UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the year ended December 31, 2023

☐ **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

(State or other jurisdiction of incorporation or organization)

36-2517428

(I.R.S. Employer Identification No.)

2500 Lake Cook Road, Riverwoods, Illinois 60015

(Address of principal executive offices, including zip code)

(224) 405-0900

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:		
Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, par value $0.01 per share	DFS	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** ☒ **No** ☐

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** ☐ **No** ☒

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted 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 such files). **Yes** ☒ **No** ☐

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

Large Accelerated Filer	☒	Accelerated Filer	☐	Smaller Reporting Company	☐
Non-accelerated Filer	☐			Emerging Growth Company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation of the effectiveness of its internal control over financial reporting under Section 404(b) of Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☒

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

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 $29,097,770,033.

As of February 16, 2024, there were 250,555,294 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 09, 2024 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, 2023

TABLE OF CONTENTS

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. See "Item 8 — Financial Statements and Supplementary Data — Glossary of Acronyms" for terms and abbreviations used throughout the annual report.

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 it®, Freeze it®, College Covered® 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.

Part I.

Part I | Item 1. Business

Introduction

Discover Financial Services (the "Company") is a digital 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 ("GLBA") and therefore are subject to oversight, regulation and examination by the Board of Governors of the Federal Reserve System (the "FRB" or "Federal Reserve"). We provide digital banking products and services and payment services through our subsidiaries. We offer our customers credit card loans, personal loans, home loans and deposit products. We had $128.4 billion in loan receivables and $84.0 billion in deposits issued through direct-to-consumer channels and affinity relationships at December 31, 2023. We also operate the Discover Network, the PULSE network ("PULSE") and Diners Club International ("Diners Club"), collectively known as the Discover Global Network. The Discover Network processes transactions for Discover-branded credit and debit 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 automated teller machines ("ATMs") domestically and internationally, as well as merchant acceptance throughout the United States of America ("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.

On November 29, 2023, we announced our Board of Directors had authorized management to explore the sale of our private student loan portfolio. We stopped accepting new applications for private student loans February 1, 2024. See "— Operating Model — Digital Banking — Private Student Loans" for more information.

Pending Merger with Capital One Financial Corporation

On February 19, 2024, Discover and Capital One Financial Corporation ("Capital One") jointly announced that they entered into an agreement and plan of merger (the "Merger Agreement"), under which the companies will combine in an all-stock merger, which values Discover at $35.3 billion. Under the terms of the Merger Agreement, holders of Discover common stock will receive 1.0192 shares of Capital One common stock for each share of Discover common stock they own. Capital One shareholders will own approximately 60% of the combined company and Discover shareholders will own approximately 40% of the combined company. The Merger Agreement contains customary representations and warranties, covenants and closing conditions. The Board of Directors of the combined company will have fifteen directors, consisting of the current twelve Capital One Board members and three Discover Board members to be named at a later date. For more information, see Discover's Current Report on Form 8-K filed with the Securities and Exchange Commission (the "SEC") on February 22, 2024.

Completion of the proposed merger remains subject to approval by the FRB and the Office of the Comptroller of the Currency ("OCC") and other customary closing conditions, including the approval of both companies' shareholders.

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 our directors and executive officers, and any amendments to those documents filed with or furnished to 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 Guidelines; (ii) our Code of Conduct and Business Ethics; and

(iii) the charters of the Audit, Compensation and Leadership Development, Nominating, Governance and Public Responsibility 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, United States of America, telephone number (224) 405-0900.

Operating Model

We manage our business activities in two segments: Digital Banking and Payment Services. Our Digital 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 loans and deposit products. Our Payment Services segment includes PULSE, Diners Club and our Network Partners business, which provides payment transaction processing and settlement services on the Discover Global Network.

We are principally engaged in providing products and services to customers in the U.S. However, we also receive revenue from sources outside of the U.S., including royalty and licensee revenue from our Diners Club licensees and network assessment, discount and interchange fees from our network-to-network partners ("Network Alliances"). For quantitative information concerning our geographic distribution, see Note 4: 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 22: Segment Disclosures to our consolidated financial statements.

Digital Banking

Set forth below are descriptions of the credit cards, private student loans, personal loans, home loans and deposit products issued by our bank subsidiary, Discover Bank.

Credit Cards

We currently offer and issue credit cards 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 earned on revolving credit card balances comprised approximately 81% of our total interest income for the year ended December 31, 2023. We also charge customers other fees as specified in the cardmember agreements. These may include fees for late payments, returned checks, balance transfer transactions and cash advance transactions.

Our credit card customers' transactions in the U.S. are processed over the Discover Network. We receive discount and fee revenue from merchants with whom we have a direct relationship. Where we do not have a direct relationship with a merchant, we receive interchange and assessment fees from acquirers.

All of our cards offer rewards programs, the costs of which are generally recorded 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:

transactionprocess4q25.jpg

For information on how we market our credit card loans, see "— Credit Risk Management — Account Acquisition (New Customers)" and "— Marketing."

Private Student Loans

On November 29, 2023, we announced our Board of Directors had authorized management to explore the sale of the private student loan portfolio and transfer servicing of these loans to a third-party servicer. We stopped accepting new applications for private student loans February 1, 2024. Applications received prior to this date will continue to be processed, and pending approval, disbursed under the terms and conditions laid out below. Generally, final disbursements of funds will be completed by December 31, 2024.

All of our private student loans are unsecured and have terms and conditions that vary by type of student loan, and feature fixed or variable interest rates with zero origination fees. Customers can elect to make extra payments to pay their loans off earlier than contractually scheduled without penalty. The loans can feature potential rewards, such as for earning good grades, and we also offer optional in-school payment features where students make payments while in school. The standard repayment period is 15 to 20 years, depending on the type of student loan. Private student loans may include a deferment period, during which interest continues to accrue and customers 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 student ceases to be enrolled in school at least half time. As part of the loan approval process, all of our private 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.

Personal Loans

Our personal loans are primarily intended to help customers consolidate existing debt, although they can be used for other purposes. These loans are unsecured with fixed interest rates, terms and payments, and have zero origination fees. The repayment period for personal loans is 3 to 7 years and there is no penalty for prepaying any portion of a personal loan balance. Customers may be subject to late fees if they have not made a minimum payment by the contractual due date.

We market personal loans primarily through direct mail, digital channels and email. Prospective applicants can obtain information regarding Discover Personal Loans and complete an application either online or by telephone.

Home Loans

Our home loans are intended for multiple purposes, including mortgage refinance, debt consolidation, home improvement and other major expenses. These loans are closed-end with fixed interest rates, terms and payments, and are secured by a first or second lien on a customer’s home. These loans require monthly payment over a 10 to 30-year term. Customers may elect to make larger than minimum payments without being subject to a prepayment penalty. Customers do not pay origination fees or third-party costs during the application process or at closing, but they may be required to reimburse certain third-party costs if the loan is repaid in full within three years. Customers may also be subject to additional charges, including late fees and returned payment charges.

We market home loans primarily through direct mail, digital channels and email. Prospective applicants can obtain information and apply online or by telephone.

Deposits

We obtain deposits from consumers directly or through affinity relationships (“direct-to-consumer deposits”). Additionally, we obtain deposits through third-party securities brokerage firms that offer our deposits to their customers (“brokered deposits”). Our direct-to-consumer deposit products include savings accounts, certificates of deposit, money market accounts, IRA savings accounts, IRA certificates of deposit and checking accounts, while our brokered deposit products include certificates of deposit and sweep accounts. All of our deposits are insured by the Federal Deposit Insurance Corporation (the “FDIC”) to the maximum permitted by law. We do not pay interest on checking account balances and instead offer cashback rewards for certain debit card purchases. Certificates of deposit are offered on a range of tenors from three months through ten years with interest rates that are fixed for the full period. There are minimum balance requirements to open certificates of deposit and penalties for early withdrawals. There are no minimum balance requirements to open money market accounts and savings accounts. Interest rates on money market accounts and savings accounts are subject to change at any time. Service charges apply to outgoing wire transfers only and availability of funds varies based on type and method of deposit and other factors.

We market our direct-to-consumer deposit products through the use of digital channels, direct mail, print materials, email and arrangements with third parties. Customers can generally apply for deposit accounts online or by telephone. Cashback Debit checking account applications can only be initiated online. 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 payment transaction processing and settlement services, among other services.

PULSE

Our PULSE network is a leader in debit payments, cash access and account transfers. PULSE links cardholders served by financial institutions to ATMs and point-of-sale ("POS") terminals located throughout the U.S., including cardholders at financial institutions with which PULSE has direct relationships and through agreements PULSE has with other debit networks. PULSE also provides cash access at ATMs internationally.

PULSE's primary source of revenue is transaction fees charged for switching and settling ATM and 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 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 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.

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 a global acceptance network through its relationships with 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 technological 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 and Discover brands to existing and new merchants. 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 in their card-issuing territory and abroad.

Network Partners Business

We have agreements with a number of financial institutions including financial technology firms, networks or Network Alliances and commercial service providers for issuance of products or processing of payments on the Discover Global Network. 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.

Our Network Partners business is composed of Network Alliances, technology-enabled partners and our commercial payments network. Network Alliances allow Discover-enabled cards to be used at other networks' participating merchants and allow other networks' participating issuers' cards to be used at Discover Network merchants. Our commercial payments network facilitates transactions and business-to-business payments between buyers and suppliers using the existing payment infrastructure of Discover Network.

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

transactioncyclefl4q25.jpg

* * *

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

Credit Risk Management

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. For all loan types, we have established a credit policy and limits that are designed to manage our exposure to credit risk. 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 personal loan and home loan customers through similar channels. In all cases we have a rigorous process for screening applicants.

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

We assess the creditworthiness of each consumer loan applicant by 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 loan products, experienced credit underwriters must review and approve each application.

Upon approval of a customer's application for one of our lending 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 more generally available 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.

Customer Assistance

We provide our customers with a variety of tools to proactively manage their accounts, including email, text message, push reminders and publicly accessible web pages 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 preventing delinquency or returning delinquent accounts to current status.

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 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 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 returning to current status on their obligations to us. For more information see Note 4: Loan Receivables to our consolidated financial statements.

Marketing

Our marketing group works closely with credit risk management to provide key functions to acquire new customers and enhance our relationships with existing customers. These key functions include product development, Cashback Bonus and other rewards programs management, protection product management, and brand and advertising management.

Product Development

To attract and retain customers and merchants, we continue to develop new programs, features and benefits and market them through various channels, including television, radio, mail and digital. Marketing efforts may promote various features including, but not limited to, no annual fee, Cashback Bonus and promotional offers, as well as various free benefits such as Online Privacy Protection, FICO Credit Score, Freeze it, Spend Analyzer and Social Security Number Alerts. By developing an extensive prospect database, using credit bureau data and using a customer contact strategy and management system, we continuously develop our modeling and customer engagement capabilities that help optimize the product, pricing and channel selection.

Rewards / Cashback Bonus

Our cardmembers use several card products, all with no annual fee, that allow them to earn their rewards based on their purchases, which can be redeemed in any amount at any time, in general as set forth below.

- *Discover it* card offers a 5% Cashback Bonus in categories that change each quarter, which customers must activate each quarter, up to a quarterly maximum and a 1% Cashback Bonus on all other purchases.
- *Discover it Chrome* card offers a 2% Cashback Bonus at gas stations and restaurants on up to $1,000 in combined purchases each quarter and a 1% Cashback Bonus on all other purchases.
- *Discover it Miles* card offers 1.5 miles for every dollar spent on purchases.
- *Discover it Business* card, which we no longer offer for new accounts, offers a 1.5% Cashback Bonus on all purchases.

Protection Products

We currently sell Identity Theft Protection and we service and maintain existing enrollments of the Payment and Wallet Protection products detailed below for our credit card customers.

- *Identity Theft Protection* includes an initial credit report, credit bureau report monitoring at the three major credit bureaus, alerts to customers when key changes to their credit bureau files are made, provides their credit bureau snapshot, monitoring that notifies a customer if their personal identifying information is shared on the dark web, identity theft insurance of up to $1,000,000 to cover certain expenses due to identity theft and access to knowledgeable professionals who can help resolve issues.
- *Payment Protection* allows customers to suspend their minimum payments due for up to two years, depending on the qualifying event and product level, when certain qualifying life events occur. While on this benefit, customers have no minimum monthly payment and are not charged interest, late fees or other product fees. This product covers various events, such as unemployment, disability, Federal or State disasters and other life events, such as marriage or the birth of a child. Depending on the product level and availability under state laws, outstanding balances up to $10,000 or $25,000, are cancelled in the event of death.
- *Wallet Protection* offers 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. We also leverage strategic partnerships and sponsorship properties such as the NHL and the Big Ten Conference to help drive loan growth. 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 credit card customers have the option to manage their accounts online via Discover.com, through Discover Mobile applications and by calling our U.S.-based customer service personnel. Our digital solutions offer a range of benefits, which includes, but is not limited to, the following:

- Access to overall credit health tools such as Credit Scorecard, Freeze it, Social Security Number Alerts and New Account Alerts;
- Customer service via multiple communication channels, including messaging and 24/7 telephone customer service; and
- Proactive notifications via email, text messaging and in-app messaging for monitoring transaction activity and account security.

Our private student loan, personal loan, home loan and deposit product customers can utilize our online account services to manage their accounts and to use interactive tools and calculators. Additionally, our card, personal loan and deposit product customers have access to Discover's Mobile application. Card and deposit product customers that use the mobile application have access to benefits, including Online Privacy Protection. This benefit helps customers to have more control over their personal information online by regularly helping to remove it from select people-search sites that could sell their data.

Processing Services

Our processing services cover four functional areas: card personalization, print/mail, remittance processing and item processing. Card personalization is responsible for the mailing of credit and debit cards for new accounts, replacements and reissues. Print/mail specializes in statement and letter printing and mailing. Remittance processing handles account payments and physical check processing. Item processing handles hard-copy forms and electronic documents, including bank deposits, credit disputes and general correspondence, among other items.

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.

Each credit and debit card transaction is subject to screening, authorization and approval through externally developed and proprietary POS decision systems. We use a variety of techniques that help identify and halt fraudulent transactions, including machine-learning 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.

Discover Global Network Operations

We support our merchants through a merchant acquiring model that includes direct relationships with large merchants in the U.S. and arrangements with merchant acquirers generally for small- and mid-size merchants. Additionally, Discover Network cards are widely accepted, and acceptance continues to grow in a number of countries around the world on the Diners Club network or through reciprocal acceptance arrangements made with international payment networks (i.e., Network Alliances).

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 Global 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 Global 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.

The Discover Global 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 Global 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 Global Network is a founding and current member of the Payment Card Industry Security Standards Council, LLC (the "Council") 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 authorization and settlement, among other functions. The Discover Global 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 Global Network card transactions.

Our approach to technology development and management involves both third-party and in-house resources. We use third-party vendors for technology services (e.g., cloud, telecommunications, hardware and operating systems) as well as for processing and other services for our digital 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, reliable and secure 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. Historically, in our private student loan business, our loan disbursements peaked at the beginning of a school's academic semester or quarter; we stopped accepting new applications for private student loans February 1, 2024. 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

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 and payment networks, based on several factors, including brand, reputation, customer service, product and service offerings, incentives, pricing, e-commerce and digital wallet participation, 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, Capital One and Citibank) 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 no annual fees, cash rewards, conservative portfolio management and strong, 100% U.S.-based customer service. Competition based on rewards and other card features and benefits continues to be strong. Our personal loan product competes for customers primarily with financial institutions (including Citibank and American Express) and non-traditional lenders (including SoFi and Lending Club). Our home loan product faces competition primarily from national and regional mortgage lenders.

Our credit card receivables continue to represent a majority of our receivables. The credit card business is highly competitive. Some of our competitors offer a wider variety of financial products than we do, which may 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 and technology 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.

Merchant acceptance of the Discover card has increased in the past several years to reach near parity in the U.S. for both the number of merchants enabled for acceptance and the number of merchants actively accepting Discover. However, the legacy perception of lower acceptance still presents limitations in attracting new cardholders and debit card issuers. Most domestically-issued credit cards, other than those issued on the American Express network, are issued on the Visa and MasterCard networks, thus most other card issuers benefit from the dominant market share of Visa and MasterCard. 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, customer perception of service quality, brand image, reputation and market share. The Discover and Diners Club networks' primary competitors are Visa, MasterCard and American Express. 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 ongoing competition from financial technology firms and alternative payment solutions, 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 large banks, including Ally, American Express, Barclays, Capital One, Goldman Sachs, Synchrony and USAA. We compete with banks and credit unions that source deposits through branch locations and direct channels. We seek to differentiate our deposit product offerings on the basis of brand reputation, digital experience, customer service and value.

For more information regarding the nature of 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.

Human Capital

The success of our business is highly dependent on attracting, retaining and developing employees with the necessary skills and experience to support our customers, our business and our strategy. We employed approximately 21,100 individuals at December 31, 2023, which consisted primarily of full-time employees in the U.S. Additionally, we employ 100% of our customer service agents within the U.S., which we believe offers a distinct competitive advantage.

Our purpose-driven, people-first culture and human capital management strategy is built on a foundational set of core values and Discover Behaviors and powered by significant investments in employee learning and development, market-competitive compensation and benefits and diversity, equity and inclusion ("DE&I"). One place we see the results from our human capital strategy is in our consistently high levels of employee engagement, which we measure through employee surveys.

Employee Learning and Development

Career and skill development are important components of our talent management system. In addition to on-the-job coaching and training, we provide a range of internal professional and leadership development programs that help our employees build better teams and develop the skills to advance their careers. For example, employees can access continuing education courses that cover a variety of subjects through our training and development platform. Additionally, we support our employees' educational goals through programs that can reimburse up to 100% of tuition at certain schools.

Market-Competitive Compensation and Benefits

We offer a market-competitive compensation and benefits package to attract, retain and motivate highly qualified and diverse talent. We designed our compensation and benefits package using a pay-for-performance philosophy to reward the achievement of our financial and strategic performance goals as well as individual performance. Our total compensation and benefits package for U.S. employees includes competitive holiday and flexible paid-time-off; a 401(k) retirement savings plan with matching and company contributions that can total up to 8% of an employee's wages per year; subsidized medical, dental, vision, disability and supplemental life insurance; paid parental and caregiver leave; adoption and surrogacy assistance; and an employee assistance program, among other benefits.

Diversity, Equity and Inclusion

DE&I is a competitive differentiator for companies and something that we continue to advance at Discover. At December 31, 2023, our U.S.-based employee population was composed of 64% Women and 46% People of Color, including 15% who self-identify as Asian, 12% as Hispanic and 15% as Black. Our workforce diversity either meets or exceeds the diversity of the available workforce in each of the metropolitan areas where we have locations.

Our Executive Management Committee and Board of Directors regularly review our DE&I strategy and progress. Our VP, Chief Diversity & Social Impact Officer leads our DE&I office, which manages the development, implementation and monitoring of our enterprise-wide DE&I strategies, programs, initiatives and policies. We strive to incorporate our DE&I principles throughout our human capital management processes, including talent acquisition, learning and development, employee relations, performance management and total rewards (including pay equity).

Pay Equity

We seek to pay our employees fairly for their work and we regularly monitor our performance, addressing pay-equity discrepancies or issues as appropriate. We regularly benchmark roles and compensation data to help ensure internal pay equity. We partner with an independent, third-party consultant to conduct a company-wide pay equity analysis that considers race, ethnicity and gender. We use this analysis to identify groups with pay discrepancies, understand the underlying drivers and implement best practices to address inequity. Based on our most recent review using this approach, women and minorities at Discover earn, on average, between $0.99 and $1.03 for every $1 earned by men and non-minorities after accounting for factors such as role, tenure and geography.

Employee Engagement

Discover is an award-winning workplace, recognized for our inclusive and collaborative culture; examples for 2023 include Fortune's 100 Best Companies to Work For® and the Disability Equality Index's Best Places to Work for Disability Inclusion. Employee engagement and satisfaction is core to our talent attraction and retention strategy, which supports our business success. We consistently leverage employee listening to drive continuous improvement throughout our company. In our most recent employee survey conducted in the fourth quarter of 2023, 82% of employees recommended Discover as a great place to work, which places Discover among the top 25% of all companies surveyed by Glint.

Risk Management

We manage risks that affect our customers, financial performance and ability to meet stakeholder and regulatory expectations. We use an enterprise-wide risk management framework to identify, measure, monitor, manage and report these risks. We have made changes throughout 2023 to better ensure compliance with our risk management framework and supporting governance structure. These enhancements will continue throughout 2024 to further demonstrate strong risk management.

Enterprise Risk Management Framework

Our enterprise risk management principles are executed through a risk management framework that is based on 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.

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, standards, risk management processes, monitoring and testing and reporting. Our framework is designed to be comprehensive with respect to our business units and their control and support functions, and across all risk types.

Accountability

We structure accountability across the three lines of defense model along the principles of risk management execution, oversight and independent validation. As the first line of defense, our business units seek to achieve business objectives while identifying and managing risks that arise from day-to-day operations as well as those driven by change. 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 operate independently 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 (i) oversees the establishment of enterprise-level risk management standards and policies; (ii) oversees the processes that are designed to be consistent with the size and complexity of our business, applicable legal and regulatory requirements and industry practices; and (iii) independently tests business units' compliance with applicable regulatory requirements. 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 our 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 Directors ("Audit Committee") and, where appropriate, the Risk Oversight Committee of the Board of Directors ("Risk Oversight Committee"). The Chief Audit Executive reports directly to the Audit Committee and administratively to the Chief Executive Officer ("CEO").

Defined Risk Appetite

We operate within a risk appetite framework approved by our Board of Directors, which guides an acceptable level of risk-taking relative to desired financial returns, strategic goals and other stakeholder 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. 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 at least quarterly meetings held by our Management Risk Committee and regular reporting to the Risk Oversight and Audit Committees, as well as regular reporting to our Risk sub-committees commensurate with the needs of our businesses. Further, our CRO is a member of our Executive Management Committee.

The following is a more detailed description of our three lines of defense for managing risk, as described in our Enterprise Risk Management Policy.

First Line of Defense

- *Business Units*: The CEO is ultimately responsible for risk management within our Company. In that capacity, the CEO establishes a risk management culture throughout our Company and ensures that businesses operate in accordance with this risk culture. Our business unit heads are responsible for managing risk associated with their strategic, financial and other business objectives. Business unit heads are responsible for (i) complying with all risk limits and risk policies; (ii) identifying and documenting risks and implementing appropriate controls; (iii) understanding and managing the overall level of risk in their organization, including the impact of the risks being accepted; (iv) explicitly considering risk when developing strategic plans, budgets and new products; (v) implementing appropriate controls when pursuing business strategies and objectives; (vi) ensuring business units test and implement business unit processes, controls and monitoring to support corporate model risk management standards such as documentation standards and reporting standards; (vii) coordinating with CRM to produce relevant, sufficient, accurate and timely risk reporting that is consistent with the processes and methodology established by CRM; (viii) ensuring sufficient resources and qualified personnel are deployed to control the risks inherent in the business activities; and (ix) designating, in consultation with the CRO, a Business Risk Officer to assist with the above.

- *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 our lending activities; (ii) ensuring adherence to our credit risk policies and approval limits and that departmental policies, procedures and internal controls are consistent with our defined standards; (iii) ensuring that we manage credit risk within approved limits; and (iv) monitoring performance for both new and existing consumer loan products and portfolios.

Second Line of Defense

- *Corporate Risk Management* is led by the CRO and supports business units by providing objective oversight of our risk profile. As a member of our senior management team, the CRO chairs our Management 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 our Board of Directors and executive management with an independent perspective on (i) the risks to which we are exposed; (ii) how well management is identifying, assessing and managing risk; and (iii) the capabilities we have in place to manage risk across the enterprise. The CRM department participates in our Management Risk Committee and sub-committee meetings to provide an enterprise-wide perspective on risk, governance matters, policies and risk thresholds. The CRM department includes, but is not limited to, teams that are responsible for oversight of enterprise, operational, consumer credit, counterparty credit, market, liquidity, compliance, Bank Secrecy Act/anti-money laundering, third-party and business technology and information security risks, as well as model validation and risk testing functions.

Third Line of Defense

- *Internal Audit Department* performs periodic, independent reviews and testing of compliance with risk management policies and standards across our 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 effectiveness of the CRM function. The results of such reviews are reported to our Audit Committee and Risk Oversight Committee. In addition, our Chief Audit Executive is a non-voting member of our Executive Management Committee.

Legal

In addition to the three lines of defense, our legal department plays a significant role in managing our legal risk by, among other things, identifying, interpreting and advising on legal and regulatory risks. The legal department collaborates and coordinates closely with the CRM department and business units. Our legal department also participates in meetings of the Management Risk Committee and the sub-committees of the Management Risk Committee in order to advise on legal and compliance risks and to inform the committees of any relevant legislative and regulatory developments. Further, our Chief Legal Officer is a member of our Executive Management Committee.

Risk Types

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 seven major risk categories. The first six are defined to be broadly consistent with guidance published by the Federal Reserve and the Basel Committee on Banking Supervision ("BCBS"): credit (consumer and counterparty), market, liquidity, operational, compliance and legal risk. We recognize the seventh, strategic risk, as a separate risk type. We evaluate the potential impact of a risk event on our 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, private student loans and personal loans and (ii) secured credit including deposit secured credit cards and home equity loans. Counterparty credit risk is incurred through a number of business-facing activities including payment network settlement, certain marketing and incentive programs, asset/ liability management, guarantor and insurance relationships and strategic investments.

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 instruments (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) internal fraud; (ii) external fraud; (iii) employment practices and workplace safety; (iv) clients, products and business practices; (v) damage to physical assets; (vi) business disruption and system failures; and (vii) execution, delivery and process management.

One of our key operational risks is information security, which includes cybersecurity. Our information security program is led by our Chief Information Security Officer ("CISO") and overseen by our Technology and Information Risk Committee ("TIRC"). The program is designed to safeguard the confidentiality, integrity and availability of information assets. We continuously monitor the cyber threat landscape, internal threats and technological changes to ensure controls are in place to mitigate risks to the organization and our customers. In concert with our lines of business and corporate functions, our enterprise-wide incident management framework enables us to manage risk mitigation activities that stem from incidents; these include governance structure and organization, an incident management program, incident management and escalation principles, requirements for testing and exercising the program, risk management principles and external reporting guidance.

Compliance Risk

Compliance risk is the risk of material financial loss, damage to reputation or negative impact on business strategies that Discover Financial Services and its subsidiaries may suffer as a result of its failure to comply with laws, regulations, rules and key internal policies applicable to the activities of our Company. Compliance risk exposures are actively and primarily managed by our business units in conjunction with our compliance department. Our compliance program governs the management of compliance risk and includes oversight by our Management Risk Committee and Compliance

Committee. Our Compliance Management System is in place to ensure we are responding in a timely manner to existing and changing laws, regulations and rules.

Legal Risk

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. Legal risk exposures are primarily managed by our business units in conjunction with our legal department Management Risk

Committee and Compliance Committee oversee our legal risk management. Specifically, the legal 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, business units and internal audit. The legal department also identifies and communicates legal risk associated with new products and business practices.

Strategic Risk

Strategic risk is the risk that our strategies and the execution of those strategies do not produce the desired outcome, resulting in a negative impact on our enterprise value. This risk can be driven by internal and external factors, including (i) our business model, market position, selection of strategies and execution of those strategies and (ii) competitor strategies, emergence of new competitors, emergence of new technologies, changing consumer preferences or other market factors.

Our Management Risk Committee actively manages strategic risk by monitoring our risk appetite and key risk indicators ("KRIs"), identifying and providing oversight of key risks associated with our business strategies, and working with our Risk Oversight Committee and Board of Directors to identify and manage top strategic risks. Our business units take on and are accountable for managing strategic risk in pursuit of their objectives.

Enterprise Risk Management Activities

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 enterprise-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, including Company-specific risks that span across multiple lines of business; (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 our Company including stress scenario design and stress testing, capital planning, risk appetite setting and risk modeling. The risk inventory is reviewed and approved at least annually by the Management Risk Committee while 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, including 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 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 our 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. In addition to metrics, independent CRM testing also informs how well risks are managed.

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 Management 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, modify, share or accept a risk position (or activity prior to its occurrence).

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 our Company on a regular basis. The CRM department periodically provides risk management reporting to the Management 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, their impacts and the extent to which our 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 provide information for 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 significant risks from the Board of Directors' and management's view, granular risks relevant to business units and emerging risks associated with new initiatives.

Risk Appetite and Strategic Limit Structure

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

Risk appetite is expressed through both quantitative limits and qualitative expressions to recognize a range of possible outcomes and to help set boundaries for proactive management of risks. Risk appetite measures take into account the risk profile of the businesses, the external macroeconomic environment and stakeholder views, including those of shareholders, regulators, ratings agencies and customers. 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 to various risk sub-committees, the Management 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 our 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, the Management 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.

Risk Management Review of Compensation

Our compensation program is grounded in a pay-for-performance philosophy, which considers performance across our Company, business segments and individual performance, as appropriate, as well as the long-term interests of our shareholders and the safety and soundness of our Company. We strive to deliver compensation that is competitive relative to our peers, and have designed our program to attract, retain and motivate our employees. In addition to being competitive in the markets that 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 our business.

The design and administration of our compensation program provides 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 ("CLDC") of our Board of Directors. At least annually, the CLDC meets with the CRO to review and discuss the results of the assessment of whether our compensation plans encourage imprudent risk-taking that could threaten the value of, or have a material adverse effect on, our Company or result in a failure to comply with regulatory requirements.

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 business. We seek to apply operating principles consistently to each committee. These operating principles are detailed in each committee's charter, which is approved by its parent committee. Our bank subsidiary has its own risk governance, compliance, auditing and other requirements. Our risk governance framework is designed such that bank-level risk governance requirements are satisfied as well. We are in the process of enhancing and strengthening our management committee structure and risk governance discipline, including the addition, elimination and re-alignment of management committees, to ensure comprehensive coverage.

Board Committee Structure

10K-BoardCommittees_2023 with NGPR.jpg

Board of Directors

Our Board of Directors (i) reviews and approves certain risk management policies; (ii) reviews and approves our capital targets and goals; (iii) reviews and approves our risk appetite framework; (iv) monitors and approves our strategic plan, as appropriate; (v) appoints our CRO and other risk governance function leaders, as appropriate; (vi) receives and reviews 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 Governance and Controls Committee on risks associated with significant regulatory remediation activities, including consent orders, the Audit Committee and Risk Oversight Committee on risk management matters and the CLDC on risks associated with compensation and leadership development.

Governance and Controls Committee of our Board of Directors

Our Governance and Controls Committee was formed in 2023 to assist the Board in fulfilling its respective oversight responsibilities with regard to significant regulatory remediation activities, including consent orders. The committee is responsible for overseeing and monitoring the establishment and timely implementation by management of remediation actions to address specific corrective actions required by the Company's regulators. It is responsible for overseeing the Company's Office of Remediation, approving the head of the Office of Remediation and reviewing that individual's performance. The committee is also responsible for reviewing and approving, or recommending for Board approval, any material amendments to action plans made in response to supervisory feedback, and reviewing and approving any submissions to the Company's regulators related to compliance with consent orders.

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 and liquidity risk management activities. The Committee is responsible for, among other things, (i) approving and periodically reviewing our global risk management policies; (ii) overseeing the operation of our policies and procedures for establishing our risk management governance, risk management procedures, risk appetite metrics and key risk indicators and risk-control infrastructure; (iii) overseeing the operation of processes and systems for implementing and monitoring compliance with such policies and procedures; (iv) receiving and reviewing regular reports from management on items related to operational risk; (v) reviewing and making recommendations to the Board of Directors, as appropriate, regarding our risk management framework, key risk management policies and our risk appetite and tolerance; (vi) receiving and reviewing regular reports from management and 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; (vii) receiving reports on compliance with our risk appetite and limit structure and risk management policies, procedures and controls; 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.

Audit Committee of our Board of Directors

With respect to the enterprise risk management framework, our Audit Committee's responsibilities include 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; (iii) receiving and reviewing reports from management with respect to the Company's compliance with applicable legal and regulatory requirements; and (iv) 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 CLDC is responsible for overseeing risk management associated with our compensation and leadership development practices. The Committee receives reporting regarding our compensation practices and evaluates whether these practices encourage excessive risk-taking. As a part of its reviews, the Committee considers input from our CRO and takes into account risk outcomes and the safety and soundness of the Company and Discover Bank. The CLDC receives reporting regarding talent management practices and evaluates risks associated with leadership development and succession planning. With respect to individual performance and compensation oversight, the CLDC's focus is on executive officers.

Nominating, Governance and Public Responsibility Committee of our Board of Directors

Our Nominating, Governance and Public Responsibility Committee is responsible for overseeing risk management with respect to many of the Company's governing documents and Board composition. The Committee is responsible for, among other things, (i) evaluating whether the skills necessary for overseeing management and the Company are present on the Board and consistent with the Company's Corporate Governance Guidelines; (ii) facilitating the Board's self-evaluation process to ensure the right individuals are on the Board; (iii) overseeing the Company's engagement efforts with institutional shareholders, which can highlight current and future risks; (iv) overseeing the Company’s commitment to environmental, social and governance (“ESG”) matters and its ESG strategies; and (v) receiving reports from management with respect to ESG risks and reporting.

Management Risk Committee and Sub-committees Structure

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Management Risk Committee

Our Management Risk Committee is an executive management-level committee that establishes and oversees 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 Management Risk Committee has formed and designated a number of sub-committees to assist it in carrying out its responsibilities. These sub-committees, made up of representatives from senior levels of management, escalate issues to our Management Risk Committee. As of December 31, 2023, the sub-committees consisted of the following (except where otherwise indicated, all sub-committees cover both the Company and all of its subsidiaries):

- *Credit Committee* oversees lending activities for Discover Bank, providing a regular forum for business units to bring forth and discuss key issues.
- *Asset and Liability Committee* assists in the oversight of the liquidity, funding and market risk management, as well as the execution of strategies to maintain capital adequacy.
- *Capital Planning Committee* provides oversight of capital management and the development of capital plans for the Company and Discover Bank.
- *Challenge Committee* assists in ensuring that supervisory findings and enforcement actions are resolved in a timely and appropriate manner.
- *Compliance Committee* oversees compliance risk management with respect to the business and activities of the Company and its subsidiaries through the Company’s Compliance Management System.

- *Counterparty Credit Committee* oversees enterprise-wide counterparty credit risk at the Company and its subsidiaries, establishing an enterprise-wide approach to counterparty risk management through development of the Counterparty Credit Risk Management Policy.
- *Human Resources Risk Committee* assists in the oversight of the Human Resources programs, providing a forum for leaders across the Company's business areas to evaluate key risks associated with Human Resources programs and employment practices.
- *New Initiatives Committee* assists in the oversight of new initiatives including new products, services, systems or business processes.
- *Operational Risk Committee* assists in the oversight of Operational Risk Management, approving and/or overseeing policies, standard, risk appetite and frameworks for operational risk measurement.
- *Technology and Information Risk Committee* provides oversight, leadership and direction setting concerning data risk, technology risk and information security risk management on an enterprise-wide basis.
- *Resolution Planning Committee* oversees all aspects of Discover Bank's resolution planning efforts as defined by the FDIC under the Federal Deposit Insurance Act ("FDIA").
- *Affiliate Transactions Committee* provides oversight of transactions between Discover Bank and its affiliates.

Supervision and Regulation

General

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

Our bank subsidiary, Discover Bank, is located in the U.S. and is chartered and regulated by the Office of the Delaware State Bank Commissioner ("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. Discover Bank is also a member of the Federal Home Loan Bank ("FHLB") of Chicago. Discover Bank offers credit card loans, personal loans and home loans as well as certificates of deposit, savings and checking accounts and other types of deposit accounts.

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 non-financial activities that are related to commerce such as manufacturing or retail sales of non-financial 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 GLBA requires that the depository institution we control meets certain criteria, including capital, management and Community Reinvestment Act requirements. In addition, under the Dodd-Frank Wall Street Reform and Consumer Protection Act ("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 otherwise generally permissible for bank holding companies.

Federal Reserve regulations and the FDIA require a bank holding company to serve as a source of strength to its subsidiary bank(s) 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 important financial institutions. When the Dodd-Frank Act was first signed into law, all bank holding companies with $250 billion or more in total consolidated assets became subject to enhanced prudential standards. The Dodd-Frank Act was subsequently amended by the Economic Growth, Regulatory Relief, and Consumer Protection Act to provide the Federal Reserve with the authority to impose certain enhanced prudential standards on bank holding companies with total consolidated assets between $100 billion and $250 billion, including DFS, only after issuing a new regulation or order based on a risk-based determination. In October 2019, the federal banking agencies issued final rules that tailored the regulatory requirements in effect at that time related to capital, liquidity and enhanced prudential standards to align with the risk and complexity profiles of banking institutions with total consolidated assets of $100 billion or more. Under the final rules, which became effective in December 2019, DFS is considered a Category IV institution and therefore subject to the least stringent category of enhanced prudential standards for bank holding companies with at least $100 billion in total assets. Among other things, DFS is required to submit to supervisory stress tests every other year rather than annually, is no longer subject to regulations requiring DFS to submit the results of company-run capital stress tests and is no longer subject to the liquidity coverage ratio. However, DFS is still required to submit annual capital plans to the Federal Reserve and remains subject to other core components of enhanced prudential standards, such as risk-management and risk committee requirements and liquidity risk management regulations.

In January 2021, the Federal Reserve finalized regulatory amendments that made targeted changes to the capital planning, regulatory reporting and stress capital buffer (“SCB”) requirements for firms subject to Category IV standards, including DFS, to be consistent with the Federal Reserve’s regulatory tailoring framework that became effective in December 2019. Among other things, the amended rules provide Category IV institutions with the option to submit to supervisory stress tests during off years if they wish for the Federal Reserve to reset the stress test portion of their SCB requirement.

On June 23, 2022, the Federal Reserve released results of the 2022 Comprehensive Capital Analysis and Review (“CCAR”) exercise. Discover’s results showed strong capital levels under stress, well above regulatory minimums. These results were used to set the new SCB effective October 1, 2022. On August 4, 2022, the Federal Reserve disclosed the new SCB for DFS to be 2.5%, the lowest possible requirement. In accordance with the capital plan rule amendments, we elected not to participate in the 2023 supervisory stress tests. Nevertheless, we submitted to the Federal Reserve on April 5, 2023, a capital plan based on a forward-looking assessment of income and capital under baseline and stressful conditions. On July 27, 2023, the Federal Reserve disclosed that Discover’s SCB is unchanged at 2.5%, beginning October 1, 2023 through September 30, 2024.

DFS is subject to the Federal Reserve’s supervisory rating system for large financial institutions (“LFI Rating System”). The LFI Rating System is intended to align more closely with the Federal Reserve’s current supervisory programs for large financial institutions, enhance the clarity and consistency of supervisory assessments and provide greater transparency regarding the consequences of a given rating. Under the LFI Rating System, the Federal Reserve does not provide an institution with an overall composite rating but instead evaluates and assigns ratings for each of the following three components: capital planning and positions; liquidity risk management and positions; and governance and controls. An institution subject to the LFI Rating System, such as DFS, will not be considered “well managed” under applicable regulations if it is assigned a deficient rating in any one component, which could be a barrier for seeking the Federal Reserve’s approval to engage in new or expansionary activities.

Regulatory and supervisory 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 19: Litigation and Regulatory Matters to our consolidated financial statements for more information on recent matters affecting us. Regulatory developments could also influence our strategies, impact 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, 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

DFS and Discover Bank 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. DFS and Discover Bank are required to maintain Tier 1 and total capital equal to at least 6% and 8% of our total risk-weighted assets, respectively. DFS and Discover Bank 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 current capital plan requirements, DFS 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 DFS 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 bank subsidiary is 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, 2023, DFS met all requirements to be deemed "well-capitalized" pursuant to the applicable regulations. For related information regarding our bank subsidiary see "— FDIA" below.

There are various federal and state law limitations on the extent to which our bank subsidiary 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 Discover Bank, 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 subject to regulatory requirements relative to capital distributions, including common stock dividends and repurchases, imposed by the Federal Reserve as part of its stress testing framework and CCAR program.

For more information on capital planning, including additional conditions and limits on our ability to pay dividends and repurchase our stock, see "— Bank Holding Company Regulation," "Risk Factors — Operational and Other Risk — *We may be limited in our ability to pay dividends on and repurchase our stock,*" "Risk Factors — Operational and Other Risk — We are a holding company and depend on payments from our subsidiaries," "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments," "Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Capital" and Note 17: 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 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, 2023, Discover Bank 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.

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. Under current FDIC regulations, a bank that is less than “well-capitalized” is generally prohibited from soliciting deposits by offering an interest rate that exceeds 75 basis points over the national market average or 120 percent of the current yield on a similar maturity U.S. Treasury obligation plus 75 basis points, whichever is higher. There are no such restrictions under the FDIA on a bank that is “well-capitalized.” As of December 31, 2023, Discover Bank 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, the ability to “export” interest rates permitted under the laws of the state where the bank is located. Discover Bank is located in Delaware and, therefore, can 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. This flexibility facilitates the current nationwide lending activities of Discover Bank.

The FDIA subjects Discover Bank to deposit insurance assessments. In an effort to bolster the reserves of the Deposit Insurance Fund, the Dodd-Frank Act raised the statutory minimum reserve ratio for the Fund to 1.35% and removed the statutory cap for the designated reserve ratio (“DRR”). The FDIA requires the FDIC to designate and publish a DRR annually. For 2023, the DRR was 2.00%. The FDIC also recently amended its deposit insurance regulations to increase initial base deposit insurance assessment rate schedules, beginning with the first quarterly assessment period of 2023, which will raise Discover Bank’s cost of deposit insurance. Further increases may occur in the future. In November 2023, the FDIC’s Board of Directors approved a final rule to implement a special assessment to recover the loss to the Deposit Insurance Fund associated with protecting uninsured depositors following the failure of two domestic banks in March 2023. The assessment base for the special assessment is equal to an insured depository institution’s estimated uninsured deposits reported as of December 31, 2022, adjusted to exclude the first $5 billion. The special assessment will be collected at an annual rate of approximately 13.4 basis points for an anticipated total of eight quarterly assessment periods, beginning with the first quarterly assessment period of 2024 (i.e., January 1 through March 31, 2024).

Discover Bank is subject to the FDIC’s final rule requiring periodic submission of a resolution plan to the FDIC. In June 2021, the FDIC announced a modified approach to its implementation of certain aspects of its resolution plan rule as it relates to insured depository institutions with $100 billion or more in total assets. Discover Bank is required to submit a resolution plan to the FDIC on a three-year cycle, with its first filing due on December 1, 2022, under the FDIC’s modified approach. Discover Bank submitted its most recent resolution plan to the FDIC in November 2022. In August 2023, the FDIC issued proposed revisions to strengthen the resolution plan rule, including with respect to the content and timing of resolution submissions as well as interim supplements provided to the FDIC. The proposed rule would require full plan submissions from Discover Bank every two years, with more limited supplements filed in off years. The proposed revisions also include updated and new information requirements. Because the rule revisions are not yet final, the impact to Discover Bank remains uncertain until the rulemaking process is complete.

Acquisitions and Investments

Since we are a bank holding company, and Discover Bank is an insured depository institution, 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. For more information on recent matters affecting us, see Note 19: Litigation and Regulatory Matters to our consolidated financial statements. For information on the regulatory environment, see "Risk Factors."

In addition, certain acquisitions of our voting stock may be subject to regulatory approval or notice under 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 GLBA, the Credit Card Accountability Responsibility and Disclosure Act, the Servicemembers Civil Relief Act, the Military Lending Act, the Truth in Savings Act, the Electronic Fund Transfer Act and the Dodd-Frank Act. These and other federal laws, among other things, prohibit unfair, deceptive and abusive practices, require disclosures of the cost of credit and other terms of credit and deposit accounts, provide substantive consumer rights, prohibit discrimination in credit transactions, regulate the use of credit report information, provide privacy protections, require safe and sound banking operations, restrict our ability to raise interest rates on credit cards, protect customers serving in the military and their dependents 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 DFS. 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.

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 that 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. For more information, see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments — Consumer Financial Services."

Payment Networks

Our payment networks deliver switching and settlement services to financial institutions and other program participants for a variety of ATM, payment and other electronic banking transactions. These operations are regulated by certain federal and state laws, including 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 Administration. In addition, as our payments business has expanded globally, we are subject to government regulation, both directly and indirectly through regulation affecting network licenses, in countries in which our networks operate or our cards are used. 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 handling or 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 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.

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 our anti-money laundering compliance and sanctions officer and undergoes regular independent audits to assess its effectiveness. Our program is typically reviewed on an annual basis by federal banking regulators. 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 certain transactions involving specified entities or individuals. We maintain policies, procedures and other internal controls designed to comply with these sanctions programs.

Information About Our Executive Officers

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

Name	Age	Position
Michael G. Rhodes	58	Chief Executive Officer and President
John T. Greene	58	Executive Vice President, Chief Financial Officer
Daniel P. Capozzi	52	Executive Vice President, President - Consumer Banking
Jason P. Hanson	45	Executive Vice President, President - Payment Services
Hope D. Mehlman	59	Executive Vice President, Chief Legal Officer, General Counsel and Corporate Secretary
Michael E. Roemer	61	Executive Vice President, Chief Risk Officer
Jason J. Strle	47	Executive Vice President, Chief Information Officer
Keith E. Toney	52	Executive Vice President, President - Credit and Decision Management

Michael G. Rhodes is our CEO and President, having joined Discover in February 2024. Prior to joining Discover, Mr. Rhodes was the Group Head, Canadian Personal Banking at TD Bank Group ("TD"). He joined TD in 2011 to lead the North American Credit Card and Merchant Services business, and from 2017 to 2021, he also served as the Group Head, Innovation, Technology and Shared Services. His experience also includes leadership roles at both Bank of America and MBNA America Bank. Mr. Rhodes earned his MBA from the Wharton School at the University of Pennsylvania and holds a bachelor's degree in engineering from Duke University.

John T. Greene is our Executive Vice President, Chief Financial Officer ("CFO"). He has held this role since September 2019. Prior to joining Discover, Mr. Greene served as executive vice president, chief financial officer and treasurer at Bioverativ, a global biopharmaceutical company. From 2014 to 2016, he was chief financial officer for Willis Group Holdings, which was preceded by more than eight years at HSBC Holdings where he held CFO positions for several divisions, including retail bank and wealth management, insurance and consumer and mortgage lending. He also held various CFO roles in his 12-year tenure with General Electric from 1993 to 2005. Mr. Greene holds a bachelor's degree in accounting from the State University of New York and an MBA from the Kellogg School of Management at Northwestern University.

Daniel P. Capozzi is our Executive Vice President, President - Consumer Banking. He has held this role since July 2023. In his current role, Mr. Capozzi oversees enterprise marketing, consumer products (US Cards, Lending and Deposits) and customer care operations. Prior to this role, he served as president – US Cards from December 2020 to 2023. In October 2018, he was appointed to the role of executive vice president, president - Credit Operations and Decision Management and also previously served as senior vice president, Credit and Decision Management beginning in June 2017. Since joining Discover in 2007, Mr. Capozzi has held leadership positions in the Deposits business and Corporate Finance. Prior to joining Discover, he held various leadership positions in Finance at Citibank and Bank of America. Mr. Capozzi holds a bachelor's degree in business administration from Northeastern University.

Jason P. Hanson is our Executive Vice President, President – Payment Services. He has held this role since July 2023, with responsibility for Discover Network, PULSE and Diners Club International. Since joining Discover in 2019, Mr. Hanson has held various leadership positions across Payment Services. Prior to joining Discover, Mr. Hanson held roles as a senior vice president at FIS/WorldPay, as a partner at McKinsey & Company and as an officer in the U.S. Army. Mr. Hanson holds a bachelor's degree in economics from the United States Military Academy, West Point and an MBA from the University of Chicago Booth School of Business.

Hope D. Mehlman is our Executive Vice President, Chief Legal Officer, General Counsel and Corporate Secretary. She joined Discover in January 2023 as executive vice president, chief legal officer and general counsel, and became corporate secretary in February 2023. Prior to joining Discover, Ms. Mehlman was executive vice president, general counsel and corporate secretary of Bank of the West and corporate secretary of BNP Paribas USA, Inc., positions she held from 2020 to January 2023. From 2006 to 2020, she held multiple leadership roles at Regions Financial Corp., where she last served as executive vice president, deputy general counsel, chief governance officer and corporate secretary. Ms. Mehlman holds a bachelor's degree in near eastern studies from Cornell University, a juris doctor from Seton Hall University Law School and a master of laws in taxation from New York University School of Law.

Michael E. Roemer is our Executive Vice President, CRO. He has held this role since July 2021 and previously served as chief compliance officer beginning in February 2021 through December 2021. Prior to joining Discover, Mr. Roemer served as chief compliance officer at Wells Fargo from 2018 to 2020, where he oversaw the transformation of its enterprise compliance function, focusing on regulatory remediation and improvement of compliance risk management. Before that, he was head of compliance at Barclays from 2014 to 2017, where he led the compliance transformation program and served as chief internal auditor from 2012 to 2014. Mr. Roemer holds a bachelor's degree from St. John's University and completed the Tuck Executive Program at Dartmouth College.

Jason J. Strle is our Executive Vice President, Chief Information Officer ("CIO"). He has held this role since July 2023. Prior to joining Discover, Mr. Strle served as executive vice president and group CIO for Corporate Functions at Wells Fargo from 2022 to 2023, Consumer Banking, Payments and Digital from 2017 to 2022. Prior to Wells Fargo, he spent almost 13 years with JPMorgan Chase in roles of increasing scope, culminating as CIO of Consumer and Small Business Banking. Mr. Strle holds a bachelor's degree in computer science from Ohio University in Athens, Ohio.

Keith E. Toney is our Executive Vice President, President – Credit and Decision Management. He has held this role since July 2023 and previously served as executive vice president, president – data and analytics from October 2020 to July 2023. Prior to that, Mr. Toney served as senior vice president, chief data officer beginning in December 2019. From 2017 to 2019, Mr. Toney held leadership positions with The Hartford Financial Services Group, where he last served as senior vice president – product, data science and analytics. Mr. Toney, who also served as chief data scientist at Connexion Point from 2015 to 2017, has more than 20 years of information technology and risk management experience in financial services and analytics. He holds a bachelor’s degree and a master’s degree in mathematics from Ohio State University.

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.

Summary

The following is a summary of the most important risks that could materially adversely affect our business, financial condition, cash flows and/or results of operations, and should be read together with the more detailed description of risks that follow:

- Merger Related Risks: The merger is subject to a number of risks, including that the required regulatory approvals may not be obtained in a timely manner, if at all, that the merger may be terminated or abandoned by the parties and that it may be more difficult, costly or time consuming than expected to realize, or that the combined company will fail to realize, the anticipated synergies and benefits of the merger.
- Economic, Regulatory, Enforcement and Litigation: As a consumer financial services and payment services company, we are subject to risks stemming from laws and regulations, compliance therewith and related litigation and an uncertain economic environment.
- Strategic: We must successfully compete against firms that are larger than we are and have more resources than we do as well as firms that are smaller and potentially disruptive to our industry as we manage the unique risks associated with each of our product offerings.
- Credit, Market and Liquidity: We must effectively manage our desire to grow our loan portfolio against the risk that those loans will not be repaid, while ensuring that we manage the underlying cost of the funds we use to make those loans and sources of funding we rely on to fund those loans.
- Operational and Other Risks: We must remain operationally effective and manage operational and reputational risks such as fraud and cybersecurity, while continuing to monitor and effectively respond to an external environment that may negatively impact the utilization or desirability of our products and services.

Merger Related Risks

Failure to complete the merger with Capital One could negatively affect our stock price and our future business and financial results.

If our pending merger with Capital One is not completed for any reason, our ongoing business may be adversely affected and, without realizing any of the benefits of having completed the merger, we would be subject to a number of risks, including the following:

- we may experience negative reactions from the financial markets, including negative effects on our stock price;
- we may experience negative reactions from our customers and vendors;
- we will have incurred substantial expenses and will be required to pay certain costs relating to the merger, including legal, accounting, and other fees, whether or not the merger is completed;

- our management team will have devoted substantial time and resources to matters relating to the merger, and would otherwise have devoted their time and resources to other opportunities that may have been beneficial to us, which could cause us to lag competitor advances.

In addition, if the Merger Agreement is terminated and we seek another merger or business combination, the market price of our common stock could decline, which could make it more difficult to find a party willing to offer equivalent or more attractive consideration than the consideration Capital One has agreed to provide in the merger.

We will be subject to business uncertainties and contractual restrictions while the merger with Capital One is pending.

Uncertainty about the effect of the merger on our employees and customers may have an adverse effect on us. These uncertainties may impair our ability to attract, retain and motivate key personnel until the merger is completed and could cause customers and others that deal with us to seek to change existing business relationships with us. In addition, subject to certain exceptions, we have agreed to operate our business in the ordinary course in all material respects and to refrain from taking certain actions that may adversely affect our ability to consummate the transactions contemplated by the Merger Agreement on a timely basis without the consent of Capital One. These restrictions may prevent us from pursuing attractive business opportunities that may arise prior to the completion of the merger. Employee retention may be particularly challenging during the pendency of the merger, as employees may experience uncertainty about their roles with the surviving corporation following the merger.

Shareholder litigation could prevent or delay the closing of our pending merger with Capital One or otherwise negatively affect our business and operations.

We may incur additional costs in connection with the defense or settlement of any shareholder lawsuits filed in connection with our pending merger with Capital One. Such litigation could have an adverse effect on our financial condition and results of operations and could prevent or delay the consummation of the merger.

We have incurred and are expected to incur substantial costs related to the merger.

We have incurred and expect to incur a number of non-recurring costs associated with the merger. These costs include, or will include, legal, financial advisory, accounting, consulting and other advisory fees, retention, severance and employee benefit-related costs, public company filings fees and other regulatory fees, financial printing and other printing costs. Some of these costs are payable by us regardless of whether or not the merger is completed.

Because the market price of Capital One common stock may fluctuate, our stockholders cannot be certain of the precise value of the merger consideration they may receive in our pending merger with Capital One.

At the time our pending merger with Capital One is completed, each issued and outstanding share of our common stock (other than certain shares held by us or Capital One) will be converted into the right to receive 1.0192 shares of Capital One common stock. There will be a time lapse between each of the date of the proxy statement/prospectus for the stockholders' meeting to approve the merger, the date on which our stockholders vote to approve the merger, and the date on which Discover stockholders entitled to receive shares of Capital One common stock actually receive such shares. The market value of Capital One common stock may fluctuate during these periods as a result of a variety of factors, including general market and economic conditions, changes in our and Capital One's businesses, operations and prospects, and regulatory considerations. Many of these factors are outside of our and Capital One's control. The actual value of the shares of Capital One common stock received by our shareholders will depend on the market value of shares of Capital One common stock at the time the merger is completed. This market value may be less or more than the value used to determine the exchange ratio stated in the Merger Agreement.

Regulatory approvals may not be received, may take longer than expected, or may impose conditions that are not presently anticipated or that could have an adverse effect on the combined company following the proposed merger with Capital One.

Before the merger with Capital One and the subsequent merger of Capital One, National Association and Discover Bank (the "bank merger") may be completed, various approvals, consents and non-objections must be obtained from the FRB, the OCC and the Delaware State Banking Commissioner. In determining whether to grant these approvals, such regulatory authorities consider a variety of factors, including the regulatory standing of each party. These approvals could be delayed or not obtained at all, including due to an adverse development in either party's regulatory standing or in any other factors considered by regulators when granting such approvals; governmental, political or community group inquiries, investigations or opposition; or changes in legislation or the political environment generally.

The approvals that are granted may impose terms and conditions, limitations, obligations or costs, or place restrictions on the conduct of the combined company's business or require changes to the terms of the transactions contemplated by the Merger Agreement. There can be no assurance that regulators will not impose any such conditions, limitations, obligations or restrictions and that such conditions, limitations, obligations or restrictions will not have the effect of delaying the completion of any of the transactions contemplated by the Merger Agreement, imposing additional material costs on or materially limiting the revenues of the combined company following the merger or otherwise reducing the anticipated benefits of the merger if the merger were consummated successfully within the expected timeframe. In addition, there can be no assurance that any such conditions, terms, obligations or restrictions will not result in the delay or abandonment of the merger. Additionally, the completion of the merger is conditioned on the absence of certain orders, injunctions or decrees by any court or regulatory agency of competent jurisdiction that would prohibit or make illegal the completion of any of the transactions contemplated by the Merger Agreement.

In addition, despite the parties' commitments to using their reasonable best efforts to comply with conditions imposed by regulators, under the terms of the Merger Agreement, neither us nor Capital One, nor any of their respective subsidiaries, is required to take any action, or commit to take any action, or agree to any condition or restriction, in connection with obtaining the required permits, consents, approvals and authorizations of governmental entities that would reasonably be expected to have a material adverse effect on the combined company and its subsidiaries, taken as a whole, after giving effect to the merger and the bank merger.

The Merger Agreement between us and Capital One may be terminated in accordance with its terms and the merger may not be completed.

The Merger Agreement is subject to a number of conditions which must be fulfilled in order to complete the merger. Those conditions include, among other things: (i) approval by each of our shareholders and Capital One's shareholders of certain matters relating to the merger at each company's respective special meeting; (ii) the receipt of required regulatory approvals, including the approval of the FRB and the OCC; and (iii) the absence of any order, injunction, decree or other legal restraint preventing the completion of the merger, the bank merger or any of the other transactions contemplated by the Merger Agreement or making the completion of the merger, the bank merger or any of the other transactions contemplated by the merger agreement illegal. Each party's obligation to complete the merger is also subject to certain additional customary conditions, including (a) subject to applicable materiality standards, the accuracy of the representations and warranties of the other party, (b) the performance in all material respects by the other party of its obligations under the Merger Agreement and (c) the receipt by each party of an opinion from its counsel to the effect that the merger will qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986.

These conditions to the closing may not be fulfilled in a timely manner or at all, and, accordingly, the merger may not be completed. In addition, the parties can mutually decide to terminate the Merger Agreement at any time, before or after the requisite shareholder approvals, or we or Capital One may elect to terminate the Merger Agreement in certain other circumstances.

Combining us and Capital One may be more difficult, costly or time-consuming than expected, and the combined company may fail to realize the anticipated benefits of the merger.

The success of the merger will depend, in part, on the ability to realize the anticipated revenue and cost synergies from combining the businesses of us and Capital One. To realize the anticipated revenue and cost synergies from the merger, we and Capital One must successfully integrate and combine businesses in a manner that permits those revenue and cost synergies to be realized without adversely affecting current revenues and future growth. If we and Capital One are not able to successfully achieve these objectives, the anticipated benefits of the merger may not be realized fully or at all or may take longer to realize than expected. In addition, the revenue and cost synergies of the merger could be less than anticipated, and integration may result in additional and unforeseen expenses.

An inability to realize the full extent of the anticipated benefits of the merger and the other transactions contemplated by the Merger Agreement, as well as any delays encountered in the integration process, could have an adverse effect upon the revenues, levels of expenses and operating results of the combined company following the completion of the merger, which may adversely affect the value of the common stock of the combined company following the completion of the merger.

We and Capital One have operated and, until the completion of the merger, must continue to operate, independently. It is possible that the integration process could result in the loss of key employees, the disruption of each company's ongoing businesses or inconsistencies in standards, controls, procedures and policies that adversely affect the companies' ability to maintain relationships with merchants, merchant acquirers, clients, customers, depositors and employees or to achieve the anticipated benefits and cost savings of the merger. Integration efforts between the companies may also divert management attention and resources. These integration matters could have an adverse effect on us during this transition period and for an undetermined period after completion of the merger on the combined company.

The combined company may be unable to retain our and/or Capital One personnel successfully after the merger is completed.

The success of the merger will depend in part on the combined company’s ability to retain the talent and dedication of key employees currently employed by us and Capital One. It is possible that these employees may decide not to remain with us or Capital One, as applicable, while the merger is pending or with the combined company after the merger is consummated. If we and Capital One are unable to retain key employees, including management, who are critical to the successful integration and future operations of the companies, we and Capital One could face disruptions in operations, loss of existing customers, loss of key information, expertise or know-how and unanticipated additional recruitment costs. In addition, following the merger, if key employees terminate their employment, the combined company’s business activities may be adversely affected, and management’s attention may be diverted from successfully hiring suitable replacements, all of which may cause the combined company’s business to suffer. We and Capital One also may not be able to locate or retain suitable replacements for any key employees who leave either company.

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 U.S. and global economic environment. A customer’s ability and willingness to repay us can be impacted by not only economic conditions but also a customer’s other payment obligations.

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 $14.4 billion for the year ended December 31, 2023, which was 91% of net revenues (defined as net interest income plus other income), compared to $10.6 billion for the year ended December 31, 2022, which was 80% of net revenues. Economic conditions combined with a competitive marketplace could slow loan growth, resulting in reduced revenue growth from our core digital banking business.

Financial regulatory developments have had an impact 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.

Under the enhanced prudential standards that apply to bank holding companies, DFS is considered a Category IV institution and therefore subject to the least stringent category of these standards for domestic bank holding companies with at least $100 billion in total assets. However, many of the core components of the regulations implementing enhanced prudential standards continue to apply to DFS. Since 2020, DFS has been subject to slightly more tailored requirements for capital stress testing, liquidity risk management and resolution planning. In addition, proposed changes to the regulatory capital rules issued by the federal banking regulators under the Basel Committee's December 2010 framework (the "Basel III rules"), if adopted as proposed, could require us to maintain additional capital.

The impact of the evolving regulatory environment on our business and operations depends upon a number of factors, including (i) the legislative priorities of the U.S. Congress, (ii) priorities and actions of the Federal Reserve, FDIC and CFPB, (iii) implications resulting from our competitors and other marketplace participants and (iv) changing consumer behavior. For additional information regarding bank regulatory matters impacting us, see “Business — Supervision and Regulation.”

Regulatory and legislative developments, findings and actions have had and could continue to have a negative impact on our business strategies or require us to: limit, exit or modify our business practices and product offerings; restructure our products in unanticipated ways; invest more management time and resources in compliance efforts; limit the fees we charge for services; impact the value of our assets; or limit our ability to pursue certain innovations and 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.” Furthermore, see Note 19: Litigation and Regulatory Matters to our consolidated financial statements for more information on recent matters affecting us. It is possible that any new regulatory measures or legislation may disproportionately affect us due to our size, structure or product offerings, among other things.

Compliance expectations and expenditures have steadily and significantly increased for us, and the same is true for other financial services firms, as regulators have escalated their focus on the adequacy of controls to support business operations. We may have to invest further in risk management, compliance and other functions in response to possible regulatory feedback. We may face compliance and regulatory risks if we introduce new or changed products and services or enter into new business arrangements with third-party service providers, alternative payment providers, or other industry participants. Heightened regulatory expectations and increased volume of regulatory changes may generate additional expenses or require significant time and resources to maintain compliance.

For more information regarding the regulatory environment and developments potentially impacting us, 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 of financing and payment services such as financial technology firms, based on several factors, including brand, reputation, customer service, product offerings, incentives, pricing, digital payments and other terms. Competition in credit cards is also based on merchant acceptance and the value provided to the customer by rewards programs and other innovations. 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 growth from our core digital 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 costs 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 costs in competing with other consumer financial services providers to attract and retain customers and increase usage of our products. A substantial portion of this cost relates to marketing expenditures and rewards programs. Since 2013 our rewards rate, which represents rewards cost divided by Discover Card sales volume, has increased from less than 1% to 1.40% in 2023. We expect the competitive intensity in the rewards space to continue, which could result in a continued increase in the cost of our rewards programs. Our consumer financial services products compete primarily based on 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. However, there can be no assurance that any of the costs 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 banking products, have lower funding 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 costs directly affect our earnings results. Many factors can influence the amount of our costs, as well as how quickly it may increase. Our ongoing investments in infrastructure, including technology such as generative artificial intelligence ("AI"), which may be necessary to maintain a competitive business, integrate newly-acquired businesses and establish scalable operations, increase our costs. In addition, as our business develops, changes or expands, additional costs 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 manage our costs successfully, our financial results will be negatively affected.

The inability to compete against other operators of payment networks and alternative payment providers 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, collectively the Discover Global Network. Competition with other operators of payment networks is generally based on issuer fees, fees paid to networks (including switch fees), merchant acceptance, network size and functionality, technological capabilities and other economic terms. Competition is also based on customer perception of service quality, brand image, reputation and market share. Further, we are facing ongoing competition from alternative payment providers, who may create innovative network or other arrangements with our primary competitors, large merchants 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 Global Network and may cause merchant acceptance to decrease. This, in turn, could adversely affect our ability to attract and retain network partners who may seek out more cost-effective alternatives from both traditional and non-traditional payment services providers, which may limit 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. 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 have, and are 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 has a pending lawsuit against Visa with respect to these competitive concerns. PULSE’s transaction processing revenue was $303 million and $249 million for the years ended December 31, 2023 and 2022, respectively.

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. Our competitive position could also be affected if we are unable to deploy, in a cost effective and competitive manner, technology such as generative AI. Additionally, competitors may develop data security solutions, which as a consequence of the competitors' market power, we may be forced to use. In that case, our business may be adversely affected as they may be better positioned to absorb the costs over higher volumes or a larger customer base.

Our business depends upon relationships with issuers, merchant acquirers, other payment enablers and licensees, many of whom are 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 a strong base of network licensees and achieving meaningful global card acceptance, we may be unable to achieve long-term success in our international network business.

We continue to make progress toward achieving increased global card acceptance for the Discover Global Network since we acquired the Diners Club network and related assets in 2008. Achieving global card acceptance would allow our customers, including third-party issuers leveraging the network, to use their cards at merchant and ATM locations around the world.

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. 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 such conditions arise in the future, we may deploy resources and incur expenses in order to sustain network acceptance. 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.

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.

Economic and regulatory challenges facing the student lending business could have a negative effect on our student loan portfolio.

The success of our student loan strategy depends upon our ability to manage the credit risk, pricing, funding, operations, expenses and originations wind-down of our student loan business and compliance with the December 2020 consent order with the CFPB (the "2020 Order"). Our student loan strategy is also impacted by external factors such as the overall economic environment, changes in interest rates and prepayment rates and a challenging regulatory environment for private student loans and student loans generally. For more information on the regulatory environment, see "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments" and Note 19: Litigation and Regulatory Matters to our consolidated financial statements.

There are several challenges to managing our private student loan business, including (i) economic weakness; (ii) new changes in federal and state laws or regulations; and (iii) other government and regulatory focus on higher education costs, student lending, student loan repayments and student loan servicing. Examples of these challenges include the recent legislative focus on federal student loan debt forgiveness in bankruptcy and current and anticipated legislative proposals in a number of states and the District of Columbia imposing new requirements on private student loan lenders and servicers. These challenges may require us to restructure our private student loan products and servicing activities in ways we may not currently anticipate. In addition, changes that adversely affect the private student loan market generally may negatively impact the profitability of our student loan portfolio.

The potential sale of the Discover Student Loan portfolio and transfer of servicing of such loans to a third-party provider may result in disruptions to our business and operations, and no assurances can be made that such sale and/or servicing transfer will be completed or will be as successful as projected or expected.

In November 2023, we announced that our Board of Directors authorized our management to explore the sale of the Discover Student Loan portfolio and the transfer of servicing of such loans to a third-party provider. The time and effort associated with pursuing such sale and/or transfer may result in disruption to our businesses and operations and/or diversion of management attention from other business concerns, which could impair our relationships with our current employees, customers and strategic partners. If we are unable to retain key employees, including management, who are critical to overseeing, operating and managing our student loan portfolio and the potential sale and servicing transfer of such loans, we could face disruptions in our operations, issues administering and servicing our student loans, challenges complying with the 2020 Order, loss of key information, expertise or know-how and unanticipated additional recruitment costs.

Such sale and/or transfer involves significant risks, execution complexity and uncertainties that could adversely affect our business. These risks, complexities and uncertainties include, among others, (i) the time necessary to evaluate and effect such sale and/or transfer, (ii) the level of interest from buyers or third-party servicers, (iii) the price and other terms upon which buyers are willing to acquire the loans and third-party servicers are willing to service the loans, (iv) our ability to successfully negotiate terms and conditions with buyers and third-party servicers and to satisfy such terms and conditions, (v) buyers' ability to obtain financing to acquire the loans, (vi) a third-party servicer's ability to successfully onboard the loans, (vii) potential challenges in separating the assets and operations of the Discover Student Loan business from our other businesses, (viii) requirements and impact of the 2020 Order, (ix) our ability to retain the talent and focus of our key employees dedicated to our student loan portfolio, and (x) the ability of the applicable parties to obtain any required regulatory approvals and other necessary third-party consents. Such sale and/or transfer may require our continued involvement, such as through transition service agreements, guarantees, loan repurchase obligations, loan servicing obligations and indemnities or other current or contingent financial obligations and liabilities. Additionally, such sale and/or transfer may expose us to increased information security risk as we provide data and information access to third parties.

There is no guarantee that (i) the anticipated benefits of such sale and/or transfer will be realized or (ii) we will be able to effectuate such sale and/or transfer at the prices, times, or volumes we desire, or at all. The inability to realize the full extent of the anticipated benefits, issues related to our ability to fully satisfy any post-sale and/or post-transfer obligations related to the Discover Student Loan portfolio and any delays encountered in such sale and/or transfer process, could have an adverse effect upon our capital position, revenues, levels of expenses, regulatory standing and operating results, which may adversely affect the value of our common stock. Also, our Board of Directors may determine that it is in our best interest ultimately not to complete such sale and/or transfer.

Acquisitions, strategic investments or divestitures 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, and we may also divest or explore the sale of businesses, portfolios of loans or technologies from time to time. 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 or expensive to fund. Additionally, there is no guarantee that we can obtain any necessary regulatory approvals, obtain any necessary financing or complete transactions on terms that are favorable to us or in a timely manner. 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 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. The repayment or settlement of those liabilities may have an adverse effect on our financial condition. Additionally, a divestiture may result in continued financial obligations, such as through transition service agreements, guarantees, indemnities or other current or contingent financial obligations and liabilities, following the transaction. The satisfaction of these continued financial obligations may also have an adverse effect on our financial condition.

We may not be able to successfully integrate or disaggregate personnel, operations, businesses, products, or technologies of an acquisition, investment or divestiture. Integration may be particularly challenging if we enter into a line of business in which we have limited experience and/or if the business operates in (or involves products or technologies 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, products or technologies. The integration or disaggregation of any acquisition, investment or divestiture 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. Additionally, any acquisition, investment or divestiture may expose us to increased information security risk as we integrate new systems that we may not be as familiar with or bring them in line with the requirements of our information security and business continuity programs or provide data and information access to third parties. Acquisitions, investments and divestitures also may not perform to our expectations for various reasons, including the loss of key personnel, customers or vendors or changes in the economic or regulatory environment. If we fail to integrate acquisitions or investments, divest businesses or realize the expected benefits, we may lose the return on these acquisitions, investments or divestitures or incur additional transaction costs. As a result, our business, reputation and financial condition may be harmed.

Credit, Market and Liquidity Risk

The failure to successfully manage credit risk, which may result in high delinquency and charge-off rates, could materially adversely affect our business, profitability and financial condition.

As a lender, we are exposed to the risk that our borrowers will be unable or unwilling to repay the principal of, or interest on, loans in accordance with their terms. We seek to grow our loan receivables while maintaining quality credit performance. Our success depends on our ability to manage credit risk while attracting new customers with profitable usage patterns. We select customers, manage their accounts and establish terms and credit limits using externally developed and proprietary scoring models and other analytical techniques 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 incorrectly interpret the data produced by these models in setting our credit policies.

At December 31, 2023 and 2022, $2.3 billion, or 1.76%, and $1.3 billion, or 1.14%, of our loan receivables were non-performing (defined as loans over 90 days delinquent and accruing interest, plus loans not accruing interest). Our ability to manage credit risk and avoid high charge-off rates may be adversely affected by household, business, economic and market conditions that may be difficult to predict. When these conditions deteriorate, we may experience reduced demand for credit and increased delinquencies or defaults, including loans which we have securitized and in which we retain a residual interest. The level of nonperforming loans, charge-offs and delinquencies could rise and require additional provision for credit losses. 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 credit losses will be sufficient to cover actual losses.

A customer's ability and willingness to repay us can be impacted by changes in their employment status, 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, resources, techniques and models. There can be no assurance that we will be able to grow the loan receivables portfolio in accordance with our strategies or manage credit and other risks associated with the loan products. Our failure to manage credit and other risks may materially adversely affect profitability and the ability to grow the loan receivables portfolio and further diversify the 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, results of 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, satisfaction of deposit liabilities upon withdrawal or maturity 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, or we may be too illiquid, which could limit financial flexibility and result in financial distress during a liquidity stress event. Our liquidity portfolio had a balance of approximately $23.3 billion as of December 31, 2023, compared to $19.8 billion as of December 31, 2022. Our total contingent liquidity sources amounted to $69.8 billion as of December 31, 2023, compared to $67.3 billion as of December 31, 2022. As of December 31, 2023, our total contingent liquidity sources consisted of $23.3 billion in our liquidity portfolio, $2.8 billion of undrawn capacity in private securitizations, $2.6 billion in borrowing capacity with the FHLB of Chicago and $41.2 billion in incremental Federal Reserve discount window capacity.

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 may limit our ability to repay or replace maturing liabilities in a timely manner. As such, we may be forced to delay the acquisition of additional funding or be forced to issue or raise funding at undesirable terms and/or costs, which could decrease profitability and significantly reduce financial flexibility. 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, results of operations and financial 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.

A major source of our funds is customer deposits, primarily in the form of savings accounts, certificates of deposits, money market accounts and checking accounts. 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 $84.0 billion in deposits acquired directly or through affinity relationships and $24.9 billion in deposits originated through securities brokerage firms as of December 31, 2023, compared to $70.5 billion and $21.1 billion, respectively, as of December 31, 2022. Our ability to attract and maintain deposits, as well as our cost of funds, has been, and will continue to be, significantly affected by general economic conditions. 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-quality 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 various factors, including factors beyond our control, such as perceptions about our reputation, brand, or financial strength; quality of deposit servicing or branchless banking generally, which could reduce the number of consumers choosing to place deposits with us; third parties continuing or entering into affinity relationships or marketing arrangements with us; disruptions in technology services or the internet, generally; or third-party securities brokerage firms continuing to offer our deposit products. A severe reputational event at the Company resulting in fines or additional remediation impacts may result in material deposit outflows and limit our ability to attract new deposits. Furthermore, customers may withdraw deposits to ensure that their deposits are fully insured or make investments that have a higher yield. If our customers withdraw their deposits, our funding costs may increase, which may reduce our net interest income and net income.

Our ability to obtain deposit funding and offer competitive interest rates on deposits is also dependent on capital levels of our bank subsidiary. In certain circumstances, the FDIA prohibits insured banks 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 17: Capital Adequacy to our consolidated financial statements for more information. While our subsidiary, Discover Bank, met the FDIC's definition of "well-capitalized" as of December 31, 2023 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 credit card 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 as a significant source of funding as well as for contingent liquidity. The securitization of credit card receivables involves the transfer of credit card receivables to a trust, the transfer of the beneficial interest in those credit card receivables to a second trust through a special purpose entity and the issuance by the second trust of notes to third-party investors collateralized by the beneficial interest in the transferred credit card receivables. Our average level of credit card securitized borrowings from third parties was $10.5 billion and $9.0 billion for the years ended December 31, 2023 and 2022, respectively. There can be no assurance that we will be able to complete additional credit card securitization transactions if the credit card securitization market experiences significant and prolonged disruption or volatility.

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 confirm the ratings of asset-backed securities issued by our trusts at the time of a new issuance of securities, 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 credit card receivables, the costs of securitizing our credit card receivables, the demand for credit card asset-backed securities and the legal, regulatory, accounting or tax rules affecting securitization transactions and asset-backed securities, generally.

A prolonged inability to securitize our credit card receivables, or an increase in the costs of such issuances that would make such activities economically infeasible, may require us to seek alternative funding sources, which may be less efficient and more expensive than raising capital via securitization transactions and 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 for our existing credit card securitization transactions would materially adversely affect our liquidity.

Our liquidity and cost of funds 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 securitization transactions 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 credit card receivables. The occurrence of an "early amortization event" may result in termination of the revolving periods of one or more 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 credit card receivables to meet contractual requirements (i.e., excess spread less than zero) and certain breaches of representations, warranties or covenants in the agreements relating to the securitization transactions. For more information on excess spread, see Note 5: Credit Card and Private 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 or may be less efficient and more expensive. An early amortization event also could impact our ability to access the undrawn secured credit facilities that we maintain for contingent liquidity purposes. Additionally, the occurrence of an early amortization event with respect to any of our securitization transactions may adversely impact investor demand for notes issued in our future credit card securitization transactions.

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 a few months prior to maturity. If we were to determine that the payment rate on the underlying credit card receivables would not support a short accumulation period, we would need to begin accumulating principal cash flows earlier than we have historically. A lengthening of the accumulation period could 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 or our subsidiaries' securities could materially adversely affect our liquidity, results of operations and financial condition.

We, along with Discover Bank, are regularly evaluated by the ratings agencies. 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, those of Discover Bank or our asset-backed securities could occur at any time and without notice by any of the rating agencies, which could, among other things, 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 composed 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 of 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 some of our assets and liabilities carry interest rates that fluctuate with market benchmarks. Through July 2023, short-term interest rates continued to rise as the Federal Reserve tightened monetary policy further. Although U.S. economic growth remained strong in 2023, financial market participants and the Federal Reserve Board expect that growth will decelerate in 2024 while inflationary pressures and labor market conditions normalize, leading to potential reductions in the federal funds target rate range throughout the year. The timing and pace of interest rate changes is uncertain, however, and will largely depend on trends in inflation, employment, and other macroeconomic factors. Higher interest rates could negatively impact our customers as total debt service payments would increase, impede our ability to grow our consumer lending businesses and increase the cost of our funding, which would put us at a disadvantage as compared to some of our competitors that have less expensive funding sources.

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, some of our variable-rate loan receivables are subject to a cap, exposing us to interest-rate risk. In addition, we utilize a combination of fixed- and variable-rate funding from various sources, and we may use derivative instruments to hedge the liabilities. However, timing mismatches between loan receivable growth and funding procurement could expose us to interest-rate risk.

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 Secured Overnight Financing Rate. 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 credit 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 loans and 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 "Item 7A — Quantitative and Qualitative Disclosures About Market Risk."

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. These models and the quality of their outputs are dependent on the quality and accuracy of the data loaded into the models. To the extent that the quality and integrity of that data is compromised, the models could result in inaccurate forecasts, ineffective risk management practices or inaccurate risk reporting. All models carry some level of uncertainty that introduces risks in the estimates.

If the models that we use to mitigate risks are inadequate or do not accurately predict future outcomes, 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 the security of our systems, or the systems of third parties we rely upon, is compromised, our business could be disrupted and we may be subject to significant financial exposure, liability and damage to our reputation.

Our digital banking and network operations rely heavily on the secure processing, storage and transmission of confidential or sensitive information about us, our customers and third parties with whom 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 and cloud, 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 (including third parties) to disclose confidential or sensitive information in order to gain access to our data or that of our customers.

Our technologies, systems, networks and software, those of other financial institutions and other firms (such as hardware vendors, cloud providers and others), have been, and are likely to continue to be, the target of increasingly frequent cyber-attacks, malicious code, ransomware, denial of service attacks, phishing and other social engineering, other remote access attacks and physical attacks that could result in unauthorized access, misuse, loss, unavailability or destruction of data (including confidential customer information), account takeovers, identity theft and fraud, 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 technological failure or otherwise. Further, our vulnerability to these types of threats may be increased to the extent employees work remotely or in hybrid work arrangements.

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, attacks 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 or vulnerabilities in software or hardware are unknown or are unable to be entirely addressed even after becoming known, 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 "— Failure to manage our relationships with third-party service providers could result in our revenue or results of operations being materially adversely affected."
- Our customers may use computers and mobile devices that are beyond our security control systems to access our products and services.

We are subject to increasing risk related to information and data security as we increase acceptance of the Discover card internationally, expand our suite of online digital 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 or availability of information about us, our customers, transactions processed on our networks or on third-party networks on our behalf 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.

Cyber-attacks that are successful, or are perceived to be successful, in compromising the data or disrupting the services of other peer financial institutions, whether or not we are impacted, could lead to a general loss of customer confidence, which could negatively impact market perception of our products and services. Media reports of attempted cyber-attacks, service disruptions or vulnerabilities in our information systems or security procedures or those of any of the third-party service providers we engage, could cause significant legal and financial exposure, lead to regulatory and legislative intervention and cause an overall negative effect in 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 objective to be the leading consumer 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 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 credit 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 credit card by our customers, including making it their primary credit 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 credit 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 credit 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 credit 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 credit cards, our ability to grow usage of Discover credit 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.

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

Discover card net transaction dollar volume was concentrated among our top 100 merchants in 2023, with our largest merchant accounting for approximately 6% of that net transaction volume. Transaction volume on the PULSE network was also concentrated among the top 100 merchants in 2023, with our largest merchant accounting for approximately 17% 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 Discover cards 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. 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 business activities and reduce our revenue.

Geopolitical events, natural disasters, extreme weather-related events or other catastrophic events, including terrorist attacks and pandemics, may have a negative effect on our business and infrastructure, including our information technology systems. Climate change may exacerbate certain of these threats, including the frequency and severity of weather-related events and other natural disasters. Our Diners Club network, concentrated primarily on serving the global travel industry, could be adversely affected by a number of factors including international conditions, travel restrictions, pandemics or negative perceptions about the safety of travel that may result in an indefinite decline in consumer or business travel activity. Armed conflict, public health emergencies, natural disasters, political instability or terrorism may have a significant and prolonged 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, including 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 fraud environment continues to be challenging for the financial services industry in general. Credit and debit card fraud, identity theft and electronic-transaction related crimes are prevalent and perpetrators are growing ever more sophisticated. More recently, emerging generative AI capabilities, such as synthetic voice and conversation generation, introduced new fraud risks, especially in the form of identity fraud. While we have policies and procedures designed to address such risk, there can be no assurance that losses will not occur. Our resources, customer authentication methods and fraud prevention tools may be insufficient to accurately predict, prevent or detect fraud. Consumer activists and regulators have sought to expand financial institutions' responsibility to hold customers harmless for fraudulent transactions on their accounts. We incurred fraud losses and other charges of $131 million and $149 million during the years ended December 31, 2023 and 2022, respectively.

Our risk of fraud continues to increase as third parties that handle confidential consumer information suffer security breaches, acceptance of the Discover card grows internationally and we expand our digital 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. Furthermore, 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. For example, we may be unsuccessful in deploying new technologies to strengthen our credit underwriting capabilities, enhance the effectiveness of our marketing efforts, ensure acceptance with new payment technologies, enhance customer service, drive efficiencies in back-office functions or reduce fraud. The competitive mobile, e-wallet and tokenization spaces are expected to continue to bring risks and opportunities to both our digital banking and payment services businesses.

The effect of technological changes on our business is both rapid and 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 us both as a card issuer and as a 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.

The process of developing new products and services or enhancing our existing products and services is complex, costly and uncertain. 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. 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 adopted by consumers, merchants or financial institution customers. Also, the 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 support 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, financial condition and results of operations.

Failure to manage our relationships with third-party service providers could result in our revenue or results of operations being 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 digital 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, security requirements or compliance with applicable laws, the failure could negatively impact our business by adversely affecting our ability to process customers' transactions in a secure, consistent, 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 have a materially adverse effect on our reputation, revenues and/or our results of operations.

With remote and hybrid work arrangements, we have become increasingly dependent on third-party service providers, including those with which we have no direct relationship, such as our employees' internet service providers. If these third-parties experience service disruptions, our operations may be interrupted or negatively impacted.

If our 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 as well as patches 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.

If we are unable to recruit, retain and motivate key officers and employees to drive our business, 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 and grow 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 proposed rulemaking on incentive compensation practices for certain employees at banking organizations, including executives, and may issue additional rules relating to such activities in the future. These requirements could negatively impact our ability to compete with other companies in attracting, hiring 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. Additionally, the market for individuals with skills in fields such as technology, advanced analytics, digital marketing and payments is increasingly competitive and we may not be able to attract and retain persons with the desired skill set or experience. If we are unable to recruit, retain and motivate key personnel to manage and grow our business well, our business could be materially adversely affected.

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

As an issuer and merchant acquirer in the U.S. 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. Losses related to merchant chargebacks were not material for the years ended December 31, 2023 and 2022.

Damage to our reputation could negatively affect our business and brand.

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; a breach of our or our service providers' cybersecurity defenses; 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 otherwise undesirable publicity generated through unexpected social media coverage can damage our reputation and brand. Negative publicity regarding us, whether or not true, may result in customer attrition and other harm to our business prospects. There has also been increased focus on topics related to environmental, social and corporate governance policies, and criticism of our policies in these areas could also harm our reputation and/or potentially limit our access to some forms of capital or liquidity.

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

We rely on a multifaceted strategy to protect our intellectual property that takes advantage of protection such as patents, trademarks, copyrights, trade secrets and other restrictions on disclosure of confidential and proprietary information. We develop our intellectual property internally and in some cases license it from third parties.

In addition, the Discover, PULSE and Diners Club brands have substantial economic and intangible 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. We strategically license our trademarks 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 or other third parties do not adhere to contractual standards, engage in improper business practices, or otherwise misappropriate, misuse 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 developed or licensed marketing, processes or systems may infringe upon 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.

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 jurisdictions in which we operate as described more fully in "Business — Supervision and Regulation," the risk factor entitled "— *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"* and "Management's Discussion and Analysis of Financial Condition and Results of Operations — Regulatory Environment and Developments." In addition, we are subject to inquiries and enforcement actions from states' attorney general offices and regulation by federal regulators, 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 accounting standards (such as the Financial Accounting Standards Board, the SEC, banking regulators and our independent registered public accounting firm), which may add new requirements or change their interpretations on how standards should be applied. Guidance not yet issued could potentially have a material impact on business lines, as well as how we record and report our financial condition and results of operations, and 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 our bank subsidiary being placed in receivership, litigation exposure and disgorgement and fines (as described further below). For example, failure to comply with anti-terrorism, anti-money laundering, anti-bribery and anti-corruption laws, including the USA Patriot Act of 2001, the U.S. Foreign Corrupt Practices Act and other laws regarding corporate conduct, can expose us and/or individual employees to severe criminal and civil penalties.

Legislative, regulatory and tax code changes could impact the profitability of our business activities, alter consumer behavior in ways we did not anticipate, 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 competitors or may disproportionately benefit our 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 enacted by U.S. and non-U.S. governmental and regulatory authorities, such as the European Union's General Data Protection Regulation, the GLBA, and the California Consumer Privacy Act. Due to recent consumer data compromise events in the U.S., which resulted in unauthorized access to millions of customers' data, these areas continue to be a focus of the U.S. Executive Branch and Congress, state legislators and attorneys general and other 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 "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 or the failure to provide timely notification of a disclosure, 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.

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

Consumer banking and payment services institutions have historically been subject to significant legal actions, both from private and government litigants. In addition to regulatory actions, private litigation may include class action lawsuits and commercial, shareholder and patent litigation. Many of these actions have included claims for substantial compensatory, statutory or punitive damages. We have been, currently are, and may again be involved in various actions or proceedings brought by private litigants as well as governmental regulatory and enforcement agencies. This includes the 2020 Order with the CFPB pursuant to which Discover is required to implement a redress and compliance plan in addition to the payment of at least $10 million in consumer redress to consumers who may have been harmed and a $25 million civil money penalty to the CFPB, and the September 2023 consent order by the FDIC with Discover Bank regarding its compliance management system for consumer protection laws pursuant to which Discover Bank has agreed to improve its consumer compliance management system and enhance related corporate governance and enterprise risk management practices, and increase the level of Board oversight over such matters. In addition, we may be subject to further actions, including the imposition of additional consent orders, regulatory agreements or civil money penalties, by governmental regulatory and enforcement agencies regarding similar or other issues. Furthermore, issues with or delays in satisfying the requirements of a regulatory action could affect our progress on others, and failure to satisfy the requirements of a regulatory action on a timely basis could result in additional penalties, enforcement actions, and other negative consequences, including reputational harm, requiring changes to business activities and product offerings, or subjecting us to material fines, penalties, customer restitution or other requirements, resulting in increased expenses. Compliance with existing consent orders, and any other consent orders or regulatory actions, as well as the implementation of their requirements, may increase our expenses, require us to reallocate resources away from growing our existing businesses, subject us to business restrictions, negatively impact our capital and liquidity, require us to undergo significant changes to our business, operations, products and services, and risk management practices, and expose us to private litigation. See Note 19: Litigation and Regulatory Matters to our consolidated financial statements for more information on current matters affecting us.

Historically, we have offered customers an arbitration clause in agreements to quickly and economically resolve disputes. The arbitration clause has, in some cases, also limited our exposure to consumer class action litigation, while still being able to resolve individual customer disputes. However, there is no guarantee that we will be able to continue to offer arbitration clauses in the future or that we will be successful in enforcing the arbitration clause in court. Legal challenges to the enforceability of these clauses may cause us to discontinue their use. In addition to court enforceability uncertainty, there have been bills pending in the U.S. Congress to directly or indirectly prohibit the use of pre-dispute arbitration clauses in some or all consumer banking products. Members of Congress have also urged the CFPB to enact rules prohibiting or limiting the use of pre-dispute arbitration clauses.

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

We increased our quarterly common stock dividend in 2023 to $0.70 per share, an increase of $0.10 per share from the previous rate of $0.60 per share and repurchased approximately 6.8% of our outstanding common stock under our share repurchase program in 2023. 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 regulatory limitations imposed by the Federal Reserve 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. No dividend may be declared or paid on or set aside for payment on our common stock if full dividends have not been declared and paid on all outstanding shares of our preferred stock in any dividend period. 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 its 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."

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," "forecasts," 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;
- the impact of current, pending and future legislation, regulation, supervisory guidance and regulatory and legal actions, including, but not limited to, those related to accounting guidance, tax reform, financial regulatory reform, consumer financial services practices, anti-corruption and funding, capital and liquidity;
- risks related to the proposed merger with Capital One including, among others, (i) failure to complete the merger with Capital One or unexpected delays related to the merger or the inability of the parties to obtain regulatory approvals or satisfy other closing conditions required to complete the merger, (ii) regulatory approvals resulting in the imposition of conditions that could adversely affect the combined company or the expected benefits of the transaction, (iii) diversion of management's attention from ongoing business operations and opportunities, (iv) cost and revenue synergies from the merger may not be fully realized or may take longer than anticipated to be realized, (v) the integration of each party's management, personnel and operations will not be successfully achieved or may be materially delayed or will be more costly or difficult than expected, (vi) deposit attrition, customer or employee loss and/or revenue loss as a result of the announcement of the proposed merger, (vii) expenses related to the proposed merger being greater than expected, and (viii) shareholder litigation that could prevent or delay the closing of the proposed merger or otherwise negatively impact our business and operations;
- 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 our card and personal loan growth;
- our ability to complete the proposed sale of the Discover Student Loan portfolio;
- 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;
- 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 our or others' key systems;
- our ability to remain organizationally effective;
- the effect of political, economic and market conditions, geopolitical events, climate change, pandemics and unforeseen or catastrophic events;
- our ability to introduce new products or services;
- our ability to manage our relationships with third-party vendors, as well as those with which we have no direct relationship such as our employees' internet service providers;
- our ability to maintain current technology and integrate new and acquired systems and technology;
- 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;
- our ability to comply with regulatory requirements, including existing consent orders; and
- new lawsuits, investigations, consent orders or similar matters or unanticipated developments related to current matters.

We routinely evaluate and may pursue acquisitions of, investments in or divestitures from 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 1C. Cybersecurity

Risk Assessment and Management

Our Information Security Program is led by our CISO and overseen by our TIRC. The program is designed to safeguard the confidentiality, integrity and availability of information assets by monitoring the cyber threat landscape, internal threats and technological changes and through the development of controls to mitigate risk to the organization and our customers.

Our Enterprise Risk Management governance structure is based on the principle that each line of business is responsible for managing risks, including information security risk, inherent in its business.

Our Information Risk Management ("IRM") department provides second line defense oversight of the Information Security Program in support of senior management and the Board of Directors' responsibility to provide appropriate risk oversight. Owned by the VP, Information Security and Technology Risk ("VP-ISTR") in IRM, the Information Security Policy provides a framework for the security of information assets and computer resources and is consistent with our five principles that guide the Company's approach to risk management: Comprehensiveness, Accountability, Independence, Defined Risk Appetite and Transparency. The Information Security Policy is designed to comply with applicable laws and regulations, such as the GLBA and the Sarbanes-Oxley Act.

Our enterprise-wide incident management framework addresses risk mitigation activities that stem from incidents including governance structure and organization; risk, incident management and escalation principles; requirements for testing and assessing our processes; and external reporting guidance. We conduct internal assessments and engage external assessors, consultants and auditors to help provide assurance and validation of our security controls, as well as alignment to industry norms.

We are also committed to strong third party risk management. Our Third Party Program provides regulatory guidance for managing third party risk and is designed to assist us with the identification, measurement, management, monitoring and reporting of third party risk.

Our Information Security Program requires that employees adhere to our Third Party Information Security Policy, as well as the Third Party Risk Management Policy, which requires review of third-party controls to determine whether such controls meet the objectives of our Third Party Information Security Policy. The IRM team is responsible for seeing that appropriate information security risks are identified and monitored. 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.

Incident Management

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 or availability of information about us, our customers, transactions processed on our networks or on third-party networks on our behalf, 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 loss of confidence in the security of our systems, products and services that could materially adversely affect our business. For more information about the risks posed by cybersecurity threats, see "Risk Factors — Operational and Other Risk — If the security of our systems, or the systems of third parties we rely upon, is compromised, our business could be disrupted and we may be subject to significant financial exposure, liability and damage to our reputation."

Board of Directors Oversight

Our Risk Oversight Committee and Audit Committee are responsible for reviewing and approving our Information Security Program, as well as reviewing the quality and effectiveness of our technology security. These committees are also responsible for reviewing the guidelines and policies for assessing and managing our exposure to risks, including cybersecurity risk, and the steps management takes to monitor and control such exposures. The Risk Oversight Committee and Audit Committee periodically meet to facilitate oversight of risk management matters, including cybersecurity risk. For example, at least five times per year, the committees receive updates from the CISO and VP-ISTR on our Information Security Program.

The Board of Directors regularly devotes time during its meetings to review and discuss the most significant risks facing us over the short-, medium- and long-term, and our responses to those risks, including cybersecurity risks. Within these discussions, the Board of Directors receives updates from senior executives including the CRO and, on an annual basis, the CISO on the risks posed by cybersecurity threats and our information security program. Additionally, the CISO provides annual Information Security training to the Board of Directors. The training covers the regulatory landscape, risk management practices, cyber landscape and threats to us and the roles and responsibilities of management and board members.

Management Oversight

Our Information Security Program is led by our CISO, who reports to our CIO, and overseen by the TIRC, which serves as a sub-committee to the Management Risk Committee. The TIRC provides oversight, leadership and direction for data risks, technology risks and information security. Our CISO leads the Information Security organization and has the overall responsibility of implementing its strategy and objectives to build a strong cyber engineering function. Reporting to the CISO is the Security Intelligence Incident Response Team, which is responsible for managing cybersecurity incidents by leading, designing and implementing threat intelligence, continuous monitoring and rapid response services.

Our CISO has over 20 years of information technology experience with specialization in information security and risk management. Our CISO is a Certified Information Systems Security Professional, Certified Ethical Hacker, a graduate of the Department of Defense Executive Leadership Development Program, a fellow with the American Council of Technology and an adjunct professor at Carnegie Mellon University. He was formerly the CISO at other large financial institutions and a federal agency prior to joining Discover.

Item 2. Properties

Our principal properties are located in the U.S. and include our corporate headquarters, our call centers and a processing center. Our corporate headquarters is used by both our Digital Banking and Payment Services segments and the call centers and processing center largely support our Digital Banking segment. We also have various offices located outside the U.S. that primarily support our Payment Services segment.

We have begun to reconfigure certain locations as we continue to work to optimize our physical space. As a result, our call centers and processing center are being utilized to a reasonable capacity. We believe our facilities that support both our Digital Banking and Payment Services segments are suitable and adequate to meet our current and projected needs.

Item 3. Legal Proceedings

For a description of legal proceedings, see Note 19: Litigation and Regulatory Matters to our consolidated financial statements.

Item 4. Mine Safety Disclosures

None.

Part II.

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

Our common stock is traded on the New York Stock Exchange (ticker symbol DFS). As of February 16, 2024, there were approximately 36,645 holders of record of our common stock.

Issuer Purchases of Equity Securities

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

Period	Total Number of Shares Purchased	Average Price Paid Per Share(3)	Total Number of Shares Purchased as Part of Publicly Announced Plan or Program(1)(4)	Maximum Dollar Value of Shares that may yet be purchased under the Plans or Programs(1)(4)
October 1-31, 2023				
Repurchase program(1)(4)	—	$ —	—	$ —
Employee transactions(2)	1,080	$ 89.40	N/A	N/A
November 1-30, 2023				
Repurchase program(1)(4)	—	$ —	—	$ —
Employee transactions(2)	6,818	$ 83.45	N/A	N/A
December 1-31, 2023				
Repurchase program(1)(4)	—	$ —	—	$ —
Employee transactions(2)	2,624	$ 98.25	N/A	N/A
Total				
Repurchase program(1)(4)	—	$ —	—	$ —
Employee transactions(2)	10,522	$ 87.75	N/A	N/A

(1) In April 2023, our Board of Directors approved a new share repurchase program authorizing the purchase of up to $2.7 billion of our outstanding shares of common stock through June 30, 2024. This share repurchase authorization replaced our prior $4.2 billion share repurchase program.

(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.

(3) Average price paid per share excludes any excise tax.

(4) Share repurchases were suspended because of an ongoing internal review of compliance, risk management and corporate governance. See "—Liquidity and Capital Resources — Capital" for additional information.

Stock Performance Graph

The following graph compares the cumulative total stockholder return of our common stock, the S&P 500 Financials Index and the S&P 500 Index for the period from December 31, 2018 through December 31, 2023. The graph assumes an initial investment of $100 on December 31, 2018. The cumulative returns include stock price appreciation and assume full reinvestment of dividends. This graph does not forecast future performance of our common stock.[431]

	December 31,					
	2018	2019	2020	2021	2022	2023
Discover Financial Services	$ 100.00	$ 146.95	$ 161.76	$ 209.95	$ 181.46	$ 214.51
S&P 500 Financials Index	$ 100.00	$ 131.47	$ 155.65	$ 200.29	$ 163.98	$ 207.04
S&P 500 Index	$ 100.00	$ 132.09	$ 129.77	$ 175.02	$ 156.52	$ 175.46

Item 6. Reserved

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, 2023 and 2022 and for years ended December 31, 2023, 2022 and 2021.

Introduction and Overview

Discover Financial Services ("DFS") is a digital banking and payment services company. We provide digital banking products and services and payment services through our subsidiaries. We offer our customers credit card loans, personal loans, home loans and deposit products. We also operate the Discover Network, the PULSE network ("PULSE") and Diners Club International ("Diners Club"), collectively known as the Discover Global Network. The Discover Network processes transactions for Discover-branded credit and debit 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 automated teller machines domestically and internationally and merchant acceptance throughout the United States of America ("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 credit and charge cards and/or provide card acceptance services.

Our primary revenues consist of interest income earned on loan receivables and fees earned from customers, financial institutions, merchants and issuers. The primary expenses required to operate our business include funding costs (interest expense), credit 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.

2023 Highlights

The highlights below compare results as of and for the year ended December 31, 2023 against results as of and for the year ended December 31, 2022.

- Net income was $2.9 billion, or $11.26 per diluted share, compared to net income of $4.4 billion, or $15.44 per diluted share, in the prior year.
- Total loans grew $16.3 billion, or 15%, to $128.4 billion.
- Credit card loans grew $12.1 billion, or 13%, to $102.3 billion.
- The net charge-off rate for credit card loans increased 185 basis points to 3.90% and the delinquency rate for credit card loans over 30 days past due increased 134 basis points to 3.87%.
- Direct-to-consumer deposits grew $13.5 billion, or 19%, to $84.0 billion.
- Payment Services transaction volume for the segment was $364.6 billion, up 10%.

Outlook

The outlook below provides our current expectations for our financial results for 2024, in comparison to 2023, based on market conditions, the regulatory and legal environment and our business strategies.

- We expect total loans to be relatively flat.
- Based on our expectation of the interest rate environment during 2024, net interest margin is expected to decrease.
- We expect the total net charge-off rate to increase driven by the seasoning of recent vintages with higher delinquencies.
- Total expenses are expected to increase driven by investments in compliance and risk management capabilities. We remain committed to managing expenses while continuing to make investments in profitable long-term growth.

Regulatory Environment and Developments

Banking

Capital Standards and Stress Testing

As a bank holding company, DFS is subject to mandatory supervisory stress tests every other year and is required to submit annual capital plans to the Federal Reserve based on forward-looking internal analysis of income and capital levels under baseline and stressful conditions. DFS is also subject to capital buffer requirements, including the Stress Capital Buffer ("SCB"), which requires maintaining regulatory capital levels above a threshold based on the results of supervisory stress tests after accounting for planned dividend payments.

In January 2021, the Federal Reserve finalized regulatory amendments that made targeted changes to the capital planning, regulatory reporting and SCB requirements for firms subject to Category IV standards, including DFS, to be consistent with the Federal Reserve’s regulatory tailoring framework. The final rules generally align to instructions the Federal Reserve previously provided to Category IV firms regarding their respective capital plan submissions. The amended rules also provide Category IV firms with the option to submit to supervisory stress tests during off years if they wish for the Federal Reserve to reset the stress test portion of their SCB requirement. The Federal Reserve also revised the scope of application of its existing regulatory guidance for capital planning to align with the tailoring framework. However, the timing and substance of any additional changes to existing guidance or new guidance are uncertain. Moreover, following the failure of three domestic banks during March and April 2023, members of Congress, the President of the United States and various bank regulatory authorities have made public statements indicating a desire for additional prudential regulation for Category IV firms like DFS.

In July 2023, the Federal Reserve, the Office of the Comptroller of the Currency (“OCC”) and the Federal Deposit Insurance Corporation (“FDIC”) issued a proposal to amend the risk-based capital framework (the “Basel III rules”), which includes replacing the current “advanced approach” with a new expanded risk-based approach. In addition, the proposal introduces new standardized approaches for credit risk, operational risk and credit valuation adjustment risk, and would significantly revise risk-based capital requirements for all banking institutions with assets of $100 billion or more, including DFS. If adopted, the new requirements would be effective July 1, 2025 with a three-year transition period.

In August 2023, the Federal Reserve, the FDIC and the OCC (the “Agencies”) issued a proposal that would require banking institutions in Categories II through IV of the tailoring framework, including DFS, and their insured depository institution subsidiaries with $100 billion or more in assets such as Discover Bank, to have minimum levels of outstanding long-term debt. Under the proposed rule, a covered banking institution would be required to have a minimum outstanding amount of eligible long-term debt that is at least 6% of the institution’s total risk-weighted assets, 2.5% of its total leverage exposure (if it is required to maintain a minimum supplementary leverage ratio) and 3.5% of its average total consolidated assets, whichever is greater. If adopted, banking institutions would have three years to comply with the new requirements, though the Agencies would retain the authority to accelerate or extend the transition period.

While we cannot currently predict the timing or substance of the finalization of these proposals or other regulatory changes, if any such change were adopted, it would likely revise the regulatory tailoring currently applicable to DFS, otherwise tighten the prudential regulatory requirements that would apply to DFS and increase our expenses.

In June 2022, the Federal Reserve released results of the 2022 Comprehensive Capital Analysis and Review ("CCAR") exercise. Our capital levels demonstrated resiliency under stress, staying well above regulatory minimums. Based on these results, in August 2022, our new SCB was set at 2.5%, the lowest possible requirement. This new SCB was effective October 1, 2022 through September 30, 2023. In accordance with the capital plan rule amendments, we elected not to participate in the 2023 supervisory stress tests. Nevertheless, on April 5, 2023, we submitted to the Federal Reserve a capital plan based on a forward-looking internal assessment of income and capital under baseline and stressful conditions. On July 27, 2023, the Federal Reserve disclosed that our SCB was unchanged at 2.5%, effective beginning October 1, 2023 through September 30, 2024.

London Interbank Offered Rate Transition

In March 2021, the United Kingdom's Financial Conduct Authority announced that it would no longer encourage or compel banks to continue to contribute quotes and maintain the London Interbank Offered Rate ("LIBOR") after December 31, 2021, and the most commonly used U.S. dollar ("USD") LIBOR settings ceased to be published on a representative basis in July 2023.

On December 16, 2022, the Federal Reserve adopted a final rule, which became effective on February 27, 2023, implementing the Adjustable Interest Rate (LIBOR) Act ("LIBOR Act"), which provides a statutory framework to replace LIBOR with a benchmark rate based on the Secured Overnight Financing Rate ("SOFR") for contracts governed by U.S. law that do not have fallback provisions or that have fallback provisions resulting in a replacement rate based on LIBOR.

In connection with the transition, $1.8 billion of our LIBOR-based capital markets securities transitioned to the corresponding tenor for Chicago Mercantile Exchange ("CME") Term SOFR Reference Rate plus the applicable tenor spread adjustment in a manner consistent with the LIBOR Act and the regulation implementing the LIBOR Act. Additionally, approximately $500 million of Discover Bank's subordinated notes not covered under the LIBOR Act reset in August 2023 consistent with their fallback provisions.

New originations of variable-rate student loans are indexed solely to 3-month term SOFR, as published by the CME. Our portfolio of outstanding LIBOR-indexed student loans converted to a SOFR index in October 2023.

Consumer Financial Services

The Consumer Financial Protection Bureau ("CFPB") regulates consumer financial products and services and examines certain providers of consumer financial products and services, including Discover. The CFPB's authority includes rulemaking, supervisory and enforcement powers with respect to federal consumer protection laws; preventing "unfair, deceptive or abusive acts or practices" ("UDAAP") and ensuring that consumers have access to fair and transparent financial products and services. Historically, the CFPB's policy priorities focused on several financial products of the type we offer (e.g., credit cards and other consumer lending products). In addition, the CFPB is required by statute to undertake certain actions including its biennial review of the consumer credit card market.

The CFPB's priorities have continued to focus on, among other things, increased enforcement of existing consumer protection laws, with a particular focus on fees charged to consumers, UDAAP, fair lending, student lending and servicing, debt collection and credit reporting. Additionally, detection of repeat offenders, such as companies that violate a formal court or agency order, has also become a priority for the CFPB. Director Chopra, in March 2022, identified, as repeat offenders, several companies that have had multiple enforcement actions, including Discover. The CFPB has recently taken action against financial institutions for violating prior enforcement actions. In December 2020, certain of our subsidiaries entered into a consent order with the CFPB regarding identified private student loan servicing practices. See Note 19: Litigation and Regulatory Matters to our consolidated financial statements for more information.

On February 1, 2023, the CFPB proposed a rule to alter Regulation Z's late fee standards that includes caps on fees for late payments, which could result in increased cardholder delinquencies and credit losses.

Enhanced regulatory requirements, potential supervisory findings, or enforcement actions and ratings could negatively impact our ability to implement certain consumer-focused enhancements to product features and functionality and business strategies, limit or change our business practices, limit our consumer product offerings, cause us to invest more management time and resources in compliance efforts or limit our ability to obtain related required regulatory approvals. The additional expense, time and resources needed to comply with ongoing or new regulatory requirements may adversely impact the cost of and access to credit for consumers and results of business operations.

Data Security and Privacy

Policymakers at the federal and state levels remain focused on enhancing data security and data breach incident response requirements. Furthermore, regulations and legislation at various levels of government continue to be proposed and enacted to augment consumer data privacy standards and require companies to assess and/or disclose cybersecurity metrics, risks, opportunities, policies and practices. At the federal level, Discover is subject to the Gramm-Leach-Bliley Act ("GLBA") and its implementing regulations and guidance, which regulate Discover's use and disclosure of our consumers' nonpublic personal information ("NPI"). In July 2023, the Securities and Exchange Commission (the "SEC") adopted rules on Cybersecurity Risk Management, Strategy, Governance and Incident Disclosure. For more information on Discover's cybersecurity program in connection with these rules, see Item 1C. Cybersecurity.

At the state level, the California Consumer Privacy Act ("CCPA"), which became effective in 2020, created a broad set of privacy rights and remedies. The California Privacy Rights Act ("CPRA"), which became effective on January 1, 2023, amends the CCPA, enhancing consumer privacy protections and creating a new California Privacy Protection Agency ("CPPA"). A California court recently issued an order delaying enforcement of the CPRA regulations from July 1, 2023, until March 29, 2024, although the CPPA may still decide to enforce the provisions of the CCPA, as amended. The CPPA has proposed additional regulations around cybersecurity, risk assessment and automated decision-making technology that may impact Discover once they move to more formal rulemaking. Other states continue to pass privacy legislation with New Jersey being the first in 2024. So far, these laws exempt either NPI or financial institutions subject to the GLBA from their scope, so the impact of these state privacy laws on several Discover businesses is limited. We continue to evaluate the impact of the CCPA, as well as other federal and state laws, on our businesses and other providers of consumer financial services, including laws regulating the capture and use of consumer biometrics. For more information on the impact to Discover of data security and privacy laws on regulation, see "Business — Supervision and Regulation" and Item 1A. Risk Factors.

Environmental, Social and Governance Matters

Environmental, social and governance ("ESG") issues, including climate change, human capital and governance practices, are a significant area of focus by U.S. federal, state and international lawmakers and regulatory agencies, as well as shareholders and other stakeholders. In recent months, there have been substantial legislative and regulatory developments on such issues, including proposed, issued or implemented legislation and rulemakings that would require companies to assess and/or disclose climate and other ESG metrics, risks, opportunities, policies and practices. For example, in March 2022, the SEC proposed climate-related disclosure requirements and in October 2023, three climate disclosure bills were signed in California. The potential impact to us of these legislative and regulatory developments is uncertain at this time, although we expect that the emerging legal and regulatory requirements on ESG issues will result in additional compliance and reporting costs to us.

We continue to monitor and assess the potential impact of these legislative and regulatory developments.

Results of Operations

The discussion below provides a summary of our results of operations and information about our loan receivables as of and for the year ended December 31, 2023, compared to the year ended December 31, 2022. Refer to our annual report on Form 10-K for the year ended December 31, 2022, for discussion of our results of operations and loan receivables information as of and for the year ended December 31, 2022, compared to the year ended December 31, 2021.

Segments

We manage our business activities in two segments, Digital Banking and Payment Services, based on the products and services provided. For a detailed description of the operations of each segment, as well as the allocation conventions used in our business segment reporting, see Note 22: Segment Disclosures to our consolidated financial statements.

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

	For the Years Ended December 31,		
	2023	2022	2021
Digital Banking			
Interest income			
Credit card loans	$ 14,438	$ 10,632	$ 8,717
Private student loans	1,033	831	742
Personal loans	1,156	872	878
Other loans	326	167	114
Other interest income	892	362	200
Total interest income	17,845	12,864	10,651
Interest expense	4,746	1,865	1,134
Net interest income	13,099	10,999	9,517
Provision for credit losses	6,018	2,359	218
Other income	2,311	2,118	1,745
Other expense	5,822	5,049	4,549
Income before income taxes	3,570	5,709	6,495
Payment Services			
Other income	450	176	789
Other expense	194	167	256
Income before income taxes	256	9	533
Total income before income taxes	$ 3,826	$ 5,718	$ 7,028

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

	For the Years Ended December 31,		
	2023	2022	2021
Network Transaction Volume			
PULSE Network	$ 285,616	$ 253,072	$ 247,913
Network Partners	39,671	44,542	40,707
Diners Club[(1)]	39,299	33,505	25,937
Total Payment Services	364,586	331,119	314,557
Discover Network — Proprietary[(2)]	224,572	218,738	188,960
Total Network Transaction Volume	$ 589,158	$ 549,857	$ 503,517
Transactions Processed on Networks			
Discover Network	3,728	3,617	3,259
PULSE Network	7,705	6,200	5,632
Total Transaction Processed on Networks	11,433	9,817	8,891
Credit Card Volume			
Discover Card Volume[(3)]	$ 232,785	$ 224,477	$ 192,755
Discover Card Sales Volume[(4)]	$ 217,914	$ 210,645	$ 182,125

(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 Discover card sales volume on the Discover Network.

(3) Represents Discover card activity related to sales net of returns, balance transfers, cash advances and other activity.

(4) Represents Discover card activity related to sales net of returns.

Digital Banking

Our Digital Banking segment reported pretax income of $3.6 billion for the year ended December 31, 2023, as compared to $5.7 billion for the year ended December 31, 2022.

Net interest income increased for the year ended December 31, 2023, as compared to the year ended December 31, 2022, primarily driven by a higher yield on loans and a higher average level of loan receivables, partially offset by higher funding costs. Interest income increased compared to the prior year primarily due to higher market rates and a higher average level of loan receivables. Interest expense increased compared to the prior year primarily due to higher funding costs driven by higher market rates and a larger funding base.

For the year ended December 31, 2023, the provision for credit losses increased as compared to the year ended December 31, 2022, primarily driven by loan growth, increasing delinquencies, and macroeconomic variables impacting household cash flows. For a detailed discussion on provision for credit losses, see "— Loan Quality — Provision and Allowance for Credit Losses."

Total other income for the Digital Banking segment increased for the year ended December 31, 2023, as compared to the year ended December 31, 2022, primarily due to increases in loan fee income and net discount and interchange revenue. Loan fee income increased primarily due to a higher volume of late payments. The increase in discount and interchange revenue was partially offset by an increase in rewards, both of which were driven by higher sales volume.

Total other expense increased for the year ended December 31, 2023, as compared to the year ended December 31, 2022, primarily due to increases in employee compensation and benefits, professional fees, other expense and marketing and business development. The increase in employee compensation and benefits was driven primarily by higher headcount. Professional fees increased primarily due to increased consulting supporting compliance and risk management initiatives. Other expense increased mainly due to a reserve for customer remediation. The marketing and business development increase was due primarily from growth investments in consumer banking products.

Discover card sales volume was $217.9 billion for the year ended December 31, 2023, which was an increase of 3.5% as compared to the year ended December 31, 2022. This volume growth was primarily driven by higher consumer spending across most spending categories.

Payment Services

Our Payment Services segment reported pretax income of $256 million for the year ended December 31, 2023, as compared to pretax income of $9 million for the year ended December 31, 2022. The increase in segment pretax income was primarily due to smaller losses on equity investments as a result of smaller mark-to-market adjustments for equity investments measured at fair value.

Critical Accounting Estimates

In preparing our consolidated financial statements in conformity with accounting principles generally accepted in the U.S. ("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 credit losses as a critical accounting estimate.

Allowance for Credit Losses

The allowance for credit losses was $9.3 billion at December 31, 2023, which reflects a $1.9 billion build from the amount of the allowance for credit losses at December 31, 2022. The allowance for credit losses represents management's estimate of expected credit losses over the remaining expected life of our financial assets measured at amortized cost. Changes in the allowance for credit losses, and in the related provision for credit losses, can materially affect net income.

In estimating the expected credit losses, we use a combination of statistical models and qualitative analysis. There is a significant amount of judgment applied in selecting inputs and analyzing the results produced to estimate the allowance for credit losses. For more information on these judgments and our accounting policies and methodologies used to determine the allowance for credit losses, see "— Loan Quality," Note 4: Loan Receivables and Note 2: Summary of Significant Accounting Policies to our consolidated financial statements.

One of the key assumptions requiring significant judgment in estimating the current expected credit losses ("CECL") on a quarterly basis is the determination of the macroeconomic forecasts used in the loss forecast models. For the reasonable and supportable loss forecast period, we consider forecasts of multiple economic scenarios that generally include a base scenario with one or more optimistic (upside) or pessimistic (downside) scenarios. These scenarios comprise a variety of macroeconomic variables, including annualized gross domestic product growth and unemployment rate. The scenarios that are chosen each quarter and the amount of weighting given to each scenario depend on a variety of factors including recent economic events, leading economic indicators, views of internal and third-party economists and industry trends. Assumptions about the macroeconomic environment are inherently uncertain and, as a result, actual changes in the allowance for credit losses may be different from the simulated scenario presented below.

To demonstrate the sensitivity of the estimated credit losses to the macroeconomic scenarios, we measured the impact of altering the weighting of macroeconomic scenarios used in our loss forecast. Our allowance for credit losses would increase by approximately $660 million at December 31, 2023 if we applied 100% weight to the most adverse scenario in our sensitivity analysis to reflect continued inflationary pressures, including unsustainably low unemployment and the influence of geopolitical events, as well as high interest rates.

The sensitivity disclosed above is hypothetical. It is difficult to estimate how potential changes in any one factor or input, such as the weighting of macroeconomic forecasts, might affect the overall allowance for credit losses because we consider a variety of factors and inputs in estimating the allowance for credit losses. The macroeconomic scenarios used are constructed with interrelated projections of multiple economic variables, and loss estimates are produced that consider the historical correlation of those economic variables with credit losses. The inputs in the macroeconomic scenarios may not change at the same rate and may not be consistent across all geographies or product types, and changes in factors and inputs may be directionally inconsistent, such that improvement in one factor or input may offset deterioration in others. As a result, the sensitivity analysis above does not necessarily reflect the nature and extent of future changes in the allowance for credit losses. It is intended to provide insights into the impact of different judgments about the economy on our modeled loss estimates for the loan portfolio and does not imply any expectation of future losses. Furthermore, the hypothetical increase in our allowance for credit losses for loans does not incorporate the impact of management judgment for qualitative factors applied in the current allowance for credit losses, which may have a positive or negative effect on our actual financial condition and results of operations.

The overall economic environment directly impacts the macroeconomic variables that are used in the loss forecast models. If management used different assumptions about the economic environment in estimating expected credit losses, the impact to the allowance for credit losses could have a material effect on our consolidated financial condition and results of operations. In addition, if we experience significant instability in the economic environment, the uncertainty around the credit loss forecasts may increase, both due to the uncertainty of the economic forecasts and the challenges our models may have in incorporating them.

Table of Contents

Earnings Summary

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

	For the Years Ended December 31,			2023 vs. 2022 Increase (Decrease)		202 Increa
	2023	2022	2021	$	%	$
Interest income	$ 17,845	$ 12,864	$ 10,651	$ 4,981	39 %	$ 2,213
Interest expense	4,746	1,865	1,134	2,881	154 %	731
Net interest income	13,099	10,999	9,517	2,100	19 %	1,482
Provision for credit losses	6,018	2,359	218	3,659	155 %	2,141
Net interest income after provision for credit losses	7,081	8,640	9,299	(1,559)	(18) %	(659)
Other income	2,761	2,294	2,534	467	20 %	(240)
Other expense	6,016	5,216	4,805	800	15 %	411
Income before income taxes	3,826	5,718	7,028	(1,892)	(33) %	(1,310)
Income tax expense	886	1,344	1,606	(458)	(34) %	(262)
Net income	$ 2,940	$ 4,374	$ 5,422	$ (1,434)	(33) %	$ (1,048)
Net income allocated to common stockholders	$ 2,859	$ 4,286	$ 5,323	$ (1,427)	(33) %	$ (1,037)

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-earning 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. The following factors influence net interest income:

- 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 interest rates necessary to attract and maintain direct-to-consumer deposits;
- The level and composition of other interest-earning assets, including our liquidity portfolio, and interest-bearing liabilities;
- 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, the interest rate on reserve balances, LIBOR and SOFR; and
- The effectiveness of interest rate swaps in our interest rate risk management program.

Net interest income increased for the year ended December 31, 2023, as compared to the year ended December 31, 2022, primarily driven by a higher yield on loans and a higher average level of loan receivables, partially offset by higher funding costs. Interest income increased compared to the prior year primarily due to higher market rates and a higher average level of loan receivables. Interest expense increased compared to the prior year primarily due to higher funding costs driven by higher market rates and a larger funding base.

Table of Contents

Average Balance Sheet Analysis

(dollars in millions)

	For the Years Ended December 31,					
	2023			2022		
	Average Balance	Yield/ Rate	Interest	Average Balance	Yield/ Rate	Inter
Assets						
Interest-earning assets						
Cash and cash equivalents	$ 8,192	5.17 %	$ 423	$ 9,279	1.89 %	$ 17
Restricted cash	250	7.80 %	20	515	1.48 %	
Other short-term investments	—	—	—	—	—	
Investment securities	12,938	3.47 %	449	6,988	2.57 %	17
Loan receivables[1]						
Credit card loans[2][3]	94,205	15.33 %	14,438	79,243	13.42 %	10,63
Private student loans	10,382	9.95 %	1,033	10,240	8.11 %	83
Personal loans	9,011	12.83 %	1,156	7,295	11.95 %	87
Other	4,713	6.92 %	326	2,895	5.77 %	10
Total loan receivables	118,311	14.33 %	16,953	99,673	12.54 %	12,50
Total interest-earning assets	139,691	12.77 %	17,845	116,455	11.05 %	12,80
Allowance for credit losses	(7,936)			(6,820)		
Other assets	6,938			6,070		
Total assets[4]	$ 138,693			$ 115,705		
Liabilities and Stockholders' Equity						
Interest-bearing liabilities						
Interest-bearing deposits						
Time deposits	$ 38,220	3.89 %	$ 1,485	$ 23,988	2.02 %	$ 48
Money market deposits	8,143	4.16 %	339	8,453	1.67 %	14
Other interest-bearing savings deposits	51,366	4.01 %	2,062	44,276	1.43 %	63
Total interest-bearing						

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

(2) Interest income on credit card loans includes $468 million, $365 million and $295 million of amortization of balance transfer fees for the years ended December 31, 2023, 2022 and 2021, respectively.

(3) Includes the impact of interest rate swap agreements used to change a portion of floating-rate assets to fixed-rate assets for the years ended December 31, 2023, 2022 and 2021.

(4) The return on average assets, based on net income, was 2.12%, 3.80% and 4.90% for the years ended December 31, 2023, 2022 and 2021, respectively.

(5) Includes the impact of one terminated derivative formerly designated as a cash flow hedge for the years ended December 31, 2023, 2022 and 2021.

(6) Includes the impact of interest rate swap agreements used to change a portion of fixed-rate funding to floating-rate funding for the years ended December 31, 2023, 2022 and 2021.

(7) Includes the impact of terminated derivatives formerly designated as fair value hedges for the years ended December 31, 2023, 2022 and 2021.

(8) Includes the impact of interest rate swap agreements used to change a portion of floating-rate funding to fixed-rate funding for the years ended December 31, 2023 and 2022.

(9) The return on average stockholders' equity, based on net income, was 21.00%, 32.00% and 43.12% for the years ended December 31, 2023, 2022 and 2021, respectively.

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

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

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

Rate/Volume Variance Analysis[1)]

(dollars in millions)

	Year Ended December 31, 2023 vs. Year Ended December 31, 2022			Year Ended December 31, 2022 vs. Year Ended December 31, 2021		
	Volume	Rate	Total	Volume	Rate	Total
Increase/ (Decrease) in net interest income due to changes in:						
Interest-earning assets						
Cash and cash equivalents	$ (23)	$ 271	$ 248	$ (9)	$ 166	$ 157
Restricted cash	(6)	18	12	—	8	8
Investment securities	191	79	270	(40)	37	(3)
Loan receivables						
Credit card loans	2,170	1,636	3,806	1,299	616	1,915
Private student loans	11	191	202	14	75	89
Personal loans	216	68	284	43	(49)	(6)
Other	121	38	159	48	5	53
Total loan receivables	2,518	1,933	4,451	1,404	647	2,051
Total interest income	2,680	2,301	4,981	1,355	858	2,213
Interest-bearing liabilities						
Interest-bearing deposits						
Time deposits	391	610	1,001	1	43	44
Money market deposits	(5)	203	198	2	96	98
Other interest-bearing savings deposits	116	1,314	1,430	15	439	454
Total interest-bearing deposits	502	2,127	2,629	18	578	596

(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, 2023, 2022 and 2021 based on the percentage of the rate or volume variance to the sum of the two absolute variances.

Loan Quality

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

	December 31,	
	2023	2022
Credit card loans	$ 102,259	$ 90,113
Other loans		
Private student loans	10,352	10,308
Personal loans	9,852	7,998
Other loans	5,946	3,701
Total other loans	26,150	22,007
Total loan receivables	128,409	112,120
Allowance for credit losses	(9,283)	(7,374)
Net loan receivables	$ 119,126	$ 104,746

Provision and Allowance for Credit Losses

Provision for credit losses is the expense related to maintaining the allowance for credit losses at an appropriate level to absorb the estimate of credit losses anticipated over the remaining expected life of loan receivables at each period end date. In deriving the estimate of expected credit losses, we consider the collectability of principal, interest and fees associated with our loan receivables. We also consider expected recoveries of amounts that were either previously charged-off or are expected to be charged-off. Establishing the estimate for expected credit losses requires significant management judgment. The factors that influence the provision for credit losses include:

- Increases or decreases in outstanding loan balances, including:
  - Changes in consumer spending, payment and credit utilization behaviors;
  - The level of new account and loan originations and loan maturities; and
  - Changes in the overall mix of accounts and products within the portfolio;
- The credit quality of the loan portfolio, which reflects our credit granting practices and the effectiveness of collection efforts, among other factors;
- The impact of general economic conditions on the consumer, including national and regional conditions, unemployment levels, bankruptcy trends and interest rate movements;
- The level and direction of historical losses; and
- Regulatory changes or new regulatory guidance.

Refer to "— Critical Accounting Estimates — Allowance for Credit Losses" and Note 4: Loan Receivables to our consolidated financial statements for more details on how we estimate the allowance for credit losses.

The following tables provide changes in our allowance for credit losses (dollars in millions):

For the Year Ended December 31, 2023	Credit Card Loans	Private Student Loans	Personal Loans	Other Loans	Total Loans
Balance at December 31, 2022	$ 5,883	$ 839	$ 595	$ 57	$ 7,374
Cumulative effect of ASU No. 2022-02 adoption[1]	(66)	—	(2)	—	(68)
Balance at January 1, 2023	5,817	839	593	57	7,306
Additions					
Provision for credit losses[2]	5,476	152	363	28	6,019
Deductions					
Charge-offs	(4,481)	(155)	(290)	(1)	(4,927)
Recoveries	807	22	56	—	885
Net charge-offs	(3,674)	(133)	(234)	(1)	(4,042)
Balance at December 31, 2023	$ 7,619	$ 858	$ 722	$ 84	$ 9,283

For the Year Ended December 31, 2022	Credit Card Loans	Private Student Loans	Personal Loans	Other Loans	Total Loans
Balance at December 31, 2021	$ 5,273	$ 843	$ 662	$ 44	$ 6,822
Additions					
Provision for credit losses[2]	2,233	99	24	13	2,369
Deductions					
Charge-offs	(2,417)	(126)	(159)	—	(2,702)
Recoveries	794	23	68	—	885
Net charge-offs	(1,623)	(103)	(91)	—	(1,817)
Balance at December 31, 2022	$ 5,883	$ 839	$ 595	$ 57	$ 7,374

For the Year Ended December 31, 2021	Credit Card Loans	Private Student Loans	Personal Loans	Other Loans	Total Loans
Balance at December 31, 2020	$ 6,491	$ 840	$ 857	$ 38	$ 8,226
Additions					
Provision for credit losses[2]	229	67	(75)	6	227
Deductions					
Charge-offs	(2,255)	(89)	(190)	—	(2,534)
Recoveries	808	25	70	—	903
Net charge-offs	(1,447)	(64)	(120)	—	(1,631)
Balance at December 31, 2021	$ 5,273	$ 843	$ 662	$ 44	$ 6,822

(1) Represents the adjustment to the allowance for credit losses as a result of the adoption of Accounting Standards Update ("ASU") No. 2022-02 on January 1, 2023.

(2) Excludes a $1 million, $10 million and $9 million adjustment to the liability for expected credit losses on unfunded commitments for the years ended December 31, 2023, 2022 and 2021, respectively, as the liability is recorded in accrued expenses and other liabilities in our consolidated statements of financial condition.

The allowance for credit losses was approximately $9.3 billion at December 31, 2023, which reflects a $1.9 billion build from the amount of the allowance for credit losses at December 31, 2022. The build in the allowance for credit losses between December 31, 2023 and December 31, 2022, was primarily driven by loan growth, increasing delinquencies, and macroeconomic variables impacting household cash flows.

The allowance estimation process begins with a loss forecast that uses certain macroeconomic variables and multiple macroeconomic scenarios among its inputs. In estimating the allowance at December 31, 2023, we used a macroeconomic forecast that projected the following weighted average amounts: (i) unemployment rate ending 2024 at 4.17% and, within our reasonable and supportable period, peaking at 4.26% in the second quarter of 2025 and (ii) 1.36% growth rate in real gross domestic product in 2024.

In estimating expected credit losses, we considered the uncertainties associated with borrower behavior and payment trends, as well as recent and expected macroeconomic conditions, such as high consumer price inflation and the fiscal and monetary policy responses to that inflation. The Federal Reserve raised its federal funds rate target range substantially during 2022 and the first three quarters of 2023 in an effort to slow economic growth and reduce inflation. Although real GDP growth and labor market conditions have exceeded most economists’ expectations this year, restrictive monetary policy, as manifested in relatively high interest rates, typically precedes weaker consumer credit conditions caused by rising unemployment as economic growth slows. Credit performance in our lending portfolios has evolved in line with our expectations this year, but may weaken if the economy fails to avert a recession in response to tighter credit conditions or other factors. We assessed the prospects for various macroeconomic outcomes in setting our allowance for credit losses.

The forecast period we deemed to be reasonable and supportable was 18 months for all periods presented. The 18-months reasonable and supportable forecast period was deemed appropriate given the current economic conditions. For all periods presented, we determined that a reversion period of 12 months was appropriate for the same reason. We applied a weighted reversion method to provide a more reasonable transition to historical losses for all loan products for all periods presented.

The provision for credit 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 credit losses at the balance sheet date. For the year ended December 31, 2023, the provision for credit losses increased by $3.7 billion, as compared to the year ended December 31, 2022. The reserve build during the year ended December 31, 2023, was primarily driven by loan growth, increasing delinquencies, and macroeconomic variables impacting household cash flows.

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 credit losses, while fraud losses are recorded in other expense.

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

	For the Years Ended December 31,					
	2023		2022		2021	
	$	%	$	%	$	%
Credit card loans	$ 3,674	3.90 %	$ 1,623	2.05 %	$ 1,447	2.09 %
Private student loans	$ 133	1.29 %	$ 103	1.00 %	$ 64	0.63 %
Personal loans	$ 234	2.60 %	$ 91	1.25 %	$ 120	1.73 %

The net charge-offs and net charge-off rate for credit card loans, private student loans and personal loans increased for the year ended December 31, 2023, when compared to the same periods in 2022, primarily due to portfolio seasoning.

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, and loan receivables that are not accruing interest regardless of delinquency (dollars in millions):

	December 31,			
	2023		2022	
	$	%	$	%
Loans 30 or more days delinquent				
Credit card loans	$ 3,955	3.87 %	$ 2,278	2.53 %
Private student loans	$ 271	2.62 %	$ 212	2.05 %
Personal loans	$ 143	1.45 %	$ 63	0.80 %
Total loan receivables	$ 4,427	3.45 %	$ 2,578	2.30 %
Loans 90 or more days delinquent				
Credit card loans	$ 1,917	1.87 %	$ 1,028	1.14 %
Private student loans	$ 70	0.67 %	$ 45	0.43 %
Personal loans	$ 39	0.40 %	$ 16	0.21 %
Total loan receivables	$ 2,045	1.59 %	$ 1,101	0.98 %
Loans not accruing interest	$ 269	0.21 %	$ 214	0.19 %

The 30-day and 90-day delinquency rates for credit card loans, private student loans, and personal loans at December 31, 2023, increased compared to December 31, 2022, primarily driven by portfolio seasoning.

Modified and Restructured Loans

For information regarding modified and restructured loans, see Note 4: Loan Receivables to our condensed consolidated financial statements.

Maturities and Sensitivities of Loan Receivables to Changes in Interest Rates

Our loan portfolio had the following maturity distribution(1) (dollars in millions):

At December 31, 2023	Due One Year or Less	Due After One Year Through Five Years	Due After Five Years Through Fifteen Years	Due After Fifteen Years	Total
Credit card loans	$ 32,250	$ 54,628	$ 15,032	$ 349	$ 102,259
Private student loans	364	2,083	6,296	1,609	10,352
Personal loans	2,653	6,653	546	—	9,852
Other loans	161	724	2,102	2,959	5,946
Total loan portfolio	$ 35,428	$ 64,088	$ 23,976	$ 4,917	$ 128,409

(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, 2023, approximately $55.9 billion of our loan portfolio due after one year had interest rates tied to an index and approximately $37.0 billion were fixed-rate loans.

Other Income

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

	For the Years Ended December 31,			2023 vs. 2022 Increase		2022 vs. 2 Increase (De
	2023	2022	2021	$	%	$
Discount and interchange revenue, net[1]	$ 1,447	$ 1,380	$ 1,188	$ 67	5 %	$ 192
Protection products revenue	172	172	165	—	— %	7
Loan fee income	763	632	464	131	21 %	168
Transaction processing revenue	303	249	227	54	22 %	22
(Losses) gains on equity investments	(9)	(214)	424	205	(96) %	(638)
Other income	85	75	66	10	13 %	9
Total other income	$ 2,761	$ 2,294	$ 2,534	$ 467	20 %	$ (240)

(1) Net of rewards, including Cashback Bonus rewards, of $3.1 billion, $3.0 billion and $2.5 billion for the years ended December 31, 2023, 2022 and 2021, respectively.

Total other income increased for the year ended December 31, 2023, as compared to the year ended December 31, 2022, primarily due to smaller losses on equity investments and increases in loan fee income and net discount and interchange revenue. The smaller losses on equity investments were the result of smaller mark-to-market adjustments for equity investments measured at fair value. Loan fee income increased primarily due to a higher volume of late payments. The increase in discount and interchange revenue was partially offset by an increase in rewards, both of which were driven by higher sales volume.

Other Expense

The following table represents the components of other expense (dollars in millions):

	For the Years Ended December 31,			2023 vs. 2022 Increase (Decrease)		2022 vs Increase (
	2023	2022	2021	$	%	$
Employee compensation and benefits	$ 2,434	$ 2,139	$ 1,986	$ 295	14 %	$ 153
Marketing and business development	1,164	1,035	810	129	12 %	225
Information processing and communications	608	513	500	95	19 %	13
Professional fees	1,041	871	797	170	20 %	74
Premises and equipment	89	118	92	(29)	(25) %	26
Other expense	680	540	620	140	26 %	(80)
Total other expense	$ 6,016	$ 5,216	$ 4,805	$ 800	15 %	$ 411

Total other expense increased for the year ended December 31, 2023, as compared to the year ended December 31, 2022, primarily due to increases in employee compensation and benefits, professional fees, other expense and marketing and business development. The increase in employee compensation and benefits was driven primarily by higher headcount. Professional fees increased primarily due to increased consulting supporting compliance and risk management initiatives. Other expense increased mostly due to a reserve for customer remediation. The marketing and business development increase was due primarily from growth investments in consumer banking products.

Income Tax Expense

The following table reconciles our effective tax rate to the U.S. federal statutory income tax rate (dollars in millions):

	For the Years Ended December 31,		
	2023	2022	2021
U.S. federal statutory income tax rate	21.0 %	21.0 %	21.0 %
U.S. state, local and other income taxes, net of U.S. federal income tax benefits	3.5	3.4	3.2
Tax credits	(2.0)	(1.3)	(1.2)
Other	0.6	0.4	(0.1)
Effective income tax rate	23.1 %	23.5 %	22.9 %
Income tax expense	$ 886	$ 1,344	$ 1,606

Liquidity and Capital Resources

Funding and Liquidity

We seek to maintain stable, diversified and cost-effective funding sources and a strong liquidity profile to fund our business and repay or refinance our maturing obligations under 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 contingency liquidity sources. Our primary funding sources include direct-to-consumer and brokered deposits, public term asset-backed securitizations and other short-term and long-term borrowings. Our primary liquidity sources include a portfolio composed of highly liquid, unencumbered assets, including cash and cash equivalents and investment securities, as well as secured borrowing capacity through private term asset-backed securitizations and Federal Home Loan Bank ("FHLB") advances. In addition, we have unused borrowing capacity at the Federal Reserve discount window, which provides another source of contingency liquidity.

Funding Sources

Deposits

We obtain deposits from consumers directly or through affinity relationships ("direct-to-consumer deposits"). Additionally, we obtain deposits through third-party securities brokerage firms that offer our deposits to their customers ("brokered deposits"). Direct-to-consumer deposit products include savings accounts, certificates of deposit, money market accounts, IRA savings accounts, IRA certificates of deposit and checking accounts. We gather these deposits from retail customers of our bank, many of whom have more than one Discover product. These deposits originate from a large and diverse customer base, and therefore, the majority of these deposit account balances are insured according to the FDIC's insurance limits. Our cost of insuring these deposits in the fourth quarter reflects the FDIC special assessment, which was immaterial for the year ended December 31, 2023, to cover the cost of losses to the Deposit Insurance Fund incurred after the failure of two domestic banks in March 2023. Brokered deposit products include certificates of deposit and sweep accounts. In accordance with FDIC guidance, we do not categorize certain retail deposit products such as affinity deposits and deposits generated through certain sweep deposit relationships as brokered for regulatory reporting purposes. At December 31, 2023, we had $84.0 billion of direct-to-consumer deposits and $24.9 billion of brokered deposits, of which there are $89.2 billion of deposit balances due in less than one year and $19.7 billion of deposit balances due in one year or thereafter.

Credit Card Securitization Financing

We securitize 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"). In connection with our securitization transactions, credit card receivables are transferred to DCMT. DCMT has issued a certificate representing the beneficial interest in its credit card receivables to DCENT. We issue DCENT DiscoverSeries notes in public and private transactions, which are collateralized by the beneficial interest certificate held by DCENT. From time to time, we may add credit card receivables to DCMT to create sufficient funding capacity for future securitizations while managing seller's interest. During 2023, we added $4.5 billion of credit card loan receivables to the securitization trust, which increased seller's interest. As of December 31, 2023, there were $30.4 billion of credit card receivables in the trust. We retain significant exposure to the performance of the securitized credit card receivables through holding the seller's interest and subordinated classes of DCENT DiscoverSeries notes. At December 31, 2023, we had $11.7 billion of outstanding public asset-backed securities and $3.1 billion of outstanding subordinated asset-backed securities that had been issued to our wholly-owned subsidiaries.

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 with respect to the securitized credit card receivables during a collection period including interest collections, fees and interchange, exceeds the fees and expenses of DCENT 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 all outstanding securitized borrowings using available collections received with respect to the securitized credit card receivables. For the three months ended December 31, 2023, the DiscoverSeries three-month rolling average excess spread was 14.75%. The period of ultimate repayment would be determined by the amount and timing of collections received.

Through our wholly-owned indirect subsidiary, Discover Funding LLC, we are required to maintain an interest in a contractual minimum level of receivables in DCMT in excess of the face value of outstanding investors' interests. This minimum interest is referred to as the minimum seller's interest. The required minimum seller's interest in the pool of trust receivables is approximately 7% in excess of the total investors' interests, which includes interests held by third parties as well as those interests held by us. If the level of receivables in DCMT were to fall below the required minimum, we would be required to add receivables from the unrestricted pool of receivables, which would increase the amount of credit card 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 exhibits seasonality as higher receivable balance repayments tend to occur in the first calendar year quarter. If we could not add enough receivables to satisfy the minimum seller's interest requirement, an early amortization (or repayment) of investors' interests would be triggered.

An early amortization event would impair our liquidity and may 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. We have several strategies we can deploy to prevent an early amortization event. For instance, we could add receivables to DCMT, which would reduce our available borrowing capacity at the Federal Reserve discount window. Alternatively, we could employ structured discounting, which was used effectively in 2009 to bolster excess spread and mitigate early amortization risk.

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, 2023	Total	Less Than One Year	One Year and Thereafter
Scheduled maturities of borrowings - owed to credit card securitization investors	$ 11,678	$ 3,225	$ 8,453

The "AAA(sf)" and "Aaa(sf)" ratings of the DCENT DiscoverSeries Class A Notes issued to date have been based, in part, on an FDIC rule, which created a safe harbor that provides that the FDIC, as conservator or receiver, will not use its power to disaffirm or repudiate contracts, seek to reclaim or recover assets transferred in connection with a securitization, or recharacterize assets transferred in connection with a securitization as assets of the insured depository institution, provided such transfer satisfies the conditions for sale accounting treatment under previous GAAP. Although the implementation of 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 2009. However, other legislative and regulatory developments may impact our ability or desire to issue asset-backed securities in the future.

Federal Home Loan Bank Advances

Discover Bank is a member bank of the FHLB of Chicago, one of 11 FHLBs that, along with the Office of Finance, compose the FHLB System. The FHLBs are government-sponsored enterprises of the U.S. (“U.S. GSEs”) chartered to improve the availability of funds to support home ownership. As such, senior debt obligations of the FHLBs feature the same credit ratings as U.S. Treasury securities and are considered high-quality liquid assets for bank regulatory purposes. Consequently, the FHLBs benefit from consistent capital market access during nearly all macroeconomic and financial market conditions and low funding costs, which they pass on to their member banks when they borrow advances. Thus, we consider FHLB advances a stable and reliable funding source for Discover Bank for short-term contingency liquidity and long-term asset-liability management.

As a member of the FHLB of Chicago, Discover Bank has access to short- and long-term advance structures with maturities ranging from overnight to 30 years. As of December 31, 2023, we had total committed borrowing capacity of $3.6 billion based on the amount and type of assets pledged, of which $1.0 billion of long-term advances were outstanding with the FHLB of Chicago. Under certain stressed conditions, we could pledge our liquidity portfolio securities and borrow against them at a modest reduction to their value.

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):

At December 31, 2023		**Principal Amount Outstanding**
Discover Financial Services (Parent Company) fixed-rate senior notes, maturing 2024-2032	$	3,350
Discover Financial Services (Parent Company) fixed-rate retail notes, maturing 2025-2031	$	140
Discover Financial Services (Parent Company) fixed to floating-rate senior notes, maturing 2034	$	1,000
Discover Bank fixed-rate senior bank notes, maturing 2024-2030	$	3,550
Discover Bank fixed-rate subordinated bank notes, maturing 2028	$	500

At December 31, 2023, $732 million of interest on our fixed-rate debt is due in less than one year and $2.2 billion of interest is due in one year and thereafter. See Note 9: Long-Term Borrowings to our consolidated financial statements for more information on the maturities of our long-term borrowings.

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 mortgage bonds or debentures issued by government agencies or U.S. GSEs. At December 31, 2023, there were no outstanding balances in the federal funds market or under repurchase agreements. Additionally, we have access to short-term advance structures through privately placed asset-backed securitizations. At December 31, 2023, there were $750 million of short-term advances outstanding from private asset-backed securitizations.

Additional Funding Sources

Private Asset-Backed Securitizations

We have access to committed borrowing capacity through privately placed asset-backed securitizations. 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 test results, for any contingency funding needs. At December 31, 2023, we had a total committed capacity of $3.5 billion, $750 million of which was drawn. We seek to ensure the stability and reliability of these securitizations by staggering their maturity dates, renewing them well ahead of their scheduled maturity dates and periodically drawing them for operational tests and seasonal funding needs.

Federal Reserve

Discover Bank has access to the Federal Reserve Bank of Philadelphia's discount window. As of December 31, 2023, Discover Bank had $41.2 billion of available borrowing capacity through the discount window based on the amount and type of assets pledged, primarily consumer loans. We also have access to, and have tested our ability to borrow from, the Federal Reserve's Bank Term Funding Program ("BTFP"), which offers loans up to one year in length collateralized by U.S. Treasuries, U.S. agency securities and U.S. agency mortgage-backed securities. As of December 31, 2023, we have no borrowings outstanding under the discount window or the BTFP and reserve this capacity as a source of contingency liquidity.

Funding Uses

Our primary uses of funds include the extensions of loans and credit to customers, primarily through Discover Bank; the maintenance of sufficient working capital for routine operations; the service of our debt and capital obligations, including interest, principal, and dividend payments; and the purchase of investment securities for our liquidity portfolio.

In addition to originating consumer loans to new customers, we also extend credit to existing customers, which primarily arises from agreements for unused lines of credit on certain credit cards and certain other loan products, provided there is no violation of conditions established in the related agreement. At December 31, 2023, our unused credit arrangements were approximately $229.8 billion. These arrangements, 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, loan qualification and the cost of capital.

In the normal course of business, we enter into various contracts for goods and services, such as consulting, outsourcing, data, sponsorships, software licenses, telecommunications, and global merchant acceptance, among other things. These contracts are legally binding and specify all significant terms, including any applicable fixed future cash payments.

As of December 31, 2023, we have debt obligations, common stock and preferred stock outstanding, for which we incur servicing costs. Refer to "— Funding Sources" and "— Capital" for more information related to our debt obligations and capital service, respectively, and the timing of expected payments.

We assess funding uses and liquidity needs under stressed and normal operating conditions, 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. To anticipate funding needs under stress, we conduct liquidity stress tests to assess the impact of idiosyncratic, systemic and hybrid (i.e., idiosyncratic and systemic) scenarios with varying levels of liquidity risk reflecting a range of stress severity. If we determine we have excess cash and cash equivalents above what is required for daily operations, we may invest in highly liquid, unencumbered assets that we expect to be able to convert to cash quickly and with little loss of value using the repo market or other secured borrowing or outright sales.

Guarantees

Guarantees are contracts or indemnification agreements that may 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 may 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. 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. See Note 18: Commitments, Contingencies and Guarantees to our consolidated financial statements for further discussion regarding our guarantees.

Credit Ratings

Our borrowing costs and capacity in certain funding markets, including those for securitizations and unsecured senior and subordinated debt, may be affected by the credit ratings of DFS, Discover Bank and the securitization trusts. Downgrades in these credit ratings could result in higher interest expense on our unsecured debt and asset securitizations, as well as higher credit enhancement requirements for both our public and private asset securitizations. In addition to increased funding costs, deterioration in our credit ratings could reduce our borrowing capacity in the unsecured debt and asset securitization capital markets.

The table below reflects our current credit ratings and outlooks:

	Moody's Investors Service	Standard & Poor's	Fitch Ratings
Discover Financial Services			
Senior unsecured debt	Baa2	BBB-	BBB+
Outlook for Discover Financial Services senior unsecured debt	Negative	Stable	Stable
Discover Bank			
Senior unsecured debt	Baa1	BBB	BBB+
Outlook for Discover Bank senior unsecured debt	Negative	Stable	Stable
Subordinated debt	Baa1	BBB-	BBB
Discover Card Execution Note Trust (DCENT)			
Class A[(1)]	Aaa(sf)	AAA(sf)	AAA(sf)

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

A credit rating is not a recommendation to buy, sell or hold securities and may be subject to revision or withdrawal at any time by the assigning rating organization. Each rating should be evaluated independently of any other rating. A credit rating outlook reflects an agency's opinion regarding the likely rating direction over the medium term, often a period of about a year, and indicates the agency's belief that the issuer's credit profile is consistent with its current rating level at that point in time.

Liquidity

We seek to ensure that we have adequate liquidity to sustain business operations, fund asset growth and satisfy debt obligations under stressed and normal operating 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 other secured borrowing or outright sales.

We maintain a liquidity risk and funding management policy, which outlines the overall framework and general principles we follow in managing liquidity risk across our business. The Board of Directors approves the policy and the Asset and Liability Management Committee (the "ALCO") is responsible for its implementation. 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. The ALCO, chaired by our Treasurer, has cross-functional membership, and manages liquidity risk centrally. 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 needs. 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 set by our Board of Directors.

We employ a variety of metrics to monitor and manage liquidity. We utilize early warning indicators ("EWIs") to detect emerging liquidity stress events. The EWIs include both idiosyncratic and systemic measures and are monitored daily 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 tests regularly and ensure contingency funding is in place to address potential liquidity shortfalls. We evaluate a range of stress scenarios that are designed to follow 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 periods by comparing estimated contingency funding needs to available contingency liquidity.

Our primary contingency liquidity sources include our liquidity portfolio securities, which we could sell, repo or borrow against, and private securitizations with unused borrowing capacity. In addition, we could borrow FHLB advances by pledging securities to the FHLB of Chicago. Moreover, we have unused borrowing capacity with the Federal Reserve discount window and BTFP, which provide additional sources of contingency liquidity. We seek to maintain sufficient liquidity to satisfy all maturing obligations and fund business operations for at least 12 months in a severe stress environment. In such an environment, we may also take actions to curtail the size of our balance sheet, which would reduce the need for funding and liquidity.

At December 31, 2023, our liquidity portfolio was composed of highly liquid, unencumbered assets, including cash and cash equivalents and investment securities. Cash and cash equivalents were primarily deposits with the Federal Reserve. Investment securities primarily included debt obligations of the U.S. Treasury and U.S. GSEs and residential mortgage-backed securities issued by U.S. government agencies or U.S. GSEs. These investments, nearly all of which are classified as available-for-sale, 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 on the size of our balance sheet as well as operational requirements, market conditions and interest rate risk management objectives.

At December 31, 2023, our liquidity portfolio and undrawn credit facilities were $69.8 billion, which was $2.5 billion higher than the balance at December 31, 2022. Our liquidity portfolio and undrawn credit facilities grew primarily as a result of an increase in cash and cash equivalents. During the years ended December 31, 2023 and 2022, the average balance of our liquidity portfolio was $21.0 billion and $16.3 billion, respectively. Our liquidity portfolio and undrawn facilities consist of the following (dollars in millions):

	December 31,	
	2023	2022
Liquidity portfolio		
Cash and cash equivalents[1]	$ 9,815	$ 7,585
Investment securities[2]	13,439	12,213
Total liquidity portfolio	23,254	19,798
Private asset-backed securitizations[3]	2,750	3,500
Federal Home Loan Bank of Chicago	2,551	1,712
Primary liquidity sources	28,555	25,010
Federal Reserve discount window[3]	41,199	42,268
Total liquidity portfolio and undrawn credit facilities	$ 69,754	$ 67,278

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

(2) Excludes $320 million and $97 million of U.S. Treasury securities that have been pledged as swap collateral in lieu of cash as of December 31, 2023 and 2022, 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 service and management activities, including dividend payments 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 capital securities, as well as dividends from our subsidiaries, notably 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 DFS can meet upcoming funding obligations, including common and preferred stock dividend payments and debt service obligations, using existing cash resources. In managing this metric, we structure our debt maturity schedule to manage prudently the amount of debt maturing within a short period. See Note 9: Long-Term Borrowings to our consolidated financial statements for further information regarding our debt.

Capital

Our primary sources of capital are the earnings generated by our businesses and the proceeds from issuances of capital securities. We seek to manage capital to a level and composition sufficient to support our businesses' growth, account for their risks, and meet regulatory requirements, rating agency targets and debt investor expectations. 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, DFS, along with Discover Bank, must maintain minimum capital levels. 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 condition and operating 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. Current or future legislative or regulatory reforms, such as those related to the adoption of the CECL accounting model or those related to the proposed revisions to the Basel Committee's December 2010 framework ("Basel III rules"), may require us to hold more capital and/or adversely impact our capital level. We consider the potential impacts of these reforms in managing our capital position.

DFS and Discover Bank are subject to regulatory capital rules issued by the Federal Reserve and the FDIC, respectively, under the Basel III rules. Under these rules, DFS and Discover Bank are classified as "standardized approach" entities as they are 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. The Basel III rules require DFS and Discover Bank to maintain minimum risk-based capital and leverage ratios and define what constitutes capital for purposes of calculating those ratios.

In accordance with the final rule on the impact of CECL on regulatory capital, we have elected to phase in the impact over three years, beginning in 2022. By electing this option, our Common Equity Tier 1 ("CET1") capital ratios are higher than they otherwise would have been. The phase-in of the CECL accounting model decreased CET1 by $1.1 billion as of January 1, 2023. For additional information regarding the risk-based capital and leverage ratios, see Note 17: Capital Adequacy to our consolidated financial statements.

Federal Reserve rules impose limitations on DFS’ capital distributions if we do not maintain our risk-based capital ratios above stated regulatory minimum ratios based on the results of supervisory stress tests. We are required to assess whether DFS’ planned capital actions are consistent with the effective capital distribution limitations that will apply on a pro-forma basis throughout the planning horizon.

The SCB requirement is institution-specific and is calculated as the greater of (i) 2.5% and (ii) the sum of (a) the difference between DFS' actual CET1 ratio at the beginning of the forecast and the projected minimum CET1 ratio based on the Federal Reserve's models in its nine-quarter Severely Adverse stress scenario, plus (b) the sum of the dollar amount of DFS' planned common stock dividend distributions for each of the fourth through seventh quarters of its nine-quarter capital planning horizon, expressed as a percentage of risk-weighted assets. For Category IV firms, including DFS, the Federal Reserve calculates each firm’s SCB biennially in even-numbered calendar years, and did so in 2022. Based on the results of the 2022 CCAR exercise released by the Federal Reserve, our new SCB was set at 2.5%, the lowest possible requirement, effective October 1, 2022, through September 30, 2023. In odd-numbered years, each firm subject to Category IV standards that did not opt-in to such year's supervisory stress tests as part of the Federal Reserve's CCAR process receives an adjusted SCB requirement that is updated to reflect its planned common stock dividends per the firm's annual capital plan. On July 27, 2023, the Federal Reserve disclosed SCB requirements to firms subject to Category IV standards that did not opt-in to this year's stress test. Our SCB remains unchanged at 2.5%, effective beginning October 1, 2023 through September 30, 2024. See "— Regulatory Environment and Developments — Banking — Capital Standards and Stress Testing" for additional information.

At December 31, 2023, DFS and Discover Bank met the requirements for "well-capitalized" status under the Federal Reserve's Regulation Y and the prompt corrective action rules and corresponding FDIC requirements, respectively, exceeding the regulatory minimums to which they were subject under the applicable rules.

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

We disclose tangible common equity, which represents common equity less goodwill and intangibles. Management believes that common stockholders' equity excluding goodwill and intangibles is meaningful to investors as a measure of our true net asset value. At December 31, 2023, tangible common equity is considered to be a non-GAAP financial measure as it is not formally defined by GAAP or codified in the federal banking regulations. Other financial services companies may also disclose this measure and definitions may vary. We advise users of this information to exercise caution in comparing this measure among different companies.

The following table reconciles total common stockholders' equity (a GAAP financial measure) to tangible common equity (dollars in millions):

	December 31,	
	2023	**2022**
Total common stockholders' equity[1]	$ 13,772	$ 13,288
Less: goodwill	(255)	(255)
Tangible common equity	$ 13,517	$ 13,033

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

Our Board of Directors declared the following common stock dividends during 2023, 2022 and 2021:

Declaration Date	Record Date	Payment Date	Dividend per Share
2023			
October 16, 2023	November 22, 2023	December 07, 2023	$ 0.70
July 17, 2023	August 24, 2023	September 07, 2023	0.70
April 17, 2023	May 25, 2023	June 08, 2023	0.70
January 17, 2023	February 23, 2023	March 09, 2023	0.60
Total common stock dividends			$ 2.70
2022			
October 18, 2022	November 23, 2022	December 08, 2022	$ 0.60
July 20, 2022	August 25, 2022	September 08, 2022	0.60
April 27, 2022	May 26, 2022	June 09, 2022	0.60
January 18, 2022	February 17, 2022	March 03, 2022	0.50
Total common stock dividends			$ 2.30
2021			
October 19, 2021	November 24, 2021	December 09, 2021	$ 0.50
July 20, 2021	August 19, 2021	September 02, 2021	0.50
April 20, 2021	May 20, 2021	June 03, 2021	0.44
January 19, 2021	February 18, 2021	March 04, 2021	0.44
Total common stock dividends			$ 1.88

On January 16, 2024, we declared a quarterly cash dividend on our common stock of $0.70 per share, payable on March 7, 2024 to holders of record on February 22, 2024, which is consistent with the quarterly amount paid in 2023.

Our Board of Directors declared the following Series C preferred stock dividends during 2023, 2022 and 2021:

Declaration Date	Record Date	Payment Date	Dividend per Depositary Share
2023			
July 17, 2023	October 13, 2023	October 30, 2023	$ 27.50
January 17, 2023	April 14, 2023	May 01, 2023	27.50
Total Series C preferred stock dividends			$ 55.00
2022			
July 20, 2022	October 14, 2022	October 31, 2022	$ 27.50
January 18, 2022	April 15, 2022	May 02, 2022	27.50
Total Series C preferred stock dividends			$ 55.00
2021			
July 20, 2021	October 15, 2021	November 01, 2021	$ 27.50
January 19, 2021	April 15, 2021	April 30, 2021	27.50
Total Series C preferred stock dividends			$ 55.00

Our Board of Directors declared the following Series D preferred stock dividends during 2023 and 2022:

Declaration Date	Record Date	Payment Date	Dividend per Depositary Share
2023			
July 17, 2023	September 08, 2023	September 25, 2023	$ 30.625
January 17, 2023	March 08, 2023	March 23, 2023	30.625
Total Series D preferred stock dividends			$ 61.250
2022			
July 20, 2022	September 08, 2022	September 23, 2022	$ 30.625
January 18, 2022	March 08, 2022	March 23, 2022	30.625
Total Series D preferred stock dividends			$ 61.250

On January 16, 2024, we declared a semi-annual cash dividend on our Series C and Series D preferred stock of $27.50 and $30.625 per depositary share, respectively, payable on April 30, 2024 and March 25, 2024, respectively, to holders of record on April 15, 2024 and March 8, 2024, respectively.

Our Board of Directors approved a new share repurchase program in April 2023. The new program authorized up to $2.7 billion of share repurchases through June 30, 2024, and replaced the prior $4.2 billion share repurchase program. If and when we repurchase our shares under the program, we may use various methods including open market purchases, privately negotiated transactions or other purchases, including block trades, accelerated share repurchase transactions, or any combination of such methods. During the three months ended December 31, 2023, we did not repurchase any shares. During the year ended December 31, 2023, we repurchased approximately 18.1 million shares, or 6.8% of our outstanding common stock as of December 31, 2022, for $1.9 billion.

The amount and size of any future dividends and share repurchases will depend on our results of operations, financial condition, capital levels, cash requirements, future prospects, regulatory review and other factors. As reported in the second quarter of 2023, we have decided to pause share repurchases while an internal review of compliance, risk management and corporate governance is ongoing. See Note 19: Litigation and Regulatory Matters to our consolidated financial statements for additional information on the card product misclassification. The declaration and payment of future dividends and 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. No dividend may be declared or paid or set aside for payment on our common stock if full dividends have not been declared and paid on all outstanding shares of preferred stock in any dividend period. 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 our banking subsidiary (Discover Bank) can provide funds to us through dividends, loans or otherwise. Further, current or future regulatory reforms, such as those that propose to alter the Basel III standards, may require us to hold more capital or could adversely impact our capital level. As a result, there can be no assurance that we will declare and pay any dividends or repurchase any shares of our common stock in the future.

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 an investment position or portfolio. We are exposed to market risk primarily from changes in interest rates.

Interest Rate Risk

We borrow money from various depositors and institutions to provide loans to our customers and invest in other assets and our business. These loans to customers and other assets earn interest, which we use to pay interest on the money borrowed. Our net interest income and, therefore, earnings will be reduced if the interest rate earned on assets increases at a slower pace than the interest rate paid on our borrowings. Changes in interest rates and our competitors' responses to those changes may influence customer payment rates, loan balances or deposit account activity. As a result, we may incur higher funding costs that could decrease our 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 portfolio that reflects our mix of variable- and fixed-rate assets and liabilities. To the extent that the repricing characteristics of the assets and liabilities in a particular portfolio are not sufficiently matched, 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 21: 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 months from our reporting date, we assume that all interest-rate-sensitive assets and liabilities are subject to a hypothetical, immediate 100 basis point change in interest rates relative to market consensus expectations as of the beginning of the period. The sensitivity simulation includes the hypothetical assumption that all relevant types of interest rates would change instantaneously, simultaneously and to the same degree.

Our interest-rate-sensitive assets include our variable-rate loan receivables and certain assets in our liquidity portfolio. We have limitations on our ability to mitigate interest rate risk by adjusting rates on existing balances. Further, competitive actions may limit our ability to increase the rates that we charge to customers for new loans. At December 31, 2023, the majority of our credit card and private student loans charge variable rates. Fixed-rate assets that will mature or otherwise contractually reset to a market-based indexed rate or other fixed-rate prior to the end of the 12-month measurement 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 assets with a fixed interest rate that contractually will, or is 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 credit losses. For purposes of this analysis, expected credit losses 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 months. Thus, liabilities that vary with changes in a market-based index, such as the federal funds rate or SOFR, which will reset before the end of the next 12 months, or liabilities that have fixed rates at the fiscal period end but will mature and are assumed to be replaced with a market-based indexed rate prior to the end of the next 12 months, are also considered to be rate sensitive. For these fixed-rate liabilities, earnings sensitivity is measured from the expected maturity date.

Net interest income sensitivity simulations require assumptions regarding market conditions, consumer behavior and the growth and composition of our balance sheet. Our view of market conditions utilizes the implied forward interest rate projection at the beginning of our analysis horizon. This view serves as the base for interest rate risk simulations. We apply rate shocks to the base implied forward curve to measure our overall interest rate sensitivity position. Our view of balance sheet composition and growth utilizes our corporate forecast. On at least a quarterly basis, we create a corporate forecast that incorporates receivable growth and seasonality. The appropriate level of funding is projected and utilizes a diverse mix of instruments with issuance based on expected market conditions. At the same time, optimal levels of liquidity are maintained in accordance with internal guidelines. The degree by which our deposit rates change when benchmark interest rates change, our deposit "beta," is one of the most significant of these assumptions. Assumptions about deposit beta and other matters are inherently uncertain and, as a result, actual earnings may differ from the simulated earnings presented below. Our actual earnings depend on multiple factors including, but not limited to, the direction and timing of changes in interest rates, the movement of short-term interest rates relative to long-term rates, balance sheet composition, competitor actions affecting pricing decisions in our loans and deposits, the mix of promotional balances in our card portfolio, the level of interest charge-offs and recoveries, the influence of loan repayment rates on revolving balances and strategic actions undertaken by our management.

We have taken actions to bring our net interest income sensitivity closer to neutral as the Federal Reserve has slowed its pace of monetary policy tightening and the outlook for near-term U.S. economic growth may be weakening. The following table shows the impacts to net interest income over the following 12-month period that we estimate would result from an immediate and parallel change in interest rates affecting all interest rate sensitive assets and liabilities. These numbers do not include a sale of the private student loan portfolio (dollars in millions):

	December 31,			
	2023		2022	
Basis point change	**$**	**%**	**$**	**%**
+100	$ 161	1.17 %	$ 183	1.40 %
-100	$ (153)	(1.11) %	$ (190)	(1.45) %

Given the nature of our loan portfolio, the impact to our net interest income is far more linear across various rate increase or decrease scenarios than would be true for a financial institution with significant rate-sensitive prepayment risk from the exposure to mortgages.

Item 8. Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Discover Financial Services (the "Company") as of December 31, 2023, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), 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, 2023, of the Company and our report dated February 23, 2024, expressed an unqualified opinion on those financial statements.

Basis for Opinion

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 are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. 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.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (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 its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP

Chicago, Illinois
February 23, 2024

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

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

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial condition of Discover Financial Services (the "Company") as of December 31, 2023 and 2022, 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, 2023, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023, 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) (PCAOB), the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 23, 2024, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Allowance for Credit Losses — Credit Card Loans, Private Student Loans, and Personal Loans — Refer to Notes 2 and 4 to the financial statements

Critical Audit Matter Description

The allowance for credit losses (“allowance”) represents management’s estimate of expected credit losses over the remaining life of each loan, using relevant available information, relating to past events, current conditions, and reasonable and supportable forecasts of future economic conditions. As of December 31, 2023, the total allowance was $9.3 billion, which includes the allowance associated with the credit card loan, private student loan and personal loan portfolios of $7.6 billion, $0.9 billion, and $0.7 billion, respectively.

The determination of the allowance estimate involves a high degree of subjectivity and requires significant estimates of current credit risk using both quantitative and qualitative analysis. Management uses statistical models, which are developed on the historical relationship between losses and predictive variables, to estimate the quantitative component of the allowance. The statistical models require that management select certain inputs for each estimate, including the macroeconomic forecast scenario, and the reasonable and supportable forecast period. In addition, management considers relevant qualitative factors that have occurred but are not yet reflected in the model estimate.

Auditing certain aspects of the allowance associated with the credit card loan, private student loan, and personal loan portfolios required a high degree of auditor judgment and an increased extent of effort, including the involvement of our credit modeling specialists. This included evaluating the (1) model methodology, including the selection of predictive variables during model development, (2) selection of key model assumptions, including the macroeconomic forecast scenario and reasonable and supportable period, and (3) qualitative analysis of the results, including the use of qualitative adjustments, if applicable.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the allowance for credit losses balance, specific to the credit card loan, private student loan, and personal loan portfolios included the following procedures, among others:

- We tested the design and operating effectiveness of management's controls over the determination and review of model methodology, selection of key model assumptions, and qualitative analysis of the results
- We evaluated whether the methodology and key model assumptions are appropriate in the context of the applicable financial reporting framework
- With assistance from credit modeling specialists, we evaluated whether the models are suitable for determining the estimate, which included understanding the model methodologies and logic and whether the selected methods for estimating loan losses is appropriate for each loan portfolio
- We evaluated whether the selected macroeconomic forecasts were reasonable, including evaluating if they were internally consistent with other aspects of the Company's operations, and externally consistent with other macroeconomic forecasts
- We evaluated the reasonableness and consistency of the reasonable and supportable forecast period
- We evaluated whether judgments have been applied consistently to the models and that any qualitative adjustments are consistent with the measurement objective of the applicable financial reporting framework and are appropriate in the circumstances
- We considered any contradictory evidence that arose while performing our procedures, and whether or not this evidence was indicative of management bias
- We evaluated the completeness and accuracy of the Company's allowance for credit losses disclosures

Litigation and Regulatory Matters — Card Product Misclassification Refund Liability — Refer to Note 19 to the financial statements

Critical Audit Matter Description

Beginning in 2007, the Company incorrectly classified certain credit card accounts into its highest merchant and merchant acquirer pricing tier. The misclassification affected pricing for certain merchants and merchant acquirers, but not for cardholders. As of December 31, 2023, the Company recorded a liability of $375 million within accrued expenses and other liabilities to provide refunds to merchant and merchant acquirers as a result of the card product misclassification.

The Company used facts and data available as of December 31, 2023, to develop its best estimate for the amount of refunds it expects to pay to merchant and merchant acquirers. The determination of the liability involved management judgment and estimation as a result of differences in individual merchant agreements, changes in network terms and availability of historical data.

We identified the refund liability as a critical audit matter because auditing management's judgment in determining the methodology for the liability calculation and assumptions applied within the calculation required a high degree of auditor judgment and an increased extent of effort.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the card misclassification refund liability included the following procedures, among others:

- We tested the design and operating effectiveness of management’s controls over the determination and review of the liability calculation and assumptions used in the calculation
- We tested the completeness and accuracy of data used within the calculation
- We evaluated the reasonableness of the methodology used to calculate the liability which included evaluating the mathematical accuracy of the calculation, the application of the data inputs to the calculation, and assumptions used within the calculation
- We inspected meeting minutes for the Board of Directors, Audit Committee, Risk Oversight Committee, and Governance and Controls Committee
- We performed inquiries with members of management regarding the refund liability
- We inspected supporting documentation and inquired of members of management regarding the status of any ongoing regulatory reviews specific to the refund liability or settlement negotiations
- We considered any contradictory evidence that arose while performing our procedures, and whether or not this evidence was indicative of management bias
- We evaluated the completeness and accuracy of the Company’s disclosures related to the refund liability

/s/ Deloitte & Touche LLP	
Chicago, Illinois	
February 23, 2024	

We have served as the Company’s auditor since the spin-off from its former parent company in 2007 and as Discover Bank’s (a wholly owned subsidiary of the Company) auditor since 1985.

DISCOVER FINANCIAL SERVICES

Consolidated Statements of Financial Condition

(dollars in millions, except for share amounts)

	December 31,	
	2023	2022
Assets		
Cash and cash equivalents	$ 11,685	$ 8,856
Restricted cash	43	41
Investment securities (includes available-for-sale securities of $13,402 and $11,987 reported at fair value with associated amortized cost of $13,451 and $12,167 at December 31, 2023 and 2022, respectively)	13,655	12,208
Loan receivables		
Loan receivables	128,409	112,120
Allowance for credit losses	(9,283)	(7,374)
Net loan receivables	119,126	104,746
Premises and equipment, net	1,091	1,003
Goodwill	255	255
Other assets	5,667	4,597
Total assets	$ 151,522	$ 131,706
Liabilities and Stockholders' Equity		
Liabilities		
Deposits		
Interest-bearing deposit accounts	$ 107,493	$ 90,151
Non-interest-bearing deposit accounts	1,438	1,485
Total deposits	108,931	91,636
Short-term borrowings	750	—
Long-term borrowings	20,581	20,108
Accrued expenses and other liabilities	6,432	5,618
Total liabilities	136,694	117,362
Commitments, contingencies and guarantees (Notes 15, 18 and 19)		
Stockholders' Equity		
Common stock, par value $0.01 per share; 2,000,000,000 shares authorized; 570,837,720 and 569,689,007 shares issued at December 31, 2023 and 2022, respectively	6	6
Preferred stock, par value $0.01 per share; 200,000,000 shares authorized; 10,700 shares issued and outstanding at December 31, 2023 and 2022, respectively	1,056	1,056
Additional paid-in capital	4,553	4,468
Retained earnings	30,448	28,207
Accumulated other comprehensive loss	(225)	(339)
Treasury stock, at cost; 320,734,860 and 302,305,216 shares at December 31, 2023 and 2022, respectively	(21,010)	(19,054)
Total stockholders' equity	14,828	14,344
Total liabilities and stockholders' equity	$ 151,522	$ 131,706

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,	
	2023	2022
Assets		
Restricted cash	$ 43	$ 41
Loan receivables	$ 30,590	$ 25,937
Allowance for credit losses allocated to securitized loan receivables	$ (1,347)	$ (1,152)
Other assets	$ 3	$ 3
Liabilities		
Short- and long-term borrowings	$ 11,743	$ 10,259
Accrued expenses and other liabilities	$ 19	$ 14

See Notes to the Consolidated Financial Statements.

DISCOVER FINANCIAL SERVICES
Consolidated Statements of Income

(dollars in millions, except for share amounts)

	For the Years Ended December 31,		
	2023	2022	2021
Interest income			
Credit card loans	$ 14,438	$ 10,632	$ 8,717
Other loans	2,515	1,870	1,734
Investment securities	449	179	182
Other interest income	443	183	18
Total interest income	17,845	12,864	10,651
Interest expense			
Deposits	3,886	1,257	661
Short-term borrowings	5	2	—
Long-term borrowings	855	606	473
Total interest expense	4,746	1,865	1,134
Net interest income	13,099	10,999	9,517
Provision for credit losses	6,018	2,359	218
Net interest income after provision for credit losses	7,081	8,640	9,299
Other income			
Discount and interchange revenue, net	1,447	1,380	1,188
Protection products revenue	172	172	165
Loan fee income	763	632	464
Transaction processing revenue	303	249	227
(Losses) gains on equity investments	(9)	(214)	424
Other income	85	75	66
Total other income	2,761	2,294	2,534
Other expense			
Employee compensation and benefits	2,434	2,139	1,986
Marketing and business development	1,164	1,035	810
Information processing and communications	608	513	500
Professional fees	1,041	871	797
Premises and equipment	89	118	92
Other expense	680	540	620
Total other expense	6,016	5,216	4,805
Income before income taxes	3,826	5,718	7,028
Income tax expense	886	1,344	1,606
Net income	$ 2,940	$ 4,374	$ 5,422
Net income allocated to common stockholders	$ 2,859	$ 4,286	$ 5,323
Basic earnings per common share	$ 11.27	$ 15.45	$ 17.75
Diluted earnings per common share	$ 11.26	$ 15.44	$ 17.74

See Notes to the Consolidated Financial Statements.

DISCOVER FINANCIAL SERVICES
Consolidated Statements of Comprehensive Income
(dollars in millions)

	For the Years Ended December 31,		
	2023	2022	2021
Net income	$ 2,940	$ 4,374	$ 5,422
Other comprehensive income (loss), net of tax			
Unrealized gains (losses) on available-for-sale investment securities, net of tax	99	(250)	(170)
Unrealized gains (losses) on cash flow hedges, net of tax	6	(5)	3
Unrealized pension and post-retirement plan gains, net of tax	9	10	28
Other comprehensive income (loss)	114	(245)	(139)
Comprehensive income	$ 3,054	$ 4,129	$ 5,283

See Notes to the Consolidated Financial Statements.

Table of Contents

DISCOVER FINANCIAL SERVICES
Consolidated Statements of Changes in Stockholders' Equity

(dollars in millions, shares in thousands)

	Preferred Stock		Common Stock			
	Shares	Amount	Shares	Amount	Additional Paid-in Capital	Retained Earnings
Balance at December 31, 2020	11	$ 1,056	567,898	$ 6	$ 4,257	$ 19,754
Net income	—	—	—	—	—	5,422
Other comprehensive loss	—	—	—	—	—	—
Purchases of treasury stock	—	—	—	—	—	—
Common stock issued under employee benefit plans	—	—	88	—	9	—
Common stock issued and stock-based compensation expense	—	—	845	—	103	—
Dividends — common stock ($1.88 per share)	—	—	—	—	—	(569)
Dividends — Series C preferred stock ($5,500 per share)	—	—	—	—	—	(31)
Dividends — Series D preferred stock ($7,674 per share)	—	—	—	—	—	(38)
Balance at December 31, 2021	11	1,056	568,831	6	4,369	24,538
Net income	—	—	—	—	—	4,374
Other comprehensive loss	—	—	—	—	—	—
Purchases of treasury stock	—	—	—	—	—	—
Common stock issued under employee benefit plans	—	—	107	—	10	—
Common stock issued and stock-based compensation expense	—	—	751	—	89	—

See Notes to the Consolidated Financial Statements.

DISCOVER FINANCIAL SERVICES
Consolidated Statements of Cash Flows

(dollars in millions)

	For the Years Ended December 31,		
	2023	2022	2021
Cash flows provided by operating activities			
Net income	$ 2,940	$ 4,374	$ 5,422
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for credit losses	6,018	2,359	218
Deferred income taxes	(626)	(433)	318
Depreciation and amortization	458	561	531
Amortization of deferred revenues	(468)	(365)	(295)
Net losses (gains) on investments and other assets	50	261	(382)
Other, net	110	125	257
Changes in assets and liabilities:			
Increase in other assets	(658)	(846)	(496)
Increase in accrued expenses and other liabilities	739	1,104	446
Net cash provided by operating activities	8,563	7,140	6,019
Cash flows provided by (used for) investing activities			
Maturities of other short-term investments	—	—	2,200
Maturities of available-for-sale investment securities	1,831	2,084	2,727
Purchases of available-for-sale investment securities	(2,996)	(7,682)	(9)
Maturities of held-to-maturity investment securities	16	32	82
Purchases of held-to-maturity investment securities	(49)	(50)	(28)
Net change in principal on loans originated for investment	(19,934)	(19,961)	(4,574)
Proceeds from the sale of available for sale securities	—	—	5
Proceeds from the sale of other investments	44	336	1
Purchases of other investments	(100)	(169)	(170)
Proceeds from sale of premises and equipment	—	9	—
Purchases of premises and equipment	(303)	(236)	(194)
Net cash (used for) provided by investing activities	(21,491)	(25,637)	40
Cash flows (used for) provided by financing activities			
Net change in short-term borrowings	750	(1,750)	1,750
Net change in deposits	17,250	19,208	(4,533)
Proceeds from issuance of securitized debt	2,230	5,620	1,727
Maturities and repayment of securitized debt	(1,494)	(4,395)	(3,451)
Proceeds from issuance of other long-term borrowings	2,041	1,265	—
Maturities and repayments of other long-term borrowings	(2,340)	(834)	(922)
Proceeds from issuance of common stock	12	10	9
Dividends paid on common and preferred stock	(752)	(703)	(636)
Purchases of treasury stock	(1,938)	(2,359)	(2,260)
Net cash provided by (used for) financing activities	15,759	16,062	(8,316)
Net increase (decrease) in cash, cash equivalents and restricted cash	2,831	(2,435)	(2,257)
Cash, cash equivalents and restricted cash, at the beginning of the period	8,897	11,332	13,589
Cash, cash equivalents and restricted cash, at the end of the period	$ 11,728	$ 8,897	$ 11,332
Reconciliation of cash, cash equivalents and			

See Notes to the Consolidated Financial Statements.

Notes to the Consolidated Financial Statements

1. Background and Basis of Presentation

Description of Business

Discover Financial Services ("DFS" or the "Company") is a digital banking and payment services company. The Company is a bank holding company under the Bank Holding Company Act of 1956 and a financial holding company under the Gramm-Leach-Bliley Act. Therefore, the Company is subject to oversight, regulation and examination by the Board of Governors of the Federal Reserve System (the "Federal Reserve"). The Company provides digital banking products and services and payment services through its subsidiaries. The Company offers its customers credit card loans, personal loans, home loans and deposit products. The Company also operates the Discover Network, the PULSE network ("PULSE") and Diners Club International ("Diners Club"), collectively known as the Discover Global Network. The Discover Network processes transactions for Discover-branded credit and debit 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 automated teller machines ("ATMs") domestically and internationally, as well as merchant acceptance throughout the United States of America ("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 credit and charge cards and/or provide card acceptance services.

The Company manages its business activities in two segments, Digital Banking and Payment Services, based on the products and services provided. See Note 22: Segment Disclosures for a detailed description of each segment's operations and the allocation conventions used in business segment reporting.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the U.S. ("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.

Certain prior year amounts have been reclassified to conform to the current year presentation. These reclassifications had no impact on the Company's consolidated financial condition, results of operations or changes in stockholders' equity.

Principles of Consolidation

The accompanying 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 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 VIEs 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 the student loan securitization trust. 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, 2023, 2022 and 2021.

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 as they typically do not have readily determinable fair values, and are adjusted for any impairment in value. Investments in actively traded stock are carried at fair value with changes in fair value recorded as an adjustment to earnings.

Immaterial Restatement of Prior Period Financial Statements

As reported in the second quarter of 2023, beginning in 2007, the Company incorrectly classified certain credit card accounts into its highest merchant and merchant acquirer pricing tier. The Company determined the revenue impact of the incorrect card product classification was immaterial to the consolidated financial statements for all impacted prior periods. For comparative purposes, the Company has made these corrections to the consolidated financial statements for the prior periods presented in this Form 10-K. Additionally, prior period amounts in the applicable notes to the consolidated financial statements have been corrected. The impacts of the misclassification and subsequent corrections are contained entirely within the Digital Banking segment. See Note 26: Immaterial Restatement of Prior Period Financial Statements for additional information and quantification of the prior period restatement impacts.

Recently Issued Accounting Pronouncements (Not Yet Adopted)

In December 2023, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2023-09, *Income Taxes (Topic 740): Improvements to Income Tax Disclosures*. This ASU enhances the transparency of income tax information through improvements to income tax disclosures primarily related to the rate reconciliation and income taxes paid. Entities are required to disaggregate the rate reconciliation (including percentages and reported amounts) by certain specified categories with additional disaggregation by nature and/or jurisdiction for items over a designated threshold. Income taxes paid (net of refunds received) must be disaggregated by federal (national), state, and foreign taxes and separately by individual jurisdiction in which that amount for a particular jurisdiction is equal to or greater than five percent of total income taxes paid (net of refunds received). This annual disclosure guidance is effective for the Company for the year ending December 31, 2025 and requires prospective application. Retrospective application is also permitted. Management will consider which method is appropriate for the Company. While the ASU implements further income tax disclosure requirements, it does not change how an entity determines its income tax obligation, and it will have no impact on the Company's consolidated financial condition, results of operations or cash flows.

In November 2023, the FASB issued ASU No. 2023-07, *Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures*. The ASU requires disclosure of additional segment level information, particularly regarding significant segment expenses. Entities must disclose significant expense categories and amounts that are regularly provided to the chief operating decision maker ("CODM") and included in the reported segment measure of profit or loss. Other segment items must also be reported, which are those items that make up the difference between segment revenues less significant segment expenses and reported segment profit or loss. Additionally, entities must disclose the identity of the CODM and how they use the reported measures of segment profit or loss for decision making and assessing segment performance. The guidance is effective for the Company for the year ending December 31, 2024, and interim periods thereafter and requires retrospective application. While the ASU implements further segment disclosure requirements, it does not change how an entity identifies its operating or reportable segments, and it will have no impact on the Company's consolidated financial condition, results of operations or cash flows.

In March 2023, the FASB issued ASU No. 2023-02, *Investments—Equity Method and Joint Ventures (Topic 323): Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method*. The ASU expands the use of the proportional amortization method of accounting for tax credit investments. Currently, the method is limited to Low Income Housing Tax Credit investments. Under the amended guidance, use of proportional amortization will be available to any qualifying tax credit investments, including but not limited to investments in New Markets Tax Credit and Renewable Energy Tax Credit programs. The ASU is effective for the Company on January 1, 2024.

The Company will elect the proportional amortization method for any of its qualifying tax credit investments. Management has chosen a modified-retrospective application, meaning a cumulative-effect adjustment will be recorded to the opening balance of retained earnings as of the effective date without adjusting comparative periods. Management determined that the standard will not have a material impact on the Company’s consolidated financial statements.

Recently Adopted Accounting Pronouncement

In March 2022, the FASB issued ASU No. 2022-02, *Financial Instruments—Credit Losses (Topic 326): Troubled Debt Restructurings and Vintage Disclosures*. The ASU eliminated the troubled debt restructuring ("TDR") recognition and measurement guidance and enhanced disclosures for modifications of receivables to borrowers experiencing financial difficulty. Under ASU 2022-02, the use of a discounted cash flow method is no longer required when measuring expected credit losses on modified loans. The ASU also refined existing credit-related disclosures by requiring disclosure of current-period gross charge-offs of receivables by year of origination. The amendments in the ASU were applied prospectively to modifications and disclosures of gross charge-offs; however, adoption on a modified retrospective basis was applied for the effect on the allowance for credit losses related to the elimination of the TDR recognition and measurement guidance. The ASU became effective for the Company on January 1, 2023. Upon adoption, the Company recorded an adjustment to reduce the beginning balance of its allowance for credit losses by $68 million to reflect the elimination of the measurement guidance related to TDRs with an offsetting increase, net of tax, to beginning retained earnings.

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, excluding amounts restricted by certain contractual or other obligations. Cash and cash equivalents included $2.0 billion and $1.5 billion of cash and due from banks and $9.7 billion and $7.4 billion of interest-earning deposits at other banks at December 31, 2023 and 2022, respectively.

Restricted Cash

Restricted cash includes cash in accounts from 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, 2023, investment securities consisted of debt obligations of the U.S. Treasury and government-sponsored enterprises of the U.S. ("U.S. GSEs") and mortgage-backed securities issued by government agencies or U.S. GSEs. 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 20: Fair Value Measurements. 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. Interest on investment securities is accrued each month in accordance with their contractual terms and recorded in other assets in the consolidated statements of financial condition. The U.S. Treasury and U.S. GSE obligations and mortgage-backed securities issued by government agencies or U.S. GSEs in which the Company invests have long histories with no credit losses and are explicitly or implicitly guaranteed by the U.S. government. Therefore, management has concluded that there is no expectation of non-payment on its investment securities and does not record an allowance for credit losses on these investments.

Loan Receivables

Loan receivables consist of credit card receivables and other loan receivables. The carrying values of all classes of loan receivables include unamortized net deferred loan origination fees and costs (also see "— Significant Revenue Recognition Accounting Policies — Loan Interest and Fee Income"). The credit card loan receivables carrying amount includes the principal amounts outstanding and uncollected billed interest and fees and is 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 private student loans, personal loans and other loans and the carrying amount of those loans includes principal amounts outstanding. For private 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.

Delinquent Loans and Net 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 unsecured 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 by 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 reserved for at 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 Credit Losses

The Company maintains an allowance for credit losses at a level that is appropriate to absorb net credit losses anticipated over the remaining expected life of loan receivables as of the balance sheet date. The estimate of expected credit losses considers uncollectible principal, interest and fees associated with the Company's loan receivables existing as of the balance sheet date. Additionally, the estimate includes expected recoveries of amounts that were either previously charged off or are expected to be charged off. The allowance is evaluated quarterly for appropriateness and is maintained through an adjustment to the provision for credit 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 the provision for credit losses.

The Company calculates its allowance for credit losses by estimating expected credit losses separately for classes of receivables with similar risk characteristics. This results in segmenting the portfolio by loan product type, which is the level that the Company develops and documents its methodology for determining the allowance for credit losses. The estimate of expected credit losses for each loan product type is based on: (i) a reasonable and supportable forecast period; (ii) a reversion period; and (iii) a post-reversion period based on historical information covering the remaining life of the loan, all of which is netted with expected recoveries. The lengths of the reasonable and supportable forecast and reversion periods can vary and are subject to a quarterly assessment that considers the economic outlook and level of variability among macroeconomic forecasts. The Company applies a weighted approach in reverting from the reasonable and supportable forecast period to the post-reversion period.

Several analyses are used to help estimate credit losses anticipated over the remaining expected life of loan receivables as of the balance sheet date. The Company's estimation process includes models that predict customer losses based on risk characteristics and portfolio attributes, macroeconomic variables and 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 credit card loans, the Company uses a modeling framework that includes the following components for estimating expected credit losses:

- Probability of default: this component estimates the probability of charge-off at different points in time over the life of each loan.

- Exposure at default: this component estimates the balance on the loan at the time of default. Given that there is no stated life of a receivable balance on a revolving credit card account, the Company applies a percentage of expected payments to estimate the balance that would remain at the time of charge-off.
- Recoveries from charged-off accounts are estimated separately and are netted as part of the aggregation of all of the components of the card loss modeling framework.
- The output of the above three components is adjusted to remove post measurement date activity.

For private student loans and personal loans, the Company uses vintage-based models that estimate expected credit losses over the life of the loan, net of recovery estimates, impacted mainly by time elapsed since origination, credit quality of origination vintages and macroeconomic forecasts.

The components described above for credit card, private student and personal loans are developed utilizing historical data and applicable macroeconomic variable inputs based on statistical analysis and customer behavioral relationships with credit performance. Expected recoveries from loans charged off as of the balance sheet date are modeled separately and included in the allowance estimate. The Company leverages these models and recent macroeconomic forecasts for the portion of the estimate associated with the reasonable and supportable forecast period. To estimate expected credit losses for the remainder of the life of the credit card loans, the Company reverts to historical experience of credit card loans with characteristics similar to those as of the balance sheet date and observed over various phases of a credit cycle. To estimate expected credit losses for the remainder of the life of private student and personal loans, the Company generally reverts to use of average macroeconomic variables over an appropriate historical period.

The considerations in these models include past and current loan performance, loan growth and seasoning, 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 to borrowers experiencing financial difficulty. For the credit card loan portfolio, the Company estimates its credit losses on a loan-level basis, which includes loans that are delinquent and/or no longer accruing interest and/or loans that have been restructured. For the remainder of its portfolio, including private student, personal and other loans, the Company estimates its credit losses on a pooled basis. For all loan types, recoveries are estimated at a pooled level based on estimates of future cash flows derived using historical experience.

Accrued interest receivable on credit card loans is included in the estimate of expected credit losses once billed to the customer (i.e., once the interest becomes part of the loan balance). Except as noted in the following sentence, an allowance for credit losses is not recorded for unbilled credit card interest or accrued interest receivable on other loan classes as the impact to the allowance for credit losses is not material. Accrued interest receivable on student loans that have not yet entered repayment is included in the estimate of expected credit losses.

No liability for expected credit losses is required for unused lines of credit on the Company’s credit card loans because they are unconditionally cancellable. The Company records a liability for expected credit losses for unfunded commitments on all other loans, which is presented as part of accrued expenses and other liabilities in the consolidated statements of financial condition. This liability is evaluated quarterly for appropriateness and is maintained through an adjustment to the provision for credit losses.

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 private student loans and certain grants of private student loan forbearance are generally subject to disclosure as loan modifications to borrowers experiencing financial difficulty.

Loan receivables that have been modified are subject to the same requirements for the accrual of expected credit loss over their expected remaining lives as described above for unmodified loans. The effects of all loan modifications, whether or not they are subject to disclosure as loan modifications to borrowers experiencing financial difficulty, are reflected in the allowance for credit losses.

Premises and Equipment, net

Premises and equipment, net, are stated at cost less provisions for impairment and accumulated depreciation and amortization. Accumulated depreciation and amortization is computed using the straight-line method over the estimated useful lives of the assets. The Company periodically reviews the estimated useful lives and may adjust them as necessary. Buildings are depreciated over a period of thirty-nine years. The costs of improvements are capitalized and depreciated either over the asset’s estimated useful life, typically ten years to fifteen years, or over the remaining term of the lease, when applicable. Furniture and fixtures are depreciated over a period of five years to ten years. Equipment is depreciated over three years to ten years. Maintenance and repairs are immediately expensed when incurred, while the costs of significant improvements are capitalized.

Purchased software and capitalized costs related to internally developed software are amortized over their useful lives of three years 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 6: 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.

Premises and equipment are subject to impairment testing when events or conditions indicate that the carrying value of the 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.

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 is tested for impairment by comparing the fair value of the reporting unit to its carrying value. If the fair value of the reporting unit exceeds its carrying value, goodwill is not impaired. If the carrying value exceeds its fair value, an impairment loss must be recognized in an amount equal to that excess, limited to the total amount of goodwill allocated to that reporting unit. No impairment was identified during the impairment test conducted as of October 1, 2023.

Stock-based Compensation

The Company measures the cost of services received from employees and non-employee directors 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. Awards to employees who are retirement-eligible at any point during the year are amortized over 12 months in accordance with the vesting terms that apply under those circumstances. No compensation cost is recognized for awards that are subsequently forfeited.

Advertising Costs

The Company expenses television and radio 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 $359 million, $307 million and $262 million for the years ended December 31, 2023, 2022 and 2021, 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 reporting 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. A valuation allowance is provided if the Company believes it is more likely than not that all or some portion of the deferred tax asset will not be realized. An increase or decrease in the valuation allowance that results from a change in circumstances and which causes a change in management's judgment about the realizability of the related deferred tax asset is included in the current tax provision. 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. The Company recognizes and reports interest and penalties, if necessary, related to uncertain tax positions within its provision for income tax expense. See Note 15: Income Taxes for more information about the Company's income taxes.

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 other comprehensive income ("OCI") on an after-tax basis where applicable. The Company's policy is to adjust the tax effects of a component of AOCI in the same period in which the item is sold or otherwise derecognized, or when the carrying value of the item is remeasured. Details of OCI, net of tax, are presented in the statement of comprehensive income and a roll forward of AOCI is presented in the consolidated statements of changes in stockholders' equity and Note 13: Accumulated Other Comprehensive Income.

Significant Revenue Recognition Accounting Policies

Loan Interest and Fee Income

Interest on loans is composed largely of interest on credit card loans and is recognized based on 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 other assets on the consolidated statements of financial condition. Interest on other loan receivables is accrued each month in accordance with their contractual terms and recorded in other assets in the consolidated statements of financial condition.

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 estimated life of the related balance. As of December 31, 2023 and 2022, deferred revenues related to balance transfer fees, recorded as a reduction of loan receivables, were $107 million and $85 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, 2023 and 2022, the remaining unamortized deferred costs related to loan origination were $306 million and $298 million, respectively, and were recorded in loan receivables.

The Company accrues interest and fees on credit card and closed-end loan receivables until the loans are paid or charged off, except in instances of customer bankruptcy, death or suspected fraud, where no further interest and fee accruals occur following notification. 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 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 that relate to capitalized interest on private student loans are treated as principal charge-offs and recoveries, affecting the provision for credit losses rather than interest income. The Company considers uncollectible interest and fee revenues in assessing the adequacy of the allowance for credit losses.

Interest income from loans disclosed as modifications to borrowers experiencing financial difficulty is accounted for in the same manner as other accruing loans. Cash collections on these loans are allocated according to the same payment hierarchy applied to loans that have not been modified.

Discount and Interchange Revenue

The Company earns discount revenue from fees charged to merchants with whom it has entered into card acceptance agreements for processing credit card purchase transactions. The Company earns acquirer interchange revenue primarily from merchant acquirers on Discover Network, Diners Club and PULSE transactions made by credit and debit card customers at merchants with whom merchant acquirers have entered into card acceptance agreements for processing payment card transactions. These card acceptance arrangements generally renew automatically and do not have fixed durations. Under these agreements, the Company stands ready to process payment transactions as and when each is presented. The Company earns discount, interchange and similar fees only when transactions are processed. Contractually defined per-transaction fee amounts typically apply to each type of transaction processed and are recognized as revenue at the time each transaction is captured for settlement. These fees are typically collected by the Company as part of the process of settling transactions daily with merchants and acquirers and are fully earned at the time settlement is made.

The Company pays issuer interchange 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 and PULSE networks. This cost is contractually established and is based on the card-issuing organization's transaction volume. The Company classifies this cost as a reduction of discount and interchange revenue. Costs of cardholder reward arrangements, including the Cashback Bonus reward program, are classified as reductions of discount and interchange revenue pursuant to guidance under Accounting Standards Codification ("ASC") Topic 606 governing consideration payable to a customer. For both issuer interchange and transaction-based cardholder rewards, the Company accrues the cost at the time each underlying card transaction is captured for settlement.

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 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, 2023, 2022 and 2021, rewards costs amounted to $3.1 billion, $3.0 billion and $2.5 billion, respectively. The liability for customer rewards was $2.2 billion at December 31, 2023 and 2022, and is included in accrued expenses and other liabilities on the consolidated statements of financial condition.

Protection Products Revenue

The Company earns revenue related to fees received for providing ancillary products and services, including payment protection and identity theft protection services, to its credit card customers. A portion of this revenue comprises amounts earned for arranging for the delivery of products offered by third-party service providers. The amount of revenue recorded is generally based on either a percentage of a customer's outstanding balance or a flat fee, in either case assessed monthly and recognized as earned. These contracts are month-to-month arrangements that are cancellable at any time. The Company recognizes each monthly fee in the period to which the service or coverage relates.

Transaction Processing Revenue

Transaction processing revenue represents switch fees charged to financial institutions and merchants under network participation agreements for processing ATM and debit transactions over the PULSE network, as well as various participation and membership fees. Network participation agreements generally renew automatically and do not have fixed durations, although the Company does enter into fixed-term pricing or incentive arrangements with certain network participants. Similar to discount and interchange fees, switch fees are contractually defined per-transaction fee amounts and are assessed and recognized as revenue at the time each transaction is captured for settlement. These fees are typically collected by the Company as part of the process of settling transactions with network participants. Membership and other participation fees are recognized over the periods to which each fee relates.

Other Income

Other income includes gains and losses on equity investments, sales-based royalty revenues earned by Diners Club, merchant fees, revenues from network partners and other miscellaneous revenue items. Unrealized gains and losses on equity investments carried at fair value are recognized quarterly based on changes in their respective fair values. Sales-based royalty revenues are recognized as the related sales are reported by Diners franchisees. All remaining items of other income are recognized as the related performance obligations are satisfied.

Future Revenue Associated with Customer Contracts

For contracts under which the Company processes payment card transactions, the Company has the right to assess fees for services performed and to collect those fees through the settlement process. The Company generates essentially all of its discount and interchange revenue and transaction processing revenue, as well as some revenue reported as other income, through such contracts. There is no specified quantity of service promised in these contracts as the number of payment transactions is dependent upon cardholder behavior, which is outside the control of the Company and its network customers (i.e., merchants, acquirers, issuers and other network participants). As noted above, these contracts are typically without fixed durations and renew automatically. For these reasons, the Company does not make or disclose an estimate of revenue associated with performance obligations attributable to the remaining terms of these contracts. Future revenue associated with the Company’s sales-based royalty revenues earned from Diners Club licensees is similarly variable and open-ended and therefore the Company does not make or disclose an estimate of royalties associated with performance obligations attributable to the remaining terms of the licensing and royalty arrangements. Because of the nature of the services and the manner of collection associated with the majority of the Company’s revenue from contracts with customers, material receivables or deferred revenues are not generated.

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 distinct good or service is received by the Company in exchange for the payment and the fair value of the good or service can be reasonably estimated. If no such good or service 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 $27 million and $32 million at December 31, 2023 and 2022, respectively.

3. Investments

The Company’s other short-term investments and investment securities consist of the following (dollars in millions):

	December 31,	
	2023	2022
U.S. Treasury[1] and U.S. GSE[2] securities	$ 12,937	$ 11,423
Residential mortgage-backed securities - Agency[3]	718	785
Total investment securities	$ 13,655	$ 12,208

(1) $320 million and $97 million of U.S. Treasury securities pledged as swap collateral as of December 31, 2023 and 2022, respectively.

(2) Consists of securities issued by the Federal Home Loan Bank (“FHLB”).

(3) Consists of securities issued by Fannie Mae, Freddie Mac, or Ginnie Mae.

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
December 31, 2023				
Available-for-Sale Investment Securities[1]				
U.S. Treasury and U.S. GSE securities	$ 12,971	$ 52	$ (86)	$ 12,937
Residential mortgage-backed securities - Agency	480	—	(15)	465
Total available-for-sale investment securities	$ 13,451	$ 52	$ (101)	$ 13,402
Held-to-Maturity Investment Securities[2]				
Residential mortgage-backed securities - Agency[3]	$ 253	$ —	$ (19)	$ 234
Total held-to-maturity investment securities	$ 253	$ —	$ (19)	$ 234
December 31, 2022				
Available-for-Sale Investment Securities[1]				
U.S. Treasury and U.S. GSE securities	$ 11,580	$ 21	$ (178)	$ 11,423
Residential mortgage-backed securities - Agency	587	—	(23)	564
Total available-for-sale investment securities	$ 12,167	$ 21	$ (201)	$ 11,987
Held-to-Maturity Investment Securities[2]				
Residential mortgage-backed securities - Agency[3]	$ 221	$ —	$ (22)	$ 199
Total held-to-maturity investment securities	$ 221	$ —	$ (22)	$ 199

(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 ("RMBS") that were classified as held-to-maturity as they were entered into as a part of the Company's community reinvestment initiatives.

The Company invests in U.S. Treasury obligations and securities issued by government agencies or U.S. GSEs, which have long histories with no credit losses and are explicitly or implicitly guaranteed by the U.S. federal government. Therefore, management has concluded that there is no expectation of non-payment on its investment securities and does not record an allowance for credit losses on these investments. In addition, the Company does not have the intent to sell any available-for-sale securities in an unrealized loss position and does not believe it is more likely than not that it will be required to sell any such security before recovery of its amortized cost basis.

The following table provides information about available-for-sale 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):

		Less than 12 months		More than 12 months	
	Number of Securities in a Loss Position	**Fair Value**	**Unrealized Losses**	**Fair Value**	**Unrealized Losses**
December 31, 2023					
Available-for-Sale Investment Securities					
U.S. Treasury and U.S. GSE securities	105	$ 3,513	$ (13)	$ 3,978	$ (73)
Residential mortgage-backed securities - Agency	31	$ —	$ —	$ 465	$ (15)
December 31, 2022					
Available-for-Sale Investment Securities					
U.S. Treasury and U.S. GSE securities	123	$ 9,060	$ (175)	$ 106	$ (3)
Residential mortgage-backed securities - Agency	34	$ 559	$ (22)	$ 5	$ (1)

During the years ended December 31, 2023 and 2022, the Company had no sales of available-for-sale securities. The Company received $5 million of proceeds from the sale of available-for-sale securities during the year ended December 31, 2021. See Note 13: Accumulated Other Comprehensive Income for unrealized gains and losses on available-for-sale securities during the years ended December 31, 2023, 2022 and 2021.

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

At December 31, 2023	One Year or Less	After One Year Through Five Years	After Five Years Through Ten Years	After Ten Years	Total
Available-for-Sale Investment Securities — Amortized Cost					
U.S. Treasury and U.S. GSE securities	$ 2,127	$ 10,634	$ 210	$ —	$ 12,971
Residential mortgage-backed securities - Agency[1]	—	73	26	381	480
Total available-for-sale investment securities	$ 2,127	$ 10,707	$ 236	$ 381	$ 13,451
Held-to-Maturity Investment Securities — Amortized Cost					
Residential mortgage-backed securities - Agency[1]	$ —	$ —	$ —	$ 253	$ 253
Total held-to-maturity investment securities	$ —	$ —	$ —	$ 253	$ 253
Available-for-Sale Investment Securities — Fair Values					
U.S. Treasury and U.S. GSE securities	$ 2,093	$ 10,628	$ 216	$ —	$ 12,937
Residential mortgage-backed securities - Agency[1]	—	70	25	370	465
Total available-for-sale investment securities	$ 2,093	$ 10,698	$ 241	$ 370	$ 13,402
Held-to-Maturity Investment Securities — Fair Values					
Residential mortgage-backed securities - Agency[1]	$ —	$ —	$ —	$ 234	$ 234
Total held-to-maturity investment securities	$ —	$ —	$ —	$ 234	$ 234
Available-for-Sale Investment Securities — Weighted-Average Yields[2]					
U.S. Treasury and U.S. GSE securities	2.14 %	3.87 %	4.37 %	— %	3.59 %
Residential mortgage-backed securities - Agency[1]	— %	2.09 %	3.35 %	3.53 %	3.30 %

(1) Maturities of RMBS are reflective of the contractual maturities of the investment.

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

Taxable interest on investment securities was $449 million, $179 million and $182 million for the years ended December 31, 2023, 2022 and 2021, respectively. There was no U.S. federal income tax-exempt interest on investment securities for the years ended December 31, 2023, 2022 and 2021.

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 and 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 reduces the carrying value of the investments and is recorded in other expense within the consolidated statements of income. The Company further reduces the carrying value of the investments by recognizing any amounts that are in excess of future net tax benefits in other expense. The Company earns a return primarily through tax credits allocated to the affordable housing projects and the community revitalization projects. The Company does not consolidate these investments as the Company does not have a controlling financial interest in the investee entities. As of December 31, 2023 and 2022, the Company had outstanding investments in these entities of $514 million and $416 million, respectively, and related contingent liabilities for unconditional and legally binding delayed equity contributions of $187 million and $111 million, respectively. Of the above outstanding equity investments, the Company had $456 million and $375 million of investments related to affordable housing projects as of December 31, 2023 and 2022, respectively, which had $155 million and $100 million of related contingent liabilities for unconditional and legally binding delayed equity contributions, respectively.

The Company holds non-controlling equity positions in several payment services entities and third-party venture capital funds, which invest in such entities. Most of the direct investments in such entities are not subject to equity method accounting because the Company does not have significant influence over the investee. The Company's investments in third-party venture capital funds represent limited partnership interests and are accounted for under the equity method. The common or preferred equity securities that the Company holds typically do not have readily determinable fair values. As a result, these investments are carried at cost minus impairment, if any. As of December 31, 2023 and 2022, the carrying value of these investments, which are recorded within other assets on the Company's consolidated statements of financial condition, was $35 million and $39 million, respectively.

The Company also holds non-controlling equity positions in payment service entities that have actively traded stock and therefore have readily determinable fair values. As a result, these investments are carried at fair value based on the quoted share prices. As of December 31, 2023, the carrying values of these investments, which are recorded within other assets on the Company's consolidated statements of financial condition, were immaterial. As of December 31, 2022, the carrying values of these investments were $41 million. During the year ended December 31, 2023, the Company recognized an immaterial net loss on the consolidated statements of income related to these investments. The Company recognized a net loss of $214 million during the year ended December 31, 2022. The Company recognized a net gain of approximately $423 million during the year ended December 31, 2021.

4. Loan Receivables

The Company has two loan portfolio segments: credit card loans and other loans.

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

	December 31,	
	2023	**2022**
Credit card loans[(1)(2)]	$ 102,259	$ 90,113
Other loans[(3)]		
Private student loans[(4)]	10,352	10,308
Personal loans	9,852	7,998
Other loans	5,946	3,701
Total other loans	26,150	22,007
Total loan receivables	128,409	112,120
Allowance for credit losses	(9,283)	(7,374)
Net loan receivables	$ 119,126	$ 104,746

(1) Amounts include carrying values of $14.8 billion and $13.5 billion underlying investors' interest in trust debt at December 31, 2023 and 2022, respectively, and $15.6 billion and $12.2 billion in seller's interest at December 31, 2023 and 2022, respectively. See Note 5: Credit Card and Private Student Loan Securitization Activities for additional information.

(2) Unbilled accrued interest receivable on credit card loans, which is presented as part of other assets in the Company's consolidated statements of financial condition, was $753 million and $611 million at December 31, 2023 and 2022, respectively.

(3) Accrued interest receivable on private student, personal and other loans, which is presented as part of other assets in the Company's consolidated statements of financial condition, was $522 million, $69 million and $21 million, respectively, at December 31, 2023 and $468 million, $49 million and $11 million, respectively, at December 31, 2022.

(4) Private student loans in repayment were $6.3 billion and $6.0 billion at December 31, 2023 and 2022, respectively.

Credit Quality Indicators

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 and information from credit bureaus, such as FICO or other credit scores, relating to the customer's broader credit performance. The Company actively monitors key credit quality indicators, including FICO scores and delinquency status, for credit card, private student and personal loans. These indicators are important to understand the overall credit performance of the Company's customers and their ability to repay.

FICO scores are generally obtained at the origination of the account and are refreshed monthly or quarterly thereafter to assist in predicting customer behavior. Historically, the Company has noted that accounts with FICO scores below 660 have larger delinquencies and credit losses than those with higher credit scores.

The following table provides the distribution of the amortized cost basis (excluding accrued interest receivable presented in other assets) by the most recent FICO scores available for the Company's customers for credit card, private student and personal loan receivables (dollars in millions):

	Credit Risk Profile by FICO Score					
	December 31,					
	2023				2022	
	660 and Above		Less than 660 or No Score		660 and Above	
	$	%	$	%	$	%
Credit card loans	$ 82,238	80 %	$ 20,021	20 %	$ 73,827	82 %
Private student loans by origination year[(1)]						
2023	$ 1,010	94 %	$ 69	6 %		
2022	1,495	95 %	85	5 %	$ 1,172	94 %
2021	1,468	94 %	91	6 %	1,668	95 %
2020	1,180	94 %	75	6 %	1,365	95 %
2019	1,039	93 %	76	7 %	1,221	95 %
Prior	3,498	93 %	266	7 %	4,306	94 %
Total private student loans	$ 9,690	94 %	$ 662	6 %	$ 9,732	94 %
Personal loans by origination year						
2023	$ 5,149	98 %	$ 100	2 %		
2022	2,604	93 %	187	7 %	$ 4,270	98 %
2021	1,049	92 %	91	8 %	1,958	96 %
2020	355	92 %	29	8 %	790	95 %
2019	169	88 %	22	12 %	444	92 %
Prior	78	80 %	19	20 %	249	86 %
Total personal loans	$ 9,404	95 %	$ 448	5 %	$ 7,711	96 %

(1) FICO score represents the higher credit score of the cosigner or borrower.

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 amortized cost basis (excluding accrued interest receivable presented in other assets) of delinquent loans in the Company's loan portfolio is shown below for credit card, private student and personal loan receivables (dollars in millions):

	December 31,					
	2023			2022		
	30-89 Days Delinquent	90 or More Days Delinquent	Total Past Due	30-89 Days Delinquent	90 or More Days Delinquent	Total Past Due
Credit card loans	$ 2,038	$ 1,917	$ 3,955	$ 1,250	$ 1,028	$ 2,278
Private student loans by origination year[(1)]						
2023	$ —	$ —	$ —			
2022	7	2	9	$ —	$ —	$ —
2021	18	6	24	6	1	7
2020	20	7	27	14	3	17
2019	24	9	33	19	5	24
Prior	132	46	178	128	36	164
Total private student loans	$ 201	$ 70	$ 271	$ 167	$ 45	$ 212
Personal loans by origination year						
2023	$ 26	$ 8	$ 34			
2022	44	16	60	$ 12	$ 3	$ 15
2021	20	8	28	15	6	21
2020	7	2	9	8	2	10
2019	5	2	7	6	2	8
Prior	2	3	5	6	3	9
Total personal loans	$ 104	$ 39	$ 143	$ 47	$ 16	$ 63

(1) Private 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. During a deferment period, these loans do not advance into delinquency.

Allowance for Credit Losses

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

	For the Year Ended December 31, 2023				
	Credit Card Loans	Private Student Loans	Personal Loans	Other Loans	Total Loans
Balance at December 31, 2022	$ 5,883	$ 839	$ 595	$ 57	$ 7,374
Cumulative effect of ASU No. 2022-02 adoption[1]	(66)	—	(2)	—	(68)
Balance at January 1, 2023	5,817	839	593	57	7,306
Additions					
Provision for credit losses[2]	5,476	152	363	28	6,019
Deductions					
Charge-offs	(4,481)	(155)	(290)	(1)	(4,927)
Recoveries	807	22	56	—	885
Net charge-offs	(3,674)	(133)	(234)	(1)	(4,042)
Balance at December 31, 2023	$ 7,619	$ 858	$ 722	$ 84	$ 9,283

	For the Year Ended December 31, 2022				
	Credit Card Loans	Private Student Loans	Personal Loans	Other Loans	Total Loans
Balance at December 31, 2021	$ 5,273	$ 843	$ 662	$ 44	$ 6,822
Additions					
Provision for credit losses[2]	2,233	99	24	13	2,369
Deductions					
Charge-offs	(2,417)	(126)	(159)	—	(2,702)
Recoveries	794	23	68	—	885
Net charge-offs	(1,623)	(103)	(91)	—	(1,817)
Balance at December 31, 2022	$ 5,883	$ 839	$ 595	$ 57	$ 7,374

	For the Year Ended December 31, 2021				
	Credit Card Loans	Private Student Loans	Personal Loans	Other Loans	Total Loans
Balance at December 31, 2020	$ 6,491	$ 840	$ 857	$ 38	$ 8,226
Additions					
Provision for credit losses[2]	229	67	(75)	6	227
Deductions					
Charge-offs	(2,255)	(89)	(190)	—	(2,534)
Recoveries	808	25	70	—	903
Net charge-offs	(1,447)	(64)	(120)	—	(1,631)
Balance at December 31, 2021	$ 5,273	$ 843	$ 662	$ 44	$ 6,822

(1) Represents the adjustment to the allowance for credit losses as a result of the adoption of ASU No. 2020-02 on January 1, 2023, which eliminated the requirement to apply discounted cash flow measurements for certain troubled debt restructurings.

(2) Excludes a $1 million, $10 million and $9 million adjustment to the liability for expected credit losses on unfunded commitments for the years ended December 31, 2023, 2022 and 2021, respectively, as the liability is recorded in accrued expenses and other liabilities in the Company's consolidated statements of financial condition.

The allowance for credit losses was approximately $9.3 billion at December 31, 2023, which reflects a $1.9 billion build from the amount of the allowance for credit losses at December 31, 2022. The build in the allowance for credit losses between December 31, 2023 and December 31, 2022, was primarily driven by loan growth, increasing delinquencies, and macroeconomic variables impacting household cash flows.

The allowance estimation process begins with a loss forecast that uses certain macroeconomic variables and multiple macroeconomic scenarios among its inputs. In estimating the allowance at December 31, 2023, the Company used a macroeconomic forecast that projected the following weighted average amounts: (i) unemployment rate ending 2024 at 4.17% and, within the Company's reasonable and supportable period, peaking at 4.26% in the second quarter of 2025 and (ii) 1.36% growth rate in real gross domestic product in 2024.

In estimating expected credit losses, the Company considered the uncertainties associated with borrower behavior and payment trends, as well as recent and expected macroeconomic conditions, such as high consumer price inflation and the fiscal and monetary policy responses to that inflation. The Federal Reserve raised its federal funds rate target range substantially during 2022 and the first three quarters of 2023 in an effort to slow economic growth and reduce inflation. Although real GDP growth and labor market conditions have exceeded most economists' expectations this year, restrictive monetary policy, as manifested in relatively high interest rates, typically precedes weaker consumer credit conditions caused by rising unemployment as economic growth slows. Credit performance in the Company's lending portfolios has evolved in line with its expectations this year, but may weaken if the economy fails to avert a recession in response to tighter credit conditions or other factors. The Company assessed the prospects for various macroeconomic outcomes in setting its allowance for credit losses.

The forecast period the Company deemed to be reasonable and supportable was 18 months for all periods presented. The 18 months reasonable and supportable forecast period was deemed appropriate given the current economic conditions. For all periods presented, the Company determined that a reversion period of 12 months was appropriate for the same reason. The Company applied a weighted reversion method to provide a more reasonable transition to historical losses for all loan products for all periods presented.

The net charge-offs for credit card loans, private student loans and personal loans increased for the year ended December 31, 2023, when compared to the year ended December 31, 2022, primarily due to portfolio seasoning.

Net charge-offs of principal are recorded against the allowance for credit 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,		
	2023	2022	2021
Interest and fees accrued subsequently charged off, net of recoveries (recorded as a reduction of interest income)	$ 681	$ 303	$ 286
Fees accrued subsequently charged off, net of recoveries (recorded as a reduction to other income)	$ 192	$ 100	$ 75

Gross principal charge-offs of the Company's loan portfolio are presented in the table below, on a year-to-date basis, for credit card, private student and personal loan receivables (dollars in millions):

	For the Twelve Months Ended December 31, 2023
Credit card loans	$ 4,481
Private student loans by origination year	
2023	$ —
2022	4
2021	17
2020	21
2019	24
Prior	89
Total private student loans	$ 155
Personal loans by origination year	
2023	$ 19
2022	119
2021	81
2020	33
2019	24
Prior	14
Total personal loans	$ 290

Delinquent and Non-Accruing Loans

The amortized cost basis (excluding accrued interest receivable presented in other assets) of delinquent and non-accruing loans in the Company’s loan portfolio is shown below for each class of loan receivables (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[(2)]
December 31, 2023					
Credit card loans	$ 2,038	$ 1,917	$ 3,955	$ 1,881	$ 197
Other loans					
Private student loans	201	70	271	69	8
Personal loans	104	39	143	37	11
Other loans	39	19	58	3	53
Total other loans	344	128	472	109	72
Total loan receivables	$ 2,382	$ 2,045	$ 4,427	$ 1,990	$ 269
December 31, 2022					
Credit card loans	$ 1,250	$ 1,028	$ 2,278	$ 1,003	$ 176
Other loans					
Private student loans	167	45	212	45	8
Personal loans	47	16	63	16	7
Other loans	13	12	25	1	23
Total other loans	227	73	300	62	38
Total loan receivables	$ 1,477	$ 1,101	$ 2,578	$ 1,065	$ 214

(1)

(1) The payment status of both modified and unmodified loans is included in this table.

(2) The Company estimates that the gross interest income that would have been recorded under the original terms of non-accruing credit card loans was $37 million, $23 million and $28 million for the years ended December 31, 2023, 2022 and 2021, respectively. The Company does not separately track the amount of gross interest income that would have been recorded under the original terms of loans. Instead, the Company estimated this amount based on customers’ current balances and most recent interest rates.

Loan Modifications to Borrowers Experiencing Financial Difficulty

The Company has internal loan modification programs that provide relief to credit card, private student and personal 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, through third party consumer credit counseling agencies, are also available for credit card and personal loans. Those programs feature interest rate reductions, payment delays, term extensions, or a combination thereof.

For credit card customers, the Company offers both temporary and permanent hardship programs. The temporary hardship programs consist of an interest rate reduction lasting for a period no longer than 12 months. Charging privileges on these accounts are generally suspended while in the program. However, if the customer meets certain criteria, charging privileges may be reinstated following completion of the program.

The permanent modification program involves closing the account, changing the structure of the loan to a fixed payment loan with a maturity no longer than 72 months and reducing the interest rate on the loan. The permanent modification program does not typically 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, typically continue to be subject to the original minimum payment terms and do not normally include waiver of unpaid principal, interest or fees.

To assist private student loan borrowers who are experiencing temporary financial difficulties but are willing to resume making payments, the Company has offered a payment delay (in the form of hardship forbearance or temporary payment reduction), or a payment delay (in the form of a temporary payment reduction) combined with a temporary interest rate reduction. During 2023, programs were offered up to six consecutive months at one time with a lifetime usage cap, most commonly, of 12 months.

For personal loan customers, the Company offers various payment programs, including temporary and permanent programs, in certain situations. The temporary programs normally consist of reducing the minimum payment for no longer than 12 months and, in certain circumstances, the interest rate on the loan is reduced. The permanent programs involve extending the loan term and, in certain circumstances, reducing the interest rate on the loan. The total term of the loan, including modification, 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.

In addition to the programs described above, the Company will in certain cases accept partial payment in full satisfaction of the outstanding receivable. This is a form of principal forgiveness also known as a settlement. The difference between the loan balance and the amount received in settlement is recorded as a charge-off.

The Company monitors borrower performance after using payment programs or forbearance. The Company believes the programs are useful in assisting customers experiencing financial difficulties and allowing them to make timely payments. In addition to helping customers with their credit needs, these programs are designed to maximize collections and ultimately the Company’s profitability. The Company plans to continue to use payment programs to provide relief to customers experiencing financial difficulties.

ASU No. 2022-02, Financial Instruments—Credit Losses (Topic 326): Troubled Debt Restructurings and Vintage Disclosures, became effective for the Company on January 1, 2023. The new guidance eliminated Subtopic 310-40, Troubled Debt Restructurings, and implemented enhanced disclosure requirements regarding loan modifications to borrowers experiencing financial difficulty. The new disclosures are required to be applied on a prospective basis. There will be no comparative disclosures to prior periods until such time as both periods disclosed are subject to the new guidance.

The following table provides the period-end amortized cost basis, by modification category, of loans to borrowers experiencing financial difficulty that entered a modification program during the period (dollars in millions). Some of the loans presented in the table below may no longer be enrolled in a program at period-end:

	For the Twelve Months Ended December 31,	
	2023	
Credit card loans[1][2]		
Interest rate reduction	$ 2,330	
Total credit card loans[3]	$ 2,330	
% of total class of financing receivables	2.28	%
Private student loans[1]		
Payment delay[4]	$ 33	
Interest rate reduction and payment delay[4]	143	
Total private student loans[3]	$ 176	
% of total class of financing receivables	1.70	%
Personal loans[1]		
Payment delay[4]	$ 10	
Term extension[5]	29	
Interest rate reduction and payment delay[4]	65	
Interest rate reduction and term extension[5]	29	
Total personal loans[3]	$ 133	
% of total class of financing receivables	1.35	%

(1) Accrued interest receivable (including unbilled accrued interest receivable for credit card loans) on modified loans to borrowers experiencing financial difficulty, which is presented as part of other assets in the Company's condensed consolidated statements of financial condition, was immaterial at December 31, 2023.

(2) Accounts that entered a credit card loan modification program include $408 million that were converted from revolving line-of-credit arrangements to term loans during the year ended December 31, 2023.

(3) For settlements, the amortized cost basis is zero at period-end and therefore there is no amount reported for principal forgiveness in the table above. See financial effects table below for principal forgiveness to borrowers experiencing financial difficulty.

(4) The Company defines a payment delay as a temporary reduction in payments below the original contractually required payment amounts (e.g., interest only payments). The Company's credit card loan modification programs do not result in an other than insignificant delay in payment.

(5) The Company defines term extensions as only those modifications for which the maturity date is extended beyond the original contractual maturity date by virtue of a change in terms other than a payment delay as defined above. Modifications to credit card loans are not considered term extensions because credit card loans do not have a fixed repayment term.

The only non-cancellable commitments the Company has to lend additional funds to borrowers experiencing financial difficulty relate to certain private student loans. As of December 31, 2023, the amount of such commitments associated with loans modified during the periods presented was immaterial.

The following table provides information on the financial effects of loan modifications to borrowers experiencing financial difficulty, by modification type, made during the period (dollars in millions):

	For the Twelve Months Ended December 31, 2023
Credit card loans	
Weighted-average interest rate reduction	13.85 %
Principal forgiven	$ 121
Interest and fees forgiven[(1)]	$ 117
Private student loans	
Weighted-average interest rate reduction	8.91 %
Payment delay duration (in months)[(2)]	6 to 12
Principal forgiven	$ —
Personal loans	
Weighted-average interest rate reduction	12.28 %
Weighted-average term extension (in months)	39
Payment delay duration (in months)[(2)]	6 to 12
Principal forgiven	$ —

(1) Represents the amount of interest and fees forgiven resulting from accounts entering into a credit card loan modification program and pre-charge off settlements. Interest and fees forgiven are reversed against the respective line items in the consolidated statements of income.

(2) During 2023, private student loan payment delays were offered up to six consecutive months at one time with a lifetime usage cap, most commonly, of 12 months. For personal loan payment delays, the Company limits this assistance to a life of loan maximum of 12 months.

Loan receivables that have been modified are subject to the same requirements for the accrual of expected credit loss over their expected remaining lives as for unmodified loans. The allowance for credit losses incorporates modeling of historical loss data and thereby captures the higher risk associated with modified loans to borrowers experiencing financial difficulty based on their account attributes.

The following table presents the payment status and period-end amortized cost basis, by class of loan receivable, of loans that were modified on or after January 1, 2023 to borrowers experiencing financial difficulty (dollars in millions):[(1)]

	Current	30-89 Days Delinquent	90 or More Days Delinquent
At December 31, 2023			
Credit card loans	$ 1,882	$ 252	$ 196
Private student loans	147	18	8
Personal loans	109	20	4
Total	$ 2,138	$ 290	$ 208

(1) This table includes any loan that entered a modification program during the period without regard to whether it remained in a modification program as of the reporting date.

The following table presents the defaulted amount and period-end amortized cost basis, by modification category, of loans that defaulted during the period and were modified on or after January 1, 2023 through the end of the reporting period to borrowers experiencing financial difficulty (dollars in millions):

	For the Twelve Months Ended December 31, 2023	
	Defaulted Amount[(1)]	Period-end Amortized Cost Basis
Credit card loans		
Interest rate reduction	$ 383	$ 210
Total credit card loans	$ 383	$ 210
Private student loans		
Payment delay	$ 5	$ 4
Interest rate reduction and payment delay	20	17
Total private student loans	$ 25	$ 21
Personal loans		
Payment delay	$ 2	$ 1
Term extension	4	2
Interest rate reduction and payment delay	10	2
Interest rate reduction and term extension	7	3
Total personal loans	$ 23	$ 8

(1) For purposes of this disclosure, a loan is considered to be defaulted when it is 60 days or more delinquent at month end and has advanced two stages of delinquency subsequent to modification. Loans that entered a modification program in any stage of delinquency but did not experience a further payment default are included in the payment status table above but are not counted as defaulted for purposes of this disclosure.

Troubled Debt Restructurings (Prior to 2023)

Prior to the adoption of ASU 2022-02, the Company considered a modified loan in which a concession had been granted to the borrower to be a TDR based generally on the cumulative length of the concession period and credit quality of the borrower. Due to differences between the legacy TDR requirements and current loan modification disclosure requirements, information presented in the disclosures below is not directly comparable to the disclosures under the current guidance.

To evaluate the primary financial effects that resulted from credit card loans entering into a TDR program during the year ended December 31, 2022, the Company quantified the amount by which interest and fees were reduced during the periods. During the year ended December 31, 2022, the Company forgave approximately $29 million of interest and fees resulting from accounts entering into a credit card loan TDR program.

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

	For the Year Ended December 31, 2022	
	Number of Accounts	Balances
Accounts that entered a TDR program during the period		
Credit card loans[1]	237,339	$ 1,545
Private student loans	6,841	$ 127
Personal loans	6,303	$ 86

(1) Accounts that entered a credit card TDR program include $322 million that were converted from revolving line-of-credit arrangements to term loans during the year ended December 31, 2022.

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

	For the Year Ended December 31, 2022	
	Number of Accounts	Aggregated Outstanding Balances Upon Default
TDRs that subsequently defaulted		
Credit card loans[(1)(2)]	28,231	$ 141
Private student loans[(3)]	1,145	$ 22
Personal loans[(2)]	1,140	$ 20

(1) For credit card loans that default from a temporary loan modification program, accounts revert back to the pre-modification terms and charging privileges remain suspended in most cases.

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

(3) For student loans, a customer defaults from a loan modification after they 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 year ended December 31, 2022, approximately 65%, of the total balances were charged off at the end of the month in which they defaulted from a TDR program. For the year ended December 31, 2022, for accounts that had defaulted from a TDR program and had not been subsequently charged off, the balances were included in the allowance for credit loss analysis.

Geographical Distribution of Loans

The Company originated credit card loans throughout the U.S. The geographic distribution of the Company’s credit card loan receivables was as follows (dollars in millions):

	December 31,			
	2023		2022	
	$	%	$	%
Texas	$ 9,150	8.9 %	$ 7,996	8.9 %
California	9,078	8.9	7,888	8.7
Florida	7,496	7.3	6,465	7.2
New York	6,538	6.4	5,895	6.5
Illinois	5,012	4.9	4,528	5.0
Pennsylvania	4,985	4.9	4,484	5.0
Ohio	4,188	4.1	3,759	4.2
New Jersey	3,499	3.4	3,127	3.5
Georgia	3,294	3.2	2,849	3.2
Michigan	2,821	2.8	2,521	2.8
Other	46,198	45.2	40,601	45.0
Total credit card loans	$ 102,259	100.0 %	$ 90,113	100.0 %

The Company originated private student, personal and other loans throughout the U.S. The geographic distribution of private student, personal and other loan receivables was as follows (dollars in millions):

	December 31,			
	2023		2022	
	$	%	$	%
California	$ 2,449	9.4 %	$ 2,015	9.2 %
New York	2,074	7.9	1,900	8.6
Texas	1,987	7.6	1,595	7.2
Florida	1,607	6.1	1,248	5.7
Pennsylvania	1,567	6.0	1,431	6.5
Illinois	1,405	5.4	1,247	5.7
New Jersey	1,285	4.9	1,114	5.1
Ohio	975	3.7	849	3.9
Georgia	851	3.3	647	3.0
Virginia	778	3.0	654	2.8
Other	11,172	42.7	9,307	42.3
Total other loans	$ 26,150	100.0 %	$ 22,007	100.0 %

5. Credit Card and Private Student Loan Securitization Activities

The Company's securitizations are accounted for as secured borrowings and the related trusts are treated as consolidated subsidiaries of the Company. For a description of the Company's principles of consolidation with respect to VIEs, see Note 1: Background and Basis of Presentation.

Credit Card Securitization Activities

The Company accesses the term asset securitization market through DCMT and DCENT. Credit card loan receivables are transferred into DCMT and beneficial interests in DCMT are transferred into DCENT. DCENT issues debt securities to investors that are reported primarily in long-term borrowings.

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. 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. Wholly-owned subsidiaries of Discover Bank hold the subordinated classes of notes. The Company is exposed to credit risk associated with trust receivables as of the balance sheet date through the retention of these subordinated interests. The estimate of expected credit losses on trust receivables is included in the allowance for credit losses estimate.

The Company's retained interests in the trust's assets, consisting of investments in DCENT notes held by subsidiaries of Discover Bank, constitute intercompany positions that 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 trust's creditors. Further, the transferred credit card loan receivables are owned by the trust and are not available to the Company's third-party creditors. The trusts have ownership of cash balances, the amounts of which are reported in restricted cash within the Company’s consolidated statements of financial condition. Except for the seller’s interest in trust receivables, the Company’s interests in trust assets are generally subordinate to the interests of third-party investors in trust debt and, as such, may not be realized by the Company if needed to absorb deficiencies in cash flows that are allocated to those investors. 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.

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 following table (dollars in millions):

	December 31,	
	2023	2022
Restricted cash	$ 36	$ 33
Investors' interests held by third-party investors	11,725	10,200
Investors' interests held by wholly-owned subsidiaries of Discover Bank	3,117	3,341
Seller's interest	15,598	12,220
Loan receivables(1)	30,440	25,761
Allowance for credit losses allocated to securitized loan receivables(1)	(1,347)	(1,152)
Net loan receivables	29,093	24,609
Other assets	2	2
Carrying value of assets of consolidated variable interest entities	$ 29,131	$ 24,644

(1) The Company maintains its allowance for credit losses at an amount equal to lifetime expected credit losses associated with all loan receivables, which includes all loan receivables in the trusts. Therefore, the credit risk associated with the transferred receivables is fully reflected on the Company's statements of financial condition in accordance with GAAP.

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 in the securities, there are certain features or triggering events that will cause an early amortization of the debt securities, including triggers related to the impact of the performance of the trust receivables on the availability and adequacy of cash flows to meet contractual requirements. As of December 31, 2023, no economic or other early amortization events have occurred.

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.

Private Student Loan Securitization Activities

The Company's private student loan trust receivables reported in loan receivables and the related debt issued by the trust reported in long-term borrowings were immaterial as of December 31, 2023 and 2022. The amounts are included, together with amounts related to the Company's credit card securitizations, in the supplemental information about assets and liabilities of consolidated variable interest entities, which is presented with the Company's consolidated statements of financial condition.

6. Premises and Equipment

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

	December 31,	
	2023	2022
Land	$ 37	$ 37
Buildings and improvements	605	587
Furniture, fixtures and equipment	1,155	1,111
Software	1,305	1,125
Premises and equipment	3,102	2,860
Less: accumulated depreciation	(1,409)	(1,339)
Less: accumulated amortization of software	(602)	(518)
Premises and equipment, net	$ 1,091	$ 1,003

Depreciation expense was $74 million, $80 million and $86 million for the years ended December 31, 2023, 2022 and 2021, respectively. Amortization expense on capitalized software was $113 million, $114 million and $103 million for the years ended December 31, 2023, 2022 and 2021, respectively.

7. Goodwill

As of December 31, 2023 and 2022, the Company had goodwill of $255 million related to PULSE, which is part of the Payment Services segment. The Company conducted its annual goodwill impairment test as of October 1, 2023 and 2022 and no impairments were identified.

8. Deposits

The Company obtains deposits from consumers directly or through affinity relationships ("direct-to-consumer deposits"). Additionally, the Company obtains deposits through third-party securities brokerage firms that offer the Company's deposits to their customers ("brokered deposits"). Direct-to-consumer deposit products include savings accounts, certificates of deposit, money market accounts, IRA savings accounts, IRA certificates of deposit and checking accounts. Brokered deposit products include certificates of deposit and sweep accounts.

Customer deposits held with Discover Bank are currently insured for up to $250,000 per account holder through the Federal Deposit Insurance Corporation ("FDIC"). Uninsured deposits are the portion of deposit accounts in U.S. offices that exceed the FDIC insurance limit or similar state deposit insurance regime, and amounts in any other uninsured investment or deposit accounts that are classified as deposits and not subject to any federal or state deposit insurance regime. At December 31, 2023 and 2022, Discover Bank had approximately $7.0 billion and $8.9 billion of uninsured deposits, respectively, a portion of which comprise intercompany deposits. The decrease in uninsured deposits reported was primarily driven by leveraging technological capabilities, beginning in the first quarter of 2023, enabling improved application of deposit account ownership attributes in deriving this amount. The amounts of uninsured deposits above were estimated based on the same methodologies and assumptions used for Discover Bank's regulatory reporting at each respective balance sheet date.

The following table summarizes certificates of deposit in uninsured accounts and accounts that are in excess of the FDIC insurance limit by time remaining until maturity (dollars in millions):

	At December 31, 2023
Three months or less	$ 146
Over three months through six months	73
Over six months through twelve months	368
Over twelve months	293
Total	$ 880

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

	At December 31, 2023
2024	$ 25,561
2025	8,153
2026	4,129
2027	4,347
2028	2,144
Thereafter	906
Total	$ 45,240

9. 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,				
	2023				2022
	Maturity	Interest Rate	Weighted-Average Interest Rate	Outstanding Amount	Outstanding Amount
Securitized Debt					
Fixed-rate asset-backed securities[1]	2024-2026	0.58% - 5.03%	3.17%	$ 10,003	$ 8,401
Floating-rate asset-backed securities[2]	2024	6.08%	6.08%	925	1,774
Total Discover Card Master Trust I and Discover Card Execution Note Trust				10,928	10,175
Floating-rate asset-backed security[3][4]	2031	9.50%	9.50%	65	84
Total private student loan securitization trust				65	84
Total long-term borrowings - owed to securitization investors				10,993	10,259
Discover Financial Services (Parent Company)					
Fixed-rate senior notes	2024-2032	3.75% - 6.70%	4.68%	3,336	3,333
Fixed-rate retail notes	2025-2031	3.25% - 4.40%	3.82%	140	154
Fixed to floating-rate senior notes[5]	2034	7.96%	7.96%	993	—
Discover Bank					
Fixed-rate senior bank notes[1]	2024-2030	2.45% - 4.65%	3.53%	3,571	5,348
Fixed-rate subordinated bank notes	2028	5.97%	5.97%	500	489
Fixed-rate Federal Home Loan Bank advances	2030	4.77% - 4.82%	4.82%	523	—
Floating-rate Federal Home Loan Bank advances[6]	2024	5.55% - 5.65%	5.65%	525	525
Total long-term borrowings				$ 20,581	$ 20,108

(1) The Company uses interest rate swaps to hedge portions of these long-term borrowings against changes in fair value attributable to changes in the applicable benchmark interest rates. The use of these interest rate swaps impacts the carrying value of the debt. See Note 21: Derivatives and Hedging Activities.

(2) DCENT floating-rate asset-backed securities include issuances with the following interest rate terms: 1-month Term SOFR + 0.11448% Tenor Spread Adjustment + 60 basis points as of December 31, 2023.

(3) The private student loan securitization trust floating-rate asset-backed security includes an issuance with the following interest rate term: Prime rate + 100 basis points as of December 31, 2023.

(4) Repayment of this debt is dependent upon the timing of principal and interest payments on the underlying private student loans. The date shown represents the final maturity date.

(5) The fixed to floating-rate senior notes include a rate reset on November 2, 2033, to a floating rate based on compounded SOFR + 3.370%.

(6) The floating-rate FHLB advances include interest rate terms based on SOFR plus a spread ranging from 16 to 26 basis points as of December 31, 2023.

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

	At December 31, 2023
2024	$ 4,251
2025	6,146
2026	4,912
2027	1,001
2028	1,439
Thereafter	2,832
Total	$ 20,581

As a member of the FHLB of Chicago, the Company has access to both short- and long-term advance structures with maturities ranging from overnight to 30 years. As of December 31, 2023, the Company had total committed borrowing capacity of $3.6 billion based on the amount and type of assets pledged, of which the outstanding balance was comprised of $1.0 billion in long-term advances. As of December 31, 2022, the Company had total committed borrowing capacity of $2.2 billion, of which the outstanding balance was comprised solely of a $525 million long-term advance. These advances are presented as short- or long-term borrowings on the consolidated statements of financial condition based on the contractual maturity at origination.

Additionally, the Company has access to committed borrowing capacity through private securitizations to support the funding of its credit card loan receivables. As of December 31, 2023, the total commitment of secured credit facilities through private providers was $3.5 billion, $750 million of which was outstanding as a short-term advance. This advance is presented as short-term borrowings on the consolidated statements of financial condition. As of December 31, 2022, the total commitment of secured credit facilities through private providers was $3.5 billion, none of which was drawn. Access to the unused portions of the secured credit facilities is subject to the terms of the agreements with each of the providers. The secured credit facilities have various expirations in 2025. Borrowings outstanding under each facility bear interest at a margin above the Term Secured Overnight Financing Rate ("SOFR") or the asset-backed commercial paper costs of each 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.

10. 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. Effective May 11, 2023, the Discover Financial Services Amended and Restated 2014 Omnibus Incentive Plan (the "2014 Omnibus Plan") was replaced with the Discover Financial Services 2023 Omnibus Incentive Plan (the "2023 Omnibus Plan"). Subject to adjustments for certain transactions in the 2023 Omnibus Plan, the total number of shares that may be granted is 18 million shares reduced by the number of shares granted under the 2014 Omnibus Plan. 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 million 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 one of the following: 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 $170,000 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 in full on the earlier of the one year anniversary of the date of grant or immediately prior to the first annual meeting of shareholders following 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.

Table of Contents

Stock-Based Compensation

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

	For the Years Ended December 31,		
	2023	2022	2021
RSUs	$ 69	$ 58	$ 46
PSUs(1)	5	31	57
Total stock-based compensation expense	$ 74	$ 89	$ 103
Income tax benefit	$ 18	$ 16	$ 15

(1) Total PSU expense for the year ended December 31, 2021, includes an incremental $1 million, representing a modification to the 2019 PSU award. The nature of the modification was to adjust the payout to compensate for the 2020 current expected credit loss ("CECL") adoption impact on earnings per share ("EPS").

RSUs

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

	Number of Units	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
RSUs at December 31, 2022	1,938,283		$ 190
Granted	728,993		
Conversions to common stock	(626,780)		
Forfeited	(96,379)		
RSUs at December 31, 2023	1,944,117	0.85	$ 219
Vested and convertible RSUs at December 31, 2023	664,962	0.00	$ 75

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, 2022[1)]	1,059,683	$ 107.47
Granted	728,993	$ 104.20
Vested	(534,603)	$ 103.95
Forfeited	(96,379)	$ 109.43
Unvested RSUs at December 31, 2023[(1)]	1,157,694	$ 106.87

(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.

Table of Contents

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,		
	2023	2022	2021
Intrinsic value of RSUs converted to common stock	$ 68	$ 59	$ 62
Grant-date fair value of RSUs vested	$ 56	$ 41	$ 47
Weighted-average grant-date fair value of RSUs granted	$ 104.20	$ 116.50	$ 101.47

As of December 31, 2023, there was $46 million of total unrecognized compensation cost related to non-vested RSUs. The cost is expected to be recognized over a weighted-average period of 0.86 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	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
PSUs at December 31, 2022(1)	716,472	$ 99.21		$ 70
Granted	384,085	$ 110.70		
Conversions to common stock	(406,543)	$ 85.34		
Forfeited	(113,337)	$ 109.55		
PSUs at December 31, 2023(1)(2)(3)(4)	580,677	$ 108.56	0.98	$ 65

(1) All PSUs outstanding at December 31, 2023 and December 31, 2022, are unvested PSUs.

(2) Includes 227,082 PSUs granted in 2021 that are earned based on the Company's cumulative EPS as measured over the three-year performance period, which ended December 31, 2023, and are subject to the requisite service period, which ended February 1, 2024.

(3) Includes 187,128 PSUs granted in 2022 that are earned based on the Company's cumulative EPS as measured over the three-year performance period, which ends December 31, 2024, and are subject to the requisite service period, which ends February 1, 2025.

(4) Includes 166,467 PSUs granted in 2023 that may be earned based on the Company's cumulative EPS as measured over the three-year performance period, which ends December 31, 2025, and are subject to the requisite service period, which ends February 1, 2026.

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, 2023, 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.

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

	For the Years Ended December 31,		
	2023	**2022**	**2021**
Intrinsic value of PSUs converted to common stock	$ 47	$ 29	$ 15
Grant-date fair value of PSUs vested	$ 35	$ 17	$ 18
Weighted-average grant-date fair value of PSUs granted	$ 110.70	$ 124.01	$ 94.21

As of December 31, 2023, there was $7 million of total unrecognized compensation cost related to non-vested PSUs. The cost is expected to be recognized over a weighted-average period of 1.06 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 and when the underlying shares are issued.

11. 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 (income) is recorded in employee compensation and benefits within the consolidated statements of income. For this plan, the net periodic benefit cost was immaterial for all periods presented.

The Company measures the funded status of the defined benefit pension plan as the difference between the fair value of plan assets and the projected benefit obligation and recognizes that amount as either an asset or liability in the consolidated statements of financial condition as appropriate. For the year ended December 31, 2023, the Company contributed approximately $115 million to the defined benefit pension plan. The over-funded status related to the defined benefit pension plan recorded in other assets was $14 million as of December 31, 2023. The unfunded status related to the defined benefit pension plan recorded in accrued expenses and other liabilities was $101 million as of December 31, 2022. Expected benefit payments from the Discover Pension Plan for each of the next five years range from $27 million and $30 million annually.

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, 2023, 2022 and 2021 was $128 million, $104 million and $97 million, respectively.

12. Common and Preferred Stock

Common Stock Repurchase Program

In April 2022, the Board of Directors approved a share repurchase program authorizing up to $4.2 billion of share repurchases. The program expired on April 18, 2023. In April 2023, the Company's Board of Directors approved a new share repurchase program authorizing the repurchase of up to $2.7 billion of its outstanding shares of common stock. This program expires on June 30, 2024. As reported in the second quarter of 2023, the Company decided to pause share repurchases while an internal review of compliance, risk management and corporate governance is ongoing. See Note 19: Litigation and Regulatory Matters for additional information on the card product misclassification. During the three months ended December 31, 2023, the Company did not repurchase any shares. During the year ended December 31, 2023, the Company repurchased approximately 18.1 million shares for approximately $1.9 billion.

Table of Contents

Preferred Stock

The table below presents a summary of the Company's non-cumulative perpetual preferred stock that is outstanding at December 31, 2023 (dollars in millions, except per depositary share amounts):

Series	Description	Initial Issuance Date	Liquidation Preference and Redemption Price per Depositary Share(1)	Per Annum Dividend Rate in effect at December 31, 2023	Total Depositary S Authorized, Issue Outstanding	
					December 31, 2023	
C(2)(3)(4)	Fixed-to-Floating Rate	10/31/2017	$ 1,000	5.500 %	570,000	
D(2)(5)(6)	Fixed-Rate Reset	6/22/2020	$ 1,000	6.125 %	500,000	
Total Preferred Stock					1,070,000	1,

(1) Redeemable at the redemption price plus declared and unpaid dividends.

(2) Issued as depositary shares, each representing 1/100th interest in a share of the corresponding series of preferred stock. Each preferred share has a par value of $0.01.

(3) Redeemable at the Company’s option, subject to regulatory approval, either (i) in whole or in part on any dividend payment date on or after October 30, 2027, or (ii) in whole but not in part, at any time within 90 days following a regulatory capital treatment event (as defined in the certificate of designations for the Series C preferred stock).

(4) Any dividends declared are payable semi-annually in arrears at a rate of 5.50% per annum until October 30, 2027. Thereafter, dividends declared will be payable quarterly in arrears at a floating rate equal to 3-month Term SOFR plus a spread of 3.338% per annum.

(5) Redeemable at the Company’s option, subject to regulatory approval, either (i) in whole or in part during the three-month period prior to, and including, each reset date (as defined in the certificate of designations for the Series D preferred stock) or (ii) in whole but not in part, at any time within 90 days following a regulatory capital treatment event (as defined in the certificate of designations for the Series D Preferred Stock).

(6) Any dividends declared are payable semi-annually in arrears at a rate of 6.125% per annum until September 23, 2025, after which the dividend rate will reset every 5 years to a fixed annual rate equal to the 5-year Treasury plus a spread of 5.783%.

13. Accumulated Other Comprehensive Income

Changes in each component of AOCI were as follows (dollars in millions):

	Unrealized (Losses) Gains on Available-for-Sale Investment Securities, Net of Tax	Losses on Cash Flow Hedges, Net of Tax	Losses on Pension Plan, Net of Tax	AOCI
For the Year Ended December 31, 2023				
Balance at December 31, 2022	$ (136)	$ (14)	$ (189)	$ (339)
Net change	99	6	9	114
Balance at December 31, 2023	$ (37)	$ (8)	$ (180)	$ (225)
For the Year Ended December 31, 2022				
Balance at December 31, 2021	$ 114	$ (9)	$ (199)	$ (94)
Net change	(250)	(5)	10	(245)
Balance at December 31, 2022	$ (136)	$ (14)	$ (189)	$ (339)
For the Year Ended December 31, 2021				
Balance at December 31, 2020	$ 284	$ (12)	$ (227)	$ 45
Net change	(170)	3	28	(139)
Balance at December 31, 2021	$ 114	$ (9)	$ (199)	$ (94)

The following table 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 (Expense) Benefit	Net of Tax
For the Year Ended December 31, 2023			
Available-for-Sale Investment Securities			
Net unrealized holding gains arising during the period	$ 131	$ (32)	$ 99
Net change	$ 131	$ (32)	$ 99
Cash Flow Hedges			
Net unrealized losses arising during the period	$ (74)	$ 18	$ (56)
Amounts reclassified from AOCI	82	(20)	62
Net change	$ 8	$ (2)	$ 6
Pension Plan			
Unrealized gains arising during the period	$ 12	$ (3)	$ 9
Net change	$ 12	$ (3)	$ 9
For the Year Ended December 31, 2022			
Available-for-Sale Investment Securities			
Net unrealized holding losses arising during the period	$ (331)	$ 81	$ (250)
Net change	$ (331)	$ 81	$ (250)
Cash Flow Hedges			
Net unrealized losses arising during the period	$ (13)	$ 3	$ (10)
Amounts reclassified from AOCI	4	1	5
Net change	$ (9)	$ 4	$ (5)
Pension Plan			
Unrealized gains arising during the period	$ 13	$ (3)	$ 10
Net change	$ 13	$ (3)	$ 10
For the Year Ended December 31, 2021			
Available-for-Sale Investment Securities			
Net unrealized holding losses arising during the period	$ (226)	$ 56	$ (170)
Net change	$ (226)	$ 56	$ (170)
Cash Flow Hedges			
Net unrealized losses arising during the period	$ (1)	$ 1	$ —
Amounts reclassified from AOCI	3	—	3
Net change	$ 2	$ 1	$ 3
Pension Plan			
Unrealized gains arising during the period	$ 37	$ (9)	$ 28
Net change	$ 37	$ (9)	$ 28

Table of Contents

14. Other Expense

Total other expense includes the following components (dollars in millions):

	For the Years Ended December 31,		
	2023	2022	2021
Fraud losses and other charges	$ 131	$ 149	$ 92
Postage	115	97	91
Credit-related inquiry fees	40	31	24
Supplies	38	35	46
Impairment charges	—	—	95
Other expense	356	228	272
Total other expense	$ 680	$ 540	$ 620

15. Income Taxes

Income tax expense consisted of the following (dollars in millions):

	For the Years Ended December 31,		
	2023	2022	2021
Current			
U.S. federal	$ 1,254	$ 1,465	$ 1,084
U.S. state and local	258	312	204
Total	1,512	1,777	1,288
Deferred			
U.S. federal	(556)	(381)	280
U.S. state and local	(70)	(52)	38
Total	(626)	(433)	318
Income tax expense	$ 886	$ 1,344	$ 1,606

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,		
	2023	2022	2021
U.S. federal statutory income tax rate	21.0 %	21.0 %	21.0 %
U.S. state, local and other income taxes, net of U.S. federal income tax benefits	3.5	3.4	3.2
Tax credits	(2.0)	(1.3)	(1.2)
Other	0.6	0.4	(0.1)
Effective income tax rate	23.1 %	23.5 %	22.9 %

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 Company's consolidated statements of financial condition, were as follows (dollars in millions):

	December 31,	
	2023	2022
Deferred tax assets		
Allowance for credit losses	$ 2,245	$ 1,791
Customer fees and rewards	236	166
Depreciation and software amortization	60	—
Other	203	270
Total deferred tax assets before valuation allowance	2,744	2,227
Valuation allowance	(1)	(1)
Total deferred tax assets, net of valuation allowance	2,743	2,226
Deferred tax liabilities		
Depreciation and software amortization	—	(71)
Deferred loan origination costs	(40)	(48)
Other	(47)	(26)
Total deferred tax liabilities	(87)	(145)
Net deferred tax assets	$ 2,656	$ 2,081

A reconciliation of beginning and ending unrecognized tax benefits is as follows (dollars in millions):

	For the Years Ended December 31,		
	2023	2022	2021
Balance at beginning of period	$ 19	$ 39	$ 56
Additions			
Current year tax positions	4	4	13
Prior year tax positions	—	1	8
Reductions			
Prior year tax positions	(1)	(20)	(14)
Settlements with taxing authorities	(1)	—	(14)
Expired statute of limitations	(3)	(5)	(10)
Balance at end of period(1)	$ 18	$ 19	$ 39

(1) For the years ended December 31, 2023, 2022 and 2021, amounts included $18 million, $18 million and $37 million, respectively, of unrecognized tax benefits, which, if recognized, would favorably affect the effective tax rate.

The Company recognizes accrued interest and penalties related to unrecognized tax benefits as a component of income tax expense. Interest and penalties related to unrecognized tax benefits were $2 million for the years ended December 31, 2023 and 2022.

The Company is subject to examination by the Internal Revenue Service and tax authorities in various state, local and foreign tax jurisdictions. The Company's federal income tax filings are open to examinations for the tax years ended December 31, 2020 and forward. The Company regularly assesses the likelihood of additional assessments or settlements in each of the taxing jurisdictions. At this time, the potential change in unrecognized tax benefits is expected to be immaterial 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 partial valuation allowance as of December 31, 2023 and 2022.

16. Earnings Per Share

The following table presents the calculation of basic and diluted EPS (dollars and shares in millions, except per share amounts):

	For the Years Ended December 31,		
	2023	2022	2021
Numerator			
Net income	$ 2,940	$ 4,374	$ 5,422
Preferred stock dividends	(62)	(62)	(69)
Net income available to common stockholders	2,878	4,312	5,353
Income allocated to participating securities	(19)	(26)	(30)
Net income allocated to common stockholders	$ 2,859	$ 4,286	$ 5,323
Denominator			
Weighted-average shares of common stock outstanding	254	277	300
Effect of dilutive common stock equivalents	—	1	—
Weighted-average shares of common stock outstanding and common stock equivalents	254	278	300
Basic earnings per common share	$ 11.27	$ 15.45	$ 17.75
Diluted earnings per common share	$ 11.26	$ 15.44	$ 17.74

Anti-dilutive securities were not material and had no impact on the computation of diluted EPS for the years ended December 31, 2023, 2022 and 2021.

17. Capital Adequacy

DFS is subject to the capital adequacy guidelines of the Federal Reserve. Discover Bank, the Company’s 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 limit the Company’s business activities and have a direct material effect on the financial condition and operating results of DFS and Discover Bank. Under capital adequacy guidelines and the regulatory framework for prompt corrective action, DFS and Discover Bank must meet specific risk-based capital requirements and leverage ratios 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.

DFS and Discover Bank are subject to regulatory and capital rules issued by the Federal Reserve and FDIC, respectively, under the Basel Committee’s December 2010 framework (“Basel III rules”). Under the Basel III rules, DFS and Discover Bank are classified as “standardized approach” entities. Standardized approach entities are 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 exposure less than $10 billion.

In accordance with the final rule on the impact of CECL on regulatory capital, the Company has elected to phase in the impact over three years beginning in 2022. Accordingly, the Company's Common Equity Tier 1 ("CET1") capital ratios are higher than they otherwise would have been. The

Company's CET1 capital ratios will continue to be favorably impacted by this election over the phase-in period, which ends December 31, 2024.

As of December 31, 2023 and 2022, DFS and Discover Bank met all Basel III minimum capital ratio requirements to which they were subject. DFS and Discover Bank also met the requirements to be considered "well-capitalized" under Regulation Y and prompt corrective action rules, respectively. There have been no conditions or events that management believes have changed DFS' or Discover Bank's category. To be categorized as "well-capitalized," DFS and Discover Bank must maintain minimum capital ratios outlined in the table below.

The following table shows the actual capital amounts and ratios of DFS 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[1]	Amount	Ratio	Amount[2]	Ratio[2]
December 31, 2023						
Total capital (to risk-weighted assets)						
Discover Financial Services	$ 17,986	13.7 %	$ 10,471	≥8.0%	$ 13,088	≥10.0%
Discover Bank	$ 16,856	13.0 %	$ 10,352	≥8.0%	$ 12,939	≥10.0%
Tier 1 capital (to risk-weighted assets)						
Discover Financial Services	$ 15,872	12.1 %	$ 7,853	≥6.0%	$ 7,853	≥6.0%
Discover Bank	$ 13,910	10.8 %	$ 7,764	≥6.0%	$ 10,352	≥8.0%
Tier 1 capital (to average assets)						
Discover Financial Services	$ 15,872	10.7 %	$ 5,915	≥4.0%	N/A	N/A
Discover Bank	$ 13,910	9.5 %	$ 5,833	≥4.0%	$ 7,292	≥5.0%
Common Equity Tier 1 (to risk-weighted assets)						
Discover Financial Services	$ 14,816	11.3 %	$ 5,890	≥4.5%	N/A	N/A
Discover Bank	$ 13,910	10.8 %	$ 5,823	≥4.5%	$ 8,411	≥6.5%
December 31, 2022						
Total capital (to risk-weighted assets)						
Discover						

(1) Capital ratios are calculated based on the Basel III standardized approach rules, subject to applicable transition provisions, including CECL transition provisions.

(2) 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.

(3) Capital amounts and ratios have been updated to reflect the impact of the restatement described in Note 26: Immaterial Restatement of Prior Period Financial Statements. Discover Bank capital amounts and ratios presented as of December 31, 2022 have been updated from amounts previously disclosed in the Company's Form 10-Q for the period ended September 30, 2023, due to certain intercompany allocations recorded in the fourth quarter.

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 $1.7 billion, $4.0 billion and $3.3 billion in the years ended December 31, 2023, 2022 and 2021, respectively, to DFS.

18. 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.

Commitments

Unused Credit Arrangements

At December 31, 2023, the Company had unused credit arrangements for loans of approximately $229.8 billion. Such arrangements 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 arrangements, 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, loan qualification and the cost of capital. As the Company's credit card loans are unconditionally cancellable, no liability for expected credit losses is required for unused lines of credit. For all other loans, the Company records a liability for expected credit losses for unfunded commitments, which is presented as part of accrued expenses and other liabilities in the consolidated statements of financial condition.

Contingencies

See Note 19: 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.

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 private 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.

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.
- *Global 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. The Company has some contractual remedies to offset these counterparty settlement exposures (such as letters of credit or pledged deposits), 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. In the event 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 would be approximately $100 million as of December 31, 2023.

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, 2023, the Company had not recorded any contingent liability in the consolidated statements of financial condition for these counterparty exposures and management believes that the probability of any payments under these arrangements is low.

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, 2023, 2022 and 2021.

The maximum potential amount of obligations of the Discover Network arising from 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 following table summarizes certain information regarding merchant chargeback guarantees (dollars in millions):

	For the Years Ended December 31,		
	2023	2022	2021
Aggregate sales transaction volume[(1)]	$ 257,611	$ 256,237	$ 223,360

(1) Represents 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 as of December 31, 2023 and 2022. 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 a higher risk due to various factors such as time delays in the delivery of products or services. As of December 31, 2023 and 2022, the Company had escrow deposits and settlement withholdings of $10 million and $11 million, respectively, which are recorded in interest-bearing deposit accounts and accrued expenses and other liabilities on the Company's consolidated statements of financial condition.

19. 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 offered its customers an arbitration clause in its customer agreements. The arbitration clause allows the Company and its customers to quickly and economically resolve disputes. Additionally, the arbitration clause has in some instances limited the costs of, and the Company's exposure to, litigation. Future legal and regulatory challenges and prohibitions may cause the Company to discontinue its offering and use of such clauses. From time to time, the Company is involved in legal actions challenging its arbitration clause. Bills may be periodically introduced in Congress to directly or indirectly prohibit the use of pre-dispute arbitration clauses.

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, regulatory, accounting, tax and other operational matters. The investigations and proceedings may result in significant adverse judgments, settlements, fines, penalties, injunctions, decreases in regulatory ratings, customer restitution or other relief. These outcomes could materially impact the Company's consolidated financial statements, increase its cost of operations, or limit the Company's ability to execute its business strategies and engage in certain business activities. Certain subsidiaries of the Company are subject to consent orders with the Consumer Financial Protection Bureau ("CFPB") and FDIC, as described below. Pursuant to powers granted under federal banking laws, regulatory agencies have broad and sweeping discretion and may assess civil money penalties, require changes to certain business practices or require customer restitution at any time.

In accordance with applicable accounting guidance, the Company establishes a liability for legal and regulatory matters when those matters create loss contingencies that are both probable and estimable. Litigation and regulatory settlement-related expense was $17 million, $15 million and $59 million for the years ended December 31, 2023, 2022 and 2021, 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 the likelihood of losses 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 $230 million as of December 31, 2023. This estimated range of reasonably possible losses is based on currently available information for those proceedings in which the Company is involved and considers the Company's best estimate of such losses for those matters for which an estimate can be made. It 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 noted 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 adversely affect the Company's reputation and 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.

In July 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 with respect to certain private student loan servicing practices (the "2015 Order"). The 2015 Order expired in July 2020. In December 2020, the Discover Subsidiaries agreed to a consent order (the "2020 Order") with the CFPB resolving the agency's investigation into Discover Bank's compliance with the 2015 Order. In connection with the 2020 Order, Discover is required to implement a redress and compliance plan and must pay at least $10 million in consumer redress to consumers who may have been harmed and has paid a $25 million civil money penalty to the CFPB.

On September 25, 2023, following the consent of the Board of Directors of Discover Bank, the FDIC issued a consent order (the "2023 Order") to Discover Bank, a subsidiary of the Company. The 2023 Order addresses shortcomings in Discover Bank's compliance management system for consumer protection laws and related matters. It does not contain any monetary penalties or fines. As part of the 2023 Order, Discover Bank agreed to improve its consumer compliance management system and enhance related corporate governance and enterprise risk management practices, and increase the level of Board oversight over such matters. Discover Bank has been taking significant steps to strengthen the organization's compliance management system and address the other issues identified in the 2023 Order. In addition, Discover added two new independent directors with significant banking experience to the Boards of Discover and Discover Bank in the third quarter of 2023.

Management and the Board are committed to meeting all the requirements of the 2023 Order. Discover Bank is working diligently to complete items required by the 2023 Order. This includes having retained third party consultants to conduct independent reviews and the submission of action plans to the FDIC by the required deadlines for review and feedback. The actions completed to date, taken together with actions previously undertaken to improve and enhance its compliance management system and enhance related corporate governance, address multiple consent order objectives, however, many provisions require longer term implementation. Depending on regulatory feedback, the timing of approvals and sustainability periods, necessary work is not likely to be completed until at least 2025.

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 a conspiracy by defendants to shift fraud liability to merchants with the migration to the EMV security standard and chip technology. The plaintiffs assert joint and several liability among the defendants and seek unspecified damages, including treble damages, attorneys' fees, costs and injunctive relief. The Company filed its motion to compel arbitration, motion for summary judgment, and Daubert challenges on November 30, 2022, and awaits rulings. 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. However, the Company will seek to defend itself vigorously against all claims asserted by the plaintiffs.

Card Product Misclassification

As reported in the second quarter of 2023, beginning in 2007, the Company incorrectly classified certain credit card accounts into its highest merchant and merchant acquirer pricing tier. The misclassification affected pricing for certain merchants and merchant acquirers, but not for cardholders. In the second quarter of 2023, the Company recorded a liability of $365 million within accrued expenses and other liabilities to provide refunds to merchants and merchant acquirers as a result of the card product misclassification. As of December 31, 2023, the balance of the liability was $375 million, reflecting an additional $11 million for the estimated effect of the current price tiering on discount and interchange assessments recorded in each of the third and fourth quarters of 2023. As of December 31, 2023, $12 million of disbursements had been made against this liability as the Company continues to develop its plan to provide refunds to merchants and merchant acquirers and engage in ongoing discussions about such plans with its regulators. Regulators may impose other requirements that may result in additional charges or a remediation amount that differs, possibly materially, from the Company’s current estimate.

Management has corrected the card product misclassification as of November 2023, and the Company remains in discussions with its regulators regarding this matter. The Company expects these discussions will likely result in enforcement actions, which may include, among other remedies, monetary penalties, the amount of which cannot be estimated at this time.

In addition, the Company and its subsidiaries have been named as defendants in various lawsuits, including putative class actions on behalf of affected merchants, a putative class action on behalf of shareholders and shareholder derivative actions. The Company also is cooperating with a Securities and Exchange Commission (“SEC”) investigation into the card product misclassification matter. The Company believes that additional losses are probable as a result of these actions but is not able to make a reasonable estimate of such losses as of December 31, 2023.

20. Fair Value Measurements

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 the inputs to valuation techniques used to measure fair value of financial instruments based on whether the inputs 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 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 where the inputs used to measure fair value may fall into different levels of the fair value hierarchy, the level in the fair value hierarchy in which the measurements are classified is based on the lowest level input that is significant to the fair value measurement in its entirety. Accordingly, the Company may utilize both observable and unobservable inputs in determining the fair values of financial instruments classified within the Level 3 category.

The Company evaluates the classification of each fair value measurement within the hierarchy at least quarterly.

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.

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, 2023				
Assets				
Fair value - OCI				
U.S. Treasury and U.S. GSE securities	$ 12,928	$ 9	$ —	$ 12,937
Residential mortgage-backed securities - Agency	—	465	—	465
Available-for-sale investment securities	$ 12,928	$ 474	$ —	$ 13,402
Derivative financial instruments - cash flow hedges[1]	$ —	$ 2	$ —	$ 2
Fair value - Net income				
Marketable equity securities	$ 1	$ —	$ —	$ 1
Derivative financial instruments - fair value hedges[1]	$ —	$ 2	$ —	$ 2
Balance at December 31, 2022				
Assets				
Fair value - OCI				
U.S. Treasury and U.S. GSE securities	$ 11,416	$ 7	$ —	$ 11,423
Residential mortgage-backed securities - Agency	—	564	—	564
Available-for-sale investment securities	$ 11,416	$ 571	$ —	$ 11,987
Derivative financial instruments - cash flow hedges[1]	$ —	$ 1	$ —	$ 1
Fair value - Net income				
Marketable equity securities	$ 41	$ —	$ —	$ 41
Liabilities				
Fair value - OCI				
Derivative financial instruments - cash flow hedges[1]	$ —	$ 3	$ —	$ 3
Fair value - Net income				
Derivative financial instruments - fair value hedges[1]	$ —	$ 2	$ —	$ 2

(1) Derivative instrument carrying values in an asset or liability position are presented as part of other assets or accrued expenses and other liabilities, respectively, in the Company's consolidated statements of financial condition.

Available-for-Sale Investment Securities

Investment securities classified as available-for-sale consist of U.S. Treasury and U.S. GSE securities and RMBS. The fair value estimates of investment securities classified as Level 1, consisting of U.S. Treasury securities, are determined based on quoted market prices for the same securities. The fair value estimates of U.S. GSE securities and RMBS are classified as Level 2 and are valued by maximizing the use of relevant observable inputs, including quoted prices for similar securities, benchmark yield curves and market-corroborated inputs.

The Company validates the fair value estimates provided by pricing services primarily by comparing to valuations obtained through other pricing sources. The Company evaluates pricing variances among 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.

At December 31, 2023, amounts reported in RMBS reflect U.S. government agency and U.S. GSE obligations issued by Ginnie Mae, Fannie Mae and Freddie Mac with an aggregate par value of $480 million, a weighted-average coupon of 4.09% and a weighted-average remaining maturity of four years.

Marketable Equity Securities

The Company holds non-controlling equity positions in payment service entities that have actively traded stock and therefore have readily determinable fair values. The Company classifies these equity securities as Level 1, the fair value estimates of which are determined based on quoted share prices for the same securities.

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 by 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 among 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 of any changes to the valuation techniques performed by proprietary pricing models before implementation, working closely with the third-party valuation service and reviewing the service's control objectives 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. For these assets, measurement at fair value in periods subsequent to the initial recognition of the assets may be applicable whenever one is tested for impairment. No impairments were recognized related to these assets for the years ended December 31, 2023 and 2022.

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):

Balance at December 31, 2023	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total	Carrying Value
Assets					
Amortized cost					
Residential mortgage-backed securities - Agency	$ —	$ 234	$ —	$ 234	$ 253
Held-to-maturity investment securities	$ —	$ 234	$ —	$ 234	$ 253
Net loan receivables	$ —	$ —	$ 126,940	$ 126,940	$ 119,126
Carrying value approximates fair value[1]					
Cash and cash equivalents	$ 11,685	$ —	$ —	$ 11,685	$ 11,685
Restricted cash	$ 43	$ —	$ —	$ 43	$ 43
Accrued interest receivables[2]	$ —	$ 1,450	$ —	$ 1,450	$ 1,450
Liabilities					
Amortized cost					
Time deposits[3]	$ —	$ 45,333	$ —	$ 45,333	$ 45,240
Short-term borrowings	$ —	$ 750	$ —	$ 750	$ 750
Long-term borrowings - owed to securitization investors	$ —	$ 10,770	$ 65	$ 10,835	$ 10,993
Other long-term borrowings	—	9,469	—	9,469	9,588
Long-term borrowings	$ —	$ 20,239	$ 65	$ 20,304	$ 20,581
Carrying value approximates fair value[1]					
Accrued					

(1) The carrying values of these assets and liabilities approximate fair value due to their short-term nature.

(2) Accrued interest receivable and payable carrying values are presented as part of other assets and accrued expenses and other liabilities, respectively, in the Company's consolidated statements of financial condition.

(3) Excludes deposits without contractually defined maturities for all periods presented.

21. 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 foreign currency are not designated as hedges and do not qualify for hedge accounting.

Derivatives may give rise to counterparty credit risk, which generally is mitigated 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 before engaging in any transaction with the Company. The Company regularly monitors counterparties 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, if any, 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 20: Fair Value Measurements for a description of the valuation methodologies used for derivatives. Cash collateral amounts associated with derivative positions that are cleared through an exchange are legally characterized as settlement of the derivative positions. Such collateral amounts are reflected as offsets to the associated derivatives balances recorded in other assets or in accrued expenses and other liabilities. Other 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 variability in cash flows related to changes in interest rates on interest-earning assets and funding instruments. These interest rate swaps qualify for hedge accounting in accordance with ASC Topic 815, *Derivatives and Hedging* ("ASC 815"). At December 31, 2023 and 2022, the Company's outstanding cash flow hedges primarily relate to interest receipts from credit card receivables and had an initial maximum period of five years and three years, respectively.

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. Amounts reported in AOCI related to derivatives at December 31, 2023, will be reclassified to interest income and interest expense as interest receipts and payments are accrued on the Company's then outstanding credit card receivables and certain floating-rate debt, respectively. During the next 12 months, the Company estimates it will reclassify $79 million into pretax earnings related to its cash flow hedges.

Fair Value Hedges

The Company is exposed to changes in the fair value 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 the fair value of certain fixed-rate long-term borrowings, including securitized debt and bank notes, attributable to changes in the respective benchmark rates. These interest rate swaps qualify as fair value hedges in accordance with ASC 815. Changes in the fair values of both (i) the derivatives and (ii) the hedged long-term borrowings attributable to the interest rate risk being hedged are recorded in interest expense and generally provide substantial offset to one another.

Derivatives Not Designated as Hedges

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 on the consolidated statements of income.

Derivatives Cleared Through an Exchange

Cash variation margin payments on derivatives cleared through an exchange are legally considered settlement payments and are accounted for with corresponding derivative positions as one unit of account and not presented separately as collateral. With settlement payments on derivative positions cleared through this exchange reflected as offsets to the associated derivative asset and liability balances, the fair values of derivative instruments and collateral balances shown are generally reduced.

Derivatives Activity

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,					
	2023				2022	
	Notional Amount	Number of Outstanding Derivative Contracts	Derivative Assets	Derivative Liabilities	Notional Amount	Derivative Assets
Derivatives designated as hedges						
Interest rate swaps — cash flow hedge	$ 10,650	17	$ 2	$ —	$ 5,000	$ 1
Interest rate swaps — fair value hedge	$ 8,650	10	2	—	$ 4,425	—
Derivatives not designated as hedges						
Foreign exchange forward contracts(1)	$ 29	7	—	—	$ 25	—
Total gross derivative assets/ liabilities(2)			4	—		1
Less: collateral held/ posted(3)			—	—		—
Total net derivative assets/ liabilities			$ 4	$ —		$ 1

(1) The foreign exchange forward contracts have notional amounts of EUR 6 million, GBP 6 million, SGD 1 million, INR 1.1 billion and AUD 2 million as of December 31, 2023, and notional amounts of EUR 6 million, GBP 6 million, SGD 1 million, INR 788 million and AUD 2 million as of December 31, 2022.

(2) In addition to the derivatives disclosed in the table, the Company enters into forward contracts to purchase when-issued mortgage-backed securities and tax exempt single family mortgage revenue bonds as part of its community reinvestment initiatives. At December 31, 2023, the Company had one outstanding contract with a total notional amount of $35 million and an immaterial fair value. At December 31, 2022, the Company had one outstanding contract with a total notional amount of $48 million and an immaterial fair value.

(3) Collateral amounts, which consist of cash and investment securities, are limited to the related derivative asset/liability balance and do not include excess collateral received/pledged.

The following amounts were recorded on the statements of financial condition related to cumulative basis adjustments for fair value hedges (dollars in millions):

	December 31,			
	2023		2022	
	Carrying Amount of Hedged Liabilities	Cumulative Amount of Fair Value Hedging Adjustment (Decreasing) the Carrying Amount of Hedged Liabilities[(1)]	Carrying Amount of Hedged Liabilities	Cumulative Amount of Fair Value Hedging Adjustment (Decreasing) the Carrying Amount of Hedged Liabilities[(1)]
Long-term borrowings	$ 8,620	$ —	$ 4,386	$ (3)

(1) The balance includes $12 million and $28 million of cumulative hedging adjustments related to discontinued hedging relationships as of December 31, 2023 and 2022, respectively.

The following table summarizes the impact of the derivative instruments on income and indicates where within the consolidated financial statements such impact is reported (dollars in millions):

	Location and Amount of (Losses) Gains Recognized on the Consolidated Statements of Income		
	Interest Expense		
	Long-Term Borrowings	Interest Income (Credit Card)	Other Income
For the Year Ended December 31, 2023			
Total amounts of income and expense line items presented in the consolidated statements of income, where the effects of fair value or cash flow hedges are recorded	$ (855)	$ 14,438	$ 85
The effects of cash flow and fair value hedging			
Gains (losses) on cash flow hedging relationships			
Amounts reclassified from OCI into earnings	$ 9	$ (91)	$ —
(Losses) gains on fair value hedging relationships			
(Losses) gains on hedged items	$ (19)	$ —	$ —
(Losses) gains on interest rate swaps	(80)	—	—
Total (losses) gains on fair value hedging relationships	$ (99)	$ —	$ —
For the Year Ended December 31, 2022			
Total amounts of income and expense line items presented in the consolidated statements of income, where the effects of fair value or cash flow hedges are recorded	$ (606)	$ 10,632	$ 75
The effects of cash flow and fair value hedging			
(Losses) gains on cash flow hedging relationships			
Amounts reclassified from OCI into earnings	$ (2)	$ (2)	$ —
Gains (losses) on fair value hedging relationships			
Gains on hedged items	$ 66	$ —	$ —
(Losses) gains on interest rate swaps	(70)	—	—
Total (losses) gains on fair value hedging relationships	$ (4)	$ —	$ —
The effects of derivatives not designated in hedging relationships			
Gains on derivatives not designated as hedges	$ —	$ —	$ 1
For the Year Ended December 31, 2021			
Total amounts of income and expense line items presented in the consolidated statements of income, where the effects of fair value or cash flow hedges are recorded	$ (473)	$ 8,717	$ 66

For the impact of the derivative instruments on OCI, see Note 13: Accumulated Other Comprehensive Income.

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 and foreign exchange forward 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 the derivatives held with that counterparty. These collateral receivable or payable amounts are generally not offset against the fair value of these derivatives but are recorded separately in other assets or deposits. Most of the Company’s cash collateral amounts relate to positions cleared through an exchange and are reflected as offsets to the associated derivatives balances recorded in other assets and accrued expenses and other liabilities.

The Company also has agreements with certain of its derivative counterparties that contain a provision under which the Company could be declared in default on any of its derivative obligations if the Company defaults on any of its indebtedness, including default where the lender has not accelerated repayment of the indebtedness.

22. Segment Disclosures

The Company manages its business activities in two segments: Digital Banking and Payment Services.

- *Digital Banking:* The Digital 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 loans and deposit products. The majority of Digital 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 ATM, 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 Digital Banking segment.
- Through its operation of the Discover Network, the Digital Banking segment incurs fixed marketing, servicing and infrastructure costs that are not specifically allocated among the segments, except for an allocation of direct and incremental costs driven by the Company’s Payment Services segment.
- The Company’s assets 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.

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

	Digital Banking	Payment Services	Total
For the Year Ended December 31, 2023			
Interest income			
Credit card loans	$ 14,438	$ —	$ 14,438
Private student loans	1,033	—	1,033
Personal loans	1,156	—	1,156
Other loans	326	—	326
Other interest income	892	—	892
Total interest income	17,845	—	17,845
Interest expense	4,746	—	4,746
Net interest income	13,099	—	13,099
Provision for credit losses	6,018	—	6,018
Other income	2,311	450	2,761
Other expense	5,822	194	6,016
Income before income taxes	$ 3,570	$ 256	$ 3,826
For the Year Ended December 31, 2022			
Interest income			
Credit card loans	$ 10,632	$ —	$ 10,632
Private student loans	831	—	831
Personal loans	872	—	872
Other loans	167	—	167
Other interest income	362	—	362
Total interest income	12,864	—	12,864
Interest expense	1,865	—	1,865
Net interest income	10,999	—	10,999
Provision for credit losses	2,359	—	2,359
Other income	2,118	176	2,294
Other expense	5,049	167	5,216
Income before income taxes	$ 5,709	$ 9	$ 5,718
For the Year Ended December 31, 2021			
Interest income			
Credit card loans	$ 8,717	$ —	$ 8,717
Private student loans	742	—	742
Personal loans	878	—	878
Other loans	114	—	114
Other interest income	200	—	200
Total interest income	10,651	—	10,651
Interest expense	1,134	—	1,134
Net interest income	9,517	—	9,517
Provision for credit losses	218	—	218
Other income	1,745	789	2,534
Other expense	4,549	256	4,805
Income before income taxes	$ 6,495	$ 533	$ 7,028

23. Revenue from Contracts with Customers

ASC Topic 606, *Revenue from Contracts with Customers* (“ASC 606”), generally applies to the sales of any good or service for which no other specific accounting guidance is provided. ASC 606 defines 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. The Company’s revenue that is subject to this model includes discount and interchange, protection products fees, transaction processing revenue and certain amounts classified as other income.

The following table presents revenue from contracts with customers disaggregated by business segment and reconciles revenue from contracts with customers to total other income (dollars in millions):

	Digital Banking	Payment Services	Total
For the Year Ended December 31, 2023			
Other income subject to ASC 606			
Discount and interchange revenue, net[1]	$ 1,360	$ 87	$ 1,447
Protection products revenue	172	—	172
Transaction processing revenue	—	303	303
Other income	16	69	85
Total other income subject to ASC 606[2]	1,548	459	2,007
Other income not subject to ASC 606			
Loan fee income	763	—	763
Gains (losses) on equity investments	—	(9)	(9)
Total other income (loss) not subject to ASC 606	763	(9)	754
Total other income by operating segment	$ 2,311	$ 450	$ 2,761
For the Year Ended December 31, 2022			
Other income subject to ASC 606			
Discount and interchange revenue, net[1]	$ 1,301	$ 79	$ 1,380
Protection products revenue	172	—	172
Transaction processing revenue	—	249	249
Other income	11	64	75
Total other income subject to ASC 606[2]	1,484	392	1,876
Other income not subject to ASC 606			
Loan fee income	632	—	632
Gains (losses) on equity investments	2	(216)	(214)
Total other income not subject to ASC 606	634	(216)	418
Total other income by operating segment	$ 2,118	$ 176	$ 2,294
For the Year Ended December 31, 2021			
Other income subject to ASC 606			
Discount and interchange revenue, net[1]	$ 1,115	$ 73	$ 1,188
Protection products revenue	165	—	165
Transaction processing revenue	—	227	227
Other income	—	66	66
Total other income subject to ASC 606[2]	1,280	366	1,646
Other income not subject to ASC 606			
Loan fee income	464	—	464
Gains on equity investments	1	423	424
Total other income not subject to ASC 606	465	423	888
Total other income by operating segment	$ 1,745	$ 789	$ 2,534

(1) Net of rewards, including Cashback Bonus rewards, of $3.1 billion, $3.0 billion and $2.5 billion for the years ended December 31, 2023, 2022 and 2021, respectively.

(2) Excludes $15 million, $10 million and $2 million deposit product fees that are reported within net interest income for the years ended December 31, 2023, 2022 and 2021, respectively.

For a detailed description of the Company's significant revenue recognition accounting policies, see Note 2: Summary of Significant Accounting Policies.

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.

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,	
	2023	2022
	(dollars in millions)	
Assets		
Cash and cash equivalents[1]	$ 3,509	$ 3,155
Restricted cash	75	20
Notes receivable from subsidiaries[2]	1,650	1,759
Investment in bank subsidiary[3]	12,791	11,685
Investments in non-bank subsidiaries[3]	1,116	877
Other assets	871	811
Total assets	$ 20,012	$ 18,307
Liabilities and Stockholders' Equity		
Non-interest-bearing deposit accounts	$ 2	$ 2
Short-term borrowings from subsidiaries	390	115
Long-term borrowings	4,469	3,487
Accrued expenses and other liabilities	323	359
Total liabilities	5,184	3,963
Stockholders' equity	14,828	14,344
Total liabilities and stockholders' equity	$ 20,012	$ 18,307

(1) The Parent Company had $3.5 billion and $3.1 billion in a money market deposit account at Discover Bank as of December 31, 2023 and 2022, respectively, which is included in cash and cash equivalents. These funds are available to the Parent for liquidity purposes.

(2) The Parent Company had a balance of $1.3 billion representing advances to Discover Bank as of December 31, 2023 and 2022, which is included in notes receivable from subsidiaries.

(3) Figures presented as of December 31, 2022 have been updated from amounts previously disclosed in Part II Item 5 — Other Information in the Company's Form 10-Q for the period ended September 30, 2023, due to certain intercompany allocations recorded in the fourth quarter.

Discover Financial Services
(Parent Company Only)
Condensed Statements of Comprehensive Income

	For the Years Ended December 31,		
	2023	2022	2021
	(dollars in millions)		
Interest income	$ 240	$ 98	$ 33
Interest expense	189	189	199
Net interest expense	51	(91)	(166)
Dividends from bank subsidiary	1,700	4,000	3,250
Dividends from non-bank subsidiaries	11	688	—
Other income	4	—	—
Total income	1,766	4,597	3,084
Other expense	(2)	6	10
Income before income tax benefit and equity in undistributed net income of subsidiaries	1,768	4,591	3,074
Income tax benefit (expense)	(7)	25	25
Equity in undistributed net income of subsidiaries	1,179	(242)	2,323
Net income	2,940	4,374	5,422
Other comprehensive (loss) income, net	114	(245)	(139)
Comprehensive income	$ 3,054	$ 4,129	$ 5,283

Table of Contents

Discover Financial Services
(Parent Company Only)

Condensed Statements of Cash Flows

	For the Years Ended December 31,		
	2023	2022	2021
	(dollars in millions)		
Cash flows provided by operating activities			
Net income	$ 2,940	$ 4,374	$ 5,422
Adjustments to reconcile net income to net cash provided by operating activities:			
Equity in undistributed net income of subsidiaries	(1,179)	242	(2,323)
Non-cash dividend from subsidiary	(11)	(188)	—
Stock-based compensation expense	74	89	103
Deferred income taxes	2	(8)	(13)
Depreciation and amortization	4	32	47
Net gains on investments and other assets	(4)	—	—
Changes in assets and liabilities:			
Increase in other assets	(65)	(143)	(91)
(Decrease) increase in accrued expenses and other liabilities	(41)	27	24
Net cash provided by operating activities	1,720	4,425	3,169
Cash flows (used for) provided by investing activities[(1)]			
Return of capital from sale of subsidiary	2	—	—
Decrease (increase) in loans to subsidiaries	109	(982)	114
Proceeds from sale of subsidiary	3	—	—
Net cash provided by (used for) investing activities	114	(982)	114
Cash flows used for financing activities			
Net increase (decrease) in short-term borrowings from subsidiaries	275	(324)	156
Proceeds from issuance of common stock	12	10	9
Proceeds from issuance of long-term borrowings	993	740	—
Maturities and repayment of long-term borrowings	(15)	(834)	(172)
Purchases of treasury stock	(1,938)	(2,359)	(2,260)
Dividends paid on common and preferred stock	(752)	(703)	(636)
Net cash used for financing activities	(1,425)	(3,470)	(2,903)
Increase (decrease) in cash, cash equivalents and restricted cash	409	(27)	380
Cash, cash equivalents and restricted cash, at beginning of period	3,175	3,202	2,822
Cash, cash equivalents and restricted cash, at end of period	$ 3,584	$ 3,175	$ 3,202
Reconciliation of cash, cash equivalents and restricted cash			
Cash and cash equivalents	$ 3,509	$ 3,155	$ 3,182
Restricted cash	75	20	20
Cash, cash equivalents and restricted cash, at end of period	$ 3,584	$ 3,175	$ 3,202
Supplemental disclosure of cash flow information			
Cash paid during the period for:			
Interest expense	$ 175	$ 159	$ 156
Income taxes, net of income tax refunds	$ 22	$ (39)	$ (70)

(1) Subsequent to the issuance of the audited financial statements for the year ended December 31, 2021, the Company identified an immaterial classification error within cash flows (used for)/provided by investing activities. The correction of this error had no impact on the net cash (used for)/provided by investing activities. Management has evaluated the materiality of this misstatement and concluded it was not material to the prior period.

26. Immaterial Restatement of Prior Period Financial Statements

As reported in the second quarter of 2023, beginning in 2007, the Company incorrectly classified certain credit card accounts into its highest merchant and merchant acquirer pricing tier. The card product classification impacts the pricing and charging of discount and interchange revenue, which is recorded within discount and interchange revenue, net, on the consolidated statements of income. The Company determined the revenue impact of the incorrect card product classification was immaterial to the consolidated financial statements for all impacted prior periods. For comparative purposes, the Company has made these immaterial corrections to the recognition of discount and interchange revenue, as well as the related impacts to assets, liabilities and retained earnings in the prior periods presented in this Form 10-K. Assets were impacted by adjustments to deferred tax assets, and liabilities were impacted by an adjustment to the liability for estimated refunds to merchants and merchant acquirers.

The prior period impacts to the Company's consolidated statement of financial condition were as shown below (dollars in millions):

	December 31, 2022		
	As Previously Reported	**Restatement Impacts**	**As Restated**
Assets			
Other Assets	$ 4,519	$ 78	$ 4,597
Total Assets	$ 131,628	$ 78	$ 131,706
Liabilities and Stockholders' Equity			
Liabilities			
Accrued Expenses and other liabilities	$ 5,294	$ 324	$ 5,618
Total Liabilities	$ 117,038	$ 324	$ 117,362
Stockholders' Equity			
Retained Earnings	$ 28,453	$ (246)	$ 28,207
Total Stockholders' Equity	$ 14,590	$ (246)	$ 14,344
Total Liabilities and Stockholders' Equity	$ 131,628	$ 78	$ 131,706

The prior period impacts to the Company's consolidated statements of income and the related impacts to the consolidated statements of comprehensive income were as shown below (dollars in millions):

	For the Year Ended December 31, 2022			For the Year Ended December 31, 2021		
	As Previously Reported	Restatement Impacts	As Restated	As Previously Reported	Restatement Impacts	As Restated
Other income						
Discount and interchange revenue, net	$ 1,424	$ (44)	$ 1,380	$ 1,224	$ (36)	$ 1,188
Total other income	$ 2,338	$ (44)	$ 2,294	$ 2,570	$ (36)	$ 2,534
Other expense						
Other expense	$ 560	$ (20)	$ 540	$ 620	$ —	$ 620
Total other expense	$ 5,236	$ (20)	$ 5,216	$ 4,805	$ —	$ 4,805
Income before income taxes	$ 5,742	$ (24)	$ 5,718	$ 7,064	$ (36)	$ 7,028
Income tax expense	$ 1,350	$ (6)	$ 1,344	$ 1,615	$ (9)	$ 1,606
Net Income	$ 4,392	$ (18)	$ 4,374	$ 5,449	$ (27)	$ 5,422
Net income allocated to common stockholders	$ 4,304	$ (18)	$ 4,286	$ 5,351	$ (28)	$ 5,323
Basic earnings per common share	$ 15.52	$ (0.07)	$ 15.45	$ 17.85	$ (0.10)	$ 17.75
Diluted earnings per common share	$ 15.50	$ (0.06)	$ 15.44	$ 17.83	$ (0.09)	$ 17.74

The prior period impacts to the Company's consolidated statements of changes in stockholders' equity were as shown below (dollars in millions):

	Retained Earnings	Total Stockholders' Equity
As Previously Reported		
For the Year Ended December 31, 2020		
Balance at December 31, 2019	$ 21,290	$ 11,859
Net income	$ 1,141	$ 1,141
Balance at December 31, 2020	$ 19,955	$ 10,884
Restatement Impacts		
For the Year Ended December 31, 2020		
Balance at December 31, 2019	$ (185)	$ (185)
Net income	$ (16)	$ (16)
Balance at December 31, 2020	$ (201)	$ (201)
As Restated		
For the Year Ended December 31, 2020		
Balance at December 31, 2019	$ 21,105	$ 11,674
Net income	$ 1,125	$ 1,125
Balance at December 31, 2020	$ 19,754	$ 10,683

	Retained Earnings	Total Stockholders' Equity
As Previously Reported		
For the Year Ended December 31, 2021		
Balance at December 31, 2020	$ 19,955	$ 10,884
Net income	$ 5,449	$ 5,449
Balance at December 31, 2021	$ 24,766	$ 13,408
Restatement Impacts		
For the Year Ended December 31, 2021		
Balance at December 31, 2020	$ (201)	$ (201)
Net income	$ (27)	$ (27)
Balance at December 31, 2021	$ (228)	$ (228)
As Restated		
For the Year Ended December 31, 2021		
Balance at December 31, 2020	$ 19,754	$ 10,683
Net income	$ 5,422	$ 5,422
Balance at December 31, 2021	$ 24,538	$ 13,180

	Retained Earnings	Total Stockholders' Equity
As Previously Reported		
For the Year Ended December 31, 2022		
Balance at December 31, 2021	$ 24,766	$ 13,408
Net income	$ 4,392	$ 4,392
Balance at December 31, 2022	$ 28,453	$ 14,590
Restatement Impacts		
For the Year Ended December 31, 2022		
Balance at December 31, 2021	$ (228)	$ (228)
Net income	$ (18)	$ (18)
Balance at December 31, 2022	$ (246)	$ (246)
As Restated		
For the Year Ended December 31, 2022		
Balance at December 31, 2021	$ 24,538	$ 13,180
Net income	$ 4,374	$ 4,374
Balance at December 31, 2022	$ 28,207	$ 14,344

The prior period impacts to the Company's consolidated statements of cash flows were as follows (dollars in millions):

	For the Year Ended December 31, 2022			For the Year Ended December 31, 2021		
	As Previously Reported	Restatement Impacts	As Restated	As Previously Reported	Restatement Impacts	As Restate
Cash flows provided by operating activities						
Net Income	$ 4,392	$ (18)	$ 4,374	$ 5,449	$ (27)	$ 5,422
Adjustments to reconcile net income to net cash provided by operating activities:						
Deferred income taxes	$ (427)	$ (6)	$ (433)	$ 327	$ (9)	$ 318
Changes in assets and liabilities:						
Increase in accrued expenses and liabilities	$ 1,080	$ 24	$ 1,104	$ 410	$ 36	$ 446
Net cash provided by operating activities	$ 7,140	$ —	$ 7,140	$ 6,019	$ —	$ 6,019

The following tables reflect the impacts of the card product misclassification and subsequent restatements of certain prior period amounts reported on the Parent Company's financial statements.

The prior period impacts to the Parent Company's condensed statement of financial condition were as follows (dollars in millions):

	December 31, 2022		
	As Previously Reported	Restatement Impacts	As Restated
Investment in bank subsidiary[(1)]	$ 11,922	$ (237)	$ 11,685
Investments in non-bank subsidiaries[(1)]	$ 886	$ (9)	$ 877
Total assets	$ 18,553	$ (246)	$ 18,307
Liabilities and Stockholders' Equity			
Stockholders' equity	$ 14,590	$ (246)	$ 14,344
Total liabilities and stockholders' equity	$ 18,553	$ (246)	$ 18,307

(1) Figures presented have been updated from amounts previously disclosed in Part II Item 5 — Other Information in the Company's Form 10-Q for the period ended September 30, 2023, due to certain intercompany allocations recorded in the fourth quarter.

The prior period impacts to the Parent Company's condensed statements of income and the related impacts to the condensed statements of comprehensive income were as follows (dollars in millions):

	For the Year Ended December 31, 2022			For the Year Ended December 31, 2021		
	As Previously Reported	Restatement Impacts	As Restated	As Previously Reported	Restatement Impacts	A Resta
Equity in undistributed net income of subsidiaries	$ (224)	$ (18)	$ (242)	$ 2,350	$ (27)	$ 2,3
Net income	$ 4,392	$ (18)	$ 4,374	$ 5,449	$ (27)	$ 5,4
Comprehensive income	$ 4,147	$ (18)	$ 4,129	$ 5,310	$ (27)	$ 5,2

The prior period impacts to the Parent Company's condensed statements of cash flows were as follows (dollars in millions):

	For the Year Ended December 31, 2022			For the Year Ended December 31, 2021		
	As Previously Reported	Restatement Impacts	As Restated	As Previously Reported	Restatement Impacts	As R
Cash flows provided by operating activities						
Net income	$ 4,392	$ (18)	$ 4,374	$ 5,449	$ (27)	$ 5
Adjustments to reconcile net income to net cash provided by operating activities:						
Equity in undistributed net income of subsidiaries	$ 224	$ 18	$ 242	$ (2,350)	$ 27	$ (2
Net cash provided by operating activities	$ 4,425	$ —	$ 4,425	$ 3,169	$ —	$ 3

27. Subsequent Events

On February 19, 2024, the Company and Capital One Financial Corporation jointly announced that they entered into an agreement and plan of merger (the “Merger Agreement”), under which the companies will combine in an all-stock merger, which values Discover at $35.3 billion. Under the terms of the Merger Agreement, holders of Discover common stock will receive 1.0192 shares of Capital One common stock for each share of Discover common stock they own. Capital One shareholders will own approximately 60% of the combined company and Discover shareholders will own approximately 40% of the combined company. The Merger Agreement contains customary representations and warranties, covenants and closing conditions. The Board of Directors of the combined company will have fifteen directors, consisting of the current twelve Capital One Board members and three of the Company’s Board members to be named at a later date.

Glossary of Acronyms

- **AI**: Artificial Intelligence
- **ALCO**: Asset and Liability Management Committee
- **AOCI**: Accumulated Other Comprehensive Income (Loss)
- **ASC**: Accounting Standards Codification
- **ASU**: Accounting Standards Update
- **ATM**: Automated Teller Machine
- **BCBS**: Basel Committee on Banking Supervision
- **BTFP**: Bank Term Funding Program
- **CCAR**: Comprehensive Capital Analysis and Review
- **CCPA**: California Consumer Privacy Act
- **CECL**: Current Expected Credit Loss
- **CEO**: Chief Executive Officer
- **CET1**: Common Equity Tier 1
- **CFO**: Chief Financial Officer
- **CFPB**: Consumer Financial Protection Bureau
- **CIO**: Chief Information Officer
- **CISO**: Chief Information Security Officer
- **CLDC**: Compensation and Leadership Development Committee
- **CME**: Chicago Mercantile Exchange
- **CODM**: Chief Operating Decision Maker
- **COSO**: Committee of Sponsoring Organizations of the Treadway Commission
- **CPPA**: California Privacy Protection Agency
- **CPRA**: California Privacy Rights Act
- **CRM**: Corporate Risk Management
- **CRO**: Chief Risk Officer
- **DCENT**: Discover Card Execution Note Trust
- **DCMT**: Discover Card Master Trust
- **DE&I**: Diversity, Equity and Inclusion
- **DFS**: Discover Financial Services
- **DRR**: Designated Reserve Ratio
- **EPS**: Earnings Per Share
- **ESG**: Environmental, Social and Governance
- **EWI**: Early Warning Indicator
- **FASB**: Financial Accounting Standards Board
- **FDIA**: Federal Deposit Insurance Act
- **FDIC**: Federal Deposit Insurance Corporation
- **FFIEC**: Federal Financial Institutions Examination Council
- **FHLB**: Federal Home Loan Bank
- **FRB**: Federal Reserve Board
- **GAAP**: Accounting Principles Generally Accepted in the United States
- **GLBA**: Gramm-Leach-Bliley Act
- **IRM**: Information Risk Management
- **KRI**: Key Risk Indicator
- **LFI**: Large Financial Institution
- **LIBOR**: London Interbank Offered Rate
- **NPI**: Nonpublic Personal Information
- **OCC**: Office of the Comptroller of the Currency
- **OCI**: Other Comprehensive Income (Loss)
- **PCAOB**: Public Company Accounting Oversight Board
- **POS**: Point-of-sale
- **PSU**: Performance Stock Unit
- **Repo**: Repurchase Agreement
- **RMBS**: Residential Mortgage-Backed Securities
- **RSU**: Restricted Stock Unit
- **SCB**: Stress Capital Buffer
- **SEC**: Securities and Exchange Commission
- **SOFR**: Secured Overnight Financing Rate
- **TDR**: Troubled Debt Restructuring
- **TIRC**: Technology and Information Risk Committee
- **UDAAP**: Unfair, Deceptive or Abusive Acts or Practices
- **U.S.**: United States of America
- **USD**: United States Dollar
- **U.S. GSE**: Government-sponsored Enterprise of the U.S.
- **VIE**: Variable Interest Entity
- **VP-ISTR**: VP, Information Security and Technology Risk

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.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2023. 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. Based on management's assessments and those criteria, management has concluded that our internal control over financial reporting was effective as of December 31, 2023.

The effectiveness of our internal control over financial reporting as of December 31, 2023, 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

Insider Trading Arrangements

During the period covered by this report, none of the Company's directors or executive officers has adopted or terminated a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement (each as defined in Item 408 of Regulation S-K under the Securities Exchange Act of 1934, as amended).

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

Part III.

Part III | Item 10. Directors, Executive Officers and Corporate Governance

Information regarding our executive officers is included under the heading "Information About Our Executive Officers" 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 9, 2024 ("Proxy Statement") is incorporated by reference herein.

"Election of directors — Our board of directors"

"Corporate governance — Board structure and operations"

"Other matters — Family relationships"

Our Code of Conduct and Business Ethics applies to all directors, officers and employees, including our Chief Executive Officer and our Chief Financial Officer. You can find our Code of Conduct and Business Ethics on our internet site, *www.discover.com*. We will post any amendments to the Code of Conduct and Business Ethics 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.

"Election of directors — Director compensation"

"Executive compensation"

"Compensation discussion and analysis"

"2023 Executive compensation tables"

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information related to the compensation plans under which our equity securities are authorized for issuance as of December 31, 2023, is set forth in the table below.

Plan Category	Number of securities to be issued upon exercise of outstanding warrants and rights[(1)]	Weighted-average exercise price of outstanding warrants and rights	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	2,524,794	N/A	40,053,462
Equity compensation plans not approved by security holders	N/A	N/A	N/A
Total	2,524,794	N/A	40,053,462

(1) Includes 1,944,117 vested and unvested RSUs and 580,677 vested and unvested PSUs that can be converted to up to 1.5 shares per each unit dependent on the performance factor.

Information related to the beneficial ownership of our common stock is presented under the caption "Stock ownership information — 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.

"Other matters — Certain transactions"

"Election of directors — Our board of directors — Director independence"

Item 14. Principal Accounting Fees and Services

Information regarding principal accounting fees and services is presented under the caption "Audit matters" in our Proxy Statement and is incorporated by reference herein.

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 81 through 147 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 below for a list of the exhibits being filed or furnished with or incorporated by reference into this annual report on Form 10-K.

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 herein by reference thereto).

Exhibit Number	Description
2.4*	Agreement and Plan of Merger, dated as of February 19, 2024, by and among Discover Financial Services, Capital One Financial Corporation and Vega Merger Sub, Inc. (filed as Exhibit 2.1 to Discover Financial Services' Current Report on Form 8-K filed on February 22, 2024 and incorporated herein by reference thereto).
3.1	Restated Certificate of Incorporation of Discover Financial Services (filed as Exhibit 3.2 to Discover Financial Services' Current Report on Form 8-K filed on May 21, 2019 and incorporated herein by reference thereto).
3.2	Amended and Restated By-Laws of Discover Financial Services, as amended and restated on October 26, 2023 (filed as Exhibit 3.1 to Discover Financial Services' Quarterly Report on Form 10-Q filed on October 26, 2023 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 3.2 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).
3.5	Certificate of Designations of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series C (filed as Exhibit 3.1 to Discover Financial Services' Current Report on Form 8-K filed on October 31, 2017 and incorporated herein by reference thereto).
3.6	Certificate of Elimination of the 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 December 4, 2017 and incorporated herein by reference thereto).
3.7	Certificate of Designations of Fixed-Rate Reset Non-Cumulative Perpetual Preferred Stock, Series D (filed as Exhibit 3.1 to Discover Financial Services' Current Report on Form 8-K filed on June 22, 2020 and incorporated herein by reference thereto).
4.1	Description of Discover Financial Services' Securities.
4.2	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).
4.3	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).
4.4	Second Supplemental Indenture, dated as of November 2, 2023, between the Company and U.S. Bank Trust Company, National Association.
4.5	Deposit Agreement (Series C), dated October 31, 2017 (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on October 31, 2017 and incorporated herein by reference thereto).
4.6	Form of Certificate Representing the Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred Stock, Series C (filed as Exhibit 4.2 to Discover Financial Services' Current Report on Form 8-K filed on October 31, 2017 and incorporated herein by reference thereto).
4.7	Deposit Agreement (Series D), dated June 22, 2020 (filed as Exhibit 4.1 to Discover Financial Services' Current Report on Form 8-K filed on June 22, 2020

Exhibit Number	Description
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. International 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).
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).
10.11†	Discover Financial Services Directors' Compensation Plan, 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 herein by reference thereto).
10.12†	Amendment No. 2 to the Discover Financial Services Directors' Compensation Plan, effective as of December 1, 2011 (filed as Exhibit 10.10 to the Discover Financial Services' Annual Report on Form 10-K filed on January 26, 2012 and incorporated herein by reference thereto).
10.13†	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).
10.14†	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).

Exhibit Number		Description
10.18†		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).
10.19		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).
10.20		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).
10.21		Second Amended and Restated Indenture Supplement for the Discover Series 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).
10.22		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).
10.23†		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 herein by reference thereto).
10.24		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 and incorporated herein by reference thereto).
10.25		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).
10.26		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 herein by reference thereto).
10.27		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 herein by reference thereto).
10.28		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 herein by reference thereto).
10.29		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

Exhibit Number	Description
10.33†	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).
10.34†	Amendment No. 4 to Discover Financial Services Employee Stock Purchase Plan (filed as Exhibit 10.1 to Discover Financial Services’ Quarterly Report on Form 10-Q filed on October 29, 2015 and incorporated herein by reference thereto).
10.35	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).
10.36†	Amendment No. 5 to Directors’ Compensation Plan of Discover Financial Services, effective as of January 1, 2017 (filed as Exhibit 10.54 to Discover Financial Services’ Annual Report on Form 10-K filed on February 23, 2017 and incorporated herein by reference thereto).
10.37†	Form 2018 Award Certificate for Restricted Stock Units under Discover Financial Services Director’s Compensation Plan (filed as Exhibit 10.1 to Discover Financial Services’ Quarterly Report on Form 10-Q filed on May 1, 2018 and incorporated herein by reference thereto).
10.38†	Amendment No. 6 to the Directors’ Compensation Plan of Discover Financial Services, effective as of February 22, 2018 (filed as Exhibit 10.5 to Discover Financial Services’ Quarterly Report on Form 10-Q filed on May 1, 2018 and incorporated herein by reference thereto).
10.39†	Amendment No. 7 to the Directors’ Compensation Plan of Discover Financial Services, effective as of January 1, 2019 (filed as Exhibit 10.62 to Discover Financial Services’ Annual Report on Form 10-K filed on February 20, 2019 and incorporated herein by reference thereto).
10.40†	Amendment No. 8 to the Directors’ Compensation Plan of Discover Financial Services, effective as of January 1, 2019 (filed as Exhibit 10.63 to Discover Financial Services’ Annual Report on Form 10-K filed on February 20, 2019 and incorporated herein by reference thereto).
10.41†	Amendment No. 9 to the Directors’ Compensation Plan of Discover Financial Services, effective as of January 1, 2022 (filed as Exhibit 10.58 to Discover Financial Services’ Annual Report on Form 10-K filed on February 24, 2022 and incorporated herein by reference thereto).
10.42†	Amendment No. 10 to the Directors’ Compensation Plan of Discover Financial Services, effective as of December 14, 2022 (filed as Exhibit 10.59 to Discover Financial Services’ Annual Report on Form 10-K filed on February 23, 2023 and incorporated herein by reference thereto).
10.43†	Amendment No. 11 to the Directors’ Compensation Plan of Discover Financial Services, effective as of October 25, 2023.
10.44†	Discover Financial Services Directors’ Voluntary Nonqualified Deferred Compensation Plan, effective as of April 10, 2008.
10.45†	Form 2020 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’ Quarterly Report on Form 10-Q filed on April 30, 2020 and incorporated herein by reference thereto).
10.46†	Form 2020 Award Certificate for Performance 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, 2020 and incorporated herein by reference thereto).

Exhibit Number	Description
10.50†	Form 2022 Award Certificate for Performance 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 28, 2022 and incorporated herein by reference thereto).
10.51†	Form 2022 Special Award Certificate for Restricted 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 28, 2022 and incorporated herein by reference thereto).
10.52†	Form 2023 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' Quarterly Report on Form 10-Q filed on April 25, 2023 and incorporated herein by reference thereto).
10.53†	Form 2023 Award Certificate for Performance 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 25, 2023 and incorporated herein by reference thereto).
10.54†	Form 2023 Special Award Certificate for Restricted 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 25, 2023 and incorporated herein by reference thereto).
10.55†	Discover Financial Services 2023 Omnibus Incentive Plan (filed as Annex B to Discover Financial Services' Proxy Statement filed on March 17, 2023, and incorporated herein by reference thereto).
10.56†	Form 2023 Special Award Certificate for Restricted Stock Units under Discover Financial Services 2023 Omnibus Incentive Plan (filed as Exhibit 10.2 to Discover Financial Services' Quarterly Report on Form 10-Q filed on July 28, 2023 and incorporated herein by reference thereto).
10.57†	Discover Financial Services Severance Plan (filed as Exhibit 10.3 to Discover Financial Services' Quarterly Report on Form 10-Q filed on July 28, 2023 and incorporated herein by reference thereto).
10.58†	Transition Letter, dated as of August 13, 2023 between Discover Financial Services and Roger C. Hochschild (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on August 14, 2023 and incorporated herein by reference thereto).
10.59†	Letter Agreement, dated as of December 7, 2023 between Discover Financial Services and Michael Rhodes (filed as Exhibit 10.1 to Discover Financial Services' Current Report on Form 8-K filed on December 11, 2023 and incorporated herein by reference thereto).
10.60†	Form 2024 Award Certificate for Restricted Stock Units under Discover Financial Services 2023 Omnibus Incentive Plan.
10.61†	Form 2024 Award Certificate for Performance Stock Units under Discover Financial Services 2023 Omnibus Incentive Plan.
10.62†	Form 2024 Special Award Certificate for Restricted Stock Units under Discover Financial Services 2023 Omnibus Incentive Plan.
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

Exhibit Number	Description
101	Interactive Data File — the following financial statements from Discover Financial Services Annual Report on Form 10-K formatted in inline XBRL: (1) Consolidated Statements of Financial Condition, (2) Consolidated Statements of Income, (3) Consolidated Statements of Comprehensive Income, (4) Consolidated Statements of Changes in Stockholders' Equity, (5) Consolidated Statements of Cash Flows and (6) Notes to the Consolidated Financial Statements.
104	Cover Page Interactive Data File — the cover page from Discover Financial Services Annual Report on Form 10-K formatted in inline XBRL and contained in Exhibit 101.

* Exhibits and schedules have been omitted pursuant to Items 601(a)(5) or 601(b)(2) of Regulation S-K. A copy of any omitted exhibit or schedule will be furnished supplementally to the SEC upon request; provided, however, that the parties may request confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended, for any document so furnished.

† 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.

Item 16. Form 10-K Summary

None.

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/ John T. Greene
			John T. Greene **Executive Vice President, Chief Financial Officer**

Date: February 23, 2024

Power of Attorney

We, the undersigned, hereby severally constitute Hope D. Mehlman and Efie Vainikos, 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 23, 2024.

Signature	Title
/s/ MICHAEL G. RHODES	Chief Executive Officer and President, Director
Michael G. Rhodes	
/s/ JOHN T. GREENE	Executive Vice President, Chief Financial Officer (Principal Financial Officer)
John T. Greene	
/s/ SHIFRA C. KOLSKY	Senior Vice President, Controller and Chief Accounting Officer (Principal Accounting Officer)
Shifra C. Kolsky	
/s/ THOMAS G. MAHERAS	Chairman of the Board
Thomas G. Maheras	
/s/ JEFFREY S. ARONIN	Director
Jeffrey S. Aronin	
/s/ GREGORY C. CASE	Director
Gregory C. Case	
/s/ CANDACE H. DUNCAN	Director
Candace H. Duncan	
/s/ JOSEPH F. EAZOR	Director
Joseph F. Eazor	
/s/ KATHY L. LONOWSKI	Director
Kathy L. Lonowski	
/s/ DANIELA O'LEARY-GILL	Director
Daniela O'Leary-Gill	
/s/ JOHN B. OWEN	Director
John B. Owen	
/s/ DAVID L. RAWLINSON II	Director
David L. Rawlinson II	
/s/ J. MICHAEL SHEPHERD	Director
J. Michael Shepherd	
/s/ BEVERLEY A. SIBBLIES	Director
Beverley A. Sibblies	
/s/ MARK A. THIERER	Director
Mark A. Thierer	
/s/ JENNIFER L. WONG	Director
Jennifer L. Wong	