The Depository Trust & Clearing Corporation

Consolidated Financial Statements as of and for the Years Ended December 31, 2021 and 2020, and Independent Auditors' Report

THE DEPOSITORY TRUST & CLEARING CORPORATION

TABLE OF CONTENTS

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INDEPENDENT AUDITOR'S REPORT

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

Opinion

We have audited the consolidated financial statements of The Depository Trust and Clearing Corporation and its subsidiaries (the "Company"), which comprise the consolidated statements of financial condition as of December 31, 2021 and 2020, 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 (collectively referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Company and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

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

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for one year after the date that the financial statements are available to be issued.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Company's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Deloitte & Touche LLP

March 25, 2022

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION

(In thousands, except share data)	As of December 31, 2021	As of December 31, 2020
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 14,236,922	$ 9,165,353
Participants' segregated cash	6,078	134
Short-term investments	445,000	800,000
Accounts receivable - net of allowance for credit losses	244,090	217,531
Participants' and Clearing Funds	56,501,935	61,903,522
Other Participants' assets	1,326,873	813,006
Other current assets	176,352	138,265
Total current assets	72,937,250	73,037,811
NON-CURRENT ASSETS:		
Premises and equipment - net of accumulated depreciation	190,326	202,224
Goodwill	57,699	57,699
Intangible assets - net of accumulated amortization	328,635	343,530
Operating lease right-of-use-asset	222,341	220,073
Other non-current assets	318,629	306,088
Total non-current assets	1,117,630	1,129,614
TOTAL ASSETS	$ 74,054,880	$ 74,167,425
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Commercial paper - net of unamortized discount	$ 8,291,933	$ 3,843,290
Long-term debt	—	3,921
Pension and postretirement benefits	33,981	40,438
Operating lease liability	28,705	27,179
Accounts payable and accrued expenses	100,346	122,021
Participants' and Clearing Funds	56,501,935	61,903,522
Payable to Participants	1,332,951	813,140
Other current liabilities	291,251	285,707
Total current liabilities	66,581,102	67,039,218
NON-CURRENT LIABILITIES:		
Long-term debt	3,731,814	3,723,942
Pension and postretirement benefits	147,919	179,552
Operating lease liability	242,846	245,836
Other non-current liabilities	270,863	290,526
Total non-current liabilities	4,393,442	4,439,856
Total liabilities	70,974,544	71,479,074
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
Series D, $0.50 par value - 2,000 shares authorized, issued (above par), and outstanding	490,900	—
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	2,231,213	1,964,412
Accumulated other comprehensive loss, net of tax	(208,533)	(233,333)
Non-controlling interests	150,000	150,000
Total shareholders' equity	3,080,336	2,688,351
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 74,054,880	$ 74,167,425

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, 2021	2020
REVENUES		
Settlement and asset services	$ 507,315	$ 458,406
Clearing services	767,753	703,098
Matching services	298,025	293,377
Repository and derivatives services	302,696	270,030
Wealth management services	111,864	107,831
Data and other services	48,777	40,477
Investment income, net	17,170	14,184
Total revenues	2,053,600	1,887,403
EXPENSES		
Employee compensation and related benefits	806,075	781,761
Information technology	225,911	192,676
Professional and other services	367,914	352,113
Occupancy	55,180	54,065
Depreciation and amortization	166,523	146,326
General and administrative	44,282	51,093
Impairment of intangible assets	14,467	7,255
Total expenses	1,680,352	1,585,289
Total operating income	373,248	302,114
NON-OPERATING INCOME (EXPENSE)		
Interest income	54,050	136,668
Refunds to Participants	(32,160)	(88,374)
Interest expense	(80,332)	(120,042)
Net income from Equity method investments	—	558
Other non-operating income, net	41,627	44,102
Total non-operating expense	(16,815)	(27,088)
Income before taxes	356,433	275,026
Provision for income taxes	64,532	63,009
Net income	$ 291,901	$ 212,017
Net income attributable to non-controlling interests	135	480
Net income attributable to DTCC	$ 291,766	$ 211,537

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, 2021	2020
Net income	$ 291,901	$ 212,017
OTHER COMPREHENSIVE INCOME (LOSS) - Net of tax:		
Defined benefit pension and other plans (1)	28,403	(12,884)
Foreign currency translation	(3,603)	1,483
Other comprehensive income (loss)	24,800	(11,401)
Comprehensive income	316,701	200,616
Comprehensive income attributable to non-controlling interests	135	480
Comprehensive income attributable to DTCC	$ 316,566	$ 200,136

(1) Amounts are net of provision for income taxes of $10,875 and benefit for income taxes of $4,825 for 2021 and 2020, 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

								Accumulated Other Comprehensive Income (Loss), Net of Tax			
	Preferred Stock				Common	Additional Paid-In	Retained	Defined Benefit Pension and	Foreign Currency	Non-controlling	Total Shareholders'
(In thousands)	**Series A**	**Series B**	**Series C**	**Series D**	**Stock**	**Capital**	**Earnings**	**Other Plans**	**Translation**	**Interests**	**Equity**
BALANCE - January 1, 2020	$ 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 income (loss)	—	—	—	—	—	—	—	(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
Net income	—	—	—	—	—	—	291,766	—	—	135	291,901
Other comprehensive income (loss)	—	—	—	—	—	—	—	28,403	(3,603)	—	24,800
Redemption of preferred stock	—	—	(390,516)	—	—	—	(9,484)	—	—	—	(400,000)
Proceeds from issuance of preferred stock, net of issuance costs	—	—	—	490,900	—	—	—	—	—	—	490,900
Dividend to non-controlling interest	—	—	—	—	—	—	—	—	—	(135)	(135)
Dividend on preferred stock	—	—	—	—	—	—	(15,481)	—	—	—	(15,481)
BALANCE - December 31, 2021	$ 300	$ 300	$ —	$ 490,900	$ 5,091	$ 411,065	$ 2,231,213	$ (201,239)	$ (7,294)	$ 150,000	$ 3,080,336

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, 2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 291,901	$ 212,017
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:		
Depreciation and amortization	166,523	146,326
Impairment of intangible assets	14,467	7,255
Net gain on disposal of Premises and equipment	—	(20)
Deferred income taxes	16,161	4,625
Accretion of discount on Commercial paper, net of associated interest paid	(2,393)	(35,767)
Net income from Equity method investments	—	(558)
Other	11,372	30,330
Net change in:		
Accounts receivable	(25,883)	(41,416)
Other assets	(57,472)	41,714
Accounts payable and accrued expenses	(20,369)	21,293
Pension and postretirement benefits	(23,272)	(5,541)
Operating lease liability	(32,025)	(26,519)
Other liabilities	9,830	45,182
Participants' and Clearing Funds liabilities	(993,661)	12,042,342
Payable to Participants	519,813	294,160
Net cash (used in)/provided by operating activities	(125,008)	12,735,423
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of Short-term investments	(2,046,179)	(2,145,000)
Maturities of Short-term investments	2,401,251	2,245,000
Purchases of Premises and equipment	(37,265)	(34,827)
Capitalized software development costs	(118,497)	(95,248)
Acquisition of Intangible assets	—	(26,434)
Proceeds from sale of Equity method investments	—	9,902
Proceeds from Company owned life insurance policies	4,298	—
Net cash provided by/(used in) investing activities	203,608	(46,607)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from Commercial paper	51,136,107	35,790,441
Repayments of Commercial paper	(46,685,071)	(39,065,601)
Proceeds from issuance of debt, net of debt issuance costs	—	3,721,025
Repayments on long-term debt and other borrowings	(3,921)	(4,101)
Preferred stock dividend payments	(15,481)	(16,763)
Proceeds from issuance of preferred stock, net of issuance costs	490,900	—
Redemption of preferred stock	(400,000)	—
Payment to Non-controlling interests	(480)	(2,640)
Net cash provided by financing activities	4,522,054	422,361
Effect of foreign exchange rate changes on Cash and cash equivalents	(2,919)	3,488
Net increase in Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets, Restricted cash	4,597,735	13,114,665
Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets, Restricted cash - Beginning of year	39,460,290	26,345,625
Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets, Restricted cash - End of year	$ 44,058,025	$ 39,460,290
SUPPLEMENTAL DISCLOSURES:		
Interest paid	$ 50,933	$ 112,967
Income taxes paid - net of refunds	$ 86,205	$ 17,691

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 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, through itself, its subsidiary and affiliates, provides post-trade matching, processing and other related services, primarily to members of the financial services community. ITP's subsidiary and applicable affiliates are authorized to provide certain post-trade matching services pursuant to certain orders issued by regulatory authorities and may be subject to the supervision and examination by these authorities in the jurisdiction they operate including the SEC, the Financial Conduct Authority in the United Kingdom (FCA), and the Autorité des Marchés Financiers (AMF) and the Ontario Securities Commission (OSC) in Canada.

Deriv/SERV, through its subsidiary and affiliates, enhances transparency and provides operational efficiency for derivatives and securities financing transactions processing and reporting. Deriv/SERV also offers the Trade Information Warehouse asset servicing for credit default swaps. Deriv/SERV's subsidiary and applicable affiliates are registered or recognized trade repositories and may be subject to supervision and examination by regulatory authorities in the jurisdictions they operate including the U.S. Commodity Futures Trading Commission (CFTC), SEC, FCA, thirteen Canadian provincial and territorial regulators, the European Securities and Markets Authority (ESMA), the Swiss Financial Market Supervisory Authority (FINMA), the Monetary Authority of Singapore (MAS), the Financial Services Agency of Japan (JFSA), and the Australian Securities and Investments Commission (ASIC).

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

Solutions (UK) offers software solutions and consulting services.

1. BUSINESS AND OWNERSHIP (CONTINUED)

BED owns and operates the 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 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 financial 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 expenses 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.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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.

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.

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. Balances comprised of cash that represent cash dividends, interest, reorganization, redemptions, and cash collateral received are included in Other Participants' assets, with a corresponding liability recorded in Payable to Participants, on the accompanying Statements of Financial Condition.

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, 2021 and 2020. The FRB stock, amounting to $6,402,000 at December 31, 2021 and 2020, is included in Other non-current assets on the accompanying Consolidated Statements of Financial Condition.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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.

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

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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 observable price changes in orderly transactions for the identical or similar security. 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 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.

Debt issuance costs. Debt issuance costs consist of costs incurred in obtaining financing. 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 and are amortized over the term of the financing using the straight-line method.

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.

The Company was fined by the SEC for compliance violations arising from a regulatory examination. Without admitting or denying the findings, the Company consented to pay an $8 million penalty in 2021. The charge for the fine is included in General and administrative in the accompanying Statements of Income of which $5 million was recorded in fourth quarter of 2020 and $3 million was recorded in the third quarter of 2021. The fine was paid in full in the fourth quarter of 2021.

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 value and volume of executed transactions and the established fee schedules, less any applicable volume discounts. The volume targets or thresholds for the discounts primarily 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.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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 that are based on either volume or value of trading activity 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 clients' 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.

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 $75 million to NSCC Participants during 2021 and $25 million to DTC Participants during 2020. The amount of the rebates were determined based on a net income targets at the legal entity level. Participants received rebates in proportion to their fees paid in 2021 and 2020, respectively. The rebates are presented net in Clearing services and Settlement and asset services revenues in the accompanying Consolidated Statements of Income.

Details for the rebate amount in the accompanying Consolidated Statements of Income for the years ended December 31, 2021 and 2020 follows (in thousands):

	2021	2020
Settlement and asset services	$ —	$ 25,000
Clearing services	75,000	—
Total	$ 75,000	$ 25,000

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.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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, 2021 and 2020 was $17,413,000 and $17,599,000, 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 11. Of the $17,599,000 as of December 31, 2020, $14,190,000 was recognized as revenue during the year ended December 31, 2021.

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 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 $17,170,000 and $14,184,000 for the years ended December 31, 2021 and 2020, respectively.

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) in the U.S., 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 also has defined benefit pension plans that are offered in certain non-U.S. locations based on factors such as eligible compensation, age and/or years of service. It is the Company’s policy to fund the pension plans in amounts sufficient to meet the requirements under applicable laws.

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 the Rule of 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.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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.

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.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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.

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.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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, 2021 and 2020 follows (in thousands):

	2021	2020
Cash and cash equivalents	$ 14,236,922	$ 9,165,353
Participants' segregated cash	6,078	134
Participants' and Clearing Funds cash deposits	28,480,163	29,473,824
Cash in Other Participants' assets	1,326,873	813,006
Restricted cash included in Other non-current assets	7,989	7,973
Total Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets and Restricted cash shown on the Consolidated Statements of Cash Flows	$ 44,058,025	$ 39,460,290

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 2021-10 - Government Assistance (Topic 832): Disclosures by Business Entities about Government Assistance *Issued November 2021*	• Applies to business entities that account for a transaction with a government by applying a grant and accounting model by analogy to other accounting guidance (for example, the grant model within International Accounting Standards (IAS) 20, Accounting for Government Grants). • Requires the following annual disclosures: ◦ Information about the nature of the transaction(s) and the related accounting policy used to account for the transactions. ◦ The line items on the balance sheet and income statement that are affected by the transactions, and the amounts applicable to each financial statement line item. ◦ Significant terms and conditions of the transactions, including commitments and contingencies.	• Effective January 1, 2022. • The Company is evaluating the impact on its consolidated financial statements and related disclosures.
ASU 2021-09 - Leases (Topic 842): Discount rate for Lessees that are not Public Business Entities *Issued November 2021*	• Provides lessees that are not public business entities with the option to elect, as an accounting policy, the use of a risk-free rate as the discount rate by class of underlying asset rather than at the entity-wide level for all leases. • Requires entities that make the risk-free rate election to disclose which asset classes it has elected to apply a risk-free rate.	• Effective January 1, 2022. • The Company is evaluating the impact on its consolidated financial statements and related disclosures.

3. ACCOUNTING AND REPORTING DEVELOPMENTS (CONTINUED)

Standard	Description	Impact on the financial statements or other significant matters
Financial Accounting Standards Board Standard Issued, but not yet Adopted (continued)		
ASU 2021-08 - Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers *Issued October 2021*	• Requires contract assets and contract liabilities (i.e. deferred revenue) acquired in a business combination to be recognized and measured by the acquirer on the acquisition date in accordance with ASC 606, Revenue from Contracts with Customers, which results in the acquirer recognizing contract assets and contract liabilities at the same amounts recorded by the acquiree.	• Effective January 1, 2023. • The Company does not anticipate that the adoption of this standard will have a significant impact on its consolidated financial statements and related disclosures. • The Company will continue to evaluate the impact this standard will have on its consolidated financial statements and related disclosures until the standard is 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 does not anticipate that the adoption of this standard will have a significant impact on its 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, 2021 and 2020 follow (in thousands):

	2021	2020
Assets:		
Participants' segregated cash	$ 6,078	$ 134
Other Participants' assets	1,326,873	813,006
Total	$ 1,332,951	$ 813,140
Liabilities:		
Payable to Participants	$ 1,332,951	$ 813,140

5. ACCOUNTS RECEIVABLE

Details for Accounts receivable as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Due from Participants and customers for services	$ 226,571	$ 204,071
Allowance for credit losses	(253)	(259)
Due from Participants and customers for services, net	226,318	203,812
Other receivables	17,772	13,719
Total	$ 244,090	$ 217,531

Details for allowance for credit losses for the years ended December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Beginning balance of allowance for credit losses	$ 259	$ 614
Provision	566	1,340
Less: Write-offs	(572)	(1,695)
Ending balance of allowance for credit losses	$ 253	$ 259

6. PARTICIPANTS' AND CLEARING FUNDS

Details for the Participants' and Clearing Funds as of December 31, 2021 and 2020 follow (in thousands):

	2021			
	DTC	NSCC	FICC	Total
Total deposits	$ 1,962,667	$ 14,753,453	$ 39,785,815	$ 56,501,935
Less: Required deposits	1,150,000	8,343,253	29,720,679	39,213,932
Excess deposits	$ 812,667	$ 6,410,200	$ 10,065,136	$ 17,288,003

	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

6. PARTICIPANTS' AND CLEARING FUNDS (CONTINUED)

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, 2021 and 2020 follow (in thousands):

	2021			
	DTC	NSCC	FICC	Total
Cash and cash equivalents	$ 1,962,667	$ 13,941,679	$ 12,575,817	$ 28,480,163
U.S. Treasury Securities	—	811,774	24,200,940	25,012,714
U.S. Agency Issued Debt Securities (Non-Callable)	—	—	129,647	129,647
U.S. Agency Residential Mortgage-Backed Securities	—	—	2,879,411	2,879,411
Total	$ 1,962,667	$ 14,753,453	$ 39,785,815	$ 56,501,935

	2020			
	DTC	NSCC	FICC	Total
Cash and cash equivalents	$ 1,925,137	$ 11,845,743	$ 15,702,944	$ 29,473,824
U.S. Treasury Securities	—	1,127,033	26,685,972	27,813,005
U.S. Agency Issued Debt Securities (Non-Callable)	—	—	347,717	347,717
U.S. Agency Residential Mortgage-Backed Securities	—	—	4,268,976	4,268,976
Total	$ 1,925,137	$ 12,972,776	$ 47,005,609	$ 61,903,522

Details for the Participants' and Clearing Funds cash deposits as of December 31, 2021 and 2020 follow (in thousands):

	2021			
	DTC	NSCC	FICC	Total
Bank deposits	$ 1,962,667	$ 12,197,679	$ 10,662,817	$ 24,823,163
Money market fund investments - at fair value	—	1,744,000	1,913,000	3,657,000
Total	$ 1,962,667	$ 13,941,679	$ 12,575,817	$ 28,480,163

	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

7. PREMISES AND EQUIPMENT

The cost, accumulated depreciation and net book value of Premises and equipment as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Furniture and equipment	$ 247,947	$ 270,209
Leasehold improvements	173,626	171,100
Buildings and improvements	22,722	22,813
Finance leases	212	1,426
Land	4,221	4,221
Total Premises and equipment	448,728	469,769
Less: Accumulated depreciation	(258,402)	(267,545)
Net book value	$ 190,326	$ 202,224

Depreciation expense for premises and equipment for the years ended December 31, 2021 and 2020 was $47,655,000 and $50,252,000, respectively, and is included in Depreciation and amortization in the accompanying Consolidated Statements of Income.

The Company disposed of fully depreciated premises and equipment that resulted in the removal of costs and accumulated depreciation of $56,797,000 and $104,640,000 for the years ended December 31, 2021 and 2020, respectively. Total disposals of premises and equipment resulted in a gain of $0 and $20,000 during the years ended December 31, 2021 and 2020, 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, 2021 and 2020 follow (in thousands):

	2021	2020
Goodwill:		
Gross carrying value	$ 57,699	$ 57,699
Intangible assets:		
Customer relationships:		
Gross carrying value	231,700	231,700
Accumulated amortization	(159,294)	(139,985)
Net book value	72,406	91,715
Capitalized software:		
Gross carrying value	633,384	773,595
Accumulated amortization	(377,155)	(521,780)
Net book value	256,229	251,815
Total Intangible assets - net of accumulated amortization	$ 328,635	$ 343,530

8. GOODWILL AND INTANGIBLE ASSETS (CONTINUED)

Intangible assets. Amortization expense for intangible assets for the years ended December 31, 2021 and 2020 was $118,868,000 and $96,074,000, 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):

2022	$ 128,202
2023	106,802
2024	65,927
2025	27,704
2026	—
Thereafter	—
Total future estimated amortization	$ 328,635

During the years ended December 31, 2021 and 2020, disposals of fully amortized capitalized software resulted in the removal of cost and accumulated amortization of $241,938,000 and $180,333,000, respectively.

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 entire purchase was allocated to the platform software asset based on a third party valuation and amortized over four years.

The Company recognized impairment charges of $14,467,000 and $7,255,000 related to capitalized software for the years ended December 31, 2021 and 2020, respectively. The impairment charges are included in Impairment of intangible assets in the accompanying Consolidated Statements of Income.

During the year ended December 31, 2021 the Company recognized the following impairments of internally developed software related to these projects:

The Common Margining project experienced continued delays, the necessity for rewriting portions of the code and changes in legal and regulatory requirements triggering an evaluation for impairment. The evaluation concluded that the $10,446,000 carrying value of its internally developed software was not recoverable and exceeded its fair value.

The Report Hub project experienced a change in strategy which included migration to CMRS triggering an evaluation for impairment. The evaluation concluded that the $2,596,000 carrying value of its internally developed software would no longer be used after the migration is completed.

The Inventory Management System Ingestion project was not performing as intended triggering an evaluation for impairment. The evaluation concluded that the $1,425,000 carrying value of its internally developed software was not recoverable and exceeded its fair value.

During the year ended December 31, 2020 the Company recognized the following impairments of internally developed software related to this project:

The Fundamental Review of Trading Book (FRTB) experienced continued delays in changes of regulatory requirements triggering an evaluation for impairment. The evaluation concluded that the $6,235,000 carrying value of its internally developed software was not recoverable and exceeded its fair value.

Goodwill impairment testing. DTCC completed its annual goodwill impairment test in the fourth quarter of 2021 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. 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.

Details for operating lease assets and lease liabilities as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Assets		
Operating lease right-of-use-asset	$ 222,341	$ 220,073
Liabilities		
Current portion of operating lease liability	28,705	27,179
Non-current operating lease liability	242,846	245,836
Total lease liabilities	$ 271,551	$ 273,015

Details for the maturity of lease liabilities as of December 31, 2021 for each of the next five years and thereafter follow (in thousands):

2022	$ 35,982
2023	37,023
2024	35,139
2025	31,308
2026	27,452
Thereafter	148,036
Total lease payments	314,940
Less: Imputed interest	(43,389)
Present value of lease liability	$ 271,551

9. LEASES (CONTINUED)

Details for lease expense for the years ended December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Occupancy	$ 28,359	$ 33,336
Information technology	4,982	3,391
Total lease expense	33,341	36,727
Sublease income [1]	(4,894)	(5,513)
Net lease expense	$ 28,447	$ 31,214

(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, 2021 and 2020 follow (in thousands):

	2021	2020
Lease payments included in the measurement of lease liabilities	$ (40,909)	$ (36,060)
Accretion of lease liabilities	8,884	9,541
Net decrease in Operating lease liability[1]	$ (32,025)	$ (26,519)

(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, 2021 and 2020 follow:

	2021	2020
Weighted average remaining lease term (years)	9.3	10.6
Weighted average discount rate	2.85 %	3.27 %

Lease right-of-use assets obtained in exchange for operating lease obligations for new and modified leases were $17,971,000 and $8,232,000 for the years ended December 31, 2021 and 2020, respectively.

10. OTHER ASSETS

Details for Other assets as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Prepaids	$ 120,796	$ 99,483
Prepaid taxes	35,316	29,498
Business employment incentive program (1)	18,091	6,794
Interest receivable	1,279	2,053
Other current assets	870	437
Total other current assets	176,352	138,265
Long-term incentive plan assets	159,502	159,865
Cash surrender value on insurance policies	70,411	71,498
Prepaids	34,822	17,512
Pension and postretirement	13,630	—
Equity investments	12,393	12,393
Deferred tax assets	11,183	27,774
Restricted cash	7,989	7,973
Investment in Federal reserve stock	6,402	6,402
Other non-current assets	2,297	2,671
Total other non-current assets	318,629	306,088
Total	$ 494,981	$ 444,353

(1) The Company participates in the New Jersey State Business Employment Incentive Program (BEIP). The intent of this program is to encourage businesses to locate and expand in the State of New Jersey through grants that the Company has elected to convert into refundable tax credits.

11. OTHER LIABILITIES

Details for Other liabilities as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Compensation payable	$ 171,975	$ 161,106
Accrued payroll and payroll withholdings	44,247	52,716
Long-term incentive plan liabilities	31,294	29,309
Deferred revenue	16,482	16,502
Deferred sublease income	7,720	9,406
Other current liabilities	19,533	16,668
Total other current liabilities	291,251	285,707
Long-term incentive plan liabilities	245,179	242,344
Unrecognized tax benefits	21,822	43,659
Deferred revenue	931	1,097
Deferred tax liabilities	183	560
Other non-current liabilities	2,748	2,866
Total other non-current liabilities	270,863	290,526
Total	$ 562,114	$ 576,233

12. COMMERCIAL PAPER

Details for Commercial paper as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Commercial paper - net of unamortized discount of $1,067 and $1,983 as of December 31, 2021 and 2020, respectively	$ 8,291,933	$ 3,843,290
Weighted-average interest rate	0.13 %	0.28 %

Interest expense on Commercial paper, included in Interest expense in the accompanying Consolidated Statements of Income, was $9,179,000 and $60,988,000 for the years ended December 31, 2021 and 2020, respectively.

13. LONG-TERM DEBT

Details for Long-term debt as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Senior notes - net of unamortized discount and debt issuance costs	$ 3,731,814	$ 3,723,942
Information technology financing	—	3,921
Total Long-term debt	3,731,814	3,727,863
Less: Current portion of long-term debt	—	(3,921)
Non-current portion of long-term debt	$ 3,731,814	$ 3,723,942

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

2022	$ —
2023	2,000,000
2024	—
2025	1,750,000
2026	—
Thereafter	—
Total	$ 3,750,000

Senior notes. On April 23, 2020 and December 7, 2020, NSCC issued three-year and five-year senior unsecured 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 senior notes as of December 31, 2021 follow (in thousands):

Issue Date	Maturity	Rate	Principal Balance	Carrying Value
April 23, 2020	April 23, 2023	1.20%(1)	$ 1,000,000	$ 997,207
April 23, 2020	April 23, 2025	1.50%(1)	1,000,000	994,428
December 7, 2020	December 7, 2023	0.40%(2)	1,000,000	995,817
December 7, 2020	December 7, 2025	0.75%(2)	750,000	744,362
			$ 3,750,000	$ 3,731,814

(1) Interest is payable semi-annually in arrears on April 23 and October 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.

13. LONG-TERM DEBT (CONTINUED)

Interest expense and amortization of discount and issuance costs, included in Interest expense in the accompanying Consolidated Statements of Income, were $43,970,000 and $22,169,000 for the years ended December 31, 2021 and 2020, respectively. The weighted-average interest rate was 0.98% as of December 31, 2021 and 2020. The aggregate debt issuance costs and unamortized discount associated with the senior notes were $18,186,000 and $26,058,000, as of December 31, 2021 and 2020, respectively.

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. In October 2021, the Company paid off the loan. Interest expense on the loan included in the accompanying Consolidated Statements of Income was $41,000 and $198,000 for the years ended December 31, 2021 and 2020, respectively.

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, 2021 and 2020 follow:

	2021	2020
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	29/35	32/37
Borrowing Rate	The greatest of the FRBNY rate, adjusted LIBOR, or zero, on the day of borrowing, plus 1.40%	
Maturity Date	May 2022	May 2021
Annual Facility Fee	0.10%(1)	0.20%(1)
Uncommitted Amount	C$200 million (2)	C$200 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	$9.3 billion	$10.9 billion
Denomination	USD	USD
Number of Participants/Lenders	29/35	32/37
Borrowing Rate	The greatest of the FRBNY rate, adjusted LIBOR, or zero, on the day of borrowing, plus 1.40%	
Maturity Date	May 2022	May 2021
Annual Facility Fee	0.10%(1)	0.20%(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.

13. LONG-TERM DEBT (CONTINUED)

There were no borrowings under the lines of credit during 2021 and 2020.

Details for debt covenants related to the lines of credit as of December 31, 2021 and 2020 follow:

	2021	2020
DTCC		
Minimum Net Worth	$1.25 billion	$1.25 billion
Maximum Priority Debt	$200 million	$200 million
DTC		
Minimum Net Worth	$200 million	$200 million
Minimum Participants' Fund deposits	$750 million	$750 million
NSCC		
Minimum Net Worth	$200 million	$200 million
Minimum Clearing Fund deposits	$1.5 billion	$1.5 billion

As of December 31, 2021 and 2020, 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, 2021 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.

14. 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

14. 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	Quoted market price of identical assets obtained from pricing services engaged by the Company	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, 2021 and 2020 follow (in thousands):

	2021			
	Level 1	Level 2	Level 3	Total
Assets:				
Clearing Funds				
U.S. Treasury Securities	$ 25,012,714	$ —	$ —	$ 25,012,714
U.S. Agency Issued Debt Securities (Non-Callable)	129,647	—	—	129,647
U.S. Agency Residential Mortgage-Backed Securities	—	2,879,411	—	2,879,411
Cash deposits - Money market fund investments	3,657,000	—	—	3,657,000
Non-current assets				
Long-term incentive plan assets - Mutual fund and Stable value fund investments	135,525	23,977	—	159,502
Total assets	$ 28,934,886	$ 2,903,388	$ —	$ 31,838,274
Liabilities:				
Clearing Funds				
Securities liabilities	$ 25,142,361	$ 2,879,411	$ —	$ 28,021,772
Money market fund investments liabilities	3,657,000	—	—	3,657,000
Total liabilities	$ 28,799,361	$ 2,879,411	$ —	$ 31,678,772

14. FAIR VALUE MEASUREMENTS (CONTINUED)

	2020			
	Level 1	Level 2	Level 3	Total
Assets:				
Clearing Funds				
U.S. Treasury Securities	$ 27,813,005	$ —	$ —	$ 27,813,005
U.S. Agency Issued Debt Securities (Non-Callable)	347,717	—	—	347,717
U.S. Agency Residential Mortgage-Backed Securities	—	4,268,976	—	4,268,976
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:				
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

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 financial 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, Payable to Participants, and Long-term debt.

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, 2021 and 2020 follow (in thousands):

	2021				
	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets:					
Cash and cash equivalents	$14,236,922	$14,236,922	$14,236,922	$ —	$ —
Participants' segregated cash	6,078	6,078	6,078	—	—
Short-term investments	445,000	445,000	—	445,000	—
Participants' and Clearing Funds:					
Cash deposits - Bank deposits	24,823,163	24,823,163	24,823,163	—	—
Other Participants' assets	1,326,873	1,326,873	1,326,873	—	—
Total	$40,838,036	$40,838,036	$40,393,036	$ 445,000	$ —
Liabilities:					
Commercial paper	$ 8,291,933	$ 8,291,933	$ —	$ 8,291,933	$ —
Participants' and Clearing Funds:					
Cash deposits - Bank deposits	24,823,163	24,823,163	24,823,163	—	—
Payable to Participants	1,332,951	1,332,951	1,332,951	—	—
Long-term debt	3,731,814	3,744,935	—	3,744,935	—
Total	$38,179,861	$38,192,982	$26,156,114	$12,036,868	$ —

14. FAIR VALUE MEASUREMENTS (CONTINUED)

	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	24,598,824	24,598,824	24,598,824	—	—
Cash deposits - Reverse repurchase agreements	925,000	925,000	—	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	$ —

Assets measured at fair value on a non-recurring basis. Certain financial 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. During the year ended December 31, 2021, there was no fair value adjustment required for equity investments without a readily determinable fair value. The carrying amount of the investments were $12,393,000 as of December 31, 2021 and 2020.

15. RETIREMENT PLANS

U.S. 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	
	2021	2020	2021	2020
Benefit obligations, beginning of year:	$ 1,232,651	$ 1,140,118	$ 68,713	$ 66,615
Service cost	1,923	2,144	548	545
Interest cost	23,054	32,187	1,157	1,742
Gross benefits paid	(64,907)	(68,854)	(1,252)	(1,728)
Expenses paid	(1,622)	(1,249)	—	—
Actuarial loss (gain)	(60,120)	128,305	(6,693)	1,539
Total benefit obligations at end of year	$ 1,130,979	$ 1,232,651	$ 62,473	$ 68,713
Total accumulated benefit obligations at end of year	$ 1,128,017	$ 1,228,596	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, 2021 and 2020, 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, 2021 and 2020, follow (in thousands):

	Pension Benefits				Other Benefits	
	Pension Plan		Other Supplemental Pension Plans		Medical & Life Plans	
	2021	2020	2021	2020	2021	2020
Benefit obligations at end of year:						
Qualified plan	$ 1,013,449	$ 1,110,105	$ —	$ —	$ —	$ —
Other plans	—	—	117,530	122,546	62,473	68,713
Total benefit obligations at end of year	1,013,449	1,110,105	117,530	122,546	62,473	68,713
Total fair value of plan assets at end of year	1,027,140	1,087,848	—	—	—	—
Funded (unfunded) status	$ 13,691	$ (22,257)	$ (117,530)	$ (122,546)	$ (62,473)	$ (68,713)
Amounts recognized in the Consolidated Statements of Financial Condition consist of:						
Non-current assets	$ 13,691	$ —	$ —	$ —	$ —	$ —
Current liability	—	—	(29,939)	(31,740)	(4,006)	(4,047)
Non-current liability	—	(22,257)	(87,591)	(90,806)	(58,467)	(64,666)
Amount recognized, end of year	$ 13,691	$ (22,257)	$ (117,530)	$ (122,546)	$ (62,473)	$ (68,713)

15. 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	
	2021	2020	2021	2020
Fair value of plan assets, beginning of year	$ 1,087,848	$ 998,442	$ —	$ —
Actual return on plan assets	665	145,014	—	—
Employer contribution	5,157	14,494	1,252	1,728
Gross benefits paid	(64,907)	(68,854)	(1,252)	(1,728)
Expenses paid	(1,623)	(1,248)	—	—
Fair value of plan assets, end of year	$ 1,027,140	$ 1,087,848	$ —	$ —

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, 2021 and 2020, follow (in thousands, except percentages):

	Target Allocation 2021	Percentage of Plan Assets, December 31, 2021	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, 2021:					
Short-term investment fund	0.50 %	0.05 %	$ 556	$ —	$ 556
Equity Portfolio:					
Domestic large cap growth			20,043	—	20,043
Domestic large cap value			20,246	—	20,246
Domestic large cap core			40,822	—	40,822
Domestic small core			7,763	3,856	3,907
International core			11,919	11,919	—
International emerging markets			3,769	3,769	—
Total equity securities	9.50 %	10.18 %	104,562	19,544	85,018
Fixed income portfolio:					
Domestic liability driven investment (1)	88.00 %	88.37 %	907,673	—	907,673
Guaranteed insurance contracts:					
Group annuity (2)	2.00 %	1.40 %	14,349	—	—
Total pension assets as of December 31, 2021			$ 1,027,140	$ 19,544	$ 993,247

15. RETIREMENT PLANS (CONTINUED)

	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 (1)	88.00 %	88.86 %	966,716	—	966,716
Guaranteed insurance contracts:					
Group annuity policies (2)	2.00 %	0.28 %	3,027	—	—
Total pension assets as of December 31, 2020			$ 1,087,848	$ 21,037	$ 1,063,784

(1) Wells Fargo acted as the trustee for the DTCC retirement plan for 2021 and 2020. As of December 31, 2021, the balance included Wells Fargo Liability Driven Solution Collective Investment Trust I of $335 million and Wells Fargo Liability Driven Solution Collective Investment Trust II of $563 million, representing 33% and 55% of total investments, respectively. 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. A significant decline in market value of these investments would significantly affect the plan assets.

(2) As permitted by U.S. GAAP, this group annuity policies 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.

15. RETIREMENT PLANS (CONTINUED)

Net periodic benefit expense (income). Details of the components of net periodic benefit expense (income) for the years ended December 31, 2021 and 2020, follow (in thousands):

	Pension Benefits		Other Benefits	
	2021	2020	2021	2020
Components of net periodic benefit expense (income):				
Expected return on plan assets	$ (37,846)	$ (40,049)	$ —	$ —
Interest cost	23,054	32,187	1,156	1,742
Service cost	1,923	2,144	548	546
Amortizations:				
Prior service cost (credit)	87	829	(5,146)	(5,568)
Actuarial loss	12,563	9,362	1,335	1,039
Settlement loss	403	2,011	—	—
Net periodic benefit expense (income)	$ 184	$ 6,484	$ (2,107)	$ (2,241)

Changes in OCI. Details of the changes in plan assets and benefit obligations recognized in OCI for the years ended December 31, 2021 and 2020, follow (in thousands):

	Pension Benefits		Other Benefits	
	2021	2020	2021	2020
Other changes recognized in OCI:				
Net loss (gain) arising during the period	$ (22,939)	$ 23,340	$ (6,693)	$ 1,539
Amortizations:				
Prior service credit (cost)	(87)	(829)	5,146	5,568
Actuarial and settlement loss	(12,966)	(11,373)	(1,335)	(1,039)
Net other changes in OCI, pre-tax	$ (35,992)	$ 11,138	$ (2,882)	$ 6,068

Details of the net amount recognized in Accumulated other comprehensive loss on the accompanying Consolidated Statements of Financial Condition as of December 31, 2021 and 2020, follow (in thousands):

	Pension Benefits		Other Benefits	
	2021	2020	2021	2020
Amount not reflected in net periodic benefit (cost) and included in Accumulated other comprehensive loss:				
Prior service credit (cost)	$ (1,652)	$ (1,740)	$ 1,040	$ 6,186
Accumulated loss	(249,712)	(285,616)	(8,794)	(16,822)
Accumulated other comprehensive loss, pre-tax	$ (251,364)	$ (287,356)	$ (7,754)	$ (10,636)

15. 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, 2021 and 2020 follow:

	Pension Benefits		Other Benefits	
	2021	2020	2021	2020
Weighted-average assumptions used to determine net periodic benefit expense (income) for the years ended December 31:				
Discount rate	2.50%	3.34%	2.38%	3.26%
Expected long-term rate of return on plan assets	4.05%	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			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

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, 2021 and 2020 follow:

	Pension Benefits		Other Benefits	
	2021	2020	2021	2020
Weighted-average assumptions used to determine benefit				
obligations as of December 31:				
Discount rate	2.86%	2.46%	2.77%	2.37%
Rate for interest cost	2.03%	2.98%	1.78%	2.83%
Rate for service cost	n/a	n/a	2.60%	3.46%
Rate for interest on service cost	n/a	n/a	2.37%	3.24%
Assumed health care cost trend rates as of December 31:				
Health care cost trend rate assumed for next year			5.81%	5.57%
Rate to which the cost trend rate is assumed to decline				
(the ultimate trend rate)			4.00%	4.46%
Year that the rate reaches the ultimate trend rate			2045	2038

15. 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-2021, with segmented interest rate adjustments.

Expected cash flows. The Company did not make any contributions to the Pension Plan during 2021 and 2020. Settlement losses relate to early retirement of executives who elected lump-sum and periodic payments. Settlement losses totaled $403,000 and $2,011,000 for the years ended December 31, 2021 and 2020, respectively. There were no participant contributions to the plans in 2021 and 2020.

Details for the benefit payments for the pension plans and other plans for 2021 and 2020 follow (in thousands):

	2021	2020
Pension plans	$ 64,907	$ 68,854
Other plans	1,252	1,723
Total	$ 66,159	$ 70,577

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
2022	$ 91,485	$ 4,006	$ 9
2023	64,993	4,127	8
2024	72,532	4,176	7
2025	66,677	4,208	6
2026	60,852	4,137	6
Thereafter	323,548	18,869	18
Total	$ 680,087	$ 39,523	$ 54

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 $46,933,000 and $44,957,000 for the years ended December 31, 2021 and 2020, respectively.

16. 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, 2021 and 2020 follow (in thousands):

	2021	2020
Current income tax:		
Federal	$ 29,518	$ 17,725
State and local	3,458	15,301
Foreign	26,372	20,425
Total current income tax	59,348	53,451
Deferred income tax:		
Federal	9,093	5,034
State and local	1,632	5,256
Foreign	(5,541)	(732)
Total deferred income tax	5,184	9,558
Provision for income taxes	$ 64,532	$ 63,009

The 2021 and 2020 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, 2021 and 2020 follow:

	2021	2020
U.S. statutory tax rate	21.0 %	21.0 %
State and local income taxes, net of Federal income tax benefit	5.5	5.5
Change in unrecognized tax benefits	1.9	0.9
Settlements of tax audits	(5.1)	(0.8)
Research activities	(2.7)	(1.7)
Benefit on foreign operations	(1.3)	(0.9)
Income from foreign operations	(1.1)	(0.6)
DEGCL joint venture	—	(0.4)
Other	(0.1)	(0.1)
Effective tax rate	18.1 %	22.9 %

16. INCOME TAXES (CONTINUED)

Details for the components of deferred tax assets and liabilities as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Deferred tax assets:		
Accrued compensation and benefits	$ 110,494	$ 118,257
Operating lease liabilities and deferred rent	63,043	66,132
Other	32,944	33,149
Total deferred tax assets	206,481	217,538
Deferred tax liabilities:		
Capitalized software	64,787	60,916
Lease right-of-use asset	48,632	51,966
Investment tax basis difference	42,126	40,335
Depreciation	39,936	37,107
Total deferred tax liabilities	195,481	190,324
Net deferred tax assets	$ 11,000	$ 27,214

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

Details for unrecognized tax benefits, included in Other non-current liabilities, as of December 31, 2021 and 2020 follow (in thousands):

	2021	2020
Beginning balance	$ 27,267	$ 29,197
Increases:		
Prior period tax positions	5,767	1,727
Current period tax positions	2,905	1,734
Decreases:		
Prior period tax positions	(11,529)	(2,188)
Statute of limitations	(1,164)	(3,090)
Settlements with tax authorities	(3,292)	(113)
Unrecognized tax benefit	19,954	27,267
Accrued interest	1,868	16,392
Ending balance	$ 21,822	$ 43,659

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 $0 and $2,115,000 for the years ended December 31, 2021 and 2020 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 $11,317,000 and $11,810,000, respectively.

16. INCOME TAXES (CONTINUED)

Details for the periods currently under examination and remaining subject to examination by jurisdiction as of December 31, 2021 follow:

	Tax Years	
Jurisdiction	**Under Examination**	**Subject to Examination**
U.S. Federal - Internal Revenue Service	-	2018 - 2020
New York State	-	2018 - 2020
New York City	2015 - 2017	2018 - 2020
State of Florida	2018 - 2019	2020
California	2017 - 2018	2019 - 2020
Michigan	2016 - 2019	-

17. 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.

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 were 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 accrued at a floating rate equal to three-month LIBOR plus 3.167% per annum (3.351% at June 15, 2021), and, when declared by DTCC's Board of Directors, dividends on the Series C Preferred stock were payable in arrears on March 15, June 15, December 15 and December 15 of each year beginning on December 15, 2020. On June 15, 2021, DTCC redeemed all 1,600 shares outstanding related to the Series C Preferred stock totaling $400,000,000 for a price equal to $250,000 per share with issuance costs of $9,484,000.

Details of dividends paid to holders of the Series C Preferred Stock during the year ended December 31, 2021 follow (in thousands):

Approved and Declared Date	Record Date	Payment Date	Declared Dividend	Shares Outstanding	Dividend Paid
April 13, 2021	May 25, 2021	June 15, 2021	$2,140.84	1,600	$ 3,425,344
January 14, 2021	February 25, 2021	March 15, 2021	$2,114.69	1,600	$ 3,383,504

17. SHAREHOLDERS' EQUITY (CONTINUED)

Details of dividends paid to holders of the Series C Preferred Stock during the year ended December 31, 2020 follow (in thousands):

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

DTCC Series D Fixed Rate Reset Non-Cumulative Perpetual Preferred stock. On June 8, 2021, DTCC issued 2,000 shares of Fixed Rate Reset Non-Cumulative Perpetual Preferred stock, Series D, $0.50 par value per share, with a liquidation preference of $250,000 per share resulting in issuance costs of $9,100,000 and net proceeds of $490,900,000. When declared by DTCC's Board of Directors, dividends on the Series D Preferred stock are payable in arrears on June 20 and December 20 of each year, beginning December 20, 2021 through June 20, 2026, at a fixed rate of 3.375% per annum. From June 20, 2026 onward, dividends will accrue at a rate equal to the five-year U.S. Treasury rate plus 2.606% per annum.

Details of dividends paid to holders of the Series D Preferred Stock during the year ended December 31, 2021 follow (in thousands):

Approved and Declared Date	Record Date	Payment Date	Declared Dividend	Shares Outstanding	Dividend Paid
November 9, 2021	November 30, 2021	December 20, 2021	$4,335.94	2,000	$ 8,671,875

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, 2021 and 2020. 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 2021 annual dividend was approved and declared by the Board of Directors in December 2021 and February 2022 in the amounts of $90,000 and $45,000, respectively. The December 2021 dividend was paid on January 11, 2022 and the February 2022 dividend will be paid in March 2022, to the holders of DTC Series A Preferred stock during 2021. The 2020 annual dividend amount of $480,000 was approved and declared by the Board of Directors in February 2021, and was paid in April 2021, to the holders of DTC Series A Preferred stock during 2020.

18. 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.

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 corporate contribution is 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.

18. CAPITAL REQUIREMENTS (CONTINUED)

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, 2021 and 2020 follow (in thousands):

	2021		
	DTC	NSCC	FICC
General business risk capital requirement	$ 193,270	$ 211,964	$ 133,407
Corporate contribution	96,635	105,982	66,703
Total requirement	289,905	317,946	200,110
Liquid net assets funded by equity	675,456	570,329	328,792
Excess	$ 385,551	$ 252,383	$ 128,682

	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

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; European Securities and Markets Authority in Europe; Financial Conduct Authority in the UK; 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 required by the FRBNY and the NYSDFS as of December 31, 2021 follow:

	Ratio	Minimum Capital Ratio[(a)]	Well Capitalized Ratio[(a)]
Tier 1 capital ratio [(1)]	76.78 %	6.00 %	8.00 %
Total capital ratio [(1)]	76.78 %	8.00 %	10.00 %
Tier 1 leverage ratio [(2)]	15.97 %	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.

19. 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 ("Repo") transactions, as well as certain Mortgage-Backed Securities in its GCF Repo service. Securities processed by GSD include Treasury bills, bonds, notes, zero-coupon securities, government agency securities and inflation-indexed securities, as well as certain eligible Mortgage-Backed Securities in its GCF Repo service. The U.S. Government securities market is predominantly an over-the-counter market and most buy-sell transactions are settled on trade date plus one day (T+1). Most Repo transactions settle same day, or T+0, via FICC's Same Day Settlement service. 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 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.

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.

19. GUARANTEES (CONTINUED)

For purposes of loss allocation, in connection with defaulting member, 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 two different tiers for purposes of loss allocation: Tier 1 and Tier 2. 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 (that is, in connection with the default of a Sponsoring Member), the loss shall be allocated to Tier 1 Participants. If the loss arises in connection with a default other than of the Sponsoring Member, the Sponsoring Member shall be responsible for any loss allocated to the Sponsoring Member Omnibus Account. 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, 2021 and 2020 follow (in billions):

	2021	2020
FICC		
GSD	$ 1,150	$ 1,201
MBSD	434	629
NSCC	185	183

20. 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 activity and determining appropriate collateral requirements; maintaining its risk-based Participants' Fund and Clearing Fund; netting obligations continuously; marking unsettled obligations to market; and utilizing quantitative analytical tools.

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 testing, stress testing and model performance monitoring 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 monitoring may reveal.

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

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 issuance of senior notes, and proceeds from a commercial paper and extendable note program. NSCC has the Supplemental Liquidity Deposit (“SLD”) - a rules-based funding obligation that requires Members whose activity generate liquidity needs in excess of NSCC’s then available liquid resources, to fund such additional amounts. SLD deposits must be in cash and are held and maintained in the same manner as other Clearing Fund deposits. 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.

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.

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

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.

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.

21. 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, 2021 and 2020 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,	
	2021	2020
ASSETS:		
Cash and cash equivalents	$ 532,060	$ 507,329
Investments in subsidiaries	1,784,894	1,959,011
Due from subsidiaries	423,437	365,901
Premises, equipment and intangible assets	171,890	167,275
Operating lease right-of-use asset	195,937	187,188
Other assets	448,320	403,223
TOTAL ASSETS	$ 3,556,538	$ 3,589,927
LIABILITIES AND SHAREHOLDERS' EQUITY:		
LIABILITIES:		
Long-term debt and other borrowings	$ —	$ 3,921
Pension and postretirement benefits	180,040	218,198
Operating lease liability	243,081	237,852
Other liabilities	203,081	591,605
Total liabilities	626,202	1,051,576
SHAREHOLDERS' EQUITY:		
Preferred stock	491,500	391,116
Common stock	5,091	5,091
Additional paid-in capital	411,065	411,065
Retained earnings	2,231,213	1,964,412
Accumulated other comprehensive loss, net of tax	(208,533)	(233,333)
Total shareholders' equity	2,930,336	2,538,351
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 3,556,538	$ 3,589,927

21. 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 2021 and 2020, 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,	
	2021	**2020**
REVENUES:		
Equity in earnings of subsidiaries	$ 231,482	$ 183,517
Interest and other income	104,118	97,697
Total revenues	335,600	281,214
OPERATING EXPENSES:		
Professional services	12,707	8,825
Other	25,541	49,180
Total operating expenses	38,248	58,005
Income before taxes	297,352	223,209
Provision for income taxes	5,586	11,672
Net income attributable to DTCC	$ 291,766	$ 211,537

21. PARENT COMPANY CONDENSED FINANCIAL STATEMENTS (CONTINUED)

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

	For the years ended December 31, 2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 291,766	$ 211,537
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:		
Equity in earnings of subsidiaries	(231,482)	(183,517)
Depreciation and amortization	1,837	2,144
Deferred income taxes	26,771	2,583
Other	8,669	19,583
Net change in:		
Due from subsidiaries	(57,536)	(106,268)
Operating lease liability	(12,189)	(19,143)
Other operating assets and liabilities, net	(80,610)	99,238
Net cash (used in)/provided by operating activities	(52,774)	26,157
CASH FLOWS FROM INVESTING ACTIVITIES:		
Distributions from subsidiaries	60,000	91,300
Capitalized software development costs and purchases of Premises and equipment	(53,982)	(27,827)
Net cash provided by investing activities	6,018	63,473
CASH FLOWS FROM FINANCING ACTIVITIES:		
Preferred stock dividend payments	(15,481)	(16,763)
Repayments on long-term debt and other borrowings	(3,921)	(4,101)
Proceeds from issuance of preferred stock, net of issuance costs	490,900	—
Redemption of preferred stock	(400,000)	—
Net cash provided by/(used in) financing activities	71,498	(20,864)
Effect of foreign exchange rate changes on Cash and cash equivalents	(11)	19
Net increase in Cash and cash equivalents	24,731	68,785
Cash and cash equivalents - Beginning of year	507,329	438,544
Cash and cash equivalents - End of year	$ 532,060	$ 507,329
SUPPLEMENTAL DISCLOSURES:		
Interest paid	$ 2,734	$ 2,712
Income taxes paid - net of refunds	$ 27,878	$ —

22. SUBSEQUENT EVENTS

The Company evaluated events and transactions occurring after December 31, 2021 through March 25, 2022, the date these consolidated financial statements were available to be issued, for potential recognition or disclosure. No additional events or transactions, other than as disclosed below and disclosed in Note 17, Shareholders' Equity, occurred during such period that would require recognition or disclosure in these consolidated financial statements.

On January 25, 2022, the Company renewed the annual lines of credit on DTCC for $500 million. This line of credit will mature on January 27, 2025.