QC INVESTMENT MEMO

To:	Queen's Capital
From:	Stephen Peng
Date:	Aug 18th, 2015
Re:	**Company Name:** Jazz Pharmaceuticals (NASDAQ: JAZZ)

COMPANY PROFILE		INVESTMENT PROFILE	
Industry:	Biopharmaceuticals	Current (Proposed) Investment Size:	3-5% of portfolio
Main Asset(s):	Xyrem, Erwinaze, Difitelio	Position Cost basis:	Hold
		Current Share Price:	$186.29
Market Capitalization	$11.31 billion	Life to Date Profit (Loss):	+ $168
Debt:	$1,366.5 million	Life to Date Percentage Return:	951%
Cash:	$921.6 million		
Enterprise Value:	$11.76 billion	Base Case Valuation:	$199
		Downside Case Valuation:	$160
NTM(E) Revenue:	$1,320 million	Upside Case Valuation:	$220
NTM(E) EBITDA:	$775 million		
NTM(E) FCF:	$350 million		

COMPANY DESCRIPTION

Jazz Pharmaceuticals is an international biopharmaceutical company based in Dublin, Ireland. It's products comprise of Xyrem, an oral solution for the treatment of narcolepsy (excessive daytime sleepiness), Erwinaze, a treatment to lymphoblastic Leukemia (cancer of the white blood cells), and Defitelio, a treatment and prevention drug for severe hepatic veno-occlusive disease (vein obstruction in the liver).

VALUATION

	2015 E	2016 E	2017 E	2018 E	Terminal Value
Revenues	$1,310-$1,370 million	$1450 - 1500 million	$1660 - $1790	$1780 - $1945 million	$15,987.79
-Xyrem net sales	$950-$970 million	$1130 - $1160 million	$1250 - $1300 million	$1310 - $1370 million	$11,950.61
Growth	23%	18%	11%	5%	-3%
-Erwinaze/Erwinase net sales[1]	$200-$215 million	$200 - $210 million	$205 - $215 million	$210 - $220 million	$1,361.67
Growth	-3.6%	-1%	2%	2%	-8%
-Defitelio/defibrotide[2]	$73-$83 million	$90 - $110 million	$105 - $125 million	$110 - $130 million	$1,070.20
Growth	-24.6%	28%	15%	5%	-3%
JZP-110			$100-$150 million	$150-$225 million	$1,605.31
Growth		Trial III	Approval	50%	-3%
Adjusted gross margin %	92-93%	93%	90%	90%	80%
Adjusted SG&A expenses (Mm)	$355-$365 million	$360	$367	$375	$2,871.50
Adjusted R&D expenses (Mm)[3]	$95-$105 million	$110	$150	$110	$843.33
Adjusted interest expense (Mm)	$40 million	$40			
Tax Rate:	19.40%	19.40%	21.00%	23%	25%
Net Income (Mm)	$610.98	$694.57	$817.89	$915.88	
GAAP net income attributable to Jazz Pharmaceuticals plc per diluted share	$5.17-$5.70				
Non-GAAP adjusted net income attributable to Jazz Pharmaceuticals plc per diluted share	**$9.45-$9.75**	**$11.33**			

1. Erwinaze sales declined mainly due to increased chargebacks and rebates and an approximately $2 million negative impact from currencies
2. Defitelio/defibrotide sales suffered $4 million from Forex differentials and another $1 million from the discontinuation of a cost recovery system in Q2 of 2014
3. R&D expenses are likely to increase over the next 2 years to evaluate the safety JZP-110 and bring the drug to market as well as further expenses to the completed rolling new drug application in the U.S. for defibrotide.
4. Disregard CapEx and depreciation as these charges are negligible
5. 2016 Earnings per share are estimated to be around $11.33

Enterprise Value	$11,772.86
Cash	921.6
Debt Outstanding	1366.5
Equity Value	$12,217.76
Shares Outstanding	61.3
Share Price	$199.31

The share price calculated in the above valuation is only reflective of the company's top four products by revenue. The valuation was performed this way to ensure conservatism. In the event of severe concentration risk and a loss of exclusivity in Xyrem (read below), the company's stock has a downside valuation of $160/share. However, if patent laws on Xyrem prevail, Jazz Pharma has upside potential of $220/share, since new drug innovations such as aGVHD can add hundreds of millions of dollars in revenue to the company's top line (discounted cash flows from these drugs sum up to roughly $20 a share).

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INVESTMENT THESIS

As with many pharmaceutical companies, Jazz Pharma's medium term outlook is directly contingent on FDA approval for trial III drugs as well as the company's ongoing litigation battles with competing brands developing similar drugs. With that said, Jazz Pharma has been doing very well for itself on multiple fronts; cash flows have been consistent over the past four years, margins have increased, and inorganic growth has been steady with the prospect of further acquisitions next year. However, the biggest problem that the company faces is that the majority of its revenues can be traced to one sole product (Xyrem), and that product can very much be endangered due to price scalping. For that reason, I advise a temporary buy recommendation on the company's stock, followed by a hold after a period of 1-2 years.

Narcolepsy is a highly prevalent sleeping disorder in the United States, with an estimated 160,000 patients suffering from excessive daytime sleepiness of one form or another. Outside of the U.S., the ailment is not as common, but the number of patients is estimated to be around 100,000 to 200,000. Of the individuals who suffer from narcolepsy, approximately 70% of them also exhibit cataplexy (sudden loss of muscle). As of now, Jazz Pharmaceuticals sells the only FDA approved drug for the cure of combined Narcolepsy with Cataplexy and EDS (excessive daytime sleepiness). In 2010, the sleep disorder market was valued at $3.5 billion, but is forecasted to decline to $3.4 billion by 2017 (source: Bionity) due to competition from new entrants in areas such as insomnia. From 2002 to 2009, Insomnia therapeutics had grown immensely with the introduction of drugs such as Eszopiclone, but we can slowly see revenues in the segment erode because of competition in the form of generics and substitutes. Although Jazz Pharmaceuticals currently enjoys a near monopoly in the sale of Narcolepsy relievers, five companies have filed ANDAs for generic versions of Xyrem, and if any of those patents pass, the company would most certainly face decreased margins.

Despite potential risks in the future, Jazz Pharmaceuticals is currently generating tremendous earnings. ROE has consistently been high at 17% over the last four years. Revenue grew by an astonishing 10% quarter after quarter in the same period. The industry average forward P/E ratio is 22.6 and PEG is 1.7, yet the company is only valued at a 16.5x multiple, with a 0.99 PEG.

In its latest corporate presentation, the company mentions a number of forward-looking statements including: the anticipated completion of the NDA submission for defibrotide, planned commercial efforts and pricing reimbursement approvals, and expected patent protection.

KEY INVESTMENT RISKS

RISK I	Description of Risk I: Xyrem sales account for almost 75% of Jazz Pharma's revenue. Concentration risk and its subsequent effect on long term profitability inherently exists in companies that are unable to expand product offerings. As of now, Jazz is not making any significant innovations towards developing drugs unrelated to narcolepsy. The company's R&D spending ($27.8 million - which is low relative to peers) has been divided between an effort to decrease the effects of metabolism on Xyrem (the drug's bioavailability is 25% and requires two nightly doses) and the development of a similar oral agent, JZP-110 With JZP-110 also being a dopamine solution to narcolepsy, the company runs the risk of cannibalism, where one of their two functionally comparable drugs eats away at the market share of the other. *Mitigating Factor to Risk I: Jazz Pharmaceutical's low R&D spending is not too big of a problem. In the past 2 years, most of the company's growth has been the result of acquisitions for drug rights and this trend is likely to continue. Furthermore, the company believes that it could address Xyrem's low bioavailability issue by developing abuse deterrent technologies, beginning with a deuterated program with CNCE (targeting the molecular buildup of the drug). As for cannibalism concerns, the company can limit the risk so long as it is able to develop synergies between the two products (i.e. seek the expertise of sleep specialists)*
RISK II	Protecting and enhancing the company's intellectual property rights: Jazz Pharmaceuticals is battling an ongoing litigation against Roxane Laboratories, for infringement over their Xyrem patent (Roxane is developing a generic version). The tension between the two firms as well as other companies seeking to create a generic version of Xyrem represents Jazz's loss of market exclusivity. In 2009, the FDA authorized free market competition in the development of cataplexy drugs, and eventually also opened up competition in the excessive daytime sleepiness market. *Mitigating Factor to Risk II: Jazz Pharma controls 20 patents on Xyrem, expiring between 2019 to 2024, and is continuing to file patents. Jazz Pharma's management has reasonable expectations that the FDA will side with them.*
RISK III	Insiders unloading stock– Bruce Cozadd, who is chairman and CEO of Jazz Pharma, unloaded 2500 shares at $177.8, worth $444,000. In the previous month, he also sold 5000 shares. Signals such as this may imply that the stock is overvalued and we may expect short interest from other employees. *Mitigating Factor to Risk III: It is unlikely that employee short interest will have a significant influence on the company's share price. Employees only control ~2.5 percent of the outstanding shares. Furthermore, shares sold in the open market will likely be at a discount to institutional managers.*

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KEY INVESTMENT STRENGTHS

STRENGTH I: The company has been highly effective at increasing sales while also minimizing costs. Total revenues for the second quarter of 2015 increased 15% to $333.7 million over the same period in 2014. Sales of Xyrem increased by 30% and the company boasts 12,475 patients (repeat business is a large part of the pharmaceutical industry), up 6.2% from last year. Operating expenses in Q2 2015 fell by $36.9 million, but much of this figure can be attributed to a $32.8 million impairment charge in 2014. Cost of product sales decreased from $31 million to $22 million resulting in an increase to the company's gross margins. Net income in the quarter doubled to $88 million.

STRENGTH II: Xyrem is in phase III for the treatment of pediatric narcolepsy. Similarly, JZP-110 is in phase III for the treatment of ailments related to narcolepsy and obstructive sleep apnea. The drug has been tested with high efficacy compared to the use of placebos. The mean sleep latency on the MWT (maintenance of wakefulness tests) improved by 9.5 after 4 weeks, and 12.8 after twelve weeks of the treatment; comparatively, placebos averaged an increase in MWT of 1.4 after four weeks and 2.1 in twelve weeks. An analyst at Piper Jaffray estimates that peak sales of JZP-110 could be as much as $400-$500 million. The clinical development program can be completed as early as 2017. Lastly, the company has another drug, Leukotac, in phase III trials. The drug treats steroid-refractory acute graft-versus host disease, a disease with mortality rates of 90% and annual costs of $140,000. With 15,000 people worldwide diagnosed with the ailment, the total market potential is $2 billion.

STRENGTH III: Jazz Pharma is a consistent producer of free cash flow. It can and has been using this capital for share repurchases, with the first wave of buybacks recently authorized. As of last quarter, the company has repurchased $190 million worth of shares. Earnings per share have increased as a result of this by double digits in the last few years due to organic growth and share accretion. Furthermore, the company has $921.6 million in cash available for acquisitions. Jazz Pharma's Ireland address is also beneficial in ensuring a low corporate tax rate. Along with tax rebates from developing new drugs and clinical trials, Jazz Pharma's effective tax rate hovers just south of 20%. The company can also take advantage of currency differentials since its sales are denominated in US dollars.

STRENGTH IV: Technical analysis and investor sentiment: The sentiment across analysts covering the stock is positive, with many analysts setting a price target north of $220 and giving the company a rating of outperform. Jazz Pharma is also largely institutionally owned. 13F filings from the SEC show that, 341 hedge funds and institutional investors have shares of Jazz Pharmaceuticals Plc. In the last quarter, institutional investors increased their share count by 3% to 54 million shares. Furthermore, the number of funds that have recently added the company into their portfolio exceeds the outflows.

INDUSTRY DETAILS

The pharmaceutical industry is facing pressure in the research and development of drugs and new products. A few of the trends that are already impacting the industry or are likely to do so in the near future are… (Source: PWC)

- Instances of chronic diseases are increasing, placing pressure on the already stretched healthcare budgets
  - This puts pressure on companies to raise the price of drugs in order to remain profitable
- Healthcare policy-makers are increasingly mandating what doctors are able to prescribe
  - Being the first to take a drug to market will continue to be the optimal business model for pharmaceutical companies so long as policy-makers instate the anti-competition laws.
- The self-medication sector is expanding as clinical advances render previous
  - Countertop drugs will benefit from this trend as opposed to life cycle drugs
- Demand for medicines is growing more rapidly in the emerging economies than the industrialized economies
  - Jazz Pharmaceuticals can potentially look to target emerging economies for individuals suffering from narcolepsy
- Governments are beginning to focus on prevention as opposed to treatment
  - Government research and development funding has been focusing on finding solutions to prevent ailments, rather than develop the drugs necessary to combat the illness. Pharmaceutical company's that previously relied on acquiring patent rights for treatment drugs (e.g. Jazz Pharma) are likely to see lower tax benefits and government funding.

Biotechnology firms have greatly outperformed the S&P 500 since the financial crisis. However, there is still a reason for concern given that much of the growth in the industry is artificially spurred by the aggressive pricing of certain drugs. In 2007, the price of Xyrem was $2.04 per ml. As of Q3 2014, the price surged up to $19.40. That represents an 841% increase. The total cost for patients has gone up to $143,604 a year. The implication of this is that the company may be too reliant on increasing drug prices to bolster sales. In fact, by taking a look at the company's annual report, it is evident that from 2013 to 2014, volume of the drug only increased by 12% while prices increased by nearly one third.