HILLSIDE ADVISORS LLC

October 31, 2016

Hybrid Vigor℠

The Hillside Convertible Advisory Letter
Volume 3 Issue 40

Best and Worst

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Investment Ideas

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If alien life forms ever thought about spending a week or so in our United States of America, hoping to see the best and worst of our country, they could not have picked a better time than the present.

Our national pastime could not be doing better. Two long-suffering franchises and their fans are reaping the rewards of patience and loyalty. This is one of those World Series where nobody loses—sure, one side will be disappointed, but history has its eyes on both. The national desire was almost palpable for the Cubs to win last night and force at least one more game. I bet a lot of Indians fans secretly wanted that too, to prolong this great series and perhaps see their players win at home. Hardly anyone is ready for the season to end. Bring on November baseball. The aliens would see the best in the world at their craft, sportsmanship (one of Cleveland's players applauded his rival after an outstanding catch), competitive energy dedicated to positive ends, and, let's not ignore, outstanding managers.

Thankfully, November also means that this terrible, horrible, no good, very bad presidential election is almost upon us. Just when you think it can't get uglier, it does. Let's start with the contrast: the Cubs and Indians are putting the best in the world out there on the playing field, while the Democratic and Republican parties have done anything but. I support Hillary Clinton and agree that she's as qualified to be president as anyone who's sought the office. But I can understand why people don't like and don't trust her. As for Donald Trump, well, the less said, the better. Suffice it to say that with at most one or two exceptions, anyone in the field running against him in the primaries (let alone at least one excellent Republican who did not run) would have been a better choice, more qualified, more thoughtful, and more temperamentally fit. The country is probably strong enough to survive a Trump presidency—probably. The aliens watching would be justifiably disgusted.

Where would the aliens be advised to invest the interplanetary currency they converted into dollars? They've been told about these things called stocks and bonds. They're nervous about stocks—they're hearing that a Trump victory could bring all manner of orange uncertainty, undermining the market's confidence, and these aliens understand that stocks are worth nothing more than what somebody else is confident enough to pay for them. But they can't help noticing how little they can earn with bonds, even though they've noticed these bond prices coming down during their brief stay here. They like the idea of not losing principal, but only up to a point. They don't want to just hold cash, after all, because they plan to return to Earth and the United States again. They want to see a lot more World Series—and they know that World Series tickets have gotten a lot more expensive over time.

If those aliens happen to be reading Hybrid Vigor, I hope they'll take my advice and consider buying some convertible bonds. They're seeing the best and worst of American culture, but they can get, within reason, the best of both core investment classes we offer. They hear that convertibles are dying, that people are leaving the market. To this I ask them: hasn't your species been around for millions of years? This is just a blip. Even lower-for-longer in the rate world is still a relative blip. Get to know convertibles, my alien friends. They'll help you pay for a lot more Series tickets.

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October 31, 2016

Risk Quartet

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A quick refresher. HARP, or Hillside Adjusted Risk Points, is best thought of as a warning measure for bonds exposed to a blend of absolute price decline and premium decay. The higher the HARP, the more dangerous the bond. HARP tends to be highest for bonds in the 120-130 "death trap" range.

We're headed back down again, risk shedding. The average HARP dropped 0.17 to end at 8.59. This puts our Ugly 20 roster at the third lowest HARP score since scores were invented. The average stock fell 3.3% which contributed to the 2½ points lost in the average bond price. The drop wasn't completely uniform, it never is, but most bonds did shed at least a few HARP basis points. It was however, a few outsized moves which made the overall needle move. Most notably a quartet.

Emergent BioSolutions 2.875% of 2021 was one of those notables. A 0.62 HARP decline to end at 8.10 was meted out by a 4.4% stock decline and a 2¼ bond price drop. How does such a small move in price, which frankly was nearly delta-neutral, make HARP slide? Location, location, location. The bond was priced going into this at 116¾ which meant that there was nothing but air under that price holding it up so high above par. A stumble on the price means that the distance to par eases, and thus the risk eases. Parity is well below par, so at this point in the curve it's not a HARP factor. There are less than three months of hard call protection left on this fine specimen, our good friends. So, even with the four years of soft call protection at 130%, please do be careful.

Interdigital 1.5% of 2020 dropped 0.73 HARP to 7.98 - the week's risk reduction record. Another meltdown in the stock was the culprit. In this case a 12.75% decline drove a nine-point bond price fall, from 122 to 113. This situation is a bit different than Emergent in that Interdigital did possess an above-par parity before the meltdown. In other words, risk was a composite of premium and distance to par. But now that parity has slipped to 96, it leaves risk more fully in the fate of distance to par. Though, unlike Emergent, Interdigital has 3.3 years of hard call protection to break the spell. And unlike Emergent, Interdigital has a mid-20's volatility compared to mid 40's. Take your poison – low vol with lots of time or low time with lots of vol.

In a week of declines, we did have a couple of new entrants. Surprised? You shouldn't be too surprised, as careful readers have learned that risk is not a linear path – even a price decline combined with just the right location on the price curve can significantly increase a bond's risk. In this case we had two such unfortunate bonds. From 28th to 13th came Ariad Pharmaceuticals 3.625% of 2019 with a 0.55 HARP gain to 7.91. The cause of all this ruckus? A 15.41% stock price decline with a 12-point bond price drop, from 133½ to 121½. In other words, a big drop: from a fairly elevated point on the price curve where parity and price were on track to converge, to a point much lower on the curve where parity is now a sub-par 94½ and risk is counted in distance to par instead of parity. Talking about mid 40's volatility, this sort of stock move is the other side of that volatility – keep that in mind.

Endologix 3.25% of 2020 this week seemed like a sequel to Ariad. A gain of 0.70 HARP moved it from 37th to 15th, on the back of a 14.68% stock decline and 11¾ bond price rout dropping from 130½ to 118¾. Same story – falling backwards into the garden of multi-dimensional risk as parity crashes though par. This one has a slightly lower volatility combined with two years of call protection instead of 2.6 years. It's never exactly the same, even when it rhymes.

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Hillside Ugly 20 List (Prices as of October 28, 2016)

	Convertible	Price	Stock	Premium (%)	Premium (pts)	HARP
1	Red Hat 0.25% 2019-10-01	124.00	77.11	18.00	18.92	11.74
2	RPM International 2.25% 2020-12-15	114.75	47.62	26.70	24.18	11.38
3	Air Lease 3.875% 2018-12-01	127.00	30.40	24.10	24.66	10.13
4	Priceline.com 0.35% 2020-06-15	128.00	1474.82	14.10	15.82	9.96
5	Proofpoint 0.75% 2020-06-15	117.00	75.03	26.50	24.51	8.71
6	BioMarin Pharmaceuticals 1.5% 2020-10-15	117.25	81.13	35.90	30.97	8.63
7	NuVasive 2.25% 2021-03-15	118.50	59.95	18.40	18.42	8.37
8	Pacira Pharmaceuticals 3.25% 2019-02-01	147.00	33.15	10.00	13.36	8.12
9	Emergent BioSolutions 2.875% 2021-01-15	114.50	26.90	31.30	27.30	8.10
10	Workday Tranche 2 1.5% 2020-07-15	125.25	86.20	18.80	19.82	8.10
11	Rambus 1.125% 2018-08-15	115.75	12.03	16.20	16.14	8.03
12	Interdigital 1.5% 2020-03-01	113.00	69.45	17.60	16.91	7.98
13	Ariad Pharmaceuticals 3.625% 2019-06-15	121.50	8.78	28.80	27.17	7.91
14	Molina Healthcare Ex 1.625% 2044-08-15	116.00	54.59	23.40	22.00	7.89
15	Endologix 3.25% 2020-11-01	118.75	10.64	24.80	23.60	7.88
16	Citrix Systems 0.5% 2019-04-15	112.75	84.52	20.00	18.79	7.84
17	Oasis Petroleum 2.625% 2023-09-15	118.25	11.48	34.80	30.53	7.78
18	Euronet Worldwide 1.5% 2044-10-01	124.25	79.98	12.10	13.41	7.78
19	WebMD Health 1.5% 2020-12-01	116.00	50.39	21.40	20.45	7.70
20	ServiceNow 0% 2018-11-01	129.00	86.12	10.70	12.47	7.69

Sources: Bloomberg, Kynex

HOCS™ 20 Review

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Not too much was especially good last week (and we're not even talking politics), but big was better than small. We saw this both in the relative performances of the major stock averages and through our trusty HOCS prism.

While CWB continued its remarkable 2016 outperformance, our flagship HOCS 100 struggled. CWB, the exchange-traded fund that purports to reflect the convertible market, lost a relatively small 46 basis points in a tough week. For the year, it's still up 8.62%. Meanwhile, HOCS 100 fell twice as much on the week, taking its year-to-date performance down to 3.95%, which marginally trails the group of mutual funds we track. That group fell 95 basis points on the week, down two bp's more than the HOCS 100, and saw its year-to-date return fall to 4.11%.

The narrower HOCS 20 lists did better than the HOCS 100 last week, particularly the more liquid Over $300 Million group. All the lists benefited from the presence of Akamai's zeroes of 2019. Akamai stock catapulted over 21% on better-than-expected results, taking the defensively balanced convertibles up over 6%. The biggest piece of bad news came from HOCS 20 stalwart Pandora 1.75%, down over 5% on a 9% stock drop on a disappointing report of slowing advertising growth. Vitamin Shoppe 2.25% of 2020 also had a rough week, dropping nearly 5% on a 10% stock decline in sympathy with rival GNC's poor report. Original-recipe HOCS 20 lost 73 basis points with the underlying shares off 2.08%, while China-free similarly fell 66 basis points in sympathy with shares down 1.89%. Notably better was the Over $300 Million group, which lost a mere 13 basis points with its stocks down only 69 basis points. As we said, bigger was better.

In this week's HOCS 20, old standby Tesla siblings have made it back to the top of the list thanks to improved safety ratings. We note that both convertibles were up slightly last week even though the stock gave up all its post-earnings pop and a bit more—the overall financials seem a bit steadier even though analysts voiced skepticism over the quality of the big earnings beat, with most of it apparently coming from emission credits. In any case, the average score of the HOCS 20 is a bit better than it's been of late. The original version comes in with a HOCS rating of 67.6, an average price point of 97.10 and a yield/premium get/give-up of 2.48% and 56.9%. In an unusual development, the original Tesla convertible managed to eke out a good enough safety score despite its high price point to slip into the China-free mix. Meanwhile, Twitter's two convertibles remain on the Over $300 Million list but have dropped off the other two: ditto for Akamai.

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Hillside HOCS 20 List

	Description	Convert	Stock	HOCS Overall	HOCS Growth	HOCS Safety	Yield	Premium
1	TESLA 1.250% 2021-03-01	88.25	199.97	77.4	71.9	88.5	4.25%	58.8%
2	TESLA 0.250% 2019-03-01	92.75	199.97	76.9	68.1	94.6	3.51%	66.9%
3	HORIZON 2.500% 2022-03-15	97.25	17.85	75.3	81.7	62.5	3.06%	56.1%
4	PANDORA 1.750% 2020-12-01	99.00	11.47	71.1	81.1	51.1	2.01%	41.7%
5	ENVESTNET 1.750% 2019-12-15	94.75	35.05	70.5	67.9	75.5	3.54%	70.0%
6	CTRIP.COM 1.250% 2022-09-15	99.00	44.73	69.3	77.1	53.7	1.61%	45.0%
7	CTRIP.COM 1.990% 2025-07-01	110.00	44.73	67.8	86.2	31.0	-0.70%	31.4%
8	SILVER 2.875% 2033-02-01	95.75	10.75	67.1	67.1	67.2	4.29%	78.1%
9	INPHI 0.750% 2021-09-01	100.25	37.06	66.2	73.3	52.0	0.70%	52.4%
10	INFINERA 1.750% 2018-06-01	102.50	7.93	65.8	58.2	80.9	0.17%	62.6%
11	ECHO 2.500% 2020-05-01	92.25	21.15	65.6	68.1	60.8	4.94%	70.8%
12	ILLUMINA 0.000% 2019-06-15	98.25	138.63	65.6	54.7	87.5	0.67%	80.3%
13	SHUTTERFLY 0.250% 2018-05-15	99.75	47.93	65.4	53.6	89.1	0.41%	33.5%
14	CEPHEID 1.250% 2021-02-01	103.75	52.76	64.8	75.4	43.5	0.36%	28.0%
15	SYNCHRONOSS 0.750% 2019-08-15	103.50	37.01	64.4	61.1	71.0	-0.49%	48.7%
16	INTEGRATED 0.875% 2022-11-15	97.00	20.70	64.0	60.3	71.3	1.39%	56.8%
17	ILLUMINA 0.500% 2021-06-15	101.25	138.63	63.6	54.9	81.1	0.23%	85.8%
18	VITAMIN 2.250% 2020-12-01	92.25	24.85	63.6	61.8	67.2	4.34%	47.5%
19	HERBALIFE 2.000% 2019-08-15	97.00	60.22	63.4	54.1	82.2	3.13%	39.0%
20	GOGO 3.750% 2020-03-01	77.50	10.03	63.4	69.1	52.2	12.16%	84.3%

Sources: Bloomberg, Kynex

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Hillside HOCS 20 List ex China

	Description	Convert	Stock	HOCS Overall	HOCS Growth	HOCS Safety	Yield	Premium
1	TESLA 1.250% 2021-03-01	88.25	199.97	77.4	71.9	88.5	4.25%	58.8%
2	TESLA 0.250% 2019-03-01	92.75	199.97	76.9	68.1	94.6	3.51%	66.9%
3	HORIZON 2.500% 2022-03-15	97.25	17.85	75.3	81.7	62.5	3.06%	56.1%
4	PANDORA 1.750% 2020-12-01	99.00	11.47	71.1	81.1	51.1	2.01%	41.7%
5	ENVESTNET 1.750% 2019-12-15	94.75	35.05	70.5	67.9	75.5	3.54%	70.0%
6	SILVER 2.875% 2033-02-01	95.75	10.75	67.1	67.1	67.2	4.29%	78.1%
7	INPHI 0.750% 2021-09-01	100.25	37.06	66.2	73.3	52.0	0.70%	52.4%
8	INFINERA 1.750% 2018-06-01	102.50	7.93	65.8	58.2	80.9	0.17%	62.6%
9	ECHO 2.500% 2020-05-01	92.25	21.15	65.6	68.1	60.8	4.94%	70.8%
10	ILLUMINA 0.000% 2019-06-15	98.25	138.63	65.6	54.7	87.5	0.67%	80.3%
11	SHUTTERFLY 0.250% 2018-05-15	99.75	47.93	65.4	53.6	89.1	0.41%	33.5%
12	CEPHEID 1.250% 2021-02-01	103.75	52.76	64.8	75.4	43.5	0.36%	28.0%
13	SYNCHRONOSS 0.750% 2019-08-15	103.50	37.01	64.4	61.1	71.0	-0.49%	48.7%
14	INTEGRATED 0.875% 2022-11-15	97.00	20.70	64.0	60.3	71.3	1.39%	56.8%
15	ILLUMINA 0.500% 2021-06-15	101.25	138.63	63.6	54.9	81.1	0.23%	85.8%
16	VITAMIN 2.250% 2020-12-01	92.25	24.85	63.6	61.8	67.2	4.34%	47.5%
17	HERBALIFE 2.000% 2019-08-15	97.00	60.22	63.4	54.1	82.2	3.13%	39.0%
18	GOGO 3.750% 2020-03-01	77.50	10.03	63.4	69.1	52.2	12.16%	84.3%
19	TESLA 1.500% 2018-06-01	163.50	199.97	63.0	78.9	31.3	-27.66%	1.8%
20	TELIGENT 3.500% 2019-12-15	92.75	6.80	62.5	78.3	30.7	6.08%	54.0%

Sources: Bloomberg, Kynex

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Hillside Advisors HOCS 20 List (Issue Size > $300 Million)

	Description	Convert	Stock	HOCS Overall	HOCS Growth	HOCS Safety	Yield	Premium
1	TESLA 1.250% 2021-03-01	88.25	199.97	77.4	71.9	88.5	4.25%	58.8%
2	TESLA 0.250% 2019-03-01	92.75	199.97	76.9	68.1	94.6	3.51%	66.9%
3	HORIZON 2.500% 2022-03-15	97.25	17.85	75.3	81.7	62.5	3.06%	56.1%
4	PANDORA 1.750% 2020-12-01	99.00	11.47	71.1	81.1	51.1	2.01%	41.7%
5	ILLUMINA 0.000% 2019-06-15	98.25	138.63	65.6	54.7	87.5	0.67%	80.3%
6	SHUTTERFLY 0.250% 2018-05-15	99.75	47.93	65.4	53.6	89.1	0.41%	33.5%
7	CEPHEID 1.250% 2021-02-01	103.75	52.76	64.8	75.4	43.5	0.36%	28.0%
8	INTEGRATED 0.875% 2022-11-15	97.00	20.70	64.0	60.3	71.3	1.39%	56.8%
9	ILLUMINA 0.500% 2021-06-15	101.25	138.63	63.6	54.9	81.1	0.23%	85.8%
10	HERBALIFE 2.000% 2019-08-15	97.00	60.22	63.4	54.1	82.2	3.13%	39.0%
11	GOGO 3.750% 2020-03-01	77.50	10.03	63.4	69.1	52.2	12.16%	84.3%
12	PRICELINE 1.000% 2018-03-15	159.00	1474.82	62.2	77.1	32.4	-30.36%	1.8%
13	JAZZ 1.875% 2021-08-15	100.00	113.60	62.0	54.8	76.3	1.87%	75.9%
14	TWITTER 1.000% 2021-09-15	92.25	17.66	61.0	47.7	87.7	2.71%	305.6%
15	OASIS 2.625% 2023-09-15	118.00	11.48	60.7	74.5	33.0	0.01%	34.6%
16	TWITTER 0.250% 2019-09-15	93.75	17.66	60.6	44.9	92.1	2.52%	312.2%
17	IONIS 1.000% 2021-11-15	82.50	26.09	60.2	66.9	46.8	4.97%	111.3%
18	INTERCEPT 3.250% 2023-07-01	98.50	124.20	59.9	71.2	37.2	3.50%	57.5%
19	AKAMAI 0.000% 2019-02-15	105.75	69.91	59.5	53.7	71.2	-2.43%	35.5%
20	INSULET 1.250% 2021-09-15	93.75	37.01	58.5	68.5	38.7	2.62%	47.8%

Sources: Bloomberg, Kynex

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Leveraged-Loan Update: Solid Low-Volatility Gains and Good Prospects for the Remainder of 2016

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The leveraged-loan market is up just over 8% so far in 2016. This slow and steady performance has been overshadowed by the year-to-date return of over 17% turned in by the high-yield market. However, leveraged-loan returns in 2016 have matched the 8% return for investment-grade bonds and have trounced the 5% return for 10-year Treasuries and 6.2% return for the S&P 500. Importantly, returns for leveraged loans come with less volatility than most other asset classes.

The leveraged-loan market has experienced an uptick in demand over the last several months. Last week it reported a $291 million inflow reflecting the thirteenth consecutive week of inflows. This is quite a change. Despite recent inflows, total retail flows so far for 2016 are still at negative $2.2 billion. Flows during 2015 and 2014 were negative $21.7 billion and $23.8 billion, respectively. Why the change in sentiment? The technicals for leveraged loans look good. Loans are floating rate instruments and investors appear to believe that the long-awaited upward movement in interest rates could finally be here. Moreover, as floating-rate instruments, leveraged loans are not vulnerable to duration risk in a rising interest rate environment. Also, loans typically sit at the top of the capital structure and can be secured against a pool of assets.

Leveraged loans are yielding 6.1% or 490 basis points over Treasuries. In contrast, high-yield bonds are yielding 6.6% or 535 basis points over. It seems, of late, some investors are willing to give up a little yield to protect themselves against rising rates. Indeed, BB-rated leveraged loans and high-yield bonds are both yielding about 4.5% and are 330 basis points over Treasuries. This seems like an easy swap idea. For an even yield, an investor can swap into the BB-rated loan and get protection against rising rates and probably improve credit protection by trading into a secured debt instrument. However, investors do need to proceed with caution. Leveraged loans are typically structured with 101 call protection for just 6 months to a year. Purchasing a loan trading over par that gets called away too soon can result in an unexpected loss.

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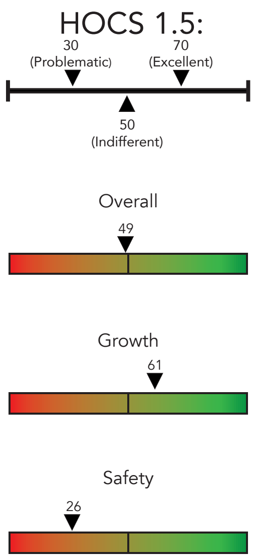
AMAG Pharmaceuticals (AMAG) – Oh Baby

AMAG

2.5% 2019/02/15
Price (Bond) = 117.00
Stock = $25.90
YTM = -4.47%
Premium = 22.4%
HOCS-Overall = 49
HOCS-Growth = 61
HOCS-Safety = 26

As of October 21, 2016



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AMAG is another name that my colleague Jeff Alton covered earlier this year when biotech and pharma were particularly beaten up (as, collectively, they are again). The 2.5% convertible notes due 2019 had fallen from a high of 285 in July 2015 to 100.5 in late-March, falling pretty much in lock step with a stock drop from $76.46 to $21.42. At the time the converts fit the OINC (Old Issue New Chance) scenario perfectly and with a HOCS slash line of 74 Overall / 80 Growth / 62 Safety it made sense for investors not familiar with the name to take a look and get involved.

Since then the stock has moved up over 20% and the converts 17%. The HOCS slash line is now 49 / 61 / 26, reflecting the much higher convert score of 117. We wouldn't recommend jumping into the convert at this price, but we think it is worth taking a look. The growth score is still pretty good and with all the uncertainty around drug pricing especially with regards to the election results, you never know when an OINC moment might present itself. It can pay to be prepared.

Company Overview

AMAG is a biopharmaceutical company focused on maternal health, anemia management, and cancer supportive care. The company has three primary offerings. Makena is by far the largest revenue generator. Makena is a treatment to reduce the risk of preterm birth in women who are pregnant with a single baby and have a history of preterm birth. The drug was approved in 2011 and has orphan drug exclusivity through 2018. AMAG acquired the drug in 2014 through the Lumara Health acquisition. The company paid $600 million in cash plus $112 million in stock with the possibility of up to $350 million in contingent consideration, of which $221 million remains with $100 million of that payable this calendar year.

Within the maternal health segment, the company also has Cord Blood Registry (CBR), which was acquired in August 2015 for $700 million cash. CBR is the world's largest private newborn stem cell company. The company stores both umbilical cord blood and cord tissue, which are rich in stem cells. The ability to reach a broader population of expectant mothers was at least a partial driver of the acquisition.

Feraheme is the primary offering within the anemia management segment. The drug was approved in 2009 and launched shortly thereafter. Feraheme is an intravenous (IV) iron replacement therapy treatment for adults with iron deficiency anemia due to chronic kidney disease. Within the broader hematology/oncology space, the company also licenses McGard. The product is a treatment for mucositis/stomatitis (from radiation therapy and/or chemotherapy), which causes severe oral pain. That product has not taken off due to the lack of broad reimbursement and insurance coverage, which resulted in the company taking an asset impairment charge in the second quarter for $15.7 million.

Financial Results and the Pipeline

AMAG reported second quarter results on August 9, which exceeded both the EPS and revenue consensus estimates. Excluding 2015 collaboration revenue (relates to a Takeda agreement that was terminated in 2015), total revenue for the quarter increased 50% compared to the year earlier quarter. The primary drivers were increasing Makena sales and the addition of CBR.

The growth in Makena sales was driven exclusively by volume increases and not pricing, which is very important in the current environment. Growth accelerated following the approval earlier this year of a single-dose preservative-free formulation. The company also received approval in July for a second manufacturer of the new formulation. In the first quarter an agreement was signed with a leading provider of home nursing services to provide home administration of Makena, which also bolstered sales. The provider is using the new single-dose preservative-free formulation exclusively. When CBR was acquired last year, the maternal sales force was expanded. This has benefitted Makena sales as new physicians increased 35% sequentially between the first and second quarter.

Table 1: Revenue Summary

Net Sales (in millions)	Q2 2016	Q2 2015	% Chg	H1 2016	H1 2015	% Chg	FY 2015
Makena	$78.4	$63.6	23.3%	$143.4	$119.1	20.4%	$251.6
Feraheme/McGard	24.6	21.1	16.6%	49.1	43.0	14.3%	90.2
Cord Blood Registry	24.4	0.0	NA	43.9	0.0	NA	24.1
License Fee, Collab, & Other	0.1	39.2	-99.7%	0.3	51.3	-99.4%	52.3
Total revenues	$127.5	$123.9	2.9%	$236.7	$213.4	10.9%	$418.3

Sources: Company Filings

Feraheme sales increased more than 16% year-over-year with two-thirds of the increase driven by volume. CBR was acquired in August of last year. The acquisition was somewhat controversial, but management has been able to stabilize volumes and was able to increase price somewhat.

Management provided sales guidance for full year 2016 as follows:

$ in millions	2016 GAAP Guidance
Makena	$310 to $340
Feraheme and McGard	$95 to $105
CBR	$98 to $108
Total	$503 to $553

The midpoint of guidance represents sales growth of 44%, excluding the collaboration revenue in 2015. Management has also guided for full year adjusted EBITDA of $255 to $285 million. That represents growth of 26% at the midpoint.

The company has provided a more recent update on the pipeline for next generation programs for both Makena and Feraheme. The company is currently conducting two Phase 3 studies for Makena. The first is a definitive pharmacokinetic (PK) study using a subcutaneous auto-injector device. The benefits here would be ease of administration by a healthcare professional and a smaller needle that is hidden from sight. Concurrently, the company is conducting a Phase 3 comparative pain study to demonstrate a reduction in pain using the subcutaneous auto-injector versus the current needle version. The company anticipates filing an sNDA (supplemental new drug application) in the second quarter of 2017 with possible approval in the first quarter of 2018. This is a bit tight with the current orphan drug exclusivity expiring that year, but management is confident it can manage the timeline.

For Feraheme the company is conducting a Phase 3 study to expand the label beyond the chronic kidney disease indication. The new label would include all adult IDA (iron deficiency anemia) patients who cannot take oral iron treatments. Enrollment in the trial is ahead of schedule and management expects to file an sNDA in mid-2017 with a decision expected by mid-2018. The broader label would double the addressable market for Feraheme.

Acquisitions and Liquidity

Like many other companies in the biotech/pharma universe, acquisitions have played a large role in forming this company. As we discussed above, Makena and CBR were both acquired within the last few years for total cash of $1.3 billion. Management has been vocal about looking for additional acquisitions or licensing agreements for marketed or late-stage development assets to accelerate future growth.

In July 2015 the company entered into an agreement with Velo Bio, a privately held life science company, for the option to acquire the rights to orphan drug candidate, digoxin immune fab (DIF). DIF is a treatment for severe eclampsia in pregnant women. Velo is conducting a Phase 2b/3a study expected to begin in late 2016. Following the completion of the trial, AMAG may terminate the agreement or for additional consideration exercise or extend the option to acquire DIF.

The company is particularly interested in drugs within its existing segments of maternal health and hematology/oncology. Management has also discussed women's health as a new area of interest as it could be a good fit within the maternal health segment.

AMAG has taken on debt to finance its acquisitions. In addition to the $200 million of convertible bonds, the company issued $500 million of 7.875% of 2023 senior notes in 2015 and entered into a secured term loan with $337 million outstanding at June 30. The term loan matures in August 2021 and has a rate of L+375. The company also has contingent consideration payments totaling $224 million on the balance sheet. Nearly all of that relates to the Makena acquisition via Lumara Health with $100 million due this year. The convertible bonds are the first debt due in 2019.

EBITDA has ramped up in the last couple of years and was $226 million over the last twelve months. Debt, including the contingency payments, to EBITDA is a somewhat high 5.6 times. However when cash of $547 million is factored in, net debt is a more manageable 3.2 times. Using the midpoint of management's guidance for 2016 EBITDA brings net leverage down to 2.6 times. Free cash flow was $132 million over the last twelve months. The company introduced a stock repurchase program in June with a $60 million authorization. During the second quarter $20 million was repurchased. Overall liquidity is quite good.

The 2.5% Convert

As we mentioned up front, the convertible bonds receive a HOCS slash line of 49 Overall / 61 Growth / 26 Safety with the bonds at 117 versus $25.90. The growth score is quite respectable at 61 and is warranted with the prospects for future growth for Makena and Feraheme quite good with the development programs underway. The low safety score is a factor of the convert price being so far above par and the low equity market value relative to total debt. We think the safety score warning should be heeded as there isn't a compelling reason to jump into the converts at this level. However, should the bonds dip back down closer to par it could be another buying opportunity for investors. The company is announcing third quarter earnings later this week, so stay tuned.

** Disclosure: An affiliate of Hillside Advisors and Principals of Hillside Advisors have investments in AMAG.

HILLSIDE ADVISORS LLC

October 31, 2016

Credit Waterfall

AMAG Pharmaceuticals, Inc (AMAG) (Dollars in Millions)	6/30/2016	Total Debt (Cum. Bal.)	Adj. EBITDA Multiple	Net Debt (Cum. Bal.)	Adj. EBITDA Multiple
Current Share Price (1)	$25.90				
Shares Out. (Millions)	34.2				
Latest Twelve Months:					
EBITDA (Adj.)	$226				
Free Cash Flow	$132				
Cash & Cash Equivalents	$547				
Senior Secured Debt					
Libor +3.75% 2015 Term Loan Facility due 08/17/21	$337				
	$337	$337	1.5x	(210)	N/M
Senior Unsecured Debt					
7.875% 2023 Senior Notes due 09/01/23	$500				
2.50% Convertible Notes due 02/15/19 (2)	$200				
	$700	$1,037	4.6x	490	2.2x
Other Commitments					
Contingent consideration - Lumara Health	$221				
Contingent consideration - MuGard	$2				
	$224	$1,261	5.6x	714	3.2x
Total Debt (3)	$1,261	$1,261	5.6x	714	3.2x
Equity Market Cap.	$886	---	---	---	---
Enterprise Value	$1,601	---	---	---	7.1x

(1) Stock price as of Friday Close 10/28/2016
(2) Reflects principal amount of convertible securities outstanding, unadjusted for unamortized debt discount.
(3) Includes Other Commitments for credit analysis purpose

Source: Bloomberg, Company filings, Earnings presentation, and Hillside Advisors

Financial Summary

AMAG Pharmaceuticals, Inc (AMAG)	Fiscal Years Ended					LTM		Quarter Ended	
(Dollars in Millions)	31-Dec-11	31-Dec-12	31-Dec-13	31-Dec-14	31-Dec-15	30-Jun-15	30-Jun-16	30-Jun-15	30-Jun-16
Revenues	61	85	81	124	418	292	442	124	127
Y / Y Change	----	39.4%	-5.3%	53.8%	236.3%	----	51.2%	----	2.9%
Gross Profit	51	71	69	104	330	237	343	104	100
Operating Profit	(80)	(17)	(12)	(4)	111	91	47	61	18
EBITDA (Adj.)	(77)	(14)	(3)	14	214	115	226	52	65
Interest Expense	0	0	0	15	53	31	69	10	18
Income Tax Expense	(1)	(1)	0	(153)	7	(130)	(18)	18	1
Capital Expenditures	1	0	5	0	1	1	3	1	2
% Revenues	0.8%	0.1%	6.3%	0.1%	0.3%	0.2%	0.7%	0.5%	1.5%
Free Cash Flow	(64)	(1)	(12)	11	95	93	132	42	82
Total Debt	0	0	0	540	1,046	523	1,037	523	1,037
% Total Debt	N/A	N/A	N/A	2.1%	9.1%	17.7%	12.7%	8.0%	7.9%
Gross Margin	82.8%	83.3%	85.2%	83.7%	78.8%	81.0%	77.6%	84.1%	78.7%
Operating Margin	NA	NA	NA	NA	NA	31.1%	10.6%	49.3%	14.2%
EBITDA (Adj.) Margin	NA	NA	NA	11.3%	51.1%	39.5%	51.2%	42.1%	50.7%
EBITDA (Adj.) / Interest	N/A	N/A	N/A	1.0x	4.0x	3.8x	3.3x	5.1x	3.5x
EBITDA (Adj.) - Capex / Interest	N/A	N/A	N/A	0.9x	4.0x	3.7x	3.2x	5.0x	3.4x

(2) Reflects principal amount of convertible securities outstanding, unadjusted for unamortized debt discount.

Source: Bloomberg, Company filings, Earnings presentation, and Hillside Advisors

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