EQUITY RESEARCH

RBC Capital Markets

RBC Capital Markets, LLC
Adnan Butt (Analyst)
(415) 633-8588
adnan.butt@rbccm.com
John Chung (Associate)
(415) 633-8620
john.chung@rbccm.com
Jeffrey Takimoto (Associate)
(415) 633-8538
jeffrey.takimoto@rbccm.com

Sector: Biotechnology

May 4, 2015

Ocular Therapeutix, Inc.

New data shows anti-VEGF hydrogel depot last 5+ months and possibly longer

Our view: Data at ARVO was better than expected, OCUL showed hydrogel based anti-VEGFs could last up to 5-months and likely longer in vitro. Animal data out to 1-month shows stable anti-VEGF release. Some may want a partnership with a bigger biopharma, to us potential upside could be much higher should OCUL push forward on its own especially with activity lasting 4-6 months.

Key points:

- **Intravitreal anti-VEGF depots face several challenges; most already addressed and two likely to be addressed by OCUL**: 1) Manufacturing/ processing ability (addressed), 2) Protein viability (addressed), 3) Depot placement and stability (addressed), 4) Release kinetics and duration (partly addressed), 5) Safety (being addressed), 6) Efficacy (not a question since this is an anti-VEGF), 7) Approvability (straight forward path), and 8) Commercial viability (yes for 4-6 month duration). Given OCUL's progress, we like risk-reward at current levels.
- **Activity of Avastin was preserved through processing steps**. Creating a hydrogel depot of a protein is not enough as the protein must stay intact and functionally active. Poster B0226 showed that Avastin inside OCUL's hydrogel depot maintained its bioactivity.
- **Long-term release is possible with several anti-VEGF agents** released over 4-5 months in vitro. Poster B0248 showed 5 formulations tested for long-term release: two for bevacizumab (labeled A and B) and three undisclosed anti-VEGFs (labeled C, D and E). Specifically formulations C and E were out to 5 months and since C was only about 60% released, it could potentially go for an even longer duration. To us this shows OCUL could have overcome the long-term delivery hurdle.
- **Meaningful levels maintained stably for a month; longer term testing may be feasible.** Clinically meaningful tissue levels were clearly sustained through 28 days with the anti-VEGF hydrogel depot. Curves for the single intravitreal injection sloped downward decreasing to negligible levels vs. curves for hydrogel depot anti-VEGF, which remained steady over the course of a 28-day period in all three tissues tested. Since these are humanized antibodies, long term testing in animal models is challenging but OCUL could use immunosuppressants to test for a longer period in vivo if needed.
- **Early data shows tolerability, which could keep improving.** The anti-VEGF depot formulation appeared fairly safe through two months based on poster B0222. There was limited vitreous inflammation that did not change over 56 days. While there was an increase in fibrosis and hyperplasia over 56 days, the presenter tells us that these are items OCUL has already been able to improve upon so it could improve even further with more work.

Outperform
Speculative Risk
NASDAQ: OCUL; USD 22.30

Price Target USD 48.00

WHAT'S INSIDE	
☐ Rating/Risk Change	☐ Price Target Change
☐ In-Depth Report	☐ Est. Change
☐ Preview	☑ News Analysis

Scenario Analysis*

Downside Scenario	Current Price	Price Target	Upside Scenario
10.00	22.30	48.00	71.00
↓ 55%		↑ 115%	↑ 218%

*Implied Total Returns

Key Statistics

Shares O/S (MM):	21.2	Market Cap (MM):	473
Dividend:	0.00	Yield:	0.0%
		Avg. Daily Volume:	365,070

RBC Estimates

FY Dec	2014A	2015E	2016E	2017E
Revenue	0.8	2.3	4.3	14.6
EPS, Ops Diluted	(2.69)	(1.73)	(2.57)	(2.96)
P/E	NM	NM	NM	NM

Revenue	Q1	Q2	Q3	Q4
2014	0.0A	0.1A	0.1A	0.5A
2015	0.3E	0.5E	0.7E	0.9E
EPS, Ops Diluted				
2014	(2.45)A	(2.10)A	(0.48)A	(0.37)A
2015	(0.39)E	(0.42)E	(0.45)E	(0.48)E

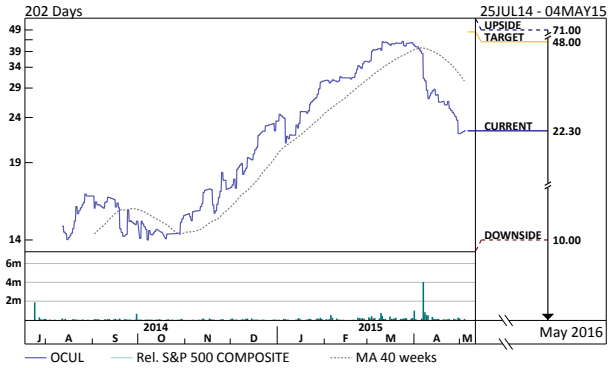
All values in USD unless otherwise noted.

Priced as of prior trading day's market close, EST (unless otherwise noted).

For Required Conflicts Disclosures, see Page 6.

Target/Upside/Downside Scenarios

Exhibit 1: Ocular Therapeutix, Inc.



Source: Bloomberg and RBC Capital Markets estimates for Upside/Downside/Target

Target price/base case

We value OCUL at $48, which includes US and EU sales with a probability of success of 85% to ReSure (~$5/share), 75% to OTX-DP inflammation (~$2/share), 60% to OTX-DP allergy (~$3/share), 55% to OTX-DP dry eye (~$9/share), 60% to OTX-TP glaucoma for (~$18/share) and 20% (prev. 15%) to Anti-VEGF hydrogel (~$13/share). We forecast US and ex-US combined peak sales of ReSure, OTX-DP inflammation, OTX-DP allergic conjunctivitis, OTX-DP dry eye, OTX-TP glaucoma, and anti-VEGF hydrogel at ~$8B and ~$10B, respectively.

Upside scenario

Our upside scenario at $71 per share includes US and EU sales with a probability of regulatory and commercial success of 70% to ReSure (~$5/share), 60% to OTX-DP inflammation (~$4/share), 55% to OTX-DP allergy (~$4/share), 30% to OTX-DP dry eye (~11/share), 45% to OTX-TP glaucoma for (~$22/share), and 40% to anti-VEGF hydrogel (~$25/share). We forecast US and ex-US combined peak sales of ReSure, OTX-DP inflammation, OTX-DP allergic conjunctivitis, OTX-DP dry eye, OTX-TP glaucoma, and anti-VEGF hydrogel at ~$9B+ and ~$11B+, respectively.

Downside scenario

Our downside scenario at $10 per share includes US and EU sales with a probability of success of 75% to ReSure (~$1/share), 70% to OTX-DP inflammation (-$1 share), 70% to OTX-DP allergy (~$1 share), 60% to OTX-DP dry eye ($2 share) and 65% to OTX-TP glaucoma for (~$8 share). We forecast US and ex-US combined product peak sales at ~$950MM and ~$700MM, respectively. The value of OTX-DP inflammation is negative because the product is launched first and it is assumed that their sales ramps alone are not high enough to support the R&D and SG&A infrastructure profitably.

Investment summary

We believe OCUL shares offer the potential for upside as the hydrogel sustained technology platform lowers clinical and development risk, allows multiple shots at success and the pipeline to be diversified, and increases the chances of a candidate making it through the clinic and onto the market. OTX-DP is in Phase III studies for inflammation and pain, and in Phase II studies for allergic conjunctivitis and dry eye. OTX-TP is in a Phase IIb study for glaucoma, having posted promising Phase IIa, and earlier stage compounds represent upside optionality. Results from these studies are expected in 2015 and 2016, assuming progress going forward through 2017. Target markets represent millions of patients worldwide, and we forecast peak sales of OCUL's products totaling ~$18B.

OCUL owns 100% of the rights to its pipeline, and patent protection extends into 2030, meaning the company is free to commercialize itself, partner, or to be acquired. Because ophthalmology remains an attractive therapeutic area and OCUL's product candidates have potential for improved dosing, convenience as well as safety advantages, progress through clinical and regulatory milestones, and any partnerships could be value-enhancing.

Potential Catalysts for OCUL Shares

- **Phase IIb data for OTX-TP in 3Q:15.** Potential to show efficacy and 3-month plug retention for glaucoma.
- **Potential partnership for OTX-DP and OTX-DP.** OCUL has the rights to both products, and a partnership is possible.
- **Potential OTX-DP approvals and launches in 2016/ 2017 in the US and EU.**
- **ReSure sales** could be higher than expectation.

Potential Risks for OCUL Shares

- **Pivotal Phase III and earlier stage studies could fail**. Phase II and Phase III data for OTX-DP are expected in 2014-2017 and one or more products could fail.
- **Sales ramp of punctum plug technology could be slow** as clinicians fail to adopt, payers put up hurdles for reimbursing branded drugs, and cheaper generics hamper market penetration.
- **Sales of ReSure Sealant could lag sales expectations** as surgeons maintain current practices.
- **OCUL could fail to find a partner** for product commercialization outside the US.
- **Other sustained release technologies could preempt OCUL's platform**, thereby leading to a move away from hydrogel based products.

Adnan Butt, (415) 633-8588; adnan.butt@rbccm.com

Exhibit 2: News flow

Timing	Expected News Flow	Program
2Q:15 (May)	Potential feasibility data at ARVO	IHD-VEGF
2Q/ 3Q:15	Phase III 'go/ no-go' decision in cataract pain/ inflamm.	OTX-DP
Mid-2015	Initiate Phase III study in allergic conjunctivitis	OTX-DP
4Q:15	Phase IIb data in glaucoma	OTX-TP
2H:15	Initiate 3rd Phase III in cataract pain/ inflamm.	OTX-DP
2015	Update on clinical program or partnership(s)	IHD-VEGF
2015	Potential pipeline update on additional programs	Hydrogel
4Q:15/ 1Q:16	Potential Phase II data in dry eye	OTX-DP
2H:15	Initiate 2nd Phase III trial in allergic conjunctivitis	OTX-DP
YE:15/ 1H:16	Phase III results in allergic conjunctivitis	OTX-DP
1H:16	Initiate Phase III study in glaucoma	OTX-TP
1H:16	Phase III 'go/ no-go' decision in dry eye	OTX-DP
Mid-/2H:16	Second Phase III results in allergic conjunctivitis	OTX-DP
2H:16	Phase III data in cataract pain/ inflamm.	OTX-DP
2H:16	File NDA/ MAA in allergic conjunctivitis	OTX-DP
YE:16/ 1H:17	File NDA/ MAA in cataract pain/ inflamm.	OTX-DP
3Q/ 4Q:17	Potential NDA approval for allergic conjunctivitis	OTX-DP
YE:17/ early 2018	Potential NDA approval for cataract pain/ inflammation	OTX-DP
1H:17	Phase III results in glaucoma	OTX-TP
2H:17/ 1H:18	File NDA/ MAA in glaucoma	OTX-TP
2017	Launch in cataract pain/ inflamm. and/ or allergic conjunctivitis	OTX-TP
2H:18/ 1H:19	Potential NDA approval for glaucoma	OTX-TP

Source: Company reports and RBC Capital Markets estimates

Exhibit 3: Pipeline

Product	Mechanism	Stage	Indication
ReSure	Ocular sealant	FDA approved	Sealant post cataract surgery
OTX-DP	Dexamethasone plug	Phase III	Post-cataract surgery for inflammation and pain
OTX-DP	Dexamethasone plug	Phase III planned	Allergic conjunctivitis
OTX-DP	Dexamethasone plug	Phase II	Dry eye
OTX-TP	Travoprost plug	Phase II	Glaucoma
OTX-MP	Moxifloxacin plug	Phase I	Bacterial conjunctivitis
Intravitreal Hydrogel Depot	Sustained release anti-VEGF depot	Pre-clinical	Wet AMD/ RVO/ DME

Source: Company reports

Valuation

We arrive at our $48 price target using a sum-of-the parts analysis for OCUL shares. The primary components of our valuation include OCUL's ReSure sealant, OTX-DP for inflammation, OTX-DP for allergy, OTX-DP for dry eye, anti-VEGF hydrogel, and OTX-TP for glaucoma product sales in the US and royalty revenues from sales in ROW. Our base, upside and downside scenarios use a discount rate of 15% to reflect potential clinical and commercial risk and assign a probability of success of the clinical and commercial roll out of ReSure, OTX-DP for inflammation, OTX-DP for allergic conjunctivitis, and OTX-TP for glaucoma.

Price target impediments

Our price target is dependent on the clinical, regulatory and commercial success of the ReSure sealant, OTX-DP inflammation, OTX-DP allergy, OTX-DP dry eye, anti-VEGF hydrogel, and OTX-TP glaucoma. The phase IIa clinical trial for OTX-TP has been completed and a Phase IIb clinical trial in OTX-TP is expected in 2Q:15. Failure to demonstrate efficacy or safety in any of these studies would be a significant setback. Furthermore, any setbacks in regulatory approvals in the US or EU, delay in launch, failure to secure a partnership outside the US, increased competition or other limitations to the market potential of these products either due to better efficacy and/or safety outcomes or pricing pressure due to the availability of generic drugs for glaucoma, could negatively affect our valuation.

Company description

Ocular Therapeutix (OCUL) is developing sustained-release drugs that target ophthalmic disorders by using its proprietary hydrogel technology as a platform. The approach has low clinical and regulatory risks as the drugs OCUL is encapsulating within its proprietary microspheres are either off-patent or about to go off-patent. Since OCUL is able to turn a number of already approved drugs typically administered as eye drops into sustained-release, long-acting products, the hydrogel technology also represents a leverageable platform and a lower risk approach for creating multiple product candidates. OCUL also markets ReSure Sealant, which was recently approved for sealing corneal incisions after cataract surgery. OTX-DP for the treatment of post-surgical ocular inflammation and pain is in Phase III trials. Product candidates undergoing Phase II testing include OTX-DP for allergic conjunctivitis and OTX-TP for glaucoma.

Ocular Therapeutix
Income Statement

Adnan Butt (415) 633 - 8588
adnan.butt@rbccm.com

($ in millions, except per share)																
Fiscal Year Ends December	2012A	2013A	2014A	1Q:15E	2Q:15E	3Q:15E	4Q:15E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Revenue																
ReSure	-	-	0.4	0.3	0.5	0.7	0.9	2.3	4.3	11.0	21.0	39.8	59.4	70.1	78.0	89.5
OTX-DP Inflammation	-	-	-	-	-	-	-	-	-	1.5	18.2	31.0	47.4	64.4	82.2	97.8
OTX-DP allergy	-	-	-	-	-	-	-	-	-	2.0	10.2	17.3	28.2	46.8	58.7	74.9
OTX-DP dry eye	-	-	-	-	-	-	-	-	-	-	-	-	23.4	83.7	146.3	211.4
OTX-TP glaucoma	-	-	-	-	-	-	-	-	-	-	2.7	14.4	91.7	194.3	308.6	435.7
ROW Royalties	-	-	-	-	-	-	-	-	-	0.1	0.8	4.6	10.3	29.2	53.7	78.4
Other	0.0	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue	**0.0**	**-**	**0.8**	**0.3**	**0.5**	**0.7**	**0.9**	**2.3**	**4.3**	**14.6**	**53.0**	**107.1**	**260.5**	**488.4**	**727.5**	**987.7**
Operating expenses																
Royalty expense	-	-	-	0.0	0.0	0.0	0.0	0.1	0.2	0.6	2.1	4.1	9.1	15.0	21.1	27.9
COGS	0.0	-	0.1	0.0	0.1	0.1	0.1	0.3	0.6	2.2	7.8	15.4	37.5	68.9	101.1	136.4
R&D	11.5	10.5	18.9	5.3	5.8	6.3	6.8	24.2	35.0	40.0	50.0	52.5	55.0	57.5	60.0	62.5
SG&A	2.1	2.4	8.9	3.2	3.5	3.9	4.3	14.9	38.0	52.5	65.0	70.0	75.0	80.0	145.5	197.5
Total operating expenses	**13.7**	**12.9**	**27.9**	**8.6**	**9.4**	**10.3**	**11.3**	**39.5**	**73.8**	**95.3**	**124.9**	**142.0**	**176.6**	**221.4**	**327.7**	**424.3**
Operating Income (Loss)	**(13.7)**	**(12.9)**	**(27.1)**	**(8.3)**	**(8.9)**	**(9.7)**	**(10.4)**	**(37.3)**	**(69.5)**	**(80.6)**	**(71.9)**	**(34.9)**	**83.9**	**267.0**	**399.8**	**563.3**
Interest income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Interest expense	(0.4)	(0.4)	(1.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)	(0.5)
Other income (expense)	(0.0)	0.0	(0.4)	(0.1)	(0.1)	(0.1)	(0.1)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)
Total other income	**(0.4)**	**(0.4)**	**(1.6)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.6)**	**(0.5)**	**(0.8)**	**(0.8)**	**(0.8)**	**(0.8)**	**(0.7)**	**(0.7)**	**(0.7)**
Pretax Income	**(14.1)**	**(13.3)**	**(28.7)**	**(8.4)**	**(9.1)**	**(9.8)**	**(10.5)**	**(37.8)**	**(70.0)**	**(81.5)**	**(72.7)**	**(35.6)**	**83.1**	**266.3**	**399.1**	**562.7**
Income tax expense	-	-	-	-	-	-	-	-	-	-	-	-	29.1	93.2	139.7	196.9
Net income (loss)	**(14.1)**	**(13.3)**	**(28.7)**	**(8.4)**	**(9.1)**	**(9.8)**	**(10.5)**	**(37.8)**	**(70.0)**	**(81.5)**	**(72.7)**	**(35.6)**	**54.0**	**173.1**	**259.4**	**365.7**
EPS - Basic (GAAP)	**($5.59)**	**($5.10)**	**($2.69)**	**($0.39)**	**($0.42)**	**($0.45)**	**($0.48)**	**($1.73)**	**($2.57)**	**($2.96)**	**($2.15)**	**($1.04)**	**$1.57**	**$4.97**	**$7.37**	**$10.29**
EPS - Diluted (GAAP)	**($5.59)**	**($5.10)**	**($2.69)**	**($0.39)**	**($0.42)**	**($0.45)**	**($0.48)**	**($1.73)**	**($2.57)**	**($2.96)**	**($2.15)**	**($1.04)**	**$1.44**	**$4.53**	**$6.67**	**$9.23**
Shares (basic)	2.5	2.6	10.7	**21.5**	21.7	21.9	22.2	21.8	27.3	27.5	33.8	34.1	34.5	34.8	35.2	35.5
Shares (diluted)	13.5	14.6	12.5	**23.3**	23.6	23.9	24.1	23.8	29.4	29.9	36.4	37.0	37.6	38.2	38.9	39.6
Operations Ratios	2012A	2013A	2014A	1Q:15E	2Q:15E	3Q:15E	4Q:15E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Margin Analysis																
COGS		-	21%	15%	15%	15%	15%	15%	15%	15%	15%	15%	17%	18%	19%	20%
R&D		-	2446%	1767%	1289%	969%	787%	1069%	808%	274%	94%	49%	21%	12%	8%	6%
SG&A		-	1152%	1067%	778%	600%	497%	658%	877%	359%	123%	65%	29%	16%	20%	20%
Operating Margin		-	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	32%	55%	55%	57%
Income Tax rate		-	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	35%	35%	35%	35%
Net Margin		-	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	21%	35%	36%	37%

Source: Company reports and RBC Capital Markets estimates

Required disclosures

Conflicts disclosures

The analyst(s) responsible for preparing this research report received compensation that is based upon various factors, including total revenues of the member companies of RBC Capital Markets and its affiliates, a portion of which are or have been generated by investment banking activities of the member companies of RBC Capital Markets and its affiliates.

Please note that current conflicts disclosures may differ from those as of the publication date on, and as set forth in, this report. To access current conflicts disclosures, clients should refer to https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?entityId=1 or send a request to RBC CM Research Publishing, P.O. Box 50, 200 Bay Street, Royal Bank Plaza, 29th Floor, South Tower, Toronto, Ontario M5J 2W7.

A member company of RBC Capital Markets or one of its affiliates managed or co-managed a public offering of securities for Ocular Therapeutix, Inc. in the past 12 months.

A member company of RBC Capital Markets or one of its affiliates received compensation for investment banking services from Ocular Therapeutix, Inc. in the past 12 months.

RBC Capital Markets, LLC makes a market in the securities of Ocular Therapeutix, Inc..

RBC Capital Markets has provided Ocular Therapeutix, Inc. with investment banking services in the past 12 months.

Explanation of RBC Capital Markets Equity rating system

An analyst's 'sector' is the universe of companies for which the analyst provides research coverage. Accordingly, the rating assigned to a particular stock represents solely the analyst's view of how that stock will perform over the next 12 months relative to the analyst's sector average. Although RBC Capital Markets' ratings of Top Pick (TP)/Outperform (O), Sector Perform (SP), and Underperform (U) most closely correspond to Buy, Hold/Neutral and Sell, respectively, the meanings are not the same because our ratings are determined on a relative basis.

Ratings

Top Pick (TP): Represents analyst's best idea in the sector; expected to provide significant absolute total return over 12 months with a favorable risk-reward ratio.

Outperform (O): Expected to materially outperform sector average over 12 months.

Sector Perform (SP): Returns expected to be in line with sector average over 12 months.

Underperform (U): Returns expected to be materially below sector average over 12 months.

Risk Rating

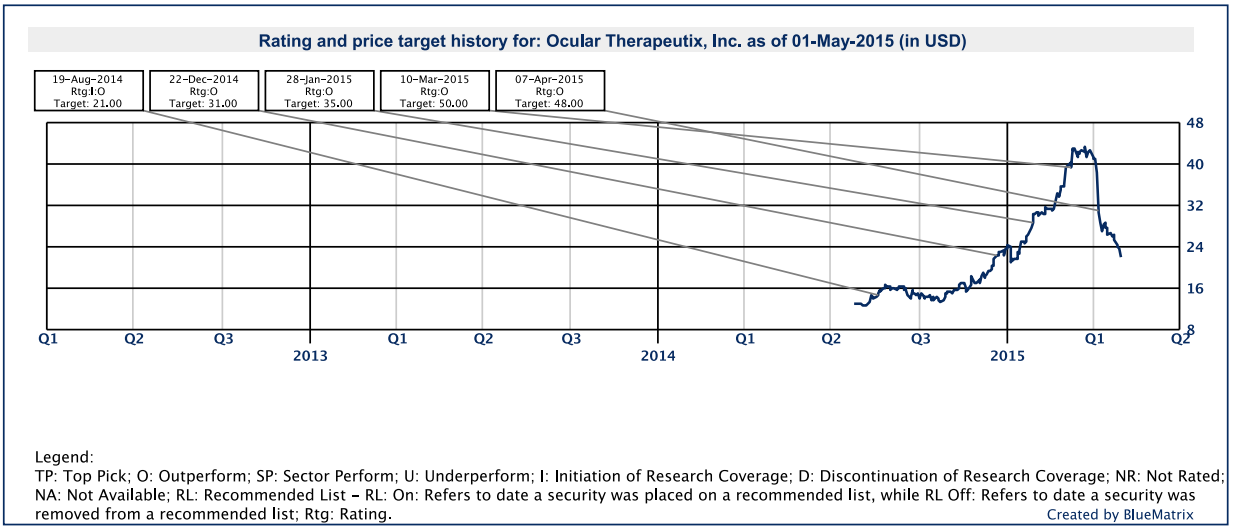
As of March 31, 2013, RBC Capital Markets suspends its Average and Above Average risk ratings. The **Speculative** risk rating reflects a security's lower level of financial or operating predictability, illiquid share trading volumes, high balance sheet leverage, or limited operating history that result in a higher expectation of financial and/or stock price volatility.

Distribution of ratings

For the purpose of ratings distributions, regulatory rules require member firms to assign ratings to one of three rating categories - Buy, Hold/Neutral, or Sell - regardless of a firm's own rating categories. Although RBC Capital Markets' ratings of Top Pick(TP)/Outperform (O), Sector Perform (SP), and Underperform (U) most closely correspond to Buy, Hold/Neutral and Sell, respectively, the meanings are not the same because our ratings are determined on a relative basis (as described below).

Distribution of ratings
RBC Capital Markets, Equity Research
As of 31-Mar-2015

			Investment Banking Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [Top Pick & Outperform]	909	52.33	280	30.80
HOLD [Sector Perform]	713	41.05	125	17.53
SELL [Underperform]	115	6.62	5	4.35



References to a Recommended List in the recommendation history chart may include one or more recommended lists or model portfolios maintained by RBC Wealth Management or one of its affiliates. RBC Wealth Management recommended lists include the Guided Portfolio: Prime Income (RL 6), the Guided Portfolio: Large Cap (RL 7), the Guided Portfolio: Dividend Growth (RL 8), the Guided Portfolio: Midcap 111 (RL 9), the Guided Portfolio: ADR (RL 10), and the Guided Portfolio: Global Equity (U.S.) (RL 11). RBC Capital Markets recommended lists include the Strategy Focus List and the Fundamental Equity Weightings (FEW) portfolios. The abbreviation 'RL On' means the date a security was placed on a Recommended List. The abbreviation 'RL Off' means the date a security was removed from a Recommended List.

Equity valuation and risks

For valuation methods used to determine, and risks that may impede achievement of, price targets for covered companies, please see the most recent company-specific research report at https://www.rbcinsight.com or send a request to RBC Capital Markets Research Publishing, P.O. Box 50, 200 Bay Street, Royal Bank Plaza, 29th Floor, South Tower, Toronto, Ontario M5J 2W7.

Conflicts policy

RBC Capital Markets Policy for Managing Conflicts of Interest in Relation to Investment Research is available from us on request. To access our current policy, clients should refer to
https://www.rbccm.com/global/file-414164.pdf
or send a request to RBC Capital Markets Research Publishing, P.O. Box 50, 200 Bay Street, Royal Bank Plaza, 29th Floor, South Tower, Toronto, Ontario M5J 2W7. We reserve the right to amend or supplement this policy at any time.

Dissemination of research and short-term trade ideas

RBC Capital Markets endeavors to make all reasonable efforts to provide research simultaneously to all eligible clients, having regard to local time zones in overseas jurisdictions. RBC Capital Markets' equity research is posted to our proprietary website to ensure eligible clients receive coverage initiations and changes in ratings, targets and opinions in a timely manner. Additional distribution may be done by the sales personnel via email, fax, or other electronic means, or regular mail. Clients may also receive our research via third party vendors. RBC Capital Markets also provides eligible clients with access to SPARC on the Firms proprietary INSIGHT website, via email and via third-party vendors. SPARC contains market color and commentary regarding subject companies on which the Firm currently provides equity research coverage. Research Analysts may, from time to time, include short-term trade ideas in research reports and / or in SPARC. A short-term trade idea offers a short-term view on how a security may trade, based on market and trading events, and the resulting trading opportunity that may be available. A short-term trade idea may differ from the price targets and recommendations in our published research reports reflecting the research analyst's views of the longer-term (one year) prospects of the subject company, as a result of the differing time horizons, methodologies and/or other factors. Thus, it is possible that a subject company's common equity that is considered a long-term

'Sector Perform' or even an 'Underperform' might present a short-term buying opportunity as a result of temporary selling pressure in the market; conversely, a subject company's common equity rated a long-term 'Outperform' could be considered susceptible to a short-term downward price correction. Short-term trade ideas are not ratings, nor are they part of any ratings system, and the firm generally does not intend, nor undertakes any obligation, to maintain or update short-term trade ideas. Short-term trade ideas may not be suitable for all investors and have not been tailored to individual investor circumstances and objectives, and investors should make their own independent decisions regarding any securities or strategies discussed herein. Please contact your investment advisor or institutional salesperson for more information regarding RBC Capital Markets' research.

Analyst certification

All of the views expressed in this report accurately reflect the personal views of the responsible analyst(s) about any and all of the subject securities or issuers. No part of the compensation of the responsible analyst(s) named herein is, or will be, directly or indirectly, related to the specific recommendations or views expressed by the responsible analyst(s) in this report.

Disclaimer

or possible acquisition of a particular financial product, a recipient in Australia should obtain any relevant disclosure document prepared in respect of that product and consider that document before making any decision about whether to acquire the product. This research report is not for retail investors as defined in section 761G of the Corporations Act.

To Hong Kong Residents:

This publication is distributed in Hong Kong by RBC Capital Markets (Hong Kong) Limited and Royal Bank of Canada, Hong Kong Branch (both entities which are regulated by the Hong Kong Monetary Authority ('HKMA') and the Securities and Futures Commission ('SFC')). Financial Services provided to Australia: Financial services may be provided in Australia in accordance with applicable law. Financial services provided by the Royal Bank of Canada, Hong Kong Branch are provided pursuant to the Royal Bank of Canada's Australian Financial Services Licence ('AFSL') (No. 246521). RBC Capital Markets (Hong Kong) Limited is exempt from the requirement to hold an AFSL under the Corporations Act 2001 in respect of the provision of such financial services. RBC Capital Markets (Hong Kong) Limited is regulated by the HKMA and the SFC under the laws of Hong Kong, which differ from Australian laws.

To Singapore Residents:

This publication is distributed in Singapore by the Royal Bank of Canada, Singapore Branch, a registered entity granted offshore bank licence by the Monetary Authority of Singapore. This material has been prepared for general circulation and does not take into account the objectives, financial situation, or needs of any recipient. You are advised to seek independent advice from a financial adviser before purchasing any product. If you do not obtain independent advice, you should consider whether the product is suitable for you. Past performance is not indicative of future performance. If you have any questions related to this publication, please contact the Royal Bank of Canada, Singapore Branch. Royal Bank of Canada, Singapore Branch accepts responsibility for this report and its dissemination in Singapore.

To Japanese Residents:

Unless otherwise exempted by Japanese law, this publication is distributed in Japan by or through RBC Capital Markets (Japan) Ltd., a registered type one financial instruments firm and/or Royal Bank of Canada, Tokyo Branch, a licensed foreign bank.