The Depository Trust & Clearing Corporation

Condensed Consolidated Financial Statements
as of June 30, 2019 and December 31, 2018 and for the three
and six months ended June 30, 2019 and 2018

THE DEPOSITORY TRUST & CLEARING CORPORATION

TABLE OF CONTENTS

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF FINANCIAL CONDITION (UNAUDITED)

(In thousands, except share data)	As of June 30, 2019	As of December 31, 2018
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 8,427,679	$ 8,641,036
Participants' segregated cash	70,623	77,988
Short-term investments	900,000	800,000
Accounts receivable - net of allowance for doubtful accounts of $598 and $1,650 as of June 30, 2019 and December 31, 2018, respectively	175,720	177,880
Participants' and Clearing Funds	34,555,394	36,622,122
Other Participants' assets	462,439	518,115
Other current assets	149,968	133,960
Total current assets	44,741,823	46,971,101
NON-CURRENT ASSETS:		
Premises and equipment - net of accumulated depreciation of $403,723 and $399,846 as of June 30, 2019 and December 31, 2018, respectively	201,604	213,111
Goodwill	57,699	57,699
Intangible assets - net of accumulated amortization of $886,953 and $839,236 as of June 30, 2019 and December 31, 2018, respectively	335,209	319,119
Equity method investments	10,373	10,491
Operating lease right-of-use-asset	237,013	—
Other non-current assets	316,820	319,579
Total non-current assets	1,158,718	919,999
TOTAL ASSETS	$ 45,900,541	$ 47,891,100
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Commercial paper - net of unamortized discount of $41,321 and $43,856 as of June 30, 2019 and December 31, 2018, respectively	$ 7,272,754	$ 7,436,141
Current portion of long-term debt	9,314	2,650
Current portion of pension and postretirement benefits	16,608	16,608
Current portion of operating lease liability	24,727	—
Accounts payable and accrued expenses	99,551	104,013
Participants' and Clearing Funds	34,555,394	36,622,122
Payable to Participants	533,062	596,103
Other current liabilities	152,042	260,677
Total current liabilities	42,663,452	45,038,314
NON-CURRENT LIABILITIES:		
Non-current portion of long-term debt	37,421	33,725
Non-current portion of pension and postretirement benefits	196,749	198,492
Non-current operating lease liability	265,200	—
Other non-current liabilities	275,567	288,334
Total non-current liabilities	774,937	520,551
Total liabilities	43,438,389	45,558,865
COMMITMENTS AND CONTINGENCIES (Note 2)		
SHAREHOLDERS' EQUITY		
Preferred stock:		
Series A, $0.50 par value - 10,000 shares authorized, issued (above par), and outstanding	300	300
Series B, $0.50 par value - 10,000 shares authorized, issued (above par), and outstanding	300	300
Series C, $0.50 par value - 1,600 shares authorized, issued (above par), and outstanding	390,516	390,516
Common stock, $100 par value - 80,000 shares authorized, 50,908 shares issued and outstanding	5,091	5,091
Additional paid-in capital	411,065	411,065
Retained earnings	1,700,669	1,571,298
Accumulated other comprehensive loss, net of tax	(195,789)	(196,335)
Non-controlling interests	150,000	150,000
Total shareholders' equity	2,462,152	2,332,235
TOTAL LIABILITIES AND SHAREHOLDERS' EQUITY	$ 45,900,541	$ 47,891,100

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

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF INCOME (UNAUDITED)

(In thousands)	For the three months ended June 30, 2019	For the three months ended June 30, 2018	For the six months ended June 30, 2019	For the six months ended June 30, 2018
REVENUES				
Settlement and asset services	$ 115,761	$ 115,983	$ 226,592	$ 229,853
Clearing services	157,029	149,455	311,834	302,842
Matching and data services	69,097	68,468	137,063	139,159
Repository services	74,278	73,392	146,713	147,256
Wealth management services	25,835	27,950	52,153	56,462
Other services	11,104	11,618	20,170	22,736
Investment income	425	429	9,174	420
Total revenues	453,529	447,295	903,699	898,728
EXPENSES				
Employee compensation and related benefits	170,112	176,834	362,431	342,793
Information technology	44,741	37,309	85,967	77,306
Professional and other services	78,321	88,506	160,920	177,937
Occupancy	10,844	11,247	22,875	23,428
Depreciation and amortization	35,481	41,291	70,818	83,243
General and administrative	13,768	8,671	23,476	20,200
Impairment of Intangible assets	2,000	—	2,000	—
Total expenses	355,267	363,858	728,487	724,907
Total operating income	98,262	83,437	175,212	173,821
NON-OPERATING INCOME (EXPENSE)				
Interest income	153,169	109,760	309,461	195,808
Refunds to Participants	(102,161)	(84,042)	(204,672)	(149,387)
Interest expense	(55,517)	(32,442)	(113,019)	(55,826)
Net income (loss) from Equity method investments	210	(4,770)	(35)	(4,666)
Other non-operating income	10,502	16,709	21,853	25,225
Total non-operating income	6,203	5,215	13,588	11,154
Income before taxes	104,465	88,652	188,800	184,975
Provision for income taxes	27,300	23,501	49,679	49,171
Net income	$ 77,165	$ 65,151	$ 139,121	$ 135,804

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

THE DEPOSITORY TRUST & CLEARING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (UNAUDITED)

(In thousands)	For the three months ended June 30, 2019	For the three months ended June 30, 2018	For the six months ended June 30, 2019	For the six months ended June 30, 2018
Net income	$ 77,165	$ 65,151	$ 139,121	$ 135,804
OTHER COMPREHENSIVE INCOME (LOSS) - Net of tax:				
Foreign currency translation	334	(6,230)	546	(5,324)
Other comprehensive income (loss)	334	(6,230)	546	(5,324)
Comprehensive income	$ 77,499	$ 58,921	$ 139,667	$ 130,480

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

THE DEPOSITORY TRUST & CLEARING CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY (UNAUDITED)

(In thousands)	Preferred Stock Series A	Preferred Stock Series B	Preferred Stock Series C	Common Stock	Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss), Net of Tax: Defined Benefit Pension and Other Plans	Accumulated Other Comprehensive Income (Loss), Net of Tax: Foreign Currency Translation	Non-controlling Interests	Total Shareholders' Equity
BALANCE - January 1, 2019	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,571,298	$ (189,472)	$ (6,863)	$ 150,000	$ 2,332,235
Net income	—	—	—	—	—	61,956	—	—	—	61,956
Other comprehensive income	—	—	—	—	—	—	—	212	—	212
BALANCE - March 31, 2019	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,633,254	$ (189,472)	$ (6,651)	$ 150,000	$ 2,394,403
Net income	—	—	—	—	—	77,165	—	—	—	77,165
Other comprehensive income	—	—	—	—	—	—	—	334	—	334
Dividend on preferred stock	—	—	—	—	—	(9,750)	—	—	—	(9,750)
BALANCE - June 30, 2019	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,700,669	$ (189,472)	$ (6,317)	$ 150,000	$ 2,462,152

(In thousands)	Preferred Stock Series A	Preferred Stock Series B	Preferred Stock Series C	Common Stock	Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss), Net of Tax: Defined Benefit Pension and Other Plans	Accumulated Other Comprehensive Income (Loss), Net of Tax: Foreign Currency Translation	Non-controlling Interests	Total Shareholders' Equity
BALANCE - January 1, 2018	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,261,309	$ (188,925)	$ (429)	$ 148,440	$ 2,027,667
Net income	—	—	—	—	—	70,653	—	—	—	70,653
Other comprehensive income	—	—	—	—	—	—	—	906	—	906
BALANCE - March 31, 2018	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,331,962	$ (188,925)	$ 477	$ 148,440	$ 2,099,226
Net income	—	—	—	—	—	65,151	—	—	—	65,151
Other comprehensive loss	—	—	—	—	—	—	—	(6,230)	—	(6,230)
Dividend on preferred stock	—	—	—	—	—	(9,750)	—	—	—	(9,750)
BALANCE - June 30, 2018	$ 300	$ 300	$ 390,516	$ 5,091	$ 411,065	$ 1,387,363	$ (188,925)	$ (5,753)	$ 148,440	$ 2,148,397

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

THE DEPOSITORY TRUST & CLEARING CORPORATION

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)

(In thousands)	For the six months ended June 30, 2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income	$ 139,121	$ 135,804
Adjustments to reconcile net income to net cash provided by/(used in) operating activities:		
Depreciation and amortization	70,818	83,243
Loss on impairment of Intangible assets	2,000	—
Net (gain)/loss on disposal of Premises and equipment and Intangible assets	4,290	(1,786)
(Earnings)/losses from Equity method investments	35	4,666
Deferred income taxes	908	5,717
Discount on Commercial paper outstanding	14,288	—
Other	8	(2,063)
Net change in:		
Accounts receivable	2,152	(2,688)
Other Participants' assets	425	(1,693)
Other assets	(14,268)	(39,289)
Accounts payable and accrued expenses	10,036	944
Pension and postretirement benefits	(1,743)	2,248
Other liabilities	(80,535)	(55,728)
Participants' and Clearing Funds liabilities, net	(144,540)	2,166,083
Payable to Participants	(63,041)	(194,705)
Net cash provided by/(used in) operating activities	(60,046)	2,100,753
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of Short-term investments	(1,000,000)	—
Maturities of Short-term investments	900,000	—
Maturities of Investments in marketable securities	—	50,000
Purchases of Investments in marketable securities	—	(58,600)
Purchases of Premises and equipment	(15,884)	(15,751)
Purchases of Intangible assets	(51,379)	(45,259)
Investment in Equity method investments	—	(5,000)
Purchase of equity investments	—	(1,104)
Net cash provided by/(used in) investing activities	(167,263)	(75,714)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Change in Commercial paper, net (see Note 11)	(177,675)	1,726,882
Repayments on long-term debt and other borrowings	(4,068)	(2,912)
Preferred stock dividend payments	(9,750)	(9,750)
Payment to Non-controlling interests	(2,340)	(1,080)
Net cash provided by/(used in) financing activities	(193,833)	1,713,140
Effect of foreign exchange rate changes on Cash and cash equivalents	629	(1,225)
Net increase/(decrease) in Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets	(420,513)	3,736,954
Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets - Beginning of period	25,569,357	20,268,842
Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets - End of period	$ 25,148,844	$ 24,005,796
SUPPLEMENTAL DISCLOSURES:		
Non-cash investing and financing activity related to information technology	$ 14,428	$ —
Interest paid by cash	$ 76,076	$ 28,914
Income taxes paid by cash - net of refunds	$ 36,184	$ 34,622
Non-cash financing activity - capital lease obligation	$ —	$ 3,640

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

1. BUSINESS AND OWNERSHIP

The Depository Trust & Clearing Corporation (DTCC) is the parent company of various operating subsidiaries, including, but not limited to, The Depository Trust Company (DTC), National Securities Clearing Corporation (NSCC), Fixed Income Clearing Corporation (FICC), DTCC ITP LLC (ITP), DTCC Deriv/SERV LLC (Deriv/SERV), DTCC Solutions LLC (Solutions), Business Entity Data, B.V. (GMEI); 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 financial services 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, clearance, settlement, trade confirmation, 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 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, formerly known as Omgeo LLC, provides post-trade matching, processing and other related services, primarily to members of the financial community.

Deriv/SERV, through its subsidiaries and affiliates, enhances transparency and provides operational efficiency for the derivatives market. Its trade repository system supports a multitude of data submissions, including real-time price reporting, transaction details, confirmation records and valuation data.

Solutions provides information-based and business processing solutions to financial intermediaries globally.

GMEI utility is DTCC's Legal Entity Identifier (LEI) solution offered in collaboration with Society for Worldwide Interbank Financial Telecommunication (SWIFT) and a consortium of 14 global financial services organizations, led by the Global Financial Markets Association (GFMA), to meet the requirements across all asset classes. GMEI is designed to create and apply a single, universal standard identifier to any organization or firm involved in a financial transaction globally.

2. BASIS OF PRESENTATION AND USE OF ESTIMATES

Basis of presentation. The accompanying Condensed Consolidated Financial Statements (interim financial statements) are prepared in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP). The accompanying interim financial statements have not been audited. These accompanying interim financial statements do not include all of the information and notes required by U.S. GAAP for complete financial statements and should be read in conjunction with DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017, which are located on the Company's website at *http://www.dtcc.com/legal/financial-statements*. See Note 2 in DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017, for additional information on the Company's Summary of Significant Accounting Policies.

The Condensed Consolidated Financial Statements reflect all adjustments of a normal recurring nature that are, in the opinion of management, necessary for the fair presentation of the results for the interim period. The results of operations for interim periods are not necessarily indicative of results for the entire year. The Condensed 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 Condensed 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 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.

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 Condensed Consolidated Statements of Financial Condition, Income or Cash Flows.

Revenue recognition. The Company derives its revenue from transaction fees, subscription revenue and support services, professional services, and other services. Revenue from transaction fees is recognized at a point in time on the transaction date, as the customer obtains the control and benefit of the service at that point. 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. Professional services and other revenues, when sold with subscription and support offerings, are accounted for separately when these services have value to the customer on a standalone basis and are recognized as the performance obligation is satisfied and control of the service is transferred to the customer, otherwise they are recognized ratably over the contract term. Other services, which represent fees generated from offering referential based data and business processing solutions to financial institutions globally, is recognized when services are provided based on contractual terms.

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

S*ettlement and asset services.* DTC provides settlement services for equity, corporate and municipal debt trades and money market instruments in the U.S. The payment and transfer of securities ownership occurs at DTC, which provides custody and asset servicing for securities. Asset services include underwriting, corporate actions processing, securities processing, global tax services and issuer services.

Clearing services. The Company’s subsidiaries, NSCC and FICC, deliver clearing services across the U.S. equities and fixed income markets. Clearing services include continuous net settlement, mortgage backed securities clearing, and government securities clearing.

Matching and data services. DTCC’s Institutional Trade Processing (ITP) service provides trade processing solutions combined with DTCC’s global solution for LEIs and its settlement capabilities with pre-trade and matching services. ITP offers buy-side, sell-side, and custodian firms an end-to-end straight-through-processing solution for their trading activity. Matching and data services include trade enrichment, trade agreement, and data analytics.

2. BASIS OF PRESENTATION AND USE OF ESTIMATES (CONTINUED)

Repository services. The Global Trade Repository service supports data submissions including real-time price reporting, transaction details, confirmation records and valuation data. The Trade Information Warehouse's Trade Reporting Repository enables regulators and market participants to view the market's overall risk exposure to over-the-counter (OTC) credit derivatives instruments by operating and maintaining the centralized, electronic database for credit default swap contracts outstanding in the global marketplace. Repository services include OTC derivatives reporting and trade reporting.

Wealth management services. NSCC provides wealth management services that include centralized, automated processing and information services for mutual fund, alternative investment, and insurance and retirement products. These businesses drive centralized, automated processing and information services. Wealth management services enable seamless, end-to-end communications with broker/dealers and other distribution partners for funds, asset managers and insurance companies and their service providers.

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

Contract balances

Deferred revenue represents the Company's contract liabilities related to billings or payments received in advance for subscription and support services, as well as professional service fees, where the performance obligation has not yet been satisfied. Deferred revenue is included in Other current liabilities and Other non-current liabilities on the accompanying Condensed Consolidated Statements of Financial Condition, as disclosed in Note 10.

Impacts to previously reported results

The Company reclassified prior period amounts related to Trade Information Warehouse revenues to conform to the current year presentation. The impact of the change in presentation on the Company's previously reported results for the three and six months ended June 30, 2018 follows (in thousands):

	For the three months ended June 30, 2018			For the six months ended June 30, 2018		
	As Previously Reported	Reclassification Presentation Adjustment	As Restated	As Previously Reported	Reclassification Presentation Adjustment	As Restated
Clearing services	$ 151,453	$ (1,998)	$ 149,455	$ 306,910	$ (4,068)	$ 302,842
Repository services	71,394	1,998	73,392	143,188	4,068	147,256

2. BASIS OF PRESENTATION AND USE OF ESTIMATES (CONTINUED)

Restricted cash. The Company reported the cash and cash equivalents related to Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets within the beginning and ending balances of Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets on the accompanying Consolidated Statements of Cash Flows.

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

	June 30, 2019	December 31, 2018	June 30, 2018
Cash and cash equivalents	$ 8,427,679	$ 8,641,036	$ 6,842,587
Participants' segregated cash	70,623	77,988	28,071
Participants' and Clearing Funds cash deposits	16,188,128	16,332,668	16,478,603
Cash in Other Participants' assets	462,414	517,665	656,535
Total Cash and cash equivalents, Participants' segregated cash, Participants' and Clearing Funds cash deposits, Cash in Other Participants' assets shown on the Condensed Consolidated Statements of Cash Flows	$ 25,148,844	$ 25,569,357	$ 24,005,796

3. ACCOUNTING AND REPORTING DEVELOPMENTS

See Note 3 in DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017, for additional information on the Company's Accounting and Reporting Developments.

Standard	Description	Impact on the financial statements or other significant matters
Financial Accounting Standards Board Standard Issued, but not yet Adopted		
ASU 2019-05 Financial Instruments - Credit Losses: Targeted Transition Relief *Issued May 2019*	• Provides entities with an option upon adoption of ASU 2016-13 Customer's Financial Instruments - Credit Losses to irrevocably elect the fair value option on an instrument-by-instrument basis for certain financial instruments that are both within the scope of the current expected credit loss and eligible for the fair value option.	• Effective January 1, 2020. • The Company is evaluating the impact on its Consolidated Financial Statements and related disclosures.

Standard	Description	Impact on the financial statements or other significant matters
Recently Adopted Accounting Standard		
ASU 2016-02 Leases *Issued February 2016*	• Requires a lessee to recognize leases with terms of longer than 12 months within balance sheet assets and liabilities. • Changes the recognition, measurement and presentation of expenses and cash flows arising from a lease depending on its classification as a financing or operating lease as determined by the lessee. • Lessor accounting will remain largely unchanged from current GAAP. Leases of fewer than 12 months are exempt from the updated standard.	• Adopted January 1, 2019. • The Company adopted the standard through a cumulative-effect adjustment without revising the prior comparative period and elected the practical expedients permitted under the transition guidance within the standard, which permits the Company not to reassess the following for any expired or existing contracts: i) whether any contracts contain leases; ii) lease classification (i.e. operating lease or finance lease); and iii) initial direct cost. • See Note 8 for additional information.

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 June 30, 2019 and December 31, 2018 follow (in thousands):

	2019	2018
Assets:		
Participants' segregated cash	$ 70,623	$ 77,988
Other Participants' assets:		
Cash	462,414	517,665
Other	25	450
Total	$ 533,062	$ 596,103
Liabilities:		
Payable to Participants	$ 533,062	$ 596,103

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

Payable to Participants included $81,000 and $127,000 of cash collateral received from Participants, representing 130% of short positions as of June 30, 2019 and December 31, 2018, respectively.

5. ACCOUNTS RECEIVABLE

Details for Accounts receivable as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019	2018
Due from Participants and customers for services	$ 168,446	$ 165,554
Allowance for doubtful accounts	(598)	(1,650)
Due from Participants and customers for services, net	167,848	163,904
Other receivables	7,872	13,976
Total	$ 175,720	$ 177,880

Total write-offs in the allowance for doubtful accounts were $1,017,000 and $130,000 for the three months ended June 30, 2019 and 2018, respectively, and $1,060,000 and $205,000 for the six months ended June 30, 2019 and 2018, respectively.

6. PARTICIPANTS' AND CLEARING FUNDS

Details for the Participants' and Clearing Funds as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019			
	DTC	NSCC	FICC	Total
Required deposits	$ 1,153,000	$ 6,491,202	$ 17,326,227	$ 24,970,429
Excess deposits	758,849	793,752	8,032,364	9,584,965
Total	$ 1,911,849	$ 7,284,954	$ 25,358,591	$ 34,555,394

	2018			
	DTC	NSCC	FICC	Total
Required deposits	$ 1,150,000	$ 6,830,444	$ 18,053,674	$ 26,034,118
Excess deposits	684,363	1,435,091	8,468,550	10,588,004
Total	$ 1,834,363	$ 8,265,535	$ 26,522,224	$ 36,622,122

Cash deposits and Securities on deposit. Details for cash deposits and securities on deposit of the Participants' and Clearing Funds, which may be applied to satisfy obligations of the depositing Participant, other Participants, or the Company as provided in the rules of the relevant subsidiaries of the Company, as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019			
	DTC	NSCC	FICC	Total
Cash deposits	$ 1,911,849	$ 6,789,981	$ 7,486,298	$ 16,188,128
Securities on deposit - at fair value	—	494,973	17,872,293	$ 18,367,266
Total	$ 1,911,849	$ 7,284,954	$ 25,358,591	$ 34,555,394

	2018			
	DTC	NSCC	FICC	Total
Cash deposits	$ 1,834,363	$ 7,651,033	$ 6,847,272	$ 16,332,668
Securities on deposit - at fair value	—	614,502	19,674,952	20,289,454
Total	$ 1,834,363	$ 8,265,535	$ 26,522,224	$ 36,622,122

Details for the Participants' and Clearing Funds cash deposits as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019			
	DTC	NSCC	FICC	Total
Bank deposits	$ 1,911,849	$ 4,850,981	$ 5,816,298	$ 12,579,128
Money market fund investments	—	1,564,000	1,220,000	2,784,000
Reverse repurchase agreements	—	375,000	450,000	825,000
Total	$ 1,911,849	$ 6,789,981	$ 7,486,298	$ 16,188,128

	2018			
	DTC	NSCC	FICC	Total
Bank deposits	$ 1,834,363	$ 5,720,033	$ 5,466,272	$ 13,020,668
Money market fund investments	—	1,556,000	931,000	2,487,000
Reverse repurchase agreements	—	375,000	450,000	825,000
Total	$ 1,834,363	$ 7,651,033	$ 6,847,272	$ 16,332,668

7. EQUITY METHOD INVESTMENTS

Details for DTCC's Equity method investments as of June 30, 2019 and December 31, 2018 follow (in thousands, except ownership percentage):

	2019	2018
European Central Counterparty N.V.		
Percentage ownership	20%	20%
Carrying value	$ 10,373	$ 10,491
DTCC-Euroclear GlobalCollateral, LTD		
Percentage ownership	50%	50%
Carrying value	$ —	$ —

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

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

Cash contributions made to DEGCL subsequent to impairment were for the funding of prior losses of DEGCL and will be included in Net loss from Equity method investments in the accompanying Condensed Consolidated Statements of Income until financial conditions improve. DTCC continues to maintain its relationship with the DEGCL joint venture.

There were no contributions to DEGCL during 2019. The Company's contributions to DEGCL for the year ended December 31, 2018 follow (in thousands):

	Amount
June 19, 2018	$ 5,000
December 5, 2018	6,000
Total (1)	$ 11,000

(1) DTCC maintained the same ownership percentage as the joint venture partner, Euroclear plc, who also contributed a total of $11,000,000

8. LEASES

The Company leases corporate offices, datacenters and certain equipment primarily through operating leases and a limited number of finance leases. The Company's leases have remaining lease terms of 1 year to 14 years, some of which may include options to extend the leases for up to 10 years, and some of which may include options to terminate the leases within 1 year.

On January 1, 2019, the Company adopted ASU 2016-02, *Leases* under the modified retrospective method. See Note 3 for additional information. The Company determines if an arrangement is or contains a lease at contract inception and accounts for lease components separately from non-lease components of an arrangement. 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 Condensed Consolidated Statements of Financial Condition. Finance leases are included in Property and equipment, Current portion of long- term debt, and Non-current portion of long-term debt on the Company's Condensed 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. For finance leases, interest expense on the lease liability is recognized using the effective interest method and amortization of the ROU asset is recognized on a straight-line basis over the shorter of the estimated useful life of the asset or the lease term.

Details for leased assets and lease liabilities as of June 30, 2019 follow (in thousands):

	Operating Leases	Finance Leases	Total
Assets			
Operating lease right-of-use	$ 237,013	$ —	$ 237,013
Premise and equipment	—	72	72
Total leased assets	$ 237,013	$ 72	$ 237,085
Liabilities			
Current			
Current portion of operating lease liabilities	$ 24,727	$ —	$ 24,727
Current portion of long-term debt	—	40	40
Non-current			
Non-current operating lease liabilities	265,200	—	265,200
Non-current portion of long-term debt	—	91	91
Total leased liabilities	$ 289,927	$ 131	$ 290,058

8. LEASES (CONTINUED)

Details for the maturity of lease liabilities follow (in thousands):

	Operating Leases	Finance Leases	Total
2019	$ 17,233	$ 25	$ 17,258
2020	33,453	46	33,499
2021	31,779	46	31,825
2022	25,844	27	25,871
2023	25,687	—	25,687
Thereafter	223,248	—	223,248
Total lease payments	357,244	144	357,388
Interest	(67,317)	(13)	(67,330)
Present value of lease liabilities	$ 289,927	$ 131	$ 290,058

Details for estimated future minimum rental payments under all noncancelable leases as of December 31, 2018 follow (in thousands):

2019	$ 33,981
2020	33,804
2021	33,879
2022	29,779
2023	29,716
Thereafter	232,344
Total minimum rental payments [(1)]	$ 393,503

(1) Future minimum rental payments were not reduced by minimum sublease rentals of $53 million due in the future under noncancelable subleases.

In addition to the table above, as of June 30, 2019, the Company had $15 million of minimum lease payments on operating leases that were signed but had not yet commenced. These operating leases will commence in the third quarter of 2019 with lease terms up to 9 years.

Details for the lease expense and the lease payments for the three months ended June 30, 2019 follow (in thousands):

	Operating Leases	Finance Leases	Total
Lease expense			
Occupancy	$ 7,705	$ —	$ 7,705
Information technology	1,773	—	1,773
Depreciation and amortization	—	10	10
Interest expense	—	2	2
Total lease expense	9,478	12	9,490
Sublease income	(1,444)	—	(1,444)
Net lease expense	$ 8,034	$ 12	$ 8,046
Lease payments included in the measurement of lease liabilities			
Operating cash flows [(1)]	$ 8,575	$ 10	$ 8,585
Financing cash flows [(2)]	—	2	2
Total lease cash flows	$ 8,575	$ 12	$ 8,587

(1) Included with net change in Other liabilities in the Condensed Consolidated Statements of Cash Flows
(2) Included with Repayments on long-term debt and other borrowings in the Condensed Consolidated Statements of Cash Flows

8. LEASES (CONTINUED)

Details for the lease expense and the lease payments for the six months ended June 30, 2019 follow (in thousands):

	Operating Leases	Finance Leases	Total
Lease expense			
Occupancy	$ 15,677	$ —	$ 15,677
Information technology	2,693	—	2,693
Depreciation and amortization	—	20	20
Interest expense	—	4	4
Total lease expense	18,370	24	18,394
Sublease income	(2,904)	—	(2,904)
Net lease expense	$ 15,466	$ 24	$ 15,490
Lease payments included in the measurement of lease liabilities			
Operating cash flows(1)	$ 17,148	$ 20	$ 17,168
Financing cash flows(2)	—	4	4
Total lease cash flows	$ 17,148	$ 24	$ 17,172

(1) Included with net change in Other liabilities in the Condensed Consolidated Statements of Cash Flows
(2) Included with Repayments on long-term debt and other borrowings in the Condensed 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 June 30, 2019 follow:

	Operating Leases	Finance Leases
Weighted average remaining lease term (years)	11.7	2.8
Weighted average discount rate	3.30%	4.30%
Leased assets and Lease liabilities (in millions) decreased due to lease modification during the		
three months ended June 30, 2019	$ 2.00	$ —
six months ended June 30, 2019	$ 2.00	$ —

9. OTHER ASSETS

Details for Other assets as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019	2018
Prepaids	$ 110,565	$ 81,774
Interest receivable	24,953	27,353
Prepaid taxes	14,424	24,645
Other current assets	26	188
Total other current assets	149,968	133,960
Long-term incentive plan assets	154,032	148,549
Cash surrender value on insurance policies	61,968	61,035
Deferred tax assets	43,933	44,952
Prepaids	35,936	44,978
Equity investments	11,750	11,750
Investment in Federal Reserve Stock	6,402	6,402
Other non-current assets	2,799	1,913
Total other non-current assets	316,820	319,579
Total	$ 466,788	$ 453,539

See Note 11 in DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017 for additional information.

10. OTHER LIABILITIES

Details for Other liabilities as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019	2018
Compensation payable	$ 70,470	$ 143,837
Long-term incentive plan liabilities	26,368	51,979
Deferred revenue	13,155	12,311
Deferred rent	—	829
Other current liabilities	42,049	51,721
Total other current liabilities	152,042	260,677
Long-term incentive plan liabilities	229,208	206,758
Unrecognized tax benefits (1)	42,115	40,153
Deferred revenue	1,347	1,431
Deferred tax liabilities	859	970
Deferred rent	—	35,136
Other payables	2,038	3,886
Total other non-current liabilities	275,567	288,334
Total	$ 427,609	$ 549,011

(1) See Note 15 for additional information.

11. COMMERCIAL PAPER

Details for Commercial paper as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019	2018
Commercial paper - net of unamortized discount of $41,321 and $43,856 as of June 30, 2019 and December 31, 2018, respectively	$ 7,272,754	$ 7,436,141
Weighted-average interest rate	2.61%	2.59%

Interest expense on Commercial paper included in the accompanying Condensed Consolidated Statements of Income was $43,855,000 and $21,546,000 for the three months ended June 30, 2019 and 2018, respectively, and $89,660,000 and $34,029,000 for the six months ended June 30, 2019 and 2018, respectively.

Details for the cash flows associated with the issuance and maturities of Commercial paper for the six months ended June 30, 2019 and 2018 follow (in thousands):

	2019	2018
Maturities less than 90 days:		
Proceeds from/(Repayments of) Commercial paper less than 90 days, net	$ (787,032)	$ 171,913
Maturities greater than 90 days:		
Proceeds from Commercial paper	3,781,680	2,327,204
Repayments of Commercial paper	(3,172,323)	(772,235)
Proceeds from/(Repayments of) Commercial paper greater than 90 days, net	609,357	1,554,969
Change in Commercial paper, net	$ (177,675)	$ 1,726,882

12. LONG-TERM DEBT

Details for Long-term debt as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019	2018
Notes payable	$ 35,050	$ 36,375
Information technology financing	11,685	—
Total long-term debt	46,735	36,375
Less: Current portion of long-term debt	(9,314)	(2,650)
Non-current portion of long-term debt	$ 37,421	$ 33,725

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

	Notes Payable	Information Technology Financing	Total
2019	$ 1,324	$ 3,661	$ 4,985
2020	2,650	4,103	$ 6,753
2021	2,650	3,921	$ 6,571
2022	2,650	—	$ 2,650
2023	2,650	—	$ 2,650
Thereafter	23,126	—	$ 23,126
Total	$ 35,050	$ 11,685	$ 46,735

12. LONG-TERM DEBT (CONTINUED)

Notes payable. Details for notes payable as of June 30, 2019 and December 31, 2018 follow (in thousands):

			Outstanding Balance	
Issue Date	**Maturity**	**Rate**	**2019**	**2018**
April 26, 2012	April 26, 2032	3.83%	$ 18,850	$ 19,575
September 28, 2012	September 28, 2032	3.93%	16,200	16,800
Total			$ 35,050	$ 36,375

The weighted-average interest rate was 3.88% as of June 30, 2019 and December 31, 2018, respectively. Total Interest expense on notes payable included in the accompanying Condensed Consolidated Statements of Income was $342,000 and $367,000 for the three months ended June 30, 2019 and 2018, respectively, and $694,000 and $745,000 for the six months ended June 30, 2019 and 2018, 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. The weighted-average interest rate of the loan was 3.90% as of June 30, 2019. Interest expense on the loan included in the accompanying Condensed Consolidated Statements of Income was $107,000 and $230,000 for the three and six months ended June 30, 2019, 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.

Details for the terms of the outstanding lines of credit as of June 30, 2019 and December 31, 2018 follow:

	2019	2018
DTCC		
Committed Amount	$500 million	$500 million
Denomination	USD	USD
Number of Participants/Lenders	10/10	10/10
DTC		
Committed Amount	$1.9 billion	$1.9 billion
Denomination	USD	USD
Number of Participants/Lenders	32/41	33/41
Uncommitted Amount	C$150 million (1)	C$150 million (1)
Denomination	CAD	CAD
Number of Participants/Lenders	1/1	1/1
NSCC		
Committed Amount	$12.1 billion	$12.1 billion
Denomination	USD	USD
Number of Participants/Lenders	32/41	33/41

(1) Used to support Canadian settlement.

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

12. LONG-TERM DEBT (CONTINUED)

Details for debt covenants related to the notes payable and lines of credit as of June 30, 2019 and December 31, 2018 follow:

	2019	2018
Notes Payable		
DTCC		
Minimum Net Worth	$400 million	$400 million
Maximum Priority Debt	20% of Net Worth	20% of Net Worth
Lines of Credit		
DTCC		
Minimum Net Worth	$1.25 billion	$1.1 billion
Maximum Priority Debt	$200 million	$200 million
DTC		
Minimum Net Worth	$150 million	$150 million
Minimum Participants' Fund deposits	$750 million	$750 million
NSCC		
Minimum Net Worth	$125 million	$125 million
Minimum Clearing Fund deposits	$1 billion	$1 billion

As of June 30, 2019 and December 31, 2018, 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 senior debt ratings and ratings outlooks for DTCC and its three clearing agency subsidiaries as of June 30, 2019 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.

13. FAIR VALUE MEASUREMENTS

See Note 15 in DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017, for the Company's valuation basis, including valuation techniques and inputs, as well as the fair value hierarchy used in measuring the Company's financial assets and liabilities that are both accounted for at fair value and at other than fair value.

Financial Assets and Liabilities measured at fair value on a recurring basis.

Fair value measurements of those items measured on a recurring basis as of June 30, 2019 are summarized below (in thousands):

	2019			
	Level 1	Level 2	Level 3	Total
Assets - Participants' and Clearing Funds				
Securities on deposit	$ 14,378,385	$ 3,988,881	$ —	$ 18,367,266
Non-current assets				
Long-term incentive plan assets	95,350	37,191	—	132,541
Total assets, excluding investments at fair value based on NAV	$ 14,473,735	$ 4,026,072	$ —	$ 18,499,807
Participants' and Clearing Funds - Securities liabilities	$ 14,378,385	$ 3,988,881	$ —	$ 18,367,266
Total	$ 14,378,385	$ 3,988,881	$ —	$ 18,367,266

The Company uses Net Asset Value (NAV) to estimate the fair value of certain investments held by the Long Term Incentive Plan (the Plan). Investments in Common Collective Trust funds are valued at NAV based upon the redemption price of units held by the Plan, which is based on the current fair value of the Common Collective Trust funds' underlying assets. Unit values are determined by the financial institution sponsoring such funds by dividing the funds' net assets at fair value by its units outstanding at the valuation dates.

Details of investments measured at fair value using NAV as of June 30, 2019 follow (in thousands):

	2019			
	NAV	Redemption Frequency	Other Redemption Restrictions	Redemption Notice Period
Common Collective Trusts	$ 21,491	Daily	None	None

There was no unfunded commitment to these investments as of June 30, 2019.

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

	2018			
	Level 1	Level 2	Level 3	Total
Assets - Participants' and Clearing Funds				
Securities on deposit	$ 16,659,680	$ 3,629,774	$ —	$ 20,289,454
Non-current assets				
Long-term incentive plan assets	113,151	35,398	—	148,549
Total	$ 16,772,831	$ 3,665,172	$ —	$ 20,438,003
Participants' and Clearing Funds - Securities liabilities	$ 16,659,680	$ 3,629,774	$ —	$ 20,289,454
Total	$ 16,659,680	$ 3,629,774	$ —	$ 20,289,454

13. FAIR VALUE MEASUREMENTS (CONTINUED)

Certain investments may transfer between the fair value hierarchy classifications during the year due to changes in valuation methodology and pricing sources. There were no financial assets and liabilities measured at fair value on a recurring basis classified as Level 3 for the periods ended June 30, 2019 and December 31, 2018.

Financial Assets and Liabilities measured at other than fair value. The carrying values, fair values and fair value hierarchy levels of all financial instruments measured at other than fair value on the accompanying Condensed Consolidated Statements of Financial Condition as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019				
	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets:					
Cash and cash equivalents	$ 8,427,679	$ 8,427,679	$ 8,427,679	$ —	$ —
Participants' segregated cash	70,623	70,623	70,623	—	—
Short-term investments	900,000	900,000	—	900,000	—
Participants' and Clearing Funds Cash deposits	16,188,128	16,188,128	15,363,128	825,000	—
Other Participants' assets	462,439	462,439	462,414	25	—
Total	$ 26,048,869	$ 26,048,869	$ 24,323,844	$ 1,725,025	$ —
Liabilities:					
Commercial paper	$ 7,272,754	$ 7,272,754	$ —	$ 7,272,754	$ —
Accounts payable and accrued expenses	99,551	99,551	—	99,551	—
Participants' and Clearing Funds Cash deposit liabilities	16,188,128	16,188,128	16,188,128	—	—
Payable to Participants	533,062	533,062	533,062	—	—
Long-term debt	46,735	48,798	—	48,798	—
Total	$ 24,140,230	$ 24,142,293	$ 16,721,190	$ 7,421,103	$ —

	2018				
	Carrying Amount	Total Fair Value	Level 1	Level 2	Level 3
Assets:					
Cash and cash equivalents	$ 8,641,036	$ 8,641,036	$ 8,641,036	$ —	$ —
Participants' segregated cash	77,988	77,988	77,988	—	—
Short-term investments	800,000	800,000	—	800,000	—
Participants' and Clearing Funds Cash deposits	16,332,668	16,332,668	15,507,668	825,000	—
Other Participants' assets	518,115	518,115	517,665	450	—
Total	$ 26,369,807	$ 26,369,807	$ 24,744,357	$ 1,625,450	$ —
Liabilities:					
Commercial paper	$ 7,436,141	$ 7,436,141	$ —	$ 7,436,141	$ —
Accounts payable and accrued expenses	104,013	104,013	—	104,013	—
Participants' and Clearing Funds Cash deposit liabilities	16,332,668	16,332,668	16,332,668	—	—
Payable to Participants	596,103	596,103	596,103	—	—
Long-term debt	36,375	36,035	—	36,035	—
Total	$ 24,505,300	$ 24,504,960	$ 16,928,771	$ 7,576,189	$ —

13. FAIR VALUE MEASUREMENTS (CONTINUED)

Financial Assets measured at fair value on a non-recurring basis. Certain assets are subject to measurement at fair value on a non-recurring basis. For these assets, measurement at fair value in periods subsequent to their initial recognition is applicable if they are determined to be impaired or when an observable event occurs.

Financial assets measured at fair value on a non-recurring basis primarily comprise of equity investments, which are classified as Level 3 instruments. The valuation techniques used to measure the fair value of the financial asset and the significant unobservable inputs as of June 30, 2019 follow:

Financial Instruments Owned	Fair Value (in thousands)	Valuation Technique	Unobservable Inputs	Input Range	Weighted Average
Equity investments	$11,750	Last Round of Financing	Price Per Share(1)	$15 - $107(2)	$71(2)

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

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

There were no purchases, sales, unrealized gains, or unrealized losses of the Company's equity investments categorized within Level 3 in the fair value hierarchy for the six months ended June 30, 2019.

14. PENSION AND POSTRETIREMENT BENEFITS

Defined contribution retirement plans. Total expense for the defined contribution retirement plans included in Employee compensation and related benefits in the accompanying Condensed Consolidated Statements of Income was $10,602,000 and $6,162,000 for the three months ended June 30, 2019 and 2018, respectively, and $20,999,000 and $15,931,000 for the six months ended June 30, 2019 and 2018, respectively.

Defined benefit pension and other postretirement benefit plans. Details of the components of net periodic benefit expense (income) and amortization for the Company's pension and postretirement benefit plans, included in Employee compensation and related benefits, Interest expense, and Other non-operating income in the accompanying Condensed Consolidated Statements of Income, for the three months ended June 30, 2019 and 2018 follow (in thousands):

	Pension Benefits		Other Benefits	
	2019	2018	2019	2018
Components of net periodic benefit expense (income):				
Expected return on plan assets	$ (10,102)	$ (9,896)	$ —	$ —
Interest cost	10,023	9,384	611	558
Service cost	1,051	1,641	167	223
Amortizations:				
Prior service cost (credit)	234	234	(1,482)	(1,482)
Actuarial loss	1,318	2,244	318	620
Settlement loss	23	56	—	—
Net periodic benefit expense (income)	$ 2,547	$ 3,663	$ (386)	$ (81)

14. PENSION AND POSTRETIREMENT BENEFITS (CONTINUED)

Details of the components of net periodic benefit expense (income) and amortization for the Company's pension and postretirement benefit plans for the six months ended June 30, 2019 and 2018 follow (in thousands):

	Pension Benefits		Other Benefits	
	2019	2018	2019	2018
Components of net periodic benefit expense (income):				
Expected return on plan assets	$ (20,204)	$ (19,792)	$ —	$ —
Interest cost	20,046	18,768	1,222	1,116
Service cost	2,102	3,282	334	446
Amortizations:				
Prior service cost (credit)	468	468	(2,964)	(2,964)
Actuarial loss	2,636	4,488	636	1,240
Settlement loss	46	112	—	—
Net periodic benefit expense (income)	$ 5,094	$ 7,326	$ (772)	$ (162)

See Note 16 in DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017 for additional information.

15. INCOME TAXES

Details for unrecognized tax benefits, included in Other non-current liabilities on the accompanying Condensed Consolidated Statements of Financial Condition, as of June 30, 2019 and 2018 follow (in thousands):

	2019	2018
Beginning balance	$ 28,692	$ 53,008
Prior period tax positions	—	348
Current period tax positions	—	340
Unrecognized tax benefit	28,692	53,696
Accrued interest	13,423	31,448
Ending balance	$ 42,115	$ 85,144

See Note 17 in DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017 for additional information.

16. 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, dividends on the Series C Preferred stock are payable in arrears on June 15 and December 15 of each year through June 15, 2020 at a fixed rate of 4.875% per annum. From June 15, 2020 onward, dividends will accrue at a floating rate equal to three-month LIBOR plus 3.167% per annum. DTCC may redeem the Series C Preferred Stock at its option, for cash, i) in whole or in part, from time to time, on any dividend payment date on or after June 15, 2020 at a redemption price equal to $250,000 per share, plus any declared and unpaid dividends to, but excluding the redemption date, or ii) in whole but not in part, at any time within 90 days following a Regulatory Capital Treatment Event, as defined in the Series C Preferred Stock Offering Memorandum, at a redemption price equal to $250,000 per share, plus any declared and unpaid dividends to, but excluding, the redemption date.

On April 22, 2019, in accordance with the Amended Certificate of Incorporation of DTCC, the Board of Directors approved and declared a dividend in the amount of $6,093.75 per share on 1,600 shares outstanding of its Series C Preferred Stock. The aggregate dividend of $9,750,000 was paid on June 17, 2019, to the holders of the Series C Preferred Stock as of record date May 31, 2019.

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. 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 June 30, 2019 and December 31, 2018. 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 2018 annual dividend amount of $2,340,000 was approved and declared by the Board of Directors in February 2019, and was paid in April 2019, to the holders of DTC Series A Preferred stock during 2018.

17. CAPITAL REQUIREMENTS

The 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. The clearing agencies must meet the capital requirements by holding liquid net assets funded by equity, as described in rule 17Ad-22(e)(15) of the CCAS and the Clearing Agency Policy on Capital Requirements.

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

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

Details of the general business risk capital requirement, corporate contribution and liquid net assets funded by equity for the clearing agencies as of June 30, 2019 and December 31, 2018 follow (in thousands):

	2019		
	DTC	**NSCC**	**FICC**
General business risk capital requirement	$ 167,607	$ 159,218	$ 109,787
Corporate contribution	83,803	79,609	54,893
Total requirement	251,410	238,827	164,680
Liquid net assets funded by equity	579,727	480,923	287,716
Excess	$ 328,317	$ 242,096	$ 123,036

	2018		
	DTC	**NSCC**	**FICC**
General business risk capital requirement	$ 169,119	$ 153,054	$ 107,845
Corporate contribution	84,559	76,527	53,922
Total requirement	253,678	229,581	161,767
Liquid net assets funded by equity	529,478	445,732	265,724
Excess	$ 275,800	$ 216,151	$ 103,957

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

17. CAPITAL REQUIREMENTS (CONTINUED)

Capital adequacy. Certain DTCC subsidiaries are subject to capital guidelines issued by United States federal and state banking regulators. During the year DTCC engaged in banking activities under DTC.

DTC capital and leverage ratios filed with the FRBNY and the NYSDFS, and included in DTC's Financial Statements submitted to the SEC as of June 30, 2019 follow:

	Ratio	Minimum Capital Ratio[a]	Well Capitalized Ratio[a]
Tier 1 capital ratio [1]	103.54%	6.00%	8.00%
Total capital ratio [1]	103.54%	8.00%	10.00%
Tier 1 leverage ratio [2]	21.23%	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) Tier 1 capital ratio primarily includes preferred stock, common stock and retained earnings. 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.

18. GUARANTEES

FICC and NSCC provide CCP services, including clearing, settlement and risk management services. Acting as a CCP, FICC (through GSD and MBSD) and NSCC guarantee the settlement of trades in the event one or more of their Participants' defaults. 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 netted transactions. To cover their guarantee risk, FICC (through GSD and MBSD) and NSCC use risk-based margining to collect cash and securities collateral through their Clearing Funds. NSCC's trade guaranty attaches at the point of validation for locked-in submissions, or at the point of comparison and validation for bilateral submissions.

Details for open CCP positions for which a trade guaranty applied as of June 30, 2019 and December 31, 2018 follow (in billions):

	2019	2018
FICC		
GSD	$ 1,143	$ 1,160
MBSD	396	333
NSCC	236	176

There were no defaults by Participants to these obligations.

See Note 22 in DTCC's Audited Consolidated Financial Statements for the years ended December 31, 2018 and 2017 for additional information.

19. SUBSEQUENT EVENTS

The Company evaluated events and transactions occurring after June 30, 2019 through August 7, 2019, for potential recognition or disclosure in these accompanying Condensed Consolidated Financial Statements. No events or transactions occurred during such period that would require recognition or disclosure in these accompanying Condensed Consolidated Financial Statements.