National Securities Clearing Corporation

Financial Statements as of and for the Years Ended
December 31, 2019 and 2018, and Report of Independent
Registered Public Accounting Firm

NATIONAL SECURITIES CLEARING CORPORATION

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholder of the
National Securities Clearing Corporation
New York, NY

Opinion on the Financial Statements

We have audited the accompanying statements of financial condition of the National Securities Clearing Corporation (the "Company") as of December 31, 2019 and 2018, the related statements of income, changes in shareholder's equity, and cash flows, and the related footnotes for each of the two years in the period ended December 31, 2019 (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, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, in conformity with the accounting principles generally accepted in the United States of America.

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 Public Company Accounting Oversight Board (United States) (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 and in accordance with auditing standards generally accepted in the United States of America. 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. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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.

Deloitte & Touche LLP

February 28, 2020

We have served as the Company's auditor since 2009.

NATIONAL SECURITIES CLEARING CORPORATION

STATEMENTS OF FINANCIAL CONDITION

(In thousands, except share data)	As of December 31, 2019	As of December 31, 2018
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 6,799,657	$ 7,125,729
Participants' segregated cash	4,876	77,988
Short-term investments	900,000	800,000
Accounts receivable	27,370	22,865
Clearing Fund	5,897,252	8,265,535
Other Participants' assets	1,499	1,783
Other current assets	25,266	32,304
Total current assets	13,655,920	16,326,204
NON-CURRENT ASSETS:		
Premises and equipment - net of accumulated depreciation of $1,560 and $3,948 as of December 31, 2019 and 2018, respectively	3,162	3,262
Intangible assets - net of accumulated amortization of $70,190 and $109,052 as of December 31, 2019 and 2018, respectively	37,771	30,991
Total non-current assets	40,933	34,253
TOTAL ASSETS	$ 13,696,853	$ 16,360,457
LIABILITIES AND SHAREHOLDER'S EQUITY		
CURRENT LIABILITIES:		
Commercial paper - net of unamortized discount of $20,623 and $43,856 as of December 31, 2019 and 2018, respectively	$ 7,154,217	$ 7,436,141
Accounts payable and accrued expenses	4,719	4,805
Clearing Fund	5,897,252	8,265,535
Payable to Participants	6,375	79,771
Total current liabilities	13,062,563	15,786,252
OTHER NON-CURRENT LIABILITIES:		
Other non-current liabilities	19,450	15,473
Total liabilities	13,082,013	15,801,725
COMMITMENTS AND CONTINGENCIES (Note 2)		
SHAREHOLDER'S EQUITY		
Common stock, $0.50 par value - 30,000 shares authorized; 20,000 shares issued and outstanding	10	10
Additional paid-in capital	69,442	69,442
Retained earnings	545,388	489,280
Total shareholder's equity	614,840	558,732
TOTAL LIABILITIES AND SHAREHOLDER'S EQUITY	$ 13,696,853	$ 16,360,457

The Notes to Financial Statements are an integral part of these statements.

NATIONAL SECURITIES CLEARING CORPORATION

STATEMENTS OF INCOME

(In thousands)	For the years ended December 31, 2019	2018
REVENUES		
Clearing services	$ 311,641	$ 338,823
Wealth management services	103,285	111,609
Other services	3,572	2,846
Total revenues	418,498	453,278
EXPENSES		
Employee compensation and related benefits	141,442	134,938
Information technology	36,041	32,726
Professional and other services	104,131	109,577
Occupancy	8,470	8,386
Depreciation and amortization	10,343	13,597
General and administrative	23,980	20,480
Impairment of Intangible assets	6,737	2,104
Total expenses	331,144	321,808
Total operating income	87,354	131,470
NON-OPERATING INCOME (EXPENSE)		
Interest income	324,875	243,354
Refunds to Participants	(167,753)	(137,936)
Interest expense	(175,771)	(113,316)
Other non-operating income, net	7,871	7,230
Total non-operating expense	(10,778)	(668)
Income before taxes	76,576	130,802
Provision for income taxes	20,468	30,319
Net income	$ 56,108	$ 100,483

The Notes to Financial Statements are an integral part of these statements.

NATIONAL SECURITIES CLEARING CORPORATION
STATEMENTS OF CHANGES IN SHAREHOLDER'S EQUITY

(In thousands)	Common Stock	Additional Paid-In Capital	Retained Earnings	Total Shareholder's Equity
BALANCE - January 1, 2018	$ 10	$ 69,442	$ 388,797	$ 458,249
Net income	—	—	100,483	100,483
BALANCE - December 31, 2018	10	69,442	489,280	558,732
Net income	—	—	56,108	56,108
BALANCE - December 31, 2019	$ 10	$ 69,442	$ 545,388	$ 614,840

The Notes to Financial Statements are an integral part of these statements.

NATIONAL SECURITIES CLEARING CORPORATION

STATEMENTS OF CASH FLOWS

(In thousands)	**For the years ended December 31, 2019**	**2018**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 56,108	$ 100,483
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:		
Depreciation and amortization	10,343	13,597
Impairment of Intangible assets	6,737	2,104
Deferred income taxes	3,284	4,751
Discount on Commercial paper outstanding	11,774	24,854
Net change in:		
Accounts receivable	(4,505)	5,824
Other assets	7,038	(14,300)
Other Participants' assets	68	897
Accounts payable and accrued expenses	(86)	2,937
Other liabilities	693	(7,737)
Clearing Fund liabilities	(2,096,447)	3,925,459
Payable to Participants	(73,396)	58,455
Net cash provided by/(used in) operating activities	(2,078,389)	4,117,324
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of Short-term investments	(2,100,000)	(800,000)
Maturities of Short-term investments	2,000,000	—
Purchases of investments in marketable securities	—	(8,600)
Maturities of investments in marketable securities	—	8,600
Capitalized software development costs	(23,760)	(18,982)
Net cash used in investing activities	(123,760)	(818,982)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from Commercial paper	29,534,455	41,659,738
Repayments of Commercial paper	(29,828,153)	(37,471,022)
Net cash provided by/(used in) financing activities	(293,698)	4,188,716
Net increase/(decrease) in Cash and cash equivalents, Participants' segregated cash, Clearing Fund cash deposits, Cash in Other Participants' assets	(2,495,847)	7,487,058
Cash and cash equivalents, Participants' segregated cash, Clearing Fund cash deposits, Cash in Other Participants' assets - Beginning of year	14,856,465	7,369,407
Cash and cash equivalents, Participants' segregated cash, Clearing Fund cash deposits, Cash in Other Participants' assets - End of year	$ 12,360,618	$ 14,856,465
SUPPLEMENTAL DISCLOSURES:		
Interest paid	$ 163,926	$ 88,721
Income taxes paid - net of refunds	$ 15,885	$ 31,661

The Notes to Financial Statements are an integral part of these statements.

1. BUSINESS AND OWNERSHIP

National Securities Clearing Corporation (NSCC or the Company) is organized as a business corporation under New York law, and is a clearing agency registered with the U.S. Securities and Exchange Commission (SEC). NSCC provides clearing, settlement, risk management, and central counterparty (CCP) services to its members (collectively referred to as Participants) for broker-to-broker trades involving equities, corporate and municipal debt, exchange-traded funds, and unit investment trusts.

NSCC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation (DTCC). Other subsidiaries of DTCC include The Depository Trust Company (DTC), Fixed Income Clearing Corporation (FICC), DTCC ITP LLC, DTCC Deriv/SERV LLC and DTCC Solutions LLC.

NSCC is designated as a Systemically Important Financial Market Utility (SIFMU) by the U.S. Financial Stability Oversight Council pursuant to Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, which subjects the Company to enhanced standards for operation and governance, as established by the SEC's Standards for Covered Clearing Agencies (CCAS).

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of presentation. The accompanying financial statements are prepared in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP).

Use of estimates. The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements. Management makes estimates regarding, among other things, the collectability of receivables, the outcome of litigation, the realization of deferred taxes, unrecognized tax benefits, fair value measurements, expense allocations and other matters that affect the reported amounts. Estimates are based on judgment and available information; therefore, actual results could differ materially from those estimates.

Cash and cash equivalents. All highly liquid investments purchased with an original maturity of three months or less at the date of acquisition are classified as Cash and cash equivalents. Cash equivalents consist primarily of highly liquid investments in deposits held in banks.

Participants' segregated cash. NSCC receives cash from Participants for the exclusive benefit of the Participants' customers in compliance with SEC rule 15c3-3 (customer protection), which requires broker-dealers to segregate a certain amount of cash and securities in specially protected accounts on behalf of their clients.

Short-term investments. Consists of cash invested in bank deposits with original maturities greater than three months and less than one year with various yields carried at amortized cost, which approximates fair value due to their short-term maturities.

Fair value measurements. The Company may be required or permitted to measure and disclose certain assets and liabilities using 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. The Company uses a three-level classification hierarchy of fair value measurements that establishes the quality of inputs used to measure fair value. The fair value of financial instruments is determined using various techniques that involve some level of estimation and judgment, the degree of which is dependent on the price transparency and the complexity of the instruments.

Accounts receivable. Accounts receivable are stated at cost, net of an allowance for doubtful accounts. The Company establishes an allowance for estimated losses resulting from uncollectibility. The Company determines the need for an allowance based on a variety of factors, including the length of time receivables are past due, macroeconomic conditions, historical experience and the financial condition of customers and other debtors.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Clearing Fund. The rules of NSCC require Participants to maintain deposits related to their respective activities based on calculated requirements. The deposits are available to secure Participants' obligations and certain liabilities of the Company. Margin deposits and Participant contributions are maintained within the Clearing Fund on the accompanying Statements of Financial Condition due to the benefits and risks of ownership incurred by the Company. Deposits and contributions may be in the form of cash, cash equivalents and securities. These deposits may be applied to satisfy obligations of the depositing Participant, other Participants, or the Company as provided in NSCC's rules.

Cash deposits. Deposits and contributions received in the form of cash may be invested in bank deposits, reverse repurchase agreements, money market funds and direct obligations of the U.S. Government. Reverse repurchase agreements provide for NSCC's delivery of cash in exchange for securities having a market value that is at least 102% of the amount of the agreements. Securities purchased under reverse repurchase agreements are typically U.S. Treasury and agency securities. Reverse repurchase agreements are recorded at the contract amounts. All interest earned on investments is accrued and included within Interest income in the accompanying Statements of Income. This interest is refunded to Participants, which is included in Refunds to Participants in the accompanying Statements of Income.

Securities on deposit - at fair value. Securities may include U.S. Treasury securities, U.S. agency debt securities and U.S. agency residential mortgage-backed securities. All interest earned on these investments is accrued and included within Interest income in the accompanying Statements of Income. This interest is refunded to Participants, which is included in Refunds to Participants in the accompanying Statements of Income.

Premises and equipment. Premises and equipment are stated at cost, net of accumulated depreciation. Routine maintenance, repairs and replacement costs are expensed as incurred, while improvements that extend the useful life of the assets are capitalized. When equipment is sold or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts and any resulting gain or loss is recognized in the accompanying Statements of Income. Premises and equipment are reviewed for impairment whenever events or changes in circumstances indicate the related carrying amount may not be recoverable. The following table summarizes how the Company depreciates Premises and equipment:

Premises and equipment	Amortization Period	Amortization Method
Furniture and equipment	5 to 7 years	Straight-line
Building and improvements	39 years	Straight-line

Depreciation expense for furniture and equipment and buildings and improvements is included in Depreciation and amortization in the accompanying Statements of Income.

Intangible assets. Intangible assets represent capitalized software. The Company capitalizes eligible costs associated with the acquisition or development of internal-use software projects that provide new or significantly improved functionality. The Company capitalizes software costs expected to result in long-term operational benefits, such as replacement systems or new applications that result in significantly increased operational efficiencies or functionality. All other costs incurred in connection with an internal-use software project are expensed as incurred.

Intangible assets are reviewed for impairment whenever events or changes in circumstances indicate the related carrying amount may not be recoverable. Intangible assets are amortized over estimated useful lives of three years using the straight-line method.

Commercial paper. NSCC issues unsecured short-term promissory notes (Commercial paper) with maturities generally less than one year. The proceeds from the issuance of the Commercial paper constitute liquid resources of NSCC that, together with other liquid resources of the Company, will enable NSCC to effect the settlement of its payment obligations in the event of the default of any of its Participants in accordance with NSCC's rules and procedures. Pending use by NSCC of the proceeds of the Commercial paper issuance for this purpose, the funds raised are invested in highly liquid short-term instruments in accordance with NSCC's investment policy.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Revenue recognition. The Company recognizes revenue to depict the transfer of promised services and related performance obligations to customers in an amount that reflects the consideration to which the entity expects to be entitled, upon satisfaction, in exchange for those services. Promised services and related performance obligations are recognized at the point in time when the control of the promised service is transferred to customer.

To recognize revenue the Company applies the following steps: identify the contract(s) with the customer, identify the performance obligations in the contract(s), determine the transaction price, allocate the transaction price to the performance obligations in the contract and recognize revenue when (or as) the entity satisfies a performance obligation.

Certain contracts with customers contain variable consideration, where the amount the Company receives is contingent on a future event occurring or not occurring, even though the amount itself may be fixed. Variable consideration primarily relates to volume based discounts for certain services, however does not have an impact on the revenue recognition due to volume targets or thresholds typically resetting on a monthly basis.

The Company derives its revenue from transaction fees and other services. Revenue from transaction fees is recognized at a point in time on the transaction date, as the customer obtains the control and benefit of the service at that point. Other services, which represent fees generated from offering referential based data and business processing solutions to financial institutions globally, is recognized when services are provided based on contractual terms.

Details for each revenue stream presented in the Company's Statements of Income follow:

Clearing services. The Company delivers clearing services across the U.S. equities markets. Occasionally, the Company offers rebates to its customers, which are discretionary and recognized upon approval by the Board of Directors, and are recorded as a reduction to Clearing services revenue.

Wealth management services. Services include centralized, automated processing and information services for mutual fund, alternative investment, and insurance and retirement products.

Other services. The Company offers referential and activity-based, announcement, security reference, and liquidity data through the DTCC Data Services product. These offerings are delivered in fixed or configurable formats, sourced from the Company's transaction, reference, position and asset servicing data.

*Rebates***.** During 2019, the Company recorded and paid a one-time rebate approved by the Board of Directors in the amount of $8 million to its customers. The rebate was based on a pro rata share of qualifying revenues, using estimated 2019 operating margin of the Company as the basis for the calculation. The rebate is recorded as a reduction to Clearing services revenue in the accompanying Statements of Income.

*Accounts receivable and deferred revenue.*The period in which the Company recognizes revenue may differ from the timing of payments received from customers. The Company records a receivable when revenue is recognized prior to payment and there is an unconditional right to payment. Alternatively, when payment precedes the provision of the related services, the Company records deferred revenue until the performance obligations are satisfied. Deferred revenue represents the Company's contract liabilities related to billings or payments received in advance for other services, when the performance obligation has not yet been satisfied.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Reconciliation of Cash, cash equivalents and restricted cash. The Company includes all cash on the Statements of Financial Condition when reconciling the beginning and ending total amounts shown in the Statements of Cash Flows, which includes Cash and cash equivalents and cash balances that are not available for general corporate purposes due to certain restrictions - Participants' segregated cash, Clearing Fund cash deposits and Cash in Other Participants' assets.

A reconciliation of Cash and cash equivalents, Participants' segregated cash, Clearing Fund cash deposits, Cash in Other Participants' assets, reported within the Statements of Financial Condition that sum to the total of the same such amounts shown on the Statements of Cash Flows as of December 31, 2019 and 2018 follow (in thousand):

	2019	2018
Cash and cash equivalents	$ 6,799,657	$ 7,125,729
Participants' segregated cash	4,876	77,988
Clearing Fund cash deposits (see Note 5)	5,554,586	7,651,033
Cash in Other Participants' assets (see Note 4)	1,499	1,715
Total Cash and cash equivalents, Participants' segregated cash, Clearing Fund cash deposits, Cash in Other Participants' assets shown on the Statements of Cash Flows	$ 12,360,618	$ 14,856,465

Income taxes. The Provision for income taxes is computed using the asset and liability method. The tax currently payable is based on taxable income for the year. Taxable income differs from Income before taxes as reported in the accompanying Statement of Income because it excludes items of income or expense that are taxable or deductible in other years and it further excludes items that are never taxable or deductible. The Company records a deferred income tax (benefit) provision when there are differences between assets and liabilities measured for financial reporting and for income tax return purposes. These temporary differences result in taxable (deferred tax liability) or deductible (deferred tax assets) amounts in future years and are measured using the tax rates and laws that will be in effect when such differences are expected to reverse. Valuation allowances are recognized if, based on the weight of available evidence, it is more likely than not that some portion of the deferred tax asset will not be realized. Deferred tax assets and liabilities are reported net by jurisdiction in non-current assets or liabilities on the accompanying Statements of Financial Condition. It is the Company’s policy to provide for uncertain tax positions and the related interest and penalties based upon management’s assessment of whether a tax benefit is more likely than not to be sustained upon examination by the tax authorities.

Expense allocations. Substantially all expenses are recorded at DTCC and are allocated to its subsidiaries, including NSCC, based upon their estimated use of such goods or services as determined by various allocation factors including direct expenses, level of support provided and utilization of technology resources. Accordingly, the expenses in the accompanying Statements of Income represent allocated costs including Employee compensation and related benefits, Information technology, Professional and other services, Occupancy, Depreciation and amortization and General and administrative.

Commitments and contingencies. The Company is involved in legal proceedings and litigation arising in the ordinary course of business. In the opinion of management, the outcome of such proceedings and litigation is not expected to have a material effect on the accompanying Statements of Financial Condition, Income or Cash Flows.

3. ACCOUNTING AND REPORTING DEVELOPMENT

Standard	Description	Impact on the financial statements or other significant matters
Financial Accounting Standards Board Standard Issued, but not yet Adopted		
ASU 2019-12 Income Taxes (Topic 740) - Simplifying the Accounting for Income Taxes *Issued December 2019*	• Clarifies and simplifies aspects of accounting for income taxes. • Eliminates certain exceptions related to the approach for intraperiod tax allocation, the methodology for calculating income taxes in an interim period and the recognition of deferred tax liabilities for outside basis differences.	• Effective January 1, 2022. • The Company is evaluating the impact on related disclosures in its financial statements.
ASU 2019-05 Financial Instruments - Credit Losses: Targeted Transition Relief *Issued May 2019*	• Provides entities with an option upon adoption of ASU 2016-13 *Financial Instruments - Credit Losses* to irrevocably elect the fair value option on an instrument-by-instrument basis for certain financial instruments that are both within the scope of the current expected credit loss and eligible for the fair value option.	• Effective January 1, 2020. • The Company will not elect the fair value option on any instrument within the scope and therefore no impact on its financial statements and related disclosures.
ASU 2018-18 Clarifying Interactions of the Revenue Recognition and Collaborative Arrangements Standards *Issued November 2018*	• Amends Collaborative Arrangement standard to clarify that certain transactions between participants in a collaborative arrangement should be accounted for under new Revenue Recognition standard when the collaborative partner is considered the customer. Requires revenues from such collaborative contracts to be recognized upon transfer of control of a good or service in the amount of consideration expected to be received from the collaborative partner. • Precludes an entity from presenting collaborative arrangement consideration as revenue from contracts with customers if the collaborative partner is not considered the customer.	• Effective January 1, 2020. • The Company's implementation efforts included the identification and evaluation of collaborative arrangements that were not reviewed under the implementation of ASU 2014-09 *Revenue from Contracts with Customers*. • The adoption of the standard will not have a material impact to the recognition and timing of revenues for collaborative arrangements or on its financial statements and related disclosures.
ASU 2018-15 Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement (CCA) That Is a Service Contract *Issued August 2018*	• Implementation costs related to a CCA will be deferred or expensed as incurred in accordance with the existing internal-use software guidance for similar costs.	• Effective January 1, 2020. • The adoption of the standard will not have a material impact on its financial statements and related disclosures.

3. ACCOUNTING AND REPORTING DEVELOPMENT (CONTINUED)

Standard	Description	Impact on the financial statements or other significant matters
Financial Accounting Standards Board Standard Issued, but not yet Adopted (continued)		
ASU 2018-13 Changes to the Disclosure Requirements for Fair Value Measurement *Issued August 2018*	• Entities will no longer be required to disclose the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy (see Note 9). • Public companies will be required to disclose the range and weighted average used to develop significant unobservable inputs for Level 3 fair value measurements. • Modifies certain disclosure requirements for nonpublic entities to make them less burdensome.	• Effective January 1, 2020. • The adoption of the standard is not expected to have an impact on the related disclosures in its financial statements.
ASU 2016-13 Financial Instruments - Credit Losses *Issued June 2016*	• Replaces the current incurred loss approach for credit losses with an "expected loss" model for instruments measured at amortized cost. • Requires all lifetime credit losses for financial assets held at the reporting date to be estimated based on factors such as historical experience, current conditions and forecasts. • Requires entities to record allowances for available-for-sale debt securities.	• Effective January 1, 2020. • The Company determined the largest instrument in scope of the standard is trade receivables. Trade receivables will require an adjustment to its provision matrix for current and forward-looking projections however, adjustments are not expected to be material. • The adoption of the standard will not have a material impact on its financial statements and related disclosures.

4. PARTICIPANTS’ SEGREGATED CASH, OTHER PARTICIPANTS’ ASSETS AND PAYABLE TO PARTICIPANTS

Details for Participants’ segregated cash, Other Participants’ assets and Payable to Participants as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Assets:		
Participants' segregated cash	$ 4,876	$ 77,988
Other Participants' assets:		
Cash	1,499	1,715
Other	—	68
Total Other Participants' assets	1,499	1,783
Total	$ 6,375	$ 79,771
Liabilities:		
Payable to Participants	$ 6,375	$ 79,771

Participants' segregated cash represents cash received from Participants to facilitate their compliance with SEC customer protection rules. Unclaimed balances are remitted to the appropriate authority when required by abandoned property laws.

5. CLEARING FUND

Details for the Clearing Fund deposits as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Required deposits	$ 5,183,646	$ 6,830,444
Excess deposits	713,606	1,435,091
Total	$ 5,897,252	$ 8,265,535

Details for the Clearing Fund deposits as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Cash deposits	$ 5,554,586	$ 7,651,033
Securities on deposit - at fair value	342,666	614,502
Total	$ 5,897,252	$ 8,265,535

Details for the Clearing Fund cash deposits as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Bank deposits	$ 3,953,586	$ 5,720,033
Money market fund investments - at fair value	1,226,000	1,556,000
Reverse repurchase agreements	375,000	375,000
Total	$ 5,554,586	$ 7,651,033

Clearing Fund cash deposits. Participant cash deposits of the Clearing Fund may be applied to satisfy obligations of the depositing Participant, other Participants, or the Company as provided in NSCC's rules.

6. PREMISES AND EQUIPMENT

The cost, accumulated deprecation and net book value of Premises and equipment for the years ended December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Furniture and equipment	$ —	$ 2,488
Buildings and improvements	3,882	3,882
Land	840	840
Cost Premises and equipment	4,722	7,210
Less accumulated depreciation	(1,560)	(3,948)
Premises and equipment, net	$ 3,162	$ 3,262

Depreciation expense for premises and equipment for the years ended December 31, 2019 and 2018 was $100,000 and $104,000, respectively, and are included in Depreciation and amortization in the accompany Statements of Income.

During the years ended December 31, 2019 and 2018, disposal of fully depreciated premises and equipment resulted in the removal of cost and accumulated depreciation of $2,488,000 and $508,000, respectively. There were no other disposals of premises and equipment for the years ended December 31, 2019 and 2018.

7. INTANGIBLE ASSETS

The gross carrying value, accumulated amortization and net book value of capitalized software for the years ended December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Gross carrying value capitalized software	$ 107,961	$ 140,043
Less accumulated amortization	(70,190)	(109,052)
Capitalized software, net	$ 37,771	$ 30,991

Details for estimated amortization expense for each of the next four years follow (in thousands):

2020	$ 12,185
2021	12,213
2022	9,509
2023	3,864
Total future estimated amortization	$ 37,771

Amortization expense for capitalized software for the years ended December 31, 2019 and 2018 was $10,243,000 and $13,493,000, respectively, and are included in Depreciation and amortization in the accompanying Statements of income.

The Company recognized impairment charges on capitalized software determined to have no realizable value for December 31, 2019 and 2018 in the amount of $6,737,000 and $2,104,000, respectively. The impairment charges are included in Impairment of Intangible assets in the accompanying Statements of Income.

During the years ended December 31, 2019 and 2018, disposal of fully amortized capitalized software resulted in the removal of cost and accumulated amortization of $48,995,000 and $0, respectively. There were no other disposals of capitalized software for the years ended December 31, 2019 and 2018.

8. COMMERCIAL PAPER

Details for Commercial paper as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Commercial paper - net of unamortized discount of $20,623 and $43,856 as of December 31, 2019 and 2018, respectively	$ 7,154,217	$ 7,436,141
Weighted-average interest rate	1.95%	2.59%

Interest expense on Commercial paper included in the accompanying Statements of Income was $166,453,000 and $104,714,000 for the years ended December 31, 2019 and 2018, respectively.

9. FAIR VALUE MEASUREMENTS

Valuation hierarchy

U.S. GAAP provides for a three-level valuation hierarchy based on the transparency of inputs to the valuation of an asset or liability as of the measurement date. Details for the descriptions of the three levels follow:

- Level 1 — Inputs to the valuation methodology are unadjusted quoted market prices for identical assets or liabilities in active markets as of the valuation date.
- Level 2 — Inputs to the valuation methodology are quoted market prices for similar assets and liabilities in active markets; quoted market prices for identical or similar assets or liabilities in markets that are not active; inputs other than quoted prices that are observable for the asset or liability; and inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- Level 3 — Inputs to the valuation methodology are unobservable and reflect the Company's own assumptions about the estimates market participants would use pricing the asset or liability based on the best information available in the circumstances (e.g., internally derived assumptions surrounding timing and amount of expected cash flows).

A financial asset or liability's categorization within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement.

Financial assets and liabilities measured at fair value on a recurring basis. For financial assets and liabilities measured at fair value on a recurring basis the Company applies the following valuation techniques to measure fair value:

Product/Instrument	Valuation Methodology	Classification in the valuation hierarchy
Assets - Clearing Fund - Securities on deposit		
U.S. Treasury Securities U. S. Agency Issued Debt Securities (Non-Callable)	Obtained from pricing services engaged by the Company, and the Company receives one price for each security. The fair values provided by the pricing services are estimated using pricing models, where the inputs to those models are based on observable market inputs.	Level 1
Assets - Clearing Fund - Cash deposits		
Money market fund investments	Quoted prices in active markets for identical assets	Level 1
Liabilities - Clearing Fund - Securities on deposit and Cash deposits - Money market fund investments		
Clearing Fund liabilities	Derived from the corresponding Clearing Fund assets (see above).	Level 1

9. FAIR VALUE MEASUREMENTS (CONTINUED)

Fair value measurements for those items measured on a recurring basis are summarized below as of December 31, 2019 and 2018 (in thousands):

	2019			
	Level 1	Level 2	Level 3	Total
Assets - Clearing Fund				
Securities on deposit	$ 342,666	$ —	$ —	$ 342,666
Cash deposits - Money market fund investments	1,226,000	—	—	1,226,000
Total	$ 1,568,666	$ —	$ —	$ 1,568,666
Liabilities - Clearing Fund				
Securities liabilities	$ 342,666	$ —	$ —	$ 342,666
Money market fund investments liabilities	1,226,000	—	—	1,226,000
Total	$ 1,568,666	$ —	$ —	$ 1,568,666

	2018			
	Level 1	Level 2	Level 3	Total
Assets - Clearing Fund				
Securities on deposit	$ 614,502	$ —	$ —	$ 614,502
Cash deposits - Money market fund investments	1,556,000	—	—	1,556,000
Total	$ 2,170,502	$ —	$ —	$ 2,170,502
Liabilities - Clearing Fund				
Securities liabilities	$ 614,502	$ —	$ —	$ 614,502
Money market fund investments liabilities	1,556,000	—	—	1,556,000
Total	$ 2,170,502	$ —	$ —	$ 2,170,502

There were no transfers between levels within the fair value hierarchy, nor were any amounts classified as Level 3 during the years ended December 31, 2019 and 2018.

Financial assets and liabilities measured at other than fair value.
Financial assets and liabilities whose carrying value approximates fair value. The carrying values of certain assets and liabilities approximate their fair values because they are short-term in duration, have no defined maturity, or have market-based interest rates. These instruments include Cash and cash equivalents, Participants' segregated cash, Short-term investments, Clearing Fund - Cash deposits bank deposits and Reverse repurchase agreements, Commercial paper, Other Participants' assets, Accounts payable and accrued expenses and Payable to Participants.

9. FAIR VALUE MEASUREMENTS (CONTINUED)

The tables below present the carrying values, fair values and fair value hierarchy levels of all financial instruments measured at other than fair value on the accompanying Statements of Financial Condition as of December 31, 2019 and 2018 (in thousands):

	2019				
	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets:					
Cash and cash equivalents	$ 6,799,657	$ 6,799,657	$ 6,799,657	$ —	$ —
Participants' segregated cash	4,876	4,876	4,876	—	—
Short-term investments	900,000	900,000	—	900,000	—
Clearing Fund:					
Cash deposits - Bank deposits	3,953,586	3,953,586	3,953,586	—	—
Cash deposits - Reverse repurchase agreements	375,000	375,000	—	375,000	—
Other Participants' assets	1,499	1,499	1,499	—	—
Total	$ 12,034,618	$ 12,034,618	$ 10,759,618	$ 1,275,000	$ —
Liabilities:					
Commercial paper	$ 7,154,217	$ 7,154,217	$ —	$ 7,154,217	$ —
Accounts payable and accrued expenses	4,719	4,719	—	4,719	—
Clearing Fund - Cash deposits - Bank deposits and Reverse repurchase agreements	4,328,586	4,328,586	4,328,586	—	—
Payable to Participants	6,375	6,375	6,375	—	—
Total	$ 11,493,897	$ 11,493,897	$ 4,334,961	$ 7,158,936	$ —

9. FAIR VALUE MEASUREMENTS (CONTINUED)

	2018				
	Carrying Amount	**Total Fair Value**	**Level 1**	**Level 2**	**Level 3**
Assets:					
Cash and cash equivalents	$ 7,125,729	$ 7,125,729	$ 7,125,729	$ —	$ —
Participants' segregated cash	77,988	77,988	77,988	—	—
Short-term investments	800,000	800,000	—	800,000	—
Clearing Fund:					
Cash deposits - Bank deposits	5,720,033	5,720,033	5,720,033	—	—
Cash deposits - Reverse repurchase agreements	375,000	375,000	—	375,000	—
Other Participants' assets	1,783	1,783	1,715	68	—
Total	$ 14,100,533	$ 14,100,533	$ 12,925,465	$ 1,175,068	$ —
Liabilities:					
Commercial paper	$ 7,436,141	$ 7,436,141	$ —	$ 7,436,141	$ —
Accounts payable and accrued expenses	4,805	4,805	—	4,805	—
Clearing Fund - Cash deposits - Bank deposits and Reverse repurchase agreements	6,095,033	6,095,033	6,095,033	—	—
Payable to Participants	79,771	79,771	79,771	—	—
Total	$ 13,615,750	$ 13,615,750	$ 6,174,804	$ 7,440,946	$ —

Financial assets measured at fair value on a non-recurring basis. Certain assets are subject to measurement at fair value on a non-recurring basis. For these assets, measurement at fair value in periods subsequent to their initial recognition is applicable if determined to be impaired. Fair value is based on discounted cash flow analyses or comparing values of similar instruments. Discounted cash flow analyses are dependent upon various factors including estimated future cash flows, interest rate yield curves and volatility of inputs.

Fair values on the aforementioned impairments disclosed in Note 7 were based on discounted cash flows using Level 3 inputs under the fair value guidance. The cash flows are those expected to be generated by the market participants, discounted at a rate commensurate with the risk of the cash flows.

10. PENSION AND POSTRETIREMENT BENEFITS

Defined contribution retirement plans. Eligible U.S. DTCC employees participate in one of two defined contribution plans, The Depository Trust & Clearing Corporation Employee Savings Plan (Employee Savings Plan) and The Depository Trust & Clearing Clearing Corporation Operations Level Employee Savings Plan (Operations Level Savings Plan). The Employee Savings Plan is a single employer plan covering non-bargaining unit employees. The Operations Level Savings Plan is a single employer plan covering bargaining unit employees.

Defined benefit pension and other postretirement benefit plans. Eligible DTCC employees participate in DTCC's trusteed non-contributory defined benefit pension and other postretirement plans, which provide for certain benefits upon retirement. DTCC's sponsored non-contributory plans include a defined benefit pension plan, supplemental executive retirement plan and benefit restoration plan. Eligible DTCC employees also participate in DTCC's life insurance program, which provides for the payment of death benefits to beneficiaries of eligible retired employees, and DTCC's health care program, which provides benefits to eligible retired employees.

10. PENSION AND POSTRETIREMENT BENEFITS (CONTINUED)

Cost allocation. DTCC allocates the cost of these plans to its subsidiaries based primarily upon the estimated proportion of each subsidiary's salary cost relative to DTCC's total salary cost. The defined contribution retirement plans costs allocated to NSCC were $5,527,000 and $4,316,000 for the years ended December 31, 2019 and 2018, respectively. The defined benefit pension and other postretirement benefit plans costs allocated to NSCC were $2,590,000 and $2,754,000 for the years ended December 31, 2019 and 2018, respectively.These costs are included in Employee compensation and related benefits, Interest expense, and Other non-operating income in the accompanying Statements of Income based on the nature of the pension expense component.

11. INCOME TAXES

NSCC is included in DTCC's consolidated Federal and various state tax returns. NSCC also files other state tax returns on a separate company basis.

Details for the components of the Company's Provision (Benefit) for income taxes calculated on a separate company basis for the years ended December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Current income tax/(benefit):		
Federal	$ 12,644	$ 22,398
State and local	4,540	10,901
Total current income tax/(benefit)	17,184	33,299
Deferred income tax/(benefit):		
Federal	2,360	3,955
State and local	924	(6,935)
Total deferred income tax/(benefit)	3,284	(2,980)
Provision for income taxes	$ 20,468	$ 30,319

Pursuant to a tax sharing agreement between DTCC and NSCC, the Company is liable for its allocable share of Federal, state and local tax liabilities that are paid by DTCC. For the years ended December 31, 2019 and 2018, the Company paid income taxes to DTCC, net of refunds, of $15,885,000 and $31,661,000, respectively.

The 2019 and 2018 effective tax rates differ from the 21% Federal statutory rate, respectively, primarily due to state and local taxes and changes in unrecognized tax benefits. Details for the reconciliation of the U.S. Federal statutory tax rate to the Company's effective tax rate on Income before taxes for the years ended December 31, 2019 and 2018 follow:

	2019	2018
U.S. statutory tax rate	21.0%	21.0%
State and local income taxes, net of Federal tax benefit	6.0	6.2
Change in unrecognized tax benefits	0.7	(4.7)
Enactment of the Tax Reform Act	—	(0.3)
Settlements of tax audits	—	1.8
Other	(1.0)	(0.8)
Effective tax rate	26.7%	23.2%

11. INCOME TAXES (CONTINUED)

Details for the components of deferred tax assets and liabilities as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Deferred tax assets:		
Deferred rent	$ 7,728	$ 1,441
Other	1,474	1,473
Total deferred tax assets	9,202	2,914
Deferred tax liabilities:		
Accrued compensation and benefits	(3,039)	(523)
Depreciation and amortization	(7,230)	(1,642)
Capitalized software	(10,672)	(9,204)
Total deferred tax liabilities	(20,941)	(11,369)
Net deferred tax liabilities	$ (11,739)	$ (8,455)

The deferred tax assets are expected to be fully realized and, accordingly, no valuation allowance was established as of December 31, 2019 and 2018.

Details for unrecognized tax benefits as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
Beginning balance at January 1,	$ 4,225	$ 8,687
Increases based on prior period tax positions	—	1,158
Decreases based on prior period tax positions	—	(3,990)
Decreases related to lapses in statute	—	(70)
Decreases related to settlements with taxing authorities	—	(1,560)
Ending balance as of December 31,	$ 4,225	$ 4,225

The Company classifies interest and penalties related to unrecognized tax benefits, if incurred, in Provision for income taxes in its accompanying Statements of Income. As of December 31, 2019 and 2018, accrued interest related to unrecognized tax benefits recorded on the accompanying Statements of Financial Condition totaled $3,486,000 and $2,790,000, respectively.

Unrecognized tax benefits are estimated based on judgment, assessment of relevant risks, facts and circumstances. Actual results could differ materially from those estimates. The Company believes that the liability for unrecognized tax benefits is the best estimate in relation to the potential for additional assessments. Unexpected results from one or more such tax audits could significantly adversely affect our income tax provision and our results of operations.

Details for the periods currently under examination and remaining subject to examination by jurisdiction as of December 31, 2019 follow:

	Tax Years	
Jurisdiction	**Under Examination**	**Subject to Examination**
U.S. Federal - Internal Revenue Service	2014	2016 - 2018
New York State	2015 - 2016	2017 - 2018
New York City	2010 - 2017	2018
State of Florida	2014 - 2016	2017 - 2018

12. TRANSACTIONS WITH RELATED PARTIES

In the ordinary course of the business, the Company enters into significant related party transactions with DTCC and its other subsidiaries.

Transactions with DTCC. NSCC has an agreement with DTCC whereby DTCC pays for substantially all of the operational expenses of NSCC, and from time-to-time purchases of long-term assets acquired by DTCC on behalf of NSCC. The related expenses are allocated to NSCC based upon its estimated use of such goods or services. Further, the agreement provides that DTCC performs credit and quantitative risk services, and certain other services for NSCC including administrative, internal audit, finance and legal services. For the years ended December 31, 2019 and 2018, the billing for these services were 107% and 108% of total allocated expenses, respectively, excluding charges passed through to Participants and capitalized software costs. The fee, representing the amount in excess of the actual cost, is included in Professional and other services in the accompanying Statements of Income.

Transactions with DTCC Solutions LLC. DTCC Solutions LLC perform announcement creation and validation services on behalf of NSCC in connection with NSCC's corporate action data information and are billed at cost. On May 1, 2018, the agreement between these two companies was terminated. Expenses under this agreement were included in Professional and other services in the accompanying Statements of Income.

On January 1, 2018, a new agreement was created for the Data Services product.Under the agreement, DTCC Solutions LLC sells data products including referential and activity-based data, security reference and benchmark analytics, on behalf of NSCC. All of the revenue from the sales is billed back to NSCC and is included in Other services, in the accompanying Statements of Income. The associated expenses incurred, plus a 5% mark-up fee, are also billed back to NSCC, and these related expenses are included in Employee compensation and related benefits, Information technology, Professional and other services, Occupancy, Depreciation and amortization and General and administrative, respectively, in the accompanying Statements of Income.

Details for related party transactions for 2019 and 2018 follow (in thousands):

	Revenues [2] For the years ended December 31,		Expenses For the years ended December 31,		Payables/(Receivables) [3] As of December 31,	
Related parties	**2019**	**2018**	**2019**	**2018**	**2019**	**2018**
DTCC [1]	$ —	$ —	$ 19,776	$ 22,125	$ 3,949	$ 3,636
DTCC Solutions LLC	3,542	2,829	1,495	4,150	(320)	(102)
Total	$ 3,542	$ 2,829	$ 21,271	$ 26,275	$ 3,629	$ 3,534

(1) DTCC expenses relate to the 7% and 8% mark-up fee for services described above.
(2) Included in Other services in the accompanying Statements of income.
(3) Included in Accounts payable and accrued expenses on the accompanying Statements of Financial Condition.

13. CAPITAL REQUIREMENTS

The capital requirements for NSCC is equal to the sum of the general business risk capital requirement and corporate contribution, as described below. The Company must meet the capital requirements by holding liquid net assets funded by equity, as described in Rule 17Ad-22(e)(15) of the CCAS and the Clearing Agency Policy on Capital Requirements.

General Business Risk Capital Requirement. The general business risk capital requirement is determined according to Rule 17Ad-22(e)(15) of the CCAS and the Clearing Agency Policy on Capital Requirements. The capital requirement is held to cover potential general business losses so that the Company can continue operations and provide services as a going concern if those losses materialize. It is determined based on the Company's general business risk profile and estimated time to execute a recovery or orderly wind-down of critical operations and, at a minimum, is equal to six months of operating expenses.

Corporate Contribution. The Company maintains an amount referred to as the corporate contribution, to be applied to losses of the Company as provided in the clearing agency rules. The amount of the corporate contribution is generally equal to 50% of the Company's general business risk capital requirement.

Details for general business risk capital requirement, corporate contribution and liquid net assets funded by equity for the Company as of December 31, 2019 and 2018 follow (in thousands):

	2019	2018
General business risk capital requirement	$ 159,218	$ 153,054
Corporate contribution	79,609	76,527
Total requirement	238,827	229,581
Liquid net assets funded by equity	524,817	445,732
Excess	$ 285,990	$ 216,151

14. LINE OF CREDIT AND CREDIT RATINGS

Line of credit. The Company maintains a line of credit to support settlement. Details for the terms of the outstanding line of credit as of December 31, 2019 and 2018 follow:

	2019	2018
Committed Amount	$12.1 billion (1)	$12.1 billion (1)
Number of Participants/Lenders	32/41	33/41
Borrowing Rate	The greater of the federal funds offered rate, adjusted LIBOR, or lenders' cost of funds, on the day of borrowing, plus 1.40%.	
Maturity Date	May 2020	May 2019

(1) The annual facility fee associated with maintaining the line of credit was 10 basis points of the total line of credit, for the years ended December 31, 2019 and 2018, and is included in Professional and other services in the accompanying Statements of Income.

There were no borrowings under the line of credit during 2019 and 2018.

Details for debt covenants related to the line of credit as of December 31, 2019 and 2018 follow:

	2019	2018
Minimum Net Worth	$125 million	$125 million
Minimum Clearing Fund deposits	$1 billion	$1 billion

For the years ended December 31, 2019 and 2018, the Company was in compliance with its debt covenants.

14. LINE OF CREDIT AND CREDIT RATINGS (CONTINUED)

Credit Ratings. The Company is rated by Moody's Investors Service, Inc. (Moody's) and S&P Global Inc. (S&P). Details for issuer credit ratings and ratings outlooks for the Company as of December 31, 2019 follow:

Moody's (1)			S&P		
Long-term	**Short-term**	**Outlook**	**Long-term**	**Short-term**	**Outlook**
Aaa	P-1	Stable	AA+	A-1+	Stable

(1) Moody's categorizes the long-term issuer ratings of the Company as a clearing counterparty rating (CCR) under the agency's Clearing Houses Rating Methodology.

15. GUARANTEES

NSCC provides CCP services, including clearing, settlement and risk management services. Acting as a CCP, NSCC guarantees the settlement of trades in the event one or more of its Participants defaults. A Participant default is defined in NSCC's rules. In its guarantor role, NSCC has equal claims to and from Participants on opposite sides of netted transactions. To cover its guarantee risk, NSCC uses risk-based margining to collect cash and securities collateral through its Clearing Fund.

NSCC is the leading provider of clearance, netting, risk management and settlement for virtually all U.S. broker-to-broker trades involving equities, corporate and municipal debt, exchange traded funds and unit investment trusts. Through its Continuous Net Settlement (CNS) system, NSCC is interposed between Participants in securities clearance and settlement. CNS transactions are generally guaranteed at the point of trade comparison and validation for bilateral submissions or the point of trade validation for locked-in submissions. Since NSCC stands between the Participants delivering and receiving CNS trades, the failure of Participants to deliver securities to NSCC on settlement date, and the corresponding failure of NSCC to redeliver the securities, results in open positions. Open CNS positions are marked-to-market daily. Such marks are debited from or credited to the involved Participants through the settlement process.

Details for certain NSCC's open positions for which a trade guarantee applied as of December 31, 2019 and 2018 follow (in billions):

	2019	**2018**
NSCC	$ 143	$ 176

There were no defaults by Participants to these obligations.

If a Participant defaults, such Participant's deposits to the Clearing Fund is the first source of funds and collateral that NSCC would use to cover any losses that may result from the close-out and liquidation of the defaulting Participant's positions. This includes any amounts that may be available to NSCC under applicable agreements with other registered clearing agencies that relate to the guaranty by one or more clearing agency parties of certain obligations of a defaulting Participant to other clearing agency parties. This may include the netting contract and limited cross-guaranty between NSCC and DTC relating to collateralization across the NSCC-DTC interface. NSCC has also entered into a multilateral netting contract and limited cross-guaranty agreement with DTC, FICC and The Options Clearing Corporation (OCC) (the "Cross-Guaranty Agreement"). In accordance with the Cross-Guaranty Agreement, these clearing agencies have agreed to make payments to each other for unsatisfied obligations of a common defaulting Participant to the extent that these clearing agencies have excess resources belonging to the defaulting Participants.

If NSCC incurs a loss resulting from the liquidation of a defaulting Participant and there is still a deficit after applying such Participant's deposits to the Clearing Fund (along with any other resources of, or attributable to, the defaulting Participant that NSCC may access under NSCC's rules), NSCC will, in accordance with NSCC's rules, satisfy this deficit by applying the corporate contribution, (see Note 13), or such greater amount as the Board of Directors may determine, before allocating any remaining loss to Participants.

15. GUARANTEES (CONTINUED)

For purposes of loss allocation, Participant defaults are grouped together chronologically into discrete event periods of 10 business days. If there is remaining loss or liability from one or more Participant default events that occurred within the same event period, NSCC will assess its non-defaulting Participants as provided for in its rules. The process, in general, allocates any remaining losses or liabilities among the Participants of NSCC who were Participants on the first day of the event period ratably in accordance with their respective average daily required deposits to the Clearing Fund over the prior 70 business days.

16. OFF BALANCE SHEET AND CONCENTRATION OF CREDIT RISKS

As a CCP, NSCC is exposed to significant credit risk to third-parties including its customer base, which extends to companies within the global financial services industry. Credit risk represents the potential for loss due to the default or deterioration in credit quality of a Participant. The Company's exposure to credit risk is primarily derived from clearing and settlement service operations. Customers are based in the United States of America and overseas and include participating brokers, dealers, banks, mutual fund companies, insurance carriers and other financial intermediaries. Credit risk also comes from financial assets, which consist principally of cash and cash equivalents, investments, accounts receivable and the Clearing Fund.

Concentrations of credit risk may arise due to large connected individual exposures and significant exposures to groups of Participants whose likelihood of default is driven by common underlying factors including economic conditions affecting the securities industry and debt-issuing countries.

Cash and cash equivalents. The Company maintains cash and cash equivalents with various financial institutions including the Federal Reserve Bank. These financial institutions are located in the United States of America and Canada, and the Company's policy is designed to limit exposure with any one financial institution. As part of its credit and risk management processes, the Company performs periodic evaluations of the relative credit standing of the financial institutions with whom it places funds. The Company generally makes deposits with financial institutions having a credit rating of at least BBB+/Baa1 or better from recognized rating agencies and that are approved via its internal credit review process. The Company also monitors the condition of the financial institutions with whom it places funds on an ongoing basis to identify any significant change in a financial institution's condition. If such a change takes place, the amounts deposited in such financial institutions may be adjusted.

Marketable securities. In addition investing in reverse repurchase agreements, money market funds and bank deposits, the Company also directly invests in U.S. Treasury securities and debt obligations of the U.S. government or those U.S. government agencies guaranteed by the U.S. government. Credit risk related to marketable securities involves the risk of nonperformance by the counterparty, which could result in a material loss.

Accounts receivable. Credit risk related to accounts receivable involves the risk of non-payment by the counterparty. Credit risk is diversified due to the large number of Participants comprising the Company's customer base. The Company also performs ongoing credit evaluations of the financial conditions of its customers and evaluates the delinquency status of the receivables.

Clearing Fund. In addition to risk management policies described above for cash and cash equivalents, when Participants provide cash deposits to the Clearing Fund, the Company may invest the cash in reverse repurchase agreements (reverse repos). The Company bears credit risk related to reverse repos only to the extent cash advanced to the counterparty exceeds the value of collateral received. Securities purchased under reverse repos are generally U.S. Treasury and Agency securities having minimal credit risk due to low probability of U.S. government default, coupled with the highly liquid nature of these securities. Reverse repos are collateralized and the collateral must have a market value greater than or equal to 102% of the cash invested. Additionally, reverse repos are typically placed with financial institutions with a credit rating of BBB+/Baa1 or better from recognized rating agencies and that are approved via the Company's credit review process. To avoid concentration of credit risk exposures, the Company sets credit limits for each counterparty.

16. BALANCE SHEET AND CONCENTRATION OF CREDIT RISKS (CONTINUED)

Clearing Fund cash deposits may also be invested in money market mutual funds under Rule 2a-7 of the Investment Company Act of 1940 having a credit rating of AAA/Aaa from recognized rating agencies. Credit risk is mitigated by investing in highly rated money market mutual funds and having cash returned daily.

The Company is exposed to credit risk on a daily basis. This risk arises at NSCC as it guarantees certain obligations of its Participants under specified circumstances. The Company manages and mitigates this risk by identifying, measuring and responding to these risks in order to protect the safety and soundness of the NSCC clearing and settlement system. Various tools are utilized to mitigate these risks including, but not limited to: setting capital adequacy standards; assessing new applicants; performing continuous monitoring of Participants' financial condition; reviewing Participants' daily trading activity and determining appropriate collateral requirements; maintaining the Clearing Fund; netting trades continuously; marking unsettled trades to market; and utilizing a variety of advanced quantitative analytical methodologies, such as back and stress testing.

To become a Participant, an applicant must meet minimum eligibility criteria that are specified in the Company's rules. All applicants must provide the Company with certain financial and operational information to be a NSCC Participant. This information is reviewed to ensure the applicant has sufficient financial resources to make anticipated contributions to the Clearing Fund and to meet its obligations to the Company. The credit quality of the Participant is evaluated at the time of application and monitored on an ongoing basis to determine if the Participant continues to be financially stable and able to meet the financial requirements of membership. As part of its review, the Company utilizes an internal credit risk-rating matrix to risk rate its Participants. The resulting rating determines the level of financial review to be performed on each Participant and may impact their Clearing Fund requirements.

The Company collects Clearing Fund deposits from its Participants using a risk-based margin methodology. The risk-based methodology enables the Company to identify the risks posed by a Participant's unsettled portfolio and to quickly adjust and collect additional deposits as needed to cover those risks. At multiple times during the day, Clearing Fund requirements are calculated for each Participant based on their then-current unsettled and pending transactions. Security pricing is updated on an intraday basis and additional charges may be collected to cover significant price movements from those Participants with a significant exposure in the identified security. The Company monitors Participants' overall trading activities throughout the trading day to determine whether exposures exist that would require special actions to increase their Clearing Fund deposits.

The Company regularly performs back and stress testing of the quality and accuracy of its risk management systems to ensure the adequacy of Clearing Fund requirements and to respond to other risk factors that the tests may reveal.

NSCC maintains a committed, secured line of credit to support potential liquidity needs in the event of a Participant default.

The Company also limits its exposure to potential losses from default by Participants through its multilateral netting contract and limited cross-guaranty agreements with DTC, FICC and OCC. These arrangements are designed to provide a mechanism for the sharing of excess net resources of a common defaulting Participant held at one clearing agency to cover losses incurred at another clearing agency. NSCC and OCC also have an agreement providing for payments to each other relating to the settlement of certain option exercises and assignments in the event of a mutual Participant's failure. Further, NSCC has a netting contract and limited cross-guaranty agreement with DTC, which includes certain arrangements. Securities delivered by DTC to NSCC to cover CNS system allocations are fully collateralized.

17. SUBSEQUENT EVENTS

The Company evaluated events and transactions occurring after December 31, 2019 through February 28, 2020, for potential recognition or disclosure in these accompanying financial statements. No events or transactions occurred during such period that would require recognition or disclosure in these accompanying financial statements.