S&P Global
Ratings

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Options Clearing Corp.

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Options Clearing Corp.

Rationale

Counterparty Credit Rating
AA+/Stable/--

Business risk

- Effective monopoly on clearing equity options
- Critical function in the U.S. capital markets
- Significant economies of scale
- High degree of operational risk

Financial risk

- Demonstrated ability to adjust clearing fees and flexibility to adjust refunds if needed
- Minimal debt

Clearing and settlement risk

- Large, diversified member base with good credit quality
- Risk concentration to largest five clearing members
- Sound margining system and plans to implement a "cover 2" loss-absorbing approach

Outlook

The outlook on Options Clearing Corp. (OCC) is stable because S&P Global Ratings expects the company to implement the new financial safeguards in 2018, provided it receives regulatory approval.

We could lower the ratings if OCC scales back its plan or if the plan does not receive regulatory approval. We could also lower the ratings if estimated peak liquidity outflows in a stress scenario structurally increase so that the back-testing performance of the proposed liquidity framework weakens.

An upgrade is a remote scenario over the next two years.

S&P Global Ratings Base-Case Scenario

Assumptions

- We expect the Federal Open Market Committee (FOMC) to raise the federal funds rate three times (25 basis points [bps] each) in 2018.
- Profitability is not a major rating factor because OCC operates as an industry utility. Bottom-line profitability after issuing a refund to clearing members historically has been, and is likely to remain, below peers.

Key metrics

	2016A	2017E	2018E
Debt/EBITDA	1.2x	Less than 1x	Less than 1x
FFO/Debt	83%	Above 70%	Above 70%
EBITDA interest coverage	10x	Above 11x	Above 11x

A--Actual. E--Expected.

Company Description

Founded in 1973, OCC is a stand-alone clearinghouse that is registered with the Securities and Exchange Commission (SEC) as a securities "clearing agency" and with the Commodity Futures Trading Commission (CFTC) as a "derivatives clearing organization." In its capacity as a clearing agency, OCC clears transactions in, and is the issuer for, put and call options on: (i) individual equity securities; (ii) debt securities; (iii) groups or indices of securities; and (iv) foreign currencies entered into on 14 registered national securities exchanges that are authorized by the SEC to provide markets for the trading of standardized options and over-the-counter securities index options. Also in its capacity as a clearing agency, OCC clears transactions in certain stock loan transactions that are submitted to it through Automated Equity Finance Markets Inc., an automated marketplace for securities lending and borrowing. In its capacity as a derivatives clearing organization, OCC clears future transactions on (i) energies and commodities products, and (ii) volatility products. Under the Dodd-Frank Act, OCC's supervisory agency is the SEC. Furthermore, on July 18, 2012, the U.S. Financial Stability Oversight Council designated OCC as a systemically important financial market utility, bringing it under the additional oversight of the Board of Governors of the Federal Reserve.

Business Risk

Our assessment of OCC's business position reflects its status as a quasi-monopoly in the U.S. options market (although it is not granted monopoly rights by law) and the critical function it performs for U.S. capital markets. The significant economies of scale and only moderate concentration in underlying instruments that the U.S. options market affords further supports our view of the company's business risk profile. Options clearing (on single-stocks or indices) represent the overwhelming majority of total volumes that OCC clears, although the double-digit growth on futures (CFE/VIX futures and Nasdaq/NFX commodities futures) and stock lending has outpaced the growth on options clearing volumes in the past two years. We now assess futures and stock lending clearing account for more than 5% of clearing revenues, versus less than 2% two years ago. We expect stock lending clearing volumes to keep increasing in 2018, after two years of double-digit growth, as Basel III regulation provides regulatory capital incentives for banks to have such transactions cleared and because still above 80% of total stock lending volumes in the U.S. remain uncleared for now. Since December 2017, OCC also clears Bitcoin futures traded on Cboe.

The company enjoys large economies of scale and has ample capacity to absorb up to 2.5 times the largest historical trading volumes per day with the current OCC systems. As a processor of over 17.5 million contracts daily, we consider OCC's operational risk to be high. The company must meet the demands of its members and the trading community at large, which requires exceptional technology and back-office operations. In our opinion, operational risk receives an appropriate level of attention and resources, and is well managed (including technology and recovery centers).

There is a high degree of operating leverage because revenues are variable, unpredictable, and dependent on the volume of options trading activity, while expenses are generally fixed. OCC must adapt to the cost of technological improvements as well as rising compliance (notably Regulation Systems Compliance and Integrity - Reg. SCI) and IT costs, which have pushed total expenses up significantly in the past two years (up 21.5% year on year for the first three quarters of 2017, following a 12% increase in 2016).

According to the capital plan OCC implemented in 2015, the company now targets an operating buffer of 25% (lower than the 31% average over the past five years). In practice, OCC projects its expenses over the year and adjusts fees so that it achieves the targeted 25% profit margin, and OCC may reset clearing fees to better target this 25% if necessary. Under policies implemented in connection with the capital plan, OCC declares a refund to clearing members equal to 50% of the excess of: (i) pretax income for the year in question over (ii) the sum of (x) the amount of pretax income necessary to produce aftertax income for such year sufficient to maintain shareholders' equity at a target capital requirement for the following year plus (y) the amount of pretax income necessary to fund any additional reserves or additional surplus required. OCC also declares a dividend on its class B common stock (held by its exchange shareholders) in an aggregate amount equal to the excess of (i) aftertax income for the year, after accounting for the refund, over (ii) the sum of (x) the amount required to be retained in order to maintain shareholders' equity at a target capital requirement for the following year plus (y) the amount necessary to fund any additional reserves or additional surplus required. Overall, bottom-line profitability is intentionally artificially controlled by the capital plan, typically below its for-profit peers, but this is not a major rating factor because OCC operates as an industry utility and focuses more on cost recovery than on profit maximization.

Some market participants have challenged OCC's new capital plan, arguing it is too favorable to the exchange shareholders (OCC is owned by ICE/NYSE, Cboe, and Nasdaq) in a context where OCC's expenses are rising very rapidly. On Aug. 8, 2017, the U.S. Court of Appeals for the D.C. Circuit remanded OCC's capital plan back to the SEC to further analyze whether the plan is consistent with the Exchange Act. The capital plan has been in effect since Sept. 10, 2015. The SEC reaffirmed its prior approval of the plan on Feb. 12, 2016. The plan will remain effective during the SEC's review, and OCC distributed refunds ($46.6 million) and dividends ($25.6 million) consistent with the plan in 2017.

OCC raised clearing fees on Dec. 1, 2016, by about 20%, illustrating its capacity to raise fees in response to increasing expenses (and relatively muted clearing volumes overall in a context of low volatility).

We continue to monitor the status of the "equivalence" agreement between the SEC and EU regulators as a component of our current business risk assessment of OCC. As of Dec. 20, 2017, the SEC and the European Commission (EC) continued to negotiate the terms of an equivalency/substituted compliance regime for clearinghouses (CCPs) clearing SEC-regulated products (this includes OCC). Currently, OCC is not eligible for recognition for these SEC-regulated products. For OCC's EU bank-affiliate clearing members to preserve existing capital treatment for exposures to OCC, OCC must receive recognition from the European Securities and Markets Authority (ESMA). If EU bank-affiliate clearing members are unable to preserve existing capital treatment for exposures to OCC, these clearing members' aggregate regulatory risk-weighted assets (with respect to their exposures to OCC) would increase significantly, requiring them to maintain large amounts of additional capital. This would most likely prompt EU clearing members to reduce trading U.S. equity options and place pressure on OCC revenues.

S&P Global Ratings base-case operating scenario

- We expect futures and stock lending clearing volumes to outpace the growth in options clearing in the next two years (but for equity options volumes to still provide the lion's share of total volumes cleared at OCC).
- We expect the company to operate with a 25% profit margin in the next two years.
- We expect total expenses to grow again in 2018, although at a lower pace than in 2017.

Peer comparison

With its status as a quasi-monopoly, operating as an industry utility, OCC bears some similarity with U.S. clearinghouses National Securities Clearing Corp. and Fixed Income Clearing Corp. We assess the business position of these three entities as "excellent."

Financial Risk

The company has no debt apart from $60 million on operating leases and $39.5 million on pension deficit (as of year-end 2016). We view most of the cash on the balance sheet as of year-end 2016 ($305.5 million) as restricted as it was needed for existing regulatory standards ($247 million for the economic capital required to cover investment, operational, litigation, and pension risks), and for declared 2016 dividends ($25.6 million paid in September2017). The company reports revenues net of refunds. Historically, OCC has had discretion over the timing of refund payments to ensure sufficient levels of operating resources are on hand at the time of payment. Overall, adjusted debt made up for less than 1.5 times (adjusted) EBITDA.

Clearing And Settlement Risk

We view the quality of membership at OCC as representative of the U.S. financial industry, with a weighted average rating (by margins) in the 'A' category. Concentration is average compared to peers, with 38% of margins contributed by the largest five clearing members at the end of 2016.

We view OCC's margining system as sound. This reflects the following elements:

- Concentration limits for some types of collateral posted as margins (such as stocks)
- The assumption of a two-day close-out period for options, which we believe is commensurate with the liquidity of these derivatives markets in the U.S. The two-day "net" margining framework on options (with a segregation between "house" and "client" positions) is very similar to the framework implemented by most EU peers
- The fact that margins for futures on "client" positions are computed as the highest between one-day "gross" and two-day "net"
- Very good back-testing results for margins, showing a level of coverage way higher than 99% in practice over the past three years (with weaker results in August 2015)
- The use of margins add-on to incorporate the risk of correlation "break-out"
- Our understanding that cross-margining arrangements with CME and ICE remain limited for now (they do not exceed a maximum of 5% of total OCC margin requirements).

We note that intraday margin calls, when they occur, are based on real-time market parameters but not on real-time members' positions, contrary to best practice. OCC has plans to switch to real-time positions in 2018. This would fix what we view as a relative weakness compared with peers.

On top of initial and variation margins, OCC collects clearing fund contributions from members. The total size of the clearing fund was $6.9 billion as of end-year 2016, representing about 6.7% of total margins posted by members. The current framework meets a "cover 1" standard, with a $1.8 billion margin of safety on top of it. This means it would provide OCC with enough resources to absorb clearing losses in "extreme but plausible conditions" whereby the largest clearing member were to default. OCC's Board of Directors approved at the end of 2016 a plan to switch to a "cover 2" framework, which would provide the clearinghouse with enough resources to absorb clearing losses in "extreme but plausible" conditions (as measured by a "1-in-80 year" statistical event) should the largest two clearing members default jointly. This would align the framework to the best peers in the U.S. and the EU, from a loss-absorbing standpoint. The implementation of the plan is pending SEC approval.

The CCP could be exposed to liquidity outflows if a clearing member defaults right before the options expiration date (for options contracts that settle in cash, like the SPX contract on the S&P 500 Index). To hedge against this liquidity risk, OCC has a $2 billion bank syndicated credit facility and has a $1 billion committed repurchase agreement with the California Public Employees' Retirement System (CalPERS). Under the new plan, OCC will strengthen its liquidity resources by requiring at least $3 billion of the clearing fund contributions in cash (compared with no minimum in cash under the current framework). Combined with the syndicated credit facility and the CalPERS arrangement, these will provide the clearinghouse with a least $6 billion of cash at any point in time to meet potential liquidity outflows, excluding the cash margins posted by the defaulting clearing members. The new proposed liquidity framework falls short, in theory, of the "cover 2" that most EU and U.S. peers now meet. We do not view it as a significant weakness for OCC for the following reasons:

- Back-testing results show that, given the market conditions that actually occurred over the past 18 months, pro forma liquidity resources under the proposed plan would have always exceeded liquidity needs had the largest two clearing members defaulted jointly
- The supplemental and emergency liquidity measures available under the proposed plan, such as the ability to expand any of its three liquidity sources (clearing fund cash minimum requirement, bank credit facility, and CalPers credit facility) by $1 billion each, effectively bringing total potential liquidity resources to $9 billion
- The predictable nature of stressed liquidity outflows at OCC, with peaks at periods close to S&P500 equity index options expiry (the third Friday of each month, and especially in March, June, September, and December), so that, in our view, the clearinghouse has time to get prepared and use the supplementary liquidity measures listed above if need be
- Back-testing resources that show the CCP meets a "cover 2" in "extreme but plausible" conditions at a confidence level higher than 99% in the past 18 months under the new framework

In 2016, OCC received approval to open an account at the Chicago Fed. In practice, it sweeps most of cash clearing fund contributions to the Fed, mitigating credit risk.

Liquidity

Our liquidity assessment reflects our projection that sources of liquidity (mostly cash flow from operations) would exceed uses of liquidity (mostly capital expenditures of about $6 million per year) by at least 1.5 times in the next two years. In a stress scenario in which EBITDA falls by 30%, we believe the company would still have excess cash.

Principal liquidity sources

- About $40 million of cash flow from operations a year (after refunds)

Principal liquidity uses

- About $6 million of capital expenditures per year
- Dividends for 2017 and 2018 determined according to the capital plan

Rating Score Snapshot

Issuer Credit Rating: AA+/Stable/--

Business risk: Excellent (1)

- Country risk: Very Low (1)
- Industry risk: Low (2)
- Competitive position: Excellent (1)

Financial risk: Minimal (1)

- Cash flow/Leverage: N/A

Preliminary anchor: aa+

Clearing and settlement risk: 0

Modifiers

- Diversification/Portfolio effect: Neutral (no impact)
- Capital structure: Neutral (no impact)
- Liquidity: Strong (no impact)
- Financial policy: Neutral (no impact)
- Management and governance: Satisfactory (no impact)
- Comparable rating analysis: Neutral (no impact)

Stand-alone credit profile/group credit profile: aa+

Table 1

Options Clearing Corp.--Financial Summary

Industry sector: Exchanges and clearing corporations			
	--Fiscal year ended Dec. 31--		
	2016	2015	2014
Rating history	AA+/Stable/--	AA+/Stable/--	AA+/Stable/--
(Mil. $)			
Revenues	280.6	250.1	305.8
EBITDA	58.0	53.3	131.2
Funds from operations (FFO)	55.6	32.6	63.3

Table 1

Options Clearing Corp.--Financial Summary (cont.)			
Net income from continuing operations	25.6	22.5	64.3
Cash flow from operations	(48.2)	119.5	63.1
Capital expenditures	0.1	2.2	4.3
Free operating cash flow	(48.3)	117.3	58.8
Dividends paid	19.7	0.0	0.0
Discretionary cash flow	(68.0)	117.3	58.8
Debt	66.6	25.1	57.0
Preferred stock	0.0	0.0	0.0
Equity	247.9	247.0	97.1
Debt and equity	314.5	272.1	154.2
Adjusted ratios			
EBITDA margin (%)	20.7	21.3	42.9
EBITDA interest coverage (x)	9.6	10.0	18.9
FFO cash int. cov. (x)	1,810.9	1,009.6	4,066.6
Debt/EBITDA (x)	1.1	0.5	0.4
FFO/debt (%)	83.4	130.1	111.1
Cash flow from operations/debt (%)	(72.4)	476.7	110.7
Free operating cash flow/debt (%)	(72.5)	467.9	103.2
Discretionary cash flow/debt (%)	(102.1)	467.9	103.2
Net cash flow / capex (%)	32,023.2	1,479.8	1,485.5
Return on capital (%)	15.9	18.1	85.3
Return on common equity (%)	10.4	13.1	104.9
Common dividend payout ratio (un-adj.) (%)	76.9	0.0	0.0

Table 2

Clearing Risk Metrics--Options Clearing Corp.	
As of year-end 2016	
Number of members (CM)	109
Margins	
Total margin deposited (IM, bil. $)	102.736
Total required margins (bil. $)	39.7
Confidence level (%)	99
At risk / close-out period	2 days
Margin concentration	Risk concentration (%): Top 2: 19%; Top 5: 38%; Top 10: 57%
Type of collateral eligible for margins	Specific deposits (underlying securities to short equity calls), valued securities, letters of credit (LOCs), U.S. Treasury securities, government-sponsored debt (GSE), money market funds (MMF), cash, escrow deposits (on short index/equity call and put options)
General approach for computing margins	STANS for all accounts, SPAN for customer segregated futures accounts, for those accounts the higher of the two calculations apply
Margin calculation level	House/client split; house margined net; client omnibus accounts margined net; client segregated futures account margined gross

Table 2

Clearing Risk Metrics--Options Clearing Corp. (cont.)

Guarantee funds	
What does the guarantee fund intend to cover?	The idiosyncratic default by the largest clearing member (CM) under extreme but plausible market conditions, with 99% confidence; a minor systemic event involving the near-simultaneous default of two randomly chosen CMs, with 99.9% confidence
Total guaranty funds contributions (GF, bil. $)	6.9
Type of collateral eligible for clearing fund contributions	Cash, U.S. Treasury securities, and Canadian government securities
Skin in the game	In lieu of charging a loss or deficiency proportionately to the clearing fund contributions of nondefaulting clearing members, OCC may, subject to the unanimous approval of the holders of Class A Common Stock and Class B Common Stock, elect to charge such loss or deficiency in whole or in part to OCC's current earnings or retained earnings
Assessment powers	Members are required to meet any additional assessments, which have no limit on amount, until such time that they cease to be a member, subject to an exception discussed below in response with regard to members who notify OCC of their intention to terminate their membership. Section 6 of Article VIII of OCC's bylaws, a CM will not be liable to make good more than an additional 100% of the amount of its then-required contribution if (i) within five business days following such proportionate charge the CM notifies the corporation in writing that it is terminating its status as a CM, (ii) no opening purchase transaction or opening writing transaction is submitted for clearance through any of the CM's accounts and (if the CM is a market loan CM or a hedge CM) no stock loan is initiated through any of the CM's accounts after the giving of such notice, and (iii) the CM closes out or transfers all of its open positions with the corporation, in each case as promptly as practicable after the giving of such notice. Rule #/Procedure #, including version (if applicable): Sections 6 of Article VIII of OCC's bylaws
Waterfall order	1. Margin deposits of defaulter; 2. Clearing fund deposits of defaulter; 3. Clearing fund deposits of nondefaulting members; 4. Subject to meeting regulatory capital requirements, use of retained earnings by OCC is discretionary at any stage of the default (pursuant to Sections 5 and 6 of Article VIII of the bylaws, OCC may also assess nondefaulting CMs in the event of a short-fall in the clearing fund); Rule #/Procedure # including version (if applicable): Section 5 and 6 of Article VIII of OCC's bylaws and Rule 1104
Liquidity sources	
Access to central bank	No
Committed lines of credit (bil. $)	3 (a $2 billion line of credit with a syndicate of banks and a $1 billion line of credit with CalPERS)
What do the sources of liquidity intend to cover?	Cover 1 at a 99% confidence level
Default experience	No defaults experienced since MF Global

Table 3

Reconciliation Of Options Clearing Corp. Reported Amounts With S&P Global Ratings Adjusted Amounts (Mil. $)

	--Fiscal year ended Dec. 31, 2016--									
Options Clearing Corp. reported amounts										
	Debt	**Shareholders' equity**	**Revenues**	**EBITDA**	**Operating income**	**Interest expense**	**EBITDA**	**Cash flow from operations**	**Dividends**	**Capital expenditures**
Reported	--	247.9	280.6	43.5	37.6	--	43.5	(62.6)	19.7	0.1
S&P Global Ratings adjustments										
Interest expense (reported)	--	--	--	--	--	--	--	--	--	--
Interest income (reported)	--	--	--	--	--	--	2.4	--	--	--
Current tax expense (reported)	--	--	--	--	--	--	4.8	--	--	--

Table 3

Reconciliation Of Options Clearing Corp. Reported Amounts With S&P Global Ratings Adjusted Amounts (Mil. $) (cont.)

Operating leases	60.0	--	--	10.9	3.2	3.2	7.7	7.7	--	--
Postretirement benefit obligations/deferred compensation	39.5	--	--	3.5	3.5	2.8	(2.9)	6.6	--	--
Surplus cash	(32.9)	--	--	--	--	--	--	--	--	--
Nonoperating income (expense)	--	--	--	--	2.4	--	--	--	--	--
Total adjustments	66.6	--	--	14.4	9.1	6.0	12.0	14.4	--	--

S&P Global Ratings adjusted amounts

	Debt	Equity	Revenues	EBITDA	EBIT	Interest expense	Funds from operations	Cash flow from operations	Dividends	Capital expenditures
Adjusted	66.6	247.9	280.6	58.0	46.7	6.0	55.6	(48.2)	19.7	0.1

Related Criteria

- Criteria - Corporates - General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- Criteria - Financial Institutions - General: Key Credit Factors For Financial Market Infrastructure Companies, Dec. 9, 2014
- Criteria - Corporates - General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Group Rating Methodology, Nov. 19, 2013
- Criteria - Corporates - General: Corporate Methodology: Ratios And Adjustments, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities And Insurers, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Ratings Detail (As Of December 28, 2017)	
Options Clearing Corp.	
Counterparty Credit Rating	AA+/Stable/--
Counterparty Credit Ratings History	
20-Sep-2016	AA+/Stable/--
17-May-2016	AA+/Watch Neg/--
10-Jun-2013	AA+/Stable/--
Sovereign Rating	
United States of America	AA+/Stable/A-1+

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.