

# Ligand's Market Valuation Does Not Withstand Scrutiny

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by: Seven Corners Capital Management

## Summary

- LGND's "shots on goal" business model is hardly revolutionary.
- LGND's non-GAAP adjusted financial results do not present an accurate picture to investors of the company's true economic performance.
- LGND is overly reliant on just three marketed drugs, which will inevitably go off patent.
- LGND shares are extremely overvalued and due for a fall; we calculate fair value at \$75.42/share, implying 53% expected downside.



Ligand Pharmaceuticals (LGND) is a pharmaceutical patent licensor. In essence, it acquires pharma-related IP, such as its patented Captisol and OmniAb technologies, and licenses said IP to other pharma companies that are conducting drug research. In return, LGND receives royalties, license fees, milestones and other revenue from said companies. In addition, LGND sells its Captisol material to pharma companies directly, although this business has stagnated in recent years and only accounted for 15.6% of LGND's revenues in 2017. Finally, the company has an internal drug development program, which does not yet have any marketed drugs.

The company claims it has a unique "Shots on Goal" business model that brings with it all of the upside of investing in the pharma sector without the potential downside of costly drug failures, because its IP license programs are "fully funded" by LGND's drug partners (in other words, LGND is not on the hook for the costs of drug trial failures). While the PR spin employed by LGND's management is ingenious and certainly has levitated the stock price, investors appear to be buying a bill of goods at current share price levels. Our conclusion is that LGND is significantly overvalued at \$158/share as of April 3, 2018, and is, in fact, worth just \$74/share on a sum-of-the-parts basis (using rather optimistic assumptions), representing 53% downside from the current share price.

## **LIGAND'S BUSINESS MODEL: SUPERIOR OR SIMPLY WELL MARKETED?**

Below is a snapshot of LGND's marketing pitch from their most recent investor day presentation in November 2017 (full slide deck can be found [here](#)).

# Shots-on-Goal Business Model

## The "LIGAND MODEL"

- Realities of the pharmaceutical industry
  - Most drug research programs fail, but not all
  - Programs are not all of equal value – different time to market, risk, economics
- BUT, the more quality programs you have, the higher likelihood of success
  - Diversified across a full range of industry partners
  - Diversified across a broad spectrum of therapeutic indications
- A shot-on-goal for Ligand is a fully funded partnership
  - Backed by license to Ligand's patents, know-how and/or data
  - Sharing of future economics based on partner's success



## The "LIGAND MODEL"

### *The Balance in Our Business*

#### **What We Do:**

- Conduct early research, discover drugs
  - Provide tools that make drugs possible
  - License data and patents
  - Acquire new technologies and assets
  - Operate with low costs and maintain lean sharecount
- Decide which indications to pursue
  - Design studies; manage regulatory work
  - Price drugs and secure reimbursement
  - Market drugs
  - Fund all development and commercialization

#### **What Our Partners Do:**



# Pipeline

## Why is Ligand's Pipeline Valuable?

- In pharmaceuticals, most programs fail; but not **ALL** programs
- Ligand's pipeline is:
  - Large and growing
  - Highly diversified
  - Many programs have top-tier sponsorship
- Unique economic structure of Ligand's pipeline:
  - Our deals are fully funded
  - Ligand is not generating big annual losses OR diluting shareholders to finance its pipeline
- Many of Ligand's major assets are still development-stage



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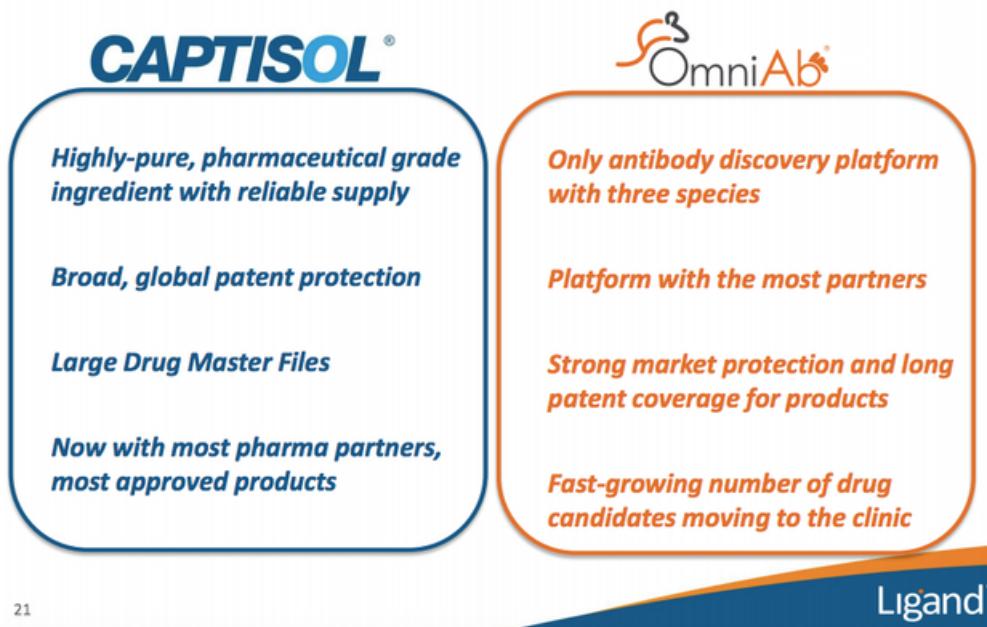
LGND presents itself as a novel way for investors to gain exposure to the healthcare industry. Yet there is nothing particularly special or noteworthy about a "shots on goal" business model. "Shots on goal" is simply a snazzy way of referencing an IP royalty business, perhaps in order to make it sound more impressive to investors. Yes, it is true that LGND is not responsible for funding expensive drug trials, but in return it only obtains a small royalty on drug revenues when these trials succeed, leaving almost all of the upside for the parties that put their capital at risk (in other words, while the downside is limited, so is the upside). Note, for example, that PDL Biopharma (PDLI) has employed a similar business model to LGND's for many years with relatively unimpressive results:



Obviously, what really matters is not the label used to describe this particular business model, but rather the intrinsic value of the underlying IP assets. So, what are the principal IP assets that LGND possesses? Again, we refer to the 2017 investor day slide deck:

## Two Major Technology Platforms

**Market Leading, Best-in-Class**



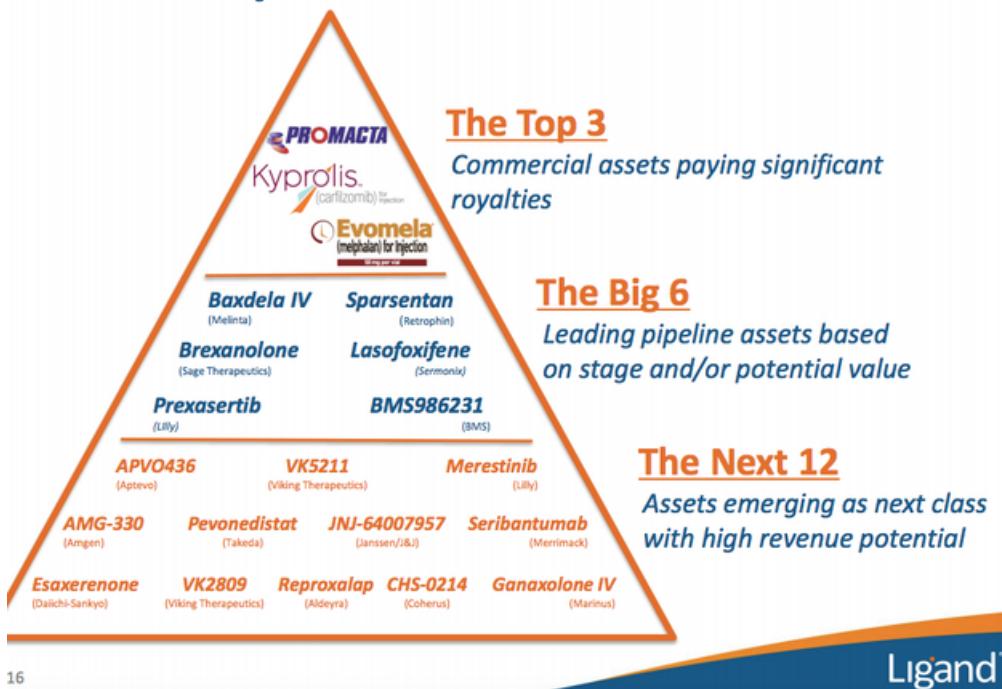
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Per LGND's 2017 Form 10-K filing (page 5), **Capitsol** is LGND's patented, uniquely-modified cyclodextrin that is specifically designed to maximize safety, while improving the solubility, stability, and bioavailability of active pharmaceutical ingredients (or APIs).

Captisol can enable faster and more efficient development paths for LGND's drug partners, given its known regulatory acceptance. **OmniAb** includes LGND'S OmniRat, OmniMouse, OmniFlic and OmniChicken technology platforms for use in discovering fully human antibodies. These platforms consist of genetically-engineered transgenic rodents that produce a broadly diversified repertoire of antibodies and enable novel fully-human antibody drug discovery and development by LGND's OmniAb partners. LGND acquired Captisol in January 2011 for \$31.6 million in cash, of which \$20.0 million was financed, with an additional \$4.3 million paid on the one-year anniversary of the transaction. LGND acquired its OmniAb technology in two purchases, the first in January 2016 for \$173.4 million in cash and stock and the second in October 2017 for \$25 million in cash at closing plus up to \$10.5 million of success-based milestones and revenue sharing.

LGND's royalties from the above IP assets are principally related to three currently marketed drugs, Promacta, KYPROLIS, and Evomela (LGND calls these "The Top 3"). In addition, the IP assets may in the future generate royalties from drugs that are currently in the clinic (which LGND's references as "The Big 6"). Finally, there are a further 12 potential drug assets using LGND-sourced IP that are in the early stage of development ("The Next 12"). LGND has handily summarized these in the following graphic:

# Portfolio Pyramid



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Ligand

In addition, below are the royalty rates for the above-referenced drugs, as disclosed in LGND's 2017 10-K, pages 14-15:

Royalty Table

Ligand Licenses With Tiered Royalties, Tiers Disclosed*				
Promacta (Novartis)	Kyprolis (Amgen)	Duravee (Pfizer)	Viviant/Cashiers (Pfizer)	
< \$100 million	< \$250 million	<\$400 million	<\$400 million	0.5%
\$100 to \$200 million	\$250 to \$500 million	\$400 million to \$1.0 billion	\$400 million to \$1.0 billion	1.5%
\$200 to \$400 million	\$500 to \$750 million	>\$1.0 billion	>\$1.0 billion	2.5%
\$400 million to \$1.5 billion	>\$750 million			
>\$1.5 billion				

CE-Tipirimate (CURx)		CE-Budesonide (Sedor)		CE-Meloxicam (Sedor)	
< \$50 million	6.0%	< \$25 million	8.0%	< \$25 million	8.0%
\$50 to \$100 million	6.8%	> \$25 million	10.0%	> \$25 million	10.0%
>\$100 million	7.5%				

Ligand Licenses With Tiered Royalties, Tiers Undisclosed\*

Program	Licensee	Royalty Rate
IRAK4	TG Therapeutics	6.0% - 9.5%
CE-Lamotrigine	CURx	4.0% - 7.0%
Lasofoxifene	Sermonix	6.0% - 10.0%
FIPase Inhibitor (VK0612)	Viking	7.5% - 9.5%
SARM (VK5211)	Viking	7.25% - 9.25%
TR Beta (VK2809 and VK0214)	Viking	3.5% - 7.5%
Oral IPO	Viking	4.5% - 8.5%
DGAT-1	Viking	3.0% - 7.0%
Various	Nacorion	4.0% - 9.0%
Various	Sequoia	4.0% - 10.0%

Ligand Licenses With Fixed Royalties\*

Program	Licensee	Royalty Rate
Evernela	Spectrum Pharma	20%
Baxdela	Melinta	2.5%
Brexanolone (SAGE-547)	SAGE	3%
Sparsentan	Retropin	9%
CE-Fosphenytoin	Sedor	11%
Pradefovir	Chiva Pharma	9%
MB07133	Chiva Pharma	6%
KLIM465	Novartis	14.5% (6.5% in year one)
Topical lasofoxifene	Anure Biotech	5%
MM-121	Merrimack Pharma	<1.0%
MM-141	Merrimack Pharma	<1.0%
ME-143	MEI Pharma	Low single digit royalty
ME-344	MEI Pharma	Low single digit royalty
Reproxalap	Aldeyra Therapeutics	Low single digit royalty

\*Royalty rates are shown net of sublicense payments. Royalty tier references for specific rates noted in the table are for up to and including the dollar amount referenced. Higher tiers are only applicable for the dollar ranges specified in the table.

It is notable when reviewing the above that the top of the pyramid produces that vast majority of LGND's revenues. The 2017 10-K, page 35, discloses the following historical royalty revenues for these three marketed drugs (we assume that "Third Largest Royalty" refers to Evomela):

The following table represents royalty revenue by program (in thousands):

	Year ended December 31,		
	2017	2016	2015
Promacta / Revelade	\$ 62,918	\$ 43,043	\$ 29,295
Kyprolis	16,413	12,145	7,317
Third Largest Royalty	7,155	1,357	390
Other Royalties	2,199	2,878	1,192
Total	\$ 88,685	\$ 59,423	\$ 38,194

From this table, we find that the top three drugs were responsible for more than 100% of the increase in 2017 royalties for LGND, given that the "Other Royalties" category actually declined in 2017 versus 2016. For 2018, management has estimated that royalties will increase by about \$27MM, to a total of approximately \$116MM (see Q4 2017 earnings press release). Below we present a description of each of LGND's "Top Three" assets, as well as a look at potential future royalties for LGND for these three:

**Promacta/Revolade** - Owned by Novartis (NVS). Per NVS's Form 20-F,

Promacta/Revolade (eltrombopag) is a once-daily oral thrombopoietin receptor agonist that works by stimulating bone marrow cells to produce platelets. It is the only approved once-daily oral thrombopoietin receptor agonist and is marketed under the brand name Promacta in the US and Revolade in most countries outside the US. It is approved in more than 100 countries for the treatment of thrombocytopenia in adult patients with chronic immune (idiopathic) thrombocytopenia (ITP) who have had an inadequate response or are intolerant to other treatments. Promacta/Revolade was acquired from GSK. According to page 80 of the Form 20-F, the first patent expiry for Promacta occurs this year, although the bulk of the expiries occur in the 2021-2023 time frame:

Promacta/Revolade: US: Patent on compound (2021), PTE (2022), PE (2023); patent on compound (2018), PE (2019); two patents on compound (2021), PE (2021); patent on method of treating thrombocytopenia (2021), PE (2021); patent on method of enhancing platelet production (2021), PE (2021); patent on method of enhancing platelet production (2023), PE (2023); patent on salt form (2025), PE (2025); five patents on formulation of different dose strengths (all 2027), PE (2027); ODE (2021), PE (2022, 2022); EU: Two patents on compound (2021, 2021), SPC for one compound patent (2025); patent on salt form (2023); patent on formulation (2027); RDP (2020). Japan: Patent on compound (2021), PTE (2025); patent on salt form (2023); PTE (2023); patent on formulation (2027); RDP (2020). There is currently no generic competition in the US, EU or Japan. In the US, a generic manufacturer has filed an ANDA challenging certain patents other than the compound patents. The EU formulation patent is being opposed in the EPO.

With \$837MM in 2017 worldwide revenues for the drug, up 37% over 2016's level, one should expect 5 or 6 more years of significant Promacta royalties for LGND before generics enter the market. This should translate into perhaps \$670MM or so future in Promacta-derived royalties for LGND, per our following estimates:

Drug	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2018-2025
	Royalties											
Promacta	29,295	43,043	62,918	81,000	95,000	100,000	105,000	100,000	90,000	80,000	20,000	671,000
Rate of Increase YoY	n/a	47%	46%	29%	17%	5%	5%	-5%	-10%	-11%	-75%	

It should also be noted that in early 2018 received FDA Breakthrough Therapy designation for first-line use in severe aplastic anemia (see PR here).

**KYPROLIS** (carfilzomib) - Owned by Amgen (AMGN). Per AMGN's FY2017 Form 10-K, KYPROLIS® is a proteasome inhibitor. In July 2017, AMGN announced positive results from the final analysis of the phase 3 ASPIRE study. The study met the key secondary endpoint of overall survival, demonstrating that KYPROLIS®, lenalidomide and dexamethasone reduced the risk of death by 21% over lenalidomide and dexamethasone alone. In December 2017, AMGN submitted a sNDA to the FDA and a variation to the marketing authorization to the EMA to include the overall survival data from the ASPIRE study in the product label. In October 2017, AMGN announced top-line results of the phase 3 ARROW study, which showed KYPROLIS® administered once-weekly at the 70 mg/m<sup>2</sup> dose with dexamethasone allowed relapsed and refractory multiple myeloma patients to live 3.6 months longer without their disease worsening than KYPROLIS® administered twice-weekly at the 27 mg/m<sup>2</sup> dose with dexamethasone. The overall safety profile of the once-weekly KYPROLIS® regimen was comparable to that of the twice-weekly regimen. In January 2018, AMGN announced that the CHMP of the EMA has

adopted a positive opinion recommending a label variation for KYPROLIS® to include updated overall survival data from the phase 3 head-to-head ENDEAVOR study in patients with relapsed or refractory multiple myeloma. The ENDEAVOR study demonstrated that KYPROLIS® and dexamethasone reduced the risk of death by 21 percent and increased overall survival by 7.6 months versus VELCADE® and dexamethasone. A phase 3 study comparing carfilzomib, dexamethasone, and daratumumab to carfilzomib and dexamethasone for the treatment of patients with relapsed or refractory multiple myeloma is ongoing.

According to page 7 of the Form 10-K, patent expiries for KYPROLIS occur in the 2025-2027 time frame:

**Patents**  
The following table describes our outstanding material patents for the indicated product by territory, general subject matter and latest expiry date. Certain of the European patents are the subject of supplemental protection certificates that provide additional protection for the product in certain European countries beyond the dates listed in the table (see footnotes).

One or more patents with the same or earlier expiry date may fall under the same "general subject matter" and are not listed separately.

Product	Territory	General subject matter	Expiration
Enbrel® (etanercept)	U.S.	Methods of treating psoriasis	8/13/2019
	U.S.	Aqueous formulation and methods of treatment using the formulation	6/8/2023
	U.S.	Fusion protein, and pharmaceutical compositions	11/22/2028
Aranesp® (darbeopetin alfa)	U.S.	DNA encoding fusion protein, and methods of making fusion protein	4/24/2029
	U.S.	Glycosylation analogs of erythropoietin proteins	5/15/2024
	U.S.	RANKL antibodies; and methods of use <sup>(1)</sup>	12/22/2017
Proleukin®/ XGEVA® (denosumab)	U.S.	Methods of treatment	6/25/2022
	U.S.	Nucleic acids encoding RANKL antibodies, and methods of producing RANKL antibodies	11/30/2023
	U.S.	RANKL antibodies including sequences	2/19/2025
	Europe	Medical use of RANKL antibodies	4/15/2018
	Europe	RANKL antibodies including epitope binding	2/23/2021
Sensipar®/ Mimpara® (cinacalcet)	U.S.	RANKL antibodies including sequences <sup>(2)</sup>	6/25/2022
	U.S.	Calcium receptor-active molecules	3/8/2018
	Europe	Formulation	9/22/2026
KYPROLIS® (carfilzomib)	U.S.	Calcium receptor-active molecules <sup>(2)</sup>	10/23/2015
	U.S.	Compositions and compounds	12/7/2027
	Europe	Methods of treatment	4/14/2025
	Europe	Compositions, compounds and methods of treatment <sup>(2)</sup>	8/8/2025

With \$835MM in 2017 worldwide revenues for the drug, up 21% over 2016's level of \$682MM, one should expect about 7 more years of significant KYPROLIS royalties for LGND before generics enter the market. This should translate into perhaps \$210MM or so future in KYPROLIS-derived royalties for LGND, per our following estimates:

Drug	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2018-2025
	Royalties											
KYPROLIS	7,317	12,145	16,413	21,000	26,000	30,000	30,000	28,000	25,000	25,000	25,000	210,000
Rate of Increase YoY	n/a	66%	35%	28%	24%	15%	0%	-7%	-11%	0%	0%	

**Evomela (melphalan).** Owned by Spectrum Pharmaceuticals (SPPI). Per SPPI's 2017 Form 10-K filing, Evomela is intended for use as a high-dose conditioning treatment prior to autologous stem cell transplant, or ASCT, for patients with multiple myeloma, or MM. MM is a cancer of plasma cells, a type of white blood cell present mainly in the bone marrow that produces antibodies. In MM, a group of plasma cells (myeloma cells) become cancerous and multiply, raising the number of plasma cells to a higher-than-normal level, which can crowd out normal blood cells and lead to abnormally high proteins in the blood or urine. There were an estimated 30,000 new cases of MM in the U.S. in 2017, with the incidence of new cases increasing by approximately 2% per year. According to page 13 of the Form 10-K, the first patent expiry for Evomela occurs in 2025:

EVOMELA: This drug is covered by issued patents claiming improved Capitolit technology that are due to expire between 2025 and 2033 in the U.S. Outside the U.S., we have issued patents that cover improved Capitol technology that are due to expire in 2025 and pending applications with anticipated expiry in 2029 (if issued). We also have filed patent applications covering the Capitol-based formulation of EVOMELA in the U.S. and a number of other countries.

EVOMELA has orphan drug exclusivity for use as a high-dose conditioning treatment prior to hematopoietic progenitor (stem) cell transplantation in patients with MM, which expires on March 10, 2023.

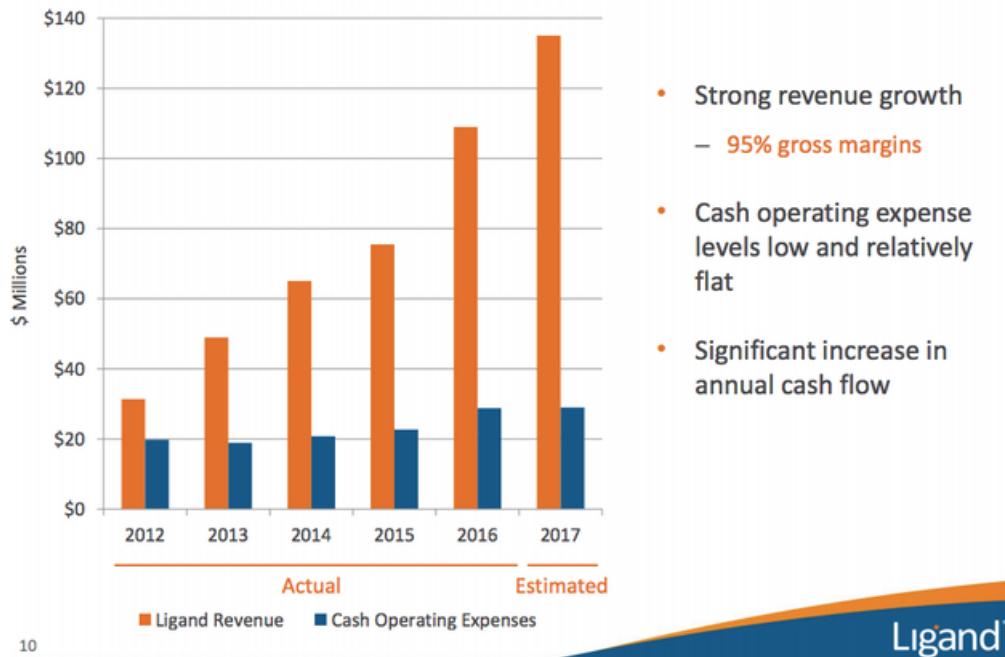
With \$35MM in 2017 worldwide revenues for the drug, up 117% over 2016's level of 16MM, one should expect at least 7 more years of Evomela royalties for orphan exclusivity expires. This should translate into perhaps \$159MM or so future in Evomela-derived royalties for LGND, per our following estimates:

Drug	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
	Royalties											
Evomela	390	1,357	7,155	12,000	18,000	22,000	25,000	22,000	20,000	20,000	20,000	157,000
Rate of Increase YoY	n/a	248%	427%	68%	50%	22%	14%	-12%	-9%	0%	0%	

## SCRUTINIZING LIGAND'S NON-GAAP FINANCIAL RESULTS

LGND presents a slide in its investor day deck that appears quite impressive, showing an explosion of revenues in recent years versus relatively consistent costs, indicating (on the surface) that the company's business model has experienced significant operating leverage recently:

### Ligand's Cash Generation is Increasing



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On the surface, this appears to evidence phenomenal cash flow expansion - that is, it does if one overlooks the word "cash" in front of the words "operating expenses" at the bottom of the chart. True, cash operating expenses (as they appear in the statement of cash flows) have been subdued while revenues have climbed much faster. But what is not mentioned is that LGND incurs many very real periodic non-cash expenses that represent either the amortization of prior period cash outlays which did not originally run through the cash flow statement (for example, non-cash interest expense and amortization related to acquisitions) or expenses paid using LGND's stock as currency (namely, stock-based compensation expense). In other words, with respect to these two categories of expenses, LGND has already spent the money (acquisitions) or is paying for an expense with an asset other than cash (stock comp); nevertheless, each represents a real expense for the company.

This "see no evil" investment approach is also evidenced in LGND's "adjusted net income" calculations, which also are based mainly on the exclusion of non-cash operating expenses, as shown below (taken from LGND's Q4 2017 press release):

**LIGAND PHARMACEUTICALS INCORPORATED****ADJUSTED FINANCIAL MEASURES**

(Unaudited, in thousands, excluding per-share data)

	Three months ended December 31,		Year ended December 31,	
	2017	2016	2017	2016
Net (loss) income	\$ (7,010)	\$ (3,125)	\$ 12,556	\$ (1,636)
Stock-based compensation expense	8,998	5,204	24,915	18,893
Non-cash interest expense(1)	2,972	2,795	11,619	10,926
Amortization related to acquisitions	8,189	2,895	18,412	11,072
(Gain)/Loss from Viking	(1,302)	8,994	2,048	23,132
Increase in contingent liabilities(2)	278	738	2,580	3,334
Other(3)	(3,658)	(68)	(3,985)	(498)
Income tax effect of adjusted reconciling items above	(5,546)	(7,295)	(19,495)	(23,726)
Deferred tax asset adjustment(4)	32,758	5,939	32,758	5,939
Excess tax benefit from stock-based compensation(5)	(1,878)	—	(4,719)	—
Valuation allowance release	(4,169)	—	(4,169)	—
Discontinued operations, net of tax	—	—	—	(731)
Adjusted net income from continuing operations	<u>\$ 29,632</u>	<u>\$ 16,077</u>	<u>\$ 72,520</u>	<u>\$ 46,705</u>

From the above, we find that LGND magically transforms \$12.6MM of GAAP net income into \$72.5MM in non-GAAP "adjusted net income" for 2017 (an increase of 475%) and converts \$1.6MM of GAAP net losses in 2016 into \$46.7MM of "adjusted net income" (an increase of 2,819%).

However, let's consider further individually each of the "non-cash" expenses that LGND excludes from the above cash flow slide and non-GAAP "adjusted net income" calculations to determine whether these are "real" expenses or expenses that investors can safely ignore. First, take the exclusion of non-cash interest expense, which increased non-GAAP net income by \$11.6MM in 2017 and by \$10.9MM in 2016. This is clearly a real expense, albeit "non-cash" in the referenced reporting period. In August 2014, LGND completed a \$245MM offering of 2019 Convertible Senior Notes which bear interest at 0.75%. LGND accounted for the 2019 Convertible Senior Notes by separating the liability and equity components of the instrument in a manner that reflects LGND's nonconvertible debt borrowing rate, meaning that LGND recorded the debt instrument at a discount. LGND is amortizing the debt discount over the life of the 2019 Convertible Senior Notes as additional non-cash interest expense utilizing the effective interest method. In other words, because of the accounting treatment for convertible notes, the initial debt discount disappears over time as the notes get closer and closer to maturity/conversion (on the conversion date, LGND will either need to pay back the entire \$245MM or convert this amount into common equity). LGND is asking investors to ignore the fact that a \$245MM liability due next year was put on the books at a much lower amount in 2014 due to the accounting treatment for the convertible notes. Unfortunately, this makes no logical sense, since the amortization of the initial discount represents real dollars LGND needs to set aside to pay off the notes in 2019 (assuming it does not convert them into common shares).

Next take stock-based compensation expense, which added back nearly \$25MM to non-GAAP "earnings" for 2017 and \$19MM in 2016. Obviously, this too is a real expense that should not be dismissed by shareholders as irrelevant to the investment case. LGND can choose to pay its employees with either equity or cash. Choosing the former does not magically transform such compensation into something that is not a real expense--shareholders are diluted by the issuance of new stock. Indeed, one would only need to

ask the recipients of such equity grants whether these have "real" value or not (offer to take their stock options off of their hands for a nominal amount and see what the response is). Often companies will even buy back shares (using cash) they just issued to offset the dilution from their stock-based compensation, which clearly demonstrates that this form of remuneration is a real expense.

Next, we move to amortization related to acquisitions, which accounted for \$18.4MM in non-GAAP "earnings" in 2017 and \$11MM in 2016. Again, this is clearly a real expense, even if it is "non-cash". The applicable cash went out the door when LGND made the respective acquisitions, although at the time this cash expense did not run through the P&L statement (instead, it was deferred to future periods via periodic acquisition-related amortization charges). Amortization and depreciation expenses are measurements of how much a company needs to set aside (i.e., in cash) on a periodic basis in order to replace its depreciating/amortizing assets (such as drug assets with inevitable patent expirations). If we accept LGND's implicit argument that these are not "real" expenses (since they are "non-cash"), then neither is the increased depreciation charges of a company that just spent \$1 billion to build a new factory or an oil and gas exploration company that spent a like amount drilling inevitably depleting oil wells.

Finally, we note that LGND filed a Form 8-K on March 7, 2018, in which it stated that it had licensed its LGND-6972 Glucagon Receptor Antagonist asset to Roivant Sciences GmbH for a \$20 million upfront payment plus potential milestone payments of up to \$548.8 million. In addition, the company stated that it was updating its 2018 non-GAAP adjusted EPS guidance to "approximately \$4.85" (up from prior guidance of "approximately \$4.22") as a consequence of upfront payment. However, we are dubious that these license proceeds constitute "real" income that should be included in LGND's non-GAAP EPS. Why? Because the 8-K states that the LGND-6972 license covers the right "to develop, make, have made, use, sell, have sold, import and export **any product covered by the Licensed Technology in and for all uses in humans or animals**". In other words, from the wording, it does not appear that LGND would be able to license this asset to any other company in the covered jurisdictions so long as the license with Roivant remains in effect. Thus the \$20 million upfront payment is a one-time only event involving the LGND's key pipeline asset which should not be expected to recur (and non-recurring gains and losses are properly excluded from non-GAAP EPS calculations).

### A REALISTIC PICTURE OF LIGAND'S ACTUAL ECONOMIC PERFORMANCE

If we reject the inclusion of the above-discussed three categories of "non cash" expenses from LGND's adjusted EPS calculations (namely, non-cash interest expense, non-cash stock compensation and the amortization of acquisition costs), we find that about \$55MM of such "non-cash" expenses should be removed from LGND's final 2017 adjusted EPS numbers in order to arrive at a true picture of LGND's yearly financial performance. Similarly, in 2016 these three categories of real expenses totaled about \$41MM, which likewise should be removed from LGND's final 2016 adjusted EPS numbers in order to achieve the same goal. If we do this, we obtain the following "adjusted adjusted" EPS for 2016 and 2017 for LGND:

<b><i>LGND "adjusted adjusted" EPS (\$1000s)</i></b>	<b><i>Three months ended December 31,</i></b>		<b><i>Year ended December 31,</i></b>	
	<b><i>2017</i></b>	<b><i>2016</i></b>	<b><i>2017</i></b>	<b><i>2016</i></b>
Net (loss) income	-7,010	-3,125	12,556	-1,636
(Gain)/Loss from Viking	-1,302	8,994	2,048	23,132
Increase in contingent liabilities(2)	278	738	2,580	3,334
Other(3)	-3,658	-68	-3,985	-498
Income tax effect of adjusted reconciling items above	-1,662	3,431	228	9,219
Deferred tax asset adjustment(4)	32,758	5,939	32,758	5,939
Excess tax benefit from stock-based compensation(5)	-1,878	—	-4,719	—
Valuation allowance release	-4,169	—	-4,169	—
Discontinued operations, net of tax	—	—	—	-731
<b><i>Adjusted net income from continuing operations</i></b>	<b><i>13,357</i></b>	<b><i>15,909</i></b>	<b><i>37,297</i></b>	<b><i>38,759</i></b>
<b>Diluted per-share amounts attributable to common shareholders:</b>				
Net (loss) income	-0.33	-0.15	0.53	-0.08
(Gain)/Loss from Viking	-0.06	0.43	0.09	1.11
Increase in contingent liabilities(2)	0.01	0.04	0.11	0.16
Other(3)	-0.17	0.00	-0.17	-0.02
Income tax effect of adjusted reconciling items above	-0.08	0.16	0.01	0.44
Deferred tax asset adjustment(4)	1.55	0.28	1.40	0.28
Excess tax benefit from stock-based compensation(5)	-0.09	—	-0.20	—
Valuation allowance release	-0.20	—	-0.18	—
Discontinued operations, net of tax	—	—	—	-0.04
2019 Senior Convertible Notes share count adjustment	-0.05	-0.03	-0.09	-0.09
<b><i>Adjusted net income from continuing operations</i></b>	<b><i>0.58</i></b>	<b><i>0.73</i></b>	<b><i>1.50</i></b>	<b><i>1.76</i></b>
Weighted average shares used in calculation of GAAP diluted earnings per share	21,109	20,898	23,481	20,831
Shares excluded due to anti-dilutive effect on GAAP net loss	3,025	1,728	—	1,884
Weighted average dilutive potential common shares issuable of 2019 Senior Convertible Notes	-1,501	-843	-1,214	-995
Weighted average shares used in calculation of adjusted diluted earnings per share	22,633	21,783	22,267	21,720
<b>P/E RATIO FOR "ADJUSTED ADJUSTED" EPS AT 159 PPS (Quarterly #s annualized)</b>	<b>68</b>	<b>55</b>	<b>106</b>	<b>90</b>

As can be seen above, our "adjusted adjusted" EPS calculations show that LGND's true economic earnings actually declined slightly between 2016 and 2017, from \$38.8MM to \$37.3MM. The result looks even worse on a per share basis due to dilution, with 2017 earnings of \$1.50/share down 15% from 2016's level of \$1.76. At the current LGND share price, this means that the company sports an astronomical 106X trailing P/E ratio, which (if we inverse the ratio) means LGND trades at an anemic trailing earnings ratio of 0.94%. Note that this is about half of the current 6-month Treasury bill rate. Is owning 6-month U.S. federal government paper really twice as risky as owning equity in a pharma company that has seen declining economic performance (per our above earnings table) recently? Strangely, the market seems to think so--either that or it does not comprehend the true economics of LGND's business model.

## LIGAND VALUATION MODEL

LGND's "shots on goal" marketing pitch and impressive (on the surface) adjusted EPS growth story has certainly resulted in a massive increase in LGND's share price:



LGND stock has appreciated approximately about 520% over the past five years and 15-fold since April 2010, a massively impressive performance during that period. With 21,204,264 shares of common stock outstanding as of February 26, 2018 (per the 2017 10-K, cover page), LGND is now valued by the market at over \$3,377,000,000. In addition, a further 2.45 million shares are potentially issuable pursuant to RSUs, options, warrants and the conversion of the 2019 Convertible Senior Notes, meaning the fully-diluted market cap for LGND is approximately \$3,767,000,000. Again, looking at just the story presented by management, such a high valuation could conceivably be justified. After all, LGND's guided adjusted EPS of \$4.85/share for 2018 would represent earnings growth of 49% versus the \$3.26/share in actual adjusted EPS for 2017 (if one accepts LGND's calculation methodology). So, a 33X forward P/E multiple, while certainly rich, is not completely irrational when considering this year-over-year adjusted EPS growth rate.

But what are investors really receiving in return for LGND's lofty valuation? First, they receive a company with shareholders' equity of just \$400MM at 12/31/17. So, on a fully-diluted basis, LGND trades at a whopping 9.4X book value, or about 2.75X the price-to-book value of the overall stock market. In addition, they receive a GAAP net income stream that produced a \$1.636MM loss in 2016 and a \$12.56MM gain in 2017. So, on a trailing basis, LGND shareholders are paying 300X 2017 GAAP earnings even without including potential dilution, representing a paltry earnings yield of 1/3 of 1%. Finally, they receive ownership of a company that produced revenues of \$141MM in 2017, so at current prices, they are paying a gigantic 26.7 multiple of trailing revenues. As Warren Buffett has stated in the past, "You pay a very high price in the stock market for a cheery consensus", and this is certainly the case with LGND.

But wait, objects the LGND bull, historical book value, revenue, and EPS numbers are totally irrelevant - what is relevant is what will happen in the future. After all, a company is worth no more and no less than the net present value of its cash flows over its remaining life. Either these are at, above or below the current market valuation. Therefore, turning to the future, we have constructed a model of LGND's projected income statement for the period 2018-2025 (and have also included historical data for 2015-2017). In our model, we have assumed that LGND management's guidance for 2018 will prove accurate. Based on this guidance, we expect that for 2018 Promacta royalties will be approximately \$80MM, KYPROLIS royalties will be approximately \$21MM, Evomela royalties will be approximately \$10MM and other royalties will be approximately \$4MM, resulting in total drug royalties of \$116MM (in line with guidance). Furthermore, we expect 2018 material sales to be \$23MM (slightly above 2017's level) and license fees and milestone payments to come in at \$45MM (after giving effect to the recently announced license of LGND-6972). This results in total 2018 revenues of \$184MM (again in line with management's guidance). As for expenses, we expect total operating costs to be \$71MM (\$2MM less than 2017) and other income to be negative \$10MM (about \$1MM better than 2017), meaning that operating income should be \$103MM, producing net income after taxes of \$79MM using a 23% tax rate (the midpoint of management's 22-24% tax rate guidance), or \$3.72/share based on 21.35MM shares outstanding (note that we expect 1.5% of share dilution over the course of 2018).

For years 2019-2025 we believe that we have made reasonable modeling assumptions, as follows: (1) Promacta royalties will peak at \$105MM in 2021 and then gradually decline to \$80MM in 2024 due to increased competition before dropping to \$20MM in 2025 due to patent expiration and generic entrants into the market; (2) KYPROLIS royalties will peak at \$30MM in 2021 and then gradually decline to \$25MM in 2023 due to increased competition; (3) Evomela royalties will peak at \$25MM in 2021 and then gradually decline to \$20MM in 2023 due to increased competition; (4) other royalties will peak at \$35MM in 2025; (5) material sales will average \$20MM/year; (6) license fees and milestone payments will average \$30MM/year after 2018; (7) COGS and G&A will each appreciate at a 3% inflation rate; (8) amortization of intangibles, R&D costs and other income will average \$13MM/year, \$20MM/year and negative \$10MM/year, respectively; and (9) LGND's tax rate will be 23%. This produces the following operating results:

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2018-2025
<b>Drug Royalties</b>												
Promacta	29,295	43,043	62,118	81,000	95,000	100,000	105,000	100,000	90,000	80,000	20,000	671,000
Rate of Increase YoY	n/a	47%	46%	29%	17%	5%	5%	-5%	-10%	-11%	-75%	
Kyprolis	7,317	12,145	16,413	21,000	26,000	30,000	30,000	28,000	25,000	25,000	25,000	210,000
Rate of Increase YoY	n/a	66%	35%	28%	24%	15%	0%	-7%	-11%	0%	0%	
Evomela	390	1,357	7,155	12,000	18,000	22,000	25,000	22,000	20,000	20,000	20,000	159,000
Rate of Increase YoY	n/a	248%	427%	68%	50%	22%	14%	-12%	-9%	0%	0%	
Other	1,192	2,878	2,199	4,000	6,000	9,000	13,500	20,250	30,375	32,500	35,000	150,625
Rate of Increase YoY	n/a	141%	-24%	82%	50%	50%	50%	50%	7%	8%	8%	
<b>Total Drug Royalties</b>	<b>38,394</b>	<b>59,423</b>	<b>88,685</b>	<b>118,000</b>	<b>145,000</b>	<b>161,000</b>	<b>173,500</b>	<b>170,250</b>	<b>165,375</b>	<b>157,500</b>	<b>160,000</b>	<b>1,190,625</b>
Rate of Increase YoY	n/a	54%	49%	33%	23%	11%	8%	-2%	-3%	-5%	-37%	
<b>Other Revenues</b>												
Material Sales	27,662	22,502	22,070	23,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	163,000
License fees, milestones, etc	6,058	27,048	30,347	45,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	235,000
<b>Total Revenues</b>	<b>71,924</b>	<b>108,973</b>	<b>141,102</b>	<b>186,000</b>	<b>185,000</b>	<b>211,000</b>	<b>223,500</b>	<b>220,250</b>	<b>215,375</b>	<b>207,500</b>	<b>210,000</b>	<b>1,698,625</b>
<b>Operating costs and expenses:</b>												
Cost of goods sold	5,807	5,571	5,366	5,500	5,665	5,835	6,010	6,190	6,376	6,567	6,764	48,908
Amortization of intangibles	0	10,643	12,120	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	104,000
Research and development	13,380	21,221	26,887	25,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	165,000
General and administrative	23,398	27,653	28,633	27,500	28,325	29,175	30,050	30,951	31,880	32,836	33,822	244,539
<b>Total operating costs and expenses</b>	<b>44,585</b>	<b>65,088</b>	<b>73,026</b>	<b>71,000</b>	<b>66,990</b>	<b>68,010</b>	<b>69,060</b>	<b>70,142</b>	<b>71,256</b>	<b>72,404</b>	<b>73,586</b>	<b>562,447</b>
<b>Income from operations</b>	<b>27,329</b>	<b>43,885</b>	<b>68,076</b>	<b>115,000</b>	<b>128,010</b>	<b>142,990</b>	<b>154,440</b>	<b>150,108</b>	<b>144,119</b>	<b>135,096</b>	<b>76,414</b>	<b>1,046,178</b>
Other income (expense), net	8,000	-35,925	-10,845	-10,000	-10,000	-10,000	-10,000	-10,000	-10,000	-10,000	-10,000	-80,000
<b>Income before income taxes</b>	<b>35,329</b>	<b>7,960</b>	<b>57,231</b>	<b>105,000</b>	<b>118,010</b>	<b>132,990</b>	<b>144,440</b>	<b>140,108</b>	<b>134,119</b>	<b>125,096</b>	<b>66,414</b>	<b>966,178</b>
Income tax expense	219,596	-10,327	-44,675	-24,150	-27,142	-30,588	-33,221	-32,225	-30,847	-28,772	-15,275	-222,221
<b>Net Income</b>	<b>214,925</b>	<b>-2,367</b>	<b>12,556</b>	<b>80,850</b>	<b>90,668</b>	<b>102,493</b>	<b>111,219</b>	<b>107,883</b>	<b>103,272</b>	<b>96,924</b>	<b>51,139</b>	<b>748,957</b>
Diluted Shares O/S	21,228	20,831	21,032	21,347	21,988	22,648	23,327	24,027	24,748	25,490	26,255	
Net Income Per Share	12.01	-0.11	0.60	3.79	4.13	4.52	4.77	4.49	4.17	3.78	3.95	31.60
<b>PV of Net Income Per Share (Disc 5%)</b>	<b>n/a</b>	<b>n/a</b>	<b>n/a</b>	<b>8.79</b>	<b>3.84</b>	<b>4.10</b>	<b>4.32</b>	<b>3.89</b>	<b>3.27</b>	<b>2.82</b>	<b>2.38</b>	<b>27.11</b>

As can be seen from the above, the model shows that LGND's existing royalty and other businesses should produce \$744MM in aggregate net income for the 2018-2025 period, which equates to a present value of \$27.11/share for LGND shareholders (using a 5% discount rate). (Note that in an effort to be fair to longs, we have not included any future dilution for the 2019 Convertible Notes, instead assuming that these will be perpetually refinanced instead of converted into common equity.)

Next, we perform the sum-of-the-parts valuation to determine whether we can get anywhere close to the current PPS of \$159. In doing this we have added the following items, each on a per-LGND share basis: (1) the \$27.11/share 2018-2025 discounted earnings stream; (2) a terminal value equal to 12X 2025 expected earnings of \$1.95/share (as per the above model); (3) LGND's \$202MM of cash on the balance sheet as of December 31, 2017; (4) the value of the recently acquired OmniAb assets, optimistically assuming their worth has increased 50% since 2016; (5) the market value of LGND's ownership of 7.82MM shares of VKTX. This produces a total SotP value for LGND of \$75.42/share, or just 47% of the current PPS of \$159, indicating approximately 53% downside:

<b>Asset</b>	<b>Value Per Share</b>	<b>Memo</b>
DCF 2018-2025	27.11	Per DCF model
Terminal Value	23.37	12X 2025 EPS
Cash on BS 12/31/17	9.45	Q4 2017 Earnings Release
Value of OmniAb (50% above purchase price)	13.94	LGND SEC Filings
7,820,964 shares of VKTX	1.55	VKTX Prospectus dated 2/2/18, p.S-31
<b>TOTAL SUM OF PARTS</b>	<b>75.42</b>	
Current PPS (4/3/18)	159.30	
<b>Downside to SoP Valuation</b>	<b>-52.7%</b>	

No doubt that LGND management would likely steer investors away from the above-referenced GAAP numbers used in our sum-of-the-parts calculations and instead point them to the non-GAAP "adjusted" numbers, however, we believe that we have shown above why the latter are not reflective of economic reality and should thus be disregarded.

### A BETTER OPTION FOR LIGAND LONGS

Fortunately, there's a better option for LGND shareholders available right now versus holding such an obviously overvalued security as LGND common equity. A prudent investor desiring exposure to the healthcare sector and, specifically, pharma sector could simply invest in a pharma ETF and receive the same upside that LGND promises at a much cheaper price. For example, such an investor could opt for the SPDR S&P Pharmaceuticals ETF (XPH), which as of April 2018 had a price-to-book ratio of 1.97X and a price-to-earnings ratio of 9.63X (source). Note that despite being massively undervalued compared to LGND, the XPH ETF also pays a modest dividend, versus no dividend for LGND:



Yes, it is true that LGND grew revenues at an impressive 96% over the past two years, however operating expenses for the same period also increased much faster than the overall pharma market, coming it at a 64% growth rate between 2015 and 2017. Moreover, LGND spent over \$119MM on acquisitions during the period in order to maintain its revenue growth rate. In fact, if we deduct from the \$156.6MM in positive cash from operations for 2016 and 2017 the sum of all cash spent on (1) acquisitions (\$119MM), (2) payments to CVR holders and other contingency payments (\$13.8MM) and (3) purchases of property and equipment (\$4MM), we are left with a grand total of just under \$20MM of true "free" cash flow available to LGND shareholders for that period, which equates to under \$1/share, or about \$0.50/share per year. Given the foregoing, one can only wonder why a LGND shareholder would not logically sell his or her shares and replace them with an equivalent amount of XPH.

### CONCLUSION

If the saying "price is what you pay and value is what you get" still holds true in investing, then we believe that at the current share price investors are getting a bum deal in LGND stock. In fact, based on our "adjusted adjusted" EPS numbers (which we believe properly reflect LGND's true economic performance), LGND currently trades at a nosebleed 106X P/E on a trailing basis, meaning LGND is about 4X overvalued versus the overall market multiple of approximately 25X. Moreover, taking a sum-of-the-parts approach and modeling LGND's expected economic performance for the 2018-2025 period, we find that the actual value of LGND's current assets is just slightly above \$75/share, meaning that there is 53% expected downside in the stock to reach our fair value. In essence, this means that we believe that investors in LGND today are paying \$1 for just \$0.47 in intrinsic value. While the future is never clear and stock prices can and do act irrationally for long periods of time, it is usually unwise to pay such a steep premium (amounting to a significant negative margin of safety) for an asset in the stock market.

**Disclosure:** I am/we are short LGND.

I wrote this article myself, and it expresses my own opinions. I am not receiving compensation for it. I have no business relationship with any company whose stock is mentioned in this article.

 Like this article

## Comments (48)

### Abe Froman Sausage King

Well written; interested in the bull response here

04 Apr 2018, 02:41 PM

### RickMichigan

Seven Corners makes their money on short selling. And promoting people to sell. Look at what they have said about other companies and it is to "sell".

04 Apr 2018, 03:21 PM

### Seven Corners Capital Management, Contributor

Author's reply » Not true - have published some long articles, some short. If market was a lot lower, there would be more longs and less shorts to talk about. Late in a bull market you take what you're given.

04 Apr 2018, 03:23 PM

### 12100131

"For years 2019-2025 we believe that we have made reasonable modeling assumptions, ......."

Hmm- no mention of any of the other drugs in the pipeline that might get to market during the 2019-2025 period. Not to mention other acquisitions that could impact returns.

Also- " it does not appear that LGND would be able to license this asset (Gluc antag) to any other company in the covered jurisdictions so long as the license with Roivant remains in effect." - this is an absurd argument- why would they need to license to another company? This assumes that Roivant forked over good money for this very strong drug candidate for no reason!!

Ligand has been trashed by shorts for over 10 years and some of us longs have laughed all the way to the bank from- \$2.50/sh to \$180/sh- keep up the bear argument- we need the pull backs :)

04 Apr 2018, 03:46 PM

**Seven Corners Capital Management, Contributor**

Author's reply » There's a whole separate line item for revenues from other drugs besides the big three. Did you even bother to look at the model?

04 Apr 2018, 05:31 PM

**Seven Corners Capital Management, Contributor**

Author's reply » You completely missed the point about the recent license agreement. The point is that since they cannot license the asset to another party after Roivant, therefore it does not make sense to include the \$20 million upfront payment as if it were recurring earnings in the adjusted earnings calculation. Yet that is precisely what management did several weeks ago in their form 8K filing.

04 Apr 2018, 05:33 PM

**Seven Corners Capital Management, Contributor**

Author's reply » "some of us longs have laughed all the way to the bank from- \$2.50/sh to \$180/sh"

BTW how did you get long at \$2.50/sh when the lowest the stock has ever traded was \$7/sh in late 2008? Did you get a special deal from management or something? Or are you fibbing?

04 Apr 2018, 06:08 PM

**12100131**

Perhaps you need to read data carefully and look at the superscript symbols on the columns? There is something call split adjusted prices. The actual price that we longs paid back in 2009 was lower. for e.g. the actual share price of ligand on 8/24/2009 at 9:33 AM was \$2.72

05 Apr 2018, 08:31 AM

**12100131**

So milestone payments are not recurring payments? Royalty if Roivant markets the drug are not recurring earnings??

05 Apr 2018, 08:33 AM

**12100131**

is that the 35 million peaking in 2025 you mention in item 4? if so you must be kidding? Perhaps you don't know the market size of the Big six- if just one like Brexanolone hits the market, that alone will top that.

05 Apr 2018, 08:38 AM

**Seven Corners Capital Management, Contributor**

Author's reply » Um, no, unless it was a reverse split you would have paid a HIGHER price pre-split. You really need to try harder if you are going to make up things. The stock never traded below \$7 on a split adjusted basis.

05 Apr 2018, 10:42 AM

**12100131**

wow - clearly you have a hard time dealing with actual data! The price and date-time stamp represents actual ligand stock purchase - 8/24/2009 at 9:33 AM Ligand price was \$2.72. Check up on ligand split history to be enlightened.

05 Apr 2018, 11:04 AM

**12100131**

FYI- if actual data matters they did a 1 to 6 split in 2010

05 Apr 2018, 11:12 AM

**Seven Corners Capital Management, Contributor**

Author's reply » Genius - they did a 1-for-6 REVERSE split in 2010 - so assuming you are telling the truth you paid \$2.72 X 6, which = \$16.32.

So you didn't \*really\* pay \$2.72/sh, you paid 6X that amount.

Again, ON A SPLIT ADJUSTED BASIS the stock has never traded below \$7/share, which is what we originally and correctly referenced. Goodbye.

05 Apr 2018, 11:12 AM

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**Seven Corners Capital Management, Contributor**

Author's reply » "So milestone payments are not recurring payments?"

\$30MM milestone payments per year are included in the model, in line with historical averages - again, you might actually want to look at the model before popping off with a non-sequitur.

05 Apr 2018, 11:39 AM

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**topri1234**

<http://bit.ly/2EjGIDz>

<http://bit.ly/2Jj8KNB>

04 Apr 2018, 04:46 PM

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**scorpion.north**

Even \$73 fair valuation is highly optimistic...

Consider....Here is a company trading for around \$160 a share earning \$1.50 per share!

Meanwhile Allergan,(AGN) trading for about \$160 a share is likely to generate \$15 to \$16 per share this year! The disparity is amazing.

04 Apr 2018, 05:56 PM

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**FunkyCarnivore**

Because Allergan is a crap company run by a bunch of criminals. Only a matter of time before Revance destroys their botox market share, too.

05 Apr 2018, 10:30 AM

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**scorpion.north**

Do you know how much of their profits/revs are from botox?

Anyway take any other company in any industry, LGND is still very pricey.

06 Apr 2018, 03:45 AM

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**Cottonwood Investments**

I don't think you strip acquisitions out of FCF. It's a capital allocation decision just like a buyback or dividend. Interesting analysis but I don't think the focus should be on non gaap or gaap eps, it's cash flow that really drives valuation, you quote Buffett and he'll tell you the same thing.

04 Apr 2018, 07:28 PM

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**Fudwrecker**

You certainly misunderstand the "Ligand Model." The XLE is not a substitute. Drug companies pay large dollars for drug trials and if a drug is approved they pay for cost of goods and marketing. Ligand pays none of those costs. They just collect royalties.

Further your "reasonable assumptions" of the revenue to be derived from Ligand's programs don't appear to be reasonable at all. If you saw the table of drugs in development there are some very large programs on the horizon. Sparsentan at Retrophin, for example just started a phase 3 trial. Peak sales of the drug in this indication have been forecast by at 900 million to one billion per year. Ligand is due royalties of 9% plus milestones. A second phase 3 for this drug in a larger indication is scheduled for later this year.

Your view of the royalties from Promacta and Kyprolis as analogous to PDLI Queen patent status of declining growth is not consistent with the views

of their owners, Novartis and Amgen. Growth was strong last year for Promacta and in the fourth quarter it only accelerated. Importantly, the drug is in phase 2 for several oncology indications which would expand the use of the drug substantially. Kyprolis is undergoing quite a few clinical trials including two key phase 3 trials in the first line setting for multiple myeloma.

As far as assigning a value of cost plus 50% to Omniab like much of your methodology the eye might accept it surrounded by a bunch of tables but it is much more than that I would say. Care to justify your estimate of value of that business?

04 Apr 2018, 11:41 PM

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**12100131**

I agree- the author presents a lot of speculative numbers in tables and figures to confuse the picture to make a weak short argument! There used to be a famous ex-monk who used to short Ligand back in the days- these folks sound like a reincarnation of the monk.

05 Apr 2018, 08:42 AM

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**Seven Corners Capital Management, Contributor**

Author's reply » You are insane if you actually believe sparsentan will be a 900MM+ revenue drug. It might not even be approved.

05 Apr 2018, 10:36 AM

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**Seven Corners Capital Management, Contributor**

Author's reply » FYI - Management appears to agree with our analysis as they have been heavy sellers of the stock around current levels. So apparently you think you are smarter than them at valuing it.

05 Apr 2018, 10:39 AM

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**Seven Corners Capital Management, Contributor**

Author's reply » Sparsentan interim readout not expected for two and a half years, RTRX just announced. You will be waiting a LONG time to get royalties for that drug...

"The pivotal DUPLEX Study is a global, randomized, multicenter, double-blind, parallel-arm, active-controlled Phase 3 clinical trial evaluating the safety and efficacy of sparsentan for the treatment of FSGS. Approximately 300 patients, aged 8 to 75 years, are expected to be randomized to receive either sparsentan (initial dose of 400 mg daily for two weeks, titrating up to a target dose of 800 mg daily) or an active control - irbesartan (initial dose of 150 mg daily for two weeks, titrating up to a target dose of 300 mg daily).

In concurrence with U.S. Food and Drug Administration (FDA) feedback, the DUPLEX Study protocol provides for an unblinded analysis of at least 190 patients (approximately 95 per treatment group) to be performed after 36 weeks of treatment to evaluate the interim efficacy endpoint – the proportion of patients achieving a modified partial remission of proteinuria (urine protein-to-creatinine ratio (Up/C)  $\leq$ 1.5 g/g and a >40 percent reduction in Up/C from baseline) at Week 36. Retrophin expects that successful achievement of this endpoint will serve as the basis for Subpart H accelerated approval of sparsentan in the United States and Conditional Marketing Authorization (CMA) consideration in Europe. The primary endpoint of the study is the change in slope of estimated glomerular filtration rate (eGFR) after 108 weeks of treatment. Secondary endpoints include the percent change in eGFR from Week 6 to Week 108, as well as the percent change from baseline in Up/C at Week 36 assessed at the final analysis. Top-line data from the 36-week interim efficacy endpoint analysis are expected in the second half of 2020."

<http://bit.ly/2GS2Dl9>

05 Apr 2018, 11:14 AM

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**12100131**

ha ha- heavy sellers? in last 6 months- net shares sold by insiders is ~54K which represents 7.4% of total held by insiders Note this selling also happened in a period when the share prices peaked- stop blowing smoke.

05 Apr 2018, 11:17 AM

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**12100131**

Insider Transaction Type Value Date Shares

HIGGINS JOHN L

Officer

Automatic Sale at \$165 per share. Direct 3,712,500 Jan 23, 2018 22,500

HIGGINS JOHN L

Officer

Automatic Sale at \$151.92 - \$155 per share. Direct 4,312,000 Jan 18, 2018 28,099

HIGGINS JOHN L

Officer

Option Exercise at \$16.14 per share. Direct 262,258 Jan 18, 2018 16,249

KOZARICH JOHN W

Director

Automatic Sale at \$145 per share. Direct 362,500 Jan 9, 2018 2,500

HIGGINS JOHN L

Officer

Disposition (Non Open Market) at \$138.66 per share. Direct 720,893 Dec 27, 2017 5,199

KORENBERG MATTHEW E

Officer

Disposition (Non Open Market) at \$138.66 per share. Direct 212,149 Dec 27, 2017 1,530

FOEHR MATTHEW W

Officer

Disposition (Non Open Market) at \$138.66 per share. Direct 411,958 Dec 27, 2017 2,971

BERKMAN CHARLES S

Officer

Disposition (Non Open Market) at \$138.66 per share. Direct 162,925 Dec 27, 2017 1,175

05 Apr 2018, 11:18 AM

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### 12100131

read up on the science behind Sparsentan and also the clinical trial data - it history traces back to trial data from pharmcopeia which ligand acquired-it is on its way to being approved

05 Apr 2018, 11:25 AM

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### Seven Corners Capital Management, Contributor

Author's reply » "Net" shares? Who cares about net shares? If, for example, insiders get 1MM shares in option grants and RSUs and sell 1MM shares on the open market during the same time frame, then "net" share sales would be zero. But you would probably think that would constitute fairly heavy selling of shares.

Why don't you ask CEO Higgins and Director Aryeh why they are selling so much stock? Is it because they think shares are undervalued? Higgins sold ~60K shares just in Q1 of this year (FYI, there have been sales by D&Os since January, despite your apparent attempt to list sales below)

05 Apr 2018, 11:34 AM

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### Seven Corners Capital Management, Contributor

Author's reply » Do you know what the upfront payment was from RTRX to LGND for sparsentan in 2012? It was LESS THAN \$2.5MM. It is NOT a valuable drug and will very likely never produce much (if any) revenue. It was essentially a throw away asset for LGND. If you are pinning your hopes on it, you are very likely to be seriously disappointed.

05 Apr 2018, 11:43 AM

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### Fudwrecker

Both a correct and deceptive point. Shrekeli paid upfront 600000 shares of RTRX which were worth 2.5 million at the time. Ligand holds the shares which are worth 13.8 million today. RTRX agreed to the large 9% royalty to Ligand as well as royalty payments including the 4.6 million paid last month when RTRX initiated the phase three. Another 4.6 million may be due later this year. Meanwhile RTRX has already had 4 years of clinical expenses advancing the drug with 2-3 more years likely. They are a good partner.

05 Apr 2018, 12:56 PM

**User 8272021**

I got shaken out of this stock years ago.....bought at \$78 (high tick) and three weeks later some former seminarian or Trappist monk with an SA profile said the company's business model was a house of cards and the investment thesis was broke. Stock tanked immediately and I sold at \$52 and it continued to tank to the mid-\$40's. But, obviously, he was DFW on his projections

Years later, I look up and it's \$110 and, obviously, \$160. Possibly my worst trade ever

05 Apr 2018, 10:40 AM

**Fudwrecker**

I am not pinning my hopes primarily on Sparsentan. That is the point of the shots on goal approach. There are 165+ programs being funded by partners of Ligand. But Sparsentan is a big one. Other big ones include the programs by Viking. One had a great phase 2 readout in hip replacement patients. The other is going to read out later this year in NASH. Each could serve major markets, sell one billion or more per year and Ligand receives milestones and 7.25% and up royalties. The drug For diabetes recently licensed to Roivant could be the largest. Your biased tables take none of these programs into account.

Btw you never addressed my question. What deep analysis led to your view that Omniab was worth 1 1/2 what Ligand paid for it.?

05 Apr 2018, 12:22 PM

**Seven Corners Capital Management, Contributor**

Author's reply » They just bought OmniAb - it's being generous to longs (not shorts) to assume the value has already appreciated 50% since the purchase. If you just bought a house recently, odds are it's not worth that much above the purchase price.

Re Viking, market values the entire company at \$200MM right now and shares are down 50% (in a bull market) the past 3 years - so market disagrees that they have amazing drug assets.

05 Apr 2018, 12:43 PM

**Fudwrecker**

That is your analysis of the value of Omniab? Well that is quite limited.

But your generosity is not needed. How about a view of the market niche filled, the partners and their review of the technology and the events that Ligand has powered since owning the asset?

05 Apr 2018, 01:00 PM

**Seven Corners Capital Management, Contributor**

Author's reply » Re 165+ programs, how many of these produce actual revenue for LGND? Just a handful. Don't get blinded by PR spin - they could probably license captisol out to 500 different drug manufacturers for no upfront fee if they wanted (what would be the downside to getting handed a free license to use captisol if you ever needed to use it, in exchange for future royalties of, say, 2 or 3%) - but that wouldn't really make the company any more valuable.

05 Apr 2018, 12:47 PM

**Fudwrecker**

Drug discovery and approval takes time. After approval drug sales tend to ramp up slowly. Melinta recently got approval for its antibiotic Baxdela which uses Captisol in its IV formulation. The company received its first major VC funding in 2003. Fifteen years later it has launched. Now it is gearing up its sales effort and seeking approvals for Baxdela in Europe and around the world.

Ligand notes the amount spent by its partners each year on partnered programs. Last year it was over 2 billion.

Some programs will fail. It is good to have a lot of shots on goal.

05 Apr 2018, 01:14 PM

**Seven Corners Capital Management, Contributor**

Author's reply » Fud - that's all great. Nobody said you had to sell your shares. You seem highly convinced - maybe it's time for you to buy even more? If the stock goes to \$300/sh, we will be the first to congratulate you - good luck. We'll have to agree to disagree on this one...

05 Apr 2018, 01:36 PM

**rynethegreat**

@SCCM

What do you see from SPPI with this pretty large pull back going forward?

05 Apr 2018, 02:16 PM

**Fudwrecker**

Sorry Seven Seas I can't agree on that. You need to do your homework specifically on Omnia in order to write such a long negative piece on Ligand.

Your thesis seems to be that although the drugs that are partnered with Ligand are growing sales at fast and accelerating rates that they will soon wither. Also you say of their partnered programs that none will matter much. I don't agree with these assertions and I don't think you provide support for them.

Additionally you seem to think that because Ligand acquires new smart programs that should be thought of as cutting into income. I think they use their cash wisely and make good choices for investments.

Recently they acquired one of their Captisol partners who has been working on using Captisol in a contrast agent commonly used in scans. On a preliminary basis it appears that doing that can reduce negative kidney events that occur using that agent by around 50%.

It would be nice if that were approved today in case you or your people or me or my people needed a scan soon. After buying the company doing this research, Ligand will invest in advancing it for about three years and then likely partner it out for commercialization. From a business point of view the agent does 500 million of revenue currently. Capturing half that market with a 5-10% royalty might mean 12-25 million a year to Ligand.

05 Apr 2018, 03:17 PM

**Seven Corners Capital Management, Contributor**

Author's reply » Fud - If you want to be gullible and fall for their spin about the business model, feel free. Knock yourself out, it's a free country.

05 Apr 2018, 04:32 PM

**FunkyCarnivore**

What a childish response to a well thought counter argument.

06 Apr 2018, 08:47 AM

**Fudwrecker**

Well you feel free also Seven Seas. I enjoy the dialogue. And of course I am still waiting for you to do that real research on Omnia.

You mentioned some sort of casual take up of Captisol that 500 companies could do. Here is how it actually works: companies can request a sample of Captisol to test with their products or programs in development. Those requests have been at an all time high over the last 12 months. If the results look good they can enter into a research agreement where they buy Captisol for preclinical work. If that goes well they enter a larger supply agreement. There are some large programs moving toward completion using Captisol, e.g., Millennium's pevonedistat, Lilly's Merestinib and Prexasterib and the very exciting cardiovascular drug from BMY. They paid 300 million for rights to the program with 2 billion total incentives. Of course Amgen's Kyprolis includes Captisol. It announced a phase 1 positive result today in a new application.

Lots more. Shots on goal.

05 Apr 2018, 08:11 PM

**Seven Corners Capital Management, Contributor**

Author's reply » "the very exciting cardiovascular drug from BMY"

Every drug is "very exciting" until either (A) it fails in the lab or gets rejected by the FDA or (B) fails in the marketplace due to intense competition. Are drug prices on the rise or facing secular headwinds right now?

As for capsitol, it was just a rhetorical point about what they could theoretically do to produce 500 "shots on goal" if they wanted to - it wasn't an assertion that this is how they actually do it. The main point is that "shots on goal" doesn't mean a whole lot if they never end up in the back of the net.

05 Apr 2018, 08:20 PM

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**Seven Corners Capital Management, Contributor**

Author's reply » Fud - you should take a look at INVA - isn't that a much better option than overvalued LGND? Sarissa is smart \$.

05 Apr 2018, 08:23 PM

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**Fudwrecker**

Seven Seas ——Omniab could be the most important part of Ligand. It is the "company within the company." It provides service to the most dynamic part of biotech today. Antibody research. Ligand has pointed out there is a "land grab" in the space with companies that are highly motivated to pursue antibody targets and to develop and get them on the market quickly. Ligand partners include a lot of newly formed companies. Surface Oncology just IPOed yesterday. Venture capital leader venBio signed an agreement in the last 30 days. They have in their family several recently IPO companies and more in earlier stages. Ligand Omniab partners include big names—Merck, Celgene, Pfizer, Gilead. They are pursuing multiple drug targets.

You need to write a definitive article on this business Seven. Your charting skills would be put to good use.

06 Apr 2018, 11:39 AM

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**Seven Corners Capital Management, Contributor**

Author's reply » "You need to write a definitive article on this business Seven. Your charting skills would be put to good use."

Hi Fud - no thanks. Have a good weekend!

06 Apr 2018, 12:30 PM

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**Fudwrecker**

A fine weekend to you also Seven.

Just a little story to intrigue you...

Ligand recently reported results of its phase 2 of LGND-6972 diabetes drug. The study showed good efficacy at bringing down the key marker of diabetes and very importantly it had no safety red flags. Ligand shopped for a partner and came up with Roivant, a very motivated and well funded company in Switzerland. Now Roivant paid 20 million up front but that is not the important part. This drug will cost upwards of 100 million to complete trials and bring to market and that does not include further developmental milestones paid to Ligand. This news probably largely accounted for the run of LGND stock up into the 180 range.

Here is the part I want to highlight for you: shortly before a company called Hanall Biopharma signed an equally large deal with Roivant for its drug HL161—an antibody derived from Omniab animals. The upfront for that deal and another with a Chinese company was 50 million. Ligand received a 6 million milestone from Hanall for those events. This drug program should significantly benefit Ligand as it moves forward. Also Hanall is working hard on other antibody programs in their lab. Hanall is one of over thirty companies partnering through Omniab, up from 16 when Ligand purchased the company. Can you see where this is leading?

06 Apr 2018, 02:24 PM