STATEMENTS OF FINANCIAL CONDITION

December 31 (in thousands)	2018	2017
Assets		
Current Assets:		
Cash and cash equivalents Note 2	$ 393,675	$ 350,866
Accounts receivable	54,898	42,070
Exchange billing receivable Note 12	109,159	95,888
Due from participant exchanges Note 12	184	166
Other current assets	22,480	25,033
Total Current Assets	580,396	514,023
Property and equipment – net Note 2	38,713	18,887
Clearing fund deposits Notes 6, 16	9,457,879	15,194,322
Other assets Notes 10, 16	46,572	45,051
Deferred income taxes Note 13	8,270	12,329
Total Assets	$ 10,131,830	$ 15,784,612
Liabilities and shareholders' equity		
Current Liabilities:		
Accounts payable and other	$ 50,418	$ 30,491
SEC transaction fees payable Note 12	27,857	33,844
Dividend payable	—	32,512
Refundable clearing fees Note 9	—	78,716
Exchange billing payable Note 12	109,159	95,888
Payable to shareholders	116,050	—
Other accrued liabilities	64,250	20,791
Total Current Liabilities	367,734	292,242
Clearing fund deposits Notes 6, 16	9,457,879	15,194,322
Other liabilities Notes 14, 15	38,745	50,973
Total Liabilities	9,864,358	15,537,537
Shareholders' Equity: Note 7		
Common stock	500	500
Paid-in capital	37,827	147,827
Retained earnings	261,438	127,474
Accumulated other comprehensive loss Notes 14, 15 (net of tax benefit of $17,816 in 2018 and $18,551 in 2017)	(32,293)	(28,726)
Total Shareholders' Equity	267,472	247,075
Total Liabilities and Shareholders' Equity	$ 10,131,830	$ 15,784,612

See Notes to the Financial Statements

STATEMENTS OF INCOME AND COMPREHENSIVE INCOME

For the years ended December 31 (in thousands)	2018	2017	2016
Revenues			
Clearing fees Note 9	$ 455,283	$ 295,468	$ 260,691
Data service fees	4,795	4,901	4,855
Exercise fees	4,548	3,749	3,684
Other	3,212	285	322
Total Revenues	467,838	304,403	269,552
Expenses			
Employee costs	150,278	120,219	103,423
Information technology	58,426	47,742	38,285
Professional fees and outside services	69,871	83,241	54,708
General and administrative	49,044	33,553	33,987
Rental, office and equipment	10,473	7,245	6,674
Depreciation and amortization	12,330	6,064	5,915
Loss on sale, property and equipment	23	54	2,706
Total Expenses	350,445	298,118	245,698
Total Operating Income	117,393	6,285	23,854
Non-Operating Income (Expense)			
Investment Income Notes 8, 10	60,467	35,780	11,070
Interest Income Note 6	97,297	19,436	2,364
Distribution of interest earned on clearing fund Note 6	(91,792)	—	—
Total Non-Operating Income (Expense):	65,972	55,216	13,434
Income Before Income Taxes	183,365	61,501	37,288
Provision for Income Taxes Note 13	49,640	28,989	11,674
Net Income	133,725	32,512	25,614
Other comprehensive income, net of tax			
Pension and postretirement benefit plan adjustments, net of tax of $735 in 2018, $(494) in 2017 and $536 in 2016	2,722	(807)	882
Comprehensive Income	$ 136,447	$ 31,705	$ 26,496

See Notes to the Financial Statements

STATEMENTS OF SHAREHOLDERS' EQUITY

(in thousands)	Common Stock	Paid-in-Capital	Accumulated Other Comprehensive Loss	Treasury Stock	Retained Earnings	Total
Balance - December 31, 2015	$ 600	$ 148,060	$ (28,801)	$ (333)	$ 127,474	$ 247,000
Net income / loss					25,614	25,614
Dividends declared					(25,614)	(25,614)
Retirement of treasury stock	(100)	(233)		333		
Amounts included in other						
comprehensive income, net of tax:						
Changes in unamortized gain			1,973			1,973
Changes in unamortized prior service (cost)			(1,091)			(1,091)
Subtotal			882			882
Balance - December 31, 2016	500	147,827	(27,919)	—	127,474	247,882
Net income / loss					32,512	32,512
Dividends declared					(32,512)	(32,512)
Amounts included in other						
comprehensive income, net of tax:						
Changes in unamortized gain			281			281
Changes in unamortized prior service (cost)			(1,088)			(1,088)
Subtotal			(807)			(807)
Balance - December 31, 2017	500	147,827	(28,726)	—	127,474	247,075
Net income / loss					133,725	133,725
Distribution to shareholders		(110,000)			(6,050)	(116,050)
ASU No. 2018-02 adoption			(6,289)		6,289	—
Amounts included in other						
comprehensive income, net of tax:						
Changes in unamortized gain			4,103			4,103
Changes in unamortized prior service (cost)			(1,381)			(1,381)
Subtotal			2,722			2,722
Balance - December 31, 2018	$ 500	$ 37,827	$ (32,293)	—	$ 261,438	$ 267,472

See Notes to the Financial Statements

STATEMENTS OF CASH FLOWS

December 31 (in thousands)	2018	2017	2016
Cash flows from / (used in) operating activities			
Net income	$ 133,725	$ 32,512	$ 25,614
Adjustments to reconcile net income to net cash flows from / (used in) operating activities:			
Unrealized (gains) losses on investments	2,585	(2,014)	(493)
Depreciation and amortization	12,330	6,064	5,915
Loss on sale, property and equipment	23	54	2,706
Deferred income taxes	3,323	16,284	16,484
Changes in assets and liabilities:			
Accounts receivable and other receivables	(26,117)	(5,087)	7,567
Other current assets	8,443	9,236	228
Other assets	(2,160)	(2,248)	(236)
Purchases of investments included in other assets	(1,925)	(44,530)	(11,790)
Sales of investments included in other assets	(21)	42,411	9,324
Accounts payable and other liabilities	61,900	6,020	(21,764)
Refundable clearing fees	(78,716)	32,124	(96,133)
Net Cash Flows From / (Used In) Operating Activities	113,390	90,826	(62,578)
Cash flows (used in) / from investing activities			
Capital expenditures	(32,179)	(14,137)	(112)
Sale of assets	—	—	2,351
Net Cash Flows (Used In) / From Investing Activities	(32,179)	(14,137)	2,239
Cash flows (used in) / from financing activities			
Issuance of notes	—	1,000	1,000
Borrowings on revolving line of credit	60,700	35,000	115,083
Repayments on revolving line of credit	(60,700)	(35,000)	(115,083)
Proceeds from liquidity facility repurchase agreements	60,000	360,000	210,000
Payments for liquidity facility repurchase agreements	(60,000)	(360,000)	(210,000)
Payments for debt issuance costs	(5,890)	(6,756)	(5,871)
Dividends paid	(32,512)	(25,614)	(19,691)
Net Cash Flows (Used In) / From Financing Activities	(38,402)	(31,370)	(24,562)
Net increase / (decrease) in cash and cash equivalents	42,809	45,319	(84,901)
Cash and cash equivalents, beginning of year	350,866	305,547	390,448
Cash and cash equivalents, end of year	$ 393,675	$ 350,866	$ 305,547
Noncash financing activities			
Distribution to shareholders	(116,050)	—	—
Total Noncash Financing Activities	(116,050)	—	—
Supplemental disclosure of cash flow information:			
Cash paid for income taxes	$ 15,469	$ 11,236	$ 5,984
Cash paid for interest	283	66	34

See Notes to the Financial Statements

As of December 31, 2018 and 2017, and for the years ended December 31, 2018, 2017 and 2016

Note 1. Nature of Operations

The Options Clearing Corporation ("OCC" or "the Corporation") is a central counterparty ("CCP") and the world's largest equity derivatives clearing organization. Founded in 1973, OCC operates under the jurisdiction of the Securities and Exchange Commission ("SEC") as a Registered Clearing Agency, the Commodity Futures Trading Commission ("CFTC") as a Derivatives Clearing Organization, and under prudential regulation by the Board of Governors of the Federal Reserve System (the "Federal Reserve") as a systemically important financial market utility ("SIFMU"). OCC provides CCP clearing and settlement services to 19 exchanges and trading platforms for options, financial futures, security futures and securities lending transactions. OCC clears contracts based on several types of underlying interests, including equity interests; stock, commodity and other indexes; foreign currencies; interest rate composites; debt securities and precious metals. OCC is headquartered in Chicago, Illinois and has offices in Texas and Washington DC.

Note 2. Summary of Significant Accounting Policies

BASIS OF PRESENTATION AND USE OF ESTIMATES The financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"). The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Although these estimates and assumptions are based on the best available information, actual results could differ from those estimates.

CASH AND CASH EQUIVALENTS Management defines cash and cash equivalents to include cash from banks and highly liquid investments. OCC considers all highly liquid investments with an initial maturity of three months or less from the date of purchase to be cash equivalents. In 2018 and 2017, cash equivalents are comprised of investments in reverse repurchase agreements with major banking institutions, which mature on the next business day. Under these agreements, OCC purchases United States of America ("U.S.") Treasury securities and the counterparties agree to repurchase the instruments the following business day at a set price, plus interest. During the term of the agreements, the underlying securities are transferred through the Federal Reserve to a custodial account maintained by the transacting bank for the benefit of OCC. The reverse repurchase agreements are secured with collateral that has a market value greater than or equal to 102% of the cash invested at the time the trade is placed. At December 31, 2018 and 2017, the carrying value of OCC's cash equivalents approximates fair value due to the short maturities of these investments.

PROPERTY AND EQUIPMENT Property and equipment are stated at historical cost, less accumulated depreciation and amortization. Depreciation is computed using straight-line and accelerated methods based on estimated useful lives that range from five to thirty-nine and one half years. Leasehold improvements are amortized over the shorter of the remaining term of the lease or the useful life of the asset.

OCC capitalizes direct and incremental costs, both internal and external, related to software developed or obtained for internal use in accordance with GAAP. Software, which includes capitalized labor, is amortized on a straight-line basis over a useful life of five years. No internal costs were capitalized in 2018, 2017 or 2016. Amortization expense related to computer software was $5.1 million, $4.8 million and $5.2 million for 2018, 2017 and 2016, respectively.

Property and equipment consisted of the following:

As of December 31, (in thousands)	2018	2017
Leasehold improvements	$ 27,606	$ 12,362
Equipment, furniture and other	17,818	10,653
Software	131,436	138,109
Hardware leased	2,178	142
Software leased	6,137	—
Total property and equipment	185,175	161,266
Accumulated depreciation and amortization	(146,462)	(142,379)
Property and equipment - net	$ 38,713	$ 18,887

IMPAIRMENT OF LONG-LIVED ASSETS OCC reviews its long lived assets for possible impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be fully recoverable. If this review indicates that the carrying amount of a long-lived asset is not recoverable, the carrying amount is reduced to the fair value. As of December 31, 2018 and 2017, OCC determined that no assets were impaired, and no impairment charges were recorded in the financial statements.

INCOME TAXES The Corporation files U.S. federal income tax returns and state income tax returns in various states. OCC accounts for income taxes under the asset and liability method. Under this method, deferred tax assets and liabilities are recorded based on the differences between the financial accounting and tax bases of assets and liabilities. Deferred tax assets and liabilities are recorded based on the currently enacted tax rate expected to apply to taxable income in the year in which the deferred tax asset or liability is expected to be settled or realized. OCC may record uncertain tax positions and the related interest and penalties based on management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by the tax authorities. Uncertain tax positions are classified as current only when OCC expects to pay in the next twelve months. Income taxes are discussed in more detail in Note 13.

INVESTMENTS OCC designates all of its investments as trading securities in accordance with GAAP and are recorded at fair value.

REVENUE RECOGNITION Revenue is recognized as services are rendered. OCC's revenues primarily consist of clearing fee revenues, which include per contract charges for clearing services, and are billed on a monthly basis. Data service fees are charged monthly based on a tiered fee structure and services provided may include access to OCC's proprietary clearing system and proprietary website, as well as receipt of files or report bundles. Exercise fees are charged for each item exercised and are also billed on a monthly basis. Investment and interest income is recorded on an accrual basis when earned.

NEW ACCOUNTING PRONOUNCEMENTS In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, *Revenue from Contracts with Customers, Topic 606*. The new revenue recognition standard provides a five step analysis of transactions to determine when and how revenue is recognized. The core principle is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects what the entity expects to be owed for those goods or services. ASU 2015-14, *Revenue from Contracts with Customers, Topic 606*, deferred the effective date to annual periods beginning after December 15, 2018 for nonpublic companies. OCC has evaluated the effect of adopting this new accounting guidance and has determined it will not have a material impact on the Corporation's financial statements.

In February 2016, the FASB issued ASU 2016-02 Leases, Topic 842, which supersedes Topic 840, *Leases*. This ASU increases the transparency and comparability of organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. At the lease commencement date, a lessee recognizes a lease liability and right-of-use asset, which is initially measured at the present value of future lease payments. There are two approaches for amortizing the right-of-use asset. Under the finance lease approach, interest on the lease liability is recognized separately from amortization of the right-of-use asset. Repayments of the principal portion of the lease liability will be classified as financing activities and payments of interest on the lease liability and variable lease payments will be classified as operating activities in the statement of cash flows. Under the operating lease approach, the cost of the lease is calculated on a straight-line basis over the life of the lease term. All cash payments are classified as operating activities in the statement of cash flows. This ASU is effective for annual periods beginning after December 15, 2019 for nonpublic companies. The impact on OCC's operations is being evaluated, but it is believed that this ASU will have a material impact on OCC's Statements of Financial Condition.

In March 2017, the FASB issued ASU 2017-07, *Compensation - Retirement Benefits (Topic 715)*. This ASU requires an employer to report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. For nonpublic entities, this update was effective beginning after December 15, 2018. OCC is evaluating the impact on its financial statements and disclosures.

In February 2018, the FASB issued ASU No. 2018-02, Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, which amends ASC 220, *Income Statement - Reporting Comprehensive Income*. Included in the provisions of tax reform is a reduction of the corporate income tax rate from 35 percent to 21 percent. GAAP requires that deferred taxes are remeasured to the new corporate tax rate in the period legislation is enacted. The deferred tax adjustment is recorded in the provision for income taxes, including items for which the tax effects were originally recorded in OCI. This treatment results in the items in OCI not reflecting the appropriate tax rate, which are referred to as stranded tax effects. This ASU allows a reclassification from accumulated OCI to retained earnings for stranded tax effects resulting from tax reform. The stranded tax effects reclassified from OCI to retained earnings were $6.3 million.

In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230)*, which amends ASC 230 to add and clarify guidance on the classification and presentation of restricted cash in the statement of cash flows. OCC is currently evaluating the impact on its financial statements and disclosures.

Note 3. Guarantees

OCC performs a guarantee function that ensures the financial integrity of the markets in which it clears contracts. In its role as guarantor and central counterparty, OCC ensures that the obligations of the contracts it clears are fulfilled. Through a novation process, OCC becomes the buyer for every seller and the seller for every buyer, protecting Clearing Members from counterparty risk and allowing the settlement of trades in the event of a Clearing Member default.

OCC does not assume any guarantor role unless it has a precisely equal and offsetting claim against a Clearing Member. OCC's obligations under the guarantee would arise if a Clearing Member were unable to meet its obligations to OCC. Margin deposits, collateral in lieu of margin deposits, and clearing fund deposits are required to collateralize Clearing Members' obligations and support OCC's guarantee.

As of December 31, 2018, and 2017, the amount of margin required by OCC to support its guarantee was $55.7 billion and $65.7 billion, respectively, which represents the aggregate market value of outstanding positions plus an additional amount to cover adverse price movements. Margin deposits and clearing fund deposits are discussed in Notes 5 and 6, respectively.

As OCC only assumes the guarantor role if it has an equal and offsetting claim, the fair value of the open interest of options and futures contracts and securities lending positions cleared and settled by OCC is not included in the Statements of Financial Condition. There were no events of default during the years ended 2018 or 2017 for which a liability should be recognized in accordance with GAAP.

Note 4. Off-Balance Sheet Risk and Concentration of Credit Risk

Credit risk represents the potential for loss due to the deterioration in credit quality or default of a counterparty or an issuer of securities or other instruments. OCC's exposure to credit risk comes from its clearing and settlement operations and from financial assets, which consist primarily of cash and cash equivalents, accounts receivable, and margin and clearing fund deposits.

CASH AND CASH EQUIVALENTS OCC maintains cash and cash equivalents with various financial institutions. When Clearing Members provide margin and clearing fund deposits in the form of cash, OCC may invest the cash deposits in overnight reverse repurchase agreements.

OCC bears credit risk related to overnight reverse repurchase agreements to the extent that cash advanced to the counterparty exceeds the value of collateral received. These securities have minimal credit risk due to the low probability of U.S. government default and their highly liquid and short-term nature. Additionally, OCC requires 102% in market value of collateral received compared to the cash provided to the counterparties.

OCC is also exposed to risk related to the potential inability to access liquidity in financial institutions where it holds cash and cash equivalents. The financial institutions are in different geographical locations and OCC monitors their financial condition on an ongoing basis to identify any significant changes.

ACCOUNTS RECEIVABLE Credit risk related to accounts receivable includes the risk of nonpayment by the counter party. OCC's credit risk is diversified due to the large number of Clearing Members composing OCC's customer base. OCC also conducts ongoing evaluations of the institutions with which it does business.

CLEARING MEMBERS, MARGIN AND CLEARING FUND OCC bears counterparty credit risk in the event that Clearing Members fail to meet their obligations to OCC.

OCC reduces its exposure through a risk management program that strives to achieve a prudent balance between market integrity and liquidity. This program of safeguards, which provides support to OCC's guarantee, consists of rigorous initial and ongoing financial responsibility standards for membership, margin deposits and clearing fund deposits. OCC also maintains two liquidity facilities to support potential liquidity needs in the event of a Clearing Member default, as described in Note 11. One facility is a syndicated line of credit with major domestic and foreign banks and the other is a repurchase facility with a large pension fund.

If a Clearing Member does not meet its settlement obligation to OCC or is declared in default, OCC may utilize the defaulting member's margin and clearing fund deposits to cover any losses resulting from the default. If those resources are exhausted, OCC may then use the respective clearing fund deposits of all Clearing Members on a pro-rata basis.

The collateral posted by Clearing Members is also subject to market and credit risk, as there is a risk of price fluctuations and nonperformance by the counterparty, which could result in a material loss. To mitigate this risk, OCC only allows collateral deposits at approved OCC banks or securities depositories, which OCC monitors on an ongoing basis.

Note 5. Margin Deposits

OCC's rules require each Clearing Member representing the seller of an option to collateralize its contract obligations by either depositing the underlying security (i.e. "specific deposits"), other securities in lieu of margin deposits or by maintaining specified margin deposits. Margin deposits are also required for futures and futures options positions and stock loan/borrow positions. Securities in lieu of margin and margin deposits may include cash, bank letters of credit, U.S. and Canadian Government securities, U.S. Government sponsored enterprise debt securities ("GSE debt securities"), specified money market fund shares or other acceptable margin securities ("valued securities"), which may consist of common stocks and exchange-traded funds ("ETFs").

The margin deposits of each Clearing Member are available to meet the financial obligations of that specific Clearing Member to OCC. The market value of all obligations is determined on a daily basis and OCC may issue intra-day margin calls for additional margin deposits, if necessary. Margin deposits must meet specified requirements, as provided for in OCC's rules, and all margin deposits are held at approved securities depositories or banks, except letters of credit.

Since OCC does not take legal ownership of margin deposits or securities deposited in lieu of margin deposits, the below assets are not reflected in the Statements of Financial Condition. However, OCC has rights to these assets in the event of a Clearing Member default. At December 31, 2018 and 2017, margin deposits exceeded OCC's required margin.

The fair values of securities in lieu of margin deposits and margin deposits at December 31, 2018 and 2017 were as follows (foreign securities are converted to U.S. dollars using the year-end exchange rate):

As of December 31, (in thousands)	2018	2017
Valued securities	$ 52,541,696	$ 54,105,324
Specific deposits	19,922,389	27,736,177
Government securities	15,863,089	11,874,983
Cash and cash equivalents	4,756,692	6,984,221
Bank letters of credit	959,000	883,000
Total	$ 94,042,866	$ 101,583,705

VALUED SECURITIES Valued securities are traded on U.S. securities exchanges or in the NASDAQ National Market System and are principally valued using the composite closing price. Common stock, ETFs, and U.S. Government securities (excluding Treasury Inflation Protected securities) are included in margin calculations and the value ascribed to this collateral is based on OCC's margin methodology, rather than traditional haircuts. As a result, the margin calculations reflect the scope for price movements to exacerbate or mitigate losses on the cleared products in the account.

SPECIFIC DEPOSITS OCC also accepts specific deposits, which are pledges of underlying stock to OCC that cover a specified short equity call option series. Specific deposits are collateral deposited in lieu of margin and reduce the calculated Clearing Member's daily margin requirement. Specific deposits are also generally traded on U.S. securities exchanges or in the NASDAQ National Market System and are generally valued using the composite closing price.

GOVERNMENT SECURITIES AND GSE DEBT SECURITIES For margin requirements, Clearing Members may deposit U.S. and Canadian Government securities, as well as eligible GSE debt securities. GSE debt securities must be approved by OCC's Risk Committee and include debt securities issued by congressionally-chartered corporations, such as the Federal Home Loan Mortgage Corporation ("Freddie Mac") and the Federal National Mortgage Association ("Fannie Mae"). Coupon interest and maturity payments on delivered Government and GSE debt securities are initially paid to OCC and then remitted to Clearing Members. For daily margin purposes, OCC haircuts the market value of (i) U.S. and Canadian Government securities not included in margin calculations, (ii) GSE debt securities, and (iii) money market fund shares to provide a cushion against adverse price fluctuations. The haircuts for Government and GSE debt securities are based on a maturity schedule and range from 0.5% to 7%. Government securities are valued on the basis of evaluated prices provided by independent pricing services.

CASH AND CASH EQUIVALENTS Cash and cash equivalents held as margin deposits may be invested, and any interest or gain received or loss incurred is included as Investment income in the Statements of Income and Comprehensive Income.

BANK LETTERS OF CREDIT AND MONEY MARKET FUNDS Under OCC's rules, bank letters of credit are required to be irrevocable and may only be issued by banks or trust companies approved by OCC. No more than 50% of a Clearing Member's margin on deposit may include letters of credit, and no more than 20% may include letters of credit issued by any one institution. Letters of credit are valued at their commitment amount.

ESCROW DEPOSITS OCC has an Escrow Deposit Program, allows a customer of a Clearing Member to pledge cash and/or fully-paid for securities held at OCC approved escrow banks. Prior to 2017, the escrow banks issued escrow instructions to OCC and concurrently made certain representations and agreements with OCC, including the banks' agreement to segregate acceptable forms of collateral, to deliver securities or pay certain amounts from the deposit in the event an exercise notice is assigned to the short position. OCC's agreements with the escrow banks require the maintenance of eligible collateral, subject to OCC's restrictions, to cover obligations related to short positions in equity and index puts and calls.

OCC implemented a restructured Escrow Deposit Program ("Program") and all escrow deposits were required to be migrated to this new Program effective November 30, 2017. The newly restructured Escrow Deposit Program requires security escrow deposits to be pledged to OCC by the escrow banks via the Depository Trust and Clearing Corporation and cash escrow deposits to be held in a tri-party account between OCC, the escrow bank and the customer. Both the security and cash escrow deposits must be viewable by OCC, clearing members (or the customer) and the escrow bank. Eligible collateral was also expanded to include U.S. Treasury Securities with greater than one year maturity. Additionally, the Escrow Deposit Program no longer supports short positions in an equity call option; these options can be covered by collateralizing with a specific deposit.

An escrow deposit is considered a deposit in lieu of margin against short equity or index call or put option positions; therefore, the covered short position is not subject to margining by OCC. OCC has specified collateral restrictions for escrow deposits. Prior to 2017, escrow deposits for a short position in an equity call option consisted of the underlying security for which the equity option was written. Escrow deposits for a short position in an equity or an index put option consisted of cash or short-term U.S. Government securities. Escrow deposits related to a short position in an index call option consisted of cash, short-term U.S. Government securities, common stocks that are listed on a national securities exchange or the NASDAQ Stock Market, or any combination of these assets.

With the restructured Escrow Deposit program, escrow deposits on a short position in an equity call option are no longer eligible. Escrow deposits for a short position in an equity or an index put option may consist of cash or U.S. Government securities. Escrow deposits related to a short position in an index call option may consist of cash, U.S. Government securities, common stocks that are listed on a national securities exchange or the NASDAQ Stock Market, or any combination of these assets.

As of December 31, 2018 and 2017, deposits were held for 148,000 and 381,000 short equity and index options contracts in the Escrow Deposit Program, respectively, and the fair value of the underlying securities (times the unit of trading or the multiplier, as appropriate) was approximately $17.8 billion and $21.2 billion. The fair value of the collateral held under the restructured Program was $17.8 billion for December 31, 2018 and $21.1 billion for December 31, 2017, respectively.

CROSS-MARGIN ARRANGEMENTS OCC also maintains cross-margining arrangements with certain U.S. commodities clearing organizations. Under the terms of these arrangements, an OCC Clearing Member that is also a Clearing Member of a commodities clearing organization participating in the cross-margining arrangement, or that has an affiliate that is a Clearing Member of the commodities clearing organization, may maintain cross-margin accounts. Within these cross-margin accounts, the Clearing Members' positions in OCC-cleared options are combined with positions of the Clearing Member (or its affiliate) in futures contracts and/or options on futures contracts for purposes of calculating margin requirements. Margin deposits on the combined positions are held jointly by OCC and the participating commodities clearing organization and are available (together with any proceeds of the options and futures positions themselves) to meet financial obligations of the Clearing Members to OCC and the commodities clearing organization. In the event that either OCC or participating commodities clearing organization suffers a loss in liquidating positions in a cross-margin account, the loss is to be shared between OCC and the participating commodities clearing organization. Margin deposits for these cross-margin accounts may be in the form of cash, valued securities, U.S. Government securities, U.S. GSE debt securities or bank letters of credit, and are reflected in the margin deposit table. OCC's share of margin deposits subject to cross-margin agreements were $449.2 million and $363.4 million at December 31, 2018 and 2017, respectively.

Note 6. Clearing Fund Deposits

OCC calculates the required fund based upon algorithms intended to simulate potential losses in the event of a simultaneous default of its two largest Clearing Members, banks or securities or commodities clearing organizations. The clearing fund size is established at an amount to be sufficient to protect OCC from loss under simulated default scenarios. A Clearing Member's contribution is the sum of $500,000 and a separate amount equal to the weighted average of the Clearing Member's proportionate shares of total risk, open interest and volume, in all accounts of the Clearing Member. As of December 31, 2018, the weightings were: total risk 70%, open interest 15% and volume 15%. As of December 31, 2017, the weightings were: total risk 35%, open interest 50% and volume 15%.

The clearing fund mutualizes the risk of default among all Clearing Members. The entire clearing fund is available to cover potential losses in the event that the margin deposits and the clearing fund deposits of a defaulting Clearing Member are inadequate or not immediately available to fulfill that Clearing Member's outstanding financial obligations. In the event of a default, OCC is generally required to liquidate the defaulting Clearing Member's open positions. To the extent that the positions remain open, OCC is required to assume the defaulting Clearing Member's obligations related to the open positions. The clearing fund is available to cover the cost of liquidating a defaulting Clearing Member's open positions or performing OCC's obligations with respect to positions not yet liquidated.

Clearing fund deposits must be in the form of cash or U.S. and Canadian Government securities, as the clearing fund is intended to provide OCC with a highly liquid pool of assets. OCC discounts the fair value of U.S. and Canadian Government securities on a daily basis to provide a cushion against adverse price fluctuations. Cash deposits in nonsegregated accounts may be invested at an approved bank, and any interest or gain received or loss incurred on invested funds is recorded in the Statements of Income and Comprehensive Income. Segregated funds cannot be invested by OCC.

During 2016, OCC obtained approval to open an account at the Federal Reserve Bank of Chicago. As of December 31, 2018 and 2017, the balance held at the Federal Reserve Bank of Chicago totaled $5.1 billion and $2.3 billion, respectively. Interest earned is recorded as Interest Income on the Statements of Income and Comprehensive Income. Beginning March 1, 2018, with the SEC's approval of OCC's Financial Safeguards, clearing members are required to maintain a minimum of $3 billion in cash in the clearing fund. The cash resides in an account at the Federal Reserve Bank of Chicago. Interest earned on those funds is passed through to the clearing members on a proportional basis and shown on the Statement of Income and Comprehensive Income as Distribution of interest earned on clearing fund. OCC charges a cash management fee of 5 basis points monthly.

The U.S. Government securities included in the clearing fund are valued using inputs from pricing services that include interest accruing on the next coupon payment. Canadian Government securities are pledged, rather than delivered to OCC. Clearing Members maintain control of the interest payment for Canadian Government securities and, therefore, the accrued interest is not included in the fair value for these securities.

The fair value of the clearing fund is included in the Statements of Financial Condition as Clearing fund deposits. The collateral types and their fair values at December 31, 2018 and 2017 are as follows (Canadian Government securities are converted to U.S. dollars using the year-end exchange rate):

As of December 31, (in thousands)	2018	2017
U.S. Government securities	$ 4,022,193	$ 12,567,142
Cash and cash equivalents	5,303,545	2,510,380
Canadian Government securities	132,141	116,800
Total	$ 9,457,879	$ 15,194,322

Note 7. Shareholders' Equity

OCC has Class A and Class B common stock, each with a $10 par value, 25,000 shares authorized, issued and outstanding at December 31, 2018 and 2017. At December 31, 2015, OCC had Class A and Class B common stock with 60,000 shares authorized, 30,000 shares issued and 25,000 shares outstanding. OCC also has Class C common stock, with a $1,000 par value, 300,000 shares authorized, and no shares issued or outstanding as of December 31, 2018 or 2017.

The Class B common stock is issuable in five series of 5,000 shares each. Only Class B common stock is entitled to receive dividends. In the event of liquidation of OCC, holders of Class A common stock, Class B common stock and Class C common stock would first be paid the par value of their shares. Next, each holder of Class B common stock would receive a distribution of $1,000,000. Subsequently, an amount equal to OCC's shareholders' equity at December 31, 1998 of $22,902,094 minus the distributions described above, would be distributed to those holders who acquired their Class B common stock before December 31, 1998. Finally, any remaining shareholders' equity would be distributed equally to all holders of Class B common stock.

The by-laws of OCC provide that any national securities exchange or national securities association, which meets specific requirements, may qualify for participation in OCC. Until 2002, exchanges qualified for participation by purchasing 5,000 shares of Class A common stock and 5,000 shares of Class B common stock. The purchase price for these shares was the aggregate book value of a comparable number of shares at the end of the preceding calendar month, but not more than $1,000,000. In 2002, OCC amended its by-laws to provide that exchanges would qualify for participation in OCC by purchasing a $1,000,000 interest bearing promissory note. Five of OCC's participant exchanges were shareholders and ten participant exchanges were noteholders as of December 31, 2018 and 2017, respectively. These interest bearing notes are recorded in Accounts Payable in the Statements of Financial Condition and were $10.0 million at December 31, 2018 and 2017, respectively.

OCC is a party to a Stockholders Agreement with its shareholders. The Stockholders Agreement provides that each shareholder appoints the members of the Governance and Nominating Committee of the Board of Directors as its proxy for purposes of voting its shares for the election of member directors, management director(s), and public director(s). The Governance and Nominating Committee nominates individuals for election as member directors and public directors. Under certain circumstances, it also provides for OCC to purchase all of the stock owned by any shareholder; however, the obligation to pay the purchase price will be subordinated to OCC's obligations to creditors, and the purchase price cannot be paid if the payment would reduce capital and surplus below $1,000,000. The purchase price is the lesser of the aggregate book value of the shares or the original purchase price paid, less $240,000, $180,000, $120,000, $60,000 or zero after the second, third, fourth, fifth or sixth year, respectively, from the date of sale of the stock.

OCC is also party to a Noteholders Agreement with the noteholders. The Noteholders Agreement provides OCC with the right to purchase all notes owned by any note holder under certain circumstances; however, the obligation to pay the purchase price will be subordinated to OCC's obligations to creditors except that such obligation will not be subordinate to OCC's obligation to pay the purchase price to any other noteholder or any shareholder under the Stockholders Agreement. If OCC exercises these purchase rights, the purchase price for the two years following the date of OCC's execution is the original aggregate principal amount of the notes plus any accrued and unpaid interest reduced by $300,000. Thereafter, the purchase price is the original aggregate principal amount of the notes plus any accrued and unpaid interest, less $240,000, $180,000, $120,000, $60,000 or zero after the second, third, fourth, fifth or sixth year, respectively, from the date the note was executed

Note 8. Reverse Repurchase Agreements

Reverse repurchase agreements outstanding, including amounts in cash and cash equivalents and margin and clearing fund deposits, averaged $4.0 billion and $4.3 billion during 2018 and 2017, respectively. The maximum amount outstanding was $11.1 billion during 2018 and $8.1 billion during 2017. Amounts outstanding and included in cash and cash equivalents in the Statements of Financial Condition at December 31, 2018 was $365 million. Amounts were outstanding and included in cash and cash equivalents in the Statements of Financial Condition at December 31, 2018 and 2017. Clearing fund deposit amounts invested at December 31, 2018 were $70 million and were included within clearing fund deposits in the Statements of Financial Condition. No clearing fund deposit amounts were invested at December 31, 2017. Margin deposits had amounts outstanding at December 31, 2018 and 2017 of $4.2 billion and $6.0 billion, respectively. Interest income earned on these reverse repurchase agreements totaled $60.3 million, $32.6 million and $9.0 million for the years ending December 31, 2018, 2017 and 2016. This interest income is recorded within Investment income on the Statements of Income and Comprehensive Income.

Note 9. Clearing Fees

OCC's Board of Directors ("Board") sets clearing fees to cover OCC's operating expenses plus an additional amount set by the Board in accordance with the Capital Plan (Note 18). Annually, the Board will determine and declare a refund to Clearing Members to the extent OCC meets its regulatory capital requirements in that year. In prior years, refunds were declared in an aggregate amount equal to 50% of the distributable earnings before taxes, which allowed for OCC to retain capital if required. Distributable earnings before taxes was established at 25% above operating expenses. In 2018, the Board of Directors elected to retain the capital above the 25% operating margin as well as taxes related to the capital retention, to be used for future capital expenditures. During 2017 and 2016, OCC did not retain capital from earnings. Subsequent to the refund declaration, any distributable earnings after taxes remaining will be distributed to stockholders in the form of a dividend. Refunds were $78.7 million and $46.6 million for the years ended December 31, 2017 and 2016, respectively. No refund was recognized for the year ended December 31, 2018 due to the disapproval of the Capital Plan by the SEC as of February 13, 2019 (see Note 18). During 2016, OCC released a portion of its uncertain tax position related to New York State revenue sourcing and in 2017, released the remainder (see Note 13). The uncertain tax position was related to tax years 2009-2014, prior to the implementation of the Capital Plan. Due to this timing, OCC's Board of Directors approved an increase to the refund to Clearing Members by the amount released of $3.9 million in 2017 and $4.7 million in 2016. Clearing fees are recorded net of refunds in the Statements of Income and Comprehensive Income.

Note 10. Other Assets

Other assets, which include investments for the supplemental executive retirement plan ("SERP") and the deferred compensation plan, consisted of the following:

As of December 31, (in thousands)	2018	2017
SERP Note 14	$ 30,020	$ 29,523
Executive deferred compensation plan Note 11	7,790	9,076
Other assets	8,762	6,452
Total other assets	$ 46,572	$ 45,051

SERP investments are recorded at fair value and changes in fair value are recorded as Investment income in the Statements of Income and Comprehensive Income. The amount recorded as Investment income/(loss) for SERP investments for the years ended December 31, 2018, 2017 and 2016 was ($746,000), $2.0 million and $1.6 million, respectively. The change in net unrealized gains/(losses) on these trading securities still held at the reporting date was $1.3 million, $2.2 million and $1.6 million, respectively.

Investments held in the executive deferred compensation plan are recorded at fair value and changes in fair value are recorded as Investment income in the Statements of Income and Comprehensive Income. In addition, changes in the investments' fair value result in charges recorded as Employee costs in the Statements of Income and Comprehensive Income.

The amount recorded in Investment income and Employee costs for the executive deferred compensation plan investments for the years ended December 31, 2018, 2017 and 2016 was ($291,000), $1.2 million and $428,000 respectively. The change in net unrealized gains/(losses) on these trading securities still held at the reporting date was ($530,000), $1.0 million and $250,000 respectively.

Note 11. Commitments

LEASES OCC leases office space, as well as data processing and other equipment. Rental expense under these leases for the years ended December 31, 2018, 2017 and 2016 was $52.5 million, $39.8 million and $31.4 million, respectively.

On December 15, 2017, OCC entered into an agreement with Banc of America Leasing & Capital, LLC ("BALC") for the lease of property improvements and fixtures for the office in Texas. The lease agreement has a principal amount of $4.7 million and a term of 7 years, at the end of which OCC has a bargain purchase option to repurchase the improvements at $1.

Future minimum aggregate rental payments under operating leases having initial or remaining noncancelable lease terms in excess of one year as of December 31, 2018 are as follows:

(in thousands)	Operating Leases	Capital Leases
2019	$ 15,278	$ 3,704
2020	12,955	2,536
2021	9,500	1,789
2022	7,282	758
2023	7,282	757
Thereafter	50,474	$ 757
Total minimum lease payments	$ 102,771	10,301
Amount representing interest	N/A	(584)
Present value of minimum lease payments	N/A	$ 9,717

EMPLOYEE COSTS OCC entered into employment agreements with certain senior officers. The aggregate commitment for future salaries and deferred compensation payments at December 31, 2018 and 2017, excluding bonuses, was approximately $1.6 million and $3.1 million, respectively.

Effective January 1, 2006, OCC implemented the Executive Deferred Compensation Plan ("Plan") for senior officers. At December 31, 2018, the Plan was funded in the amount of $3.0 million. The Plan was not funded at December 31, 2017. Amounts contributed to the Plan prior to 2014 become vested and payable on the fifth anniversary of the date it is credited to the participants' account provided the participant remains continuously employed by OCC at the vesting date. All contributions made in 2014 and thereafter will vest and become payable on the third anniversary. The Plan investments, consisting primarily of mutual funds, are designated as trading under applicable accounting guidance.

Additionally, retention payments were credited to the Plan for certain employees. These payments vest in intervals over the next two years and were funded to the participant's accounts in the amount of $600,000 in 2018.

LINES OF CREDIT OCC maintains two liquidity facilities which are available to enable OCC to meet Clearing Member default or suspension obligations or to cover certain other bankruptcy losses. One facility is a 364-day syndicated, committed, line of credit with major domestic and foreign banks in the amount of $2.0 billion at December 31, 2018, for which commitment fees are paid to the participating banks. OCC maintained a similar $2.0 billion, committed line of credit at December 31, 2017. The other facility is a $1.0 billion committed, liquidity facility with the California Public Employees' Retirement System ("CalPERS"). Under this facility, OCC entered into a Master Repurchase Agreement with CalPERS and has the ability to sell U.S. Government securities with an agreement to repurchase those securities within thirty days. In 2018 and 2017, OCC renewed the liquidity facility and laddered the maturities with $500 million renewing in January with the remaining $500 million renewing in September. Each of these $500 million tranches has a term of 364 days and commitment fees and interest are paid on a quarterly basis. No amounts were outstanding as of December 31, 2018 or 2017 under either of these facilities.

Note 12. Related Party Transactions and Other Market Agreements

OCC bills and collects transaction fees on behalf of certain exchanges for which it provides clearing and settlement services. Fees billed and uncollected by OCC, and not remitted to the exchanges, at December 31, 2018 and 2017 were $109.2 million and $95.9 million respectively, and are included in the Statements of Financial Condition as Exchange billing receivable and Exchange billing payable. In addition, OCC bills and collects Section 31 transaction fees on behalf of certain exchanges that are remitted to the SEC. At December 31, 2018, the Section 31 fees yet to be collected from Clearing Members was $8.6 million and included in the Statements of Financial Condition under Accounts receivable. The Section 31 fees already received, but not yet remitted to the SEC, are included in SEC transaction fees payable.

OCC is also a party to a Restated Participant Exchange Agreement dealing with the business relationship between and among OCC and each participant options exchange.

In 1992, OCC and its participant options exchanges formed an industry organization named The Options Industry Council ("OIC"). The total amounts expended by OCC on behalf of OIC, before reimbursement from the participant exchanges, for the years ended December 31, 2018, 2017 and 2016 were $5.4 million, $5.9 million and $5.3 million, respectively. In 2018, a decision was made to no longer collect from the exchanges their share of OIC expenditures. The exchanges' share of OIC expenditures was $200,000 for the year ended December 31, 2017 and $360,000 for December 31, 2016. At December 31, 2018 and 2017, the amounts due from participant exchanges for OIC and other related expenditures were $40,000.

OCC is also a party to clearing and settlement services agreements for certain commodity contracts with CBOE Futures Exchange, LLC, NASDAQ Futures, Inc., and One Chicago LLC, each of which is a designated contract market and an affiliated futures market as defined in OCC's by-laws.

Note 13. Income Taxes

The provision for income taxes is reconciled to the amount determined by applying the statutory federal income tax rate to income before taxes as follows:

Years ended December 31, (in thousands)	2018	2017	2016
Federal income tax at the statutory rate	$ 38,507	$ 21,525	$ 13,051
Permanent tax differences	3,777	799	721
State income tax effect	9,133	1,949	1,508
Rate changes	(1,034)	6,567	2,846
Uncertain tax position	—	(2,646)	(3,872)
Other	(743)	795	(2,580)
Provision for income taxes	$ 49,640	$ 28,989	$ 11,674

The components of OCC's income tax provision (benefit) for the years ended December 31, 2018, 2017 and 2016 are as follows (in thousands):

	2018	2017	2016
Current Income Tax (Benefit)			
Federal	$ 35,473	$ 14,540	$ (49)
State and Local	10,844	(1,835)	(4,761)
Deferred Income Tax			
Federal	3,037	15,232	13,009
State and Local	286	1,052	3,475
Provision for Income Taxes	$ 49,640	$ 28,989	$ 11,674

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act makes broad and complex changes to the U.S. tax code, including, but not limited to, (1) reducing the U.S. federal corporate tax rate from 35 percent to 21 percent; (2) eliminating the corporate alternative minimum tax (AMT); (3) creating a new limitation on deductible interest expense; (4) bonus depreciation that will allow for full expensing of qualified property; and (5) changing rules related to uses and limitations of net operating loss carryforwards created in tax years beginning after December 31, 2017.

OCC's accounting for the following elements of the Tax Act is complete as of December 31, 2018. For certain deferred tax assets and deferred tax liabilities, OCC has recorded a complete net adjustment to deferred income tax benefit of $1.0 million for the year ended December 31, 2018. A net adjustment to deferred income tax expense of $6.6 million was recorded for the year ended December 31, 2017. No additional adjustments were required in 2018.

Uncertain income tax positions are recognized based on a "more likely than not" threshold. Penalties and interest are recognized in the Provision for Income Taxes in the Statements of Income and Comprehensive Income. During 2017, OCC released penalties of $348,000 and interest of $472,000. As of December 31, 2018, no liability for interest or penalties has been recognized. OCC released its remaining unrecognized tax benefits related to New York State revenue sourcing during 2017.

OCC has no other uncertain tax positions as of December 31, 2018. OCC is subject to U.S. federal income tax, as well as income tax in various state and local jurisdictions. Currently, federal tax returns for the years 2015-2017 and various state returns for the years 2014-2017 remain open.

Amounts reported in the consolidated financial statements and the tax basis of assets and liabilities result in temporary differences. The deferred tax asset consists of the following:

As of December 31, (in thousands)	2018	2017
Compensation and employee benefits and prepaid expenses	$ (2,888)	$ 370
Accelerated depreciation and amortization	(3,042)	(197)
Deferred rent	2,483	—
Pension, postretirement and deferred compensation	11,069	11,826
Other items	648	330
Total	$ 8,270	$ 12,329

Note 14. Retirement Plans

OCC has a trusteed, noncontributory, qualified retirement plan ("Retirement Plan") covering employees who meet specified age and service requirements. OCC also has a SERP that includes a benefit replacement plan. Retirement benefits under the Retirement Plan are primarily a function of both years of service and levels of compensation.

On January 1, 2002, OCC amended and restated its retirement plan and established a defined contribution plan for new employees effective March 7, 2002. Certain employees were frozen in the Retirement plan and were no longer eligible to earn future benefit service after December 31, 2002.

Additionally, effective December 31, 2014, the Board of Directors approved an amendment to freeze benefit accruals under the Retirement Plan and SERP.

In 2016, OCC offered a lump sum payout to certain former employees with deferred vested balances. The lump sum payouts, totaling $4.2 million, were made in December 2016, using Retirement Plan assets.

OCC's funding policies are to contribute amounts determined on an actuarial basis and provide the Retirement Plan with assets sufficient to meet the benefit obligation of the plans, subject to the minimum funding requirements of U.S. employee benefit and tax laws. The OCC funds the SERP on a current basis as compensation is awarded.

Net periodic benefit cost of the plans consisted of the following:

Years ended December 31, (in thousands)	2018	2017	2016
Interest cost	$ 6,274	$ 6,778	$ 7,408
Expected return on assets	(4,972)	(4,728)	(4,517)
Amortization:			
Actuarial loss	1,877	1,786	1,704
Net periodic benefit cost	$ 3,179	$ 3,836	$ 4,595

Other changes in plan assets and benefit obligations recognized in other comprehensive income include:

Years ended December 31, (in thousands)	2018	2017	2016
Amortization of net actuarial (loss)	$ (1,877)	$ (1,786)	$ (1,704)
Net actuarial loss / (gain) for the period	(2,434)	2,872	(868)
Total recognized in other comprehensive income	($4,311)	1,086	(2,572)
Total recognized in net benefit cost and other comprehensive income	$ (1,132)	$ 4,922	$ 2,023

A net actuarial loss of $1.8 million recorded in Accumulated other comprehensive loss is amortized as a component of net periodic benefit cost during 2019.

The Retirement Plan and SERP assets and the plans' benefit obligation and funded status are as follows:

As of December 31, (in thousands)	2018	2017
Change in benefit obligation:		
Benefit obligation at beginning of year	$ 178,500	$ 171,643
Interest cost	6,274	6,778
Actuarial loss/(gain)	(12,099)	8,565
Gross benefits paid	(8,787)	(8,486)
Benefit obligation at end of year	$ 163,888	$ 178,500
Change in plan assets:		
Fair value of plan assets at beginning of year	$ 137,268	$ 108,629
Actual return on plan assets	(4,693)	10,421
Employer contributions	10,532	26,704
Gross benefits paid	(8,787)	(8,486)
Fair value of plan assets at end of year	$ 134,320	$ 137,268
Funded status end of year:		
Fair value on plan assets - overfunded	$ 134,320	$ 137,268
Fair value on plan assets - underfunded	—	—
Benefit obligation - overfunded	133,940	145,803
Benefit obligation - underfunded	29,948	32,697
Funded status	$ (29,568)	$ (41,232)
Amounts recognized in the statements of financial condition:		
Noncurrent asset	$ 380	$ —
Current liability	(2,057)	(2,007)
Noncurrent liability	(27,891)	(39,225)
Total	$ (29,568)	$ (41,232)
Amounts recognized in accumulated other comprehensive loss consist of:		
Net actuarial loss	$ 57,223	$ 61,534
Net amount recognized	$ 57,223	$ 61,534

Gross benefits paid from the SERP were $2.0 million for the years ended December 31, 2018 and 2017. Assets set aside for SERP are described in Note 10.

The accumulated benefit obligation for the Retirement Plan was $133.9 million and $145.8 million at December 31, 2018 and 2017, respectively.

The primary assumptions used to determine the accumulated benefit obligation and benefit costs are summarized below:

	Retirement Plan		SERP	
December 31,	2018	2017	2018	2017
Accumulated benefit obligation:				
Discount rate	4.25%	3.60%	4.20%	3.55%
Benefit costs:				
Discount rate	3.60%	4.05%	3.55%	3.95%
Expected return on assets	3.60%	4.05%	N/A	N/A

The expected return on assets is derived using the plans' asset mix, historical returns by asset category and expectations for future capital market performance. Both the plans' investment policy and the expected long-term rate of return assumption are reviewed periodically. The plan's assets are allocated 100% in fixed income mutual fund investments.

In October 2018 and 2017, the Society of Actuaries released updated mortality improvement scales to the 2014 table, which generally resulted in decreases in life expectancy for plan participants. There was no material impact to either plan from the implementation of the new mortality scales.

OCC's expected cash outlay for employer contributions for both plans in 2019 is $2.0 million, and future expected cash outlays for benefit payments are as follows:

(in thousands)	
2019	$ 9,419
2020	9,818
2021	10,148
2022	10,417
2023	10,705
2024-2028	54,471

In 2014 OCC adopted a liability-driven investment strategy, in which the return on investments held in the Retirement Plan aims to match the yield of the corporate bonds utilized in the calculation of the discount rate. As a result, the mix of investments was shifted to and remains 100% fixed income mutual funds.

Retirement plan assets, which are comprised of registered mutual funds, $133.5 million and $136.6 million at December 31, 2018 and 2017, and money market funds, $715,000 and $700,000 at December 31, 2018 and 2017, are required to be reported and disclosed at fair value in the financial statements. See Note 16 for discussion about OCC's fair value policy. The shares of the underlying mutual funds are fair valued using quoted market prices in an active market, and therefore all of the assets were considered Level 1 within the fair value hierarchy as of December 31, 2018 and 2017. There have been no changes in the valuation methodologies and there were no transfers between Levels 1 and 2 within the fair value hierarchy for the years ended December 31, 2018 and 2017.

OCC maintains a defined contribution plan ("401(k) plan") qualified under Internal Revenue Code Section 401(k) for eligible employees who elect to participate in the plan. Eligible employees may elect to have their salaries reduced by an amount that is subject to applicable IRS limitations. This amount is then paid into the plan by OCC on behalf of the employee.

OCC makes matching contributions to the participant's account equal to 50% of deferrals (excluding "catch -up" deposits) up to the first 6% of salary that is deferred. OCC's expenses for the matching contributions to the 401(k) plan for the years ended December 31, 2018, 2017 and 2016 were $2.7 million, $1.4 million and $2.0 million, respectively.

The 401(k) plan also contains a profit-sharing component for individuals not eligible to earn future benefit service in the Retirement Plan, as discussed above. Profit sharing contributions accrued for the 401(k) plan were $5.8 million, $3.8 million and $4.5 million in 2018, 2017 and 2016, respectively.

Note 15. Postretirement Benefits Other Than Pensions

OCC has a postretirement welfare plan covering employees who meet specified age and service requirements. Retiree contributions to medical payments vary by age and years of service at retirement. The plan is a defined dollar benefit plan in which OCC's obligation is limited to a maximum amount per participant per year set by OCC at the time a participant retires.

During November 2014, the Board of Directors approved amendments to the postretirement welfare plan, including (1) eliminating the Medical Executive Retirement Plan, (2) eliminating the retiree life insurance coverage, (3) reducing the post-cap level amount, and (4) eliminating benefits for all participants retiring after December 31, 2014.

Net periodic benefit cost consisted of the following:

Years ended December 31, (in thousands)	2018	2017	2016
Interest cost	$ 259	$ 300	$ 330
Expected return on assets	(634)	(598)	(551)
Amortization:			
Prior service cost	(1,754)	(1,754)	(1,754)
Actuarial loss	854	909	881
Total net periodic benefit (income) cost	(1,275)	(1,143)	(1,094)
Net benefit (income) cost	$ (1,275)	$ (1,143)	$ (1,094)

Other changes in plan assets and benefit obligations recognized in other comprehensive income include:

Years ended December 31, (in thousands)	2018	2017	2016
Amortization of net actuarial (loss)	$ (854)	$ (909)	$ (881)
Amortization of net prior service credit	1,754	1,754	1,754
Net actuarial loss for the period	(46)	(630)	281
Total recognized in other comprehensive income	854	215	1,154
Total recognized in net benefit cost and other comprehensive income	$ (421)	$ (928)	$ 60

Net actuarial losses of $908,000 recorded in accumulated other comprehensive loss are expected to be amortized as a component of net periodic benefit cost during 2019.

Plan assets, which are comprised of registered mutual funds, $8.5 million and $10.1 million at December 31, 2018 and 2017, and money market funds, $1.5 million and $300,000 at December 31, 2018 and 2017, are required to be reported and disclosed at fair value in the financial statements. See Note 16 for discussion about OCC's fair value policy. The shares of the underlying mutual funds are valued using quoted market prices in an active market, and therefore Level 1 within the fair value hierarchy as of December 31, 2018 and 2017. There have been no changes in the valuation methodologies and there were no transfers between Levels 1 and 2 within the fair value hierarchy for the years ended December 31, 2018 and 2017.

The primary investment objective for the plan is to maintain the plan's funded status. The plan's current target investment mix is 100% fixed income.

The actual asset allocation is as follows:

Years ended December 31,	2018	2017
Fixed income funds	85%	44%
Domestic equity funds	15%	33%
International equity funds	0%	23%
Total	100%	100%

The plan's benefit obligation, plan assets and funded statuses are as follows:

Years ended December 31, (in thousands)	2018	2017
Change in benefit obligation:		
Benefit obligation at beginning of year	$ 7,938	$ 8,148
Interest cost	259	300
Actuarial loss (gain)	(448)	291
Gross benefits paid	(815)	(801)
Benefit obligation at end of year	$ 6,934	$ 7,938
Change in plan assets:		
Fair value of plan assets at beginning of year	$ 10,942	$ 10,391
Actual return on plan assets	232	1,519
Employer contributions	(325)	(167)
Gross benefits paid	(815)	(801)
Fair value of plan assets at end of year	$ 10,034	$ 10,942
Funded status end of year:		
Fair value of plan assets	$ 10,034	$ 10,942
Benefit obligation	6,934	7,938
Funded status	$ 3,100	$ 3,004
Amounts recognized in the statements of financial condition:		
Noncurrent asset	$ 3,100	$ 3,004
Net amount recognized	$ 3,100	$ 3,004
Amounts recognized in accumulated other comprehensive loss consist of:		
Net actuarial loss	$ 15,188	$ 16,088
Net prior service (credit)	(28,591)	(30,345)
Net amount recognized	$ (13,403)	$ (14,257)

Medicare-eligible retirees must purchase both Medicare supplement and prescription drug coverage in the individual marketplace, and OCC will reimburse both coverages up to the Medicare-eligible retirees' cap amount.

The primary assumptions used to determine the accumulated benefit obligation and benefit costs are summarized below:

Years ended December 31,	2018	2017	2016
Accumulated benefit obligation:			
Discount rate	4.15%	3.45%	3.80%
Health care cost trend rate	5.50%	5.50%	5.75%
Ultimate rate	5.00%	5.00%	5.00%
Years to ultimate rate	1	2	3
Benefit costs:			
Discount rate	3.45%	3.80%	4.00%
Expected long-term rate of return	6.00%	6.00%	6.00%
Health care cost trend rate	5.50%	5.75%	6.00%
Ultimate rate	5.00%	5.00%	5.00%
Years to ultimate rate	2	3	4

A one percentage point increase in the assumed health care cost trend rate for each year would not have a material effect on the accumulated postretirement benefit obligation or net periodic benefit cost.

In October 2018 and 2017, the Society of Actuaries released updated mortality improvement scales, which generally resulted in decreases in life expectancy for plan participants. OCC used the new mortality scales to value the postretirement welfare plan liability at December 31, 2018 and 2017 and there was no material impact to the financial statements.

OCC's expected cash outflows for future benefit payments are as follows:

(in thousands)	
2019	$ 741
2020	661
2021	610
2022	586
2023	528
2024-2028	2,290

Note 16. Fair Value Measurements

OCC follows applicable accounting guidance for measuring all financial assets and liabilities that are recognized or disclosed at fair value in the financial statements on a recurring or nonrecurring basis.

Level 1 measurements consist of quoted prices in active markets for identical assets or liabilities. Level 2 measurements include significant other observable inputs, such as quoted prices for similar assets or liabilities in active markets; identical assets or liabilities in inactive markets; observable inputs, such as interest rates and yield curves; and other market-corroborated inputs. Level 3 measurements include significant unobservable inputs, supported by little or no market activity.

OCC uses Level 1 and 2 measurements to determine fair value. Level 1 measurements consist of registered mutual funds that publish a daily Net Asset Value. Level 2 measurements include U.S. and Canadian Government securities, which are generally valued using inputs from pricing services and are not quoted on active markets. There were no transfers between Level 1 and Level 2 during 2018 or 2017.

The SERP and executive deferred compensation plan assets comprise the full amount within the money market fund and registered mutual funds disclosed in the following table.

Assets measured at fair value on a recurring basis are summarized below:

December 31, 2018 (in thousands)	Total	Level 1	Level 2
U.S. Government securities	$ 4,022,193	$ —	$ 4,022,193
Canadian Government securities	132,141	—	132,141
Other assets:			
Money Market funds	2,217	2,217	—
Registered mutual funds	36,316	36,316	—
Total	$ 4,192,867	$ 38,533	$ 4,154,334

December 31, 2017 (in thousands)	Total	Level 1	Level 2
U.S. Government securities	$12,567,142	$ —	$12,567,142
Canadian Government securities	116,800	—	116,800
Other assets:			
Money Market funds	2,046	2,046	—
Registered mutual funds	37,147	37,147	—
Total	$12,723,135	$ 39,193	$12,683,942

Reverse repurchase agreements are recorded at carrying value and as such, are not included in the table above. Reverse repurchase agreements are generally valued based on inputs with reasonable levels of price transparency and the carrying value approximates fair value due to the short maturities of the investments.

Note 17. Contingencies

In the normal course of business, OCC may be subject to various lawsuits, claims, and other legal proceedings. In addition, as a regulated entity, OCC is subject to examination by the SEC and CFTC. In connection with these regulatory and legal matters, OCC has accrued $15 million as of December 31, 2018. Actual settlement amounts may exceed amounts accrued and such amounts could be material.

Note 18. Capital Plan

In 2015, the SEC initially approved OCC's Capital Plan (the Capital Plan). Under the Capital Plan OCC's shareholders contributed $150 million of equity capital, they agreed to provide additional equity capital of $117 million (and up to $200 million) if OCC's equity capital fell close to or below certain thresholds as defined in the Capital Plan. The Capital Plan specified the manner in which OCC's pre-tax operating income would be allocated between refunds to Clearing Members and dividends to shareholders. The SEC's approval was remanded by the U.S. Court of Appeals for the District of Columbia Circuit on August 8, 2017. On February 13, 2019, the SEC disapproved the Capital Plan. As a result of the disapproval, OCC is not providing a refund to clearing firms or declaring a dividend to shareholders under the Capital Plan for the year ended December 31, 2018. Furthermore, on February 28, 2019 OCC returned $110 million of the shareholders' equity capital. The shareholders agreed to leave $40 million of the $150 million contributed under the Capital Plan with OCC. The remaining $40 million of equity capital will be returned as soon as practical and at the request of the shareholders' only if the request would not cause OCC to fall below its target capital requirement, currently $247 million, nor cause OCC not to hold sufficient liquid assets to cover known cash needs.

Note 19. Subsequent Events

OCC has evaluated events subsequent to December 31, 2018 to assess the need for potential recognition or disclosure. These events have been evaluated through March 22, 2019, the date of report issuance.

LINES OF CREDIT - On January 4, 2019, OCC renewed $500 million of its pre-funded committed repurchase facility with CalPERS.

CAPITAL PLAN - On February 13, 2019, the SEC disapproved OCC's Capital Plan.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of The Options Clearing Corporation:

Opinion on the Financial Statements

We have audited the accompanying statements of financial condition of The Options Clearing Corporation (the "Corporation") as of December 31, 2018 and 2017, the related statements of income and comprehensive income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Corporation as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Corporation is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Corporation's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Deloitte & Touche LLP

Deloitte & Touche LLP
Chicago, IL
March 22, 2019

We have served as the Corporation's auditor since 1972.