September 5, 2019

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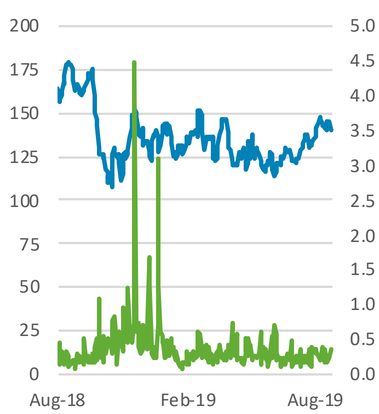
BeiGene Ltd. (BGNE US)

Share Price	$ 140.56
Av Volume	**252,976 shares**
Market Cap (mln)	$ 8,470
Price/Sales	19.41x

BeiGene (BGNE US) last share price in USD (blue, left) and volume (green, right, mln shares)



Source: Bloomberg September 5, 2019

BeiGene, Ltd. (BGNE US)

No Cure

BeiGene May Be Faking 60% of Sales

- **Confidence game:** BeiGene has no future, and we think management knows it, which explains the rapid pace of stock sales by management since inception. We have clear evidence that the company is faking sales in order to persuade investors that it can develop a successful platform in China; we suspect management may also be skimming R&D and capital budgets. At best, this is a poorly managed company pursuing commoditized drugs, with internal controls, even in the context of Chinese companies, that we find to be lax. At worst, BeiGene executives may be robbing shareholders.
- **"Golden opportunity"—for management to cash out:** BeiGene executives keep telling investors they have a once-in-a-lifetime opportunity to invest another round of capital in a native Chinese biotech company. Clearly, they see an opportunity, but not for investors. Top management has sold or registered to sell $322 mln in stock, the founder accounting for $189 mln of that.
- **Capex: really?** BeiGene owns three manufacturing facilities, racking up $157 mln in net fixed assets since 2016, with another roughly $300 mln committed, and has paid $25 mln toward a fourth despite having no drugs to manufacture. Irrational spending of this level in a highly regulated and corrupt environment like China's is a red flag.
- **Fake revenues:** Our extensive interviews in China and review of Chinese Tax Department financial statements indi-

cate that BeiGene has invented over $154 mln in revenues since Q4 2017, when it took over sales of Celgene drugs in China, an overstatement of 133%.

- **The world's most expensive R&D staff:** Reported staff costs within China are about $65 mln higher than we believe is feasible given staff compensation standards. R&D expenditure overall is eight times higher than the direct competition. This further strengthens our belief that the company, without a single drug approved in its nine-year history, is desperately wasteful or padding expenses.
- **No special privileges:** BeiGene portrays itself as a native-son pharmaceutical company favored by regulators. In reality, BeiGene stands at the back of the line for approvals, with other foreign companies. We interviewed Chinese regulators, who said that BeiGene does not enjoy the privilege of fast-track approval that a fully Chinese firm would. We have confirmed with regulators that trials for BeiGene's own drugs cannot be completed before the end of this year, meaning there will be no new BeiGene drug in the Chinese reimbursement lists this year.
- **The disappearing $70 mln:** A BeiGene subsidiary with no address or operations—and which has not been audited—shows $69.8 mln in "costs." We think that money was used to roundtrip sales.
- **Suspicious acquisition:** In 2018, BeiGene made a nonsensical decision to purchase a building on which it already had a 10-year lease for R&D in Beijing, spending $38 mln. Based on local comparisons, that price seems to be at least $10 mln too much. There appears to have been zero commercial rationale, and the seller looks suspiciously like a related party.
- **Nothing to invest in:** BeiGene has little to show for nine years of operations. With no commercialized IP assets of its

own, poor internal controls over huge expenditures, and a sales team that competitors call "weak." We cannot find value in this speculative bubble of a company and blame market frenzy for driving the company "valuation" to $8.5 bln.

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Once upon a time, BeiGene's founders might have thought they could establish China's first biotech powerhouse. That idea, if it existed at all, lasted no longer than the lock-up period after IPO. Board member Donald Glazer—who is still with the company and $22 mln richer than he was in 2016--registered $5.9 mln in shares for sale on the very day lock-up ended, and, soon, co-founders Wang Xiaodong and John Oyler followed suit.

BeiGene is still pumping and dumping. With a chaotic, over-priced, and ineffectual R&D program for me-too drugs, BeiGene is trying to excite the market and prop up share price by posting high growth in sales of drugs on behalf of Celgene (CELG). But our research indicates that these sales reports are simply a lie.

BeiGene buys drugs from Celgene offshore at a steep discount and sells to a Chinese distributor that has exclusive distribution rights. Market demand just doesn't support the volume that BeiGene committed to when it signed with Celgene. So BeiGene secretly buys the drugs back from the distributor in China. Some of those repurchased drugs are stored, and we imagine some may be discarded. We estimate that about 60% of the sales are fraudulent. The China market isn't absorbing the drugs, so BeiGene is overstating its sales by about 133%.

Why should BeiGene lie about this? Because claiming a crack sales force makes BeiGene look like it can be a player in the Chinese drug market. That has moved the stock and subsequently enriched founders.

Chart 1. BeiGene's Share Performance Since IPO

Source: Bloomberg

The reality is that no one on this management team seems to have confidence in the company. Wang, the co-founder with real scientific chops, does not even work for BeiGene. He is employed by a Chinese research institute and he “consults” for BeiGene. John Oyler, the American co-founder, was formerly CEO of a small biotech called Galenea and headed the Chinese side of a contract research organization called Bioduro. Oyler finally struck gold: BeiGene has made him a billionaire before actually developing any drugs.

Faked Sales – 57% Lower Than Reported

In its eagerness to win distribution rights, BeiGene appears to have over-committed to minimum drug purchases from Celgene and now cannot unload the drugs. That is why, we believe, BeiGene is faking sales. BeiGene buys from Celgene offshore, sells to the Chinese distributor then buys the drugs back from that distributor.

We are confident that BeiGene is lying about its sales, because we have interviewed Chinese distributors and hospitals who buy the drugs, all of which provided estimates of Celgene drug sales that are far below what the company claims. We then reviewed financial statements of BeiGene’s operating companies in China and found evidence of round-tripping that leads us to our revenue estimate.

Table 1. BeiGene-Reported Product Sales vs J Capital Estimates (USD mln)

USD mln	Celgene 2016	BeiGene (From Sept 1 2017)	BeiGene 2018	BeiGene Q1 2019	BeiGene Q2 2019	Total
	(Pre acquisition, reported by BeiGene)					
Product Revenue (BeiGene Reported)	$65	$24.40	$130.90	$57.40	$58.14	$270.84
J Capital Estimates	$28	$14	$52	$25	$25	$116
Variance	($37)	($10)	($79)	($32)	($33)	($154.84)
Variance %	-57%	-41%	-60%	-56%	-57%	-57%

Source: Company Reports and conference calls, J Capital Research estimates based on interviews and on BeiGene statutory financial filings in China

Stuck with unsellable product

We interviewed executives of BeiGene’s master distributor and of two Tier 2 distributors. We also interviewed 15 former salespeople for BeiGene and competing drug companies, two former BeiGene executives, two pharmaceutical executives familiar with the company, director of a company that conducts clinical trials on behalf of BeiGene, and 10 oncologists at major cancer hospitals in Tier 1-2 cities, plus a handful of Chinese regulators and the sales director of a large state-owned pharmaceutical company. All these interviews provided a clear picture of BeiGene's operations: the drugs are not actually selling well in the market.

For Q1 2019, BeiGene reported spectacular, 147% sales growth for the Celgene drugs. Distributors selling the drugs beg to differ. All said that sales have been flat or down in Q1 and H1 2019 compared with the same periods in 2018.

Distributors of the drugs BeiGene sells in China on behalf of Celgene estimated for us sales of the drugs in 2017, 2018, and Q1 2019. They said:

- Sales have been flat or down in Q1 and H1 2019 compared with the 147% growth reported by BeiGene.
- BeiGene claims it sold $130.9 mln in Celgene drugs in 2018. Our interviews indicate that actual sales—including $42.7 mln in sales to themselves--were in the range of $90-100 mln or lower by 24-32%.
- In the four months from its acquisition of the Celgene Shanghai company to the end of 2017, BeiGene reported that it sold $24.4 mln. Our checks with distributors and former sales indicate it was $14 mln at most.

Distributors of the Celgene drugs say sales have been flat or down in 2019–compared with the 147% growth reported by BeiGene in Q1.

"Only Tier 1 city top hospitals will buy these medicines," said a sales executive of a Chinese distributor. "This year, sales are doing poorly."

"This year, the Celgene products won't have much growth," a sales executive with the large SOE pharmaceutical distributor Sinopharm told us. "Celgene products don't have an advantage over domestic products. The efficacy is the same, but the price of imported drugs is much higher. That is their disadvantage."

"Revlimid sales rose a bit in 2018. Abraxane was flat. Vidaza was up a bit--after all, sales are very low," said a sales representative in charge of Celgene drug sales for a large Chinese distributor. Sales this year, the rep said, are flat.

"2019 looks pretty poor," said another.

Our survey of cancer doctors in 10 major hospitals around China supports our view that Celgene drug sales to patients in China are lower than BeiGene has stated and are growing more slowly. Sales are limited to the major hospitals in Tier 1 and a few Tier 2 cities, where consumers can afford the higher-priced drugs. In the lower-tier cities, doctors believe domestic drugs, costing as much as 80% less than their foreign rivals, are just as good. Even in Tier 1, growth would struggle to exceed 10%, while in lower-tier cities, we do not see potential for much growth at all.

Table 2. Survey of Celgene Products Prescribed by Chinese Oncologists

			What volume of Celgene products did you use last year? (prescriptions)			
	Types of cancer	Cancer Patients treated in the hospital	Revlimid	Abraxane	Vidaza	Will use change this year?
Grade 3 General Hospital Tier 2 North China	Blood-borne	2,000	10		10	Discontinue
Grade 3 General Hospital Tier 2 North China	Breast and thyroid	1,600				Not in use
Grade 3 General Hospital Tier 2 North China	Breast	1,000		10		Discontinue
Grade 3 General Hospital Tier 2 North China	Blood borne	1,000	10		20	Decrease
Grade 3 General Hospital Tier 1 North China	All	7,50	200	800	400	15% increase
Private Cancer Hospital Tier 1 North China	All (Excluding blood borne)	300		2,000		No increase
Grade 3 General Hospital Tier 1 North China	Blood borne	220	40	80	20	5% increase
Cancer Hospital Tier 3 East China	Breast	200		10		Uncertain
Private Cancer Hospital Tier 1 North China	All (Excluding blood borne)	150		200		No increase
General Hospital Tier 3 North East	Blood borne	65	50		10	20%

Source: J Capital, telephone and face-to-face interviews June 24-28, 2019

Qualitative responses

Does your patient's ability to pay impact what you prescribe?

All 10 doctors said yes and said they give the patients a choice, but most patients choose the cheapest option. Cheaper domestic drugs are a challenge for Celgene product growth in China. Comments:

> "Abraxane is way too expensive, and that is why we do not use it much." - Grade 3 General Hospital Tier 2 North China

High-priced cancer drugs have a very limited market, at the top-tier hospitals in the top cities.

> "Revlimid is an imported product and costs ¥21,000 for a course of treatment. 80 -90% of patients will choose a domestic product like Anxian, which costs ¥5,300 per treatment and is free for the fourth purchase. Qilu Pharma's product has just launched and is only ¥3,000." - Grade 3 General Hospital Tier 1 North China

> "If you use Xian Janssen's Velcade and Revlimid at the same time, you can only get reimbursed for one of them. So, patients will buy Velcade and then go to a pharmacy to buy a domestic substitute for Revlimid. Patients can accept costs up to ¥15,000 per treatment cycle." - Grade 3 General Hospital Tier 1 North China

> "Patients want products that are in the medical insurance scheme. If they are not in the insurance scheme, then patients can accept a few thousand Renminbi." - Cancer Hospital Tier 3 East China

> "Patients can accept ¥1,000 per treatment." - Private Cancer Hospital Tier 1 North China

How do Celgene products compare with those of competitors?

Eight doctors said that Celgene products were no better than domestic products, and two said they have superior efficacy with fewer side effects.

> "We used Revlimid when there were no alternatives. Celgene products are not any better than the domestic products from Chiatai Tianqing and Beijing SL Pharmaceuticals" - Grade 3 General Hospital Tier 2 North China

> "Abraxane efficacy is okay, but now I am using a domestic alternative. For early-stage cancers, we use Docetaxel." - Cancer Hospital Tier 3 East China

Table 3. Which competitor's products are better?

Competitor preferred over Abraxane	No of Doctors	Notes
Jiangsu Hengrui (600276 SZ), (Docetaxel)	4	Wider range of applications, less adverse reactions, much lower price
Qilu Pharmaceuticals	2	20% of the price
Beijing SL Pharmaceuticals	2	
CPSC (1093 HK)	2	
Luye Pharma's	2	
Jiangsu Kanghe Biopharma.	1	

Competitor preferred over Abraxane	No of Doctors	Notes
Yangzi River Pharmaceutical	1	
Chiatai Tianqing (Anxian)	4	lower price and high reimbursement rate
Beijing SL Pharmaceuticals	2	
Xian Janssen's Velcade	1	

Source: J Capital, telephone and in-person interviews June 24–28 2019

> "Qilu Pharmaceuticals, Beijing SL Pharmaceuticals, Chiatai Tianqing all have good products. Abraxane is ¥20,000 for 25 mg, and the Beijing SL Pharma equivalent is only ¥5,000." - Grade 3 General Hospital Tier 2 North China

> "We use more CPSC product than Celgene. There are many domestic alternatives to choose from, like CPSC, Jiangsu Hengrui, Qilu Pharmaceutical, Yangzi River Pharmaceutical, Jiangsu Kanghe Biopharma. Each manufacturer has similar efficacy. As a doctor, you cannot be superstitious and only use Western medicine. Also, CPSC is in this province, it has a good name and is better priced. We also use Luye Pharma cancer drugs." Grade 3 General Hospital Tier 2 North China

We have identified three round-tripping strategies that allow BeiGene to bury the overstated sales in company accounts:

Faking strategy 1: Buying own drugs

BeiGene has a shell company in Guangzhou with a fake address and no operations but $70 mln in 2018 costs. The "costs" mean that money can be funneled into Celgene drug purchases.

Established July 11, 2017, BeiGene Guangzhou is described by BeiGene as a "medical and pharmaceutical research company." But we visited its registered address and discovered that no such company resides at the address—and in fact, the address does not even exist; there is no No. 333 on the street where BeiGene Guangzhou is registered. The company's annual report filed with the State Administration of Industry and Commerce (SAIC) reports zero employees. Importantly, BeiGene Guangzhou was not audited in 2017 or before the Hong Kong listing in 2018.[1]

Although there is no operating company at BeiGene Guangzhou's registered address and no staff, the company shows massive costs. We obtained statutory financial statements for BeiGene Guangzhou through Chinese attorneys. In 2018,

1 see Hong Kong Listing Documents Page I 15

BeiGene Guangzhou reported no revenue but lost ¥480 mln ($69.8 mln).

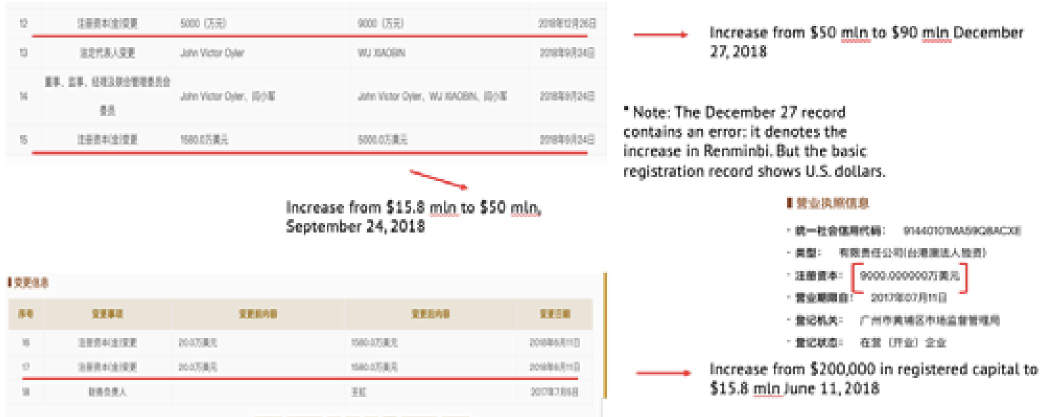
No company exists at BeiGene Guangzhou's registered address: Room 168, No. 333, Jiufo Jianshe Road, Knowledge City, Zhongxin District Guangzhou. | Photo by J Capital 2019.

The shell company was established in July 2017 but had no activity until 2018, when it was made the 100% owner of a company then called Huajian Pharmaceutical, the only BeiGene subsidiary that is licensed to buy and sell drugs. All of BeiGene's sales of the Celgene drugs go through an exclusive Chinese distributor, and until it acquired Huajian, BeiGene had no legitimate way to buy the drugs back. In China's highly regulated environment, companies need a special distribution license to buy and sell drugs. Huajian provided that.

Huajian had been acquired from two individuals for $612,000 in cash in September 2018 and renamed BeiGene Pharmaceutical Guangzhou (BPG). BeiGene reported that it valued BPG only for its license to buy and sell pharmaceuticals and classified it as an asset acquisition rather than a business combination.

Curiously, the registered capital of this shell parent was raised from $200,000 to $15.8 mln on June 11, 2018, to $50 mln on September 24, 2018, and to $90 mln on December 27, 2018. If you don't have revenue, you need capital to buy things. Each one of these increases occurred just before the end of a quarter and would have provided the company with enough capital to purchase inventory.

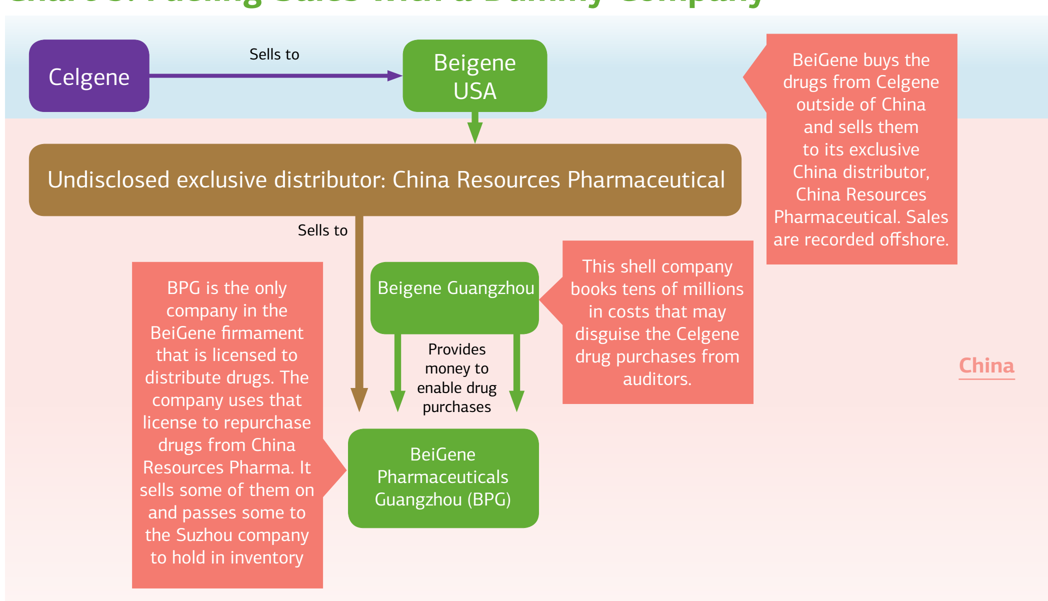
Chart 2. Changes in Registered Capital



Source: Guangdong Administration of Industry and Commerce

So, using money from its shell parent, BPG buys Celgene drugs that have been recorded as "sold." We interviewed employees of the company, who confirmed to us that Huajian buys Celgene drugs from the Chinese distributor and holds Celgene inventory.

Chart 3. Fueling Sales with a Dummy Company



Source: Company filings, J Capital Research

Faking strategy 2: company acquisition

Before it was even acquired, BPG seems to have bought around $25 mln in Celgene drugs--without paying, a conclusion we draw from the company's statutory accounts. BeiGene then bought the company and appears to have extended an intercompany loan to allow BPG to pay the bill—without anyone having to report debt. Evidence comes both from interviews and from the company accounts.

Accounts show that, at the end of 2018, BPG had an outstanding loan of ¥205 mln. BPG's immediate parent company, BeiGene Guangzhou, extended a loan of ¥200 mln, likely to BPG. This loan is not disclosed by BeiGene Ltd. in its U.S. or Hong Kong reports. Meanwhile, BPG reports ¥175 mln ($25.4 mln) of "other non-current assets." Based on our interviews with BPG staff and with the Chinese distributor of Celgene drugs, we think the "other non-current assets" are Celgene product and that BPG may have chosen to characterize the inventory as "non-current" to reflect the fact that the company has no means of disposing of it in the near future.

"Company inventory includes some frequently used drug products, mostly for hospitals, including some generic drugs, new drugs, and some Celgene drugs," a person close to BPG told us. We also confirmed with a Chinese drug distributor familiar with BPG that BPG buys Celgene inventory. Company accounts obtained from the China Finance Department show that the "non-current assets" remained on the books at the end of 2018.

Chart 4. Snapshots from BPG Accounts 2017-2018

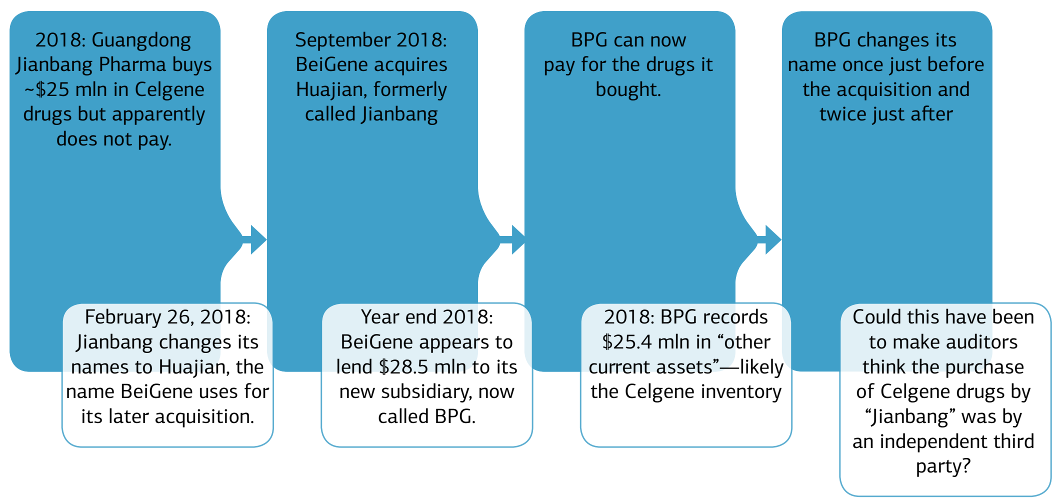
资产	2018年	2017年
流动资产：		
货币资金	¥ 30,761,291	¥ 760,362
油气资产	¥ -	¥ -
无形资产	¥ 25,144	¥ -
开发支出	¥ -	¥ -
商誉	¥ -	¥ -
长期待摊费用	¥ -	¥ -
递延所得税资产	¥ -	¥ -
其他非流动资产	¥ 175,065,887	¥ -
非流动资产合计	¥ 175,136,391	¥ 16,225
资产总计	¥ 206,239,504	¥ 5,663,945

资产	2018年	2017年
流动资产：		
货币资金	¥ 30,761,291	¥ 760,362
流动负债合计	¥ 32,467,778	¥ 1,878,280
非流动负债:		
长期借款	¥ 205,000,000	¥ -
应付债券	¥ -	¥ -
其中：优先股	¥ -	¥ -
永续债	¥ -	¥ -
长期应付款	¥ -	¥ -
专项应付款	¥ -	¥ -
预计负债	¥ -	¥ -
递延收益	¥ -	¥ -
递延所得税负债	¥ -	¥ -
其他非流动负债	¥ -	¥ -
非流动负债合计	¥ 205,000,000	¥ -
负债合计	¥ 237,467,778	¥ 1,878,280

Source: China Finance Bureau via Chinese attorney

Given that the Celgene drugs are 1) perishable and 2) falling rapidly in price, holding inventory does not make commercial sense. BeiGene could have passed off this transaction to auditors as an "Other Non-Current Asset" of $25.2 mln and folded it into the year's $40.2 mln increase, which it described as "primarily related to prepayments for acquiring long-term assets" (page 131, Hong Kong 2018 Annual Report, page 104, 2018 10-K).

Chart 5. Using the BPG Acquisition to Create "Sales"



Source: Company filings, J Capital Research

BPG changed its name three times in six months, and we believe this maneuver may have been undertaken to trick auditors into thinking that the purchaser of Celgene product is different from the company BeiGene acquired. Until February 26, 2018, BPG was called Guangdong Jianbang Pharmaceutical.[2] Jianbang then changed its name to Huajian Pharmaceuticals.[3] It then again changed names on July 12 to Beiji Shenzhou,[4] which in Chinese is a homonym for the current name, BeiGene Pharmaceuticals Guangzhou; in Chinese script, only one character differs. That name difference could have allowed the company to register the loan without discovery by auditors.

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2 Chinese name: 广东健邦药业有限公司

3 Chinese name: 华健医药有限公司

4 Chinese name: 百继神州（广州）医药有限公司

Chart 6. SAIC Record of Name Changes

8	2018-09-12	企业名称	百继神州（广州）医药有限公司	百济神州（广州）医药有限公司

工商变更 18

序号	变更日期 Date	变更事项 Change	变更前 Before Change	变更后 After Change
11	2018-07-12	企业名称 Company Name	华健医药有限公司	百继神州（广州）医药有限公司
12	2018-07-12	其他	5000.0000(单位：万元)	380.0000(单位：万元)
13	2018-02-26	企业名称	广东健邦药业有限公司	华健医药有限公司

Screenshots from Qixin, a database service that provides corporate information from the SAIC. July 4, 2019

When BeiGene reported the acquisition, it stated:

> "On September 21, 2018, BeiGene (Guangzhou) Co., Ltd. ("BeiGene Guangzhou") acquired 100% of the equity interests of Baiji Shenzhou (Guangzhou) Pharmaceuticals Co., Ltd. (formerly known as Huajian Pharmaceuticals Co., Ltd.), which subsequently changed its name to BeiGene Pharmaceuticals (Guangzhou) Co., Ltd., a pharmaceutical distribution company, for total cash consideration of $612,000 including transaction costs of $59,000. The acquisition was concentrated in a single identifiable asset, a drug distribution license, and thus the Company has concluded that the transaction is an asset acquisition as it does not meet the accounting definition of a business combination. The total cost was allocated to the drug distribution license and corresponding deferred tax liability, resulting in a $816,000 intangible asset for the license and a deferred tax liability of $204,000."

The transaction price of $612,000 is a huge mismatch with the $90 mln later injected into BPG's immediate parent company. But BPG has not been greatly expanded, nor do any other companies sit under this corporate parent. Why would so much capital be required?

When we visited the offices of BPG in Guangzhou in June 2019, staff said the name of the company prior to acquisition was "Guangdong Jianbang Pharmaceutical," a name never mentioned in BeiGene disclosures but that was the legal name until February 2018. Why change the name unless it was to fool auditors?

BeiGene Pharmaceuticals Guangzhou Office, Room 1001, Level 10, No 181, Science Road, Huangpu District Guangzhou. | Photos by J Capital June 2019

Faking strategy 3: "we subsequently acquired inventory"

BeiGene's acquisition of Celgene Shanghai also seems to have been a way to round trip sales of Celgene drugs. We believe that BeiGene may have used the acquisition as a smokescreen to buy $17.7 mln of Celgene drugs and pretend they were sold to external customers.

Those drugs, we believe, based on our interviews, ended up in BeiGene's Suzhou subsidiary. BeiGene used a local auditor for that company, BeiGene Suzhou: Zhonghui Certified Public Accountants LLP, separate from E&Y Hua Ming, which audits the group.[5] Given the material size of BeiGene Suzhou, this is irregular.

BeiGene is now claiming huge sales of the Celgene drugs. But on acquisition, BeiGene valued the distribution rights it obtained from Celgene at a mere $7.5 mln over 10 years.[6]

Table 4. Celgene Trading Rights Accounting

	December 31, 2018			December 31, 2017		
	Gross carrying amount	Accumulated amortization	Intangible assets, net	Gross carrying amount	Accumulated amortization	Intangible assets, net
Finite-lived intangible assets:						
Product distribution rights	7,500	(1,000)	6,500	7,500	(250)	7,250
Trading license	816	(144)	672	0	0	0
Total finite-lived intangible assets	8,316	(1,144)	7,172	7,500	(250)	7,250

Source: BeiGene 2017 10-K page F-28

BeiGene acquired Celgene Shanghai for $28.1 mln, of which just $4.5 mln was paid in cash and the rest in a discount on share purchases by Celgene.

- In its Hong Kong listing documents, BeiGene claims that it "subsequently" paid Celgene $17.7 million for inventory--something Celgene never mentioned. The sale document for this acquisition was never made public.

- The disclosure is vague as to where the inventory was at the time. The company implies that it acquired inventory in the Shanghai company. But we know Celgene Shanghai did not have inventory. If the purchase was made from Celgene or from the Chinese distributor, it would probably have been booked as a sale.

5 See Hong Kong listing documents page 115

6 "Product distribution rights consist of distribution rights on the approved cancer therapies licensed from Celgene, ABRAXANE®, REVLIMID®, and VIDAZA®, and its investigational agent CC-122 acquired as part of the Celgene transaction. The Company is amortizing the product distribution rights over a period of 10 years.The trading license represents the Guangzhou drug distribution license acquired on September 21, 2018. The Company is amortizing the drug distribution trading license over the remainder of the license term through February 2020."

Why has BeiGene failed to disclose that all its China sales go through a single Chinese distributor?

- We think BeiGene must have lied about acquiring $25 mln in cash from the subsidiary. We reviewed Celgene Shanghai's 2016-18 financial statements, and the company did not and could not have had that cash. Why lie about it? Because that lie could have papered over the inventory purchase—the balance sheet would show no change, so it would have looked like BeiGene acquired cash and used the cash for inventory. Actually, BeiGene could easily dip into its R&D or clinical trials budget to buy the drugs.

资产	2017年		2016年	
流动资产：				
货币资金	¥	14,411,760	¥	524,345
短期投资	¥	-	¥	-
应收票据	¥	-	¥	-
应收账款	¥	-	¥	-
预付账款	¥	7,053,560	¥	-
应收股利	¥	-	¥	-
应收利息	¥	-	¥	-
其他应收款	¥	43,273	¥	-
存货	¥	-	¥	-
其中：原材料	¥	-	¥	-
在产品	¥	-	¥	-
库存商品	¥	-	¥	-
周转材料	¥	-	¥	-
其他流动资产	¥	-	¥	-
流动资产合计	¥	21,488,593	¥	524,345
长期债券投资	¥	-	¥	-
长期股权投资	¥	-	¥	-
固定资产原价	¥	-	¥	-
减：累计折旧	¥	-	¥	-
固定资产账面价值	¥	-	¥	-
在建工程	¥	450,878	¥	-
工程物资	¥	-	¥	-
固定资产清理	¥	-	¥	-
生产性生物资产	¥	-	¥	-
无形资产	¥	-	¥	-
开发支出	¥	-	¥	-
长期待摊费用	¥	1,287,627	¥	-
其他非流动资产	¥	6,351,003	¥	-
非流动资产合计	¥	8,089,507	¥	-
资产总计	¥	29,578,100	¥	524,345

加：营业外收入	¥	-	¥	-
其中：政府补助	¥	-	¥	-
减：营业外支出	¥	-	¥	-
其中：坏账损失	¥	-	¥	-
无法收回的长期债券投资损	¥	-	¥	-
无法收回的长期股权投资损	¥	-	¥	-
自然灾害等不可抗力因素造	¥	-	¥	-
税收滞纳金	¥	-	¥	-
三、利润总额（亏损总额以"-"号	¥	-74,703,642	¥	-2,210,045
减：所得税费用	¥	-	¥	-
四、净利润（净亏损以"-"号填列	¥	-74,703,642	¥	-2,210,045

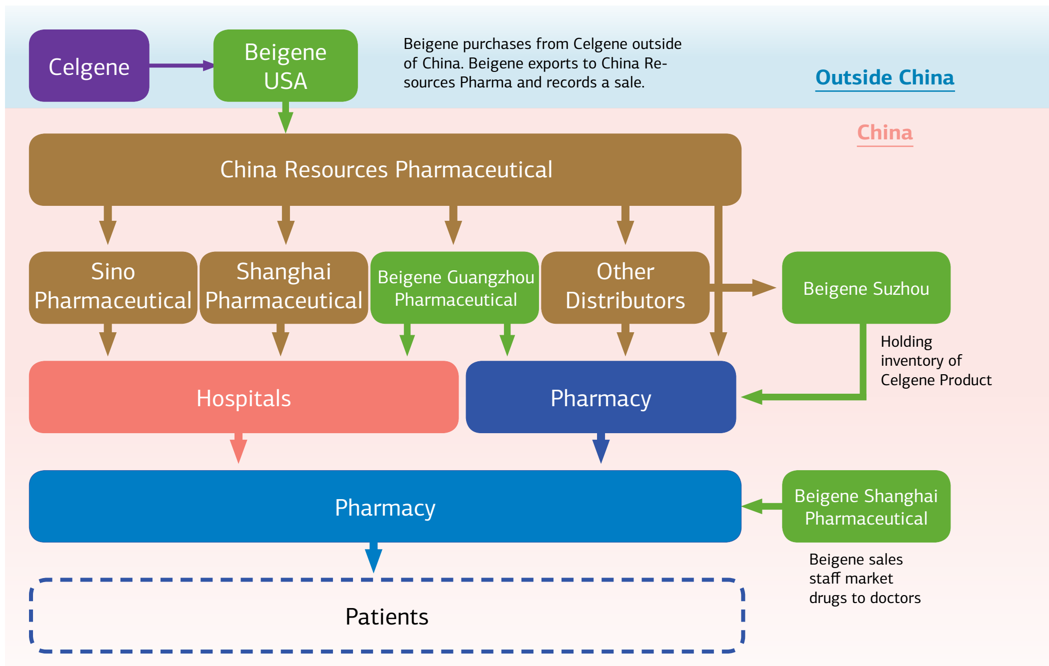
Celgene Shanghai accounts from 2016 and 2017. | Source: China Finance Bureau via Chinese attorney

- The inventory ended up in BeiGene's Suzhou subsidiary, according to the accounts and our interviews. Recorded inventory in BeiGene Suzhou at the end of 2018 was $15.9 mln. As Beigene reported in the 2018 10K "The Company's inventory balance of $16,242 and $10,930 as of December 31, 2018 and 2017, respectively, consisted entirely of finished goods product purchased from Celgene for distribution in the PRC." (Page F29 2018 10k) Based on our interviews, we have a high degree of confidence that the inventory held by BeiGene Suzhou is Celgene product. That means it has to have been repurchased from the Chinese distributor within China.

The undisclosed distributor

All of this round tripping is made possible by a massive commercial relationship that BeiGene has failed to mention to its investors. Due to Chinese regulations, BeiGene's commercial operations are almost entirely outsourced to a large, state-owned pharmaceutical distributor called China Resources Pharmaceutical Co. (CRP). Chinese industry news reports say that, following BeiGene's acquisition of Celgene China operations on August 31, 2017, BeiGene awarded distribution rights to CRP, on November 10, 2017.[7] All BeiGene sales of Celgene products are through CRP, according to CRP executives. This means that all of BeiGene's revenues from Celgene drugs should be booked when BeiGene sells them to CRP offshore. There is no good reason for BeiGene then to re-acquire $49 mln in inventory of Celgene drugs within China.

Chart 7. The Sales Process



Source: J Capital

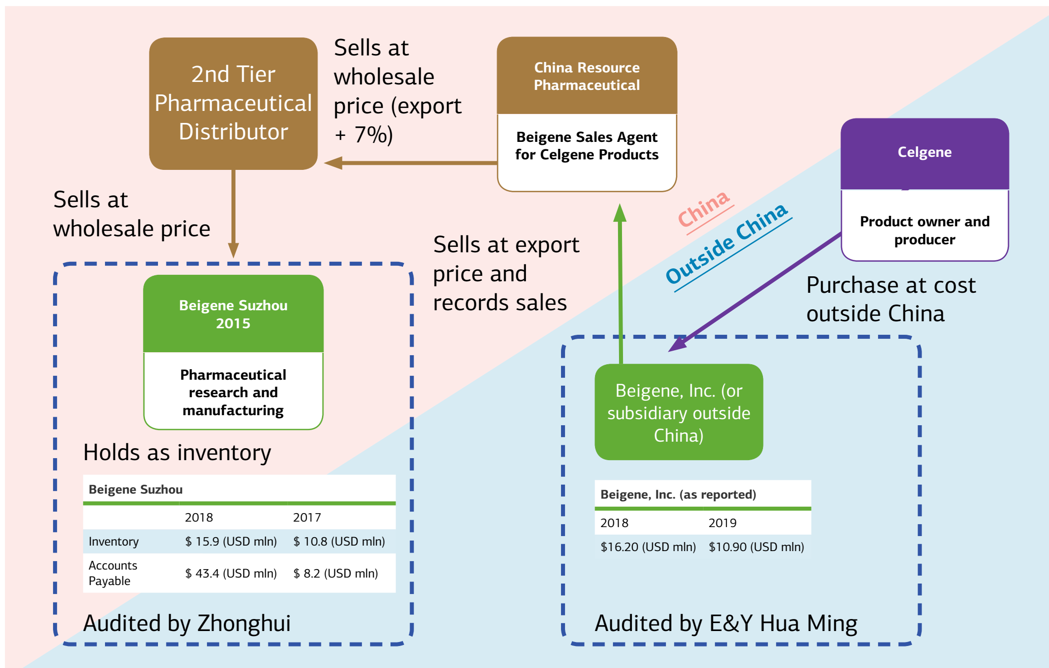
The sales process works like this: outside of China, BeiGene purchases Celgene drugs and then exports them to CRP in China. CRP is the legal owner of the Celgene drugs, which are held in a CRP warehouse in a bonded zone. BeiGene salespeople visit hospitals or hold seminars and persuade doctors to order the drugs from CRP, which then makes delivery from its own warehouse. So, what possible excuse could BeiGene have for holding Celgene drugs in its own inventory?

We asked BeiGene current and former clinical staff about use of Celgene drugs in trials. An overseas executive told us that the Celgene drugs are used in combination studies outside of China. But executives in China told us that that Celgene drugs are not used in combination trials of BeiGene drugs within China. BeiGene

7 https://news.pharmacodia.com/web/informationMobileController/getMobileNewInformationById?id=8a2d98375f5816be015fa872968733f3 Also quoted in the CRP annual report 2017 and the CRP Corporate Social Responsibility report https://www.crc.com.cn/responsibility/report/sbureport/201807/P020180724621310922660.pdf Later characterised in a press release on the CRP website on 21 November 2017 as a logistics relationship http://www.crpcg.com/xwzx_17798/hryysdt/201711/t20171121_443454.html

should not hold ANY Celgene drugs in China. We think that BeiGene may be struggling over purchase commitments to Celgene. The company may end up buying more from Celgene than CRP can sell. So BeiGene buys back the drugs in China and stores them.

Chart 8. How BeiGene May be Round Tripping Product



Source: J Capital

BeiGene Suzhou could easily hide a transaction of the magnitude we suspect. The company is a pharmaceutical manufacturer with a lot of operating and capital expenses, and accounts payable have risen substantially. On its income statement, the Suzhou company in 2018 shows an amazing $44 mln in "administrative expenses," up from just $6.7 mln in 2017. There is no operational reason for this manufacturing company of 115 staff to have expenses that high. Suzhou could conceivably use this expense line to hide purchases of the Celgene drugs, perhaps through bundled R&D contracts.

Table 5. BeiGene Suzhou Accounts (in RMB)

Balance Sheet		
Current Assets	2018	2017
Cash	¥ 62,501,264	¥ 17,023,336
Accounts receivable	¥ 32,229,990	¥ 34,923,934
Pre-paid accounts	¥ 25,139,329	¥ 5,518,211
Other receivables	¥ 1,388,947	¥ 287,534
Inventory	¥ 108,291,910	¥ 73,763,946
Other current assets	¥ 33,044,061	¥ 33,053,634
Total Current assets	¥ 262,595,501	¥ 160,525,371
Long term receivables	¥ 1,602,155	¥ 841,950
Fixed assets	¥ 145,275,239	¥ 145,437,549
Construction in progress	¥ 2,346,565	¥ 7,902,753
Intangible assets	¥ 457,075	¥ 570,366
R&D expenditures	¥ -	¥ -
Goodwill	¥ -	¥ -
Long-term pre-paid expenses	¥ 22,326,382	¥ 28,730,082
Other non-current assets	¥ 10,639,330	¥ 4,929,592
Total non-current assets	¥ 182,646,745	¥ 188,412,292
Total Assets	¥ 445,242,246	¥ 348,937,664
Accounts payable	¥ 294,874,212	¥ 55,424,671

Minimum purchase commitments

At the end of Q2, BeiGene was holding $49 mln in Celgene inventory, up by $33 mln from $16 mln in Q1. On a run-rate basis, that it almost a year of inventory.

Table 6. BeiGene Inventories (,000 USD)

	Inventories	Inventories QoQ
2017 FY/Q4	10,930	
2018 Q1	7,498	-31%
2018 Q2	6,322	-16%
2018 Q3	19,699	212%
2018 FY/Q4	16,242	-18%
2019 Q1	13,140	-19%
2019 Q2	49,048	273%

Source: Company reports

The first time that BeiGene disclosed a minimum purchase requirement was on page F-45 of the 2018 10-K, with the following single statement: “As of December 31, 2018, purchase obligations amounted to $9.7 million related to minimum purchase requirements for finished goods inventory purchased from Celgene.” That requirement suddenly looked very high in the Q2 2019 report. BeiGene made the following startling disclosure: "As of June 30, 2019, the Company had purchase commitments amounting to $134,897 [note: numbers are in thousands, so this is $134 mln] related to minimum purchase requirements for inventory purchased from Celgene and contract manufacturing organizations." Given the high markups that BeiGene’s distributor is able to apply in China, this is a huge quantity of drugs.

Did BGNE commit itself to minimum purchases with Celgene to get the Celgene distribution license deal on the cheap, and now is finding it cannot sell all the Celgene drugs it is required to buy?

Exaggerated Margins Confirm Inflated Revenue

When a company fakes its sales, margins are often the tell. During the period when BeiGene took over sales and drugs entered China’s reimbursement lists, negotiated prices for Celgene products have fallen between 37% and 63%, yet the company claims margins fell by only 8 points. We estimate, based on the sales mix reported by the company and discounted prices we have confirmed in the market margins should have fallen by 21 points. This provides further confirmation that Beigene’s sales reports are implausible.

BeiGene claims gross margins on Celgene product sales were 81% in the first quarter of sales, Q4 2017, and fell to 73% in Q1 2019. But that is very unlikely. Our interviews and gazetted prices of public tenders to supply hospitals with drugs indicate that Revlimid’s price fell 63% from Q1 2018, Vidaza 47% from Q4 2018, and

Abraxane 37% from Q1 2019. Margins would necessarily have fallen to 60% based on these price declines and the reported product mix of Beigene.

These price discounts imply that sales volumes had to double in 2018 just to make up for the price decline, and volume had to increase fourfold to have achieved the sales revenue claimed by BeiGene. Our interviews with BeiGene's distributor, with former salespeople for BeiGene, and with eight cancer hospitals in China indicate that this is not true.

Table 7. Celgene Drug Pricing

Drug	Commercially Available	Price Pre NDRL ¥	National Drug Reimbursement List (NDRL)	Post NDRL (or Current Price) ¥	Discount	Patient Cost ¥	Competitor Price ¥	Premium to Competitor	Competitor Patient Cost ¥
Abraxane	2011	5,288	Not listed	3,350	-37%	3350	2010	67%	402
Revlimid	2013	46,000	Oct-17	17,050	-63%	6820	4,000	326%	0
Vidaza	Feb-18	2,000	Oct-18	1,055	-47%	211	3,000	-65%	600

Source: J Capital, doctors survey June 2019, Company Reports

Table 8. BeiGene-Reported Gross Profit (in mln USD)

	Q4 17	Q1 18	Q2 18	Q3 18	Q4 18	Q1 19
Revenue (mln USD	15.6	23.3	31.4	38.4	37.8	57.4
Cost of sales	-3.0	-4.6	-6.3	-8.7	-9.2	-15.3
Gross profit	12.6	18.7	25.2	29.7	28.6	42.2
Gross profit %	81%	80%	80%	77%	76%	73%

Source: Company Reports

Screenshot from http://www.pharmcube.com/, a Chinese website that contains information on drug prices, approvals, and tenders. July 4, 2019.

Table 9. BeiGene Actual Gross Profit (J Capital estimate of COGS based on individual product margin) (in mln USD)

Abraxane – Rev	11.1	14.3	18.0	21.1	18.8	25.8
Abraxane - COGS	-2.2	-2.8	-3.5	-4.1	-3.7	-7.8
Revlimid – Rev (mln USD)	4.5	8.6	12.8	16.4	17.0	27.0
Revlimid - COGS	-0.9	-4.4	-6.5	-8.4	-8.7	-13.8
Vidaza-Rev	0.0	0.4	0.5	0.9	2.0	4.6
Vidaza-COGS		-0.1	-0.1	-0.2	-0.4	-1.7
Total - COS	-3.0	-7.2	-10.2	-12.6	-12.7	-23.2
Gross Profit	12.6	16.0	21.3	25.8	25.1	34.3
Gross Profit %	81%	69%	68%	67%	66%	60%

Source: Company Reports, J Capital, and Pharmcube, margin estimated based on price decreases.

Where has the money gone, really?

We believe that the faked Celgene sales are just the provable tip of an iceberg of fraud at BeiGene. The company has engaged in highly questionable spending on physical plant, on an acquisition in Beijing, and on massive external R&D.

BeiGene claimed losses in Switzerland of $152 mln in 2017 and $100.8 mln in 2018 even though the company had only a small marketing presence in Switzerland until Q3 2018.[8] It lost $47.7 mln in Australia in 2018, although the trials being conducted there are Phase 1 trials, which typically cost $1-2 mln, according to an executive of a company that conducts stage 1 trials for Chinese pharmaceutical companies outside of China.

Chart 9. Income (loss) before income taxes 2018 (,000 USD)

PRC	(130,552)
USA	15,036
Other	(574,313)
Total	**(689,829)**

The losses are not congruent with really any other measure:

8 The Swiss government announced in September 2018 that BeiGene had established a European headquarters in Basel. Before that time, BeiGene's principal activity in Switzerland was its licensing of development rights to its PD-1 drug to Celgene Switzerland

Chart 10. Long-lived assets 2018 (,000 USD)

PRC	132,385
USA	42,793
Other	23,042
Total	**198,220**

BeiGene has raised more than $3.12 bln in capital with more than $2 bln raised pre-IPO. It raised $158 mln in its Nasdaq IPO and $210 mln in debt. The company raised $903 mln in a July 2018 Hong Kong IPO, after commitments of $276 mln from cornerstone investors, including the Baker Brothers. Our work on BeiGene leads us to believe that a large portion of the enormous sums being raised are simply being channeled out of the company.

Mysterious factories

In our experience, rapid growth in land and manufacturing assets in China is always a red flag. It is relatively easy in China to obtain inflated invoices for property, plant, and equipment with which to persuade auditors that money has been put to work rather than simply vanished. BeiGene concerns us in this regard. During its frenzy of financing, we have been unable to find any mention in the calls or "Use of Proceeds" disclosures that it planned to build manufacturing capacity, yet every time the company raises money, despite having no approved drugs and having prepaid contracts for manufacturing, BeiGene builds new facilities.

BeiGene is currently building a large biologics facility in Guangzhou at the behest of a government financing vehicle and says phase 1 will be complete in 2019. BeiGene Guangzhou Biologics Manufacturing will manufacture the company's PD-1 antibody under development, tislelizumab. But tislelizumab has not completed clinical testing. Either the company has supreme confidence about both commercialization and its ability to sell tislelizumab, or this is a reckless capex spend. Surely it makes more sense to wait until commercialization and known demand before construction, and to use a third-party contract manufacturer in the interim period.

BeiGene Guangzhou Manufacturing's new factory | Source: J Capital 2019

BeiGene has three manufacturing facilities and has paid $25 mln to pre-book capacity at another, all without having anything to manufacture.

BeiGene has two other manufacturing facilities: a factory in Suzhou for small-molecule drug candidates and pilot-scale biologics and a small facility in Beijing making clinical trial materials. Additionally, the company discloses paying about $25 mln to a third-party drug manufacturer for a facility expansion to help BeiGene manufacture in the future. The disclosure is as follows:

"Represents a payment for a facility expansion under a commercial supply agreement. The payment will be credited back to the Company through credits on supply purchases over the life of the supply agreement." (2018 10-K, F-35)

We speculate that this payment is not actually for a factory but hides BeiGene's own purchase of Celgene inventory. If it is really for a factory, BeiGene needs to explain why.

Now, BeiGene's shell company in Guangzhou has purchased 10,000 sq m of land-use rights on at a cost of ¥22.34 mln. In the Q2 report, BeiGene said: "A second Guangzhou land use right was acquired in May 2019 for the Company's research and development activities." The local government told us that BeiGene had committed to start construction on a research base on the land in H2 2019 and would open the research center in 2021. Given that this company, which has no successful

Guangzhou land purchase purchased by BeiGene at Guangzhou International Biological Island Luoxuan 2nd Road, Guangzhou.

One wonders how BeiGene manages to claim superior, low-cost R&D in China and yet outsource more than half of its R&D activities.

R&D to date, already has a large R&D base in Beijing and that it outsources half of its R&D, we wonder about the need for such a facility.

No Approved Drugs: Black hole for money

One of the enduring mysteries of BeiGene's operations is why the company spends so much money and yet cannot commercialize a drug.

Whether in the United States or Hong Kong, BeiGene provides very little disclosure to explain where all this cash is going. The company discloses conducting about 50 clinical trials around the world and employs 800 people in clinical development. In the 2018 results presentation, BeiGene claimed that it had a "clinical team of over 800, with over 50% in China and remainder in US, EU, AU."

But why? BeiGene's former executives do not expect the drug candidates to achieve significant sales outside of China. The three BeiGene drug candidates, a PD-1 drug, a BTK drug, and a PARP inhibitor, will enter a very crowded field of competitors if they ever get out of the gate.

The targets were chosen, according to scientific staff formerly with BeiGene, for fast approval in China. Said one senior researcher about deciding to take a job with BeiGene: "Maybe this would be an opportunity to open the door to 'me-too' drugs in China and then work on leading-edge drugs from overseas."

This scientist said that BeiGene is wasting money on overseas trials. If it's a "me-too drug," the manager said, it is possible to select a smaller number of trial participants for targeted testing and complete trials faster at lower cost in China. Yet BeiGene is conducting extensive international trials at vast expense.

BeiGene's nearest-term hope for a commercial drug is a BTK drug called zanubrutinib. If approved before the patent expires on the existing competitor, Abbvie drug Ibrutinib (Imbruvica), zanubrutinib will have to prove superiority in head-to-head trials, and that is a high bar. If not, then zanubrutinib will enter a generic market. It is not completely clear when Imbruvica comes off patent, given many defensive patent registrations by pharmaceutical companies, but by 2027, the drug is certain to be a generic. That means that even proving superiority would give BeiGene a short ramp before dropping off the patent cliff.

If it's so valuable, why give it away?

The other most anticipated pipeline drugs are a PD-1 drug called tislelizumab and a PARP inhibitor called pamiparib.

Several times, BeiGene executives have said that the company is "about to launch" tislelizumab, a drug that the company calls "one of our two lead products (see Q1 call page 2). But BeiGene has given away 10% of the potential future revenue for tislelizumab in return for a shareholder loan—which BeiGene is paying back at 7%.

BeiGene Guangzhou Biologics is currently a 95-5% joint venture with the Guangzhou GET Technology Development Co (GET), an SOE investment vehicle owned by the Guangzhou Development Zone, set to move to 90% BeiGene and 10% GET. GET made a shareholder loan of ¥900 mln for a 76-month term at 7% interest. The debt can be converted to equity at any time before it becomes due, which would increase GET ownership of the JV from 5% to about 10%.

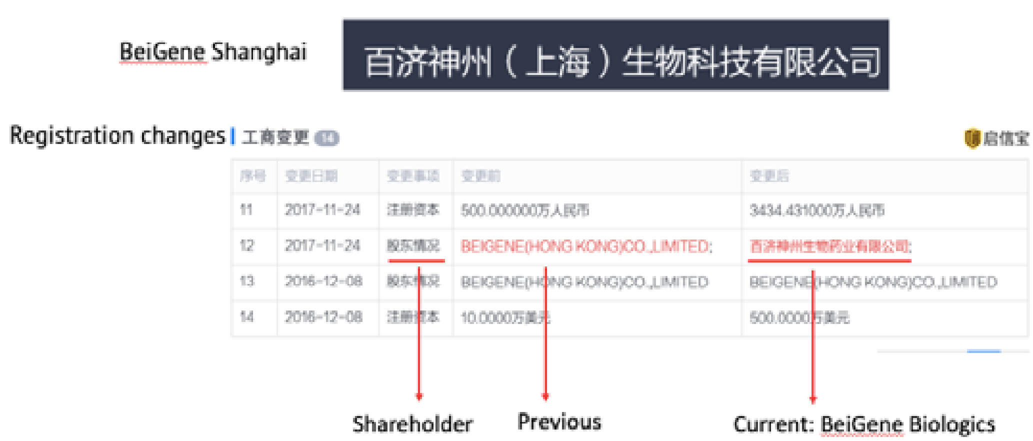
BeiGene has given its government partner 10% of the potential revenue of what it claims is a future blockbuster drug, leading us to wonder whether the drug is really as promising as BeiGene says.

In order to get its equity share, BeiGene invested the China rights to its PD-1 antibody under development, tislelizumab. At a Barclay's Global Healthcare Conference in March 2019, CFO Howard Liang said:

> So in terms of our two lead products, zanubrutinib and tislelizumab, as you know these are addressing potentially large market opportunities as BTK inhibitors and PD-1 antibodies. . . for both of the agents, we've reported a very strong data in 2018. (Bloomberg transcript page 2)

According to government information in China, rights to develop and market the drug tislelizumab belong to a BeiGene shell company in Shanghai that was injected into the GET joint venture.[9] That company was transferred to BeiGene Biologics, the JV manufacturing company now under construction, in November 2017.

Chart 9. Shareholding Change for BeiGene Shanghai and Tislelizumab



Source: State Administration of Industry and Commerce via Qixin

9 See these Chinese-language webpages: https://zhuanlan.zhihu.com/p/47358467, http://www.51xinkang.com/linchuangyanjiu/39.html#contend_div, https://www.most.gov.cn/bszn/new/rlyc/jgcx/201801/t20180131_137979.htm, http://www.shanghai.gov.cn/nw2/nw2314/nw2319/nw12344/u26aw50036.html

This has not been disclosed to the market but just loosely mentioned as "a subsequent contribution of one or more biologics assets." This means that BeiGene has given away a share of the future sales for what the company portrays as its most promising pipeline drug—a move that suggests low confidence that tislelizumab will be the blockbuster the company often claims.

The fact is, several scientists have told us that tislelizumab and pamiparib are well behind international competition in the development cycle. A former BeiGene scientific director said in a phone call that "China has around 25 PD-1 drugs" approved or in development, while the U.S. has several. We identified five PD-1 inhibitors that are commercialized or close to approval in China.

Bristol	Merck	Roche	Astra Zeneca	Pfizer
Opdivo (Nivolumab)	Keytruda (Pembrolizumab)	Tencentriq (Atezolizumab)	Imfinzi (Durvalumab)	Bavencio (Avelumab)
Approved	Approved	Approved	Approved	Approved
Approved	Approved	Approved	Approved	Phase 3
Approved	Approved	Phase 2	Phase 2	n/a
Approved	Phase 3	Phase 3	Phase 3	n/a
Phase 3	Phase 3	n/a	Phase 2	Phase 3

Source: Company reports

The CEO of a company running clinical trials for cancer drugs said that, of 2,800 drugs now in pre-clinical studies, there are hundreds of PD-1s. "This class is quite crowded now." That means that BeiGene, he said, needs to spend more to try to find a way to distinguish its own drug from the pack.

Regarding the PARP inhibitor, we spoke with a scientist who was formerly an executive with BeiGene, who is very positive about BeiGene overall. That executive said that BeiGene's PARP inhibitor is a poor drug. A biochemist who is unaffiliated with the company said of BeiGene's PARP inhibitor: "There are several of them out there, and they've under-performed in every respect."

Out-of-control R&D expense

We estimate BeiGene's unexplained overspend on R&D within China at $65 mln in 2018.

Looking at expenditure on R&D staff within China seems to be the best way to gauge overspending, and those costs are unreasonably high. We estimate that BeiGene's R&D staff costs are three times higher than what they should be, based on industry salary surveys and competitor comparisons. If you include share compensation to R&D staff that increases to 4.5 times higher. The overspend was about

$65 mln in 2018, according to our calculations.

We estimate that, of the $167 mln in R&D-related staff costs, $63.8 mln were in the United States, based on the disclosure that 200 clinical development staff were in the United States in 2018 and an estimate of compensation from disclosed contributions to the company 401-K plan.[10] The company contributes a maximum 3% of compensation to U.S. employees' 401-K plan. This contribution was $455,000 in 2017. If the average contribution was some 2% of U.S. staff compensation in 2017, this implies $22.8 mln U.S. staff compensation in 2017. Similarly, for 2018, a 2% contribution rate on $1,275,000 implies U.S. staff compensation of $63.8 mln, or an average U.S. employee annual wage of around $212,000 (assuming average 300 U.S. staff employed during 2018).

That means that China and “Other R&D” staff costs were around $103 mln. "Other" includes Australia and Switzerland, where there is a maximum of 26 staff. We estimate China R&D staff cost of around $96 mln in 2018, or $156,000 per China R&D staff member, based on 500 staff. That compares with the roughly $50,000 salary you would expect—already, arguably, generous.

The fair value of restricted shares and restricted share units are based on the closing market price of our ADSs on the NASDAQ Global Select Market on the date of grant.

The following table summarizes total compensation cost recognized for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Research and development	$ 54,384	$ 30,610	$ 8,076
Selling, general and administration	32,743	12,253	2,549
Total	$ 87,127	$ 42,863	$ 10,625

As of December 31, 2018, there was $289.9 million of total unrecognized share-based compensation expense, net of estimated forfeitures, related to unvested share-based awards which are expected to be recognized over a weighted-average period of 2.6 years. As of December 31, 2017, there was $178.2 million of total unrecognized share-based compensation expense, net of estimated forfeitures, related to unvested share-based awards which are expected to be recognized over a weighted-average period of 3.4 years. In future periods, our share-based compensation expense is expected to increase as a result of recognizing our existing unrecognized share-based compensation for awards that will vest and as we issue additional share-based awards to attract and retain our employees.

According to the latest Kelley Services Salary Guide for the China’s[11] pharmaceutical sector, a clinical research manager earns ¥400,000/annum ($59,000). A clinical research associate earns ¥150,000/annum ($22,000), an R&D director earns ¥1.5 mln/annum ($220,000), and a research project director earns ¥600,000/annum ($88,000). A former research manager at BeiGene told us in a phone call that Chinese compensation for the company is 30% at the lower levels and 70% at the

10 See 8-K filed July 24, 2018

11 https://www.kellyservices.cn/cn/siteassets/china---kelly-services/2019-salary-guide_f.pdf

highest level of that in the United States. He also said U.S. compensation is in line for the industry, not unusually high.

Using an average of 200 research staff in China, 300 clinical development staff in China and Asia-Pacific, and 115 China manufacturing staff (for internal R&D clinical trial drugs) in 2018, and assuming an average compensation of $50,000/annum, we come to a more realistic 2018 China R&D staff cost of around $31 mln. And yet the filings tell us that actual China R&D staff cost was about $96 mln--a difference of $65 mln.

Within the very large 2018 $167 mln R&D staff costs, some $54.4 mln was related to share compensation, up from $30.6 mln the previous year. BGNE claims the increase in staff share compensation expense was the result of new hires and a higher share price, but this misses the point that 2018 R&D share compensation expense accounted for about one-third of total R&D compensation when the company has yet to commercialize a drug, and also came in a year when overall group net losses increased from a $93.1 mln to a massive $673.8 mln. We get it that there may be share compensation progress awards for successful clinical trials, but such large awards without profitable commercialization, even for new hires, while the losses are huge, is on a best-case scenario poor corporate governance and a sign of freewheeling financial controls.

BeiGene has repeatedly told the market that it has a cost advantage in China, whose large population yields more patients willing to participate in trials. For example, slide 16 in the Q2 presentation starts: “China Enables a Model to Succeed in an Evolving Global Environment: BeiGene is uniquely positioned to leverage the large commercial base.” But the company financials belie those comments.

In a presentation to the American Society of Hematology December 3, 2018, John Oyler said: “The majority of the cost in our industry is upfront, and you have millions of patients when you amortize that cost over millions of patients instead of tens of thousands of patients.” (Bloomberg transcript page 11)

BeiGene’s total internal R&D expenditure is 4.7 times that of a domestic competitor on a per R&D staff member cost. If you include the external R&D costs of BeiGene, that increase to eight times higher.

Compare the expenses reported by Jiangsu Hengrui, which has developed a competitor to BeiGene’s still-in-development BTK drug, zanubrutinib. Hengrui does not disclose compensation paid to its R&D staff, but it reports that the company spends a total of $129,457 per R&D employee. That compares with $608,000 spent in R&D costs per R&D employee by BeiGene internally. And it does not count a whopping $436 mln spent on external R&D.

Table 11. R&D Expenses of Competing Companies (in mln USD unless otherwise stated, converted at 6.8785/USD)

Shanghai Junshi (1877 HK) 2018 AR (mln USD)	2018	Jiangsu Hengrui (600276 SH) 2018 AR (mln USD)	2018	BeiGene (BGNE US) 2018 10-K (mln USD)	2018
R&D expenses	$78.0	R&D expenses	$387.0	R&D expenses	$679.01
Total expense	$103.6	Number of R&D personnel	3,000	Total expense	$903.99
Number of phase II or III trials	9	R&D expense per R&D employee (in USD)	$129,009	Number of phase II or III trials	
Number of R&D personnel	159			Number of R&D personnel	800
R&D expense per R&D employee (in USD)	$490,566			R&D staff costs	$167.09
				R&D expense per R&D employee (estimated, including clinical trial managers)	$608,000

Source: company filings, converted to U.S. dollars at August 1 exchange rate

The head of a partner company to BeiGene said that the company wants to take more of the trials in-house. “U.S. companies are much more lean [than Chinese companies],” he said. “They outsource more. Chinese companies want to be vertically integrated. If they could, they’d own their own [trial] sites.”

Outsourcing

One wonders how BeiGene manages to claim superior, low-cost R&D in China and yet outsource more than half of its R&D activities. In 2018, BeiGene discloses that internal R&D activities cost $243.2 mln out of a total of $679 mln. External R&D and clinical-stage programs cost $346.8 mln in 2018. (2018 10-K, page 99) The company’s long-lived assets and revenue are in the PRC, but 83% of losses are in “other” countries. That suggests that the R&D budget could be a vessel for transferring cash to related parties.

BeiGene spent a meager $7 mln on lab equipment. It is hard to fathom how a company can spend a cool $679 mln on R&D expense in 2018 and yet the amount of capital it spent on laboratory equipment during the same year amounted to a meager $7.04 mln ($22.64 mln minus $15.59 mln in the accounts). Not many companies break out lab equipment, but the few that do show a much higher proportion of equipment to R&D expense. Ampio Pharmaceuticals (AMPE) in 2018, for example, spent $1.1 mln on lab equipment and $6.8 mln in R&D expense. Bionano Genomics (BNGO) spent $4.4 mln on lab equipment in 2018 and $9.5 mln on R&D. Nutriband (NTRB) spent $144,585 on lab equipment out of $5 mln on R&D.

Poor controls

We were amazed to learn that the company does not account for R&D costs by research program. Page 96 of the 2018 10-K contains this astonishing disclosure: "We do not allocate employee-related costs, depreciation, rental and other indirect costs to specific research and development programs because these costs are deployed across multiple product programs under research and development and, as such, are separately classified as unallocated research and development expenses."

How will they know whether a drug is profitable? But more to the point, surely this will lead to massive cost overruns and cost abuses. At the very least, it can be said that BeiGene has very poor internal controls, and in an environment as fraught as the Chinese pharmaceutical industry, that is very dangerous.

Said the former chief executive of a Chinese pharmaceuticals company in a phone call: "If I were deeply avaricious and immoral, I'd open a research institute, because how can you ever track what's being done?"

The Innerway acquisition

Because BeiGene's overspending is so staggeringly big, we relegate a clearly problematic, $38 mln acquisition almost to a footnote.

On October 4, 2018, BeiGene purchased Beijing Innerway Bio-tech Co., Ltd., the owner of the Company's research, development and office facility in Beijing, for $38.3 mln in cash, thus acquiring the building it has leased for three years. We think the acquisition may have been a means of slipping company funds to a friend. Innerway's 2017 financial statements, before the BeiGene acquisition, show a mere ¥15.3 mln ($2.2 mln) in fixed assets, including buildings, with no construction under way. The land and building values for Innerway booked in the U.S. filings are 8x and 12x, respectively, the values booked by BeiGene in the Chinese 2018 subsidiary financials. Although the Chinese financials may not account for appreciation—which has been extreme in Chinese real estate—we believe the disparity suggests that BeiGene overpaid for the assets.

In late 2018, property in the area of the science park was going for ¥30,000/sq m. The building, according to the contract posted in BGNE's 2015 S-1, is 6,144 sq m, meaning that top price, at ¥30,000 per sq m, should be $26.8 mln. Another way of looking at it is that BGNE paid 40 years of rent, which would have been (the high figure) ¥5,940,594.

Innerway was and is a biotech company that is ultimately owned, via several shell companies, by a Texas businessman named Pei-Hsung Hu or Thomas Hu. His ultimate holding company is registered to a residential address in Plano, Texas that is 11 miles from the home owned by BeiGene company co-founder Wang Xiaodong in McKinney, another Dallas suburb.[12] Some of the companies registered to Hu's address include Stm Biotech, Oakridge Venture, Therondunn Investment, and McKinney New Ventures.

Oddly, the company leasing the Changping building to BeiGene was named as Beijing Xintaike Medical Device Co., Ltd.[13] in the company's S-1 filed October 16, 2015. The address is the same, and the owner of Xintaike is the same Hu Pei-hsung as for Innerway. Yet Xintaike cannot be found on any records and was not mentioned when BeiGene acquired Innerway. Paying rent to a dummy company could also be a means of conveying cash to a related party.

Innerway is an indirect shareholder in a company that shares the third floor with BeiGene's Changping R&D base. The company, called Beijing CoWin Biotech,[14] tests for cancers that will respond to exactly the drugs BeiGene is working on—a PD-1 and a PARP inhibitor. CoWin owns subsidiaries in pharmaceutical research and manufacturing in Beijing and Jiangsu Province. CoWin's financials show zero revenue but $4.5 mln in capital investment and receivables.

12 Hu's address is 3600 Therondunn Ct, Plano, TX 75023 and Wang's is 2413 Geneva Ln, McKinney, TX 75070 according to Property Shark.

13 北京新太克医疗仪器有限公司

14 北京康为世纪生物科技有限公司

Outside the Changping R&D Center | Photo by J Capital 2019

BeiGene's Beijing R&D Center, the same building where CoWin is registered | Photo by J Capital 2019

One of CoWin's subsidiaries, called Keyintt in English, is partly owned by a Wang Xiaoqiang, whose Chinese name—albeit a common one--suggests that he may be a brother of BeiGene co-founder Wang Xiaodong.

Source: State Administration of Industry and Commerce via Qixin database

Getting in line for approvals

BeiGene claims to be favored in China without sacrificing excellence in research. The former is provably untrue and the latter hard to argue when BeiGene has been uniquely unable to commercialize a drug.

In late June, we interviewed two regulatory officials with oversight of the pharmaceuticals industry in Beijing and Hebei Province. "BeiGene is a foreign company," one said.

Whatever argument BeiGene might have had for getting a jump on competitors has now been mooted. Back in 2016, BeiGene hoped to be the first company in China to introduce a self-developed drug in any of three categories: PD-1, PARP inhibitors, and BTK. Now there are approved competitors, including drugs developed by Chinese firms, in each category.

Table 12. Drugs Competing with BeiGene Drug Candidates in China

BeiGene's Drug Candidate	Drug Type	Competing Drug	Drug Name in Chinese	Drug Owner	Date Launched in China
Zanubrutinib	Bruton's tyrosine kinase (BTK) inhibitor	Imbruvica	依鲁替尼	Pharmacyclics/Janssen Biotech Inc.	Aug-17
Mantle cell lymphoma, leukemia					
		Calquence	阿卡替尼	AstraZeneca	Awaiting approval
Generic name is acalabrutinib					
		Camrelizumab	卡瑞利珠单抗	Jiangsu Hengrui	under NDA review
classic Hodgkin's Lymphoma					
		Rivoceranib	阿帕替尼	Jiangsu Hengrui/ Advenchen Laboratories	Dec-14
Apatinib. Approved only for advanced gastric cancer					
Tislelizumab	PD-1 drug for Hodgkin's lymphoma	Keytruda		Merck	Mar-19
Generically called pembrolizumab. lung cancer					
		Tuoyi	拓益	Shanghai Junshi	12/17/18
Metastatic melanoma. Generic name toripalimab. No PD-1 drug has yet been included on China's reimbursement list. The drugs cost, at a minimum, $15,000 per year after subsidies but this is about one-third of the out-of-pocket cost of foreign drugs.					
		Sintilimab	达伯舒	Innovent Biologics/Lilly	12/27/18
classic Hodgkin's Lymphoma					
		Opdivo	欧狄沃	BMS	6/15/18
Generic name: nivolumab. Non-small cell lung cancer.					
		Tecentriq	癌自禦	Roche	Awaiting approval
metastatic non-squamous non-small cell lung cancer					
		Imfinzi	抑癌寧	AstraZeneca	Awaiting approval
non-small cell lung cancer					
		Trepinzumab		Shanghai Junshi	In clinical trials
Melanoma					
Pamiparib	PARP inhibitor	Lynparza	奥拉帕利	AstraZeneca	Aug-18
BRCA ovarian cancer					

BeiGene's Drug Candidate	Drug Type	Competing Drug	Drug Name in Chinese	Drug Owner	Date Launched in China
		Zejula	则乐	Zai Lab	Oct-18
Company claims the drug is being fast tracked for approval on the mainland. It has been approved in Hong Kong and Macau.					
		Fluzoparib		Jiangsu Hengrui	In clinical trials
Ovarian and breast cancer					

Source: Press reports

China's more even playing field

John Oyler has repeatedly spoken of the opportunity created by a closed Chinese market. At a March 7, 2017 Cowen healthcare conference, he said:

> While we're a global oncology player, we're also uniquely positioned to create value in China. We're set up as a company that can approach China as a local organization, and this enables us to take advantage of the structural features in China that are advantageous for local companies. (Bloomberg transcript page 1)

CFO Howard Liang told a Morgan Stanley healthcare conference in May 2018:

> [W]e're a China-based company where the intention is -- the original vision of the founders John Oyler and Professor Xiaodong Wang was to build the leading biotech company in China, where there is a lot of opportunity waiting as the country develops its healthcare system at the health -- the drug -- from clinical market develops.

Oyler echoed this sentiment in the 2018 results presentation:

"Established leadership in China inclusive global development to leverage the historic opportunity that China represents" (2018 Annual Results Review and Investor Presentation, February 27-28, 2019, slide 5)

Market opening in China has meant that the practical issues of price and reimbursement levels determine market success, not the willingness of regulators to create market barriers to foreign drugs. That is bad news for BeiGene, which tells investors that the company has a "once in a lifetime" opportunity to develop drugs for a closed Chinese market.

Prompted by the spiraling cost of care and by consumers' anger over the high prices and low quality of drugs, Chinese regulators in late 2016 embarked on a series of industry-shifting reforms whose net effect has been to erase any advantage BeiGene might have had from starting its R&D operation in China.

"There's nothing company-specific to BeiGene that I understand is driving special access to registration," said the former CEO of one of China's largest pharmaceutical distribution firms in a phone call. "As for superior research overseas, I call bulls---."

In 2017, China's drug-approval process was mired in red tape, which meant that China had failed to provide market access to 34 cancer drugs that had been approved in the United States, Western Europe, and Japan. Public outcry was assisted by the release of a film in 2018 called "Dying to Survive," criticizing a system that refused to admit life-saving foreign drugs and yet could not produce the drugs on its own. Following the film, 17 foreign cancer drugs were approved.

In the first stage of attacking corruption and high costs in the pharmaceutical industry, in 2016 through 2017, regulators undertook "supply-side reform" in pharma distribution, effecting the exit from the market of perhaps one-third of China's drug distributors and shifting market share to the dominant three SOEs.

In the next wave of regulation, from 2017 to mid-2018, regulators focused on lowering the cost of medicines to consumers. Strategies included:

- Banning mark-ups by hospital pharmacies
- Implementing a "two-invoice system" to limit to two the number of middlemen—and thus mark-ups--between manufacturer and pharmacy
- Accepting data generated from clinical trials run overseas for rare or life-threatening diseases, including cancer
- Adding 15 cancer drugs to the catalog of medication covered by public health insurance
- Beginning May 1, 2018, removing import tariffs on cancer drugs and reducing value-added tax from 17% to 3%.
- Reorganizing the regulatory bureaucracy and adding inspectors

The net effect has been to make a wider range of cancer drugs available but at price cuts of about 70%.

Insiders cashing out

Management seems to have low confidence in BeiGene, as they have been selling stock ever since lock-up expired. Company officers and directors have sold down a total of $322 million since listing with company co-founder, John Oyler, alone selling $188.5 mln in stock since listing.

Oyler said on the Q4 2018 earnings call:

> We believe that we're part of a once-in-a-lifetime opportunity that will positively and fundamentally change how drugs are developed globally and in the future. BeiGene was created with this opportunity in mind, and it is indelibly imprinted in our DNA. (Bloomberg Q4 2018 call transcript, page 2)

We rarely agree with Oyler, but when he says there is a great opportunity, we have to concur. Only it's an opportunity for management to cash out.

Chart 4. Officers and Directors Insider Transactions

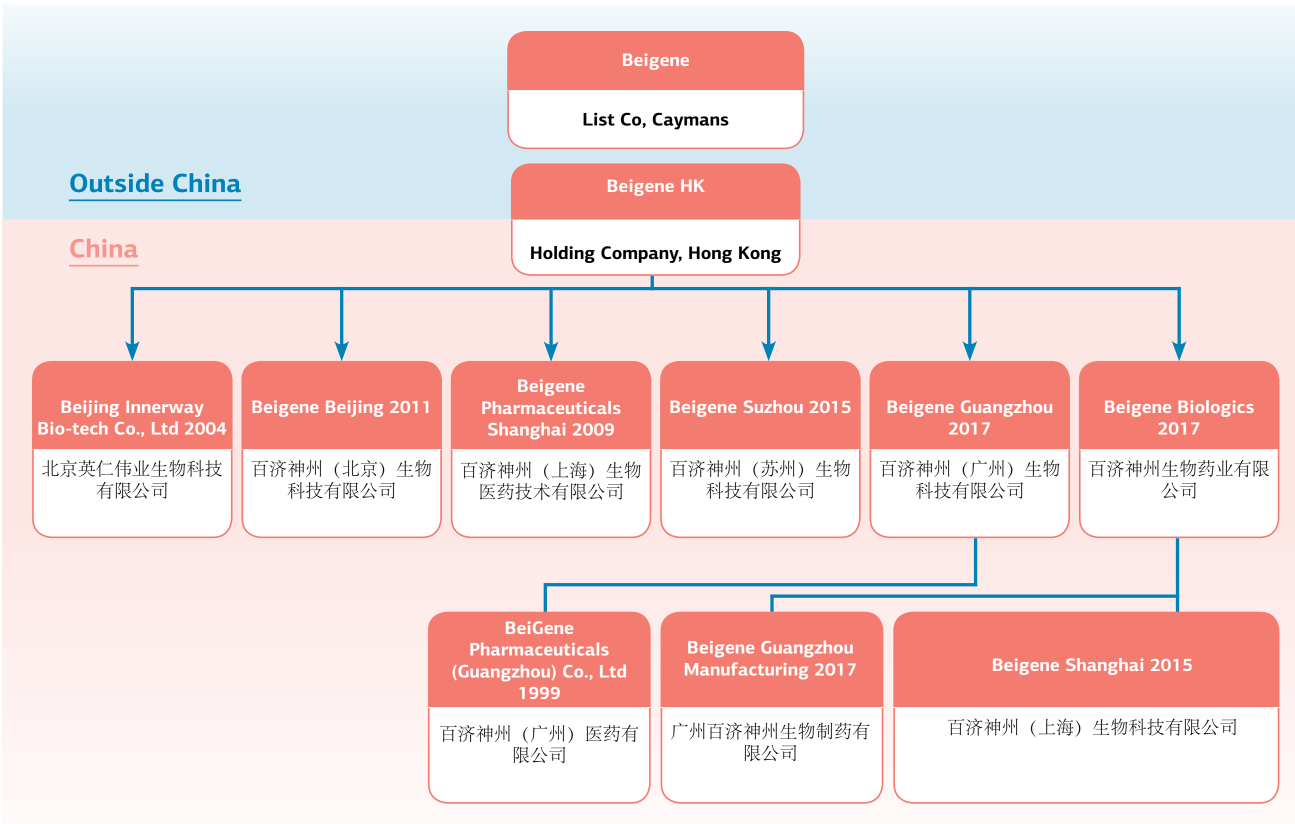
Name	Position	Value of Shares Sold (USD)
John Oyler	Chairman/CEO	$188,520,799
Li Ji	Former Board Member	$30,278,651
Wang Xiaodong	Board Member/Founder	$54,013,956
Peterson Amy C	Former CMO	$16,582,731
Glazer Donald W	Board Member	$16,450,481
Liang Howard	CFO	$10,168,618
Huang Jane	CMO	$5,308,742
Wu Xiaobin	President/GM China	741,219
Total		$322,065,196

Source: EZ-Insider

The former CMO left the company in December 2018 and cashed in more than $16 million on her way out the door before any drug she was responsible for had even left the clinical trial stage for approval. Clearly, compensation and performance are not matched.

BeiGene has not only failed to commercialize a drug in nine years, with massive capital, but the company is manifestly lying to investors. We believe this company is uninvestable.

China Operating Entities of BeiGene, with Chinese Names



Source: Company filings, J Capital Research

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