.4)	(0.1)	(0.1)
Effective income tax rate	34.5 %	36.4 %	37.1 %

For the year ended December 31, 2016, income tax expense decreased $52 million, or 4.0%, and the effective income tax rate decreased 1.9% as compared to the year ended December 31, 2015. The decrease in rates is primarily due to certain tax credits, the settlement with the United States Congress Joint Committee on Taxation and the resolution of certain federal and state tax matters.

Income tax expense decreased $56 million, or 4.1%, reflecting a decrease in pretax income, and a decline in the effective tax rate 0.7% for the year ended December 31, 2015 as compared to the year ended December 31, 2014.

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These changes are due to favorable adjustments to unrecognized tax benefits from resolving certain tax matters, and a one-time adjustment in 2014 to deferred taxes on limited partnership investments with no similar adjustment in 2015.

Deferred income taxes reflect the net tax effects of temporary differences between the financial reporting and tax bases of assets and liabilities and are measured using the enacted tax rates and laws that will be in effect when such differences are expected to reverse. Valuation allowances are provided to reduce deferred tax assets to an amount that is more likely than not to be realized. The Company evaluates the likelihood of realizing its deferred tax assets by estimating sources of future taxable income and the impact of tax planning strategies. Significant components of the Company's net deferred income taxes, which are included in other assets in the consolidated statements of financial condition, were as follows (dollars in millions):

	December 31,	
	2016	2015
Deferred tax assets		
Allowance for loan losses	$814	$702
Compensation and benefits	120	116
State income taxes	62	81
Other	39	59
Total deferred tax assets before valuation allowance	1,035	958
Valuation allowance	(2)	(2)
Total deferred tax assets, net of valuation allowance	1,033	956
Deferred tax liabilities		
Depreciation and software amortization	(138)	(120)
Customer fees and rewards	(214)	(107)
Debt exchange premium	(74)	(83)
Intangibles	(35)	(31)
Other	(62)	(59)
Total deferred tax liabilities	(523)	(400)
Net deferred tax assets	$510	$556

A reconciliation of beginning and ending unrecognized tax benefits is as follows (dollars in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Balance at beginning of period	$286	$635	$629
Additions			
Current year tax positions	13	18	18
Prior year tax positions	22	2	74
Reductions			
Prior year tax positions	(139)	(26)	(80)
Settlements with taxing authorities	(17)	(5)	(4)
Expired statute of limitations	(7)	(1)	(2)
Other			
Prior year tax positions[(1)]	—	(337)	—

Balance at end of period[2]	$158	$286	$635

(1) Overpayment of taxes in 2013 to 2015 for the timing of deductions resulting from uncertain tax positions for the years 1999 through 2012.

(2) For the years ended December 31, 2016, 2015 and 2014, amounts included $110 million, $138 million and $144 million respectively, of unrecognized tax benefits, which, if recognized, would favorably affect the effective tax rate.

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The Company recognizes accrued interest and penalties related to unrecognized tax benefits as a component of income tax expense. The accrued interest and penalties related to unrecognized tax benefits were $52 million and $131 million for the years ended December 31, 2016 and 2015, respectively.

The Company is subject to examination by the Internal Revenue Service ("IRS") and the tax authorities in various state, local and foreign tax jurisdictions. The Company regularly assesses the likelihood of additional assessments or settlements in each of the taxing jurisdictions resulting from these and subsequent years' examinations. The 2008-2010 federal audit is currently under Administrative Appeals and the IRS is currently examining the years 2011-2012. At this time, the potential change in unrecognized tax benefits is not expected to be significant over the next 12 months. The Company believes that its reserves are sufficient to cover any tax, penalties and interest that would result from such examinations.

The Company has an immaterial amount of state net operating loss carryforwards that are subject to a full valuation allowance as of December 31, 2016 and 2015.

17. Earnings Per Share

The following table presents the calculation of basic and diluted earnings per share ("EPS") (in millions, except per share amounts):

	For the Years Ended December 31,		
	2016	2015	2014
Numerator			
Net income	$2,393	$2,297	$2,323
Preferred stock dividends	(37)	(37)	(37)
Net income available to common stockholders	2,356	2,260	2,286
Income allocated to participating securities	(17)	(14)	(16)
Net income allocated to common stockholders	$2,339	$2,246	$2,270
Denominator			
Weighted-average shares of common stock outstanding	405	437	462
Effect of dilutive common stock equivalents	1	1	1
Weighted-average shares of common stock outstanding and common stock equivalents	406	438	463
Basic earnings per common share	$5.77	$5.14	$4.91
Diluted earnings per common share	$5.77	$5.13	$4.90

Anti-dilutive securities were not material and had no impact on the computation of diluted EPS for any of the years ended December 31, 2016, 2015 and 2014.

18. Capital Adequacy

The Company is subject to the capital adequacy guidelines of the Federal Reserve, and Discover Bank, the Company's main banking subsidiary, is subject to various regulatory capital requirements as administered by the FDIC. Failure to meet minimum capital requirements can result in the initiation of certain mandatory and possibly additional discretionary actions by regulators that, if undertaken, could have a direct material effect on the financial position and results of the Company and Discover Bank. Under capital adequacy guidelines and the regulatory framework for prompt corrective action, the Company and Discover Bank must meet specific capital guidelines that involve quantitative measures of assets, liabilities and certain off-balance sheet items, as calculated under regulatory guidelines. Capital amounts and classification are also subject to qualitative judgments by the regulators about components, risk weightings and other factors.

In 2013, the Federal Reserve, the Office of the Comptroller of the Currency and the FDIC issued final capital rules under the Basel Committee's December 2010 framework (referred to as "Basel III") establishing a new comprehensive

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capital framework for U.S. banking organizations. The final capital rules of Basel III ("Basel III rules") substantially revise Basel I rules regarding the risk-based capital requirements applicable to bank holding companies and depository institutions, including the Company. The Basel III rules became effective for the Company on January 1, 2015. This timing is based on the Company being classified as a "Standardized Approach" entity.

Among other things, the Basel III rules (i) introduced a new capital measure called Common Equity Tier 1 (“CET1”), (ii) specify that Tier 1 capital consists of CET1 and additional Tier 1 capital instruments meeting specified requirements, (iii) apply most deductions/adjustments to regulatory capital measures to CET1 and not to the other components of capital, thus potentially requiring higher levels of CET1 in order to meet minimum ratios and (iv) expand the scope of the deductions/adjustments from capital as compared to existing regulations.

The Basel III minimum capital ratios are as follows:

- 8.0% Total capital (i.e., Tier 1 plus Tier 2) to risk-weighted assets;
- 6.0% Tier 1 capital (i.e., CET1 plus Additional Tier 1) to risk-weighted assets;
- 4.0% Tier 1 capital to average consolidated assets as reported on consolidated financial statements (known as the “leverage ratio”); and
- 4.5% CET1 to risk-weighted assets.

As of December 31, 2016, the Company and Discover Bank met all Basel III minimum capital ratio requirements to which they were subject. The Company and Discover Bank also met the requirements to be considered "well-capitalized" under Regulation Y and prompt corrective action regulations, respectively, and there have been no conditions or events that management believes have changed the Company's or Discover Bank's category. To be categorized as “well-capitalized,” the Company and Discover Bank must maintain minimum capital ratios as set forth in the table below.

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The following table shows the actual capital amounts and ratios of the Company and Discover Bank and comparisons of each to the regulatory minimum and "well-capitalized" requirements (dollars in millions):

	Actual		Minimum Capital Requirements		Capital Requirements To Be Classified as Well-Capitalized	
	Amount	Ratio	Amount	Ratio	Amount[1]	Ratio[1]
At December 31, 2016[2]						
Total capital (to risk-weighted assets)						
Discover Financial Services	$12,445	15.5%	$6,408	≥8.0%	$ 8,010	≥10.0%
Discover Bank	$12,334	15.5%	$6,346	≥8.0%	$ 7,932	≥10.0%
Tier 1 capital (to risk-weighted assets)						
Discover Financial Services	$11,152	13.9%	$4,806	≥6.0%	$ 4,806	≥6.0%
Discover Bank	$10,450	13.2%	$4,759	≥6.0%	$ 6,346	≥8.0%
Tier 1 capital (to average assets)						
Discover Financial Services	$11,152	12.3%	$3,624	≥4.0%	N/A	N/A
Discover Bank	$10,450	11.6%	$3,591	≥4.0%	$ 4,488	≥5.0%
CET1 capital (to risk-weighted assets) (Basel III transition)						
Discover Financial Services	$10,592	13.2%	$3,604	≥4.5%	N/A	N/A
Discover Bank	$10,450	13.2%	$3,570	≥4.5%	$ 5,156	≥6.5%
At December 31, 2015[2]						
Total capital (to risk-weighted assets)						
Discover Financial Services	$12,497	16.5%	$6,052	≥8.0%	$ 7,565	≥10.0%
Discover Bank	$11,905	15.9%	$5,991	≥8.0%	$ 7,488	≥10.0%
Tier 1 capital (to risk-weighted assets)						
Discover Financial Services	$11,126	14.7%	$4,539	≥6.0%	$ 4,539	≥6.0%
Discover Bank	$9,941	13.3%	$4,493	≥6.0%	$ 5,991	≥8.0%
Tier 1 capital (to average assets)						
Discover Financial Services	$11,126	12.9%	$3,446	≥4.0%	N/A	N/A
Discover Bank	$9,941	11.7%	$3,410	≥4.0%	$ 4,263	≥5.0%
CET1 capital (to risk-weighted assets) (Basel III transition)						
Discover Financial Services	$10,566	14.0%	$3,404	≥4.5%	N/A	N/A
Discover Bank	$9,941	13.3%	$3,370	≥4.5%	$ 4,867	≥6.5%

(1) The Basel III rules do not establish well-capitalized thresholds for these measures for bank holding companies. Existing well-capitalized thresholds established in the Federal Reserve's Regulation Y have been included where available.

(2) Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation for additional information.

The amount of dividends that a bank may pay in any year is subject to certain regulatory restrictions. Under the current banking regulations, a bank may not pay dividends if such a payment would leave the bank inadequately capitalized. Discover Bank paid dividends of $1.8 billion in the in the years ended December 31, 2016, 2015 and 2014 to the Company.

19. Commitments, Contingencies and Guarantees

In the normal course of business, the Company enters into a number of off-balance sheet commitments, transactions and obligations under guarantee arrangements that expose the Company to varying degrees of risk. The Company's commitments, contingencies and guarantee relationships are described below.

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Commitments

Lease Commitments

The Company leases various office space and equipment under capital and non-cancelable operating leases, which expire at various dates through 2028. Future minimum payments on capital leases were not material at December 31, 2016. The following table shows future minimum payments on non-cancelable operating leases with original terms in excess of one year (dollars in millions):

	Operating Leases
2017	$ 13
2018	11
2019	9
2020	8
2021	7
Thereafter	28
Total minimum lease payments	$ 76

Occupancy lease agreements, in addition to base rentals, generally provide for rent and operating expense escalations resulting from increased assessments for real estate taxes and other charges. Total rent expense under operating lease agreements, which considers contractual escalations, was $15 million, $17 million and $16 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Unused Commitments to Extend Credit

At December 31, 2016, the Company had unused commitments to extend credit for loans of approximately $192.6 billion. Such commitments arise primarily from agreements with customers for unused lines of credit on certain credit cards and certain other loan products, provided there is no violation of conditions in the related agreements. These commitments, substantially all of which the Company can terminate at any time and which do not necessarily represent future cash requirements, are periodically reviewed based on account usage, customer creditworthiness and loan qualification.

Contingencies

See Note 20: Litigation and Regulatory Matters for a description of potential liability arising from pending litigation or regulatory proceedings involving the Company.

Guarantees

The Company has obligations under certain guarantee arrangements, including contracts, indemnification agreements, and representations and warranties, which contingently require the Company to make payments to the guaranteed party based on changes in an underlying asset, liability or equity security of a guaranteed party, rate or index. Also included as guarantees are contracts that contingently require the Company to make payments to a guaranteed party based on another entity’s failure to perform under an agreement. The Company’s use of guarantees is disclosed below by type of guarantee.

Securitizations Representations and Warranties

As part of the Company’s financing activities, the Company provides representations and warranties that certain assets pledged as collateral in secured borrowing arrangements conform to specified guidelines. Due diligence is performed by the Company which is intended to ensure that asset guideline qualifications are met. If the assets pledged as collateral do not meet certain conforming guidelines, the Company may be required to replace, repurchase or sell such assets. In its credit card securitization activities, the Company would replace nonconforming receivables through the allocation of excess seller's interest or from additional transfers from the unrestricted pool of receivables. If the Company could not add enough receivables to satisfy the requirement, an early amortization (or repayment) of investors' interests would be triggered. In its student loan securitizations, the Company would generally repurchase the loans from the trust at the outstanding principal amount plus interest.

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The maximum potential amount of future payments the Company could be required to make would be equal to the current outstanding balances of third-party investor interests in credit card asset-backed securities, and the principal amount of any student loan secured borrowings, plus any unpaid interest for the corresponding secured borrowings. The Company has recorded substantially all of the maximum potential amount of future payments in long-term borrowings on the Company's consolidated statements of financial condition. The Company has not recorded any incremental contingent liability associated with its secured borrowing representations and warranties. Management believes that the probability of having to replace, repurchase or sell assets pledged as collateral under secured borrowing arrangements, including an early amortization event, is low.

Mortgage Loans Representations and Warranties

The Company sold loans it originated to investors on a servicing-released basis and the risk of loss or default by the borrower is generally transferred to the investor. However, the Company was required by these investors to make certain representations and warranties relating to credit information, loan documentation and collateral. These representations and warranties may extend through the contractual life of the mortgage loan, even though the Company closed the mortgage origination business. Subsequent to the sale, if underwriting deficiencies, borrower fraud or documentation defects are discovered in individual mortgage loans, the Company may be obligated to repurchase the respective mortgage loan or indemnify the investors for any losses from borrower defaults if such deficiency or defect cannot be cured within the specified period following discovery. The Company has established a repurchase reserve based on expected losses. At December 31, 2016, this amount was not material and was included in accrued expenses and other liabilities on the consolidated statements of financial condition.

Counterparty Settlement Guarantees

Diners Club and DFS Services LLC (on behalf of PULSE) have various counterparty exposures, which are listed below.

- Merchant Guarantee. Diners Club has entered into contractual relationships with certain international merchants, which generally include travel-related businesses, for the benefit of all Diners Club licensees. The licensees hold the primary liability to settle the transactions of their customers with these merchants. However, Diners Club retains a counterparty exposure if a licensee fails to meet its financial payment obligation to one of these merchants.
- ATM Guarantee. PULSE entered into contractual relationships with certain international ATM acquirers in which DFS Services LLC retains counterparty exposure if an issuer fails to fulfill its settlement obligation.
- Network Alliance Guarantee. Discover Network, Diners Club and PULSE have entered into contractual relationships with certain international payment networks in which DFS Services LLC retains the counterparty exposure if a network fails to fulfill its settlement obligation.

The maximum potential amount of future payments related to such contingent obligations is dependent upon the transaction volume processed between the time a potential counterparty defaults on its settlement and the time at which the Company disables the settlement of any further transactions for the defaulting party. However, there is no limitation on the maximum amount the Company may be liable to pay. The actual amount of the potential exposure cannot be quantified as the Company cannot determine whether particular counterparties will fail to meet their settlement obligations.

While the Company has some contractual remedies to offset these counterparty settlement exposures (such as letters of credit or pledged deposits), in the event that all licensees and/or issuers were to become unable to settle their transactions, the Company estimates its maximum potential counterparty exposures to these settlement guarantees, based on historical transaction volume, would be $111 million for merchant guarantees as of December 31, 2016. The maximum potential counterparty exposures to these settlement guarantees for ATM guarantees would be immaterial as of December 31, 2016. The maximum potential counterparty exposures to for network alliance guarantees would be $33 million as of December 31, 2016.

The Company believes that the estimated amounts of maximum potential future payments are not representative of the Company's actual potential loss exposure given Diners Club's and PULSE's insignificant historical losses from these counterparty exposures. As of December 31, 2016, the Company had not recorded any contingent liability in the consolidated financial statements for these counterparty exposures, and management believes that the probability of any payments under these arrangements is low.

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Discover Network Merchant Chargeback Guarantees

The Company operates the Discover Network, issues payment cards and permits third parties to issue payment cards. The Company is contingently liable for certain transactions processed on the Discover Network in the event of a dispute between the payment card customer and a merchant. The contingent liability arises if the disputed transaction involves a merchant or merchant acquirer with whom the Discover Network has a direct relationship. If a dispute is resolved in the customer's favor, the Discover Network will credit or refund the disputed amount to the Discover Network card issuer, who in turn credits its customer's account. The Discover Network will then charge back the disputed amount of the payment card transaction to the merchant or merchant acquirer, where permitted by the applicable agreement, to seek recovery of amounts already paid to the merchant for payment card transactions. If the Discover Network is unable to collect the amount subject to dispute from the merchant or merchant acquirer (e.g., in the event of merchant default or dissolution or after expiration of the time period for chargebacks in the applicable agreement), the Discover Network will bear the loss for the amount credited or refunded to the customer. In most instances, a loss by the Discover Network is unlikely to arise in connection with payments on card transactions because most products or services are delivered when purchased, and credits are issued by merchants on returned items in a timely fashion, thus minimizing the likelihood of cardholder disputes with respect to amounts paid by the Discover Network. However, where the product or service is not scheduled to be provided to the customer until a later date following the purchase, the likelihood of a contingent payment obligation by the Discover Network increases. Losses related to merchant chargebacks were not material for the years ended December 31, 2016, 2015 and 2014.

The maximum potential amount of obligations of the Discover Network arising as a result of such contingent obligations is estimated to be the portion of the total Discover Network transaction volume processed to date for which timely and valid disputes may be raised under applicable law and relevant issuer and customer agreements. There is no limitation on the maximum amount the Company may be liable to pay to issuers. However, the Company believes that such amount is not representative of the Company's actual potential loss exposure based on the Company's historical experience. The actual amount of the potential exposure cannot be quantified as the Company cannot determine whether the current or cumulative transaction volumes may include or result in disputed transactions.

The table below summarizes certain information regarding merchant chargeback guarantees (in millions):

	For the Years Ended December 31,		
	2016	2015	2014
Aggregate sales transaction volume[(1)]	$136,413	$132,265	$125,637

(1) Represents period transactions processed on the Discover Network for which a potential liability exists that, in aggregate, can differ from credit card sales volume.

The Company did not record any contingent liability in the consolidated financial statements for merchant chargeback guarantees on December 31, 2016 and 2015. The Company mitigates the risk of potential loss exposure by withholding settlement from merchants, obtaining third-party guarantees, or obtaining escrow deposits or letters of credit from certain merchant acquirers or merchants that are considered higher risk due to various factors such as time delays in the delivery of products or services. As of December 31, 2016 and December 31, 2015, the Company had escrow deposits and settlement withholdings of $9 million and $7 million, respectively, which are recorded in interest-bearing deposit accounts and accrued expenses and other liabilities on the Company's condensed consolidated statements of financial condition.

20. Litigation and Regulatory Matters

In the normal course of business, from time to time, the Company has been named as a defendant in various legal actions, including arbitrations, class actions and other litigation, arising in connection with its activities. Certain of the actual or threatened legal actions include claims for substantial compensatory and/or punitive damages or claims for indeterminate amounts of damages. The litigation process is not predictable and can lead to unexpected results. The Company contests liability and/or the amount of damages as appropriate in each pending matter.

The Company has historically relied on the arbitration clause in its cardmember agreements, which has in some instances limited the costs of, and the Company's exposure to, litigation, but there can be no assurance that the Company will continue to be successful in enforcing its arbitration clause in the future. Legal challenges to the enforceability of these clauses have led most card issuers, and may cause the Company, to discontinue their use. From time to time, the Company is involved in legal actions challenging its arbitration clause. Bills are periodically introduced in Congress to directly or indirectly prohibit the use of pre-dispute arbitration clauses, and the Dodd-Frank Wall Street

Reform and Consumer Protection Act authorized the Consumer Financial Protection Bureau (the "CFPB") to conduct a study on pre-dispute arbitration clauses and, based on the study, potentially limit or ban arbitration clauses. On May 5, 2016, the CFPB issued its proposed arbitration rule that would (i) effectively ban consumer financial companies from using arbitration clauses to prevent class action cases and (ii) require records of all other arbitrations to be provided to the CFPB for potential publication on its website. The deadline for submitting comments to the proposed rule was August 22, 2016. The timing and provisions of any final rule are uncertain at this time.

The Company is also involved, from time to time, in other reviews, investigations and proceedings (both formal and informal) by governmental agencies regarding the Company’s business including, among other matters, consumer regulatory, accounting, tax and other operational matters, some of which may result in significant adverse judgments, settlements, fines, penalties, injunctions, decreases in regulatory ratings, customer restitution or other relief, which could materially impact the Company's consolidated financial statements, increase its cost of operations, or limit its ability to execute its business strategies and engage in certain business activities. For example, Discover Bank and Discover Financial Services have been the subject of actions by the FDIC and the Federal Reserve, respectively, with respect to anti-money laundering and related compliance programs as described more fully below. In addition, certain subsidiaries of the Company are subject to a consent order with the CFPB regarding certain student loan servicing practices, as described below. Regulatory actions generally can include demands for civil money penalties, changes to certain business practices and customer restitution. Supervisory actions related to anti-money laundering and related laws and regulations will limit for a period of time the Company's ability to enter into certain types of acquisitions and make certain types of investments.

In accordance with applicable accounting guidance, the Company establishes an accrued liability for legal and regulatory matters when those matters present loss contingencies which are both probable and estimable. Litigation and regulatory settlement related expense was not material for years ended December 31, 2016, 2015 and 2014 respectively.

There may be an exposure to loss in excess of any amounts accrued. The Company believes the estimate of the aggregate range of reasonably possible losses (meaning those losses the likelihood of which is more than remote but less than likely) in excess of the amounts that the Company has accrued for legal and regulatory proceedings is up to $135 million. This estimated range of reasonably possible losses is based upon currently available information for those proceedings in which the Company is involved, takes into account the Company’s best estimate of such losses for those matters for which an estimate can be made, and does not represent the Company’s maximum potential loss exposure. Various aspects of the legal proceedings underlying the estimated range will change from time to time and actual results may vary significantly from the estimate.

The Company’s estimated range above involves significant judgment, given the varying stages of the proceedings, the existence of numerous yet to be resolved issues, the breadth of the claims (often spanning multiple years and, in some cases, a wide range of business activities), unspecified damages and/or the novelty of the legal issues presented. The outcome of pending matters could be material to the Company’s consolidated financial condition, operating results and cash flows for a particular future period, depending on, among other things, the level of the Company’s income for such period, and could adversely affect the Company’s reputation.

On July 5, 2012, the Antitrust Division of the United States Department of Justice (the “Division”) issued a Civil Investigative Demand (“CID”) to the Company seeking information regarding an investigation related to potential violations of Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§1-2, by an unidentified party other than Discover. The CID seeks documents, data and narrative responses to several interrogatories and document requests, related to the debit card market. A CID is a request for information in the course of a civil investigation and does not constitute the commencement of legal proceedings. The Division is permitted by statute to issue a CID to anyone whom it believes may have information relevant to an investigation. The receipt of a CID does not presuppose that there is probable cause to believe that a violation of the antitrust laws has occurred or that a formal complaint ultimately will be filed. The Company is cooperating with the Division in connection with the CID.

On May 26, 2015, the Company entered into a written agreement with the Federal Reserve Bank of Chicago where the Company agreed to enhance the Company’s enterprise-wide anti-money laundering and related compliance programs. The agreement does not include civil money penalties. This agreement follows the consent order that Discover Bank entered into with the FDIC on June 13, 2014 related to Discover Bank's anti-money laundering and related compliance programs. In the consent order, Discover Bank agreed to, among other things, enhance its anti-money laundering and related compliance programs.

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On July 9, 2015, a class action lawsuit was filed against the Company in the U.S. District Court for the Northern District of Illinois (Polly Hansen v. Discover Financial Services and Discover Home Loans, Inc.). The plaintiff alleges that the Company contacted her, and members of the class she seeks to represent, on their cellular and residential telephones without their express consent or after consent was revoked in violation of the Telephone Consumer Protection Act ("TCPA"). Plaintiff seeks statutory damages for alleged negligent and willful violations of the TCPA, attorneys' fees, costs and injunctive relief. The TCPA provides for statutory damages of $500 for each violation ($1,500 for willful violations). On March 9, 2016, Sumner Davenport was substituted as lead plaintiff for Polly Hansen. On January 13, 2017, plaintiff filed an unopposed motion for preliminary approval of a class action settlement to resolve the case. On January 20, 2017, the Court granted preliminary approval of the settlement. The final approval hearing is scheduled for September 14, 2017. If approved, the case will be dismissed with prejudice as to all certified class members who do not opt out of the settlement.

On July 22, 2015, the Company announced that its subsidiaries, Discover Bank, The Student Loan Corporation and Discover Products, Inc. (the “Discover Subsidiaries”), agreed to a consent order with the CFPB resolving the agency’s investigation with respect to certain student loan servicing practices. The CFPB’s investigation into these practices has been previously disclosed by the Company, initially in February 2014. The order requires the Discover Subsidiaries to provide redress of approximately $16 million to consumers who may have been affected by the activities described in the order related to certain collection calls, overstatements of minimum payment due amounts in billing statements, and provision of interest paid information to consumers, and provide regulatory disclosures with respect to loans acquired in default. In addition, the Discover Subsidiaries are required to pay a $2.5 million civil money penalty to the CFPB. As required by the consent order, on October 19, 2015, the Discover Subsidiaries submitted to the CFPB a redress plan and a compliance plan designed to ensure that the Discover Subsidiaries provide redress and otherwise comply with the terms of the order.

On September 4, 2015, the District Attorney of Trinity County, California filed a protection products lawsuit against the Company in California state court (The People of the State of California Ex Rel, Eric L. Heryford, District Attorney, Trinity County v. Discover Financial Services, et al.). The District Attorney subsequently dismissed this lawsuit on February 19, 2016 and filed a new complaint in federal court in the Eastern District of California on March 4, 2016 alleging the same cause of action. An amended complaint was filed on March 25, 2016. The lawsuit asserts various claims under California's Unfair Competition Law with respect to the Company's marketing and administration of various protection products. Plaintiff seeks declaratory relief, statutory civil penalties and attorneys’ fees. The Company filed a motion to dismiss the first amended complaint on April 26, 2016. The Company is not in a position at this time to assess the likely outcome or its exposure, if any, with respect to this matter, but will seek to vigorously defend against all claims asserted by the plaintiff.

On March 8, 2016, a class action lawsuit was filed against the Company, other credit card networks, other issuing banks, and EMVCo in the U.S. District Court for the Northern District of California (B&R Supermarket, Inc., d/b/a Milam’s Market, et al. v. Visa, Inc. et al.) alleging violations of the Sherman Antitrust Act, California's Cartwright Act, and unjust enrichment. Plaintiffs allege a conspiracy by defendants to shift fraud liability to merchants with the migration to the EMV security standard and chip technology. Plaintiffs assert joint and several liability among the defendants and seek unspecified damages, including treble damages, attorneys' fees, costs and injunctive relief. On July 15, 2016, Plaintiffs filed an amended complaint that includes additional named plaintiffs, reasserts the original claims, and includes additional state law causes of action. The defendants filed motions to dismiss on August 5, 2016. On September 30, 2016, the court granted the motions to dismiss for certain issuing banks and EMVCo but denied the motions to dismiss filed by the other networks, including the Company. Discovery is proceeding and a class certification ruling is expected this spring. The Company is not in a position at this time to assess the likely outcome or its exposure, if any, with respect to this matter, but will seek to vigorously defend against all claims asserted by the plaintiffs.

21. Fair Value Measurements and Disclosures

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC Topic 820, Fair Value Measurement, provides a three-level hierarchy for classifying financial instruments, which is based on whether the inputs to the valuation techniques used to measure the fair value of each financial instrument are observable or unobservable. It also requires certain disclosures about those measurements. The three-level valuation hierarchy is as follows:

- Level 1: Fair values determined by Level 1 inputs are defined as those that utilize quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access.
- Level 2: Fair values determined by Level 2 inputs are those that utilize inputs other than quoted prices included in

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Level 1 that are observable for the asset or liability, either directly or indirectly. Level 2 inputs include quoted prices for similar assets and liabilities in active or inactive markets, quoted prices for the identical assets in an inactive market, and inputs other than quoted prices that are observable for the asset or liability, such as interest rates and yield curves that are observable at commonly quoted intervals. The Company evaluates factors such as the frequency of transactions, the size of the bid-ask spread and the significance of adjustments made when considering transactions involving similar assets or liabilities to assess the relevance of those observed prices. If relevant and observable prices are available, the fair values of the related assets or liabilities would be classified as Level 2.

- Level 3: Fair values determined by Level 3 inputs are those based on unobservable inputs and include situations where there is little, if any, market activity for the asset or liability being valued. In instances in which the inputs used to measure fair value may fall into different levels of the fair value hierarchy, the level in the fair value hierarchy within which the fair value measurement in its entirety is classified is based on the lowest level input that is significant to the fair value measurement in its entirety. The Company may utilize both observable and unobservable inputs in determining the fair values of financial instruments classified within the Level 3 category.

The determination of classification of its financial instruments within the fair value hierarchy is performed at least quarterly by the Company. For transfers in and out of the levels of the fair value hierarchy, the Company discloses the fair value measurement based on the value immediately preceding the transfer.

The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment and involves consideration of factors specific to the asset or liability. Furthermore, certain techniques used to measure fair value involve some degree of judgment and, as a result, are not necessarily indicative of the amounts the Company would realize in a current market exchange.

During the years ended December 31, 2016 and 2015, there were no changes to the Company's valuation techniques that had, or are expected to have, a material impact on the Company's consolidated financial position or results of operations.

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Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities measured at fair value on a recurring basis are as follows (dollars in millions):

	Quoted Price in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Balance at December 31, 2016				
Assets				
U.S. Treasury securities	$ 674	$ —	$ —	$674
Residential mortgage-backed securities - Agency	—	931	—	931
Available-for-sale investment securities	$ 674	$ 931	$ —	$1,605
Derivative financial instruments	$ —	$ 7	$ —	$7
Liabilities				
Derivative financial instruments	$ —	$ 94	$ —	$94
Balance at December 31, 2015				
Assets				
U.S. Treasury securities	$ 1,272	$ —	$ —	$1,272
U.S. government agency securities	494	—	—	494
Residential mortgage-backed securities - Agency	—	1,197	—	1,197
Available-for-sale investment securities	$ 1,766	$ 1,197	$ —	$2,963
Derivative financial instruments	$ —	$ 22	$ —	$22
Liabilities				
Derivative financial instruments	$ —	$ 38	$ —	$38

There were no transfers between Levels 1 and 2 within the fair value hierarchy for the years ended December 31, 2016 and 2015.

Available-for-Sale Investment Securities

Investment securities classified as available-for-sale consist of U.S. Treasury securities, U.S. government agency securities and residential mortgage-backed securities. The fair value estimates of investment securities classified as Level 1, consisting of U.S. Treasury and government agency securities, are determined based on quoted market prices for the same securities. The Company classifies all other available-for-sale investment securities as Level 2, the fair value estimates of which are obtained from pricing services, where fair values are estimated using pricing models based on observable market inputs or recent trades of similar securities. The fair value estimates of residential mortgage-backed securities are based on the best information available. This data may consist of observed market prices, broker quotes or discounted cash flow models that incorporate assumptions such as benchmark yields, issuer spreads, prepayment speeds, credit ratings and losses, the priority of which may vary based on availability of information.

The Company validates the fair value estimates provided by the pricing services primarily by comparison to valuations obtained through other pricing sources. The Company evaluates pricing variances amongst different pricing sources to ensure that the valuations utilized are reasonable. The Company also corroborates the reasonableness of the fair value estimates with analysis of trends of significant inputs, such as market interest rate curves. The Company further performs due diligence in understanding the procedures and techniques performed by the pricing services to derive fair value estimates.

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At December 31, 2016, amounts reported in residential mortgage-backed securities reflect government-rated obligations issued by Fannie Mae, Freddie Mac and Ginnie Mae with a par value of $912 million, a weighted-average coupon of 2.81% and a weighted-average remaining maturity of three years.

Derivative Financial Instruments

The Company's derivative financial instruments consist of interest rate swaps and foreign exchange forward contracts. These instruments are classified as Level 2 as their fair values are estimated using proprietary pricing models, containing certain assumptions based on readily observable market-based inputs, including interest rate curves, option volatility and foreign currency forward and spot rates. In determining fair values, the pricing models use widely accepted valuation techniques including discounted cash flow analysis on the expected cash flows of each derivative. This analysis reflects the contractual terms of the derivatives, including the period to maturity and the observable market-based inputs. The fair values of the interest rate swaps are determined using the market standard methodology of netting the discounted future fixed cash receipts (or payments) and the discounted expected variable cash payments (or receipts). The variable cash payments are based on an expectation of future interest rates derived from the observable market interest rate curves. The Company considers collateral and master netting agreements that mitigate credit exposure to counterparties in determining the counterparty credit risk valuation adjustment. The fair values of the currency instruments are valued comparing the contracted forward exchange rate pertaining to the specific contract maturities to the current market exchange rate.

The Company validates the fair value estimates of interest rate swaps primarily through comparison to the fair value estimates computed by the counterparties to each of the derivative transactions. The Company evaluates pricing variances amongst different pricing sources to ensure that the valuations utilized are reasonable. The Company also corroborates the reasonableness of the fair value estimates with analysis of trends of significant inputs, such as market interest rate curves. The Company performs due diligence in understanding the impact to any changes to the valuation techniques performed by proprietary pricing models prior to implementation, working closely with the third-party valuation service, and reviews the control objectives of the service at least annually. The Company corroborates the fair value of foreign exchange forward contracts through independent calculation of the fair value estimates.

Assets and Liabilities Measured at Fair Value on a Non-Recurring Basis

The Company also has assets that under certain conditions are subject to measurement at fair value on a non-recurring basis. These assets include those associated with acquired businesses, including goodwill and other intangible assets. For these assets, measurement at fair value in periods subsequent to the initial recognition of the assets is applicable if one or more of the assets is determined to be impaired. The Company had no material impairments related to these assets during the years ended December 31, 2016 and 2015.

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Financial Instruments Measured at Other Than Fair Value

The following tables disclose the estimated fair value of the Company's financial assets and financial liabilities that are not required to be carried at fair value (dollars in millions):

	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total	Carrying Value
Balance at December 31, 2016					
Assets					
States and political subdivisions of states	$ —	$ 2	$ —	$2	$2
Residential mortgage-backed securities - Agency	—	150	—	150	150
Held-to-maturity investment securities	$ —	$ 152	$ —	$152	$152
Cash and cash equivalents	$ 11,914	$ —	$ —	$11,914	$11,914
Restricted cash	$ 95	$ —	$ —	$95	$95
Net loan receivables	$ —	$ —	$ 78,252	$78,252	$75,087
Accrued interest receivables	$ —	$ 724	$ —	$724	$724
Liabilities					
Deposits	$ —	$ 52,183	$ —	$52,183	$51,992
Long-term borrowings - owed to securitization investors	$ —	$ 15,617	$ 900	$16,517	$16,411
Other long-term borrowings	$ —	$ 9,470	$ —	$9,470	$9,032
Accrued interest payables	$ —	$ 168	$ —	$168	$168
Balance at December 31, 2015					
Assets					
U.S. Treasury securities	$ 1	$ —	$ —	$1	$1
States and political subdivisions of states	—	7	—	7	7
Residential mortgage-backed securities - Agency	—	114	—	114	113
Held-to-maturity investment securities	$ 1	$ 121	$ —	$122	$121
Cash and cash equivalents	$ 9,572	$ —	$ —	$9,572	$9,572
Restricted cash	$ 99	$ —	$ —	$99	$99
Net loan receivables	$ —	$ —	$ 71,455	$71,455	$70,516
Accrued interest receivables	$ —	$ 660	$ —	$660	$660
Liabilities					
Deposits[1]	$ —	$ 47,714	$ —	$47,714	$47,531
Long-term borrowings - owed to securitization investors[1]	$ —	$ 15,634	$ 1,220	$16,854	$16,735
Other long-term borrowings[1]	$ —	$ 8,355	$ —	$8,355	$7,915
Accrued interest payables	$ —	$ 158	$ —	$158	$158

(1) Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation for additional information.

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The fair values of these financial assets and liabilities, which are not carried at fair value on the consolidated statements of financial condition, were determined by applying the fair value provisions discussed herein. The use of different assumptions or estimation techniques may have a material effect on these estimated fair value amounts. The following describes the valuation techniques of these financial instruments measured at other than fair value.

Cash and Cash Equivalents

The carrying value of cash and cash equivalents approximates fair value due to the low level of risk these assets present to the Company as well as the relatively liquid nature of these assets, particularly given their short maturities.

Restricted Cash

The carrying value of restricted cash approximates fair value due to the low level of risk these assets present to the Company as well as the relatively liquid nature of these assets, particularly given their short maturities.

Held-to-Maturity Investment Securities

Held-to-maturity investment securities consist of residential mortgage-backed securities issued by agencies and municipal bonds. The fair value of residential mortgage-backed securities included in the held-to-maturity portfolio is estimated similarly to residential mortgage-backed securities carried at fair value on a recurring basis discussed herein. Municipal bonds are valued based on quoted market prices for the same or similar securities.

Net Loan Receivables

The Company's loan receivables are comprised of credit card and installment loans, including the PCI student loans. Fair value estimates are derived utilizing discounted cash flow analyses, the calculations of which are performed on groupings of loan receivables that are similar in terms of loan type and characteristics. Inputs to the cash flow analysis of each grouping consider prepayment trends and seasonality factors, if appropriate, as well as interest accrual estimates based on recent yields. The expected future cash flows, derived through the cash flow analysis, of each grouping are discounted at rates at which similar loans within each grouping could be originated under current market conditions. Significant inputs to the fair value measurement of the loan portfolio are unobservable, and as such, are classified as Level 3.

Accrued Interest Receivables

The carrying value of accrued interest receivables, which is included in other assets on the consolidated statements of financial condition, approximates fair value as it is generally due in less than one year.

Deposits

The carrying values of money market deposits, savings deposits and demand deposits approximate fair value due to the potentially liquid nature of these deposits. For time deposits for which readily available market rates do not exist, fair values are estimated by discounting expected future cash flows using market rates currently offered for deposits with similar remaining maturities.

Long-Term Borrowings - Owed to Securitization Investors

Fair values of long-term borrowings owed to credit card securitization investors are determined utilizing quoted market prices of the same transactions and, as such, are classified as Level 2. Fair values of long-term borrowings owed to student loan securitization investors are calculated by discounting cash flows using estimated assumptions including, among other things, maturity and market discount rates. A portion of the difference between the carrying value and the fair value of the long-term borrowings owed to student loan securitization investors relates to purchase accounting adjustments recorded in connection with the December 2010 purchase of SLC. Significant inputs to these fair value measurements are unobservable and, as such, are classified as Level 3.

Other Long-Term Borrowings

Fair values of other long-term borrowings, consisting of subordinated and senior debt, are determined utilizing current observable market prices for those transactions and, as such, are classified as Level 2. A portion of the difference between the carrying value and the fair value of other long-term borrowings relates to the cash premiums paid in connection with the 2012 fiscal year debt exchanges.

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Accrued Interest Payables

The carrying value of accrued interest payables, which is included in accrued expenses and other liabilities on the consolidated statements of financial condition, approximates fair value as it is payable in less than one year.

22. Derivatives and Hedging Activities

The Company uses derivatives to manage its exposure to various financial risks. The Company does not enter into derivatives for trading or speculative purposes. Certain derivatives used to manage the Company's exposure to interest rate movements and other identified risks are not designated as hedges and do not qualify for hedge accounting. Derivatives may give rise to counterparty credit risk, which generally is addressed through collateral arrangements as described under the sub-heading "— Collateral Requirements and Credit-Risk Related Contingency Features." The Company enters into derivative transactions with established dealers that meet minimum credit criteria established by the Company. All counterparties must be pre-approved prior to engaging in any transaction with the Company. Counterparties are monitored on a regular basis by the Company to ensure compliance with the Company's risk policies and limits. In determining the counterparty credit risk valuation adjustment for the fair values of derivatives, the Company considers collateral and legally enforceable master netting agreements that mitigate credit exposure to related counterparties.

All derivatives are recorded in other assets at their gross positive fair values and in accrued expenses and other liabilities at their gross negative fair values. See Note 21: Fair Value Measurements and Disclosures for a description of the valuation methodologies of derivatives. Cash collateral posted and held balances are recorded in other assets and deposits, respectively, in the consolidated statements of financial condition. Collateral amounts recorded in the consolidated statements of financial condition are based on the net collateral posted or held position for each applicable legal entity's master netting arrangement with each counterparty.

Derivatives Designated as Hedges

Derivatives designated and qualifying as a hedge of the exposure to variability in expected future cash flows arising from changes in interest rates, or other types of forecasted transactions, are considered cash flow hedges. Derivatives designated and qualifying as a hedge of the exposure to changes in the fair value of an asset, liability, or firm commitment attributable to a particular risk, such as interest rate risk, are considered fair value hedges.

Cash Flow Hedges

The Company uses interest rate swaps to manage its exposure to changes in interest rates related to future cash flows resulting from interest payments on credit card securitized debt and deposits. The Company's outstanding cash flow hedges are for an initial maximum period of five years for securitized debt and seven years for deposits. The derivatives are designated as hedges of the risk of changes in cash flows on the Company's LIBOR or Federal Funds rate-based interest payments, and qualify for hedge accounting in accordance with ASC Topic 815, Derivatives and Hedging ("ASC 815").

The effective portion of the change in the fair value of derivatives designated as cash flow hedges is recorded in OCI and is subsequently reclassified into earnings in the period that the hedged forecasted cash flows affect earnings. The ineffective portion of the change in fair value of the derivative, if any, is recognized directly in earnings. Amounts reported in AOCI related to derivatives at December 31, 2016 will be reclassified to interest expense as interest payments are made on certain of the Company's floating-rate securitized debt or deposits. During the next 12 months, the Company estimates it will reclassify $17 million of pretax losses to interest expense related to its derivatives designated as cash flow hedges.

Fair Value Hedges

The Company is exposed to changes in fair value of certain of its fixed-rate debt obligations due to changes in interest rates. The Company uses interest rate swaps to manage its exposure to changes in fair value of certain fixed-rate senior notes, securitized debt, bank notes and interest-bearing brokered deposits attributable to changes in LIBOR, a benchmark interest rate as defined by ASC 815. These interest rate swaps qualify as fair value hedges in accordance with ASC 815. Changes in both (i) the fair values of the derivatives and (ii) the hedged fixed-rate senior notes, securitized debt, bank notes and interest-bearing brokered deposits relating to the risk being hedged are recorded in interest expense. The changes generally provide substantial offset to one another, with any difference, or ineffectiveness

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recorded in interest expense. Any basis differences between the fair value and the carrying amount of the hedged item at the inception of the hedging relationship are amortized to interest expense.

Derivatives Not Designated as Hedges

Interest Rate Swaps

The Company may have, from time to time, interest rate swap agreements that are not designated as hedges. Such agreements are not speculative and are also used to manage interest rate risk but are not designated for hedge accounting. Changes in the fair value of these contracts are recorded in other income.

Foreign Exchange Forward Contracts

The Company has foreign exchange forward contracts that are economic hedges and are not designated as accounting hedges. The Company enters into foreign exchange forward contracts to manage foreign currency risk. Changes in the fair value of these contracts are recorded in other income.

The following table summarizes the fair value (including accrued interest) and outstanding notional amounts of derivative instruments and related collateral balances (dollars in millions):

	December 31, 2016				December 31, 2015		
	Notional Amount	Number of Outstanding Derivative Contracts	Derivative Assets	Derivative Liabilities	Notional Amount	Derivative Assets	Derivative Liabilities
Derivatives designated as hedges							
Interest rate swaps—cash flow hedge	$3,700	7	$ —	$ 22	$4,100	$ —	$ 35
Interest rate swaps—fair value hedge	$6,208	57	7	72	$4,110	22	3
Derivatives not designated as hedges							
Foreign exchange forward contracts[(1)]	$13	6	—	—	$32	—	—
Interest rate swap	$149	1	—	—	$217	—	—
Total gross derivative assets/liabilities[(2)]			7	94		22	38
Less: Collateral held/posted[(3)]			(2)	(94)		(8)	(33)
Total net derivative assets/liabilities			$ 5	$ —		$ 14	$ 5

(1) The foreign exchange forward contracts have notional amounts of EUR 6 million, GBP 5 million and SGD 1 million as of December 31, 2016 and EUR 19 million and GBP 7 million, SGD 1 million as of December 31, 2015.

(2) In addition to the derivatives disclosed in the table, the Company enters into forward contracts to purchase when-issued mortgage-backed securities as part of its community reinvestment initiatives. At December 31, 2016, the Company had one outstanding contract with a notional amount of $36 million and immaterial fair value. At December 31, 2015, the Company had one outstanding contract with a notional amount of $52 million and immaterial fair value.

(3) Collateral amounts, which consist of both cash and investment securities, are limited to the related derivative asset/liability balance and do not include excess collateral received/pledged.

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The following tables summarize the impact of the derivative instruments on income and OCI, and indicates where within the consolidated financial statements such impact is reported (dollars in millions):

	Location	Amount of Gain (Loss) Recognized in OCI For the Years Ended December 31, 2016	2015	2014
Derivatives designated as hedges				
Interest rate swaps—cash flow/net investment hedges				
Total gain (loss) recognized in OCI after amounts reclassified into earnings, pre-tax	OCI	$12	$(22)	$(27)
Total gain (loss) recognized in OCI		$12	$(22)	$(27)

	Location	Amount of (Loss) Gain Recognized in Income For the Years Ended December 31, 2016	2015	2014
Derivatives designated as hedges				
Interest rate swaps—cash flow hedges				
Amount reclassified from OCI into income	Interest Expense	$(35)	$(46)	$(38)
Total amount reclassified from OCI into income on cash flow		(35)	(46)	(38)
Interest rate swaps—fair value hedges				
Loss on interest rate swaps		(79)	(11)	(13)
Gain on hedged items		78	11	17
Net ineffectiveness (loss) gain	Interest Expense	(1)	—	4
Increase to interest expense related to net settlements on interest rate swaps	Interest Expense	34	32	38
Total gain on fair value hedges		33	32	42
Total (loss) gain on derivatives designated as hedges recognized in income		$(2)	$(14)	$4
Derivatives not designated as hedges				
Total gains on derivatives not designated as hedges recognized in income(1)	Other Income	$1	$75	$85

(1) During the years ended December 31, 2015 and 2014, the Company recognized in income total gain of $2 million and total loss of $6 million, respectively, on forward delivery contracts related to the mortgage loan business that was closed during 2015. During the years ended December 31, 2015 and 2014, the Company recognized in income total gain of $71 million and $87 million, respectively, on interest rate lock commitments related to the mortgage loan business that was closed during 2015. See Note 3: Business Dispositions for additional information.

Collateral Requirements and Credit-Risk Related Contingency Features

The Company has master netting arrangements and minimum collateral posting thresholds with its counterparties for its fair value and cash flow hedge interest rate swaps, foreign exchange forward contracts and forward delivery contracts. The Company has not sought a legal opinion in relation to the enforceability of its master netting arrangements and, as such, does not report any of these positions on a net basis. Collateral is required by either the Company or its subsidiaries or the counterparty depending on the net fair value position of these derivatives held with that counterparty. The Company may also be required to post collateral with a counterparty for its fair value and cash flow hedge interest rate swaps depending on the credit rating it or Discover Bank receives from specified major credit rating agencies. Collateral receivable or payable amounts are not offset against the fair value of these derivatives, but are recorded separately in other assets or deposits.

As of December 31, 2016, DFS had a right to reclaim $4 million of cash collateral that had been posted (net of amounts required to be posted by the counterparty) because the credit rating of the Company did not meet specified

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thresholds. At December 31, 2016, Discover Bank's credit rating met specified thresholds set by its counterparties. However, if its credit rating is reduced by one ratings notch, Discover Bank would be required to post additional collateral, which would have been $51 million as of December 31, 2016.

The Company also has agreements with certain of its derivative counterparties that contain a provision where if the Company defaults on any of its indebtedness, including default where repayment of the indebtedness has not been accelerated by the lender, then the Company could also be declared in default on its derivative obligations.

23. Segment Disclosures

The Company's business activities are managed in two segments: Direct Banking and Payment Services.

- Direct Banking: The Direct Banking segment includes Discover-branded credit cards issued to individuals on the Discover Network and other consumer products and services, including private student loans, personal loans, home equity loans, and other consumer lending and deposit products. The majority of Direct Banking revenues relate to interest income earned on the segment's loan products. Additionally, the Company's credit card products generate substantially all revenues related to discount and interchange, protection products and loan fee income.
- Payment Services: The Payment Services segment includes PULSE, an automated teller machine, debit and electronic funds transfer network; Diners Club, a global payments network; and the Company's Network Partners business, which provides payment transaction processing and settlement services on the Discover Network. The majority of Payment Services revenues relate to transaction processing revenue from PULSE and royalty and licensee revenue from Diners Club.

The business segment reporting provided to and used by the Company's chief operating decision maker is prepared using the following principles and allocation conventions:

- The Company aggregates operating segments when determining reportable segments.
- Corporate overhead is not allocated between segments; all corporate overhead is included in the Direct Banking segment.
- Through its operation of the Discover Network, the Direct Banking segment incurs fixed marketing, servicing and infrastructure costs that are not specifically allocated among the segments, with the exception of an allocation of direct and incremental costs driven by the Company's Payment Services segment.
- The assets of the Company are not allocated among the operating segments in the information reviewed by the Company's chief operating decision maker.
- The revenues of each segment are derived from external sources. The segments do not earn revenue from intercompany sources.
- Income taxes are not specifically allocated between the operating segments in the information reviewed by the Company's chief operating decision maker.

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The following table presents segment data (dollars in millions):

	Direct Banking	Payment Services	Total
For the Year Ended December 31, 2016			
Interest income			
Credit card	$ 7,155	$ —	$ 7,155
Private student loans	444	—	444
PCI student loans	185	—	185
Personal loans	719	—	719
Other	113	—	113
Total interest income	8,616	—	8,616
Interest expense	1,398	—	1,398
Net interest income	7,218	—	7,218
Provision for loan losses	1,858	1	1,859
Other income	1,611	270	1,881
Other expense	3,422	162	3,584
Income before income tax expense	$ 3,549	$ 107	$ 3,656
For the Year Ended December 31, 2015			
Interest income			
Credit card	$ 6,626	$ —	$ 6,626
Private student loans	378	—	378
PCI student loans	220	—	220
Personal loans	631	—	631
Other	90	—	90
Total interest income	7,945	—	7,945
Interest expense	1,263	—	1,263
Net interest income	6,682	—	6,682
Provision for loan losses	1,512	—	1,512
Other income	1,779	278	2,057
Other expense	3,437	178	3,615
Income before income tax expense	$ 3,512	$ 100	$ 3,612

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The following table presents segment data (dollars in millions):

	Direct Banking	Payment Services	Total
For the Year Ended December 31, 2014			
Interest income			
Credit card	$ 6,359	$ —	$ 6,359
Private student loans	312	—	312
PCI student loans	260	—	260
Personal loans	568	—	568
Other	97	—	97
Total interest income	7,596	—	7,596
Interest expense	1,134	—	1,134
Net interest income	6,462	—	6,462
Provision for loan losses	1,440	3	1,443
Other income	1,700	315	2,015
Other expense	3,117	223	3,340
Income before income tax expense	$ 3,605	$ 89	$ 3,694

24. Related Party Transactions

In the ordinary course of business, the Company offers consumer financial products to its directors, executive officers and certain members of their families. These products are offered on substantially the same terms as those prevailing at the time for comparable transactions with unrelated parties, and these receivables are included in the loan receivables in the Company's consolidated statements of financial condition. They were not material to the Company's financial position or results of operations.

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25. Parent Company Condensed Financial Information

The following Parent Company financial statements are provided in accordance with SEC rules, which require such disclosure when the restricted net assets of consolidated subsidiaries exceed 25% of consolidated net assets.

Discover Financial Services
(Parent Company Only)
Condensed Statements of Financial Condition

	December 31,	
	2016	2015
	(dollars in millions)	
Assets:		
Cash and cash equivalents(1)	$1,901	$2,133
Notes receivable from subsidiaries(2)	751	736
Investments in bank subsidiaries	10,454	9,940
Investments in non-bank subsidiaries	861	984
Other assets(3)	202	203
Total assets(3)	$14,169	$13,996
Liabilities and Stockholders' Equity:		
Non-interest bearing deposit accounts	$14	$2
Interest-bearing deposit accounts	—	2
Total deposits	14	4
Short-term borrowings from subsidiaries	221	314
Other long-term borrowings(3)	2,259	2,105
Accrued expenses and other liabilities	352	298
Total liabilities(3)	2,846	2,721
Stockholders' equity	11,323	11,275
Total liabilities and stockholders' equity(3)	$14,169	$13,996

(1) The Parent Company had $1.9 billion and $2.1 billion in a money market deposit account at Discover Bank as of December 31, 2016 and 2015, respectively, which is included in cash and cash equivalents. These funds are available to the Parent for liquidity purposes.

(2) The Parent Company advanced $500 million to Discover Bank as of December 31, 2016 and 2015, which is included in notes receivable from subsidiaries. These funds are available to the Parent for liquidity purposes.

(3) Upon adoption of ASU 2015-03, Interest—Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs, certain balances as of December 31, 2015 have been restated to reflect the classification of debt issuance costs as a direct deduction of the related liability. See Note 1: Background and Basis of Presentation for additional information.

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Discover Financial Services
(Parent Company Only)
Condensed Statements of Income

	For the Years Ended December 31,		
	2016	2015	2014
	(dollars in millions)		
Interest income	$39	$29	$18
Interest expense	139	128	86
Net interest expense	(100)	(99)	(68)
Dividends from bank subsidiaries	1,800	1,780	1,760
Dividends from non-bank subsidiaries	269	—	100
Total income	1,969	1,681	1,792
Other expense	1	1	4
Income before income tax expense and equity in undistributed net income of subsidiaries	1,968	1,680	1,788
Income tax benefit	40	37	18
Equity in undistributed net income of subsidiaries	385	580	517
Net income	2,393	2,297	2,323
OCI, net	(1)	(22)	(70)
Comprehensive income	$2,392	$2,275	$2,253

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Discover Financial Services
(Parent Company Only)
Condensed Statements of Cash Flows

	For the Years Ended December 31,		
	2016	2015	2014
	(dollars in millions)		
Cash flows from operating activities			
Net income	$2,393	$2,297	$2,323
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in undistributed net income of subsidiaries	(385)	(580)	(517)
Stock-based compensation expense	64	56	60
Deferred income taxes	(9)	(10)	(5)
Depreciation and amortization	27	23	21
Changes in assets and liabilities:			
Decrease (increase) in other assets	10	(13)	(50)
Increase in other liabilities and accrued expenses	52	83	32
Net cash provided by operating activities	2,152	1,856	1,864
Cash flows from investing activities			
Increase in investment in subsidiaries	(1)	(21)	(35)
(Increase) decrease in loans to subsidiaries	(15)	1,700	(182)
Net cash (used for) provided by investing activities	(16)	1,679	(217)
Cash flows from financing activities			
Net (decrease) increase in short-term borrowings from subsidiaries	(93)	206	(38)
Proceeds from issuance of common stock	7	5	5
Proceeds from issuance of long-term borrowings	130	539	500
Purchases of treasury stock	(1,908)	(1,715)	(1,564)
Net increase (decrease) in deposits	10	(1)	(8)
Dividends paid on common and preferred stock	(514)	(515)	(467)
Net cash used for financing activities	(2,368)	(1,481)	(1,572)
(Decrease) increase in cash and cash equivalents	(232)	2,054	75
Cash and cash equivalents, at beginning of period	2,133	79	4
Cash and cash equivalents, at end of period	$1,901	$2,133	$79
SUPPLEMENTAL DISCLOSURES OF CASH FLOW INFORMATION			
Cash paid during the period for:			
Interest expense	$112	$97	$66
Income taxes, net of income tax refunds	$23	$109	$65

26. Subsequent Events

The Company has evaluated events and transactions that have occurred subsequent to December 31, 2016 and determined there were no subsequent events that would require recognition or disclosure in the consolidated financial statements.

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27. Quarterly Results

The following table provides unaudited quarterly results (dollars in millions, except per share data):

	December 31, 2016	September 30, 2016	June 30, 2016	March 31, 2016	December 31, 2015	September 30, 2015	June 30, 2015	March 31, 2015
Interest income	$ 2,258	$ 2,184	$2,090	$2,084	$ 2,061	$ 2,008	$1,947	$1,929
Interest expense	366	359	339	334	329	323	311	300
Net interest income	1,892	1,825	1,751	1,750	1,732	1,685	1,636	1,629
Provision for loan losses	578	445	412	424	484	332	306	390
Other income	466	476	465	474	473	503	539	542
Other expense	897	895	906	886	933	882	927	873
Income before income tax expense	883	961	898	914	788	974	942	908
Income tax expense	320	322	282	339	288	362	343	322
Net income	$ 563	$ 639	$616	$575	$ 500	$ 612	$599	$586
Net income allocated to common stockholders(1)	$ 550	$ 625	$602	$562	$ 488	$ 599	$586	$573
Basic earnings per common share(1)	$ 1.40	$ 1.56	$1.47	$1.35	$ 1.15	$ 1.38	$1.33	$1.28
Diluted earnings per common share(1)	$ 1.40	$ 1.56	$1.47	$1.35	$ 1.14	$ 1.38	$1.33	$1.28

(1) Because the inputs to net income allocated to common stockholders and earnings per share are calculated using weighted averages for the quarter, the sum of all four quarters may differ from the year to date amounts in the consolidated statements of income.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”)), which are designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified by the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as such term is defined in Exchange Act Rule 13a-15(f) and 15d-15(f)) for the Company. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with generally accepted accounting principles. There are inherent limitations to the effectiveness of any system of internal control over financial reporting. These limitations include the possibility of human error, the circumvention or overriding of the system and reasonable resource constraints. Because of its inherent limitations, our internal control over financial reporting may not prevent or detect misstatements. 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 policies or procedures may deteriorate.

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Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2016. In making this assessment, management used the criteria set forth in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on management's assessments and those criteria, management has concluded that our internal control over financial reporting was effective as of December 31, 2016.

The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, and the firm's report on this matter is included in Item 8 of this annual report on Form 10-K.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as such term is defined in Exchange Act Rule 13a-15(f) and 15d-15(f)) that occurred during the period covered by this report that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

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Part III.

Part III | Item 10. Directors, Executive Officers and Corporate Governance

Information regarding our executive officers is included under the heading “Executive Officers of the Registrant” in Item 1 of this annual report on Form 10-K. Information regarding our directors and corporate governance under the following captions in our proxy statement for our annual meeting of stockholders to be held on May 11, 2017 ("Proxy Statement") is incorporated by reference herein.

"Election of Directors - Information Concerning Nominees for Election as Directors"

"Other Matters - Section 16(a) Beneficial Ownership Reporting Compliance"

"Corporate Governance - Shareholder Recommendations for Director Candidates"

"Corporate Governance - Board Committees and Meetings"

Our Code of Ethics and Business Conduct applies to all directors, officers and employees, including our Chief Executive Officer and our Chief Financial Officer. You can find our Code of Ethics and Business Conduct on our internet site, www.discover.com. We will post any amendments to the Code of Ethics and Business Conduct, and any waivers that are required to be disclosed by the rules of either the SEC or the New York Stock Exchange, on our internet site.

Item 11. Executive Compensation

Information regarding executive compensation under the following captions in our Proxy Statement is incorporated by reference herein.

"Executive and Director Compensation"

"Compensation Discussion and Analysis"

"2016 Executive Compensation”

"Compensation Committee Report”

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information relating to the compensation plans under which our equity securities are authorized for issuance as of December 31, 2016, is set forth in the table below.

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights(1)	Weighted-average exercise price of outstanding options, warrants and rights(2)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders	4,027,507	N/A	25,457,171
Equity compensation plans not approved by security holders	N/A	N/A	N/A
Total	4,027,507	N/A	25,457,171

(1) Includes 2,932,053 vested and unvested restricted stock units and 1,095,454 vested and unvested performance stock units that can be converted to up to 1.5 shares per each unit dependent on the performance factor.

(2) As of December 31, 2016, all stock options were fully vested and exercised.

Information related to the beneficial ownership of our common stock is presented under the caption “Beneficial Ownership of Company Common Stock” in our Proxy Statement and is incorporated by reference herein.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Information regarding certain relationships and related transactions, and director independence under the following captions in our Proxy Statement is incorporated by reference herein.

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"Other Matters - Certain Transactions"
"Corporate Governance - Director Independence"

Item 14. Principal Accounting Fees and Services

Information regarding principal accounting fees and services under the caption "Ratification of Appointment of Independent Registered Public Accounting Firm" in our Proxy Statement is incorporated by reference herein.

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Part IV.

Part IV | Item 15. Exhibits, Financial Statement Schedules

(a) Documents filed as part of this Form 10-K:

1. Consolidated Financial Statements

The consolidated financial statements required to be filed in this annual report on Form 10-K are listed below and appear on pages 83 through 153 herein.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

2. Financial Statement Schedules

Separate financial statement schedules have been omitted either because they are not applicable or because the required information is included in the consolidated financial statements.

3. Exhibits

See the Exhibit Index following the signature pages for a list of the exhibits being filed or furnished with or incorporated by reference into this annual report on Form 10-K.

Item 16. Form 10-K Summary

None.

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Signature

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

Discover Financial Services
(Registrant)

By: /s/ R. MARK GRAF
R. Mark Graf
Executive Vice President and Chief Financial Officer

Date: February 22, 2017

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Power of Attorney

We, the undersigned, hereby severally constitute Kathryn McNamara Corley and D. Christopher Greene, and each of them singly, our true and lawful attorneys with full power to them and each of them to sign for us, and in our names in the capacities indicated below, any and all amendments to the annual report on Form 10-K filed with the Securities and Exchange Commission, hereby ratifying and confirming our signatures as they may be signed by our said attorneys to any and all amendments to said Annual Report on Form 10-K.

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 indicated on February 22, 2017.

Signature	Title
/S/ DAVID W. NELMS David W. Nelms	Chairman and Chief Executive Officer
/S/ R. MARK GRAF R. Mark Graf	Executive Vice President and Chief Financial Officer (Principal Financial Officer)
/S/ EDWARD W. McGROGAN Edward W. McGrogan	Senior Vice President, Controller and Chief Accounting Officer (Principal Accounting Officer)
/S/ LAWRENCE A. WEINBACH Lawrence A. Weinbach	Lead Director
/S/ JEFFREY S. ARONIN Jeffrey S. Aronin	Director
/S/ MARY K. BUSH Mary K. Bush	Director
/S/ GREGORY C. CASE Gregory C. Case	Director
/S/ CANDACE H. DUNCAN Candace H. Duncan	Director
/S/ JOSEPH F. EAZOR Joseph F. Eazor	Director
/S/ CYNTHIA A. GLASSMAN Cynthia A. Glassman	Director
/S/ RICHARD H. LENNY Richard H. Lenny	Director
/S/ THOMAS G. MAHERAS Thomas G. Maheras	Director

/S/ MICHAEL H. MOSKOW Michael H. Moskow	Director
/S/ MARK A. THIERER Mark A. Thierer	Director

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Exhibit Index

Exhibit Number	Description
2.1*	Separation and Distribution Agreement, dated as of June 29, 2007, between Morgan Stanley and Discover Financial Services (filed as Exhibit 2.1 to Discover Financial Services' Current Report on Form 8-K filed on July 5, 2007 and incorporated herein by reference thereto), as amended by the First Amendment to the Separation and Distribution Agreement dated as of June 29, 2007 between Discover Financial Services and Morgan Stanley, dated February 11, 2010 (filed as Exhibit 10.2 to Discover Financial Services' Current Report on Form 8-K filed on February 12, 2010 and incorporated herein by reference thereto).
2.2*	Agreement for the Sale and Purchase of the Goldfish Credit Card Business, dated February 7, 2008, among Discover Financial Services, Goldfish Bank Limited, Discover Bank, SCFC Receivables Corporation, and Barclays Bank Plc (filed as Exhibit 2.1 to Discover Financial Services' Current Report on Form 8-K filed on February 7, 2008 and incorporated herein by reference thereto), as amended and restated by Amended and Restated Agreement for the Sale and Purchase of the Goldfish Credit Card Business, dated March 31, 2008, among Discover Financial Services, Goldfish Bank Limited, Discover Bank, SCFC Receivables Corporation, Barclays Bank PLC, and Barclays Group US Inc. (filed as Exhibit 2.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 14, 2008 and incorporated herein by reference thereto).
2.3	Agreement and Plan of Merger by and among Discover Bank, Academy Acquisition Corp. and The Student Loan Corporation dated as of September 17, 2010 (filed as Exhibit 2.3 to Discover Financial Services' Annual Report on Form 10-K for the fiscal year ended November 30, 2010 filed on January 26, 2011 and incorporated by reference thereto).
3.1	Amended and Restated Certificate of Incorporation of Discover Financial Services (filed as Exhibit 3.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on July 1, 2009 and incorporated herein by reference thereto).
3.2	Amended and Restated By-Laws of Discover Financial Services (filed as Exhibit 3.1 to Discover Financial Services' Current Report on Form 8-K filed on July 30, 2015 and incorporated herein by reference thereto).
3.3	Certificate of Elimination of the Fixed Rate Cumulative Perpetual Preferred Stock, Series A, of Discover Financial Services (filed as Exhibit 3.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on June 26, 2012 and incorporated herein by reference thereto).
3.4	Certificate of Designations of Fixed Rate Non-Cumulative Perpetual Preferred Stock, Series B (filed as Exhibit 3.1 to Discover Financial Services' Current Report on Form 8-K filed on October 16, 2012 and incorporated herein by reference thereto).
4.1	Senior Indenture, dated as of June 12, 2007, by and between Discover Financial Services and U.S. Bank National Association, as trustee (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on June 12, 2007 and incorporated herein by reference thereto).
4.2	Subordinated Indenture, dated as of September 8, 2015, by and between Discover Financial Services and U.S. Bank National Association (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on September 8, 2015 and incorporated herein by reference thereto).
4.3	Fiscal and Paying Agency Agreement, dated November 16, 2009, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial

	Services' Current Report on Form 8-K filed on November 16, 2009 and incorporated herein by reference thereto).
4.4	Fiscal and Paying Agency Agreement, dated April 15, 2010, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on April 16, 2010 and incorporated herein by reference thereto).
4.5	Deposit Agreement, dated October 16, 2012 (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on October 16, 2012 and incorporated herein by reference thereto).
4.6	Form of Certificate Representing the Fixed Rate Non-Cumulative Perpetual Preferred Stock, Series B (filed as Exhibit 4.2 to Discover Financial Services' Current Report on Form 8-K filed on October 16, 2012 and incorporated herein by reference thereto).

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Exhibit Number	Description
4.7	Fiscal and Paying Agency Agreement between Discover Bank and U.S. Bank National Association dated as of February 21, 2013 (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on February 21, 2013 and incorporated herein by reference thereto).
4.8	Fiscal and Paying Agency Agreement, dated as of August 8, 2013, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on August 8, 2013 and incorporated herein by reference thereto).
4.9	Fiscal and Paying Agency Agreement, dated as of March 13, 2014, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on March 13, 2014 and incorporated herein by reference thereto).
4.10	Fiscal and Paying Agency Agreement, dated as of August 7, 2014, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on August 7, 2014 and incorporated herein by reference thereto).
4.11	Fiscal and Paying Agency Agreement, dated June 4, 2015, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial Services’ current report on Form 8-K filed on June 4, 2015 and incorporated herein by reference thereto).
4.12	Fiscal and Paying Agency Agreement, dated August 13, 2015, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial Services’ current report on Form 8-K filed on August 13, 2015 and incorporated herein by reference thereto).
4.13	Fiscal and Paying Agency Agreement, dated July 27, 2016, between Discover Bank, as issuer, and U.S. Bank National Association, as fiscal and paying agent (filed as Exhibit 4.1 to Discover Financial Services’ current report on Form 8-K filed on July 28, 2016 and incorporated herein by reference thereto).
	Other instruments defining the rights of holders of long-term debt securities of Discover Financial Services and its subsidiaries are omitted pursuant to Section (b)(4)(iii)(A) of Item 601 of Regulation S-K. Discover Financial Services agrees to furnish copies of these instruments to the SEC upon request.
10.1	Tax Sharing Agreement, dated as of June 30, 2007, between Morgan Stanley and Discover Financial Services (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on July 5, 2007 and incorporated herein by reference thereto).
10.2	U.S. Employee Matters Agreement, dated as of June 30, 2007, between Morgan Stanley and Discover Financial Services (filed as Exhibit 10.2 to Discover Financial Services' Current Report on Form 8-K filed on July 5, 2007 and incorporated herein by reference thereto).
10.3	Transition Services Agreement, dated as of June 30, 2007, between Morgan Stanley and Discover Financial Services (filed as Exhibit 10.3 to Discover Financial Services' Current Report on Form 8-K filed on July 5, 2007 and incorporated herein by reference thereto).
10.4	Transitional Trade Mark License Agreement, dated as of June 30, 2007, between Morgan Stanley & Co. PLC and Goldfish Bank Limited (filed as Exhibit 10.4 to Discover Financial Services' Current Report on Form 8-K filed on July 5, 2007 and incorporated herein by reference thereto).

10.5	Amended and Restated Trust Agreement, dated as of December 22, 2015, between Discover Funding LLC, as Beneficiary, and Wilmington Trust Company, as Owner Trustee (filed as Exhibit 4.6 to Discover Bank's Current Report on Form 8-K filed on December 23, 2015 and incorporated herein by reference thereto).
10.6	Third Amended and Restated Pooling and Servicing Agreement, dated as of December 22, 2015, between Discover Bank, as Master Servicer and Servicer, Discover Funding LLC, as Transferor, and U.S. Bank National Association, as Trustee (filed as Exhibit 4.2 to Discover Bank’s Current Report on Form 8-K filed on December 23, 2015 and incorporated herein by reference thereto).

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Exhibit Number	Description
10.7	Amended and Restated Series Supplement for Series 2007-CC, dated as of December 22, 2015, among Discover Bank, as Master Servicer and Servicer, Discover Funding LLC, as Transferor, and U.S. Bank National Association, as Trustee (filed as Exhibit 4.3 to Discover Bank’s Current Report on Form 8-K filed on December 23, 2015 and incorporated herein by reference thereto).
10.8†	Discover Financial Services Omnibus Incentive Plan (filed as an attachment to Discover Financial Services' Proxy Statement on Schedule 14A filed on February 27, 2009 and incorporated herein by reference thereto).
10.9†	Amended Form of Restricted Stock Unit Award Under Discover Financial Services Omnibus Incentive Plan (filed as Exhibit 10.6 to Discover Financial Services' Quarterly Report on Form 10-Q filed on July 12, 2007 and incorporated herein by reference thereto).
10.10†	Directors' Compensation Plan of Discover Financial Services (filed as Exhibit 10.3 to Discover Financial Services' Current Report on Form 8-K filed on June 19, 2007 and incorporated herein by reference thereto), as amended and restated as of January 20, 2011 (filed as Exhibit A to the Discover Financial Services' definitive proxy statement filed on February 18, 2011 and incorporated by reference thereto), as further amended by Amendment No. 2, effective as of December 1, 2011.
10.11†	Amended Form of Restricted Stock Unit Award Under Discover Financial Services Directors' Compensation Plan (filed as Exhibit 10.7 to Discover Financial Services' Quarterly Report on Form 10-Q filed on July 12, 2007 and incorporated herein by reference thereto).
10.12†	Discover Financial Services Employee Stock Purchase Plan (filed as Exhibit 10.2 to Discover Financial Services' Current Report on Form 8-K filed on June 19, 2007 and incorporated herein by reference thereto) as amended by Amendment No. 1 to Discover Financial Services Employee Stock Purchase Plan effective as of May 1, 2008 (filed as Exhibit 10.12 to Discover Financial Services' Annual Report on Form 10-K filed on January 28, 2009 and incorporated herein by reference thereto); Amendment No. 2 to Discover Financial Services Employee Stock Purchase Plan, effective as of December 1, 2009 (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 9, 2010 and incorporated herein by reference thereto); and Amendment No. 3 to Discover Financial Services Employee Stock Purchase Plan (filed as Exhibit 10.3 to Discover Financial Services' Quarterly Report on Form 10-Q filed on September 28, 2011 and incorporated herein by reference thereto).
10.13†	Offer of Employment, dated as of January 8, 1999 (filed as Exhibit 10.2 to Discover Financial Services' Current Report on Form 8-K filed on June 12, 2007 and incorporated herein by reference thereto).
10.14†	Waiver of Change of Control Benefits, dated September 24, 2007 (filed as Exhibit 10.15 to Discover Financial Services' Registration Statement on Form S-4 filed on November 27, 2007 and incorporated herein by reference thereto).
10.15	Collateral Certificate Transfer Agreement, dated as of July 26, 2007 between Discover Bank, as Depositor and Discover Card Execution Note Trust (filed as Exhibit 4.4 to Discover Bank's Current Report on Form 8-K filed on July 27, 2007 and incorporated herein by reference thereto).
10.16	Amended and Restated Indenture, dated as of December 22, 2015, between Discover Card Execution Note Trust, as Issuer, and U.S. Bank National Association, as Indenture Trustee (filed as Exhibit 4.4 to Discover Bank’s Current Report on Form 8-K filed on December 23, 2015 and incorporated herein by reference thereto).

10.17	Second Amended and Restated Indenture Supplement for the DiscoverSeries Notes, dated as of December 22, 2015, between Discover Card Execution Note Trust, as Issuer, and U.S. Bank National Association, as Indenture Trustee (filed as Exhibit 4.5 to Discover Bank's Current Report on Form 8-K filed on December 23, 2015 and incorporated herein by reference thereto).
10.18	Omnibus Amendment to Indenture Supplement and Terms Documents, dated as of July 2, 2009, between Discover Card Execution Note Trust, as Issuer, and U.S. Bank National Association, as Indenture Trustee (filed as Exhibit 4.1 to Discover Bank's Current Report on Form 8-K filed on July 6, 2009 and incorporated herein by reference thereto).
10.19†	Discover Financial Services Change-in-Control Severance Policy Amended and Restated October 15, 2014 (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on October 16, 2014 and incorporated by reference thereto).

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Exhibit Number	Description
10.20	Release and Settlement Agreement, executed as of October 27, 2008, by and among Discover Financial Services, DFS Services, LLC, Discover Bank, and their Subsidiaries and Affiliates; MasterCard Incorporated and MasterCard International Incorporated and their Affiliates; and Visa Inc. and its Affiliates and Predecessors including Visa U.S.A. Inc. and Visa International Service Association (filed as Exhibit 99.1 to Discover Financial Services' Current Report on Form 8-K filed on October 28, 2008).
10.21†	2008 Year End Form of Restricted Stock Unit Award Under Discover Financial Services Omnibus Incentive Plan (filed as Exhibit 10.21 to Discover Financial Services' Annual Report on Form 10-K filed on January 28, 2009 and incorporated herein by reference thereto).
10.22†	2008 Special Grant Form of Restricted Stock Unit Award Under Discover Financial Services Omnibus Incentive Plan (filed as Exhibit 10.22 to Discover Financial Services' Annual Report on Form 10-K filed on January 28, 2009 and incorporated herein by reference thereto).
10.23	Form of Waiver, executed by each of Discover Financial Services' senior executive officers and certain other employees (filed as Exhibit 10.3 to Discover Financial Services' Current Report on Form 8-K filed on March 13, 2009 and incorporated herein by reference thereto).
10.24	Form of Executive Compensation Agreement, dated March 13, 2009, executed by each of Discover Financial Services' senior executive officers and certain other employees (filed as Exhibit 10.4 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 8, 2009 and incorporated herein by reference thereto).
10.25†	Form of Share Award Agreement Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10(a) to Discover Financial Services' Current Report on Form 8-K filed on December 11, 2009 and incorporated herein by reference thereto).
10.26†	Amendment to 2009 Year End Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan, effective December 1, 2009 (filed as Exhibit 10.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 9, 2010 and incorporated herein by reference thereto).
10.27	Settlement Agreement and Mutual Release between Discover Financial Services and Morgan Stanley, dated February 11, 2010 (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on February 12, 2010 and incorporated herein by reference thereto).
10.28	Purchase Price Adjustment Agreement by and among Citibank, N.A., The Student Loan Corporation and Discover Bank, dated September 17, 2010 (filed as Exhibit 10.32 to Discover Financial Services' Annual Report on Form 10-K filed on January 26, 2011 and incorporated by reference thereto).
10.29	Amendment to Purchase Price Adjustment Agreement by and among Citibank, N.A., The Student Loan Corporation and Discover Bank, dated December 30, 2010 (filed as Exhibit 10.33 to Discover Financial Services' Annual Report on Form 10-K filed on January 26, 2011 and incorporated by reference thereto).
10.30	Indemnification Agreement by and between Citibank, N.A. and Discover Bank, dated September 17, 2010 (filed as Exhibit 10.34 to Discover Financial Services' Annual Report on Form 10-K filed on January 26, 2011 and incorporated by reference thereto).

10.31	First Amendment to Indemnification Agreement by and between Citibank, N.A. and Discover Bank, dated December 30, 2010 (filed as Exhibit 10.35 to Discover Financial Services' Annual Report on Form 10-K filed on January 26, 2011 and incorporated by reference thereto).
10.32	Form Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.4 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 8, 2011 and incorporated by reference thereto).
10.33	Form Award Certificate for Performance Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.5 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 8, 2011 and incorporated by reference thereto).
10.34	Asset Purchase Agreement between Discover Bank and Citibank, N.A. dated August 31, 2011 (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on September 28, 2011 and incorporated by reference thereto).

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Exhibit Number	Description
10.35	Form 2012 Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 3, 2012 and incorporated by reference thereto).
10.36	Form 2012 Award Certificate for Performance Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 3, 2012 and incorporated by reference thereto).
10.37	Form 2013 Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 30, 2013 and incorporated herein by reference thereto).
10.38	Form 2013 Award Certificate for Performance Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 30, 2013 and incorporated herein by reference thereto).
10.39	Amendment No. 3 to the Directors' Compensation Plan of Discover Financial Services, effective as of July 1, 2013 (filed as Exhibit 10.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on July 30, 2013 and incorporated herein by reference thereto).
10.40	Form of 2013 Special Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on December 26, 2013 and incorporated herein by reference thereto).
10.41	Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as an attachment to Discover Financial Services' Proxy Statement on Schedule 14A filed on March 19, 2014 and incorporated herein by reference thereto).
10.42	Form 2014 Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 29, 2014 and incorporated herein by reference thereto).
10.43	Form 2014 Award Certificate for Performance Stock Units Under Discover Financial Services Amended and Restated 2007 Omnibus Incentive Plan (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 29, 2014 and incorporated herein by reference thereto).
10.44	Amendment No. 4 to the Directors' Compensation Plan of Discover Financial Services, effective as of May 7, 2014 (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on August 1, 2014 and incorporated herein by reference thereto).
10.45	Form 2015 Award Certificate for Cash-Converted Restricted Stock Units Under Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as Exhibit 10.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 30, 2015 and incorporated herein by reference thereto).
10.46	Form 2015 Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 30, 2015 and incorporated herein by reference thereto).

10.47	Form 2015 Award Certificate for Performance Stock Units Under Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as Exhibit 10.3 to Discover Financial Services' Quarterly Report on Form 10-Q filed on April 30, 2015 and incorporated herein by reference thereto).
10.48	Form of 2015 Special Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on April 30, 2015 and incorporated by reference thereto).
10.49	Amendment No. 4 to Discover Financial Services Employee Stock Purchase Plan (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on October 29, 2015 and incorporated by reference thereto).

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Exhibit Number	Description
10.50	Form of 2015 Special Award Certificate for Restricted Stock Units Under Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on December 21, 2015 and incorporated by reference thereto).
10.51	Receivables Sale and Contribution Agreement, dated as of December 22, 2015 between Discover Bank and Discover Funding LLC (filed as Exhibit 4.1 to Discover Bank's Current Report on Form 8-K filed on December 23, 2015 and incorporated herein by reference thereto).
10.52	Form 2016 Award Certificate for Restricted Stock Units under Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as Exhibit 10.52 to Discover Financial Services' Annual Report on Form 10-K filed on February 24, 2016 and incorporated by reference thereto).
10.53	Form 2016 Award Certificate for Performance Stock Units under Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (filed as Exhibit 10.53 to Discover Financial Services' Annual Report on Form 10-K filed on February 24, 2016 and incorporated by reference thereto).
10.54	Amendment No. 5 to Directors' Compensation Plan of Discover Financial Services, effective as of January 1, 2017.
11	Statement Re: Computation of Per Share Earnings (the calculation of per share earnings is in Part II, Item 8, Note 17: Earnings Per Share to the consolidated financial statements and is omitted in accordance with Section (b)(11) of Item 601 of Regulation S-K).
12.1	Statement Re: Computation of Ratio of Earnings to Fixed Charges and Computation of Ratio of Earnings to Fixed Charges and Preferred Stock Dividends.
21	Subsidiaries of the Registrant.
23	Consent of Independent Registered Public Accounting Firm.
24	Powers of Attorney (included on signature page).
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934.
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934.
32.1	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 1350 of Chapter 63 of Title 18 of the United States Code.
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.

* We agree to furnish supplementally to the Commission a copy of any omitted schedule or exhibit to such agreement upon the request of the Commission in accordance with Item 601(b)(2) of Regulation S-K.

† Management contract or compensatory plan or arrangement required to be filed as an exhibit to Form 10-K pursuant to Item 15(b) of this report.