The Depository Trust & Clearing Corporation

Consolidated Financial Statements as of and for the Years Ended December 31, 2020 and 2019, and Independent Auditors' Report

THE DEPOSITORY TRUST & CLEARING CORPORATION

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INDEPENDENT AUDITORS' REPORT

To the Board of Directors and Shareholders of
The Depository Trust & Clearing Corporation

We have audited the accompanying consolidated financial statements of The Depository Trust & Clearing Corporation and its subsidiaries (the "Company"), which comprise the consolidated statements of financial condition as of December 31, 2020 and 2019, and the related consolidated statements of income, comprehensive income, changes in shareholders' equity, and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We conducted our audits 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 consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Company's preparation and fair presentation of the consolidated financial statements in order to design audit procedures appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of The Depository Trust & Clearing Corporation and its subsidiaries as of December 31, 2020 and 2019, and the results of their operations and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Deloitte & Touche LLP

March 26, 2021

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION

(In thousands, except share data)	As of December 31, 2020	2019
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 9,165,353	$ 8,395,163
Participants' segregated cash	134	4,876
Short-term investments	800,000	900,000
Accounts receivable - net of allowance for credit losses	217,531	177,219
Participants' and Clearing Funds	61,903,522	40,814,905
Other Participants' assets	813,006	514,104
Other current assets	138,265	177,940
Total current assets	73,037,811	50,984,207
NON-CURRENT ASSETS:		
Premises and equipment - net of accumulated depreciation	202,224	216,417
Goodwill	57,699	57,699
Intangible assets - net of accumulated amortization	343,530	325,125
Equity method investments	—	10,676
Operating lease right-of-use-asset	220,073	237,689
Other non-current assets	306,088	304,719
Total non-current assets	1,129,614	1,152,325
TOTAL ASSETS	$ 74,167,425	$ 52,136,532
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Commercial paper - net of unamortized discount	$ 3,843,290	$ 7,154,217
Long-term debt	3,921	4,103
Pension and postretirement benefits	40,438	34,270
Operating lease liability	27,179	25,906
Accounts payable and accrued expenses	122,021	102,179
Participants' and Clearing Funds	61,903,522	40,814,905
Payable to Participants	813,140	518,980
Other current liabilities	285,707	266,160
Total current liabilities	67,039,218	48,920,720
NON-CURRENT LIABILITIES:		
Long-term debt	3,723,942	3,921
Pension and postretirement benefits	179,552	178,384
Operating lease liability	245,836	264,848
Other non-current liabilities	290,526	263,681
Total non-current liabilities	4,439,856	710,834
Total liabilities	71,479,074	49,631,554
COMMITMENTS AND CONTINGENCIES (Note 2)		
SHAREHOLDERS' EQUITY		
Preferred stock:		
Series A, $0.50 par value - 10,000 shares authorized, issued (above par), and outstanding	300	300
Series B, $0.50 par value - 10,000 shares authorized, issued (above par), and outstanding	300	300
Series C, $0.50 par value - 1,600 shares authorized, issued (above par), and outstanding	390,516	390,516
Common stock, $100 par value - 80,000 shares authorized, 50,908 shares issued and outstanding	5,091	5,091
Additional paid-in capital	411,065	411,065
Retained earnings	1,964,412	1,769,638
Accumulated other comprehensive loss, net of tax	(233,333)	(221,932)
Non-controlling interests	150,000	150,000
Total shareholders' equity	2,688,351	2,504,978
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 74,167,425	$ 52,136,532

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

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONSOLIDATED STATEMENTS OF INCOME

(In thousands)	For the years ended December 31, 2020	2019
REVENUES		
Settlement and asset services	$ 458,406	$ 448,796
Clearing services	703,098	587,003
Matching services	293,377	273,836
Repository and derivatives services	270,030	290,161
Wealth management services	107,831	103,721
Data and other services	40,477	40,384
Investment income, net	14,184	22,290
Total revenues	1,887,403	1,766,191
EXPENSES		
Employee compensation and related benefits	781,761	733,025
Information technology	192,676	176,348
Professional and other services	352,113	335,180
Occupancy	54,065	48,010
Depreciation and amortization	146,326	143,338
General and administrative	51,093	54,028
Impairment of intangible assets	7,255	21,468
Total expenses	1,585,289	1,511,397
Total operating income	302,114	254,794
NON-OPERATING INCOME (EXPENSE)		
Interest income	136,668	557,551
Refunds to Participants	(88,374)	(367,073)
Interest expense	(120,042)	(216,361)
Net income from Equity method investments	558	404
Other non-operating income, net	44,102	39,012
Total non-operating (expense) income	(27,088)	13,533
Income before taxes	275,026	268,327
Provision for income taxes	63,009	47,847
Net income	212,017	220,480
Net income attributable to non-controlling interests	480	2,640
Net income attributable to DTCC	$ 211,537	$ 217,840

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

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In thousands)	**For the years ended December 31, 2020**	**2019**
Net income	$ 212,017	$ 220,480
OTHER COMPREHENSIVE INCOME (LOSS) - Net of tax:		
Defined benefit pension and other plans [1]	(12,884)	(27,286)
Foreign currency translation	1,483	1,689
Other comprehensive loss	(11,401)	(25,597)
Comprehensive income	200,616	194,883
Comprehensive income attributable to non-controlling interests	480	2,640
Comprehensive income attributable to DTCC	$ 200,136	$ 192,243

(1) Amounts are net of benefit for income taxes of $4,825 and $10,508 for 2020 and 2019, respectively.

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

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

	Preferred Stock						Accumulated Other Comprehensive Income (Loss), Net of Tax			
(In thousands)	**Series A**	**Series B**	**Series C**	**Common Stock**	**Additional Paid-In Capital**	**Retained Earnings**	**Defined Benefit Pension and Other Plans**	**Foreign Currency Translation**	**Non-controlling Interests**	**Total Shareholders' Equity**
BALANCE - January 1, 2019	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,571,298	$ (189,472)	$ (6,863)	$ 150,000	$ 2,332,235
Net income	—	—	—	—	—	217,840	—	—	2,640	220,480
Other comprehensive (loss) income	—	—	—	—	—	—	(27,286)	1,689	—	(25,597)
Dividend to non-controlling interest	—	—	—	—	—	—	—	—	(2,640)	(2,640)
Dividends on preferred stock	—	—	—	—	—	(19,500)	—	—	—	(19,500)
BALANCE - December 31, 2019	300	300	390,516	5,091	411,065	1,769,638	(216,758)	(5,174)	150,000	2,504,978
Net income	—	—	—	—	—	211,537	—	—	480	212,017
Other comprehensive (loss) income	—	—	—	—	—	—	(12,884)	1,483	—	(11,401)
Dividend to non-controlling interest	—	—	—	—	—	—	—	—	(480)	(480)
Dividends on preferred stock	—	—	—	—	—	(16,763)	—	—	—	(16,763)
BALANCE - December 31, 2020	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,964,412	$ (229,642)	$ (3,691)	$ 150,000	$ 2,688,351

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

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)	For the years ended December 31, 2020	2019
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 212,017	$ 220,480
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	146,326	143,338
Impairment of intangible assets	7,255	21,468
Net (gain)/loss on disposal of Premises and equipment and Intangible assets	(20)	2,798
Net income from Equity method investments	(558)	(404)
Deferred income taxes	4,625	12,170
Accretion of discount on Commercial paper, net of associated interest paid	(35,767)	11,774
Other	30,330	25,459
Net change in:		
Accounts receivable	(41,416)	220
Other Participants' assets	—	450
Other assets	41,714	(40,957)
Accounts payable and accrued expenses	21,293	12,664
Pension and postretirement benefits	(5,541)	(29,732)
Operating lease liability	(26,519)	(25,006)
Other liabilities	45,182	19,208
Participants' and Clearing Funds liabilities	12,042,342	1,098,814
Payable to Participants	294,160	(77,123)
Net cash provided by operating activities	12,735,423	1,395,621
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of Short-term investments	(2,145,000)	(2,100,000)
Maturities of Short-term investments	2,245,000	2,000,000
Purchases of Premises and equipment	(34,827)	(53,859)
Capitalized software development costs	(95,248)	(108,588)
Acquisition of intangible assets	(26,434)	—
Proceeds from sale of Equity method investments	9,902	—
Purchase of equity investments	—	(500)
Net cash used in investing activities	(46,607)	(262,947)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from Commercial paper	35,790,441	29,534,455
Repayments of Commercial paper	(39,065,601)	(29,828,153)
Proceeds from issuance of debt, net of debt issuance costs	3,721,025	—
Repayments on long-term debt and other borrowings	(4,101)	(42,779)
Preferred stock dividend payments	(16,763)	(19,500)
Payment to Non-controlling interests	(2,640)	(2,340)
Net cash provided by/(used in) financing activities	422,361	(358,317)
Effect of foreign exchange rate changes on Cash and cash equivalents	3,488	1,911
Net increase in Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets, Long-term restricted cash	13,114,665	776,268
Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets, Long-term restricted cash - Beginning of year	26,345,625	25,569,357
Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets, Long-term restricted cash - End of year	$ 39,460,290	$ 26,345,625
SUPPLEMENTAL DISCLOSURES:		
Interest paid	$ 112,967	$ 159,543
Income taxes paid - net of refunds	$ 17,691	$ 60,813

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

1. BUSINESS AND OWNERSHIP

The Depository Trust & Clearing Corporation (DTCC) is the parent company of various operating subsidiaries, including, but not limited to, The Depository Trust Company (DTC), National Securities Clearing Corporation (NSCC), Fixed Income Clearing Corporation (FICC), DTCC ITP LLC (ITP), DTCC Deriv/SERV LLC (Deriv/SERV), DTCC Solutions LLC (Solutions (US)), DTCC Solutions (UK) Limited (Solutions (UK)), Business Entity Data, B.V. (BED); collectively, the "Company" or "Companies."

Subsidiaries

DTC is a limited purpose trust company formed under the Banking Law of New York State and supervised by the New York State Department of Financial Services (NYSDFS); a State member bank of the Federal Reserve System (FRS), subject to examination by the Federal Reserve Bank of New York (FRBNY) under delegated authority from the Board of Governors (the FRB) of the FRS; and a clearing agency registered with and under the supervision of the U.S. Securities and Exchange Commission (SEC). DTC provides central securities depository, settlement and related services to members of the securities, banking and other financial industries.

NSCC is organized as a business corporation under New York law, and is a clearing agency registered with the SEC. NSCC provides clearing, settlement, risk management, and central counterparty (CCP) services to its members for broker-to-broker trades involving equities, corporate and municipal debt, exchange-traded funds, and unit investment trusts.

FICC is a clearing agency registered with the SEC that provides CCP services to members that participate in the U.S. government and mortgage-backed securities markets, consisting principally of automated real-time trade comparison, netting, settlement, trade confirmation, clearing, risk management and electronic pool notification. FICC has two divisions, the Government Securities Division (GSD) and the Mortgage-Backed Securities Division (MBSD).

DTC, NSCC and FICC are designated as Systemically Important Financial Market Utilities (SIFMUs) 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. This designation subjects the clearing agencies to enhanced standards for risk management, operation and governance, as established by the SEC's Standards for Covered Clearing Agencies (CCAS).

The members of DTCC's clearing agencies are collectively referred to as Participants.

ITP provides post-trade matching, processing and other related services, primarily to members of the financial services community.

Deriv/SERV, through its subsidiaries and affiliates, enhances transparency and provides operational efficiency for derivatives and securities financing transactions processing and reporting. Deriv/SERV offers the Trade Information Warehouse asset servicing for credit default swaps.

Solutions (US) provides information and data related-solutions.

Solutions (UK) offers software solutions and consulting services.

BED owns and operates the Global Market Entity Identifier (GMEI) Utility legal entity identifier (LEI) solution in the federated Global LEI system (GLEIS). The GMEI Utility is designed to provide a single, universal standard identifier to any organization or firm involved in a financial transaction internationally across all asset classes. LEIs issued by the GMEI Utility are ISO 17442 compliant and are recognized by all 55 global regulators who are members of the Regulatory Oversight Committee.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of presentation. The accompanying consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP). The accompanying consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. Intercompany accounts and transactions have been eliminated in consolidation.

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 consolidated 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, impairment of intangible assets, fair value measurements, pension benefit obligation 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. Represents cash received 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 credit losses and refunds to Participants. The Company establishes an allowance for estimated losses resulting from uncollectibility. Expected credit losses for newly recognized financial assets and changes to expected credit losses during the period are recognized in General and administrative in the accompanying Consolidated Statements of Income. The Company determines the adequacy of the allowance by estimating the possibility of loss based on a variety of factors, including the length of time receivables are past due, forward looking macroeconomic projections, historical experience and the financial condition of customers and other debtors.

Participants' and Clearing Funds. The rules of DTC, NSCC and FICC require Participants to maintain deposits related to their respective activities based on calculated requirements. The deposits are available to collateralize Participants' obligations and certain liabilities of the Companies. Margin deposits and any additional Participant contributions are maintained within the Participants' and Clearing Funds on the accompanying Consolidated 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 and cash equivalents and securities. These deposits and contributions may be applied to satisfy obligations of the depositing Participant, other Participants, or the Company pursuant to the rules of the relevant subsidiaries of the Company.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Cash deposits and Investments in marketable securities. 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, pursuant to an investment policy maintained by the Company. Reverse repurchase agreements provide for FICC and 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 Consolidated Statements of Income. This interest is refunded to Participants, and is included in Refunds to Participants in the accompanying Consolidated Statements of Income.

Securities - at fair value. Securities deposited to the Clearing Fund may include U.S. Treasury securities, U.S. agency debt securities and U.S. agency residential mortgage-backed securities, pursuant to the rules.

Securities held in custody. Securities held in custody by DTC for Participants, which are predominantly in electronic book form, but also include physical certificates, are not reported in the accompanying consolidated financial statements. Cash dividends and interest received by DTC or due on such securities and in the process of distribution or awaiting claim, are included in Other Participants' assets with a corresponding liability recorded in Payable to Participants on the accompanying Consolidated Statements of Financial Condition. Short positions occasionally exist in securities balances and are credited to the account of the Participants; such short positions are valued and collateralized daily by 130% of the short position reflected in Other Participants' assets on the accompanying Consolidated Statements of Financial Condition. DTC's obligation to return such cash collateral to Participants is also reflected in Payable to Participants.

Federal reserve stock. DTC is a member of the FRBNY and, as a member, is required to maintain a minimum level of investment in FRB stock based on the Company's capital. The FRB stock is carried at cost, classified as a restricted security and periodically evaluated for impairment. The Company determined there was no impairment as of December 31, 2020 and 2019. The FRB stock, amounting to $6,402,000 at December 31, 2020 and 2019, is included in Other non-current assets on the accompanying Consolidated Statements of Financial Condition.

Other Participants' assets and Payable to Participants. The Company receives cash and stock dividends, interest, reorganization and redemption proceeds on securities registered in the name of its nominee, Cede and Co., and interest and redemption proceeds on bearer securities, which it distributes to Participants. These balances are included in Other Participants' assets with a corresponding liability recorded in Payable to Participants on the accompanying Consolidated Statements of Financial Condition.

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 Consolidated 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	Depreciation Period	Depreciation Method
Leasehold improvements	Shorter of useful life or remaining term of the lease	Straight-line
Furniture and equipment	5 to 7 years	Straight-line
Building and improvements	39 years	Straight-line

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

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Goodwill and Intangible assets

Goodwill. The Company records Goodwill upon the completion of a business combination as the difference between the purchase price and the fair value of the net assets acquired. Subsequent to initial recognition, Goodwill is not amortized but is tested for impairment annually or more frequently if events occur or circumstances change that indicate an impairment may exist. The Company has the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If after assessing the totality of events or circumstances, the Company determines it is more likely than not that the fair value of a reporting unit is greater than its carrying amount, no further impairment testing is necessary. However, if the Company concludes otherwise, then it is required to perform the quantitative impairment test, whereby a goodwill impairment loss will be measured as the excess of a reporting unit's carrying value over its estimated fair value.

Intangible assets. The Company’s intangible assets include customer relationships and capitalized software.

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.

The following table summarizes how the Company amortizes and when it tests Intangible assets for impairment:

Intangible Asset	Life/ Amortization Period	Amortization Method	Impairment Testing Frequency
Customer relationships	Finite/ 12 Years	Straight-line	If a triggering event occurs
Capitalized software	Finite/ 3 - 5 Years	Straight-line	If a triggering event occurs

Equity method investments. All investments that represent less than a majority, but at least a 20% ownership interest, and the Company can exert significant influence over the operations of the investment, are accounted for using the equity method. Investments are initially recognized at cost. Subsequently, the Company's proportionate share of investees' earnings are recorded in Net income (loss) from Equity method investments in the accompanying Consolidated Statements of Income in the period earned. Dividends are recorded as a reduction to the investment account.

Equity investments. All investments that represent less than a 20% ownership interest are initially recognized at cost and included in Other non-current assets on the accompanying Consolidated Statements of Financial Condition. Subsequently, these investments are measured at fair value, which represents cost less impairment, if any, plus or minus changes resulting from the latest valuation of the investments from their most recent round of financing. Changes in the fair values of these investments are recorded in Other non-operating income, net in the accompanying Consolidated Statements of Income.

Commercial paper. NSCC issues unsecured short-term promissory notes (in the form of 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 NSCC, are available to enable it to effect the settlement of its payment obligations in the event of the default of any of its Participants pursuant to NSCC’s rules. Pending such use by NSCC, the proceeds of the issuance of commercial paper are invested in highly liquid short-term instruments in accordance with NSCC's investment policy.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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 Consolidated Statements of Financial Condition, Income or Cash Flows.

From time to time, the Company is also involved in reviews, investigations and proceedings (both formal and informal) by governmental and regulatory agencies regarding the Company's business practices, including, among other matters, accounting and operational matters, which may result in adverse judgments, settlements, fines, penalties, injunctions or other relief.

The Company may contest the liability and/or the amount of damages as appropriate in each pending matter. The Company accrues for the estimated loss where available information indicates that it is probable a liability has been incurred at the date of the consolidated financial statements and the Company can reasonably estimate the amount of that loss.

As of December 31, 2020, the SEC identified potential compliance violations arising from a regulatory examination and the Company accrued an estimated liability for the probable loss based on currently available information. The Company evaluates, on a quarterly basis, developments in legal and regulatory proceedings that could cause an increase or decrease in the amount of the accrual that has been previously recorded; actual results may vary significantly.

Non-controlling interests. Non-controlling interests represent the ownership of DTC Series A preferred stock. Under a plan adopted by the Board of Directors, each Participant of DTC is required to own shares of DTC Series A preferred stock. Shareholders' equity is adjusted for the income attributable to the non-controlling interest shareholders and any distributions to those shareholders.

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 Company expects to be entitled, upon satisfaction, in exchange for those services.

The Company derives its revenue from transaction fees, subscription revenue, support services, and usage fees. Revenue from transaction fees is billed monthly and calculated based on the number of executed transactions and the established fee schedules, less any applicable volume discounts. The volume targets or thresholds for the discounts reset monthly. Subscription and support revenues are recognized ratably over the performance period of the relevant contract using a time elapsed measure of progress as the customer receives the benefits of the services throughout the term of the contract. Usage fees are recognized when services are provided based on contractual terms.

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

S*ettlement and asset services.* Revenue derived from this revenue stream are in the form of transaction fees and subscription revenue. The Company provides settlement services for equity, corporate and municipal debt trades and money market instruments in the United States of America. Asset Servicing includes a broad range of services for underwriting, custody, corporate actions, dividend, proxy and reorganization services, as well as the electronic registration and transfer of securities processing.

Clearing services. Revenue derived from this revenue stream are in the form of transaction fees that are based on either the volume or value of trading activity. Services include the continuous net settlement of equity and corporate bonds, mortgage backed securities clearing, and government securities clearing.

Matching services. Revenue derived from this revenue stream are in the form of transaction fees, subscription revenue and support services. Services include trade enrichment, trade agreement, LEIs and data analytics.

Repository and derivatives services. Revenue derived from this revenue stream may be in the form of transaction fees, subscription revenue and support services. Services support derivatives trade data submissions covering real-time price reporting, transaction details, valuation data to meet members' reporting obligations in various jurisdictions globally, as well as an asset servicing infrastructure for credit default swaps, matching service for equity derivatives payments and tools to member firms to address the quality of their derivatives trade submissions.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Wealth management services. Revenue derived from this revenue stream is in the form of transaction fees. Services include centralized, automated processing and information services for mutual fund, alternative investment, and insurance and retirement products.

Data and other services. Revenue derived from this revenue stream may be in the form of subscription revenue and usage fees, which include 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

The Board of Directors approved and the Company paid rebates in the amount of $25 million to DTC Participants during 2020 and an aggregate of $47 million to DTC, NSCC and FICC Participants during 2019. The rebates were calculated based on estimated profitability at the legal entity level. Participants received rebates in proportion to their fees paid in 2020 and 2019, respectively. The rebates are presented net in Settlement and asset services and Clearing services revenues in the accompanying Consolidated Statements of Income.

The rebate amount in the accompanying Consolidated Statements of Income for the years ended December 31, 2020 and 2019 follows (in thousands):

	2020	2019
Settlement and asset services	$ 25,000	$ 13,000
Clearing services	—	34,000
Total	$ 25,000	$ 47,000

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 typically bills its customers up to 30 days in arrears. The Company records a receivable when revenue is recognized prior to payment and there is an unconditional right to payment. See Note 5, Due from Participants and customers for services, net, for the Company's receivables related to revenues from contracts with customers.

Deferred revenue represents the Company's liability to perform services in the future related to payments received in advance of those services. Deferred revenue as of December 31, 2020 and 2019 was $17,599,000 and $13,892,000, respectively, and is included in Other current liabilities and Other non-current liabilities on the accompanying Consolidated Statements of Financial Condition, as disclosed in Note 12. Of the $13,892,000 as of December 31, 2019, $11,866,000 was recognized as revenue during the year ended December 31, 2020.

Investment income, net. Investment income, net represents changes in the fair values of investment assets related to the Company's deferred compensation plan (structured as a Rabbi Trust). All of the marketable securities of the Rabbi Trust are classified as trading securities and are recorded at fair value.

Non-qualified deferred compensation plan. DTCC maintains a self-directed, non-qualified deferred compensation plan structured as a “Rabbi Trust” for certain executives and other highly compensated employees. Under the plan, participants may elect or be required to defer receipt of a portion of their annual compensation and invest it in various mutual funds. All such investments are held in the Rabbi Trust and the plan requires settlement in cash. The investment assets of the Rabbi Trust are recorded at fair value and included on the accompanying Consolidated Statements of Financial Condition in Other non-current assets as long-term incentive plan assets. The amount of compensation deferred under the plan is credited to each participant’s deferral account and a deferred compensation liability is recorded in Other non-current liabilities on the accompanying Consolidated Statements of Financial Condition. The investment assets of the Rabbi Trust are classified as trading securities, and accordingly, changes in their fair values are recorded in Investment income, net in the accompanying Consolidated Statements of Income with a corresponding charge recorded in Employee compensation and related benefits in the accompanying Consolidated Statements of Income. The change in fair value of these investments was income of $14,184,000 and $22,290,000 for the years ended December 31, 2020 and 2019, respectively.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Long-term incentive plan. DTCC's long-term incentive plan is provided to certain designated employees of DTCC to establish retention incentives for certain employees. The performance period is a three-year period commencing January 1 of each calendar year, unless modified, extended or terminated by the Board of Directors and the Compensation and Human Resources Committee. Only those employees specifically designated by the Compensation Committee are eligible to participate in the plan. The associated liabilities for the plan are classified in Other current liabilities and Other non-current liabilities on the accompanying Consolidated Statements of Financial Condition.

Retirement plans

Defined benefit plans. DTCC has a qualified non-contributory defined benefit pension plan (the Pension Plan), under which employees hired or rehired before May 1, 2009 were eligible to participate upon attainment of age 21 and completion of six months of service. The Plan is closed to new participants. The Pension Plan was frozen effective December 31, 2013 and all plan participants no longer accrue any benefits. The Pension Plan is qualified under Section 401(a) of the Internal Revenue Code of 1986, as amended. It is subject to the provisions of ERISA. The Pension Plan provides benefits to eligible retired or vested terminated employees or their beneficiaries. The Pension Benefit Guarantee Corporation, a United States governmental agency, guarantees most vested normal age retirement benefits subject to certain limitations. Pension benefits under the Pension Plan are determined based on an employee's length of service and earnings. DTCC's funding policy requires the Company to make contributions to the Pension Plan that meet or exceed the minimum funding standards under the Employee Retirement Income Security Act of 1974 (ERISA) and the Internal Revenue Code.

DTCC provides health care and life insurance benefits to eligible DTCC retired employees and their beneficiaries in the Retiree Medical and Life Insurance Plans. The Retiree Medical Plan was frozen effective January 1, 2002 and is closed to new participants but is still in existence for employees hired prior to this date. In order to be eligible, management employees hired on or before January 1, 2002, upon termination, must meet Rule 75 (age plus year of service must equal 75) and must be over the age of 55 at termination. Bargaining unit employees hired on or before January 1, 2002, upon termination, must have at least 20 years of service and be age 55 or older. When an employee is eligible for retiree medical, they are also eligible for retiree life insurance.

DTCC also sponsors a Supplemental Executive Retirement Plan (SERP) and a Restoration Plan that are non-qualified, non-funded defined benefit plans, which provide additional retirement benefits to certain employees. Benefits paid to retirees are based on age at retirement, years of credited service and average compensation. The cost of non-qualified defined benefits is determined using substantially the same actuarial methods and economic assumptions as those used for the qualified pension plan. The Company maintains certain assets in trust for non-qualified retirement benefit obligations.

The annual measurement date for DTCC's defined benefit plans is December 31. Plan assets are determined based on fair value generally representing observable market prices. The projected benefit obligations are the present values determined by discounting projected benefit distributions using the corresponding spot rates as of the measurement date from yield curves of high-quality corporate bonds available in the marketplace. The net periodic pension expense or income includes service and interest costs determined using the same yield curve spot rates, an expected return on plan assets based on an actuarially derived market-related value and amortization of prior years' actuarial gains and losses and prior service cost (credit). Service costs, interest costs, and all other costs are included in Employee compensation and related benefits, Interest expense, and Other non-operating income, respectively, in the accompanying Consolidated Statements of Income.

Actuarial gains and losses include gains or losses related to changes in the amount of the projected benefit obligations or plan assets resulting from experience different from the assumed rate of return, changes in the discount rate or other assumptions. To the extent an actuarial gain or loss exceeds 10% of the greater of the projected benefit obligation or the market-related value of plan assets, the excess is recognized over the future lifetime of the defined benefit plans.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

The expected long-term rate of return on plan assets is based on anticipated returns for each applicable asset class. Anticipated returns are weighted for the expected allocation for each asset class and are based on forecasts for prospective returns in the equity and fixed income markets, which should track the long-term historical returns for these markets. The Company also considers the growth outlook for the U.S. and global economies, as well as current and prospective interest rates.

Market-related value of assets is a balance used to calculate the expected return on plan assets. The market-related value of plan assets is either fair value or a calculated value that recognized changes in fair value in a systematic and rational manner over not more than five years. The difference between actual experience and expected returns on plan assets is included as an adjustment in the market-related value over a 4-year period.

Defined contribution retirement plans. The Company sponsors two defined contribution plans for U.S. employees, The Depository Trust & Clearing Corporation Employee Savings Plan (Employee Savings Plan) and The Depository Trust & Clearing Corporation Operations Level Employee Savings Plan (Operations Level Savings Plan). The plans are overseen by the Company's Employee Benefit Plans Committee, which is appointed by the Board of Directors of the Company and is composed of designated Company officers. 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.

The Company matches 50% of the first 6% of the employee’s contributions up to the Internal Revenue Service (IRS) compensation limits. Company matching contributions and employee contributions vest immediately.

In addition to the Company matching contributions, the Company offers a supplemental contribution on behalf of the employees in lieu of the contributions to the Pension Plan, which is now frozen. Employees are able to participate in this Pension Contribution Account (PCA) after six months of service. The Company makes contributions equal to a percentage of base and incentive pay based on years of service (3% for less than five years, 4% for five years but less than ten years, 5% for ten years or more). Company supplemental contributions vest over five years at the rate of 20% for each year of service or upon attaining age 55.

In addition to the Company matching and PCA contributions, the Company offers a supplemental contribution on behalf of the employees who were hired or rehired on or before May 1, 2001, also in lieu of the contributions to the Pension Plan. The Pension Transition Account (PTA) contribution ranges from 2% to 3% of eligible pay, for employees whose age plus service combination (in whole years) totaled 55 or higher, as of December 31, 2013. Vesting is over five years at a rate of 20% for each year of service or upon attaining age 55.

All investments, except loans receivable, are included in The Depository Trust & Clearing Corporation Master Savings Plan Trust and are administered by the plans' trustee, State Street Bank & Trust Company. Conduent Human Resources Services (Conduent) served as recordkeeper for the plans through June 30, 2020 and effective thereafter, the plan's recordkeeper was changed from Conduent to Alight Solutions. Both plans are subject to the provisions of ERISA.

Debt issuance costs. Debt issuance costs consist of costs incurred in obtaining financing and are amortized over the term of the financing using the effective interest method. These costs are generally recorded as a direct deduction from the carrying amount of the related debt liability on the Consolidated Statements of Financial Condition.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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 Consolidated Statements 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 temporary 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 asset) 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 Consolidated 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.

Foreign currency. Assets and liabilities denominated in foreign currencies are translated at rates of exchange prevailing on the dates of the accompanying Consolidated Statements of Financial Condition. Revenues and expenses are translated at average rates of exchange during the year. Gains or losses on foreign currency transactions are included in General and administrative in the accompanying Consolidated Statements of Income. Gains or losses on translation of the financial statements of foreign subsidiaries, when the functional currency is other than the U.S. dollar, are included in the accompanying Consolidated Statements of Comprehensive Income.

Derivatives and hedging. The Company uses forward contracts to hedge net investments in certain foreign subsidiaries whose functional currencies are not the U.S. dollar. The Company formally documents all relationships between the hedging instruments and hedged items, as well as the Company's risk-management objectives and strategy for undertaking various hedging transactions. Hedge accounting is applied when a derivative is highly effective at reducing the risk associated with the hedged exposure and the risk management objective and strategy are documented. Hedge documentation identifies the derivative hedging instrument, the asset or liability and type of risk hedged, and how the effectiveness of the derivative is assessed prospectively and retrospectively. For hedging instruments that qualify for hedge accounting, changes in the fair value of the derivatives are recorded in Other comprehensive (loss) income. If it is determined that a derivative is not highly effective at hedging the designated exposure, the Company discontinues hedge accounting and changes in fair value of the hedging instrument are recorded in earnings.

Reconciliation of Cash and cash equivalents and other limited use cash. When reconciling the beginning and ending total amounts shown in the Consolidated Statements of Cash Flows, the Company includes all cash on the Consolidated Statements of Financial Condition, regardless of which line it is included. The Consolidated Statements of Cash Flows includes Cash and cash equivalents and cash balances that are not available for general corporate purposes due to certain limitations, including - Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets and Restricted cash.

A reconciliation of Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets and Restricted cash reported within the accompanying Consolidated Statements of Financial Condition that sum to the total of the same such amounts shown on the accompanying Consolidated Statements of Cash Flows as of December 31, 2020 and 2019 follows (in thousands):

	2020	2019
Cash and cash equivalents	$ 9,165,353	$ 8,395,163
Participants' segregated cash	134	4,876
Participants' and Clearing Funds cash deposits	29,473,824	17,431,482
Cash in Other Participants' assets	813,006	514,104
Restricted cash included in Other non-current assets	7,973	—
Total Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets and Long-term restricted cash shown on the Consolidated Statements of Cash Flows	$ 39,460,290	$ 26,345,625

3. ACCOUNTING AND REPORTING DEVELOPMENTS

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 basis differences between book and tax.	• Effective January 1, 2022. • The Company is evaluating the impact on its consolidated financial statements and related disclosures.
Recently Adopted Accounting Standards		
ASU 2018-14 Compensation - Retirement Benefits - Defined Benefit Plan - General (Subtopic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans *Issued August 2018*	• Modifies, adds and deletes specific disclosures aimed to improve the overall usefulness of the disclosure requirements for defined benefit plans to financial statement users and to reduce unnecessary costs to companies by eliminating disclosures that may not be decision-useful.	• Adopted December 2020 on a retrospective basis. • The adoption of the standard did not have a material impact on the related disclosures in the Company's consolidated financial statements. • Certain disclosures were eliminated related to the defined benefit plans that were previously disclosed in Note 16.
ASU 2020-04 Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting *Issued March 2020*	• Provides optional ways and exceptions for applying U.S. GAAP to contract modifications and hedging relationships that currently utilize the London Interbank Offered Rate (LIBOR) as their benchmark rate, subject to certain criteria being met.	• Adopted April 2020 on a prospective basis. • The adoption of the standard did not have an impact on the Company's consolidated financial statements and related disclosures. • The Company will continue to evaluate the impacts of reference rate reform on contract modifications.
ASU 2018-15 Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement (CCA) That Is a Service Contract *Issued August 2018*	• Aligns the accounting for implementation costs incurred in a CCA that does not include a license to internal-use software with one that does. • Requires companies to defer potentially significant implementation costs incurred in a CCA that was often expensed as incurred under legacy US GAAP and recognize them as expense over the term of the arrangement.	• Adopted January 1, 2020 on a prospective basis. • The adoption of the standard did not have a material impact on the Company's consolidated financial statements and related disclosures.
ASU 2018-13 Fair value measurement (Topic 820): Disclosure Framework - 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. • Non-public companies are required to disclose transfer in/out and purchases/ issuance of Level 3 assets and liabilities. The rollforward, range and weighted average of significant unobservable inputs for Level 3 fair value are no longer required.	• Adopted January 1, 2020 on prospective basis. • The adoption of the standard did not have an impact on the Company's consolidated financial statements and related disclosures.

3. ACCOUNTING AND REPORTING DEVELOPMENTS (CONTINUED)

Standard	Description	Impact on the financial statements or other significant matters
Recently Adopted Accounting Standards (Continued)		
ASU 2017-04 Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment *Issued January 2017*	• Eliminates the second step from the goodwill impairment test. If a reporting unit's carrying amount exceeds its fair value, an entity will record an impairment charge based on that difference. The impairment charge will be limited to the amount of goodwill allocated to that reporting unit.	• Adopted January 1, 2020 on a prospective basis. • The adoption of the standard did not have an impact on the Company's consolidated financial statements and related disclosures. • The adoption of the standard will reduce the complexity of future goodwill impairment assessments.
ASU 2016-13 Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments *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.	• Adopted January 1, 2020 on a modified retrospective basis. • The Company determined the largest instrument in scope of the standard is accounts receivable. Accounts receivable and management's provision matrix were assessed for current economic conditions and forward-looking projections; however, an adjustment was not required. • The adoption of the standard did not have a material impact on the Company's consolidated 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, 2020 and 2019 follow (in thousands):

	2020	2019
Assets:		
Participants' segregated cash	$ 134	$ 4,876
Other Participants' assets	813,006	514,104
Total	$ 813,140	$ 518,980
Liabilities:		
Payable to Participants	$ 813,140	$ 518,980

Participants' segregated cash represents cash received from Participants to facilitate their compliance with SEC customer protection rule (Rule 15c3-3).

5. ACCOUNTS RECEIVABLE

Details for Accounts receivable as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Due from Participants and customers for services	$ 204,071	$ 163,432
Allowance for credit losses	(259)	(614)
Due from Participants and customers for services, net	203,812	162,818
Other receivables	13,719	14,401
Total	$ 217,531	$ 177,219

Details for allowance for credit losses for the years ended December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Beginning balance of allowance for credit losses	$ 614	$ 1,650
Provision	1,340	397
Less: Write-offs	(1,695)	(1,433)
Ending balance of allowance for credit losses	$ 259	$ 614

6. PARTICIPANTS' AND CLEARING FUNDS

Details for the Participants' and Clearing Funds as of December 31, 2020 and 2019 follow (in thousands):

2020	DTC	NSCC	FICC	Total
Total Deposits	$ 1,925,137	$ 12,972,776	$ 47,005,609	$ 61,903,522
Less: Required deposits	1,150,000	12,054,357	36,468,478	49,672,835
Excess deposits	$ 775,137	$ 918,419	$ 10,537,131	$ 12,230,687

2019	DTC	NSCC	FICC	Total
Total Deposits	$ 1,957,140	$ 5,897,252	$ 32,960,513	$ 40,814,905
Less: Required deposits	1,150,000	5,183,646	24,221,483	30,555,129
Excess deposits	$ 807,140	$ 713,606	$ 8,739,030	$ 10,259,776

Cash and Securities. Details for cash and securities of the Participants' and Clearing Funds, which may be applied to satisfy obligations of the depositing Participant, other Participants, or the Company pursuant to the rules of the relevant subsidiaries of the Company, as of December 31, 2020 and 2019 follow (in thousands):

2020	DTC	NSCC	FICC	Total
Cash and cash equivalents	$ 1,925,137	$ 11,845,743	$ 15,702,944	$ 29,473,824
Securities - at fair value	—	1,127,033	31,302,665	32,429,698
Total	$ 1,925,137	$ 12,972,776	$ 47,005,609	$ 61,903,522

2019	DTC	NSCC	FICC	Total
Cash and cash equivalents	$ 1,957,140	$ 5,554,586	$ 9,919,756	$ 17,431,482
Securities - at fair value	—	342,666	23,040,757	23,383,423
Total	$ 1,957,140	$ 5,897,252	$ 32,960,513	$ 40,814,905

6. PARTICIPANTS' AND CLEARING FUNDS (CONTINUED)

Details for the Participants' and Clearing Funds cash deposits as of December 31, 2020 and 2019 follow (in thousands):

	2020			
	DTC	NSCC	FICC	Total
Bank deposits	$ 1,925,137	$ 9,813,743	$ 12,859,944	$ 24,598,824
Money market fund investments - at fair value	—	1,607,000	2,343,000	3,950,000
Reverse repurchase agreements	—	425,000	500,000	925,000
Total	$ 1,925,137	$ 11,845,743	$ 15,702,944	$ 29,473,824

	2019			
	DTC	NSCC	FICC	Total
Bank deposits	$ 1,957,140	$ 3,953,586	$ 7,851,756	$ 13,762,482
Money market fund investments - at fair value	—	1,226,000	1,618,000	2,844,000
Reverse repurchase agreements	—	375,000	450,000	825,000
Total	$ 1,957,140	$ 5,554,586	$ 9,919,756	$ 17,431,482

7. PREMISES AND EQUIPMENT

The cost, accumulated depreciation and net book value of Premises and equipment as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Furniture and equipment	$ 270,209	$ 343,082
Leasehold improvements	171,100	164,636
Buildings and improvements	22,813	22,341
Finance leases	1,426	4,611
Land	4,221	4,221
Total Premises and equipment	469,769	538,891
Less: Accumulated depreciation	(267,545)	(322,474)
Net book value	$ 202,224	$ 216,417

Depreciation expense for premises and equipment for the years ended December 31, 2020 and 2019 was $50,252,000 and $47,799,000, respectively, and is included in Depreciation and amortization in the accompanying Consolidated Statements of Income.

During the years ended December 31, 2020 and 2019, disposals of fully depreciated premises and equipment resulted in the removal of cost and accumulated depreciation of $104,640,000 and $123,544,000, respectively. Disposals of other premises and equipment during the years ended December 31, 2020 and 2019 resulted in a gain of $20,000 and a loss of $2,798,000, respectively, and are included in General and administrative in the accompanying Consolidated Statements of Income.

8. GOODWILL AND INTANGIBLE ASSETS

The gross carrying value, accumulated amortization and net book value of Goodwill and Intangible assets as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Goodwill:		
Gross carrying value	$ 57,699	$ 57,699
Intangible assets:		
Customer relationships:		
Gross carrying value	231,700	231,700
Accumulated amortization	(139,985)	(120,679)
Net book value	91,715	111,021
Capitalized software:		
Gross carrying value	773,595	840,431
Accumulated amortization	(521,780)	(626,327)
Net book value	251,815	214,104
Total Intangible assets - net of accumulated amortization	$ 343,530	$ 325,125

Intangible assets. Amortization expense for intangible assets for the years ended December 31, 2020 and 2019 was $96,074,000 and $95,539,000, respectively, and is included in Depreciation and amortization in the accompanying Consolidated Statements of Income.

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

2021	$ 110,393
2022	101,472
2023	76,501
2024	40,683
2025	14,481
Thereafter	—
Total future estimated amortization	$ 343,530

During the years ended December 31, 2020 and 2019, disposals of fully amortized capitalized software resulted in the removal of cost and accumulated amortization of $180,333,000 and $186,465,000, respectively. There were no other disposals of capitalized software for the years ended December 31, 2020 and 2019.

The Company recognized impairment charges of $7,255,000 and $21,468,000 related to capitalized software for the years ended December 31, 2020 and 2019, respectively, that were determined to have no realizable value. The impairment charges are included in Impairment of intangible assets in the accompanying Consolidated Statements of Income.

In December 2020, the Company purchased the Compliance Management Reporting System (CMRS) platform and certain relationships from Publicis Sapient in an asset transaction for a cash consideration of $26,434,000. The purchase price was allocated to the platform software asset to be amortized over four years.

Goodwill impairment testing. DTCC completed its annual goodwill impairment test in the fourth quarter of 2020 and concluded that goodwill was not impaired. DTCC performed a qualitative assessment to test the goodwill for impairment and determined it was more likely than not that the fair value of each reporting unit exceeded their carrying value and therefore goodwill was deemed not impaired.

9. EQUITY METHOD INVESTMENTS

European Central Counterparty N.V. (ECCP N.V.), a joint venture with ABN AMRO Clearing Investments B.V., NASDAQ AB, CBOE Worldwide Holdings Limited and Euronext N.V., provides a pan-European clearing solution offering economies of scale and risk management expertise to European market participants. ECCP N.V. uses the risk management framework and customer service organization of European Multilateral Clearing Facility N.V. (EMCF), and conducts its operations using the technology platform and infrastructure of EMCF.

On December 9, 2019, the Company entered into a binding agreement to sell its 20% minority stake in ECCP N.V., along with the other ECCP N.V. shareholders, to CBOE Worldwide Holdings Limited. The transaction closed on July 1, 2020 and as a result, the Company transferred its investment in ECCP N.V. to CBOE Worldwide Holdings Limited in exchange for cash totaling $9,902,000. The transaction resulted in a gain of $269,000 for the year ended December 31, 2020, which is included in Other non-operating income, net in the accompanying Consolidated Statements of Income.

DTCC-Euroclear GlobalCollateral LTD (DEGCL), a joint venture with Euroclear plc, provides support to financial institutions in addressing significant regulatory, operational and industry challenges related to the management of margin calls and collateral impacting the over-the-counter (OTC) derivatives market.

On March 10, 2020, Euroclear plc and the Company finalized a dissolution, business and share transfer agreement with respect to the DEGCL joint venture. As a result, the Company transferred its investment in DEGCL to Euroclear plc in exchange for cash totaling $4,690,000 and the rights to certain products of the joint venture. In addition, all agreements between DEGCL and DTCC, which provided various support services and office facilities on a reimbursement basis, were terminated. The dissolution, business and share transfer resulted in a gain of $3,640,000 for the year ended December 31, 2020, which is included in Other non-operating income, net in the accompanying Consolidated Statements of Income.

10. LEASES

The Company leases corporate offices, data centers and certain equipment primarily through operating leases. The Company’s leases have remaining lease terms of 1 to 14 years, some of which may include options to extend the lease up to 10 additional years, and some of which may include options to terminate the lease within 1 year.

The Company determines if an arrangement is or contains a lease at contract inception and accounts for lease and non-lease components as a single lease component. Operating leases are included in Operating lease right-of-use (ROU) asset, Current portion of operating lease liability, and Non-current operating lease liability on the Company's Consolidated Statements of Financial Condition.

ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. The ROU assets are measured at the amount equal to the lease liabilities, adjusted for balances of accrued or prepaid rent and unamortized lease incentives provided by lessors.

Operating lease liabilities are recognized based on the present value of the future lease payments over the remaining lease term. The Company uses its incremental borrowing rate, factoring in the lease term, to determine the lease liability. When determining lease term, the Company considers renewal options that the Company is reasonably certain to exercise and termination options that the Company is reasonably certain not to exercise. For operating leases, expense is generally recognized on a straight-line basis over the lease term.

10. LEASES (CONTINUED)

Details for operating lease assets and lease liabilities as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Assets		
Operating lease right-of-use-asset	$ 220,073	$ 237,689
Liabilities		
Current portion of operating lease liability	27,179	25,906
Non-current operating lease liability	245,836	264,848
Total lease liabilities	$ 273,015	$ 290,754

Details for the maturity of lease liabilities as of December 31, 2020 for each of the next five years and thereafter follow (in thousands):

2021	$ 35,733
2022	30,404
2023	29,656
2024	28,138
2025	28,661
Thereafter	175,149
Total lease payments	327,741
Less: Imputed interest	(54,726)
Present value of lease liability	$ 273,015

Details for lease expense for the years ended December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Occupancy	$ 33,336	$ 28,144
Information technology	3,391	8,818
Total lease expense	36,727	36,962
Sublease income (1)	(5,513)	(5,794)
Net lease expense	$ 31,214	$ 31,168

(1) Included in Occupancy and Other non-operating income, net in the accompanying Consolidated Statements of Income.

Details for supplemental cash flow information related to lease liabilities for the years ended December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Lease payments included in the measurement of lease liabilities	$ (36,060)	$ (35,030)
Accretion of lease liabilities	9,541	10,024
Net decrease in Operating lease liability(1)	$ (26,519)	$ (25,006)

(1) Included in operating activities in the Consolidated Statements of Cash Flows

Details of the weighted average remaining lease term and weighted average discount rate used to determine the lease liability as of December 31, 2020 and 2019 follow:

	2020	2019
Weighted average remaining lease term (years)	10.6	11.1
Weighted average discount rate	3.27 %	3.37 %

Lease right-of-use assets obtained in exchange for operating lease obligations for new and modified leases were $8,232,000 and $11,111,000 for the years ended December 31, 2020 and 2019, respectively.

11. OTHER ASSETS

Details for Other assets as of December 31, 2020 and December 31, 2019 follow (in thousands):

	2020	2019
Prepaids	$ 99,483	$ 93,661
Prepaid taxes	29,498	64,069
Interest receivable	2,053	19,872
Other current assets	7,231	338
Total other current assets	138,265	177,940
Long-term incentive plan assets	159,865	158,264
Cash surrender value on insurance policies	71,498	66,324
Deferred tax assets	27,774	32,472
Prepaids	17,512	26,082
Equity investments	12,393	12,393
Restricted cash	7,973	—
Investment in Federal reserve stock	6,402	6,402
Other non-current assets	2,671	2,782
Total other non-current assets	306,088	304,719
Total	$ 444,353	$ 482,659

12. OTHER LIABILITIES

Details for Other liabilities as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Compensation payable	$ 161,106	$ 147,363
Long-term incentive plan liabilities	29,309	52,450
Deferred revenue and other	25,908	8,627
Accrued payroll and payroll withholdings	52,716	41,970
Other current liabilities	16,668	15,750
Total other current liabilities	285,707	266,160
Long-term incentive plan liabilities	242,344	216,092
Unrecognized tax benefits	43,659	43,474
Deferred revenue and other	1,097	1,264
Deferred tax liabilities	560	660
Other non-current liabilities	2,866	2,191
Total other non-current liabilities	290,526	263,681
Total	$ 576,233	$ 529,841

13. COMMERCIAL PAPER

Details for Commercial paper as of December 31, 2020 and December 31, 2019 follow (in thousands):

	2020	2019
Commercial paper - net of unamortized discount of $1,983 and $20,623 as of December 31, 2020 and 2019, respectively	$ 3,843,290	$ 7,154,217
Weighted-average interest rate	0.28 %	1.95 %

Interest expense on Commercial paper, included in Interest expense in the accompanying Consolidated Statements of Income, was $60,988,000 and $166,453,000 for the years ended December 31, 2020 and 2019, respectively.

14. LONG-TERM DEBT

Details for Long-term debt as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Medium-term notes, net of unamortized discount and debt issuance costs	$ 3,723,942	$ —
Information technology financing	3,921	8,024
Total Long-term debt	3,727,863	8,024
Less: Current portion of long-term debt	(3,921)	(4,103)
Non-current portion of long-term debt	$ 3,723,942	$ 3,921

Details for principal payments due on Long-term debt for each of the next five years and thereafter follow (in thousands):

	Medium-Term Notes	Information Technology Financing	Total
2021	$ —	$ 3,921	$ 3,921
2022	—	—	—
2023	2,000,000	—	2,000,000
2024	—	—	—
2025	1,750,000	—	1,750,000
Thereafter	—	—	—
Total	$ 3,750,000	$ 3,921	$ 3,753,921

Medium-term notes. On April 23, 2020 and December 7, 2020, NSCC issued three-year and five-year senior unsecured medium-term notes for an aggregate total of $3.75 billion. The proceeds from the issuances constitute liquid resources that, together with other liquid resources of the Company, are available to enable NSCC to affect the settlement of its payment obligations in the event of the default of any of its Participants pursuant to NSCC's rules.

Details of the medium-term notes follow (in thousands):

			December 31, 2020	
Issue Date	Maturity	Rate	Principal Balance	Carrying Value
April 23, 2020	April 23, 2023	1.20%(1)	$ 1,000,000	$ 994,928
April 23, 2020	April 23, 2025	1.50%(1)	1,000,000	992,575
December 7, 2020	December 7, 2023	0.40%(2)	1,000,000	993,584
December 7, 2020	December 7, 2025	0.75%(2)	750,000	742,855
			$ 3,750,000	$ 3,723,942

(1) Interest is payable semi-annually in arrears on October 23 and April 23 of each year, beginning October 23, 2020.

(2) Interest is payable semi-annually in arrears on June 7 and December 7 of each year, beginning June 7, 2021.

Interest expense and amortization of discount and issuance costs, included in Interest expense in the accompanying Consolidated Statements of Income, were $22,169,000 for the year ended December 31, 2020. The weighted-average interest rate was 0.98% as of December 31, 2020. As of December 31, 2020, the aggregate debt issuance costs and unamortized discount associated with the medium-term notes were $26,058,000.

Information Technology Financing. On January 1, 2019, the Company obtained three year financing of $14 million from IBM Credit LLC in connection to its software and services purchase agreement with IBM. The weighted-average interest rate of the loan was 3.90% as of December 31, 2020. Interest expense on the loan included in the accompanying Consolidated Statements of Income was $198,000 and $407,000 for the years ended December 31, 2020 and 2019, respectively.

14. LONG-TERM DEBT (CONTINUED)

Lines of credit. DTCC maintains a committed line of credit for general funding purposes while certain of its subsidiaries, DTC and NSCC, also maintain committed lines of credit to support settlement of its payment obligations in the event of the default of any of its Participants pursuant to the rules of the relevant subsidiaries of the Company.

Details for the terms of the outstanding lines of credit as of December 31, 2020 and 2019 follow:

	2020	2019
DTCC		
Committed Amount	$500 million	$500 million
Denomination	USD	USD
Number of Participants/Lenders	10/10	10/10
Borrowing Rate	Either base rate plus 0.25% or eurodollar plus 1.25%	Either base rate plus 0.25% or eurodollar plus 1.25%
Maturity Date	January 2022	January 2022
Annual Facility Fee	0.15%(1)	0.15%(1)
DTC		
Committed Amount	$1.9 billion	$1.9 billion
Denomination	USD	USD
Number of Participants/Lenders	32/37	32/41
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 2021	May 2020
Annual Facility Fee	0.20%(1)	0.10%(1)
Uncommitted Amount	C$150 million (2)	C$150 million (2)
Denomination	CAD	CAD
Number of Participants/Lenders	1/1	1/1
Borrowing Rate	A rate per annum equal to the Canadian Prime Rate minus 0.50%	
Maturity Date	On Demand	On Demand
NSCC		
Committed Amount	$10.9 billion	$12.1 billion
Denomination	USD	USD
Number of Participants/Lenders	32/37	32/41
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 2021	May 2020
Annual Facility Fee	0.20%(1)	0.10%(1)

(1) The annual facility fee associated with maintaining the line of credit is included in Professional and other services in the accompanying Consolidated Statements of Income.

(2) Used to support Canadian settlement.

There were no borrowings under the lines of credit during 2020 and 2019.

14. LONG-TERM DEBT (CONTINUED)

Details for debt covenants related to the lines of credit as of December 31, 2020 and 2019 follow:

	2020	2019
DTCC		
Minimum Net Worth	$1.25 billion	$1.25 billion
Maximum Priority Debt	$200 million	$200 million
DTC		
Minimum Net Worth	$200 million	$150 million
Minimum Participants' Fund deposits	$750 million	$750 million
NSCC		
Minimum Net Worth	$200 million	$125 million
Minimum Clearing Fund deposits	$1.5 billion	$1 billion

As of December 31, 2020 and 2019, the Company was in compliance with its debt covenants.

Credit Ratings. DTCC, DTC, FICC and NSCC are 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 DTCC and its three clearing agency subsidiaries as of December 31, 2020 follow:

	Moody's (1)			S&P		
	Long-term	**Short-term**	**Outlook**	**Long-term**	**Short-term**	**Outlook**
DTCC	Aa3	N/A	Stable	AA-	A-1+	Stable
DTC	Aaa	P-1	Stable	AA+	A-1+	Stable
FICC	Aaa	P-1	Stable	AA	A-1+	Stable
NSCC	Aaa	P-1	Stable	AA+	A-1+	Stable

(1) Moody’s categorizes the long-term issuer ratings of DTC, FICC and NSCC as clearing counterparty ratings (CCR) under the agency's Clearing Houses Rating Methodology.

15. 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 description 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 - Participants' and Clearing Funds - Securities on deposit		
U.S. Treasury Securities U. S. Agency Issued Debt Securities (Non-Callable)	Quoted market price of identical assets obtained from pricing services engaged by the Company.	Level 1
U. S. Agency Issued Debt Securities (Callable) U.S. Agency Residential Mortgage-Backed Securities	Quoted market price of recent trades of similar securities obtained from pricing services engaged by the Company.	Level 2
Assets - Participants' and Clearing Funds - Cash deposits		
Money market fund investments	Quoted market price of identical assets obtained from pricing services engaged by the Company.	Level 1

15. FAIR VALUE MEASUREMENTS (CONTINUED)

Product/ Instrument	Valuation Methodology	Classification in the valuation hierarchy
Non-Current Assets - Other non-current assets		
Long-term incentive plan assets - Mutual fund and Stable value fund investments	Obtained from pricing services engaged by the Company, and the Company receives one price for each security.	Level 1
	Quoted market price of recent trades of similar securities obtained from pricing services engaged by the Company.	Level 2
Liabilities - Participants' and Clearing Funds - Securities on deposit and Cash deposits - Money market fund investments		
Participants' and Clearing Funds liabilities	Derived from the corresponding Participants' and Clearing Funds assets (see above).	Level 1 and Level 2

Fair value measurements of those items measured on a recurring basis as of December 31, 2020 and 2019 follow (in thousands):

	2020			
	Level 1	Level 2	Level 3	Total
Assets:				
Participants' and Clearing Funds				
Securities	$ 28,160,722	$ 4,268,976	$ —	$ 32,429,698
Cash deposits - Money market fund investments	3,950,000	—	—	3,950,000
Non-current assets				
Long-term incentive plan assets - Mutual fund and Stable value fund investments	126,165	33,700	—	159,865
Total assets	$ 32,236,887	$ 4,302,676	$ —	$ 36,539,563
Liabilities:				
Participants' and Clearing Funds				
Securities liabilities	$ 28,160,722	$ 4,268,976	$ —	$ 32,429,698
Money market fund investments liabilities	3,950,000	—	—	3,950,000
Total liabilities	$ 32,110,722	$ 4,268,976	$ —	$ 36,379,698

15. FAIR VALUE MEASUREMENTS (CONTINUED)

	2019			
	Level 1	**Level 2**	**Level 3**	**Total**
Assets:				
Participants' and Clearing Funds				
Securities	$ 18,469,797	$ 4,913,626	$ —	$ 23,383,423
Cash deposits - Money market fund investments	2,844,000	—	—	2,844,000
Non-current assets				
Long-term incentive plan assets - Mutual fund and Stable value fund investments	100,706	33,813	—	134,519
Total assets, excluding investments at fair value based on NAV	$ 21,414,503	$ 4,947,439	$ —	$ 26,361,942
Liabilities:				
Participants' and Clearing Funds				
Securities liabilities	$ 18,469,797	$ 4,913,626	$ —	$ 23,383,423
Money market fund investments liabilities	2,844,000	—	—	2,844,000
Total liabilities	$ 21,313,797	$ 4,913,626	$ —	$ 26,227,423

During 2019, the Company used Net Asset Value (NAV) to estimate the fair value of certain investments related to the long-term incentive plan. Investments in common collective trust funds were valued at NAV based upon the redemption price of the units, which was based on the current fair value of the common collective trust funds' underlying assets. Unit values were determined by the financial institution sponsoring such funds by dividing the funds' net assets at fair value by its units outstanding at the valuation dates.

Details of investments measured at fair value using NAV as of December 31, 2019 follow (in thousands):

	2019			
	NAV	**Redemption Frequency**	**Other Redemption Restrictions**	**Redemption Notice Period**
Common collective trusts	$ 23,745	Daily	None	None

There were no unfunded commitments related to these investments as of December 31, 2019.

Certain investments may transfer between the fair value hierarchy classifications during the year due to changes in valuation methodology and pricing sources. There were no transfers between levels within the fair value hierarchy during the years ended December 31, 2020 and 2019. There were no financial assets and liabilities measured at fair value on a recurring basis classified as Level 3 for the years ended December 31, 2020 and 2019.

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, Participants' and Clearing Funds - Cash deposits bank deposits and Reverse repurchase agreements (and corresponding liabilities), Other Participants' assets, Commercial paper, and Payable to Participants.

15. FAIR VALUE MEASUREMENTS (CONTINUED)

The carrying values, fair values and fair value hierarchy levels of all financial instruments measured at other than fair value on the accompanying Consolidated Statements of Financial Condition as of December 31, 2020 and 2019 follow (in thousands):

2020	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets:					
Cash and cash equivalents	$ 9,165,353	$ 9,165,353	$ 9,165,353	$ —	$ —
Participants' segregated cash	134	134	134	—	—
Short-term investments	800,000	800,000	—	800,000	—
Participants' and Clearing Funds:					
Cash deposits - Bank deposits	24,598,824	24,598,824	24,598,824	—	—
Cash deposits - Reverse repurchase agreements	925,000	925,000	—	925,000	—
Other Participants' assets	813,006	813,006	813,006	—	—
Total	$36,302,317	$36,302,317	$34,577,317	$ 1,725,000	$ —
Liabilities:					
Commercial paper	$ 3,843,290	$ 3,843,290	$ —	$ 3,843,290	$ —
Participants' and Clearing Funds Cash deposits - Bank deposits and Reverse repurchase agreements	25,523,824	25,523,824	24,598,824	925,000	—
Payable to Participants	813,140	813,140	813,140	—	—
Long-term debt	3,727,863	3,790,077	—	3,790,077	—
Total	$33,908,117	$33,970,331	$25,411,964	$ 8,558,367	$ —

2019	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets:					
Cash and cash equivalents	$ 8,395,163	$ 8,395,163	$ 8,395,163	$ —	$ —
Participants' segregated cash	4,876	4,876	4,876	—	—
Short-term investments	900,000	900,000	—	900,000	—
Participants' and Clearing Funds:					
Cash deposits - Bank deposits	13,762,482	13,762,482	13,762,482	—	—
Cash deposits - Reverse repurchase agreements	825,000	825,000	—	825,000	—
Other Participants' assets	514,104	514,104	514,104	—	—
Total	$24,401,625	$24,401,625	$22,676,625	$ 1,725,000	$ —
Liabilities:					
Commercial paper	$ 7,154,217	$ 7,154,217	$ —	$ 7,154,217	$ —
Participants' and Clearing Funds Cash deposits - Bank deposits and Reverse repurchase agreements	14,587,482	14,587,482	14,587,482	—	—
Payable to Participants	518,980	518,980	518,980	—	—
Long-term debt	8,024	8,565	—	8,565	—
Total	$22,268,703	$22,269,244	$15,106,462	$ 7,162,782	$ —

15. FAIR VALUE MEASUREMENTS (CONTINUED)

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 they are determined to be impaired or when an observable event occurs.

Financial assets measured at fair value on a non-recurring basis include equity investments, which are classified as Level 3 instruments. There were no additional cash investments related to equity investments during 2020. On August 29, 2019, the Company made an additional cash investment of $500,000 in equity investments, which increased the Company's total investment in equity investments to $12,393,000, including a $143,000 mark-to market investment gain included in Other non-operating income, net in the accompanying Consolidated Statements of Income. The fair value of the investments were determined based on the latest valuation of equity investments from their most recent round of financing, using Level 3 inputs.

The rollforward of Equity investments categorized within Level 3 in the fair value hierarchy for the year ended December 31, 2019 follows (in thousands):

	Fair Value at December 31, 2018	Purchases	Sales	Unrealized Gains (Losses)	Fair Value at December 31, 2019
Equity investments	$ 11,750	$ 500	$ —	$ 143	$ 12,393

There were no purchases, sales, unrealized gains, or unrealized losses of the Company's equity investments categorized within Level 3 in the fair value hierarchy for the year ended December 31, 2020.

The Company's Level 3 financial asset, the valuation techniques used to measure the fair value of the financial asset and the significant unobservable inputs as of December 31, 2019 follow:

Financial Instruments Owned	Fair Value (in thousands)	Valuation Technique	Unobservable Inputs	Input Range	Weighted Average
Equity Investments	$12,393	Cost less impairment plus/ minus valuation changes	Price per share(1)	$18 - $107(2)	$64(2)

(1) Price is determined using the latest valuation from the most recent round of financing of equity investments.

(2) The unobservable input range and weighted-average are driven by the individual equity investments.

16. RETIREMENT PLANS

Defined benefit pension and other postretirement benefit plans.

Benefit obligations. The reconciliation of the beginning and ending balances of the projected benefit obligations for defined benefit plans follow (in thousands):

	Pension Benefits		Other Benefits	
	2020	2019	2020	2019
Benefit obligations, beginning of year:	$ 1,140,118	$ 1,014,046	$ 66,615	$ 64,202
Service cost	2,144	3,467	545	573
Interest cost	32,187	40,201	1,742	2,348
Gross benefits paid	(68,854)	(66,158)	(1,728)	(2,690)
Expenses paid	(1,249)	(1,706)	—	—
Actuarial loss	128,305	150,268	1,539	2,182
Total benefit obligations at end of year	$ 1,232,651	$ 1,140,118	$ 68,713	$ 66,615
Total accumulated benefit obligations at end of year	$ 1,228,596	$ 1,135,715	N/A	N/A

The Accumulated Benefit Obligations are defined as the actuarial present value of Pension benefits attributed to employee services rendered before December 31, 2020 and 2019, respectively, and based on employee service and compensation prior to the measurement date.

Funded status. The funded status of the plans, as of December 31, 2020 and 2019, follow (in thousands):

	Pension Benefits		Other Benefits	
	2020	2019	2020	2019
Benefit obligations at end of year:				
Qualified plan	$ 1,110,105	$ 1,015,573	$ —	$ —
Other plans	122,546	124,545	68,713	66,615
Total benefit obligations at end of year	1,232,651	1,140,118	68,713	66,615
Fair value of qualified plan assets at end of year	1,087,848	998,442	—	—
Total fair value of plan assets at end of year	1,087,848	998,442	—	—
Unfunded status	$ (144,803)	$ (141,676)	$ (68,713)	$ (66,615)
Amounts recognized in the Consolidated Statements of Financial Condition consist of:				
Current liability	$ (31,740)	$ (26,566)	$ (4,047)	$ (4,275)
Non-current liability	(113,063)	(115,110)	(64,666)	(62,340)
Amount recognized, end of year	$ (144,803)	$ (141,676)	$ (68,713)	$ (66,615)

16. RETIREMENT PLANS (CONTINUED)

Plan assets. The summary and reconciliation of the beginning and ending balances of the fair value of the plans' assets follow (in thousands):

	Pension Benefits		Other Benefits	
	2020	2019	2020	2019
Fair value of plan assets, beginning of year	$ 998,442	$ 863,953	$ —	$ —
Actual return on plan assets	145,014	150,544	—	—
Employer contribution	14,494	51,809	1,728	2,690
Gross benefits paid	(68,854)	(66,158)	(1,728)	(2,690)
Expenses paid	(1,248)	(1,706)	—	—
Fair value of plan assets, end of year	$ 1,087,848	$ 998,442	$ —	$ —

Investments are classified based on the lowest level of input that is significant to the fair value measurement. Details of the classification of plan assets in accordance with the three-tier fair valuation hierarchy and current asset allocations as of December 31, 2020 and 2019, follow (in thousands, except percentages):

	Target Allocation 2020	Percentage of Plan Assets, December 31, 2020	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Quoted Prices in Active Markets for Similar Assets (Level 2)
Pension assets as of December 31, 2020:					
Short-term investment fund	0.50 %	1.02 %	$ 11,110	$ —	$ 11,110
Equity Portfolio:					
Domestic large cap growth			20,569	—	20,569
Domestic large cap value			20,235	—	20,235
Domestic large cap core			41,020	—	41,020
Domestic small core			8,252	4,118	4,134
International core			12,661	12,661	—
International emerging markets			4,258	4,258	—
Total equity securities	9.50 %	9.84 %	106,995	21,037	85,958
Fixed income portfolio:					
Domestic liability driven investment (3)	88.00 %	88.86 %	966,716	—	966,716
Guaranteed insurance contracts:					
Group annuity (2)	2.00 %	0.28 %	3,027	—	—
Total pension assets as of December 31, 2020			$ 1,087,848	$ 21,037	$ 1,063,784

16. RETIREMENT PLANS (CONTINUED)

	Target Allocation 2019	Percentage of Plan Assets, December 31, 2019	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)
Pension assets as of December 31, 2019:				
Short-term investment fund[1]	0.50 %	0.54 %	$ 5,374	$ —
Equity Portfolio:				
Domestic large cap growth[1]			19,533	—
Domestic large cap value[1]			19,444	—
Domestic large cap core[1]			39,356	—
Domestic small core*[1]			7,455	3,704
International core			11,753	11,753
International emerging markets			4,025	4,025
Total equity securities	9.50 %	10.17 %	101,566	19,482
Fixed income portfolio:				
Domestic liability driven investment[1] [3]	88.00 %	88.85 %	887,157	—
Guaranteed insurance contracts:				
Group annuity [2]	2.00 %	0.44 %	4,345	—
Total pension assets as of December 31, 2019			$ 998,442	$ 19,482

* The domestic small core asset class includes an investment that is valued based on NAV per unit, as provided by the trustee of the fund, and has not been classified in the fair value hierarchy.

(1) These investments are valued based on NAV per unit, as provided by the trustee of the fund, and have not been classified in the fair value hierarchy. See Note 15 for further information about valuation techniques and inputs to measure fair value. The Company did not hold defined benefit plan assets designated as Level 2 or Level 3 as of December 31, 2019.

(2) As permitted by U.S. GAAP, this group annuity is accounted for at contract value, which approximates fair value. This investment is reported at contract value because it is the amount received by participants if they were to initiate permitted transactions under the terms of the pension plan. Contract value as reported represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses. This investment is not classified in the fair value hierarchy.

(3) As of December 31, 2020, the balance included Wells Fargo Liability Driven Solution Collective Investment Trust I of $254 million and Wells Fargo Liability Driven Solution Collective Investment Trust II of $696 million, representing 23% and 64% of total investments, respectively. As of December 31, 2019, the balance included Wells Fargo Liability Driven Solution Collective Investment Trust I of $365 million and Wells Fargo Liability Driven Solution Collective Investment Trust II of $515 million, representing 37% and 52% of total investment respectively. A significant decline in market value of these investments would significantly affect the plan assets.

16. RETIREMENT PLANS (CONTINUED)

Net periodic benefit expense (income). Details of the components of net periodic benefit expense (income) for the years ended December 31, 2020 and 2019, follow (in thousands):

	Pension Benefits		Other Benefits	
	2020	**2019**	**2020**	**2019**
Components of net periodic benefit expense (income):				
Expected return on plan assets	$ (40,049)	$ (37,998)	$ —	$ —
Interest cost	32,187	40,201	1,742	2,348
Service cost	2,144	3,467	546	573
Amortizations:				
Prior service cost (credit)	829	933	(5,568)	(5,926)
Actuarial loss	9,362	5,373	1,039	804
Settlement loss	2,011	1,242	—	—
Net periodic benefit expense (income)	$ 6,484	$ 13,218	$ (2,241)	$ (2,201)

Changes in OCI. Details of the changes in plan assets and benefit obligations recognized in OCI for the years ended December 31, 2020 and 2019, follow (in thousands):

	Pension Benefits		Other Benefits	
	2020	**2019**	**2020**	**2019**
Other changes recognized in OCI:				
Net loss arising during the period	$ 23,340	$ 37,723	$ 1,539	$ 2,182
Amortizations:				
Prior service (cost) credit	(829)	(933)	5,568	5,926
Actuarial and settlement loss	(11,373)	(6,615)	(1,039)	(803)
Net other changes in OCI, pre-tax	$ 11,138	$ 30,175	$ 6,068	$ 7,305

Details of the net amount recognized in Accumulated other comprehensive loss on the accompanying Consolidated Statements of Financial Condition, follow (in thousands):

	Pension Benefits		Other Benefits	
	2020	**2019**	**2020**	**2019**
Amount not reflected in net periodic benefit (cost) and included in Accumulated other comprehensive loss:				
Prior service (cost) credit	$ (1,740)	$ (2,569)	$ 6,186	$ 11,754
Accumulated loss	(285,616)	(273,649)	(16,822)	(16,323)
Accumulated other comprehensive loss, pre-tax	(287,356)	(276,218)	(10,636)	(4,569)

16. RETIREMENT PLANS (CONTINUED)

Assumptions for net periodic benefit expense (income). Details for the defined benefit plans assumptions used by actuaries to determine net periodic benefit expense (income) as of December 31, 2020 and 2019 follow:

	Pension Benefits		Other Benefits	
	2020	2019	2020	2019
Weighted-average assumptions used to determine net periodic benefit expense (income) for the years ended December 31:				
Discount rate	3.34%	4.41%	3.26%	4.31%
Expected long-term rate of return on plan assets	4.45%	4.45%	n/a	n/a
Assumed health care cost trend rates as of December 31:				
Health care cost trend rate assumed for next year			6.02%	6.46%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)			4.46%	4.46%
Year that the rate reaches the ultimate trend rate			2038	2038

The discount rate reflects the rate at which defined benefit plan obligations could be effectively settled. The Company projects the benefits to be paid by each plan for each year in the future, the sum of which is the projected benefit obligations. The benefits are then discounted using the Above Mean Mercer Yield Curve spot rates for the corresponding maturity years.

The total of the present values for the benefit payment years is used to calculate the single rate that discounts the benefit cash flows to the same total present value. The single rate is the basis for the final effective discount rate.

Details for the defined benefit plans assumptions used by actuaries to determine benefit obligations as of December 31, 2020 and 2019 follow:

	Pension Benefits		Other Benefits	
	2020	2019	2020	2019
Weighted-average assumptions used to determine benefit obligations as of December 31:				
Discount rate	2.46%	3.38%	2.37%	3.26%
Rate for interest cost	2.98%	4.12%	2.83%	3.97%
Rate for service cost	n/a	n/a	3.46%	4.45%
Rate for interest on service cost	n/a	n/a	3.24%	4.29%
Assumed health care cost trend rates as of December 31:				
Health care cost trend rate assumed for next year			5.57%	6.02%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)			4.46%	4.46%
Year that the rate reaches the ultimate trend rate			2038	2038

16. RETIREMENT PLANS (CONTINUED)

Assumptions for defined benefit obligations. Mortality is a key assumption used to determine the benefit obligations for the Company's defined benefit plans. The mortality assumption for all plans uses the Pri-2012 mortality tables projected generationally with scale MMP-2019. The mortality tables use a white collar adjustment for the SERP, Restoration Plan and non-union Retiree Medical and Life Insurance Plans and a blue collar adjustment for the union Retiree Medical and Life Insurance Plans. The Pension Plan continues to use no collar adjustment. On a lump sum basis, mortality is based on IRS prescribed tables projected using scale MP-2020, with segmented interest rate adjustments.

Expected cash flows. The Company did not make any contributions to the Pension Plan during 2020. The Company contributed $40,250,000 to the Pension Plan in 2019. Settlement losses relate to early retirement of executives who elected lump-sum and periodic payments. Settlement losses totaled $2,011,000 and $1,242,000 for the years ended December 31, 2020 and 2019, respectively. There were no participant contributions to the plans in 2020 and 2019.

Details for the benefit payments for the pension plans and other plans for 2020 and 2019 follow (in thousands):

	2020	2019
Pension plans	$ 68,854	$ 66,158
Other plans	1,723	2,690
Total	$ 70,577	$ 68,848

Details for estimated amounts to be paid in each of the next five years and the five year period thereafter follow (in thousands):

	Pension	Employer Benefits Payments	Medicare Subsidy Receipts
2021	$ 91,869	$ 4,047	$ 12
2022	69,959	4,203	11
2023	63,688	4,291	10
2024	71,554	4,319	9
2025	66,889	4,342	8
Thereafter	324,040	19,911	29
Total	$ 687,999	$ 41,113	$ 79

Defined contribution retirement plans. Total expense for the defined contribution retirement plans included in Employee compensation and related benefits in the accompanying Consolidated Statements of Income was $44,957,000 and $43,284,000 for the years ended December 31, 2020 and 2019, respectively.

17. INCOME TAXES

DTCC and its subsidiaries file a consolidated Federal income tax return and various state tax returns. DTCC and its subsidiaries also file other state and non-U.S. jurisdiction income tax returns on a separate company basis.

Details for the components of the Company's Provision for income taxes for the years ended December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Current income tax:		
Federal	$ 17,725	$ 3,310
State and local	15,301	5,020
Foreign	20,425	16,847
Total current income tax	53,451	25,177
Deferred income tax:		
Federal	5,034	15,687
State and local	5,256	7,157
Foreign	(732)	(174)
Total deferred income tax	9,558	22,670
Provision for income taxes	$ 63,009	$ 47,847

The 2020 and 2019 effective tax rates differ from the 21% Federal statutory tax rate mainly due to state and local taxes, changes in unrecognized tax benefits, settlements of tax audits, and the effects from U.S. taxes on foreign operations. 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, 2020 and 2019 follow:

	2020	2019
U.S. statutory tax rate	21.0 %	21.0 %
State and local income taxes, net of Federal income tax benefit	4.1	3.4
Income from foreign operations	(0.6)	(0.6)
Change in unrecognized tax benefits	0.7	1.1
Benefit on foreign operations	(0.9)	(3.0)
Settlements of tax audits	(0.8)	(0.3)
DEGCL joint venture	(0.4)	(3.1)
Other	(0.2)	(0.7)
Effective tax rate	22.9 %	17.8 %

Details for the components of deferred tax assets and liabilities as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Deferred tax assets:		
Accrued compensation and benefits	$ 118,257	$ 118,383
Operating lease liabilities and deferred rent	66,132	69,830
Other	33,149	27,063
Total deferred tax assets	217,538	215,276
Deferred tax liabilities:		
Capitalized software	60,916	52,281
Lease right-of-use asset	51,966	56,120
Investment tax basis difference	40,335	39,445
Depreciation	37,107	35,618
Total deferred tax liabilities	190,324	183,464
Net deferred tax assets	$ 27,214	$ 31,812

The deferred tax assets are expected to be fully realized and, accordingly, no valuation allowance was established.

17. INCOME TAXES (CONTINUED)

Details for unrecognized tax benefits, included in Other non-current liabilities, as of December 31, 2020 and 2019 follow (in thousands):

	2020	2019
Beginning balance	$ 29,197	$ 28,692
Increases:		
Prior period tax positions	1,727	1,382
Current period tax positions	1,734	822
Decreases:		
Prior period tax positions	(2,188)	(1,002)
Statute of limitations	(3,090)	(655)
Settlements with tax authorities	(113)	(42)
Unrecognized tax benefit	27,267	29,197
Accrued interest	16,392	14,277
Ending balance	$ 43,659	$ 43,474

The Company classifies interest and penalties related to unrecognized tax benefits, if incurred, in Provision for income taxes in its accompanying Consolidated Statements of Income. The Company recognized accrued interest of $2,115,000 and $2,816,000 for the years ended December 31, 2020 and 2019 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 the Company's income tax provision and results of operations. On February 1, 2021, the Company and the New York City tax authority reached a settlement agreement related to income tax audits of the 2010-2014 fiscal years. The Company reduced the related unrecognized tax benefit and accrued interest by approximately $11,317,000 and $11,821,000, respectively in February 2021.

Details for the periods currently under examination and remaining subject to examination by jurisdiction as of December 31, 2020 follow:

	Tax Years	
Jurisdiction	**Under Examination**	**Subject to Examination**
U.S. Federal - Internal Revenue Service	-	2017 - 2019
New York State	2015 - 2016	2017 - 2019
New York City	2010 - 2017	2018 - 2019
State of Florida	-	2018 - 2019
Massachusetts	2015 - 2016	2017 - 2019

18. SHAREHOLDERS' EQUITY

DTCC Series A Preferred stock. All 10,000 shares of DTCC Series A Preferred stock are issued and outstanding and held of record by Stock Clearing Corporation, a wholly owned subsidiary of the New York Stock Exchange LLC, the successor-in-interest to the New York Stock Exchange Inc. In the event of DTCC's voluntary or involuntary liquidation, dissolution or winding-up, the holders of Series A Non-Cumulative Perpetual Preferred stock are entitled to a liquidation preference of $30.00 per share.

DTCC Series B Preferred stock. All 10,000 shares of DTCC Series B Preferred stock are issued and outstanding and held of record by National Clearing Corporation, a wholly owned subsidiary of the Financial Industry Regulatory Authority Inc. ("FINRA"). In the event of DTCC's voluntary or involuntary liquidation, dissolution or winding-up, the holders of Series B Preferred stock are entitled to a liquidation preference of $30.00 per share.

18. SHAREHOLDERS' EQUITY (CONTINUED)

DTCC Series C Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred stock. DTCC issued 1,600 shares of Fixed-to-Floating Rate Non-Cumulative Perpetual Preferred stock, Series C, $0.50 par value per share, with a liquidation preference of $250,000 per share. When declared by DTCC's Board of Directors, in accordance with the Amended Certificate of Incorporation of DTCC, dividends on the Series C Preferred stock are payable in arrears on June 15 and December 15 of each year through June 15, 2020 at a fixed rate of 4.875% per annum. From June 15, 2020 onward, dividends accrue at a floating rate equal to three-month LIBOR plus 3.167% per annum (3.417% at December 15, 2020), and, when declared by DTCC's Board of Directors, dividends on the Series C Preferred stock are payable in arrears on March 15, June 15, September 15 and December 15 of each year beginning on September 15, 2020.

DTCC may redeem the Series C Preferred Stock at its option, for cash, i) in whole or in part, from time to time, on any dividend payment date on or after June 15, 2020 at a redemption price equal to $250,000 per share, plus any declared and unpaid dividends to, but excluding the redemption date, or ii) in whole but not in part, at any time within 90 days following a Regulatory Capital Treatment Event, as defined in the Series C Preferred Stock Offering Memorandum, at a redemption price equal to $250,000 per share, plus any declared and unpaid dividends to, but excluding, the redemption date.

Details of dividends paid to holders of the Series C Preferred Stock during the years ended December 31, 2020 and 2019 follow:

2020

Approved and Declared Date	Record Date	Payment Date	Declared Dividend	Shares Outstanding	Dividend Paid
April 7, 2020	May 29, 2020	June 15, 2020	$6,093.75	1,600	$ 9,750,000
July 27, 2020	August 28, 2020	September 15, 2020	$2,223.58	1,600	$ 3,557,722
October 12, 2020	November 25, 2020	December 15, 2020	$2,159.59	1,600	$ 3,455,351

2019

Approved and Declared Date	Record Date	Payment Date	Declared Dividend	Shares Outstanding	Dividend Paid
April 16, 2019	May 31, 2019	June 17, 2019	$6,093.75	1,600	$ 9,750,000
October 23, 2019	November 30, 2019	December 16, 2019	$6,093.75	1,600	$ 9,750,000

DTC Series A Non-Cumulative Perpetual Preferred stock. Under a plan adopted by the Board of Directors, each Participant of DTC is required to own shares of DTC Series A preferred stock. The ownership of DTC preferred stock is reported as non-controlling interests in the consolidated financial statements. There was $150,000,000 of DTC Series A preferred stock (1,500,000 shares at par value of $100 per share) outstanding as of December 31, 2020 and 2019. Annual dividends are accrued based on the weighted-average rate of interest paid by the Company on required Participants' Fund deposits during the dividend period as disclosed in the DTC's rules. The 2020 annual dividend amount of $480,000 was approved and declared by the Board of Directors in February 2021, and will be paid in April 2021, to the holders of DTC Series A Preferred stock during 2020. The 2019 annual dividend amount of $2,640,000 was approved and declared by the Board of Directors in February 2020, and was paid in March 2020, to the holders of DTC Series A Preferred stock during 2019.

19. CAPITAL REQUIREMENTS

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

19. CAPITAL REQUIREMENTS (CONTINUED)

General Business Risk Capital Requirement. This capital requirement is held to cover potential general business losses so that the clearing agencies can continue operations and provide services as a going concern if those losses materialize. It is determined based on the general business risk profile and estimated time to execute a recovery or orderly wind-down of critical operations for each of the clearing agencies and, at a minimum, is equal to six months of operating expenses.

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

Details of the general business risk capital requirement, corporate contribution and liquid net assets funded by equity for the clearing agencies as of December 31, 2020 and 2019 follow (in thousands):

	2020		
	DTC	NSCC	FICC
General business risk capital requirement	$ 179,187	$ 204,080	$ 130,261
Corporate contribution	89,593	102,040	65,130
Total requirement	268,780	306,120	195,391
Liquid net assets funded by equity	684,377	620,079	300,549
Excess	$ 415,597	$ 313,959	$ 105,158

	2019		
	DTC	NSCC	FICC
General business risk capital requirement	$ 169,398	$ 159,218	$ 113,137
Corporate contribution	84,699	79,609	56,568
Total requirement	254,097	238,827	169,705
Liquid net assets funded by equity	606,572	524,817	277,811
Excess	$ 352,475	$ 285,990	$ 108,106

Regulatory capital. DTCC's regulated subsidiaries maintain and report regulatory capital in accordance with all relevant laws, rules and guidelines. As a multinational enterprise, various DTCC subsidiaries are subject to regulatory capital regimes, as applicable. Certain DTCC subsidiaries submit regulatory capital reports to various regulators, including, but not limited to, FRBNY, the NYSDFS and the Commodity Futures Trading Commission in the United States; Ontario Securities Commission in Canada; and the Monetary Authority of Singapore in Singapore.

Capital adequacy. DTC is subject to capital guidelines issued by United States federal and state banking regulators.

DTC capital and leverage ratios filed with the FRBNY and the NYSDFS as of December 31, 2020 follow:

	Ratio	Minimum Capital Ratio[(a)]	Well Capitalized Ratio[(a)]
Tier 1 capital ratio [(1)]	103.26 %	6.00 %	8.00 %
Total capital ratio [(1)]	103.26 %	8.00 %	10.00 %
Tier 1 leverage ratio [(2)]	20.55 %	4.00 %	4.00 %

(a) As defined by the regulations issued by the Federal Reserve, Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation.

(1) Total capital and Tier 1 capital include common stock, retained earnings and preferred stock. DTC's tier 1 capital and total capital ratios are based on tier 1 capital and total risk-weighted assets.

(2) Tier 1 leverage ratio is based on tier 1 capital and quarterly average total assets.

20. TRANSACTIONS WITH RELATED PARTIES

DTCC had agreements with DEGCL to provide various support services and office facilities. On March 10, 2020, the agreements between these two companies were terminated (see Note 9 for additional information).

Expense reimbursements under these agreements for the years ended December 31, 2020 and 2019 follow (in thousands):

	Other Services(1)		Other Receivables(2)	
	For the years ended December 31,		As of December 31,	
Related parties	2020	2019	2020	2019
DEGCL	$ —	$ 9,407	$ —	$ 664

(1) Included in Other services revenue in the accompanying Consolidated Statements of Income.
(2) Included in Accounts receivable on the accompanying Consolidated Statements of Financial Condition.

21. GUARANTEES

Certain DTCC subsidiaries (NSCC and FICC) provide central counterparty (CCP) services, including clearing, settlement and risk management services. Acting as a CCP, NSCC and FICC (through GSD and MBSD) guarantee the settlement of trades in the event one or more of their Participants default. A Participant default is defined in the respective rules of NSCC, GSD and MBSD. In their guarantor role, each clearing subsidiary has equal claims to and from Participants, as applicable, on opposite sides of the netted transactions. To cover their default risk, NSCC and FICC (through GSD and MBSD) use risk-based margining to collect cash and eligible securities collateral to their Clearing Funds.

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. In addition, a Participant may be subject to an additional collection of margin on an intraday basis through the Clearing Fund.

FICC, through GSD, provides real-time trade matching, clearing, netting, risk management and settlement for trades in U.S. government debt including buy-sell transactions and repurchase agreement transactions. Securities processed by GSD include Treasury bills, bonds, notes, zero-coupon securities, government agency securities and inflation-indexed securities. The U.S. Government securities market is predominantly an over-the-counter market and most transactions are settled on trade date plus one day (T+1). Trades are guaranteed and novated upon comparison. The guarantee of GSD net settlement positions may result in a potential liability to FICC. Guaranteed positions that have not yet settled are margined and collateralized twice-daily through the Clearing Fund and marked-to-market twice-daily through the funds-only settlement process. In addition, a Participant may be subject to an additional amount referred to as the intraday supplemental required fund deposit, which, if applicable, may be collected on an intraday basis through the Clearing Fund.

MBSD provides real-time trade matching, clearing, netting, risk management and settlement for trades in the U.S. mortgage-backed securities market. Specifically, MBSD processes to-be-announced transactions, specified pool trades and stipulated trades. FICC's guarantee of MBSD transactions may result in potential liability to FICC. Guaranteed positions that have not yet settled are margined and collateralized daily through the Clearing Fund. The daily Clearing Fund includes a mark-to-market component that is calculated using guaranteed positions and prices as of prior end-of-day. In addition, a Participant may become subject to an intraday mark-to-market charge which, if applicable, may be collected on an intraday basis through the Clearing Fund.

21. GUARANTEES (CONTINUED)

If a Participant defaults in either NSCC or FICC, such Participant's deposits to the applicable Clearing Fund is the first source of funds and collateral that the NSCC and FICC would use to cover any losses that may result from the close-out and liquidation of the defaulting Participant's positions. To address potential tail losses, NSCC and FICC each separately maintain additional prefunded resources. These consist of (i) the CCP's Clearing Fund that, in the aggregate, currently serves as the CCP's default fund, and (ii) the CCP's corporate contribution, (see Note 19). If, after closing out and liquidating a defaulting Participant's positions, the CCP were to suffer a loss, such loss would be satisfied as follows: (i) first, applying the defaulter's Clearing Fund deposit, including any amounts available under cross-guaranty agreements to which the CCPs are a party, described below; (ii) next, the CCPs may apply their corporate contribution (or such higher amount as approved by their Board of Directors), and (iii) by allocating any remaining loss to Participants.

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, they will be treated as follows:

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.

FICC Participants are grouped into three different tiers for purposes of loss allocation: Tier 1, Tier 2, and Sponsored Members. GSD and MBSD will divide such obligation between Tier 1 Participants and Tier 2 Participants. Tier 1 Participants will be assessed ratably in accordance with their respective average daily required deposits to the Clearing Fund over the prior 70 business days. Tier 2 Participants will only be subject to such loss or liability to the extent they traded with the defaulting Participant. Sponsored Members are not obligated for loss allocation. If the loss arises in connection with Sponsored Member trades, the loss shall be allocated to Tier 1 Participants. GSD Participants who act as inter-dealer brokers are limited to a loss allocation of $5 million per event period in respect of their inter-dealer broker activity.

Amounts that may be available under cross-guaranty agreements include, for NSCC, amounts available under the netting contract and limited cross-guaranty between DTC and NSCC relating to collateralization across the DTC-NSCC interface, or for FICC, amounts available under the cross-margining agreements between GSD and the Chicago Mercantile Exchange Inc., which may provide for additional funds if the defaulting member was a cross-margining Participant.

DTC, NSCC, FICC and The Options Clearing Corporation (OCC) have also entered into a multilateral netting contract and limited cross-guaranty agreement. In accordance with this multilateral netting agreement, the clearing agencies have agreed to make payments to each other for any remaining unsatisfied obligations of a common defaulting Participant to the extent that these clearing agencies have excess resources belonging to the defaulting Participant. Under this agreement, no party ever needs to pay out of pocket and no party can receive more than its loss.

Details for open CCP positions for which a trade guaranty applied as of December 31, 2020 and 2019 follow (in billions):

	2020	2019
FICC		
GSD	$ 1,201	$ 1,172
MBSD	629	419
NSCC	183	143

22. OFF BALANCE SHEET AND CONCENTRATION OF CREDIT RISKS

DTCC is exposed to significant credit risk to third parties including its Participants, which extends to companies in the global financial services industry. DTCC's global customer base includes participating brokers, dealers, institutional investors, banks, trust issuers, mutual fund companies, insurance carriers, hedge funds, qualified institutional buyer clients via the sponsored membership service and other financial intermediaries - either directly or through correspondent relationships. 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 providing clearing and settlement service operations.

Credit risk arises at DTCC should a Participant fail to fulfill its settlement obligation. 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 DTCC clearing and settlement system.

Various tools are utilized to mitigate these risks including, but not limited to: setting capital adequacy standards; assessing new applicants for membership; performing continuous monitoring of Participants' financial condition; reviewing Participants' daily trading activity and determining appropriate collateral requirements; maintaining its risk-based Participants' Fund and 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 participating member at any of DTCC’s clearing agency or registered clearing house subsidiaries, an applicant must meet minimum eligibility criteria that are specified in the subsidiaries’ respective rules. All applicants must provide the Company with certain financial and operational information. This information is reviewed to ensure the applicant has sufficient financial resources to make anticipated contributions to the relevant subsidiary’s Participants' Fund or Clearing Fund and to meet its obligations to the subsidiary. 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 and/or other forms of surveillance to risk-rate or monitor Participants. The resulting rating or degree of surveillance determines the level of financial review to be performed on each Participant and may impact their Participants' Fund and Clearing Fund requirements.

Collateralization controls and net debit caps are employed by DTC to protect Participants against the risk that one or more Participants may fail to pay for their settlement obligations. DTC’s collateralization controls prevent a Participant’s net debit balance from exceeding the value of collateral in its account. The controls are designed to provide DTC with sufficient collateral to obtain funding for settlement in the event a Participant fails to pay its settlement obligation. DTC’s net debit cap controls limit the net settlement debit that each Participant can incur to an amount, based upon activity level, which would be covered by DTC’s liquidity resources. The net debit cap requires DTC to maintain sufficient liquidity to complete settlement should any single Participant or Participant family fail to settle.

NSCC and FICC collect Clearing Fund deposits from their Participants using a risk-based margining methodology. The risk-based methodology enables them 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 the tests may reveal.

DTC maintains a committed, secured line of credit to support potential liquidity needs in the event of a Participant default. NSCC maintains liquid resources to support potential liquidity needs in the event of a Participant default. In addition to the cash deposits to the Clearing Fund, these resources also include the cash that would be obtained from a committed, secured line of credit, proceeds from medium-term debt issuance, and proceeds from a commercial paper and extendable note program. FICC maintains a rules-based, committed liquidity resource (i.e., the capped contingency liquidity facility) for each division to support potential liquidity needs in the event of a netting member default.

22. OFF BALANCE SHEET AND CONCENTRATION OF CREDIT RISKS (CONTINUED)

The Company also limits its exposure to potential losses from default by Participants' through multilateral netting contracts and limited cross-guaranty agreements with other clearing agencies. 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, FICC and DTC have a multilateral netting contract and limited cross-guaranty agreement with each other and with OCC under which these clearing agencies have agreed to make payment to each other for any remaining unsatisfied obligations of a common defaulting Participant to the extent they have excess resources of the defaulting Participant. NSCC and DTC are also party to a netting contract and limited cross-guaranty agreement that includes special cross-guaranties and related arrangements designed to permit transactions to flow smoothly between DTC's system and NSCC's CNS system in a collateralized environment. These guaranties reduce risk at NSCC by ensuring that long allocations, or the approximate value of long allocations, will be made available to NSCC in a default situation.

If a DTC Participant defaults, such Participant’s deposits to the Participants' Fund would be used to satisfy an outstanding obligation and/or loss incurred by DTC. If those funds are insufficient to cover the defaulting Participant's outstanding obligations, DTC may use other Participant deposits in the Participants' Fund or apply a portion of its retained earnings to cover the loss.

Credit risk also comes from the investment of financial assets, which consist principally of cash and cash equivalents, investments, accounts receivable and Participants' and Clearing Funds. 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 financial markets, the securities industry and debt-issuing countries.

Cash and cash equivalents. The Company maintains cash and cash equivalents with various financial institutions including the FRBNY. The Company’s investment policy is designed to limit its 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 with 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 credit ratings 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 with such financial institutions may be adjusted.

Marketable securities. In addition to 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, pursuant to its investment policy. Credit risk related to investments in 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. The Company also performs ongoing credit evaluations of the financial conditions of its Participants and evaluates the delinquency status of the receivables.

Participants' Fund and Clearing Funds. In addition to risk management policies described above for cash and cash equivalents, when Participants provide cash deposits to the Participants' and Clearing Funds, the Company may invest the cash in bank deposits at the FRBNY or reverse repurchase agreements (reverse repos). Reverse repos are collateralized and the collateral must have a market value greater than or equal to 102% of the cash invested. 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 typically placed with financial institutions with a credit rating of BBB+/Baa1 or better from recognized rating agencies and that are approved through the Company’s credit review process. To avoid concentration of credit risk exposures, the Company sets credit limits for each investment counterparty.

22. OFF BALANCE SHEET AND CONCENTRATION OF CREDIT RISKS (CONTINUED)

Participants' and Clearing Funds cash deposits may also be invested in money market mutual funds under Rule 2a-7 of the Investment Company Act of 1940 with a credit rating of AAA/Aaa from recognized rating agencies. Credit risk is mitigated by investing in highly rated money market mutual funds with a stable net asset value of $1.00 and having cash returned daily.

23. PARENT COMPANY CONDENSED FINANCIAL STATEMENTS

Condensed financial statements for DTCC (the Parent Company Condensed Financial Statements) that follow should be read in conjunction with the accompanying consolidated financial statements of the Company and its subsidiaries and the notes thereto. The Parent Company Condensed Financial Statements as of December 31, 2020 and 2019 require management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. Management believes that the estimates utilized in the preparation of the condensed financial statements are reasonable. Actual results could differ materially from these estimates.

The DTCC Parent Company Condensed Statements of Financial Condition follow (in thousands):

	As of December 31,	
	2020	2019
ASSETS:		
Cash and cash equivalents	$ 507,329	$ 438,544
Investments in subsidiaries	1,959,011	1,863,686
Due from subsidiaries	365,901	259,633
Premises, equipment and intangible assets	167,275	187,926
Operating lease right-of-use asset	187,188	206,769
Other assets	403,223	392,034
TOTAL ASSETS	$ 3,589,927	$ 3,348,592
LIABILITIES AND SHAREHOLDERS' EQUITY:		
LIABILITIES:		
Long-term debt and other borrowings	$ 3,921	$ 8,024
Pension and postretirement benefits	218,198	211,720
Operating lease liability	237,852	256,993
Other liabilities	591,605	516,877
Total liabilities	1,051,576	993,614
SHAREHOLDERS' EQUITY:		
Preferred stock	391,116	391,116
Common stock	5,091	5,091
Additional paid-in capital	411,065	411,065
Retained earnings	1,964,412	1,769,638
Accumulated other comprehensive loss, net of tax	(233,333)	(221,932)
Total shareholders' equity	2,538,351	2,354,978
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 3,589,927	$ 3,348,592

23. PARENT COMPANY CONDENSED FINANCIAL STATEMENTS (CONTINUED)

DTCC Parent Company has an agreement with its subsidiaries whereby the DTCC Parent Company pays for substantially all of the expenses for the operations of its subsidiaries. The related expenses are allocated to subsidiaries based upon their estimated use of such goods or services as determined by applicable allocation factors. Further, the agreement provides that the DTCC Parent Company performs credit and quantitative risk services, and certain other services for its subsidiaries, including among other things, administrative, internal audit, finance and legal services. The billing for these services as a percentage of total allocated expenses ranged from 104% to 108% in 2020 and 2019, excluding pass-through charges and the impact of capitalized software. The fee, representing the amount over actual cost, is included in Interest and other income in the Condensed Statements of Income below.

The DTCC Parent Company Condensed Statements of Income follow (in thousands):

	For the years ended December 31,	
	2020	2019
REVENUES:		
Equity in earnings of subsidiaries	$ 183,517	$ 165,724
Interest and other income	97,697	110,000
Total revenues	281,214	275,724
OPERATING EXPENSES:		
Professional services	8,825	8,842
Other	49,180	48,249
Total operating expenses	58,005	57,091
Income before taxes	223,209	218,633
Provision for income taxes	11,672	793
Net income attributable to DTCC	$ 211,537	$ 217,840

23. PARENT COMPANY CONDENSED FINANCIAL STATEMENTS (CONTINUED)

The DTCC Parent Company Condensed Statements of Cash Flows follow (in thousands):

	For the years ended December 31, 2020	2019
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 211,537	$ 217,840
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:		
Equity in earnings of subsidiaries	(183,517)	(165,724)
Depreciation and amortization	2,144	2,608
Deferred income taxes	2,583	(10,660)
Other	19,583	18,947
Net change in:		
Due from subsidiaries	(106,268)	(69,573)
Operating lease liability	(19,143)	(18,518)
Other operating assets and liabilities, net	99,238	16,707
Net cash provided by/(used in) operating activities	26,157	(8,373)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Investments in subsidiaries	—	(30,799)
Distributions from subsidiaries	91,300	69,000
Capitalized software development costs and purchases of Premises and equipment	(27,827)	(48,923)
Net cash provided by/(used in) investing activities	63,473	(10,722)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Preferred stock dividend payments	(16,763)	(19,500)
Repayments on long-term debt and other borrowings	(4,101)	(42,779)
Net cash used in financing activities	(20,864)	(62,279)
Effect of foreign exchange rate changes on Cash and cash equivalents	19	24
Net increase/(decrease) in Cash and cash equivalents	68,785	(81,350)
Cash and cash equivalents - Beginning of year	438,544	519,894
Cash and cash equivalents - End of year	$ 507,329	$ 438,544
SUPPLEMENTAL DISCLOSURES:		
Interest paid	$ 2,712	$ 4,864
Income taxes paid - net of refunds	$ —	$ 20,091

24. OTHER MATTERS

The outbreak of the novel coronavirus (“COVID-19”) in many countries continues to adversely impact global commercial activity and has contributed to significant volatility in financial markets. The World Health Organization has declared COVID-19 a "Public Health Emergency of International Concern." The global impact of the outbreak continues to evolve, and as cases of the virus have continued to be identified, many countries have reacted by instituting quarantines and restrictions on travel. Such actions are creating disruption in global supply chains, and adversely impacting a number of industries. The outbreak could have a continued adverse impact on economic and market conditions and trigger a period of global economic slowdown. The rapid development and fluidity of this situation precludes any prediction as to the ultimate adverse impact of COVID-19. Nevertheless, COVID-19 could have a material impact on the Company's financial statements. In addition to the factors described above, other factors either in the U.S or internationally that may affect market, economic and geopolitical conditions, and thereby adversely affect the Company’s business include, without limitation, economic slowdown, changes in interest rates and/or a lack of availability of credit, changes in law and/or regulation, and uncertainty regarding government and regulatory policy.

The ongoing concerns related to the COVID-19 virus caused DTC to suspend all physical securities processing services from the Company’s vault from March 20, 2020 to May 18, 2020. DTC is at risk for a range of additional potential exposures, the most significant of which stem from the inability to process physical securities. As a result, the Company has potential contingent liabilities from: (i) the acceptance of Letters of Securities Possession (LOP) and (ii) the issuance of Letters of Indemnification certificates (LOI). The LOP is used when, due to extraordinary circumstances, the underwriter of a new issue is unable to deliver the physical certificates to DTC as required by DTC’s operating rules. An LOI is issued to Transfer Agents to enable the processing of transactions when the presentment of physical certificates is not possible. An LOI is effective until such time that the physical certificates become available and are returned to the Transfer Agent.

Since March 20, 2020, DTC received 3,559 LOPs from underwriters for $91.1 billion in new issuances and issued 5,005 LOIs for a total value of $39.3 billion. As of December 31, 2020, of the $91.1 billion, 7 LOPs were outstanding with a total value of $114.1 million and of the $39.3 billion, 46 LOIs were outstanding with a total value of $132.4 million. The Company continues to assess this matter and believes, based on information available to it, the resolution of these matters will not have a material adverse effect on the financial condition and to the Company’s operating results or cash flows for any particular period. Accordingly, no such amounts have been recognized by the Company in the accompanying consolidated financial statements. The Company continues to assess the probability and the estimation of the exposure to determine the extent of further disclosures and/or whether recognition may be necessary going forward.

All other DTCC services remain uninterrupted and the Company has not experienced any impairments to the Company's assets or material adverse financial impacts related to COVID-19.

25. SUBSEQUENT EVENTS

The Company evaluated events and transactions occurring after December 31, 2020 through March 26, 2021, the date these consolidated financial statements are available to be issued, for potential recognition or disclosure. No additional events or transactions, other than as disclosed below, occurred during such period that would require recognition or disclosure in these consolidated financial statements.

On February 1, 2021, the Company settled with the New York City tax authorities with respect to ongoing state income tax audits related to the years 2010-2014. See Note 17 for additional information.