Equity Research

Basic Industries | North America Fertilizers & Agriculture

6 May 2014

Phibro Animal Health Corp.

Initiating Coverage at Overweight; Ag from a Different Angle

We are initiating coverage on Phibro Animal Health Corp. with an Overweight rating and a $21 price target. We see PAHC shares as a differentiated way to gain exposure to a powerful trend underlying the global agriculture industry – a growing population moving up the literal food chain increases the amount of animal protein demanded. **As a producer of leading medical and nutritional feed supplements aimed at keeping animals healthier and more productive, Phibro benefits from livestock farmers' need for greater efficiency in raising poultry, swine, beef cattle, dairy cattle, and other species**. Additionally, as the company is not a pure commodity processor or producer, it is less directly exposed to the near-term volatility of commodity prices.

We believe Phibro's revenue and margin outlook is promising. On a macro level, with a global platform and a diverse product portfolio, **Phibro's earnings should gain from leverage to the fastest growing livestock species (poultry), with the fastest growing products (vaccines, non-medicated supplements), in the fastest growing regions (Latin America, Asia)**. Specifically, through market expansion of brands such as OmniGen and V-Max in China and Brazil, leverage of leading vaccine technology (the TAbic blister-pack delivery system), and targeted acquisitions allowing entry into new high-potential markets such as aquaculture (AquaVet**), we believe Phibro can deliver annual revenue growth of 5-6% for the next several years as EBITDA margins expand over 250bps** from an improved product mix and investments in cost savings.

The primary risks to the company relate to regulatory challenges in the face of greater scrutiny by the government and the public of the use of antibiotics in livestock production. Recent standards proposed by the FDA place limits on the use of these drugs, but the current impact would be on only a small piece of Phibro's current business. **In our view, the company's diversification helps offset the risk of additional controls in the future.**

PAHC: Quarterly and Annual EPS (USD)

	2013	2014			2015			Change y/y	
FY Jun	Actual	Old	New	Cons	Old	New	Cons	2014	2015
Q1	0.07A	N/A	0.21A	N/A	N/A	0.34E	N/A	200%	62%
Q2	0.15A	N/A	0.27A	N/A	N/A	0.36E	N/A	80%	33%
Q3	0.18A	N/A	0.18E	N/A	N/A	0.35E	N/A	0%	94%
Q4	0.21A	N/A	0.32E	N/A	N/A	0.37E	N/A	52%	16%
Year	0.60A	N/A	0.98E	N/A	N/A	1.42E	N/A	63%	45%
P/E	29.8		18.4			12.7			

Source: Barclays Research.
Consensus numbers are from Thomson Reuters

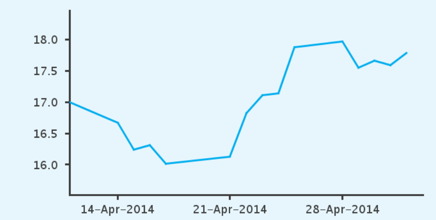
Stock Rating	OVERWEIGHT	from N/A
Industry View	NEUTRAL	Unchanged
Price Target	USD 21.00	from N/A

Price (05-May-2014)	USD 17.96
Potential Upside/Downside	+17%
Tickers	PAHC

Market Cap (USD mn)	727
Shares Outstanding (mn)	40.70
Free Float (%)	90.09
52 Wk Avg Daily Volume (mn)	0.4
Dividend Yield (%)	N/A
Return on Equity TTM (%)	N/A
Current BVPS (USD)	-1.64

Source: Thomson Reuters

Price Performance	Exchange-Nasdaq
52 Week range	USD 18.50-15.10



Link to Barclays Live for interactive charting

North America Fertilizers & Agriculture

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North America Fertilizers & Agriculture — **Industry View: NEUTRAL**

Phibro Animal Health Corp. (PAHC)

Stock Rating: OVERWEIGHT

Income statement ($mn)	2013A	2014E	2015E	2016E	CAGR
Revenue	653	684	728	770	5.7%
EBITDA (adj)	76	90	100	110	13.1%
EBIT	57	69	79	89	16.3%
Pre-tax income	18	13	65	77	62.6%
Net income	25	1	52	53	28.6%
EPS (adj) ($)	0.60	0.98	1.42	1.66	40.1%
Diluted shares (mn)	30.5	34.9	39.4	39.4	9.0%
DPS ($)	0.00	0.10	0.39	0.39	N/A

Margin and return data					Average
EBITDA (adj) margin (%)	11.6	13.2	13.8	14.2	13.2
EBIT margin (%)	8.7	10.0	10.8	11.6	10.3
Pre-tax margin (%)	2.7	1.9	8.9	10.0	5.9
Net margin (%)	3.8	0.2	7.1	6.9	4.5
ROIC (%)	5.5	2.1	16.9	15.9	10.1
ROA (%)	4.0	7.1	11.3	12.8	8.8
ROE (%)	-23.4	-133.7	154.0	88.8	21.4

Balance sheet and cash flow ($mn)					CAGR
Tangible fixed assets	104	103	102	101	-1.1%
Intangible fixed assets	35	35	35	35	0.0%
Cash and equivalents	27	30	34	42	15.1%
Total assets	474	486	501	520	3.1%
Short and long-term debt	366	288	263	233	-14.0%
Other long-term liabilities	62	62	62	62	0.0%
Total liabilities	543	468	447	427	-7.7%
Net debt/(funds)	338	257	229	191	-17.4%
Shareholders' equity	-69	18	55	93	N/A
Change in working capital	-35	-10	-9	-9	N/A
Cash flow from operations	0	36	64	73	459.6%
Capital expenditure	-20	-20	-20	-20	N/A
Free cash flow	-20	16	44	53	N/A

Valuation and leverage metrics					Average
EV/EBITDA (adj) (x)	13.8	10.7	9.3	8.2	10.5
P/E (adj) (x)	29.8	18.4	12.7	10.8	17.9
FCF yield (%)	-3.6	2.5	6.2	7.4	3.2
P/Sales (x)	1.1	1.0	1.0	0.9	1.0
P/BV (x)	-7.9	34.4	12.7	7.5	11.7
Dividend yield (%)	0.0	0.5	2.2	2.2	1.2
Total debt/capital (%)	123.2	94.1	82.8	71.5	92.9

Price (05-May-2014)	USD 17.96
Price Target	USD 21.00

Why Overweight? We see PAHC shares as a unique way to gain exposure to the strong underlying protein demand trends supporting agribusiness, and we believe that its potential for additional Animal Health market penetration with both existing and new products should support above-industry revenue growth and solid margin expansion.

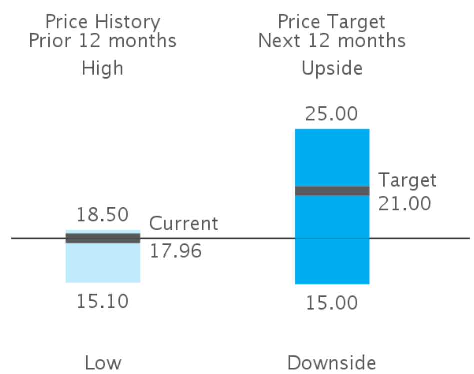
Upside case — **USD 25.00**

Our upside case of $25 assumes a slightly higher multiple applied to a est 2015 EBITDA of $105M + a modestly higher long-term growth rate in our cash flow model. This EBITDA value results from assuming better top line growth and slight margin expansion relative to our base case.

Downside case — **USD 15.00**

Our downside case of $15 assumes a slightly lower multiple applied to a est 2015 EBITDA of $89M + a modestly lower long-term growth rate in our cash flow model. This EBITDA value results from assuming slower top line growth and slight margin compression relative to our base case.

Upside/Downside scenarios



Selected operating metrics

Source: Company data, Barclays Research
Note: FY End Jun

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PHIBRO ANIMAL HEALTH CORPORATION

PAHC

Stock Rating
OVERWEIGHT

Industry View
NEUTRAL

Price Target
USD 21.00

Price (02-May-2014)
USD 17.78

Potential Upside/Downside
+18%

Phibro Animal Health Corp.(PAHC): Quarterly and Annual EPS (USD)

	2013	2014			2015			Change y/y	
FY Jun	Actual	Old	New	Cons	Old	New	Cons	2014	2015
Q1	0.07A	N/A	0.21A	N/A	N/A	0.34E	N/A	200%	62%
Q2	0.15A	N/A	0.27A	N/A	N/A	0.36E	N/A	80%	33%
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P/E	29.5		18.2			12.5			

Source: Barclays Research.
Consensus numbers are from Thomson Reuters

Investment Thesis

We see Phibro Animal Health as a differentiated way for investors to gain exposure to the steadily growing global market for animal protein and the expanding need for reliable, cost-effective inputs (feed, medications, vitamins and minerals) to support the industry. Phibro is a smaller company among the other participants in the animal health market, but to us it offers an interesting story given its potential for above-industry growth rates as particular products, including its TAbic technology for vaccines and its leading nutritional supplements such as OmniGen for dairy cows, appear poised for greater market penetration. With larger, positive industry trends supportive of long-term growth in livestock production well in place, we believe the main driver for the stock will be whether the company can meet or exceed expectations for above-market top-line growth while improving profitability through an updated, progressing product mix and improving cost controls.

We initiate coverage of Phibro Animal Health with an Overweight rating (Industry view: Neutral) and a price target of $21. Our price target reflects an average of two valuation methodologies: 1) using a multiple of 10.25x our projected 2015 EBITDA of $100M; and 2) a discounted cash flow model assuming an 8.2% discount rate and a long-term growth rate of 3.0%. This is a small-cap company, a new IPO largely controlled by a single family, with a corresponding limited level of trading volume, and as such the stock-specific risks are substantial. That said, the growth potential appears high – we are currently projecting an EBITDA growth CAGR of over 13% from FY2013-16, well ahead of the market's expectation for the other main stand-alone public animal health companies.

Phibro generates its earnings from three primary operating divisions; the most important in terms of growth and profitability is Animal Health. The remaining businesses include Mineral Nutrition, which is essentially a processing/pass-through of metals into vitamin forms, and Performance Products, which is largely a legacy business that hearkens back to the company's origins in chemicals. Performance Products produces industrial chemicals for personal care and industrial uses (e.g. fluoride for toothpaste). Mineral Nutrition and Performance Products are relatively low margin and together contribute only a small share of EBITDA (we estimate less than 14% for FY2014).

Zoetis (ZTS, covered by Barclays US Pharmaceuticals analyst Doug Tsao with an Equal Weight/Positive rating and a price target of $35 [23.2x our FY14E EPS of $1.51]) is the best U.S. pure-play animal health comparable company to Phibro, in our view, but it is noticeably larger, more profitable (given the different business composition), less levered, sells into the companion animal (pet) market as well as the livestock market, and unlike Phibro is not effectively controlled by a founding family. At the same time, it is likely to see a lower growth rate in the near term, it has less exposure to the fast-growing poultry market and greater dependence on the more challenging cattle market, and investors have become somewhat less favorable on the company's ability to effectively communicate its strategy to investors. Zoetis currently trades at 12.1x and 17.4x consensus estimated 2015 EBITDA and EPS, respectively. All in, we believe that the proper market valuation for PAHC will be at a moderate but significant discount to ZTS. Over time, should Phibro's Animal Health business demonstrate the ability to maintain high single-digit revenue growth and expand operating margins toward the higher end of the industry range – achievements not impossible for a company with less than $700M in revenues over the past year in a ~$22 billion market – we would expect valuation expansion in response. Our upside scenario assumes an average revenue growth rate of 6.4% into 2016 and operating margins of 11.4%-11.9% for 2015/16 vs. 8.7% for FY2013.

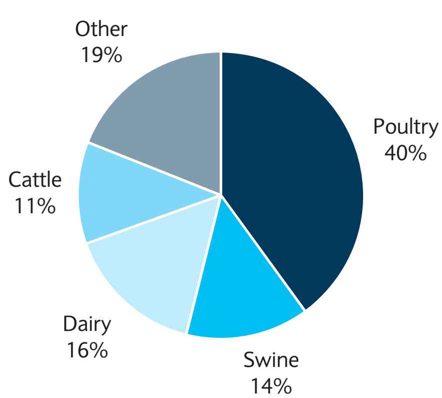
Company Description & History

Phibro Animal Health Corp. is a global diversified animal health and mineral nutrition company characterized by its focus on livestock – the company has no offerings for the pet or "companion animal" market. It aims to help meet steadily growing global demand for animal protein by offering a range of products to livestock producers that improve efficiency and reduce overall operating costs. In particular, Phibro's offerings assist in disease prevention and treatment while also providing dietary supplements for balanced nutrition. Total sales are weighted to the fast-growing poultry market but also serve other animal categories (swine, dairy cattle, beef cattle).

The company has a broad customer base spanning a wide range of industries from the big ag processors (ADM, Cargill) and integrated protein producers (Smithfield, Tyson, Pilgrim's Pride, Perdue) to veterinary companies (MWI Veterinary Supply Co.) Though smaller than many of its competitors – Phibro's total revenues were $662M for the twelve months ending December 2013, compared to Zoetis, the market leader, which had sales of $4.6B over the same period – the company is well established across geographies as it sells to approximately 2,850 customers in over 65 countries. Part of management's strategy is to sell into what it considers "high-value regions" – those where livestock production is primarily conducted on large, commercial farms. As such, it has focused its sales efforts into the key markets of the U.S., Brazil, China, Russia, Mexico, Australia, Turkey, Israel, Canada, and Europe and sees great opportunity to expand its existing operations in emerging markets, specifically Latin America and Asia.

FIGURE 1

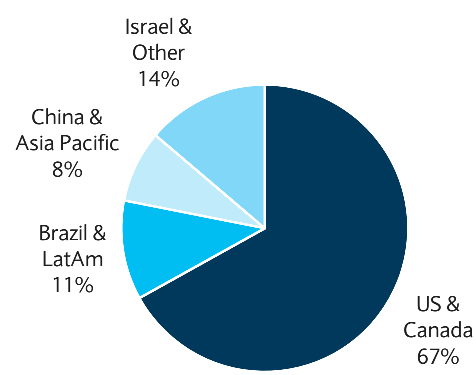
FY2013 Total Net Sales ($653M) by Animal Species



Source: Company filings
Note PAHC uses a June FYE.

FIGURE 2

FY2013 Total Net Sales ($653M) by Geography



Source: Company filings

History

Phibro has been in the Bendheim family for over 65 years, when Philipp Brothers Chemicals (PBC), the predecessor company, was spun off from Philipp Brothers Inc. in the 1940s to focus on the manufacture of specialized chemicals used for household and industrial products. From the 1970s through the 1990s, PBC acquired the Prince Agri mineral nutrition business, bought a vitamin mixing company in Israel, and began producing anticoccidials (intestinal parasite preventatives).

Today's company began to truly take shape in 2000, when PBC bought Pfizer's medicated feed additive business. In 2003 the company changed its name to Phibro Animal Health Corporation (PAHC) and divested certain legacy chemical businesses. After the private equity firm 3i acquired a 30% stake in the company in 2008, PAHC expanded through acquisitions of vaccine makers, nutritional additive brands (OmniGen, Animate), and trace mineral companies, and has entered into a number of other partnerships and licensing arrangements that have added other products and markets.

Manufacturing & Research Facilities

While Phibro corporate headquarters are located in Teaneck, New Jersey, its domestic production and R&D facilities are spread throughout the United States. It has four domestic manufacturing plants located in Hannibal, Missouri (for Animal Health); Omaha, Nebraska (for Mineral Nutrition); Quincy, Illinois (for both Animal Health and Mineral Nutrition); and Santa Fe Springs, California (for Performance Products). In addition, research is conducted at its Quincy location as well as three separate dedicated research facilities – Corvallis, Oregon; Manhattan, Kansas; and St. Paul, Minnesota.

To support its substantial foreign operations, Phibro has a significant asset base outside of the US. Its three manufacturing locations in Israel and two in Brazil are detailed below in Figure 3 and represent about 56% of its total consolidated assets.

Phibro's Israeli facilities produce: 1) nicarbazin and amprolium anticoccidials primarily for export, 2) vaccines also largely for export, and 3) animal health pharmaceuticals, trace minerals, and nutritional specialty products for Israel's animal feed market. Its Brazilian production assets manufacture a variety of antibiotics and anticoccidials including virginiamycin, semduramicin, and nicarbazin, which are then sold under brand names such as Stafac, Aviax, Coxistac, Nicarb, and Terramycin. A substantial portion of the products manufactured in Brazil are also exported into the global markets.

FIGURE 3
Phibro Facilities

Location	Purpose	Business Segment	Owned vs. Leased
Hannibal, Missouri	Manufacturing	Animal Health	Land lease
Quincy, Illinois	Manufacturing, Sales, Premixing, Research and Administrative	Animal Health & Mineral Nutrition	Owned
Omaha, Nebraska	Manufacturing and Premixing	Mineral Nutrition	Owned
Santa Fe Springs, California	Manufacturing	Performance Products	Owned
Corvallis, Oregon	Research	Animal Health	Owned
Manhattan, Kansas	Research	Animal Health	Leased
St. Paul, Minnesota	Research	Animal Health	Leased
Teaneck, New Jersey	Corporate Headquarters	N/A	Leased
Beit Shemesh, Israel	Manufacturing and Research	Animal Health	Land lease
Naot Hovav, Israel	Manufacturing and Research	Animal Health	Land lease
Petach Tikva, Israel	Manufacturing and Premixing	Animal Health	Owned
Braganca Paulista, Brazil	Manufacturing and Administrative	Animal Health	Owned
Guarulhos, Brazil	Manufacturing, Sales, Premixing, Research and Administrative	Animal Health	Owned

Source: Company filings

Management Team with Extensive Animal Health Experience

Phibro's executive management team averages approximately 17 years of experience in the animal health industry and comes from diverse backgrounds. Key members of the team are profiled below.

- **Jack C. Bendheim**, *Chairman of the Board of Directors and Chief Executive Officer*: Mr. Bendheim has served as Phibro's President and Chief Operating Officer since 1988. He took on the CEO role from Mr. Carlson, below, concurrent with the company's IPO in order to consolidate his role as the main representative of Phibro's strategic vision. He has been a Director since 1984. He joined Phibro in 1969 and served as Executive Vice President and Treasurer from 1983 to 1988 and as Vice President and Treasurer from 1975 to 1983. Mr. Bendheim is also a director of Empire Resources, Inc., a metals trading company in Fort Lee, New Jersey. Mr. Bendheim is also the current Chairman of the Animal Health Institute, an industry organization advocating for animal health issues, including efficient and effective FDA, USDA and EPA regulatory and approval processes.

- **Gerald K. Carlson**, *Director and Chief Operating Officer*: Mr. Carlson joined Phibro as Chief Executive Officer in May 2002 and has been a Director since 2008. Prior to joining Phibro, Mr. Carlson served as the Commissioner of Trade and Development for the State of Minnesota from 1999 to 2001. Mr. Carlson served as Senior Vice President, Corporate Planning and Development prior to his retirement in 1998 from Ecolab Inc., a global provider of cleaning and sanitation products, systems and services. During his thirty-two year career at Ecolab, Mr. Carlson also served as Senior Vice President of International as well as Senior Vice President and General Manager, Institutional, North America.

- **Richard G. Johnson**, *Chief Financial Officer*: Mr. Johnson joined Phibro in September 2002 and has served as Chief Financial Officer since then. Prior to joining Phibro, Mr. Johnson served as Director of Financial Management for Laserdyne Prima, Inc., a manufacturer of laser cutting and welding systems, from 2001 to 2002 and as Vice President, Planning and Control, Latin America for Ecolab, Inc., from 1992 to 1999. Mr. Johnson served in various senior financial positions at Ecolab over a 15-year period.

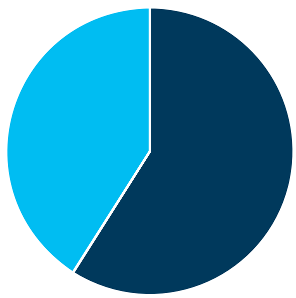
- **Daniel M. Bendheim**, *Director and Executive Vice President, Corporate Strategy*: Mr. Bendheim joined Phibro in 1997. In 2001 he was appointed Vice President of Business Development and in 2004 he was appointed President, Performance Products. Prior to joining Phibro, Mr. Bendheim worked as an analyst at South Coast Capital, a boutique investment bank. He obtained a B.A. degree in political science with honors from Yeshiva University in 1993 and a J.D. degree with honors from Harvard Law School in 1996. Mr. Bendheim is a son of Jack C. Bendheim.

We will expand on the details of Phibro's operating segments including their products and financial performance below, but first we want to outline the current state of the overall animal health market – a market that has gained an increasing amount of investor attention (and M&A activity) since Zoetis, the market leader, was spun out as a stand-alone public company in February 2013.

MARKET OVERVIEW

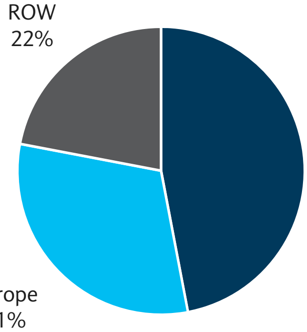
For the calendar year 2012, the International Federation for Animal Health estimates that the total global animal health market, comprising both livestock and pet/companion animal sales, totaled $22.5 billion. Livestock use represented well over half of this demand, with the Americas and Europe together representing nearly four-fifths of the market.

FIGURE 4
Animal Health Market by Animal Type



Source: IFAH, Barclays Research estimates

FIGURE 5
Animal Health Market by Region



Source: IFAH, Barclays Research estimates

The outlook for the animal health business is based on many of the same themes that we cover in our Agribusiness research on fertilizers and agricultural processors – the idea that 1) an increasing population that is, 2) steadily growing in income will see individuals move up the food chain in what they consume, which in practice means an increase in the amount of animal protein and dairy in peoples' diets. In a world of relatively constrained resources (water, arable land, energy) for the production of ag commodities, increased productivity depends on efficiency; a successful farmer or livestock producer is focused on improving yields, be it bushels of corn per acre or pounds of well-marbled beef per cow, relative to the cost. One of the best ways for a livestock grower to maximize weight and feed conversion (the amount of grains the animal eats per pound of edible meat upon slaughter) is to keep the animal healthy and disease-free. In that context, the antibiotics, vaccines, and nutritional supplements sold by companies like Phibro offer a low-cost (relative to feed costs), high-return value proposition.

This dynamic is expected to help drive industry growth rates in the mid-to-high-single digits over the next several years. Industry studies cited by Phibro in its public prospectus filed with the SEC on April 14, 2014, indicate that the market sub-segments with the highest expected growth levels are projected to be vaccines among products, swine and poultry among species, and Latin America/Asia Pacific among regions.

FIGURE 6

Animal Health Product Industry Projected CAGR by Region and Species, 2012-2017E

	Projected CAGR 2012-2017E
Region:	
Asia Pacific	7.9%
LatAm	5.4%
US	4.1%
W. Europe	2.9%
Livestock Species:	
Swine	6.6%
Poultry	6.2%
Cattle	4.6%

Source: Company filings (Prospectus filed 4/14/2014)

The current market structure of the animal health industry is such that many of the participants are divisions of much larger, diversified pharma companies (Elanco as a part of Eli Lilly, Merial as a part of Sanofi, etc). Zoetis is the clear industry leader in terms of revenues, while it and PAHC are the only public, U.S.-based, stand-alone companies with an animal health focus. Other independent, publicly-traded animal health companies are two French firms: Virbac (CY2013 sales EUR 736M, market cap EUR ~1.5B) and Vetoquinol (CY13 sales EUR 300M, market cap EUR 450M).

FIGURE 7

Phibro and Comparable Companies, Revenue (2011-2013) and Projected Y/Y Revenue Growth (2014E-2016E)

	Revenue			Projected Y/Y Revenue Growth		
	2011	2012	2013	2014E	2015E	2016E
Phibro (USD millions)	**618**	**654**	**653**	**4.7%**	**6.4%**	**5.9%**
Zoetis (USD millions)	4,233	4,336	4,561	3.9%	5.7%	5.2%
Virbac (EUR millions)	623	695	736	3.6%	6.3%	4.0%
Vetoquinol (EUR millions)	284	298	300	5.9%	5.4%	N/A

Source: Company reports, Thomson Reuters, Barclays Research
Note: Phibro projections are based on Barclays Research estimates and use a June fiscal year end. Other company projections are Thomson Reuters consensus estimates.

In this context, key questions for investors when looking at Phibro's position within the industry include: 1) how well protected are its current products from substantial competition, and 2) what prospects are there for growth at or above the overall industry level?

On the competitive aspect, there are several reasons we believe Phibro will have a fairly stable position in those markets where their products are already well-established – it's important to note that, particularly for the base business of antibiotics and anticoccidials, the underlying products have been around for decades. With that in mind:

- Phibro has years of production expertise that have allowed it to be low-cost and highly efficient, so there is little risk of another producer coming in with a much lower cost structure.

- Phibro has been able to accumulate the regulatory approvals and registrations needed to sell these products in a range of different countries – a strong hurdle for a new competitor – especially given the relatively low overall market size potential of many individual products.
- The company has a sales force with breadth and depth across regions already well familiar with the offerings and the customer base, particularly important given the relative fragmentation of the sales process for animal health vs. the human health market.

Finally, and in our view very importantly, the nature of how the products themselves are used provides a need for several competing offerings. Livestock antibiotics, for example, must be rotated to avoid resistance and loss of efficacy – and so farmers and feedlot operators will use different companies' products for their herds on a serial basis through the year. For example, they may use virginiamycin from Phibro followed by a competing product from Elanco followed by a product from Zoetis, and then back again for the following year.

Of course, for other products, particularly for sub-segments of Animal Health such as Nutritional Specialties and Vaccines, Phibro has proprietary products/technologies with ample IP that serve to protect their market position. We'll expand in detail on these aspects of Phibro's offerings in the following sections of this report.

As to growth, in short we think that Phibro has a compelling story mixing new products, new partnerships, and new market entries that should allow for above-market organic growth, with the prospects of tuck-in style acquisitions increasing as the company's cash flow improves post-IPO (having paid off and/or refinanced its high-coupon debt). Highlights should include:

- Organic growth in emerging markets, with particular opportunities for medicated feed additives in regions such as Brazil, China, and Turkey where the company is expanding its sales force and shifting to a direct marketing model
- Expanding market penetration of OmniGen, a non-medicated market-leading dairy cow supplement with 20% penetration of the U.S. market that has just been introduced in Europe, with entry into the Chinese market expected in 2H14
- Leveraging its partnership with Epitopix to enter the U.S. vaccine market while expanding the reach of its TAbic vaccine technology into other regions (i.e. a re-branding under a direct sales model in Brazil)
- Entry into the Aquaculture market via Phibro's recent acquisition of AquaVet, an Israeli-based firm focusing on animal health opportunities for the farmed fish market

These are all growth aspects specific for Phibro, but it's important to recognize that the underlying drivers for animal health are much larger in scope and are tied to the trends pushing global production and consumption of livestock animals upwards. We give a brief overview of the macro aspect of the livestock market in the following section.

PROTEIN/LIVESTOCK MARKET OUTLOOK

Near-term challenges have impacted domestic livestock production

In recent years livestock production in the U.S. has been challenged, with recession, drought, high feed prices all serving to dampen profitability of those that produce cattle, swine, and poultry. The impact has been most visible for cattle, with the USDA's annual inventory report earlier this year showing the nation's inventory of cattle and calves had dropped to 87.73mm head, the lowest total since 1951, and the USDA expects inventories – and production – to drop again in 2014. Pig production also fell this past year, and for swine 2014 is expected to be significantly impacted by the PED (Porcine Epidemic Diarrhea) virus, which is taking a sizable toll on the nation's baby pig population. In the immediate term, only in poultry has U.S. production continued to grow. It's worth remembering that chickens have a much shorter time of development from chick to broiler (nine months vs. 20 months for a pig and 39 months for cattle), and as such producers can respond to shifts in price or cost – such as higher feed costs from drought – fairly quickly. Tyson Foods, in its 2Q14 quarterly results just released 5/5/2014, guided to total domestic chicken production still up 2-3% for FY2014.

FIGURE 8

U.S. cattle production has been declining since the 2008 financial crisis, while poultry has continued to trend upward

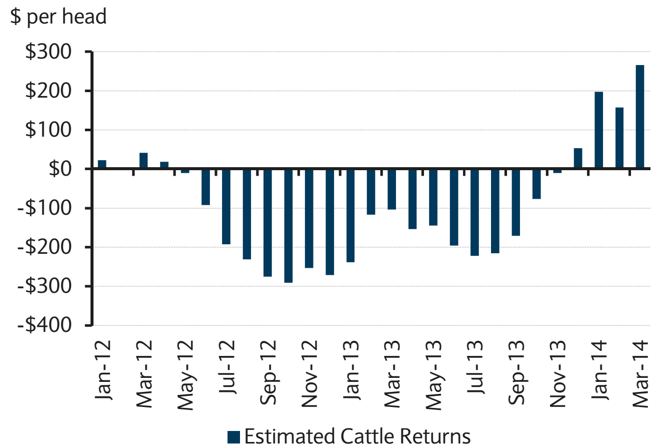
	2009	2010	2011	2012	2013	2014E
Production:						
Cattle (1000 heads)	35,939	35,695	35,313	34,279	33,930	33,300
Swine (1000 heads)	114,542	113,685	115,838	116,791	116,410	113,206
Poultry (1000 mt)	15,935	16,563	16,694	16,621	16,976	17,276
Ending Inventories:						
Cattle (1000 heads)	93,881	92,682	90,769	89,300	87,730	87,100
Swine (1000 heads)	64,887	64,925	66,361	66,374	66,025	65,675
Poultry (1000 mt)	279	351	268	295	303	288

Source: USDA, Barclays Research estimates

Yet the market is responding to the recent environment as one would expect – by bidding up prices. For beef, as has been widely reported in the popular press, the USDA is reporting month after month of record or near-record retail meat prices, while on the wholesale side live cattle prices are up, and the estimated returns for "finishing" a steer (i.e. bringing it to market weight) have turned strongly positive. Similar dynamics are playing out in the pork market; the market price for lean hogs has also spiked (May '14 lean hogs at $117/cwt vs. ~$100/cwt in February, with recent highs over $126/cwt) with concerns about reduced supplies due to PED, taking implied profitability to very high levels.

FIGURE 9

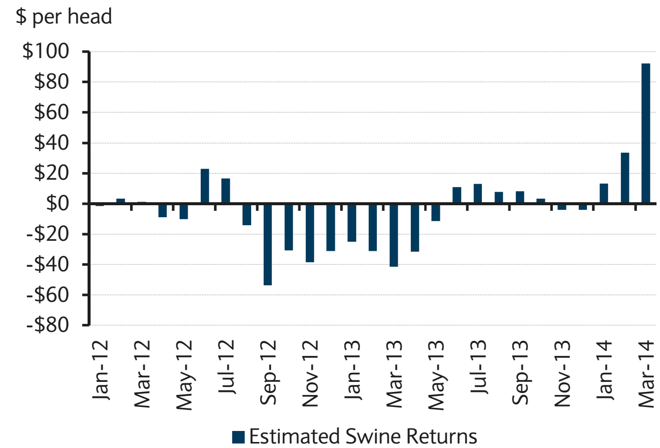
Estimated returns for finishing steers have turned sharply upwards…



Source: Iowa State Extension, Barclays Research estimates

FIGURE 10

… as have returns for farrow-to-finish swine



Source: Iowa State Extension, Barclays Research estimates

What this means is that while 2014 is likely to see production fall again for cattle and swine, lower grain and oilseed prices have brought down feed costs, and, combined with the profitability signals above we expect growth for both cattle and swine to turn upward after 2014. One encouraging sign – though counterintuitive at first – are the indications that cow slaughter (production) is declining. What the low rates of beef cow slaughter in the fourth quarter of 2013 and so far this year (e.g. 102,700 for all cows for the week ending 4/19/2014, down from 125,400 in the prior year week) imply is that that producers are starting to retain their animals in order to begin the process of rebuilding their herds.

Though this has been the dominant recent dynamic in the domestic markets, as applicable to Phibro we'd point out that in the short term, the company has more total exposure to poultry than to cattle or swine – in the key Animal Health division 56% of sales were associated with poultry for the fiscal year ending 2013.

Global protein trends remain positive, with ample growth opportunity

The more important element germane to investing in Phibro is the larger group of global protein trends, which in our view indicate a promising level of livestock production and consumption in markets around the world. Phibro already is a global company – beyond the U.S. it has production assets in Brazil and Israel and sells into markets around the world including South America, Europe, Africa, and Asia. **Over half of the company's Animal Health sales are already outside of North America,** and we expect this share to grow as management focuses on key emerging markets with new products and a more direct, on-the-ground sales force.

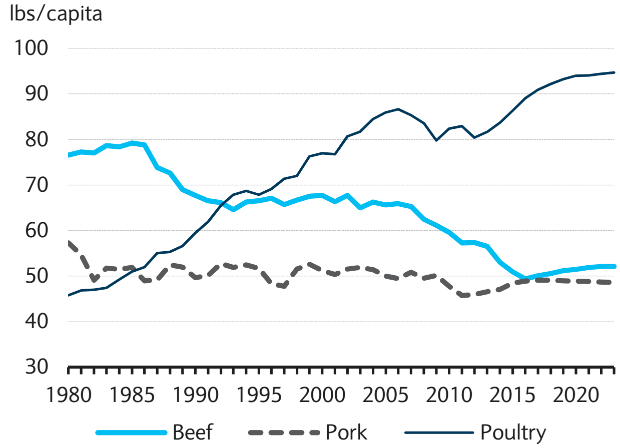
It's when you pull back beyond the near-term issues that have weighed on U.S. livestock production/protein consumption that the underlying fundamentals become clearer.

Figures 11 and 12 below show the per capita meat consumption by species for the U.S. vs. the BRIC countries, which we'll use as a proxy for emerging markets. **Domestically since 1980, per capita beef demand has declined by 26% through 2013 while poultry demand has increased 78% over the same period.** Pork consumption has stayed relatively flat since the early 1980s. Going forward, the spread between poultry and beef is expected to widen even more, according to the USDA's most recent long-term forecasts.

For the BRICs, the trend in per capita consumption has been consistently up across the three main species over the same time period, with pork showing the strongest demand thanks to China's voracious appetite. Chicken has also seen a large shift up in consumption.

FIGURE 11

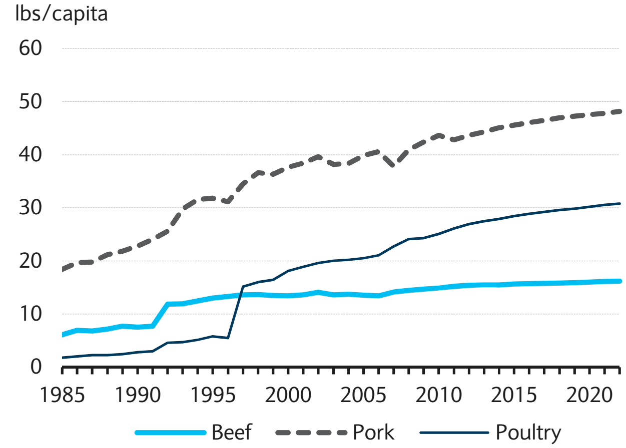
U.S. animal protein consumption has shifted toward poultry and away from beef…



Source: FAO/UN, World Bank, Barclays Research estimates

FIGURE 12

… while BRIC countries' consumption of pork and poultry has trended solidly upward

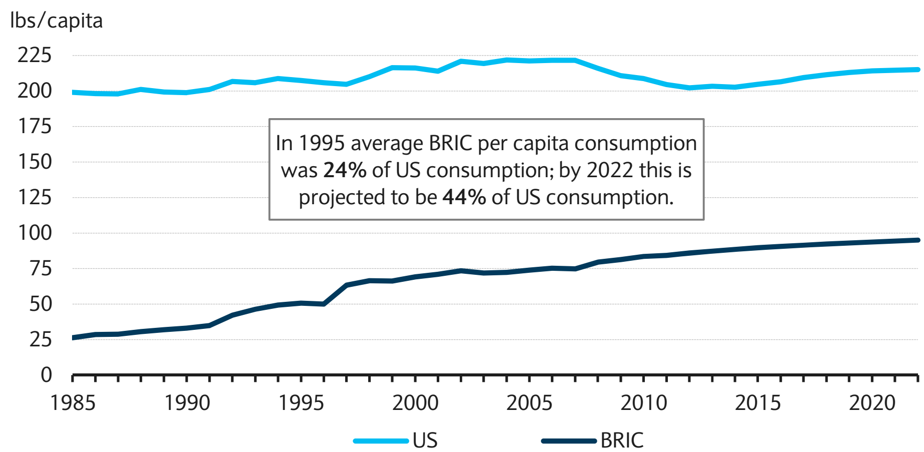


Source: FAO/UN, World Bank, Barclays Research estimates

Figure 13 puts this into better perspective – that even with the rapid relative growth in protein consumption per capita for the BRIC countries, their average total meat appetite on a per capita basis is still less than half of that of the United States. We believe the implication is clear – there is a lot of headroom for protein demand to grow in the developing world, which means that additional pressure will be placed on the major livestock producing countries to meet this demand.

FIGURE 13

Comparison of total protein per capita consumption, U.S. vs BRIC average



Source: FAO/UN, World Bank, Barclays Research estimates

The table below reflects the UN/FAO's current meat production outlook among those countries currently in the top 10 of output today – globally, the market is expected to provide an additional 46.2 mm tonnes of meat by 2022, or an increase of 15.3% over 2013.

FIGURE 14

Global projections for total meat production (all species)

	2013	2014f	2015f	2016f	2017f	2018f	2019f	2020f	2021f	2022f
China	81.0	82.7	84.3	85.8	87.2	88.7	90.0	91.3	92.5	93.7
EU	56.9	57.4	57.9	58.6	59.0	59.2	59.5	59.9	60.2	60.5
U.S.	39.8	40.1	40.7	41.7	42.1	43.1	43.5	44.1	44.4	44.9
Brazil	27.5	28.1	28.7	29.0	29.4	29.8	30.3	30.7	31.1	31.4
Russia	8.2	8.6	8.9	9.2	9.4	9.5	9.7	9.8	9.9	10.1
India	7.8	8.1	8.3	8.5	8.7	8.9	9.1	9.4	9.6	9.8
Mexico	6.0	6.1	6.2	6.4	6.5	6.6	6.7	6.8	6.9	7.0
Argentina	5.1	5.3	5.5	5.5	5.7	5.9	6.0	6.0	6.1	6.3
Canada	4.8	4.9	5.1	5.1	5.2	5.1	5.2	5.2	5.3	5.3
Vietnam	4.2	4.2	4.3	4.4	4.6	4.7	4.8	4.9	5.0	5.1
World	**301.5**	**306.8**	**312.4**	**318.2**	**323.1**	**328.6**	**333.1**	**338.0**	**342.8**	**347.7**

Source: FAO/UN, Barclays Research estimates

Just as we've covered in our research on the grains and oilseeds markets, producers will look to pull every available lever to reach this higher output; for corn farmers this means fertilizer and drought/pest-resistant seeds. For livestock it becomes crucially important – and economic – to use available technology to improve yield and reduce loss by keeping the animals healthier.

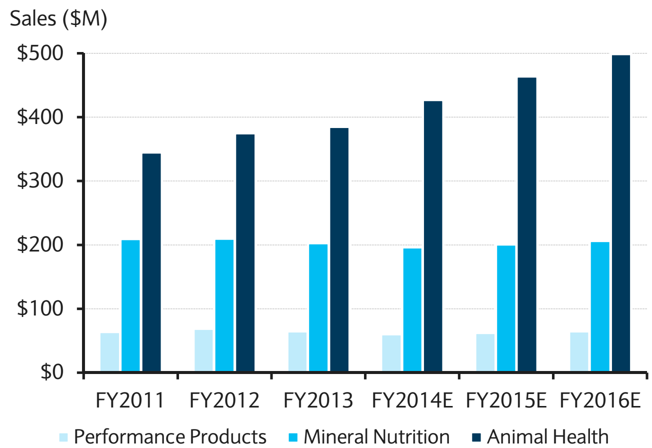
PHIBRO OPERATING SEGMENT REVIEW

Phibro has three primary operating segments:

- Animal Health (antibiotics, anticoccidials, vaccines)
- Mineral Nutrition (mineral/metal based dietary vitamin additives)
- Performance Products (chemicals/ingredients for personal/industrial product use)

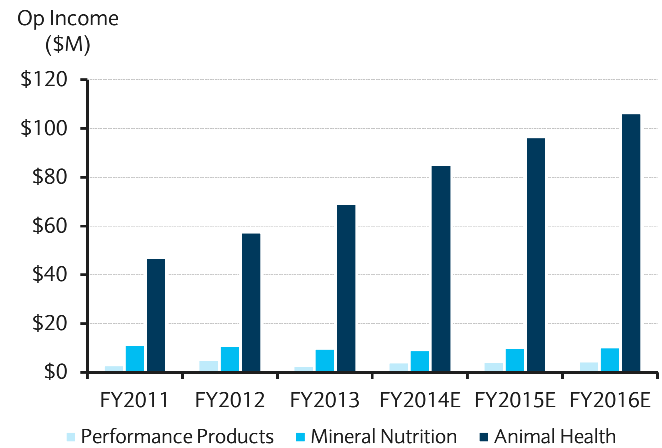
Historically the majority of the company sales and operating income (59% and 85%, respectively, for FY2013) have been generated by the Animal Health business. We expect this segment to be of most interest to investors as it should be the source of nearly all of the company's revenue and EBIT growth going forward, as shown in our projections below.

FIGURE 15
Net Sales by Segment, FY2011-FY2016E



Source: Company filings, Barclays Research estimates

FIGURE 16
Operating Income (pre-corporate expense) by Segment, FY2011-FY2016E



Source: Company filings, Barclays Research estimates

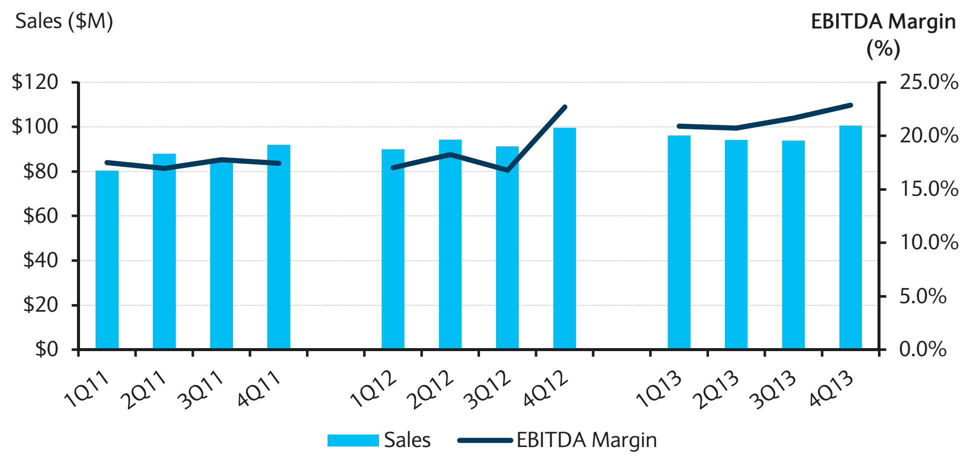
We'll examine the particulars of each of the three business segments in turn.

Animal Health

Phibro's Animal Health segment manufactures and sells more than 550 product presentations (each presentation representing a specific product and dosage) ranging across antibiotics, vaccines, and nutritional supplements. For the fiscal years ending in June, Animal Health revenues increased at 5.6% a year from FY11-FY13, with EBITDA growing 17.5% annually over the same period. For the 6 months ending December '13 vs. the same period in 2010, the CAGRs for sales and EBITDA increase to 7.5% and 18.8%, respectively.

FIGURE 17

Animal Health: Net Sales (LHS) vs. Adjusted EBITDA Margin (RHS)

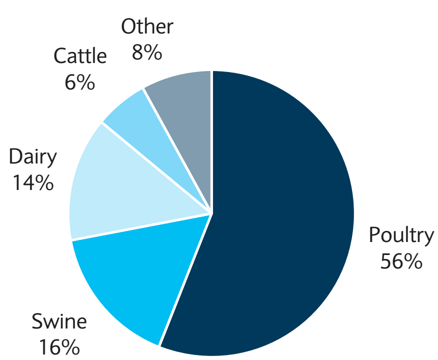


Source: Company filings

A factor we find favorable about Phibro's Animal Health segment is its sales weighting toward swine and poultry, which are among the fastest growing of the world's livestock species and, as mentioned above, are expected to drive rapid demand for animal medications and supplements.

FIGURE 18

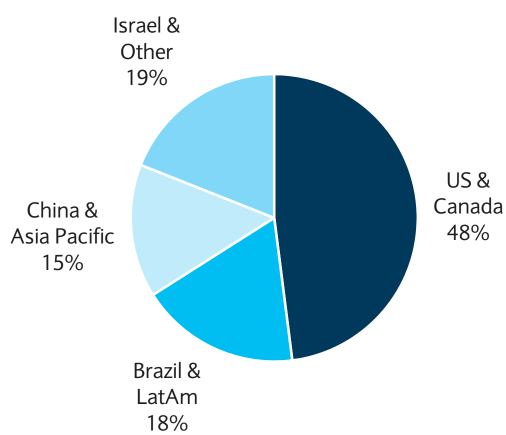
Animal Health FY2013 Net Sales by Species



Source: Company filings

FIGURE 19

Animal Health FY2013 Net Sales by Geography



Source: Company filings

In particular, the OECD and FAO project that global poultry production will increase ~2% per year through 2021, relative to 1.5% for cattle. Much of this is due to the lower cost of raising chicken compared to other types of protein. Chicken is the most efficient of the meat proteins in terms of **feed conversion** as a broiler only requires ~2 pounds of feed per one pound of liveweight vs. 3.5 pounds of feed for swine and 6 pounds of feed for cattle. Lower feed costs combined with a shorter time of growth/development relative to the other major proteins (approximately 9 months for a broiler vs. 39 months for beef cattle) help drive a higher rate of production growth. In addition, the lower production costs lead to lower consumer costs per pound, further spurring global poultry consumption.

All that said, on a company specific level a prime consideration for investors will be where the continued growth in this division will come from – how will Phibro, which is among the smaller animal health companies, manage to grow sales at or above the industry average and expand margins as it does so? As shown in the table below, we believe the company should be able to grow Animal Health sales at a 9% rate from 2013-2016, with EBITDA growing at 13.5%, as the company brings on new products, in new markets, with a reinforced sales force with a mandate to develop relationships with key accounts. Our projections are below.

FIGURE 20

Animal Health Projections, FY2011-FY2016E

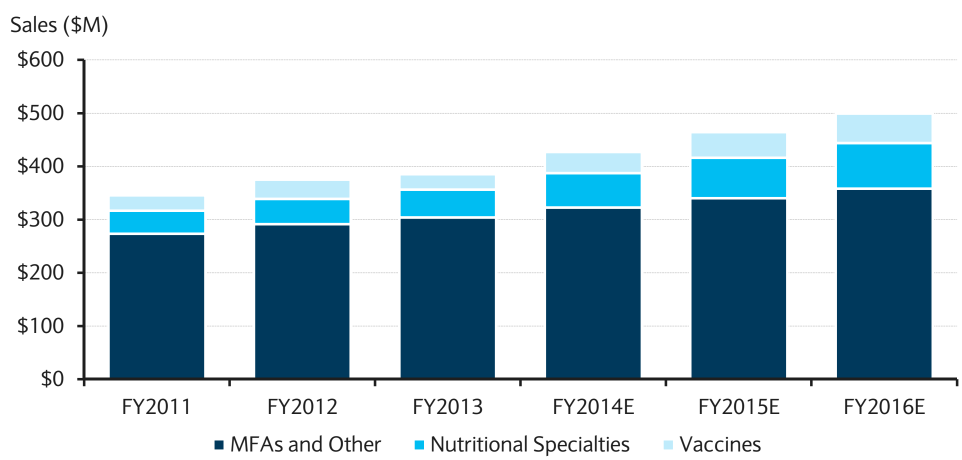
	FY2011	FY2012	FY2013	FY2014E	FY2015E	FY2016E
Sales ($M)	345.2	375.2	384.9	426.9	464.1	499.0
EBITDA ($M)	60.1	70.5	83.0	98.4	110.2	121.5
EBITDA Margin (%)	17.4%	18.8%	21.6%	23.1%	23.8%	24.4%

Source: Company reports, Barclays Research

Getting comfortable with the growth drivers for the Animal Health division means understanding its three sub-segments: MFAs (Medicated Feed Additives) and Other, Nutritional Specialties, and Vaccines. **MFAs is currently the largest component of the three, but Vaccines offers the highest percentage growth prospects from a small base.**

FIGURE 21

Animal Health Net Sales by Sub-Segment, FY2011-FY2016E



Source: Company filings

MFAs and Other

This sub-segment consists of **medicated** products that are administered through animal feed, logically referred to as Medicated Feed Additives (MFAs). The "Other" component is essentially a small group of ethanol fermentation processing aids. Specifically, MFAs comprise antibiotics, anticoccidials (coccidiosis is an intestinal parasitic disease with substantial prevalence in poultry), and other drugs aimed at preventing disease and ultimately leading to healthier, more productive animals.

Key Products

While the core MFA products are described in Figure 22 below, Phibro's most important proprietary product is the antibiotic, v**irginiamycin.** It is sold under the brand names Stafac, V-Max, and Eskalin to chicken, turkey, swine, cattle, and dairy producers and has different uses depending on the animal species. For chickens, the medication is intended to prevent necrotic enteritis while in swine it curbs dysentery. It also helps to prevent liver abscesses in cattle. The antibiotic was first introduced in 1975, yet continues to be effectively and widely used. **It is currently approved for use in 30 countries with over 90 product registrations. Phibro remains the sole global manufacturer and marketer of the product** and has been successful in avoiding any substantial generic competition; the company believes that virginiamycin is a technically challenging antibiotic to produce and that its leading efficiency and know-how has largely discouraged other makers from attempting to produce their own versions. Phibro also has a substantial advantage in that they have a wide range of product registrations – meaning the regulatory right to sell a certain version of virginiamycin in a particular country. These registrations are not easy or quick to acquire, acting as another barrier for direct competition.

Anticoccidials are generally used to prevent and treat the disease coccidiosis in poultry and cattle. Coccidiosis is a parasitic disease caused by coccidian protozoa in the animal's intestinal tract and can easily spread from one infected animal to the other. Young livestock is especially susceptible and can suffer severe symptoms (the most common being diarrhea) as well as death if left untreated. The medications targeted at coccidiosis are manufactured through fermentation and chemical synthesis and then sold by Phibro under brand names including Nicarb, Aviax, and Coxistac.

FIGURE 22

Primary MFA Products: Antibiotics and Anticoccidials

Brand	Active Ingredient	Market Entry of Active Ingredient	Description
Terramycin/TM-50/TM-100	oxytetracycline	1951	Antibacterial with multiple applications for a wide number of species.
Neo-Terramycin/Neo-TM	oxytetracycline + neomycin	1999	Antibacterial with multiple applications for a wide number of species.
Nicarb	nicarbazin	1954	Anticoccidial for poultry
Amprolium	amprolium	1960	Anticoccidial for poultry and cattle
Bloat Guard	poloxalene	1967	Anti-bloat treatment for cattle
Banminth	pyrantel tartrate	1972	Anthelmintic for livestock
Mecadox	carbadox	1972	Antibacterial for swine to control salmonellosis and dysentery
Stafac/Eskalin/V-Max	virginiamycin	1975	Antibacterial used to prevent and control diseases in poultry, swine and cattle
Coxistac/Posistac	salinomycin	1979	Anticoccidial for poultry and cattle; disease preventative in swine
Rumatel	morantel tartrate	1981	Anthelmintic for livestock
Cerditac/Cerdimix	oxibendazole	1982	Anthelmintic for livestock
Aviax/Aviax II	semduramicin	1995	Anticoccidial for poultry
Aviax Plus	semduramicin + nicarbazin	2010	Anticoccidial for poultry

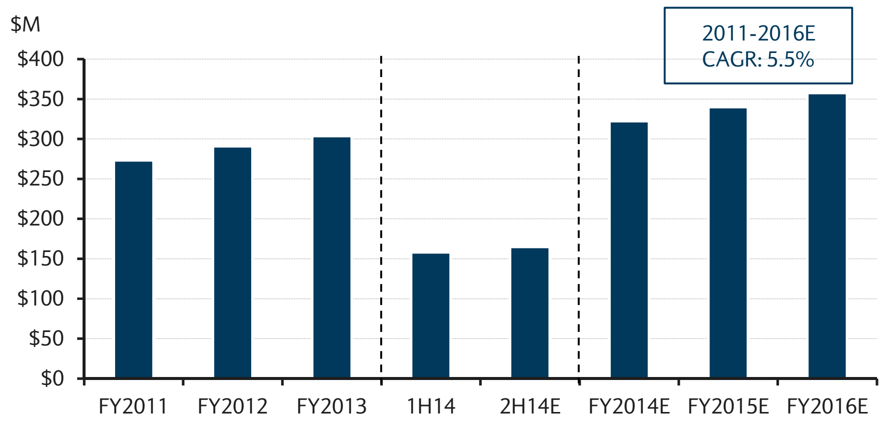
Source: Company filings

Phibro also offers other MFA products such as anthelmintics (Banminth) to treat parasite infections and other medications (Bloat Guard) to control bloat in beef and dairy cattle.

Growth Prospects

Growth in MFAs is largely expected to follow market growth rates driven by livestock production growth, with particular opportunities seen in key emerging markets (Brazil in particular) for the company's new, direct sales model. The company sees strong potential for the V-MAX brand of antibiotic for beef cattle in Brazil, having added 15 dedicated sales staff over the past year for the region. Right now, Phibro products are used in roughly 650,000 head of cattle in Brazil – out of the 30 million raised each year in the country. This is around twice the amount of market penetration the company had compared to the previous year but shows how high the potential ceiling could be.

FIGURE 23
Animal Health: MFAs and Other, Net Sales, 2011-2016E



Source: Company filings, Barclays Research

Regulatory Risks

When it comes to MFAs, and particularly for antibiotics, it is important to note that in December 2013 the FDA announced a new policy aimed at eliminating overuse of the drugs for livestock production. Policymakers are increasingly concerned about signs of growing human resistance to antibiotics as a public health crisis, and many believe that loosely-controlled use for animals has been a factor in this resistance developing among the greater population.

In practical terms the new FDA policy means this: **first, it will eliminate the use of antibiotics purely for growth enhancement or "non therapeutic" purposes**, in which there is no specific disease treatment. Labels for the drugs will be changed to remove any dosage recommendations for growth-promotion uses. **Secondly, veterinarians will assume the role of gatekeepers under a prescription system**; no longer can the drugs be sold over-the-counter in feed or ranch supply stores. In strict terms, the measures are voluntary – companies had three months to tell the FDA whether they would comply – but all the major animal health companies have announced their intent to do so. The drug producers now have three years to adjust to the new rules.

For Phibro, management believes that the impact will be fairly minimal. The vast majority of their antibiotic sales are for therapeutic use, with only $15-$20M of current annual sales into the turkey and swine market considered non-therapeutic. Additionally, nearly their entire customer base already has ample access to veterinarians, so this won't be a change in their access or purchasing process. The view from Mr. Bendheim and his team is that with three years to adapt on the labelling and usage side, they will have ample opportunities to develop different, medical uses for their antibiotic products.

Nutritional Specialties

Products in this sub-segment are **non-medicated** additives intended to enhance nutrition, metabolic function, and animals' immune systems. The offerings are primarily marketed for use with dairy cows, with OmniGen as the most important, flagship product.

Key Products

OmniGen is, in the company's description, a "proprietary non-antibiotic immune enhancer" that is protected by extensive IP; Phibro claims 53 patents or pending patents in 30 countries, with an estimated average remainder patent length of 10 years. The advantages of the product, practically, are less based on its patent strength and more its unique wide range of benefits and the high amount of data collected around those benefits that Phibro is able to use as a marketing tool with dairy farmers.

OmniGen has robust statistics supporting its ability to strengthen dairy cows' immune system and its impact as an effective preventative of metabolic disorders, helping the animals' response to environmental stresses and leading to reduction in disease[1]. It even helps reduce cases of inflamed udders or the uterus (mastitis/metritus). As a result, OmniGen supports increased milk production of higher quality (i.e. milk having a lower somatic cell count), which can then be sold by the dairy milk producer at higher prices. The IP of OmniGen along with related R&D facilities (OmniGen Research, LLC) was acquired by Phibro in December 2012; PAHC had previously been paying net annual royalties of ~$4M to OGR. It's notable that the inventors of OmniGen originally came in contact with Phibro through one of the company's mineral nutrition field sales reps – Phibro repeatedly emphasizes how important the direct, on-the-ground network of sales support staff is for the business, as sales are highly decentralized among the main livestock producing regions, even in the United States.

Animate is a patented mineral supplement that enhances the nutrition of the transition dairy cow (a cow that is in the four weeks before or after calving and at heightened risk of disease). It helps to maintain appropriate blood calcium levels in the cow during this critical parturition period and improves producer profitability.

FIGURE 24
Primary Nutritional Specialties Products

Brand	Market Entry	Description
AB20	1989	Natural flow agent that improves overall feed quality and effectiveness
Chromax	1992	Source of organic chromium used to optimize swine production through reproductive efficiency
Biosaf	1997	Heat stable live-cell yeast that optimize production efficiency
Procreatin 7	1997	Live-cell yeast product for ruminant nutrition
Animate	1999	Maintains proper blood calcium levels in dairy cows during critical parturition period
Safmannan	2000	Yeast cell wall components that optimize production efficiency
OmniGen-AF[1]	2004	Optimizes immune status in dairy cows
NutrafitoPlus	2011	Proprietary blend that enhances absorption and utilization of nutrients for poultry, swine, ruminant and aquatic feeds
Provia 6086	2013	Direct fed microbial for all classes of livestock

Source: Company filings

Growth Prospects

Growth in the Nutritional Specialties division should come from increased penetration of OmniGen use in the US, where the company estimates OmniGen is already used in 20% of the 9 million cow U.S. dairy market, and expansion into other markets, with a focus on

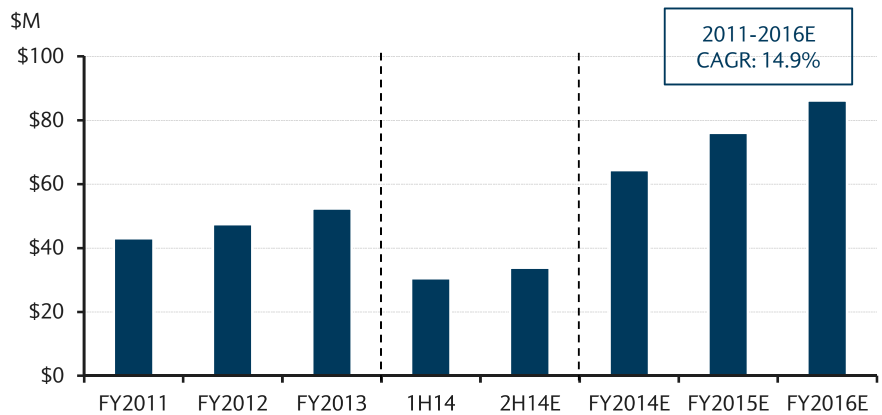
[1] Phibro's current OmniGen marketing materials contain data showing highly statistically significant reductions in disease, terminated cow pregnancies, and death, upon consistent use.

Europe, Brazil, and China. In these regions, Phibro is expanding its sales force and focusing its efforts on "progressive industrial producers" who currently practice fairly modern dairy production techniques. The market upside potential is substantial: there are 15 million dairy cows in Europe, where the company has regulatory approvals in place and has been active in certain initial markets such as the Netherlands, and nearly 2 million dairy cows in Brazil. In addition, the company expects regulatory approval for OmniGen in China in 2H14 at which point it plans to launch in that 5 million dairy cow market.

We expect substantial growth from a fairly modest 2011 base of sales to revenues nearly doubling by 2016.

FIGURE 25

Animal Health: Nutritional Specialties, Net Sales, 2011-2016E



Source: Company filings, Barclays Research

Vaccines

Phibro's vaccine products are principally used in the poultry market, which we highlighted above as the fastest growing animal species by volume in the world. These biologicals are aimed at reducing the occurrence of Salmonella, E. Coli, and other diseases and are most often used with breeding stock (birds that lay the eggs that produce the baby chicks) and "layers" that produce table eggs. In FY2013, net sales were 98% weighted towards poultry and primarily sold internationally (to Israel, China, Southeast Asia, India, Turkey, East and Central Europe, Africa, and Brazil/Latin America). It's important to note that to date Phibro has **not** participated in the U.S. vaccine market, largely because their vaccine production facilities are located in Israel – it is very difficult for a producer to bring live viruses over the border.

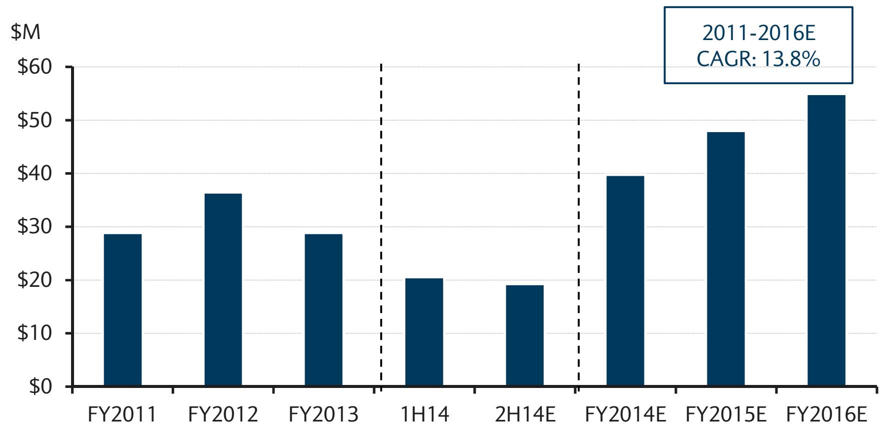
The company's significant proprietary aspect for the vaccine business is TAbic, which is innovative for its patented delivery (with the patent lasting through approximately 2020) in the form of an effervescent tablet in a blister pack. This is a more convenient and easily storable delivery method for the customer compared to the traditional glass bottles in which most other vaccines of its type are distributed.

A main driver for growth in this sub-segment will come from the "re-launching" of the company's vaccine lines in Brazil and China, where: 1) sales had been conducted through local distributors who had not invested much time or effort into marketing, and 2) the vaccines had remained branded under the Abic brand (the Abic vaccine business having been acquired from Teva in 2009). Phibro is recommitting to these regions with a dedicated, direct sales force and bringing the products under the Phibro Vaccines brand.

Additionally, Phibro has taken initial steps to enter the U.S. vaccine market through a manufacturing and distribution agreement with Epitopix. The agreement establishes Phibro as the exclusive U.S. distributor of Epitopix's autogenous chicken vaccines with proprietary SRP (Siderophore Receptor and Porin) technology – it also offers the opportunity in the near future to bring some of these technologies to Phibro's Israeli production facilities.

FIGURE 26

Animal Health: Vaccines, Net Sales, 2011-2016E



Source: Company filings, Barclays Research

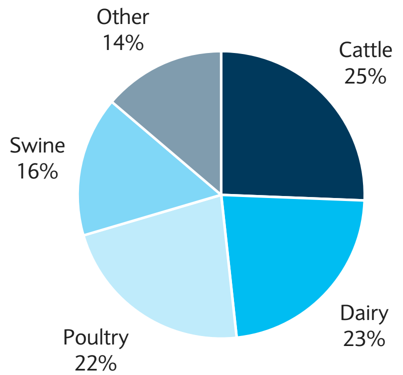
Mineral Nutrition

Mineral Nutrition is the second largest of the primary operating segments in terms of sales, representing 31% of FY2013 revenues, but only 24% of EBITDA over the same period. It is essentially a commodity pass-through business, and therefore operates at a substantially lower margin than the Animal Health segment. The Mineral Nutrition division manufactures and distributes more than 450 formulations of trace minerals including zinc, manganese, copper, iron, cobalt, selenium, magnesium, iodine, and molybdenum. The minerals are intended to be used in animal feed to help livestock obtain their optimal daily nutrient requirements. Trace metals sales have been a legacy part of Phibro's business going back over 30 years, when Prince Agri was absorbed into the company.

Sales in this segment are predominantly geared towards North America (97% of FY2013 net sales were to the U.S. & Canada) and are fairly balanced in terms of animal species among the cattle, dairy, poultry, and swine markets, as shown in Figures 27 and 28 below. Customers generally consist of feed companies, blenders, and integrated livestock or pet food companies. These buyers tend to have their own unique product formulations in which the minerals sold by Phibro are used.

FIGURE 27

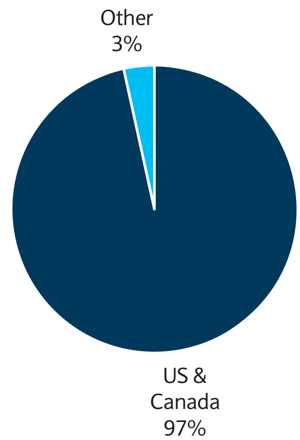
Mineral Nutrition FY2013 Net Sales by Species



Source: Company filings

FIGURE 28

Mineral Nutrition FY2013 Net Sales by Geography



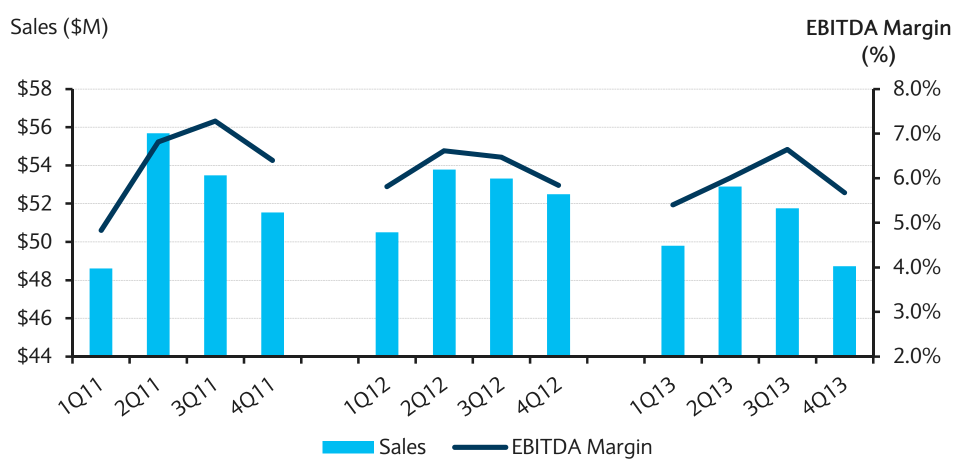
Source: Company filings

Investors should note that this business has more direct exposure to commodity prices than does Animal Health, as input costs are driven by the price of the underlying minerals. Overall the company is largely able to pass along these cost fluctuations to customers, with the downside that margin opportunity for the segment is limited.

We essentially project flat sales and slightly declining margins for Mineral Nutrition going forward, with a slight increase from 2014-2016 as U.S. livestock herds begin to rebuild from the current trough, but overall we see this as a very modest value-add division that essentially can be thought of as a commodity processing business. **Much of the true economic value of the business likely derives from the cross-selling potential of leveraging relationships with Mineral Nutrition into greater Animal Health product penetration.** As with OmniGen, discussed above, this business also brings about a high number of touches with a broad range of livestock farmers, providing important market information, such as the emergence of new products with the potential for future M&A or shifting preferences among buyers.

FIGURE 29

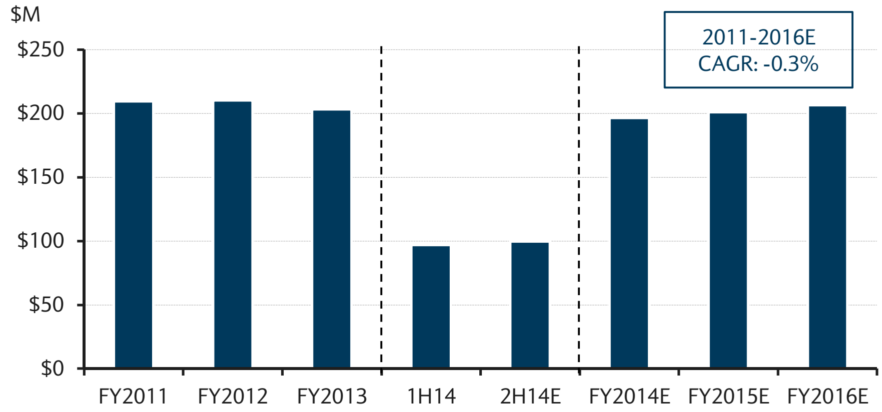
Mineral Nutrition: Net Sales (LHS) vs. Adjusted EBITDA Margin (RHS)



Source: Company filings

FIGURE 30

Mineral Nutrition Net Sales Projections, 2014E-2016E



Source: Company filings, Barclays Research estimates

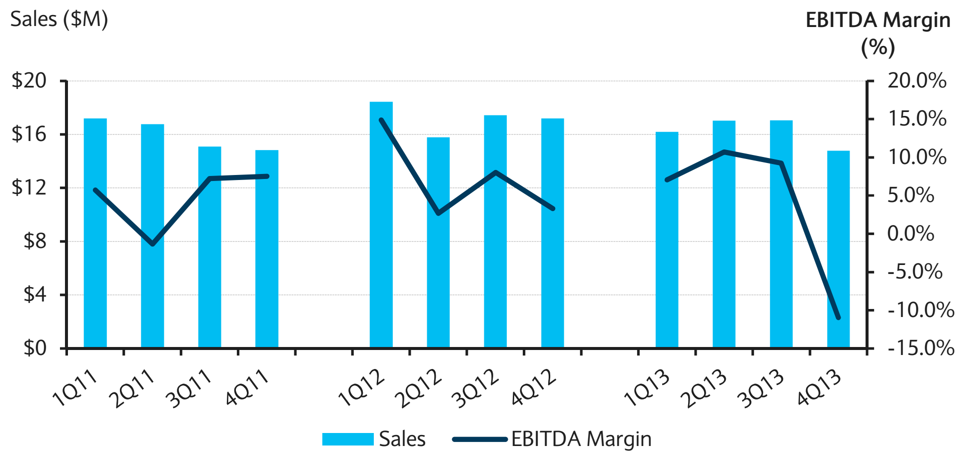
Performance Products

The third and final primary operating segment is Performance Products – a small piece of the total company that manufactures specialty chemicals at a single plant in California for household and industrial use. The ingredients are utilized in the personal care, auto, chemical, and chemical catalyst industries among roughly 400 customers that are largely located within the U.S. This division contributed just 10% of net revenues and 3% of EBITDA in FY2013. The main operating units comprise PhibroChem, Ferro Metal and Chemical Corp., and Phibro-Tech.

We expect essentially flat performance from this small division going forward, with EBITDA margins improving only modestly.

FIGURE 31

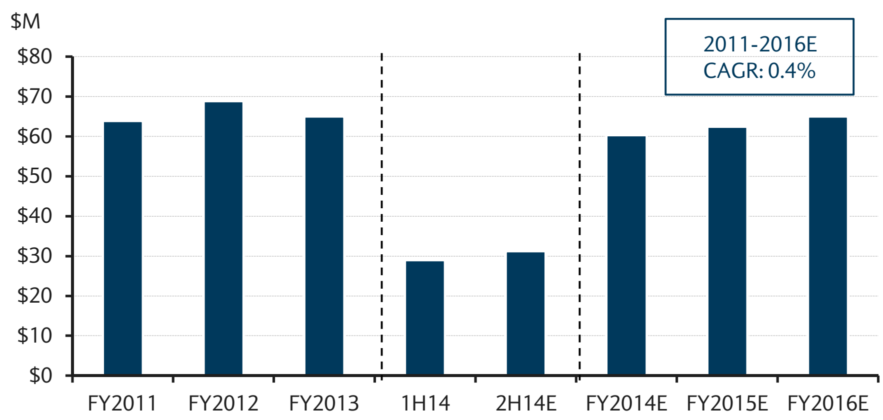
Performance Products: Net Sales (LHS) vs. Adjusted EBITDA Margin (RHS)



Source: Company filings

FIGURE 32

Performance Products Net Sales Projections, 2014E-2016E



Source: Company filings, Barclays Research estimates

Financial Model

FIGURE 33

PAHC Income Statement Summary, FY2011-FY2017E

(in $M, except per share data)	FY2011A	FY2012A	FY2013A	FY2014E	FY2015E	FY2016E	FY2017E
Total Net Sales	618	654	653	684	728	770	807
COGS	472	490	474	474	497	519	542
Gross Margin	**147**	**164**	**179**	**209**	**230**	**251**	**265**
SG&A Expenses	105	115	122	141	151	162	169
EBIT (Operating Income)	**41**	**49**	**57**	**69**	**79**	**89**	**96**
Interest Expense	35	36	36	30	14	13	11
Interest Income	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Foreign currency (gains)/losses	(6)	1	3	2	0	0	0
Other (income)/expense	21	(0)	0	24	0	0	0
Earnings before Taxes	**(8)**	**13**	**18**	**13**	**65**	**77**	**85**
Income Taxes	5	6	(7)	12	13	24	26
Net Income to Phibro Shareholders	**(13)**	**7**	**25**	**1**	**52**	**53**	**59**
Non-cash/Non-operating charges (gains)	20	3	(7)	33	4	12	10
Adjusted/Operating Net Income	**7**	**10**	**18**	**34**	**56**	**65**	**69**
Adjusted EPS - Fully Diluted	**$0.24**	**$0.33**	**$0.60**	**$0.98**	**$1.42**	**$1.66**	**$1.74**
Adjusted EBITDA	**58**	**67**	**76**	**90**	**100**	**110**	**116**

Source: Company reports, Barclays Research

FIGURE 34

PAHC Balance Sheet Summary, FY2011-FY2017E

(in $M, except per share data)	FY2011A	FY2012A	FY2013A	FY2014E	FY2015E	FY2016E	FY2017E
Cash & Equivalent	49	54	27	30	34	42	55
A/R	98	99	99	117	123	130	136
Inventories	124	118	140	134	141	146	151
Prepaid expenses & other current assets	24	29	30	30	30	30	30
Current Assets	**295**	**300**	**296**	**311**	**328**	**347**	**372**
PP&E	109	100	104	103	102	101	101
Intangibles	13	15	35	35	35	35	35
Other assets	18	22	38	36	36	36	36
TOTAL ASSETS	**435**	**437**	**474**	**486**	**501**	**520**	**544**
Short-term borrowings and current portion of long-term debt	6	5	0	0	0	0	0
A/P	63	67	58	60	64	67	68
Accrued expenses and other current liabilities	48	53	57	57	57	57	57
Current Liabilities	**116**	**125**	**115**	**118**	**122**	**124**	**126**
Domestic senior credit facility	18	14	34	0	0	0	0
Long-term debt	335	331	332	288	263	233	203
Deferred Income Taxes	0	0	0	0	0	9	18
Other noncurrent liabilities	36	56	62	62	62	62	62
TOTAL LIABILITIES	**505**	**526**	**543**	**468**	**447**	**427**	**408**
TOTAL EQUITY	**(70)**	**(88)**	**(69)**	**18**	**55**	**93**	**136**

Source: Company reports, Barclays Research

FIGURE 35

PAHC Cash Flow Statement Summary, FY2011-FY2017E

(in $M, except per share data)	FY2011A	FY2012A	FY2013A	FY2014E	FY2015E	FY2016E	FY2017E
Net Earnings	(13)	7	25	1	52	53	59
Depreciation and amortization	17	18	19	21	21	20	20
Deferred income taxes	1	(2)	(12)	0	0	8	9
Foreign currency (gains)/losses	(8)	3	3	2	0	0	0
Other	7	1	0	20	0	0	0
Change in Working Capital	(9)	5	(35)	(10)	(9)	(9)	(9)
Cash from operating activities	**(5)**	**32**	**0**	**36**	**64**	**73**	**78**
Additions to PP&E	(22)	(15)	(20)	(20)	(20)	(20)	(20)
Acquisitions	0	(3)	(19)	0	0	0	0
Proceeds from sale of PP&E	2	1	1	0	0	0	0
Cash from investing activities	**(19)**	**(18)**	**(37)**	**(20)**	**(20)**	**(20)**	**(20)**
Domestic senior credit facility borrowings/(repayments)	18	(4)	20	(34)	0	0	0
Long term debt issued/(repaid)	51	(5)	(5)	(44)	(25)	(30)	(30)
Dividends paid to common shareholders	(50)	0	(3)	(29)	(15)	(15)	(15)
Issue/(repurchase) of common shares	0	0	0	114	0	0	0
Common share/debt issue costs	(8)	0	(1)	(20)	0	0	0
Cash from financing activities	**10**	**(8)**	**11**	**(13)**	**(40)**	**(45)**	**(45)**
Effect of exchange rate movements	(0)	(1)	(0)	0	0	0	0
Change in Cash	(14)	5	(27)	3	4	8	13
Cash balance beginning of period	63	49	54	27	30	34	42
Cash balance end of period	49	54	27	30	34	42	55
Operating CFPS	**($0.15)**	**$1.05**	**$0.01**	**$1.04**	**$1.65**	**$1.88**	**$2.02**
Free cash flow	**(26)**	**17**	**(20)**	**16**	**44**	**53**	**58**
Free CFPS	**($0.86)**	**$0.56**	**($0.64)**	**$0.46**	**$1.13**	**$1.36**	**$1.51**

Source: Company reports, Barclays Research

Valuation methodology

The biggest challenge of valuing Phibro Animal Health is the limited comp set. In our view, Zoetis is the best single-company comparable as the only other independent, U.S.-listed, public company solely focused on the animal health market, but it is noticeably larger (the leading company by sales in the sector), more profitable (given the different business composition), less levered, sells into the companion animal (pet) market as well as the livestock market, and unlike Phibro is not effectively controlled by a founding family. ZTS is also fairly new to being publicly traded, having only been spun out of Pfizer as a stand-alone stock in February of 2013.

Virbac and Vetoquinol are interesting comparables, though both are traded on the French stock exchange. Virbac's sales level is slightly but not tremendously larger and also is largely controlled by a single family, but it has a much stronger focus on companion animal products, with 56% of sales applicable to pets and only 42% for livestock. Vetoquinol is smaller, split nearly 50/50 between livestock/pets, and has no exposure to poultry, vaccines, or products similar to OmniGen (the company aims much more at pain management and cardio health).

As of market close on Friday, May 2, 2014, the respective valuations were as follows:

FIGURE 36

Zoetis, Virbac, Vetoquinol: P/E and EV/EBITDA, 2014E-2015E

	P/E		EV/EBITDA	
	2014E	**2015E**	**2014E**	**2015E**
Zoetis	19.8x	17.4x	13.3x	12.1x
Virbac	22.4x	20.2x	12.8x	11.6x
Vetoquinol	17.1x	15.6x	8.9x	8.2x

Source: Thomson Reuters consensus estimates
Note: Prices as of 5/2/14

In our view, an appropriate valuation for PAHC stock is to give the company a small but substantial discount to the trading level of ZTS stock, in accordance with the different size of revenues, lower margins – largely stemming from PAHC's lower-margin Mineral Nutrition and Performance Product divisions – and higher debt level. With ZTS having stabilized at ~12x FY2 EBITDA, we set our initial price target for PAHC at $21, reflecting an average of two valuation methodologies: 1) using a multiple of 10.25x our projected 2015 EBITDA of $100M, and 2) a discounted cash flow model assuming an 8.2% discount rate and a long-term growth rate of 3.0%.

This is a small-cap company, a new IPO largely controlled by a single family, with a corresponding limited level of trading volume, and as such the stock-specific risks are substantial. That said, we like the markets where the company has strength, the well-established product base, and the potential for margin expansion as that product mix evolves.

Risks

- Regulatory risk as the use of antibiotics and other medical additives for meat production is facing scrutiny by the FDA and other regulators, particularly for "non-therapeutic" (i.e. growth-encouraging uses). Though only a small piece ($15-$20M) of the company's sales come from these non-therapeutic applications, there is still risk of negative publicity and/or headlines, product bans or other, tighter government controls in the U.S. and abroad.

- Growth projections assume entry into new markets (i.e., OmniGen in China, Europe) with expectations of registration/regulatory approvals and with new products through newly formed partnerships/acquisitions (Epitopix, AquaVet). These strategies face varying amounts of uncertainty in execution.

- Phibro will have relatively high leverage (>3x TTM EBITDA) post-IPO but by paying off and/or refinancing current high-interest debt, the company will lower its interest expense substantially. The company expects to steadily reduce its leverage over the next several years.

- The Bendheim family retains the vast majority of voting power via a dual class share structure, with public shareholders holding approximately 5% and 3i Investments holding approximately 2% of votes.

- Substantial outbreaks of livestock diseases that are currently uncureable (i.e., Porcine Epidemic Diarrhea Virus, or PED) may reduce the size of livestock herds in certain regions and dampen near-term demand for Phibro's products.

- Competition from more aggressively-priced generics may increase for certain of Phibro's products, though makers of these generics will generally lack the company's scale, production skill, customer relationships, and/or distribution capacity.

FIGURE 37

Barclays North America Fertilizers & Agriculture Comp Sheet

	Ticker	Rating	Price	Target	Market Cap	Dividend Yield[1]	TTM Leverage	EV/EBITDA 2013	EV/EBITDA 2014E	EV/EBITDA 2015E	EBITDA 2013	EBITDA 2014E	EBITDA 2015E	P/E 2013	P/E 2014E	P/E 2015E	EPS 2013	EPS 2014E	EPS 2015E
North America Fertilizer Producers		Neutral																	
Agrium Inc.	AGU-US	OW	$95.89	$113	13,875	3.1%	1.8x	8.0x	8.0x	6.7x	2,113	2,131	2,516	13.0x	13.3x	11.0x	$7.38	$7.21	$8.74
CF Industries Holdings Inc.	CF-US	EW	$244.52	$267	13,913	1.6%	1.2x	5.9x	7.3x	7.1x	2,642	2,143	2,204	10.4x	12.5x	11.7x	$23.60	$19.57	$20.92
Mosaic Co.	MOS-US	EW	$49.71	$50	20,590	2.0%	0.7x	8.5x	8.1x	7.6x	2,149	2,257	2,406	17.5x	17.7x	15.0x	$2.84	$2.82	$3.31
Potash Corp. of Saskatchewan	POT-US	EW	$36.24	$34	30,910	3.9%	1.4x	10.5x	12.8x	11.2x	3,309	2,708	3,080	17.3x	22.6x	18.3x	$2.09	$1.61	$1.98
Intrepid Potash Inc.	IPI-US	UW	$16.71	$11	1,260	0.0%	1.5x	13.7x	18.4x	11.7x	103	77	120	51.3x	732.1x	52.1x	$0.33	$0.02	$0.32
CVR Partners LP	UAN-US	EW	$21.05	$23	1,541	8.6%	0.8x	10.4x	10.6x	10.5x	153	149	151	13.0x	13.2x	13.1x	$1.62	$1.60	$1.61
Average							*1.2x*	*9.5x*	*10.9x*	*9.2x*				*14.2x*	*15.8x*	*13.8x*			

	Ticker	Rating	Price	Target	Market Cap	Dividend Yield	TTM Leverage	EV/EBITDA 2013	EV/EBITDA 2014E	EV/EBITDA 2015E	EBITDA 2013	EBITDA 2014E	EBITDA 2015E	P/E 2013	P/E 2014E	P/E 2015E	EPS 2013	EPS 2014E	EPS 2015E
North America Agricultural Processors		Neutral																	
Bunge	BG-US	OW	$75.57	$90	11,109	1.6%	3.6x	8.9x	8.2x	7.4x	1,850	1,997	2,208	14.0x	12.2x	10.4x	$5.39	$6.18	$7.24
Ingredion Inc.	INGR-US	EW	$71.26	$74	5,402	2.4%	2.4x	8.3x	7.9x	7.3x	800	843	914	14.1x	12.9x	11.6x	$5.05	$5.50	$6.15
Average							*3.0x*	*8.6x*	*8.1x*	*7.4x*				*14.1x*	*12.6x*	*11.0x*			

	Ticker	Rating	Price	Target	Market Cap	Dividend Yield	TTM Leverage	EV/EBITDA 2013	EV/EBITDA 2014E	EV/EBITDA 2015E	EBITDA 2013	EBITDA 2014E	EBITDA 2015E	P/E 2013	P/E 2014E	P/E 2015E	EPS 2013	EPS 2014E	EPS 2015E
North America Animal Health		Neutral																	
Phibro Animal Health Corporation[1]	PAHC-US	OW	$17.96	$21	708	0.0%	3.5x	12.7x	10.7x	9.6x	76	90	100	29.8x	18.4x	12.7x	$0.60	$0.98	$1.42
Zoetis[2]	ZTS-US	EW	$30.53	$35	15,265	1.0%	2.9x	14.5x	13.8x	12.2x	1,268	1,333	1,504	21.5x	20.2x	17.4x	$1.42	$1.51	$1.75
Average							*3.2x*	*13.6x*	*12.2x*	*10.9x*				*25.6x*	*19.3x*	*15.1x*			

All amounts in USD $ millions except for per-share data. Prices are as of May 5, 2014, market close.
Note: P/E averages exclude IPI
Industry view: Neutral
[1] PAHC estimates use a June fiscal year end
[2] ZTS is covered by US Pharmaceuticals analyst Doug Tsao with a Positive industry view.
Stock ratings: OW-Overweight; EW-Equal Weight; UW-Underweight
Source: Thomson Reuters, Company reports, Barclays Research estimates.
For full disclosures on each covered company, including details of our company-specific valuation methodology and risks, please refer to http://publicresearch.barcap.com.

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Primary Stocks (Ticker, Date, Price)

Phibro Animal Health Corp. (PAHC, 05-May-2014, USD 17.96), Overweight/Neutral, A/C/D/J/L

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Overweight - The stock is expected to outperform the unweighted expected total return of the industry coverage universe over a 12-month investment horizon.

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North America Fertilizers & Agriculture		
Agrium Inc. (AGU)	Bunge Limited (BG)	CF Industries Holdings (CF)
CVR Partners (UAN)	Ingredion Inc. (INGR)	Intrepid Potash Inc. (IPI)
Phibro Animal Health Corp. (PAHC)	Potash Corporation of Saskatchewan (POT)	The Mosaic Company (MOS)

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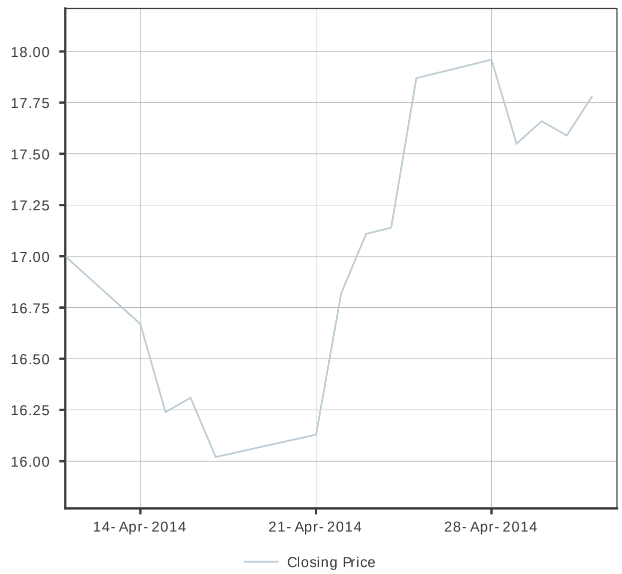
Phibro Animal Health Corp. (PAHC)

	Stock Rating	Industry View
USD 17.96 (05-May-2014)	**OVERWEIGHT**	**NEUTRAL**

Rating and Price Target Chart - USD (as of 05-May-2014) **Currency=USD**

Date	Closing Price	Rating	Adjusted Price Target



Source: IDC, Barclays Research

Link to Barclays Live for interactive charting

A: Barclays Bank PLC and/or an affiliate has been lead manager or co-lead manager of a publicly disclosed offer of securities of Phibro Animal Health Corp. in the previous 12 months.

C: Barclays Bank PLC and/or an affiliate is a market-maker and/or liquidity provider in equity securities issued by Phibro Animal Health Corp. or one of its affiliates.

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L: Phibro Animal Health Corp. is, or during the past 12 months has been, an investment banking client of Barclays Bank PLC and/or an affiliate.

Valuation Methodology: In our view, an appropriate valuation for PAHC stock is to give the company a small but substantial discount to the trading level of ZTS stock, in accordance with PAHC's smaller revenue lower margins – largely stemming from PAHC's lower-margin Mineral Nutrition and Performance Product divisions – and higher debt level. We set our initial price target for PAHC at $21, reflecting an average of two valuation methodologies: (1) using a multiple of 10.25x our projected 2015 EBITDA of $100M and (2) a discounted cash flow model assuming an 8.2% discount rate and a long-term growth rate of 3.0%

Risks which May Impede the Achievement of the Barclays Research Price Target: Increased regulatory controls over medical feed additives for livestock production, a slowdown in global economic growth that reduces demand for animal proteins, the spread of any outbreaks of animal disease, or the failure of the company to receive expected registrations/approvals for entry into new countries would all serve to reduce Phibro's financial results relative to our projections.

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