Morgan Stanley

MORGAN STANLEY RESEARCH
NORTH AMERICA

Morgan Stanley & Co. LLC

David Friedman, M.D.
David.Friedman@morganstanley.com
+1 212 761 4217

Sara Slifka
Sara.Slifka@morganstanley.com
+1 212 761 3920

Brienne Kugler
Brienne.Kugler@morganstanley.com
+1 212 761 6209

October 21, 2013

Stock Rating
Overweight

Industry View
In-Line

Initiation

Ophthotech Corp

First PDGF Inhibitor for Wet AMD; Initiate at OW, PT $56

We see Ophthotech's lead asset, Fovista, a PDGF inhibitor, as a drug that has a good chance of clinical and commercial success for wet AMD.

We are initiating coverage on Ophthotech with an OW rating and $56 PT. The lead asset, Fovista, is a first in class PDGF inhibitor in Ph 3 trials in combination with marketed anti-VEGF drugs for the treatment of wet AMD. **We believe Fovista used in combination with anti-VEGF therapies has the ability to improve the vision benefits seen with anti-VEGF monotherapy in wet AMD pts, creating a compelling and potentially large commercial opportunity.** Ophthotech also has a Ph 1/2 inhibitor of C5, ARC1905, potentially for wet AMD. This asset is too early for us to value. While there is ~2 yrs to Ph 3 data for Fovista, likely yielding some stock discount to intrinsic value, we believe this drug has a good chance of Ph 3 success and sig. sales potential.

Clinical: Fovista is currently in three combination Ph 3 wet AMD trials (two with Lucentis, one with Eylea or Avastin). Data from a large, Lucentis controlled Ph 2b trial showed that Fovista + Lucentis improved 24 wk vision gains vs. Lucentis alone (10.6 letter gain with combo vs. 6.5 letter gain with Lucentis) as well as provided incremental gains on most other vision metrics (Ex. 1). The safety profile of the drug was roughly similar to control. There were minimal incremental problems from the additional injection, as Fovista and Lucentis were sequentially injected 30 min apart in Ph 2.

Commercial: While anti-VEGF drugs work well in wet AMD pts, **a)** ~20% of pts still lose vision in the first yr on drug, **b)** most pts do not return to normal vision, and **c)** most pts have progressive vision loss over time. We expect Ph 3 success given the similar trial design to Ph 2. With success in Ph 3, **our work suggests peak WW sales for Fovista of >$1.5bn**. See inside for detailed commercial assumptions (p. 10-12).

Risks: Fovista Ph 3 trial failure (or discordance across trials) is the greatest risk in the near term. Longer term, we expect the PDGF space to become competitive, although we see value in the first mover advantage here.

Next Catalysts: Fovista Ph 3 data is expected in 2016. Ophthotech is considering the initiation of exploratory trials with Fovista in other indications (discussed inside) in 2014 with data from these trials potentially in 2015.

Key Ratios and Statistics

Reuters: OPHT.O Bloomberg: OPHT US
Biotechnology / United States of America

Price target	**$56.00**
Shr price, close (Oct 18, 2013)	$29.25
Mkt cap, curr (mm)	$884
52-Week Range	$36.00-23.00

Fiscal Year ending	**12/12**	**12/13e**	**12/14e**	**12/15e**
ModelWare EPS ($)	**(1.70)**	**(2.87)**	**(2.85)**	**(3.32)**
P/E	**NM**	**NM**	**NM**	**NM**
Consensus EPS ($)§	**-**	**-**	**-**	**-**
Div yld (%)	-	0.0	0.0	0.0

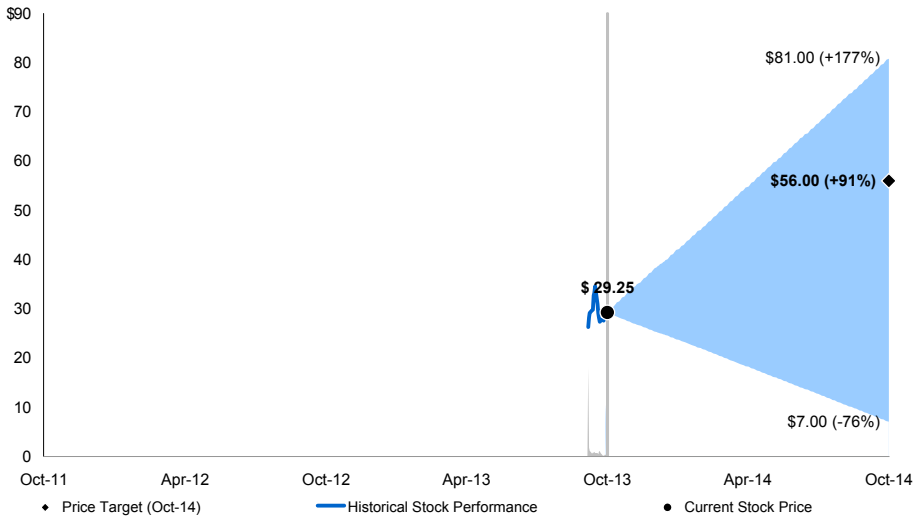
Unless otherwise noted, all metrics are based on Morgan Stanley ModelWare framework (please see explanation later in this note).
§ = Consensus data is provided by Thomson Reuters Estimates.
e = Morgan Stanley Research estimates

Wet AMD	Disease of the central portion of the retina responsible for detailed central vision and color perception caused by abnormal new blood vessel formation beneath the retina
VEGF (vascular endothelial growth factor)	Secreted by pericytes and other cells; help support blood vessel growth
PDGF (platelet derived growth factor)	Protein that helps regulate cells on blood vessels called pericytes, which support and stabilize newly formed blood vessels
Complement Cascade	Normal part of the immune system

Source: Morgan Stanley Research

Risk-Reward Snapshot: Ophthotech (OPHT, OW, PT $56)

Fovista's Success Drives Risk-Reward



Source: Morgan Stanley Research estimates, Thomson Reuters

Price Target $56		We derive our PT from a discounted cash flow analysis that uses a WACC of 15% and a 0% terminal growth rate. The revenue driver in our model is the WW launch of Fovista in wet AMD in 2H17 (US) and 2018 (EU/ROW).
Bull Case $81	**DCF**	**Fovista gains significant share in the wet AMD market. Limited competition from earlier stage anti-PDGF/VEGF combinations.** Our bull case assumes that Fovista gains ~40% share of the overall wet AMD market. This share is driven by Fovista use in ~45% of Lucentis treated eyes, 33% of Eylea treated eyes and ~40% of Avastin treated eyes. This scenario assumes 1) Regeneron's anti-PDGF/Eylea combination makes it to market by ~2020, but does not take significant share from Fovista, and 2) Fovista is able to gain meaningful traction in combination with Avastin despite its likely high cost per injection. We model WW Fovista sales of >$2bn with ~$1.5bn in sales in the US.
Base Case $56	**DCF**	**Fovista gains decent share in the wet AMD market, but loses some share to competition in 2020 and beyond.** Our base case scenario assumes Fovista approval and ~30% peak share of the overall wet AMD market. This share is made up of Fovista use in ~40% of Lucentis treated eyes, ~33% of Eylea treated eyes at peak and ~30% of Avastin treated eyes. This scenario assumes 1) Regeneron's anti-PDGF/Eylea combination launches in 2020 and rapidly takes share from Fovista, and 2) Fovista use in combination with Avastin is less than that with the other two anti-VEGF therapies as patients treated with Avastin are often those that are unable to afford Lucentis/Eylea, and these patients may also be unable to afford the addition of Fovista. We model peak WW Fovista sales of ~$1.7bn with >$1bn sales in the US.
Bear Case $7	**Cash Based Value**	**Fovista fails.** Our bear case assumes Fovista fails in its Ph 3 wet AMD trials either due to insufficient efficacy or safety concerns. Given that Fovista is Ophthotech's only late stage asset, we would expect the stock to trade at or near cash in the case of Ph 3 failure. We view this scenario as unlikely given Fovista data to date.

Investment Thesis

- We are OW OPHT as we believe the company's lead asset Fovista has encouraging data in wet AMD to date and WW sales potential of >$1.5bn.
- Fovista, a PDGF inhibitor, is in Ph 3 in combination with anti-VEGF therapy for the treatment of wet AMD. Ph 2b data suggest Fovista + anti-VEGF leads to greater vision improvement than anti-VEGF therapy alone.
- Fovista's Ph 3 program largely mimics its Ph 2b and we expect success in 2016, followed by a 2016 NDA filing and potential launch in 2017.
- While anti-VEGF therapies work well in many pts with wet- AMD, ~20% of pts initiating treatment with these drugs continue to lose vision over the course of a year and most pts have progressive vision loss over time.
- Physician feedback suggests that 1) all pts with wet AMD should be treated, 2) the goal of treatment is to provide the greatest letter benefit upfront, and 3) a gain of even 2-3 letters makes a difference. We model >$1bn peak sales in the US and ~$500mn+ ex-US.
- Ophthotech is considering exploratory trials for Fovista in add'l indications such as wet AMD VEGF failures, proliferative vitreoretinopathy, and von Hippel Lindau disease. These indications as well as any potential success from Ophthotech's earlier stage asset, ARC1905, are upside to our model.

Risks to our price target
1) Fovista could fail in Ph 3 either due to insufficient efficacy or a safety issue, 2) Fovista does not yet have data in combination with Eylea or Avastin and it is possible that 1) these combinations show different results than the Lucentis + Fovista combination and/or 2) the FDA or EMEA could require add'l data for these less well studied combinations.

Investment Case

Summary & Conclusions

We are initiating coverage of OPHT with an Overweight rating and a $56 price target. Ophthotech is a biopharmaceutical company focused on developing drugs for the treatment of eye diseases. **The key value driver for the company is Fovista,** a platelet derived growth factor (PDGF) inhibitor in Ph 3 for the treatment of wet age related macular degeneration (wet AMD; data 2016).

Ophthotech also has **ARC1905,** an eye-targeted C5 inhibitor (part of the complement cascade). We do not currently assign any value or expected spending to this drug.

Fovista

Ph 2b Data - Additional Benefit, Modest Safety Risk

Fovista is currently being developed for use in combination with the current standard for wet AMD, anti-VEGF therapy. Currently approved versions include Roche/Novartis' Lucentis and Regeneron/Bayer's Eylea. Roche's Avastin, a cancer therapy with the same mechanism of action as Lucentis, is also used off-label for wet AMD (more in the US than ex-US).

To date, Fovista has been studied in a Ph 2b trial comparing Fovista + Lucentis vs. Lucentis alone. In this trial (Ex. 1), separate, sequential intravitreal (i.e. into the eye) injections of 1.5mg Fovista and 0.5mg Lucentis were administered every 4 weeks. The combination yielded statistically significant improvements vs. Lucentis monotherapy on the primary endpoint of mean change in visual acuity at 24 weeks based on the EDTRS vision scale (Ex. 8). The proportion of patients both a) gaining multiple lines of vision, and b) losing multiple lines of vision were improved with the addition of Fovista.

Exhibit 1

Ph 2b Shows Solid Fovista Vision Improvements

	Lucentis 0.5mg Q4W	0.3mg Fovista + Lucentis Q4W	1.5mg Fovista + Lucentis Q4W
N	147	147	151
Baseline VA (letters)	50.6	50.6	49.3
Mean change in visual acuity at wk 24 (ETDRS letters)	**6.5**	**8.8**	**10.6**
Mean change in visual acuity at wk 12 (ETDRS letters)	5.1	7.2	8.7
Proportion of pts **gaining ≥15** letters at wk 24	34%	33%	39%
Proportion of pts **gaining > 20** letters at wk 24	11.6%	n/a	19.9%
Proportion of pts **gaining > 25** letters at wk 24	4.1%	n/a	11.9%
Proportion of pts **losing ≥5** letters at wk 24	21.5%	n/a	8.3%
Proportion of pts **losing ≥10** letters at wk 24	12.5%	n/a	3.4%

Source: Company Data, Morgan Stanley Research

The theoretical safety risks for Fovista are twofold – it is a novel mechanism drug and it requires sequential intravitreal injections. As noted below (Ex. 2) the biggest relative increase in adverse events was seen with increased intra-ocular pressure (IOP), likely related to the extra 50 µL volume of Fovista on top of Lucentis' 50 µL volume. This problem typically resolves with time, can be further and more quickly ameliorated with certain eye drops, and can be monitored non-invasively.

Exhibit 2

Ph 2b Safety Shows Fovista Addition Safe

	Lucentis	0.3mg Fovista + Lucentis	1.5mg Fovista + Lucentis
N	148	149	152
Lesion size (DA)	1.8	1.9	1.5
Baseline VA (letters)	50.6	50.6	49.3
Conjunctival hemorrhage	25%	22.8%	33.6%
Punctate keratitis	6.8%	12.8%	9.9%
Eye pain	5.4%	6.7%	8.6%
Conjunctival hyperemia	8.8%	6.0%	8.6%
Subretinal fibrosis	5.4%	4.0%	3.3%
IOP increased	2.7%	5.4%	5.9%
ALL	**54.1%**	**57.7%**	**69.7%**
Mean change in BCVA (at wk 24)	6.5	8.8	10.6

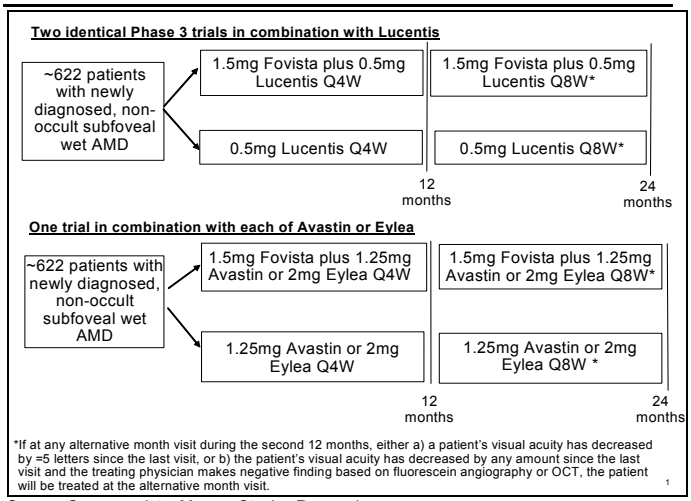
Source: Company Data, Morgan Stanley Research

We Expect Ph 3 Success

Fovista is currently being studied in three Ph 3 trials: 1) two trials in combination with Lucentis vs. Lucentis monotherapy, and 2) one trial in combination with either Avastin or Eylea vs. Avastin/Eylea monotherapy. The Fovista Ph 3 trials (Ex. 3) largely mimic the successful Ph 2b, which reduces clinical trial risk, in our view. We expect a Ph 3 outcome and visual benefit similar to that observed in Ph 2b.

In our view, the key unknowns heading into Ph 3 and the regulatory process include:
a) the "transferability" of data from a Lucentis combination to an Eyelea or Avastin combination,
b) whether Fovista's benefit will be at least sustained beyond 24 weeks in larger sample sizes,
c) whether Fovista's benefit will be maintained with injections spaced out >every four weeks,
d) will the FDA and EMEA accept only one trial in combination with Eylea or Avastin, and
e) what happens if there are discordant outcomes between the three trials.
We are optimistic that none of these issues will manifest, and discuss our rationale inside in the Fovista section.

Exhibit 3
Fovista Ph 3 Program



Source: Company data, Morgan Stanley Research

Commercial Opportunity Significant

Wet AMD is a disease of the central portion of the retina, known as the macula, which is responsible for detailed central vision and color perception. In wet AMD, abnormal new blood vessels idiopathically form beneath the retina leading to blood vessel leakage, fluid build up, retinal distortion, and scar formation. If untreated, progressive retinal damage results in irreversible and severe vision loss leading to blindness. We estimate that there are potentially > 4mn patients with wet AMD globally, with only 1+mn currently diagnosed and treated.

The current standard of care for wet AMD is anti-VEGF therapy (Roche/Novartis' Lucentis, Regeneron/Bayer's Eylea, Roche's Avastin off-label). Lucentis and Eylea are tracking to >$5bn in 2013 sales (Ex. 4), with the majority likely from wet AMD pts. Avastin is much less expensive, generates less revenue, and Roche does not break out AMD related sales.

Exhibit 4
Global anti-VEGF Sales Tracking >$5bn in 2013

	2006	2007	2008	2009	2010	2011	2012	1H13
Lucentis US	$381	$826	$889	$1,106	$1,403	$1,721	$1,585	$881
Lucentis ROW	$19	$393	$886	$1,232	$1,533	$2,050	$2,398	$1,172
Lucentis Total	**$400**	**$1,219**	**$1,775**	**$2,338**	**$2,936**	**$3,771**	**$3,983**	**$2,053**
Eylea US	0	0	0	0	0	$24.8	$837.9	$644
Eylea ROW	0	0	0	0	0	0	$19	$160
Eylea Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$25**	**$857**	**$804**
Total Anti-VEGF	**$400**	**$1,219**	**$1,775**	**$2,338**	**$2,936**	**$3,796**	**$4,840**	**$2,857**

Source: Company Data, Morgan Stanley Research

These therapies work well, but visual benefit is still limited. In the Lucentis and Eylea Ph 3 trials, a) 18-22% of patients still lost vision over the course of one year, b) the majority of pts do not return to normal vision levels, and c) the majority of pts likely will end up progressing over time. Therefore, we and physicians still see a significant unmet need for therapies on top of anti-VEGF drugs.

We Model ~$1.7bn Peak WW Fovista Sales in 2021

Our 2021 WW sales of $1.7bn (~$1bn US, ~$470mn EU, ~$140mn ex-US/ex-EU) assumes >400K Fovista treated wet AMD pts WW (~250K US, ~160+K ex-US). This equates to a ~30% overall share of VEGF treated pts and ~10% of wet AMD pts overall. We assume an average number of vials per patient per year of ~4.2 (in-line with VEGF drugs), and a gross price per vial at launch of ~$1100 in the US.

Our market share assumptions are supported by physician and market diligence which suggest to us that:
a) physicians believe all wet AMD patients should be treated,
b) the goal of treatment is to provide the greatest vision benefit upfront as patients inevitably decline, and
c) a gain on the ETDRS (Early Treatment Diabetic Retinopathy Study) eye chart as little as 2-3 letters makes a clinical difference (i.e. is noticeable for patients).

We acknowledge that there are likely offsets to this bullish diligence, including the cost and procedure logistics for adding Fovista (discussed more inside). In addition, it is likely that there is a spectrum of physician and pt attitudes to the risk/cost/benefit equation that Fovista may provide. However netting these risks out, we believe that if the benefits demonstrated in Ph 2b are replicated in Ph 3 that our share assumptions are reasonable.

Ophthotech currently owns WW rights to Fovista. Our present model assumes that Ophthotech markets Fovista in the US and partners the drug ex-US. We model a 22-26% royalty to Ophthotech on Fovista sales in the EU, and a high single digit royalty on Fovista sales ex-US/ex-EU (assumes more regional type partnerships).

Patent Estate Should be Sufficient

Fovista's composition of matter patent expires in 2017 in the US and 2018 in the EU/Japan, around the time of the likely launch of Fovista. However, Fovista has method of treatment patents covering its use in combination with anti-VEGF drugs for the treatment of wet AMD that do not expire until 2026. While we do not expect this to prevent competitors, we do expect it to prevent a generic Fovista from entering (i.e. a competitor would need to develop their own molecule and run their own trials). In addition, Ophthotech has an exclusive license for Nektar PEG mfg patents (PEG modification allows for long half life of Fovista) that also expire in 2026.

Potential to Expand Use of Fovista
Ophthotech is likely to evaluate the clinical development of Fovista in a number of other ophthalmic conditions including:
a) wet AMD pts failing anti-VEGF therapy,
b) proliferative vitreoretinopathy, and
c) retinal manifestations of von Hippel-Lindau disease.

Exploratory trials could potentially begin in 2014, with data in 2015. We do not attribute value to these incremental indications, as we have yet to see proof of concept data.

ARC1905

ARC1905 is an inhibitor of C5 – a part of the complement cascade (a part of the immune system). Ophthotech has completed a Ph 1/2a trial for this drug in wet AMD. This 60 pt trial explored ARC1905 in combination with Lucentis and showed a) no dose limiting toxicities, and b) a trend towards an increase in visual acuity from baseline with an improvement of 13.6 letters (0.3mg), 11.7 letters (1mg) and 15.3 letters (2mg) at a 24 week follow up visit.

Ophthotech could try and run a clinical trial of ARC1905 plus anti-VEGF therapy (+/- Fovista) in patients with wet AMD that do not respond adequately to anti-VEGF monotherapy. However, the timing of progression forward, path to market, and efficacy potential remain unclear. Therefore, we do not include any value for ARC1905.

Exhibit 5

Catalyst Calendar

Drug	Type	Event	Expected Timing
Fovista	Product Advancement	Begin potential exploratory trials in other indications	2014
Fovista	Clinical Data	Data from potential exploratory trials in other indications	2015
Fovista	Clinical Data	Ph 3 trials with Lucentis, Eylea and Avastin	2016
Fovista	Regulatory	File NDA and MAA for Fovista in wet AMD	2H16
Fovista	Product Advancement	Begin small registrational trial in Japan	2017
Fovista	Regulatory	Fovista approval	2H17

Source: Company Data, Morgan Stanley Research

Valuation

Exhibit 6
DCF Drives Valuation

	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Free Cash Flow	($40)	($82)	($99)	$3	($60)	$315	$396	$516	$524	$530	$517	$513	$512	$512	$410	$328	$262
YoY Growth		*104%*	*21.4%*	*-103.3%*	*-1931%*	*-625.1%*	*25.5%*	*30.4%*	*1.5%*	*1.2%*	*-2.6%*	*-0.7%*	*-0.2%*	*0.0%*	*-20.0%*	*-20.0%*	*-20.0%*
Net Cash Proxy for Dilution	($2.54)	($4.29)	($5.5)	($6.8)	($8.2)	($9.8)	($7.7)	($8.2)	($8.8)	($9.1)	($8.8)	($8.8)	($8.8)	($8.8)	($8.8)	($8.8)	($8.8)
Free Cash Flow for DCF	($42.7)	($86.1)	($104.8)	($3.5)	($68.2)	$305.6	$388.1	$507.8	$515.2	$521.2	$507.7	$504.4	$503.5	$503.3	$400.9	$319.0	$253.4
Present Value of Free Cash Flow	($47.4)	($83.2)	($88.0)	($2.6)	($43.3)	$168.7	$186.3	$212.0	$187.0	$164.5	$139.4	$120.4	$104.5	$90.8	$62.9	$43.5	$30.1

Source: Company data, Morgan Stanley Research estimates

Exhibit 7
DCF Valuation Suggests Upside

Valuation Date	**2013.8**
Discount Rate	**15%**
Terminal Growth Rate	0%
Terminal Value Year	2029
Sum of Discounted FCF	$1,281
Discounted Terminal Value	$200
Net Cash	$219
Equity Value	**$1,700**
Equity Value/Sh	**$56**
Shares Outstanding (Basic)	30.4

Source: Company Data, Morgan Stanley Research estimates

$56 PT includes Fovista in wet AMD.
We derive our PT from a discounted cash flow (DCF) analysis that uses a WACC of 15% and a terminal growth rate of 0% post 2029. We incorporate the cash cost of stock options

Valuation Methodology: We use a DCF to value Ophthotech as well as most other companies under coverage. We believe a DCF best captures the long-term nature of drug development and commercialization. We do not feel that a multiples analysis accomplishes the same goal, as it only evaluates a company during a snapshot in time.
Discount Rate: We typically apply a discount rate of 15% to development stage companies that have a fair amount of risk.
Terminal Growth Rate: Our modeled cash flows extend to 2023. Beyond this point, we grow free cash flows from 2023-27 at 25% of the prior year's growth rate. In 2027-29 we decline cash flows by 20% per year to account for the potential presence of a generic Fovista after the 2026 patent expiry. Beyond 2029, we use a terminal growth rate of 0%.

Revenue: The revenue driver in our model is Fovista.

Economics: Ophthotech has WW rights to Fovista. We assume an EU/ROW partner. We model royalties to Ophthotech in the low 20s on EU sales and high singe digits on ROW sales. Ophthotech also has several low single digit royalty obligations on Fovista sales. 1) For rights to anti-PDGF aptamers, Ophthotech owes OSI a royalty at a low single digit percentage of net sales – we estimate 2.5%. 2) For use of Nektar's technology, Ophthotech is obligated to pay Nektar tiered royalties at low to mid-single digit percentages of net sales – we estimate 2-4%. 3) In conjunction with a May 23rd, 2013 financing, Novo AS gained rights to a low to mid single digit percentage of net sales. This financing can be drawn in three separate tranches with additional royalty obligations, with each tranche – we assume Ophthotech uses 2/3 tranches and a corresponding 4% royalty obligation.

COGS: We assume a drug cost of ~5-7% of sales, which in addition to royalty obligations leads to total COGS of ~20%.

Operating Expenses:
R&D: We expect R&D to increase over the next few years as Ophthotech runs the Fovista Ph 3 program (1 yr data in 2016). Post 2016, we expect R&D to begin to decline.
SG&A: We expect SG&A to be relatively stable through 2017. We expect a sig. increase in 2017+ as Ophthotech builds a US infrastructure to market Fovista.

Financings: We model a $100mn upfront from a partner and a ~$145mn financing in 2016.

Key Risks Include: 1) Fovista fails to demonstrate sufficient efficacy and safety for approval, 2) the FDA and EMEA deem one trial with Avastin and Eylea as insufficient for approval and require additional data, which could result in an approval delay for these combinations, 3) Ophthotech has difficulty finding an ex-US partner, which could result in additional financing needs, 4) the commercial potential for Fovista is more limited than we expect if a) two injections are logistically difficult in the real-world, b) two injections are a bigger hurdle for patients and/or payors than we anticipate, or c) competition has a larger impact than we expect.

Fovista - Potential 1st PDGF Inhibitor for Wet AMD

Ophthotech's lead asset is Fovista, an intravitreal PDGF inhibitor currently in Ph 3 for the treatment of wet AMD in addition to standard of care (i.e. anti-VEGF therapy). **We believe Fovista has a good chance of Ph 3 success (data 2016), and if approved, we believe peak WW sales of >$1.5bn are achievable.**

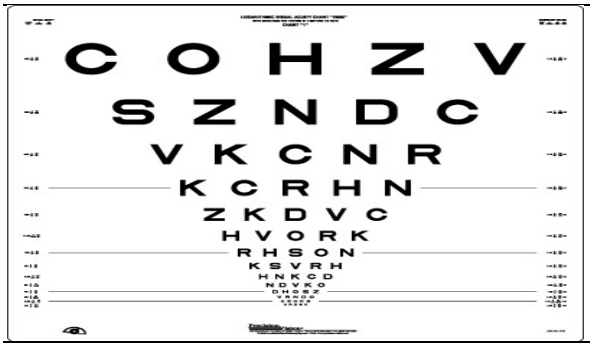
Ph 2b Sets Up Ph 3 Fovista Success

Efficacy: Ph 2b: Fovista Data Strong

Fovista's three arm Ph 2b compared low dose (0.3mg) and high dose (1.5mg) Fovista, both in combination with Lucentis, vs. Lucentis monotherapy in ~445 wet AMD patients (Ex. 9). The primary endpoint of this trial was mean change in visual acuity from baseline at 24 weeks as measured on the ETDRS (Early Treatment Diabetic Retinopathy Study) eye chart (Ex. 8). This endpoint was included as a secondary endpoint for the anti-VEGF pivotal trials.

Exhibit 8

ETDRS Eye Chart: 5 Letters = 1 Line



Source: Company Data, Morgan Stanley Research

The high dose Fovista combination arm yielded a statistically significant and, in our view, clinically meaningful ~4 letter benefit vs. Lucentis monotherapy. The low dose Fovista arm was not differentiated from Lucentis monotherapy, but was 1/5th the amount of Fovista per dose.

In addition to the primary endpoint, and in line with the primary endpoints from the pivotal anti-VEGF trials, Ophthotech measured the proportion of pts that both gained and lost significant numbers of lines of vision (the primary endpoint for Lucentis/Eylea was the proportion of pts losing >15 letters by 52 wks). In the Ph 2b, a greater portion of patients treated with the Fovista + Lucentis combination achieved 3, 4, and 5+ line gains on the ETDRS eye chart vs. Lucentis alone. In addition, a smaller proportion of pts lost 1-2+ lines of vision.

Exhibit 9

Ph 2b Shows Solid Vision Improvements

	Lucentis 0.5mg Q4W	0.3mg Fovista + Lucentis Q4W	1.5mg Fovista + Lucentis Q4W
N	147	147	151
Baseline VA (letters)	50.6	50.6	49.3
Mean change in visual acuity at wk 24 (ETDRS letters)	**6.5**	**8.8**	**10.6**
Mean change in visual acuity at wk 12 (ETDRS letters)	5.1	7.2	8.7
Proportion of pts **gaining ≥15** letters at wk 24	34%	33%	39%
Proportion of pts **gaining > 20** letters at wk 24	11.6%	n/a	19.9%
Proportion of pts **gaining > 25** letters at wk 24	4.1%	n/a	11.9%
Proportion of pts **losing ≥5** letters at wk 24	21.5%	n/a	8.3%
Proportion of pts **losing ≥10** letters at wk 24	12.5%	n/a	3.4%

Source: Company Data, Morgan Stanley Research

One critique of the data we have heard is that the Lucentis monotherapy arm generated benefits at the lower end of the range seen with that drug. Drug benefits can vary trial to trial, which is why the controlled nature of this study is important. One would have to believe that either a) only one arm (the monotherapy arm) was "negatively impacted" and thus was not truly representative, or b) if both arms were at the "higher end" of the Lucentis benefit range, that PDGF inhibition would cease to add additional benefit. We believe the rationale of controlled trials and the mechanism of action speak against those points.

Safety: Minimal Additional Risk to Offset Good Benefit

We see the overall safety profile of Fovista to be good, with only modest changes in certain eye parameters.

Exhibit 10

Ph 2b Safety Highlights Only Modest Changes

	Lucentis	0.3mg Fovista + Lucentis	1.5mg Fovista + Lucentis
N	148	149	152
Lesion size (DA)	1.8	1.9	1.5
Baseline VA (letters)	50.6	50.6	49.3
Conjunctival hemorrhage	25%	22.8%	33.6%
Punctate keratitis	6.8%	12.8%	9.9%
Eye pain	5.4%	6.7%	8.6%
Conjunctival hyperemia	8.8%	6.0%	8.6%
Subretinal fibrosis	5.4%	4.0%	3.3%
IOP increased	2.7%	5.4%	5.9%
ALL	**54.1%**	**57.7%**	**69.7%**
Mean change in BCVA (at wk 24)	6.5	8.8	10.6

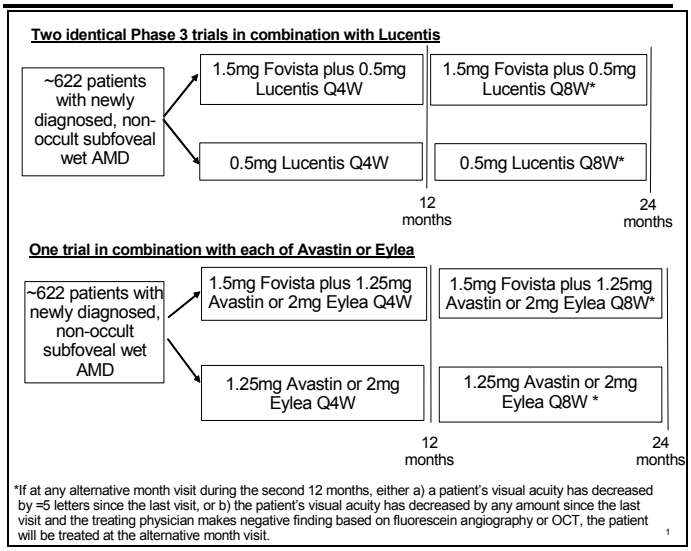
Source: Company Data, Morgan Stanley Research

The biggest changes in safety were on conjunctival hemorrhage, and eye pain which overall we understand to be mild and self-limited. Increased intra-ocular pressure (IOP) was noted and is most likely related to the increased volume of injection for the combination regimen (50 µL each) into a somewhat fixed space in the eye. While in theory severe IOP increases can be problematic, and is the underlying etiology in glaucoma, we do not believe the rises here are even close to that level of concern, and were self-limited as well.

Ph 3 Fovista Trials Have Good Chances of Success

Ophthotech has already begun the Ph 3 program (Ex. 11), and we expect success across the trials. Exhibit 11

Fovista Ph 3 Program



Source: Company data, Morgan Stanley Research

We believe one of the keys to Ph 3 success is the relatively minimal set of trial design changes (e.g. inclusion criteria, primary endpoint, dosing regimen) from Ph 2b to the core Ph 3 Lucentis trials (Ex. 12). Overall, we view the Ph 3 program as somewhat de-risked, but discuss below some of the key points of risk that remain as well as why we are comfortable with success.

a) Anti-VEGF selection: Two of the three Ph 3 trials are essentially identical in overall design to the Ph 2b with Lucentis as a combination/comparator. The third trial is with Avastin or Eylea. While Fovista has not been studied in combination with either Avastin or Eylea previously, we do not view this third trial as a significant risk given all the anti-VEGF therapies act via the same mechanism, a large portion of the clinical data suggest relatively similar effect on vision across the drugs, and we are not aware of any novel drug properties that would cause an adverse reaction when "mixed" in the eye.

The EMA recently requested data rationalizing this third Ph 3 trial as Fovista has not been studied with these two other drugs in humans. We do not expect a justification here to extend beyond discussions +/- pre-clinical type toxicology/drug-drug interaction studies.

b) Dosing >24 wks: The Ph 2b trial was only 24 wks, while the Ph 3 trials are two years. The drug is being developed with the intention of chronic use. We believe PDGF inhibition will likely have similar characteristics and dynamics as VEGF inhibition in terms of benefit over time. Lucentis' benefit was stable post 6 mos. of dosing. While the slope of the vision gain curve of the Fovista+Lucentis arm was clearly upward sloping at a rate that was higher than Lucentis alone, our base case is simply a maintenance of the already shown benefit.

c) Dosing less than Q4 wks: Similar to our above rationale, we expect the ability to space out injections to >Q4 wks (every four weeks) will be similar to what has been observed across all three anti-VEGF drugs – the ability to incrementally space out injections starting in the second year of dosing when the patient is most likely clinically stable.

d+e) Approval Path and Trial Concordance: The two Lucentis Ph 3 trials have already started enrolling patients and one year data from these trials are on track for 2016. There has been some question around Ophthotech's plans to initially file with only 12-month data. To that end, we highlight that both Lucentis and Eylea were originally filed with only one year of Ph 3 data. As Fovista will continue to accrue longer term data during the FDA review period, just as Eylea and Lucentis did, we do not see an NDA filing on 12 month Ph 3 data as an issue.

Fovista's Ph 3 program is three trials. We do not believe it is necessary for all three trials to succeed for Fovista to gain approval. We, and the company, believe that if a positive outcome occurs in at least the two Lucentis trials, an FDA/EMEA approval is likely. Should this occur, the label would potentially be for use only in combination with Lucentis. While this could potentially impact the size of the addressable market, our conversations with physicians suggest that as long as Fovista has proven efficacy with one of the anti-VEGF drugs, and the Avastin/Eylea trial shows beneficial trends, there would be little hesitation to use Fovista in combination with all the anti-VEGF drugs.

If a positive outcome occurs in two of the three trials, but only one of the Lucentis trials, the FDA/EMEA may request additional information prior to granting approval of Fovista. We would see additional risk to the regulatory steps in that case, although the quality of the data and degree of positive (or

negative) trends overall would likely dictate the degree of risk in that case.

Exhibit 12

Fovista Ph 3 Program Largely Replicates Ph 2b

Metric	Ph 2b	Ph 3	Impact
Inclusion Criteria	Newly diagnosed predominantly or minimally classic subfoveal wet AMD	Newly diagnosed predominantly or minimally classic subfoveal wet AMD	**Neutral -** No change to inclusion criteria
Primary Endpoint	Mean change in visual acuity at 24 wks	Mean change in visual acuity at 12 months	**Neutral/Positive** - In Ph 2b, the benefit seen with Fovista + Lucentis vs. Lucentis monotherapy increased over the study period. Lucentis tends to show near-maximum benefit by six months.
Size	449 patients	1,866 patients	**Mixed** - More patients means a greater powering to detect a difference between treatments, but the magnitude of benefit in clinical trials often declines from Ph 2 to Ph 3 given less noise. More patients can also mean a greater chance of seeing a safety signal.
Dose	0.3mg and 1.5mg Fovista	1.5mg Fovista	**Positive** - In Ph 2b, only the 1.5mg dose of Fovista in combination with Lucentis showed a statistically significant benefit vs. Lucentis monotherapy. Both doses appeared safe.
Active Comparator*	Lucentis	Lucentis, Avastin, Eylea	**Neutral -** Lucentis, Avastin and Eylea are all anti-VEGF therapies that work via the same mechanism. All three theapies have shown a similar benefit on visual acuity in wet AMD patients.
Drug Administration	Fovista intravitreal injection given 30 min after anti-VEGF intravitreal injection	Fovista intravitreal injection given 30 min after anti-VEGF intravitreal injection	**Neutral -** No change to drug administration

*Two of three Ph 3 clinical trials will evaluate Fovista plus Lucentis, one will evaluate Fovista plus either Avastin or Eylea

Source: Company Data, Morgan Stanley Research

Commercial Potential in Wet AMD is Significant

Wet AMD is a disease of the central portion of the retina known as the macula, which is responsible for detailed central vision and color perception. In wet AMD, abnormal new blood vessels form beneath the retina leading to blood vessel leakage, fluid build up, retinal distortion and scar formation. If untreated, progressive retinal damage results in irreversible and severe vision loss. We estimate that there are over 4mn patients with wet AMD globally, with >1mn currently diagnosed and treated. While the anti-VEGF drugs have been approved for more than wet AMD (Ex. 13), we do not expect use (or development success) beyond wet AMD.

Exhibit 13

Anti-VEGF Drugs Are Approved Broadly

	Wet AMD US	Wet AMD EU	US DME	EU DME	US (C)RVO	EU (C)RVO
Lucentis	Jun-06	Jan-07	Aug-12	Jan-11	Jun-10	Jun-11
Eylea	Nov-11	Nov-12	NA	NA	Sep-12	Aug-13

Source: Company Data, Morgan Stanley Research

Exhibit 14

Eylea & Lucentis Sold Nearly $5bn WW in 2012

	2006	2007	2008	2009	2010	2011	2012
Lucentis US	$381	$826	$889	$1,106	$1,403	$1,721	$1,585
Lucentis ROW	$19	$393	$886	$1,232	$1,533	$2,050	$2,398
Lucentis Total	**$400**	**$1,219**	**$1,775**	**$2,338**	**$2,936**	**$3,771**	**$3,983**
Eylea US	0	0	0	0	0	$24.8	$838
Eylea ROW	0	0	0	0	0	0	$19
Eylea Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$25**	**$857**
Total Anti-VEGF	**$400**	**$1,219**	**$1,775**	**$2,338**	**$2,936**	**$3,796**	**$4,840**

Source: Company Data, Morgan Stanley Research

Anti-VEGF drugs are current standard of care

Anti-VEGF therapies prevent VEGF (a cell signaler) from binding to its receptor on endothelial cells. This inhibition helps prevent further abnormal blood vessel growth and leakage. Anti-VEGF therapies approved and currently used for wet AMD include Roche/Novartis' Lucentis and Regeneron/Bayer's Eylea. Roche's Avastin, a cancer therapy with the same anti-VEGF mechanism, is also used off-label in wet AMD. In 2012, annual WW sales of Lucentis and Eylea were ~$4.8bn

with the majority (likely ~80%+) of these sales in wet AMD (Ex. 14). We expect sales to track >$5bn in 2013 for the class.

We Model ~$1.7bn Peak WW Fovista Sales in 2021
Our 2021 WW sales of $1.7bn (~$1bn US, ~$465mn EU, ~$140mn ex-US/ex-EU) assumes the following.
A) >1mn treated wet AMD patients with 675K in the US and ~430K in the EU.
B) Steady state share breakdown between anti-VEGF therapies of ~30% Lucentis, 30% Eylea and 40% Avastin in the US, and 40% Lucentis, 40% Eylea and 20% Avastin in the EU.
C) Fovista use in 45% of Lucentis treated eyes, 33% (at peak) of Eylea treated eyes, and 30% of Avastin treated eyes. We note that in 2020, we assume launch of Regeneron's anti-PDGF/Eylea combination (see competition section below) and share loss for Fovista in that segment. Our modeled 33% share in Eylea pts in 2020 declines to 12% in 2023.
D) An average number of vials per patient per year of ~4.2, in-line with our understanding of anti-VEGF drugs.
E) A gross price per vial at launch of ~$1100 in the US, a 40% discount to Eylea.

Our physician feedback suggests that:
a) all diagnosed wet AMD patients should be treated,
b) the goal of treatment is to provide the greatest vision benefit upfront as patients inevitably decline, and
c) a gain on the ETDRS (Early Treatment Diabetic Retinopathy Study) eye chart as little as 2-3 letters makes a clinical difference (i.e. is noticeable for patients). Given this strong feedback, if Fovista's benefits demonstrated in its Ph 2b trial are replicated in Ph 3, we see our share assumptions as reasonable.

Two potential commercial challenges with Fovista
There are two specific challenges to commercialization that we believe are worth mentioning.

a) Fovista + anti-VEGF treatment will require two separate injections (one Fovista, one VEGF). The trial design is to give them 30 min apart. The time gap between injections may be logistically difficult for some physicians in practice as it requires 1) extra time per an individual patient (though patients can stay in the waiting room between injections), 2) potential scheduling challenges to make sure "chair time" is maximized in a practice, and 3) two separate injection set ups.

The 30-minute gap was instituted to avoid potentially dangerous changes in intraocular pressure (IOP), which can be caused by injecting large volumes into the eye. However, given that 1) the injection volume of Fovista plus current 2nd generation anti-VEGFs (50µL for each drug) is similar to that of the single injection of the first generation anti-VEGF drug Macugen (90µL), and 2) Fovista Ph 2b data would suggest little change in IOP after each injection, it is possible that physicians choose to shorten the 30 min wait or eliminate it completely as they gain experience/comfort with the drug.

b) Lucentis or Eylea injections cost ~$1800+ (Ex. 15) and we estimate Fovista injection cost of >$1000. This pricing scheme suggests a total cost for the combination of nearly $3000/injection cycle (or ~$12k/pt/yr). While we expect it to be difficult for payors not to cover this treatment if the Ph 2b benefit is replicated in Ph 3, this price tag could be a hurdle for some patients and increases the importance of Fovista combination treatment showing a strong benefit vs. VEGF monotherapy in Ph 3. While Avastin is a much cheaper anti-VEGF option, our feedback from physicians suggests the driver of current off-label Avastin use is price sensitivity. Thus, while we model use in this segment, we expect it to be incrementally less than with Lucentis or Eylea.

Exhibit 15
Lucentis & Eylea Cost Close to $2,000 Per Injection

Current Price Per Injection	WAC	ASP
Lucentis	$1,950	$1,986.3
Eylea	$1,850	$1,961.0
Avastin	~$26-$50	

Source: Company Data, Morgan Stanley Research, Medi-span

Ophthotech currently owns WW rights to Fovista. Our present model assumes that Ophthotech develops and markets this drug in the US and partners the drug ex-US. We model a low 20+% royalty to Ophthotech on Fovista sales in the EU and a high single digit royalty on Fovista sales ex-US/ex-EU (assumes more regional type partnerships).

Competition is Several Years Behind
There are several PDGF inhibitor competitors in development, but all are many years behind Fovista. The most advanced is still in Ph 1. The competitor that garners the most Street attention is Regeneron's PDGF/Eylea combination. While we have not seen any data for this combination (drug is set to enter the clinic this year), and its efficacy/safety vs. Fovista is not yet known, we conservatively assume that this combination reaches the market in 2020 and takes meaningful share from Fovista/Eylea combination use based on similar efficacy and more convenience in that market segment.

Exhibit 16
PDGF/VEGF Competitors Are Several Years Behind Fovista

Company	Drug	Status
Regeneron	PDGF + Eylea	Preclinical - enter clinical development in 2H13
Allergan	VEGF/PDGF DARPin	Preclinical- enter clinical development in 2014
Xcovery Vision	X-82	Ph 1
Neurotech	NT-506 PDGF	Preclinical
Somalogic	Anti-PDGF SOMAmer	Preclinical

Source: Company Data, Morgan Stanley Research

Potential to Expand Use of Fovista
Ophthotech is evaluating clinical development of Fovista in a number of other ophthalmic conditions.

a) VEGF inhibitor failure wet AMD: After one year of treatment with VEGF therapy, ~18-22% of patients lose additional vision. Some portion of these patients may be anti-VEGF resistant due to pericyte coverage, although this will need to be proven in clinical studies to translate into vision benefit. While the exact number of patients remains unknown, this population represents a significant unmet need and could become a meaningful opportunity for Fovista.

b) Proliferative vitreoretinopathy (PVR): PVR is a complication that occurs in ~5-10% of cases of retinal detachment. We estimate there are ~2-3K cases of PVR per year in the US. PVR is characterized by scarring of the retina. Surgery is the main treatment, but the recurrent form is often untreatable. In an animal model of PVR, Fovista inhibited scarring of the retina. We await clinical data to better understand Fovista's potential in this indication.

c) Retinal manifestations of von Hippel Lindau disease (vHL): vHL is an inherited disease characterized by tumors (both benign and malignant) and cysts in the eye or other organs. This disease affects ~5-10K individuals in the US. Tumors in the eye consisting of newly formed blood vessels are called retinal capillary hemangiomas and occur in ~60% of these patients. These tumors cause retinal leakage and vision loss. In cells with deficient/mutated vHL protein, there is overexpression of VEGF and PDGF. Thus, there is some belief that a PDGF inhibitor like Fovista may have a beneficial effect.

Exploratory trials in these additional indications could potentially begin in 2014 with data in 2015. We do not attribute value to anything beyond the main AMD indication, as we have not seen data in any of these other potential indications. However, they could represent meaningful additional opportunities with clinical trial success.

Wet AMD – The Role of PDGF and VEGF

Wet AMD results from the creation of new abnormal blood vessels in the choroid layer of the eye – the vascular layer behind the retina. Blood vessels leak causing fluid build up and scarring, which decreases vision. Growth of new blood vessels increase PDGF, which is secreted by endothelial cells lining the inside of the vessel walls. PDGF leads to increased pericytes, which are cells that cover the outside of newly formed blood vessels and promote blood vessel growth and stabilization.

Pericytes secrete vascular endothelial growth factor (VEGF), which helps blood vessels grow. The goal of the standard of care drugs for wet AMD, anti-VEGF therapies, is to block the activity of VEGF and consequently the growth of blood vessels. Pericyte secretion of VEGF counteracts the effect of anti-VEGF therapies, and pericyte presence can make it difficult for anti-VEGF therapies to reach their target.

Fovista, a PDGF inhibitor, blocks PDGF and results in the stripping of pericytes from blood vessels. Without the protection of pericytes, blood vessels are highly vulnerable to the effects of anti-VEGF therapy.

Exhibit 17

Fovista Wet AMD Market Model

US ($ in millions)	2012	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
US population over 40	143,000,000	144,716,000	146,452,592	148,210,023	149,988,543	151,788,406	153,609,867	155,453,185	157,318,623	159,206,447	161,116,924	163,050,327
YoY Growth		1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Pts with wet AMD	1,573,000	1,591,876	1,610,979	1,630,310	1,649,874	1,669,672	1,689,709	1,709,985	1,730,505	1,751,271	1,772,286	1,793,554
% of population over 40	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Pts diag & Rx with VEGF inhib	676,390	691,352	706,644	722,275	738,252	754,582	771,274	788,334	805,772	823,596	841,814	860,435
% of population with AMD	43.0%	43.4%	43.9%	44.3%	44.7%	45.2%	45.6%	46.1%	46.6%	47.0%	47.5%	48.0%
Lucentis pts	202,917	207,406	211,993	216,683	221,476	226,375	231,382	236,500	241,732	247,079	252,544	258,130
Lucentis share	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Eylea pts	111,604	186,665	211,993	216,683	221,476	226,375	231,382	236,500	241,732	247,079	252,544	258,130
Eylea share	16.5%	27%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Avastin pts	361,869	297,281	282,658	288,910	295,301	301,833	308,509	315,334	322,309	329,438	336,726	344,174
Avastin share	53.5%	43%	40%	40%	40%	40%	40%	40%	40%	40%	40%	40%
Fovista												
Lucentis + Fovista	0	0	0	0	0	11,319	41,649	66,220	82,189	88,948	95,967	98,090
Fovista share	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	18.00%	28.00%	34.00%	36.00%	38.00%	38.00%
Eylea + Fovista	0	0	0	0	0	11,319	41,649	66,220	79,771	61,770	45,458	30,976
Fovista share	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	18.00%	28.00%	33.00%	25.00%	18.00%	12.00%
Avastin + Fovista	0	0	0	0	0	15,092	44,425	70,635	87,668	94,878	102,365	104,629
Fovista share	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	14.40%	22.40%	27.20%	28.80%	30.40%	30.40%
Total Fovista Patients	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**37,729**	**127,723**	**203,075**	**249,628**	**245,596**	**243,789**	**233,694**
Annual Vials per Patient						2.00	4.20	4.20	4.20	4.20	4.20	4.20
Total Annual Fovista Vials						**75,458**	**536,436**	**852,915**	**1,048,439**	**1,031,504**	**1,023,915**	**981,515**
Gross Price per Vial						$1,110	$1,132	$1,155	$1,178	$1,201	$1,226	$1,250
Annual Price Increase							2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Gross to Net						5.0%	7.5%	10.0%	10.0%	10.0%	10.0%	10.0%
Net Price per Vial						$1,055	$1,047	$1,039	$1,060	$1,081	$1,103	$1,125
Total US Fovista Sales	**$0**	**$0**	**$0**	**$0**	**$0**	**$80**	**$562**	**$886**	**$1,111**	**$1,115**	**$1,129**	**$1,104**

EU ($ in millions)	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
EU population over 40	259,000,000	261,590,000	264,205,900	266,847,959	269,516,439	272,211,603	274,933,719	277,683,056	280,459,887	283,264,486	286,097,130	288,958,102
YoY Growth		1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Pts with wet AMD	2,849,000	2,877,490	2,906,265	2,935,328	2,964,681	2,994,328	3,024,271	3,054,514	3,085,059	3,115,909	3,147,068	3,178,539
% of population over 40	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
'ts diag & treated with VEGF inhib	427,350	435,940	444,702	453,641	462,759	472,060	481,549	491,228	501,101	511,174	521,448	531,929
% of population with AMD	15.0%	15.2%	15.3%	15.5%	15.6%	15.8%	15.9%	16.1%	16.2%	16.4%	16.6%	16.7%
Lucentis pts	277,778	239,767	222,351	204,138	196,672	200,626	192,619	196,491	200,441	204,469	208,579	212,772
Lucentis share	65%	55%	50%	45%	43%	43%	40%	40%	40%	40%	40%	40%
Eylea pts	4,701	43,594	88,940	136,092	161,966	177,023	192,619	196,491	200,441	204,469	208,579	212,772
Eylea share	1.1%	10%	20%	30%	35%	38%	40%	40%	40%	40%	40%	40%
Avastin pts	144,872	152,579	133,411	113,410	104,121	94,412	96,310	98,246	100,220	102,235	104,290	106,386
Avastin share	34%	35%	30%	25%	23%	20%	20%	20%	20%	20%	20%	20%
Fovista												
Lucentis + Fovista	0.00	0.00	0.00	0.00	0.00	0	9,631	35,368	56,123	69,520	75,089	80,853
Fovista share	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	18.00%	28.00%	34.00%	36.00%	38.00%
Eylea + Fovista	0.00	0.00	0.00	0.00	0.00	0	9,631	35,368	56,123	67,475	52,145	38,299
Fovista share	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	18.00%	28.00%	33.00%	25.00%	18.00%
Avastin + Fovista	0	0	0	0	0	0	4,815	14,147	22,449	27,808	30,035	32,341
Fovista share	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	14.40%	22.40%	27.20%	28.80%	30.40%
Total Fovista Patients	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**24,077**	**84,884**	**134,696**	**164,802**	**157,269**	**151,493**
Annual Vials per Patient							4.20	4.20	4.20	4.20	4.20	4.20
Total Annual Fovista Vials						**0**	**101,125**	**356,513**	**565,724**	**692,170**	**660,529**	**636,273**
Net Price per Vial							$722	$707	$693	$679	$665	$652
Annual Price Decline								-2%	-2%	-2%	-2%	-2%
Total EU Fovista Sales	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$73**	**$252**	**$392**	**$470**	**$440**	**$415**

Source: Company Data, Morgan Stanley Research estimates

ARC1905 – Another Potential Treatment for AMD

Ophthotech's second asset is ARC1905, an inhibitor of C5 (a central component of the complement cascade which is part of the immune system). This drug is also a potential treatment for wet AMD.

Preclinical and pharmacogenetic studies suggest the development of AMD involves a complement mediated inflammatory component. In addition, independent studies have implicated local inflammation and activation of the complement cascade in drusen formation, a marker of dry AMD that can be a precursor to the development of wet AMD. Thus, ARC1905, an inhibitor of the complement cascade, represents a potential novel mechanism for the treatment of wet AMD.

Early Human Data Is Interesting
ARC1905 has been studied in a Ph 1/2 multicenter ascending dose open label single arm trial in wet AMD.

The Ph 1/2 trial was conducted in 60 patients and explored ARC1905 in combination with Lucentis. In this trial, no dose limiting toxicities were observed. In addition, in a subgroup of 43 patients naïve to anti-VEGF therapy, who received 6 injections at doses of 0.3mg, 1mg, 2mg of ARC1905 plus Lucentis, there was a trend toward an increase in visual acuity from baseline at all timepoints. Specifically, at a 24 week follow up visit, improvement from baseline was 13.6 letters (0.3mg). 11.7 letters (1mg), and 15.3 letters (2mg). While these letter benefits are encouraging, without a control arm, it is difficult to determine ARC1905's true efficacy.

Awaiting Clarity on Path Forward
Ophthotech is evaluating a clinical trial of ARC1905 plus anti-VEGF therapy in patients with wet AMD that do not respond adequately to treatment with anti-VEGF monotherapy. We do not currently include any value for ARC1905 given it's a) early stage, b) unclear efficacy given the lack of a randomized controlled trial, and c) uncertain development path. Additionally, other C5 inhibitors, e.g. Alexion's Soliris, have not yet shown a clear benefit in the AMD population, thus the burden of proof remains on the complement inhibition mechanism in AMD.

IP Solid
ARC1905 has composition of matter patent protection in the US and Europe to 2025 and in Japan to 2026.

Exhibit 18

Annual Income Statement

($ in millions)	2011A	2012A	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
US Fovista			**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$79.6**	**$561.8**	**$886.5**	**$1,111.5**	**$1,115.4**	**$1,129.4**	**$1,104**
EU Fovista			$0.0	$0.0	$0.0	$0.0	$0.0	$73.0	$252.1	$392.0	$470.0	$439.6	$415.0
ROW Fovista			$0	$0	$0	$0	$0	$15	$63	$118	$141	$132	$124
Total WW Fovista Sales			**$0**	**$0**	**$0**	**$0**	**$80**	**$649**	**$1,202**	**$1,621**	**$1,726**	**$1,701**	**$1,644**
EU Fovista Royalties			$0.0	$0.0	$0.0	$0.0	$0.0	$16.1	$55.5	$86.2	$103.4	$96.7	$91.3
ROW Fovista Royalties			$0	$0	$0	$0	$0	$1	$5	$9	$11	$11	$10
Total Fovista Royalties			**$0**	**$0**	**$0**	**$0**	**$0**	**$17**	**$60**	**$96**	**$115**	**$107**	**$101**
Other Revenue						**100**							
Total Revenue	$0	$0	$0	$0	$0	$100	$80	$579	$947	$1,207	$1,230	$1,237	$1,205
Operating Expenses:													
Cost of Sales	$0	$0	$0	$0	$0	$0	$12	$92	$179	$226	$237	$235	$228
% of US sales- Drug cost	*NA*	*NA*	*NA*	*NA*	*NA*	*7%*	*7%*	*7%*	*6%*	*5%*	*5%*	*5%*	*5%*
% of US sales - total COGS (incl. royalties)							*16%*	*16%*	*20%*	*20%*	*21%*	*21%*	*21%*
R&D	$14	$7	$23	$73	$88	$83	$71	$64	$54	$54	$54	$54	$54
YoY growth	*-6%*	*-51%*	*231%*	*225%*	*20%*	*-5%*	*-25%*	*-15%*	*-15%*	*0%*	*0%*	*0%*	*0%*
% of revenue	*na*	*na*	*na*	*na*	*na*	*83%*	*89%*	*11%*	*6%*	*5%*	*4%*	*4%*	*5%*
SG&A	$5	$6	$12	$12	$12	$13	$57	$102	$117	$129	$135	$135	$135
YoY growth	*27%*	*14%*	*90%*	*2%*	*2%*	*2%*	*350%*	*80%*	*15%*	*10%*	*5%*	*0%*	*0%*
% of revenue	*na*	*na*	*na*	*na*	*na*	*13%*	*71%*	*18%*	*12%*	*11%*	*11%*	*11%*	*11%*
Total Operating Expenses	$19.39	$13.04	$34	$85	$100	$96	$139	$258	$351	$409	$427	$425	$418
Operating Income (Loss)	-$19	-$13	-$34	-$85	-$100	$4	-$60	$321	$596	$798	$803	$812	$788
Operating Margin	*na*	*na*	*na*	*na*	*na*	*4%*	*na*	*56%*	*63%*	*66%*	*65%*	*66%*	*65%*
Interest income	$0.002	$0.0	$0.0	$0.4	$0.3	$0.4	$0.5	$0.9	$1.8	$3.0	$4.4	$5.8	$7.3
Interest expense	$0.00	-$0.5	-$1.5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Fx transaction gain (loss)	-$0.02	$0.0	$0.0										
Non cash change in fair value (inv. rights liabil.)	$0.0	-$0.4	-$1.3										
Pretax Income (Loss)	($19.41)	($13.9)	($37.2)	($84.8)	($99.8)	$4.5	($59.38)	$322.31	$597.87	$801.08	$807.71	$817.64	$795.23
Provision for Income Taxes	(1.03)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	195.8	280.4	282.7	286.2	278.3
Effective Tax Rate		0%	0%	0%	0%	0%	0.0%	0%	33%	35%	35%	35%	35%
Net Income (Loss)	($18.38)	($13.9)	($37.2)	($85)	($100)	$4	($59)	$322	$402	$521	$525	$531	$517
EPS, basic	($2.23)	($1.62)	($2.82)	($2.79)	($3.26)	$0.14	($1.74)	$9.32	$11.48	$14.66	$14.55	$14.47	$13.80
EPS, diluted	($2.23)	($1.62)	($2.82)	($2.79)	($3.26)	$0.11	($1.74)	$7.24	$8.60	$10.68	$10.29	$9.91	$9.14
EPS, diluted (incl. ESOs)	($2.26)	($1.70)	($2.87)	($2.85)	($3.32)	$0.06	($1.82)	$7.12	$8.50	$10.57	$10.18	$9.81	$9.05
Basic Shares Outstanding	8.23	8.6	13.2	30.4	30.6	32.4	34.2	34.6	35.0	35.5	36.1	36.7	37.5
Diluted Shares Outstanding	8.23	8.6	13.2	30.4	30.6	39.5	34.2	44.5	46.7	48.8	51.0	53.6	56.5
One time items	($6.8)	($7.1)											
GAAP Net Income	($25.47)	($21.6)	($37.9)	($86.5)	($101.8)	$2.5	($62.2)	$317.2	$397.3	$515.4	$519.5	$525.9	$511.5
GAAP EPS, diluted (includes ESOs)	($3.10)	($2.52)	($2.87)	($2.85)	($3.32)	$0.06	($1.82)	$7.12	$8.50	$10.57	$10.18	$9.81	$9.05

Source: Company Data, Morgan Stanley Research estimates

Exhibit 19

Balance Sheet

($ in millions)	2011A	2012A	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Assets													
Cash and cash equivalents	$6.4	$4.3	$218	$182	$88	$243	$193	$522	$941	$1,487	$2,049	$2,629	$3,210
Marketable securities	$0.0	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2
Other receivables	$1.0	$0.0	$1.1	$1.2	$1.3	$1.3	$1.6	$5.8	$9.5	$12.1	$12.3	$12.4	$12.1
Prepaid expenses and other deposits	$0.1	$0.0	$0	$0	$0	$0	$1	$6	$9	$12	$12	$12	$12
Debt issuance costs	$0.0	$0.3	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total current assets	**$7.50**	**$4.84**	**$220**	**$183**	**$89**	**$245**	**$196**	**$534**	**$960**	**$1,511**	**$2,074**	**$2,654**	**$3,234**
Property, plant and equipment, net	$0.07	$0.0	$0	$0	$0	$1	$2	$3	$4	$6	$7	$8	$9
Security deposits	$0.17	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other long-term assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total assets	**$7.7**	**$4.879**	**$219.9**	**$183.3**	**$89.5**	**$246.0**	**$197.5**	**$537.0**	**$964.4**	**$1,516.7**	**$2,080.7**	**$2,661.8**	**$3,242.6**
Liabilities and stockholders' equity													
Notes payable	$0.0	$11	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Accrued drug supply and trial cost	$1.5	$1	$1	$2	$3	$3	$2	$2	$2	$2	$2	$2	$2
Accounts payable	$0.9	$1	$1	$3	$3	$3	$4	$8	$11	$12	$13	$13	$13
Accrued compensation	$0.8	$1	$1	$1	$1	$1	$1	$1	$1	$1	$1	$1	$1
Deferred rent	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Investor rights liability	$0.2	$1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total current liabilities	**$3.3**	**$14.4**	**$2.2**	**$5.3**	**$6.2**	**$5.9**	**$6.8**	**$10.2**	**$12.7**	**$14.4**	**$15.0**	**$14.9**	**$14.7**
Other long-term liabilities	$0.0	$0	$42	$83	$83	$83	$83	$83	$83	$83	$83	$83	$83
Total liabilities	**$3.3**	**$14.4**	**$44**	**$89**	**$89**	**$89**	**$90**	**$94**	**$96**	**$98**	**$98**	**$98**	**$98**
Cumulative Series A	$65.3	$69.47	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cumulative Series A-1	$8.0	$8.46	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cumulative Series B	$33.1	$35.5	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Cumulative Series B-1	$0.5	$1	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Preferred Stock	$3.0	$3	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Common stock	$0.0	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01
APIC	$0.0	$0	$340	$346	$353	$507	$520	$539	$566	$601	$645	$700	$770
Accumulated deficit	($105)	($126)	($164)	($251)	($353)	($350)	($412)	($95)	$302	$818	$1,337	$1,863	$2,374
Accumulated other comprehensive income	$0.0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total stockholders' equity	**$4**	**-$10**	**$176**	**$95**	**$0**	**$157**	**$107**	**$443**	**$868**	**$1,419**	**$1,982**	**$2,564**	**$3,145**
Total liabilities and stockholder's equity	**$7.74**	**$4.9**	**$220**	**$183**	**$89**	**$246**	**$198**	**$537**	**$964**	**$1,517**	**$2,081**	**$2,662**	**$3,243**

Source: Company Data, Morgan Stanley Research estimates

Exhibit 20

Cash Flow Statement

($ in millions)	2011A	2012A	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Net loss	($18.6)	($14.6)	($37.9)	($86.5)	($101.8)	$2.5	($62.2)	$317.2	$397.3	$515.4	$519.5	$525.9	$511.5
Depreciation	$0.03	$0.03	$0.0	$0.0	$0.1	$0.1	$0.2	$0.3	$0.4	$0.6	$0.7	$0.9	$1.0
Amortization and accretion	$0.00	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Unrealized gain on investments	$0.00	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Non-cash charge in fair value (inv. rights libil.)	$0.01	$0.37	($0.97)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0	$0.00
Stock-based compensation	$0.25	$0.6	$0.0	$1.7	$2.0	$1.9	$2.8	$5.2	$4.7	$5.3	$5.5	$5.5	$5.4
Preferred stock issued for tech and licenses	$0.50	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Changes in operating assets and liabilities:													
Prepaid expenses, other current deposits	$0.1	$0	($0)	($0)	($0)	($0)	($1)	($5)	($4)	($3)	($0)	($0.1)	$0
Other receiveables	($0.74)	$1.0	($1)	($0)	($0)	($0)	($0)	($4)	($4)	($3)	($0)	($0.1)	$0
Security deposits	($0.0)	($0)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0.0	$0
Accrued drug supply and trial cost	($0.8)	($0.5)	($0)	$2	$0	($0)	($0)	($0)	($0)	$0	$0	$0.0	$0
Accounts payable and accrued expenses	($0.05)	$0.0	$0	$2	$0	($0)	$1	$4	$3	$2	$1	($0.1)	($0)
Accrued bonuses	$0.22	($0.2)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0.0	$0
Deferred rent	($0.02)	($0)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0.0	$0
Net cash used in operating activities	**($19.12)**	**($13.10)**	**($40)**	**($82)**	**($99)**	**$4**	**($59)**	**$317**	**$398**	**$518**	**$526**	**$532.1**	**$518**
Investing Activities:													
Purchases of property, plant and equipment	($0.00)	$0.0	($0.0)	($0.0)	($0.5)	($1.0)	($0.8)	($1.4)	($1.9)	($1.8)	($1.8)	($1.9)	($1.8)
Deposit on purchase of property, plant & equipment	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.0	$0.00
Purchases of marketable securities	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0.0	$0
Sales and maturities of marketable securities	$3.40	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0.0	$0
Net cash used in investing activities	**$3.4**	**$0.0**	**($0.0)**	**($0.0)**	**($0.5)**	**($1.0)**	**($0.8)**	**($1.4)**	**($1.9)**	**($1.8)**	**($1.8)**	**($1.9)**	**($1.8)**
Financing activities:													
Sale of royalty entitlement to Novo A/S	$0.000	$0	$42	$42	$0	$0	$0	$0	$0	$0	$0	$0	$0
Proceeds from issuance of notes payable, net	$0.000	$11.01	($11)	$0	$0	$0	$0	$0	$0	$0	$0	$0.0	$0
Proceeds from common stock and options	$0.0	$0	$173	$4	$5	$152	$10	$14	$19	$25	$34	$45	$59
Proceeds from issuance of preferred stock	$15.0	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0.0	$0
Tax Benefits related to employee stock options	$0	$0	$0	$0	$0	$0	$0	$0	$4	$4	$5	$4.9	$5
Net cash provided by financing activities	**$14.99**	**$11.01**	**$254.3**	**$45.2**	**$5.0**	**$152.4**	**$10.0**	**$13.8**	**$22.9**	**$29.8**	**$38.5**	**$49.7**	**$64.2**
Effect of exchange rate on changes in cash													
Increase in cash and cash equivalents	($0.73)	($2.1)	$214.19	($36.66)	($94.32)	$155.66	($50.10)	$329.12	$418.63	$545.83	$562.43	$580.0	$580.70
Cash and equivalents at beginning of year	$7.1	$6.4	$4	$218	$182	$88	$243	$193	$522	$941	$1,487	$2,049.1	$2,629
Cash and equivalents at end of year	**$6.396**	**$4.3**	**$218**	**$182**	**$88**	**$243**	**$193**	**$522**	**$941**	**$1,487**	**$2,049**	**$2,629.1**	**$3,210**

Source: Company Data, Morgan Stanley Research estimates

MORGAN STANLEY ModelWare	**Morgan Stanley ModelWare is a proprietary analytic framework that helps clients uncover value, adjusting for distortions and ambiguities created by local accounting regulations.** For example, ModelWare EPS adjusts for one-time events, capitalizes operating leases (where their use is significant), and converts inventory from LIFO costing to a FIFO basis. ModelWare also emphasizes the separation of operating performance of a company from its financing for a more complete view of how a company generates earnings.

Disclosure Section

The information and opinions in Morgan Stanley Research were prepared by Morgan Stanley & Co. LLC, and/or Morgan Stanley C.T.V.M. S.A., and/or Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., and/or Morgan Stanley Canada Limited. As used in this disclosure section, "Morgan Stanley" includes Morgan Stanley & Co. LLC, Morgan Stanley C.T.V.M. S.A., Morgan Stanley Mexico, Casa de Bolsa, S.A. de C.V., Morgan Stanley Canada Limited and their affiliates as necessary.
For important disclosures, stock price charts and equity rating histories regarding companies that are the subject of this report, please see the Morgan Stanley Research Disclosure Website at www.morganstanley.com/researchdisclosures, or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY, 10036 USA.
For valuation methodology and risks associated with any price targets referenced in this research report, please email morganstanley.research@morganstanley.com with a request for valuation methodology and risks on a particular stock or contact your investment representative or Morgan Stanley Research at 1585 Broadway, (Attention: Research Management), New York, NY 10036 USA.

Analyst Certification

The following analysts hereby certify that their views about the companies and their securities discussed in this report are accurately expressed and that they have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report: David Friedman.
Unless otherwise stated, the individuals listed on the cover page of this report are research analysts.

Global Research Conflict Management Policy

Morgan Stanley Research has been published in accordance with our conflict management policy, which is available at www.morganstanley.com/institutional/research/conflictpolicies.

Important US Regulatory Disclosures on Subject Companies

As of September 30, 2013, Morgan Stanley beneficially owned 1% or more of a class of common equity securities of the following companies covered in Morgan Stanley Research: Auxilium Pharmaceuticals, Cubist Pharmaceuticals Inc., Elan Corporation PLC, Ironwood Pharmaceuticals, Inc., Optimer Pharmaceuticals.
Within the last 12 months, Morgan Stanley managed or co-managed a public offering (or 144A offering) of securities of Alnylam Pharmaceuticals, Chimerix Inc, Cubist Pharmaceuticals Inc., Elan Corporation PLC, Infinity Pharmaceuticals Inc, Ironwood Pharmaceuticals, Inc., NPS Pharmaceuticals, **Ophthotech Corp**, Portola Pharmaceuticals Inc, Synageva Biopharma Corp, Tesaro Inc..
Within the last 12 months, Morgan Stanley has received compensation for investment banking services from Alnylam Pharmaceuticals, Auxilium Pharmaceuticals, Chimerix Inc, Cubist Pharmaceuticals Inc., Elan Corporation PLC, ImmunoGen Inc., Infinity Pharmaceuticals Inc, Ironwood Pharmaceuticals, Inc., NPS Pharmaceuticals, **Ophthotech Corp**, Portola Pharmaceuticals Inc, Synageva Biopharma Corp, Tesaro Inc., Vertex Pharmaceuticals.
In the next 3 months, Morgan Stanley expects to receive or intends to seek compensation for investment banking services from Alexion Pharmaceuticals, Alnylam Pharmaceuticals, Auxilium Pharmaceuticals, Chimerix Inc, Cubist Pharmaceuticals Inc., Elan Corporation PLC, Idenix Pharmaceuticals, Inc., ImmunoGen Inc., Incyte Corporation, Infinity Pharmaceuticals Inc, Ironwood Pharmaceuticals, Inc., Lexicon Pharmaceuticals, Inc., Neurocrine Biosciences Inc, NPS Pharmaceuticals, Pharmacyclics Inc., Portola Pharmaceuticals Inc, Synageva Biopharma Corp, Tesaro Inc., Theravance Inc, Vertex Pharmaceuticals, XenoPort Inc.
Within the last 12 months, Morgan Stanley has received compensation for products and services other than investment banking services from Auxilium Pharmaceuticals, Cubist Pharmaceuticals Inc., Elan Corporation PLC, Vertex Pharmaceuticals.
Within the last 12 months, Morgan Stanley has provided or is providing investment banking services to, or has an investment banking client relationship with, the following company: Alexion Pharmaceuticals, Alnylam Pharmaceuticals, Auxilium Pharmaceuticals, Chimerix Inc, Cubist Pharmaceuticals Inc., Elan Corporation PLC, Idenix Pharmaceuticals, Inc., ImmunoGen Inc., Incyte Corporation, Infinity Pharmaceuticals Inc, Ironwood Pharmaceuticals, Inc., Lexicon Pharmaceuticals, Inc., Neurocrine Biosciences Inc, NPS Pharmaceuticals, **Ophthotech Corp**, Pharmacyclics Inc., Portola Pharmaceuticals Inc, Synageva Biopharma Corp, Tesaro Inc., Theravance Inc, Vertex Pharmaceuticals, XenoPort Inc.
Within the last 12 months, Morgan Stanley has either provided or is providing non-investment banking, securities-related services to and/or in the past has entered into an agreement to provide services or has a client relationship with the following company: Auxilium Pharmaceuticals, Cubist Pharmaceuticals Inc., Elan Corporation PLC, InterMune, Portola Pharmaceuticals Inc, Vertex Pharmaceuticals.
Morgan Stanley & Co. LLC makes a market in the securities of Alexion Pharmaceuticals, Alnylam Pharmaceuticals, AMAG Pharmaceuticals, Inc., Auxilium Pharmaceuticals, Chimerix Inc, Cubist Pharmaceuticals Inc., Elan Corporation PLC, Idenix Pharmaceuticals, Inc., ImmunoGen Inc., Incyte Corporation, Infinity Pharmaceuticals Inc, InterMune, Ironwood Pharmaceuticals, Inc., Lexicon Pharmaceuticals, Inc., Neurocrine Biosciences Inc, NPS Pharmaceuticals, **Ophthotech Corp**, Optimer Pharmaceuticals, Pharmacyclics Inc., Portola Pharmaceuticals Inc, Synageva Biopharma Corp, Tesaro Inc., Theravance Inc, Vertex Pharmaceuticals, XenoPort Inc.
The equity research analysts or strategists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality of research, investor client feedback, stock picking, competitive factors, firm revenues and overall investment banking revenues.
Morgan Stanley and its affiliates do business that relates to companies/instruments covered in Morgan Stanley Research, including market making, providing liquidity and specialized trading, risk arbitrage and other proprietary trading, fund management, commercial banking, extension of credit, investment services and investment banking. Morgan Stanley sells to and buys from customers the securities/instruments of companies covered in Morgan Stanley Research on a principal basis. Morgan Stanley may have a position in the debt of the Company or instruments discussed in this report. Certain disclosures listed above are also for compliance with applicable regulations in non-US jurisdictions.

STOCK RATINGS

Morgan Stanley uses a relative rating system using terms such as Overweight, Equal-weight, Not-Rated or Underweight (see definitions below). Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold and sell. Investors should carefully read the definitions of all ratings used in Morgan Stanley Research. In addition, since Morgan Stanley Research contains more complete information concerning the analyst's views, investors should carefully read Morgan Stanley Research, in its entirety, and not infer the contents from the rating alone. In any case, ratings (or research) should not be used or relied upon as investment advice. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations.

Global Stock Ratings Distribution

(as of September 30, 2013)

For disclosure purposes only (in accordance with NASD and NYSE requirements), we include the category headings of Buy, Hold, and Sell alongside our ratings of Overweight, Equal-weight, Not-Rated and Underweight. Morgan Stanley does not assign ratings of Buy, Hold or Sell to the stocks we cover. Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.

	Coverage Universe		Investment Banking Clients (IBC)		
Stock Rating Category	Count	% of Total	Count	% of Total IBC	% of Rating Category
Overweight/Buy	**1002**	**34%**	**410**	**38%**	**41%**
Equal-weight/Hold	**1278**	**44%**	**493**	**46%**	**39%**
Not-Rated/Hold	**114**	**4%**	**28**	**3%**	**25%**
Underweight/Sell	**526**	**18%**	**140**	**13%**	**27%**
Total	**2,920**		**1071**		

Data include common stock and ADRs currently assigned ratings. An investor's decision to buy or sell a stock should depend on individual circumstances (such as the investor's existing holdings) and other considerations. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months.

Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.
Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.
Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index.
.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers

Important disclosures regarding the relationship between the companies that are the subject of Morgan Stanley Research and Morgan Stanley Smith Barney LLC or Morgan Stanley or any of their affiliates, are available on the Morgan Stanley Wealth Management disclosure website at www.morganstanley.com/online/researchdisclosures.

For Morgan Stanley specific disclosures, you may refer to www.morganstanley.com/researchdisclosures.

Each Morgan Stanley Equity Research report is reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval is conducted by the same person who reviews the Equity Research report on behalf of Morgan Stanley. This could create a conflict of interest.

Other Important Disclosures

Morgan Stanley & Co. International PLC and its affiliates have a significant financial interest in the debt securities of Auxilium Pharmaceuticals, Cubist Pharmaceuticals Inc..

Morgan Stanley is not acting as a municipal advisor and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Morgan Stanley produces an equity research product called a "Tactical Idea." Views contained in a "Tactical Idea" on a particular stock may be contrary to the recommendations or views expressed in research on the same stock. This may be the result of differing time horizons, methodologies, market events, or other factors. For all research available on a particular stock, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.

Morgan Stanley Research is provided to our clients through our proprietary research portal on Matrix and also distributed electronically by Morgan Stanley to clients. Certain, but not all, Morgan Stanley Research products are also made available to clients through third-party vendors or redistributed to clients through alternate electronic means as a convenience. For access to all available Morgan Stanley Research, please contact your sales representative or go to Matrix at http://www.morganstanley.com/matrix.

Any access and/or use of Morgan Stanley Research are subject to Morgan Stanley's Terms of Use (http://www.morganstanley.com/terms.html). By accessing and/or using Morgan Stanley Research, you are indicating that you have read and agree to be bound by our Terms of Use (http://www.morganstanley.com/terms.html). In addition you consent to Morgan Stanley processing your personal data and using cookies in accordance with our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html), including for the purposes of setting your preferences and to collect readership data so that we can deliver better and more personalised service and products to you. To find out more information about how Morgan Stanley processes personal data, how we use cookies and how to reject cookies see our Privacy Policy and our Global Cookies Policy (http://www.morganstanley.com/privacy_pledge.html).

If you do not agree to our Terms of Use and/or if you do not wish to provide your consent to Morgan Stanley processing of your personal data or using cookies please do not access our research.

Morgan Stanley Research does not provide individually tailored investment advice. Morgan Stanley Research has been prepared without regard to the circumstances and objectives of those who receive it. Morgan Stanley recommends that investors independently evaluate particular investments and strategies, and encourages investors to seek the advice of a financial adviser. The appropriateness of an investment or strategy will depend on an investor's circumstances and objectives. The securities, instruments, or strategies discussed in Morgan Stanley Research may not be suitable for all investors, and certain investors may not be eligible to purchase or participate in some or all of them. Morgan Stanley Research is not an offer to buy or sell any security/instrument or to participate in any trading strategy. The value of and income from your investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies or other factors. There may be time limitations on the exercise of options or other rights in securities/instruments transactions. Past performance is not necessarily a guide to future performance. Estimates of future performance are based on assumptions that may not be realized. If provided, and unless otherwise stated, the closing price on the cover page is that of the primary exchange for the subject company's securities/instruments.

The fixed income research analysts, strategists or economists principally responsible for the preparation of Morgan Stanley Research have received compensation based upon various factors, including quality, accuracy and value of research, firm profitability or revenues (which include fixed income trading and capital markets profitability or revenues), client feedback and competitive factors. Fixed Income Research analysts', strategists' or economists' compensation is not linked to investment banking or capital markets transactions performed by Morgan Stanley or the profitability or revenues of particular trading desks.

Morgan Stanley Research is not an offer to buy or sell or the solicitation of an offer to buy or sell any security/instrument or to participate in any particular trading strategy. The "Important US Regulatory Disclosures on Subject Companies" section in Morgan Stanley Research lists all companies mentioned where Morgan Stanley owns 1% or more of a class of common equity securities of the companies. For all other companies mentioned in Morgan Stanley Research, Morgan Stanley may have an investment of less than 1% in securities/instruments or derivatives of securities/instruments of companies and may trade them in ways different from those discussed in Morgan Stanley Research. Employees of Morgan Stanley not involved in the preparation of Morgan Stanley Research may have investments in securities/instruments or derivatives of securities/instruments of companies mentioned and may trade them in ways different from those discussed in Morgan Stanley Research. Derivatives may be issued by Morgan Stanley or associated persons.

With the exception of information regarding Morgan Stanley, Morgan Stanley Research is based on public information. Morgan Stanley makes every effort to use reliable, comprehensive information, but we make no representation that it is accurate or complete. We have no obligation to tell you when opinions or information in Morgan Stanley Research change apart from when we intend to discontinue equity research coverage of a subject company. Facts and views presented in Morgan Stanley Research have not been reviewed by, and may not reflect information known to, professionals in other Morgan Stanley business areas, including investment banking personnel.

Morgan Stanley Research personnel may participate in company events such as site visits and are generally prohibited from accepting payment by the company of associated expenses unless pre-approved by authorized members of Research management.

Morgan Stanley may make investment decisions or take proprietary positions that are inconsistent with the recommendations or views in this report.

To our readers in Taiwan: Information on securities/instruments that trade in Taiwan is distributed by Morgan Stanley Taiwan Limited ("MSTL"). Such information is for your reference only. The reader should independently evaluate the investment risks and is solely responsible for their investment decisions. Morgan Stanley Research may not be distributed to the public media or quoted or used by the public media without the express written consent of Morgan Stanley. Information on securities/instruments that do not trade in Taiwan is for informational purposes only and is not to be construed as a recommendation or a solicitation to trade in such securities/instruments. MSTL may not execute transactions for clients in these securities/instruments. To our readers in Hong Kong: Information is distributed in Hong Kong by and on behalf of, and is attributable to, Morgan Stanley Asia Limited as part of its regulated activities in Hong Kong. If you have any queries concerning Morgan Stanley Research, please contact our Hong Kong sales representatives.

Morgan Stanley is not incorporated under PRC law and the research in relation to this report is conducted outside the PRC. Morgan Stanley Research does not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors shall have the relevant qualifications to invest in such securities and shall be responsible for obtaining all relevant approvals, licenses, verifications and/or registrations from the relevant governmental authorities themselves.

Morgan Stanley Research is disseminated in Brazil by Morgan Stanley C.T.V.M. S.A.; in Japan by Morgan Stanley MUFG Securities Co., Ltd. and, for Commodities related research reports only, Morgan Stanley Capital Group Japan Co., Ltd; in Hong Kong by Morgan Stanley Asia Limited (which accepts responsibility for its contents); in Singapore by Morgan Stanley Asia (Singapore) Pte. (Registration number 199206298Z) and/or Morgan Stanley Asia (Singapore) Securities Pte Ltd (Registration number 200008434H), regulated by the Monetary Authority of Singapore (which accepts legal responsibility for its contents and should be contacted with respect to any matters arising from, or in connection with, Morgan Stanley Research); in Australia to "wholesale clients" within the meaning of the Australian Corporations Act by Morgan Stanley Australia Limited A.B.N. 67 003 734 576, holder of Australian financial services license No. 233742, which accepts responsibility for its contents; in Australia to "wholesale clients" and "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813, which accepts responsibility for its contents; in Korea by Morgan Stanley & Co International plc, Seoul Branch; in India by Morgan Stanley India Company Private Limited; in Indonesia by PT Morgan Stanley Asia Indonesia; in Canada by Morgan Stanley Canada Limited, which has approved of and takes responsibility for its contents in Canada; in Germany by Morgan Stanley Bank AG, Frankfurt am Main and Morgan Stanley Private Wealth Management Limited, Niederlassung Deutschland, regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin); in Spain by Morgan Stanley, S.V., S.A., a Morgan Stanley group company, which is supervised by the Spanish Securities Markets Commission (CNMV) and states that Morgan Stanley Research has been written and distributed in accordance with the rules of conduct applicable to financial research as established under Spanish regulations; in the US by Morgan Stanley & Co. LLC, which accepts responsibility for its contents. Morgan Stanley & Co. International plc, authorized by the Prudential Regulatory Authority and regulated by the Financial Conduct Authority and the Prudential Regulatory Authority, disseminates in the UK research that it has prepared, and approves solely for the purposes of section 21 of the Financial Services and Markets Act 2000, research which has been prepared by any of its affiliates. Morgan Stanley Private Wealth Management Limited, authorized and regulated by the Financial Conduct Authority, also disseminates Morgan Stanley Research in the UK. Private UK investors should obtain the advice of their Morgan Stanley & Co. International plc or Morgan Stanley Private Wealth Management representative about the investments concerned. RMB Morgan Stanley (Proprietary) Limited is a member of the JSE Limited and regulated by the Financial Services Board in South Africa. RMB Morgan Stanley (Proprietary) Limited is a joint venture owned equally by Morgan Stanley International Holdings Inc. and RMB Investment Advisory (Proprietary) Limited, which is wholly owned by FirstRand Limited.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (DIFC Branch), regulated by the Dubai Financial Services Authority (the DFSA), and is directed at Professional Clients only, as defined by the DFSA. The financial products or financial services to which this research relates will only be made available to a customer who we are satisfied meets the regulatory criteria to be a Professional Client.

The information in Morgan Stanley Research is being communicated by Morgan Stanley & Co. International plc (QFC Branch), regulated by the Qatar Financial Centre Regulatory Authority (the QFCRA), and is directed at business customers and market counterparties only and is not intended for Retail Customers as defined by the QFCRA.

As required by the Capital Markets Board of Turkey, investment information, comments and recommendations stated here, are not within the scope of investment advisory activity. Investment advisory service is provided in accordance with a contract of engagement on investment advisory concluded between brokerage houses, portfolio management companies, non-deposit banks and clients. Comments and recommendations stated here rely on the individual opinions of the ones providing these comments and recommendations. These opinions may not fit to your financial status, risk and return preferences. For this reason, to make an investment decision by relying solely to this information stated here may not bring about outcomes that fit your expectations.

The trademarks and service marks contained in Morgan Stanley Research are the property of their respective owners. Third-party data providers make no warranties or representations relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages relating to such data. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P. Morgan Stanley bases projections, opinions, forecasts and trading strategies regarding the MSCI Country Index Series solely on public information. MSCI has not reviewed, approved or endorsed these projections, opinions, forecasts and trading strategies. Morgan Stanley has no influence on or control over MSCI's index compilation decisions. Morgan Stanley Research or portions of it may not be reprinted, sold or redistributed without the written consent of Morgan Stanley. Morgan Stanley research is disseminated and available primarily electronically, and, in some cases, in printed form. Additional information on recommended securities/instruments is available on request.

Morgan Stanley Research is disseminated and available primarily electronically, and, in some cases, in printed form.

Additional information on recommended securities/instruments is available on request.

The Americas
1585 Broadway
New York, NY 10036-8293
United States
Tel: +1 (1) 212 761 4000

Europe
20 Bank Street, Canary Wharf
London E14 4AD
United Kingdom
Tel: +44 (0) 20 7 425 8000

Japan
4-20-3 Ebisu, Shibuya-ku
Tokyo 150-6008
Japan
Tel: +81 (0) 3 5424 5000

Asia/Pacific
1 Austin Road West
Kowloon
Hong Kong
Tel: +852 2848 5200

Industry Coverage:Biotechnology

Company (Ticker)	Rating (as of)	Price* (10/18/2013)
David Friedman, M.D.		
Ophthotech Corp (OPHT.O)	O (10/21/2013)	$29.25
AMAG Pharmaceuticals, Inc. (AMAG.O)	E (11/21/2011)	$21.53
Alexion Pharmaceuticals (ALXN.O)	O (09/07/2010)	$108.43
Alnylam Pharmaceuticals (ALNY.O)	O (06/11/2013)	$59.75
Auxilium Pharmaceuticals (AUXL.O)	E (05/03/2013)	$16.85
Chimerix Inc (CMRX.O)	O (05/06/2013)	$16.82
Cubist Pharmaceuticals Inc. (CBST.O)	++	$65.25
Elan Corporation PLC (ELN.N)	++	$16.24
Idenix Pharmaceuticals, Inc. (IDIX.O)	E (03/18/2011)	$3.72
Incyte Corporation (INCY.O)	U (01/23/2013)	$38.04
InterMune (ITMN.O)	E (09/07/2010)	$14.21
Ironwood Pharmaceuticals, Inc. (IRWD.O)	E (04/24/2013)	$10.7
Lexicon Pharmaceuticals, Inc. (LXRX.O)	U (06/11/2013)	$2.59
NPS Pharmaceuticals (NPSP.O)	O (10/03/2012)	$30.05
Portola Pharmaceuticals Inc (PTLA.O)	O (06/17/2013)	$23.75
Synageva Biopharma Corp (GEVA.O)	O (04/20/2012)	$57.82
Theravance Inc (THRX.O)	U (07/22/2013)	$34.17
Vertex Pharmaceuticals (VRTX.O)	E (05/08/2012)	$77.06
XenoPort Inc (XNPT.O)	U (06/11/2013)	$5.89
Yigal Nochomovitz, Ph.D.		
ImmunoGen Inc. (IMGN.O)	E (11/13/2012)	$17.03
Infinity Pharmaceuticals Inc (INFI.O)	O (02/19/2013)	$14.31
Pharmacyclics Inc. (PCYC.O)	E (03/19/2013)	$132.04
Tesaro Inc. (TSRO.O)	O (07/23/2012)	$39.53
Sara Slifka		
Neurocrine Biosciences Inc (NBIX.O)	O (10/03/2012)	$10.75
Optimer Pharmaceuticals (OPTR.O)	++	$12.85

Stock Ratings are subject to change. Please see latest research for each company.
* Historical prices are not split adjusted.