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Reason for report:
INDUSTRY UPDATE

LEERINK SWANN

HEALTHCARE EQUITY RESEARCH

PHARMACEUTICALS - MAJOR

Big Pharma Operations and Outlook Largely Intact in Japan

S&P 500 Health Care Index: 375.12

Companies Highlighted:
AZN, BMY, GENZ, GSK LN, LLY, MRK, NVS, PFE, SAN FP

• **Bottom Line:** While our thoughts go out to all of the victims of the earthquake disaster in Japan, we have received several questions from investors regarding the pot'l impact of the disaster on big pharma. Feedback from the companies was comforting: overall, most company representatives appear to have been accounted for and damage to local headquarters and manufacturing facilities has been limited to date. Some short-term economic disruption from the disaster is likely but this should be muted relative to other industries. We also expect the positive contribution from the yen to Fx to be somewhat tempered with loosening monetary policy. In 2012, it is possible that the disaster will temporarily impact the MHLW's (Ministry of Health, Labor, and Welfare) pricing and/or generic fill rate recommendations. However, volume increases and new product approvals should reduce the impact. Our top large cap pharma pick remains SNY (OP) based on a compelling valuation & dividend yield and accretion from the GENZ acquisition.

• **Japan contributes 7-8% of pharmaceutical sales on average to the eight companies in our coverage universe.** BMY has the least revenue exposure to Japan (3% of '10 sales) while NVS has the most exposure (10.9% of '10 pharma sales; 8% of total sales). Applying a broad stroke to the EPS contribution from pharmaceutical sales in Japan, we estimate the average EPS exposure excluding R&D costs at ~9-10%, with GSK having the most significant estimated ex-R&D profit contribution and BMY the least. See pg. 2 for a detailed table.

• **Majority of large pharma operations in Japan over 200 miles from the most impacted area, Sendai.** Almost all of the large cap pharmas have facilities (manufacturing/R&D/sales) over 200 miles away from the area hardest hit by the quake. GSK's Imaichi facility is ~160 miles south & operations were temporarily suspended, but GSK expects to return to production in the next few days & has business continuity plans in place to ensure ~2 months of supply in the channel.

• **Widely anticipated 2012 price cuts may be somewhat deeper but unlikely to derail long-term prospects.** Several companies highlight "counter-cyclical" approvals and patent expirations in Japan (e.g., GSK's Advair, LLY's Zyprexa, MRK's Singulair, PFE's Lyrica, NVS's Diovan & SNY's Plavix) relative to U.S. and EU patent expirations. Beyond Fx, we believe economic stimulus from the Japanese gov't could weigh on the MHLW's decisions (e.g., in 2010, biennial price reductions were 6.4-6.5%) resulting in 2012 price cuts at or above the 6-7% cuts of 2006 and 2010. In addition, the gov't could promote increased incentives for generic fill rates. Currently, the generic fill rate in Japan is ~20% & targeted to achieve 30% in 2012.

Please refer to Pages 6 - 8 for Analyst Certification and important disclosures. Price charts and disclosures specific to covered companies and statements of valuation and risk are available https://leerink.bluematrix.com/bluematrix/Disclosure2 or by contacting Leerink Swann LLC Publishing Department, One Federal Street, 37th Floor, Boston, MA 02110. A description of the benchmarks is available by contacting the Leerink Swann Publishing Department.

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U.S. & EU Major Pharmaceuticals Japanese Revenue & EPS Exposure

	AZN	BMY	GSK	LLY	MRK	NVS Pharma	PFE	SNY
2010 Total Revenue	$33,269	$19,484	£28,392	$23,076	$45,987	$30,558	$67,791	€ 30,384
% Contribution from Japan	7.9%	3.0%	7.0%	7.0%	8.2%	10.9%	7.5%	7.3%
2010 Japan Revenue	**$2,617**	**$585**	**£2,000**	**$1,617**	**$3,768**	**$3,344**	**$5,084**	**€ 2,225**
Operating Margin	55.8%	55.8%	55.8%	55.8%	55.8%	55.8%	55.8%	55.8%
Operating Profit	$1,460	$326	£1,116	$902	$2,103	$1,866	$2,837	€ 1,242
Japanese Corporate Tax Rate	41.0%	41.0%	41.0%	41.0%	41.0%	41.0%	41.0%	41.0%
Tax Expense	$599	$134	£458	$370	$862	$765	$1,163	€ 509
2010 Net Profit from Japan	**$862**	**$192**	**£658**	**$532**	**$1,241**	**$1,101**	**$1,674**	**€ 733**
% of '11E Net Income	**9.3%**	**5.2%**	**11.4%**	**11.3%**	**11.0%**	**8.6%**	**9.7%**	**8.8%**
2010 EPS Contribution from Japan	**$0.63**	**$0.11**	**13p**	**$0.48**	**$0.40**	**$0.46**	**$0.21**	**€ 0.56**
2011E Shares Outstanding	1,363	1,696	5,020	1,101	3,090	2,394	7,905	1,305

Note1: Operating margin is ex-R&D and based on GSK disclosures

Note 2: Revenue, profit & tax expense in MM's

Note 3: NVS books approx. $1B in Diovan sales in Japan

Source: Company 10-K's and Leerink Swann estimates

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Major Pharmaceuticals Location of Japanese Facilities & Proximity to Sendai

Company	Facility	Location in Japan	Distance from Sendai	Comments
AZN	None reported	NM	NM	No facilities
BMY	Aichi plant	Close to Nagoya	~450 miles	Operations unaffected thus far - the facility manufactures and packages oral and sterile dosage forms of antibiotic products, oncological products, antiallergic products, and antiasthmatic product. The facility also packages imported products: hormone preparations, epidermis products, oncological products, antibiotic products, and virucide. Products are produced and packaged only for the domestic market.
BMY	Tokyo office	Tokyo	~230 miles	Operations unaffected thus far - 400 of ~1,000 employees in Japan work at this site, including about 250 in R&D in Medical Affairs, Pharmacovigilance, Regulatory, Clinical Strategies, Clinical Operations, Data Management and Early Development.
GSK	Tokyo office	Tokyo	~230 miles	Operations largely unaffected thus far - Development, market & production, 3.6% of employees
GSK	Imaichi facility	Close to Nikko	~160 miles	Operations at the Imaichi site have been temporarily suspended but GSK expects to return to production in the next few days; GSK has business continuity plans in place to help ensure the ongoing supplies of medicines and has ~2 months of stock within the supply chain.
GSK	Regional office	Tohoku region	~214 miles	Some damage sustained in earthquake/tsunami; located northeast of Sendai
LLY	Sales office	Kobe area	~550 miles	No issues from earthquake/tsunami thus far
LLY	Manufacturing facility	Kobe area	~550 miles	Operations unaffected so far - Primarily QC for imported product with some very limited fill/finish activities
LLY	Research site	Kobe area	~550 miles	No issues from earthquake/tsunami thus far
MRK	Regional HQ	Tokyo Osaka	~230 miles ~530 miles	No impact from earthquake/tsunami on operations thus far
MRK	Manufacturing facility	Shiga Menuma	~500 miles ~200 miles	No impact from earthquake/tsunami on operations thus far
NVS	Manufacturing facility	Sasayama	~520 miles	No significant impact to business - 26,000 sq ft facility that manufactures tablets, capsules, dry syrups, suppositories, creams, powders
PFE	Manufacturing facility	Nagoya	~450 miles	No issues from earthquake/tsunami thus far
SNY	Research site	Tokyo	~230 miles	No significant impact from earthquake/tsunami - 3.1% of employees located in Japan
SNY	Manufacturing facility	Kawagoe	~220 miles	No significant impact from earthquake/tsunami - Primarily produces Plavix; normal operations resuming on Thursday, ~2 months of stock within the hospital trade

Source: Company websites, 10-Ks, Google

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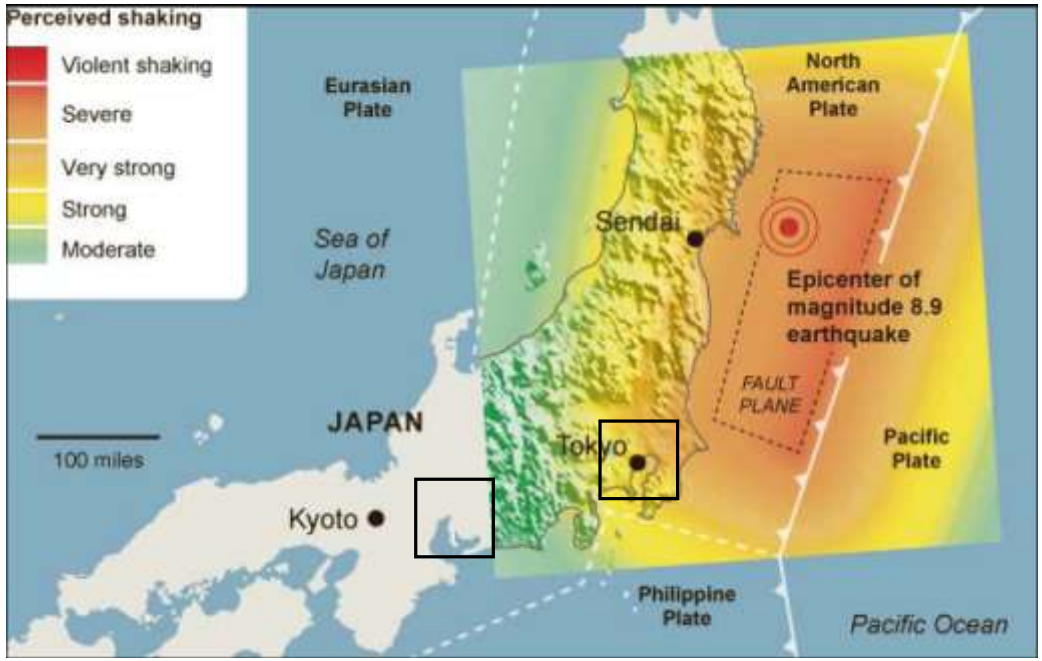
Major Pharmaceuticals Product Growth in Japan

Company	Comments
AZN	Symbicort launch was only mention of high growth opportunity
BMY	Baraclude & Sprycel are growth brands in Japan
GSK	GSK Japan delivered another very strong year, with sales up 14% to £1,959 million. Underlying sales growth, excluding pandemic products, Valtrex and Avandia, was 6%. This growth was driven primarily by Adoair (Seretide/Advair), up 17%, and contributions from newly launched products such as Cervarix, Avolve/Avodart and Xyzal, partially offset by a Paxil sales decline of 11%, and declines in the mature respiratory products Flixotide/Flovent down 18%, and Serevent, down 26%, which in part reflected biennial price reductions. The vaccine franchise has become an important pillar for the company in Japan. Arepanrix became one of only two flu vaccines ever allowed for import into Japan when it received regulatory approval in January 2010. Cervarix has had a strong launch in Japan with 2010 sales of £57 million. The product was also recognized as one of the three vaccines that would receive public funding from the Japanese government from 2011 onwards. Operating profit for Japan increased by 20% to £1.2 billion, reflecting higher Cervarix and pandemic vaccine sales and the favorable impact of product mix on cost of goods, partially offset by lower sales of Relenza.
LLY	Zyprexa demand in Japan has been increasing (~$400M of sales in '10, second-largest market for Zyprexa), Cymbalta, Alimta, Humalog demand growing strongly as well.
MRK	Singulair growth in Japan has been strong. Hyzaar (marketed as Preminent) recorded strong performance as well. Emend growth also being supported by a recent launch in Japan.
NVS	Diovan $1.2B in sales; Lucentis & Tasigna mentioned as key markets
PFE	Japan is listed as PFE's second largest national market. Brands highlighted by PFE as growth brands in Japan are Lyrica, Champix, and Celebrex.
SNY	Japan is leading market for Amaryl; Plavix '10 growth (+37.1%); Lantus (32.3%)

Source: Company 2010 10-Ks

Map of Japan – Location of Sendai Relative to Major Pharma Facilities



The black boxes surround areas in Japan where a majority of large pharma manufacturing, R&D & sales sites are located.

Source: New York Times, 3/14/11, Google Maps

Disclosures Appendix

Analyst Certification

I, Seamus Fernandez, certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

Valuation:

SNY trades at ~7.8x our '11 EPS estimate of €6.39. This represents a >50% discount to the S&P 500 on 2010 EPS and a >25% discount to Leerink Swann's large-cap pharmaceutical coverage universe on 2010 EPS. SNY's relative P/E discount to the S&P 500 and to Leerink Swann's pharmaceutical coverage universe on 2010 EPS fully reflects a flat to declining EPS growth profile, in our view. Over the next 12-18 months, we expect SNY shares to trade at ~9.5x our '11 EPS estimate of €6.39 or €60-€61/share.

Risks to Valuation:

Risks to SNY include possible near-term risk of '11 and '12 sales with earlier-than expected introduction of Eloxatin generics and disappointing global product launches from Multaq. Our DCF and probability-weighted DCF analyses suggest attractive upside from current levels to €60-61/share; however, greater-than-anticipated generic substitution of Lovenox in the U.S. or disappointing launch of Multaq represents downside risks.

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Distribution of Ratings/Investment Banking Services (IB) as of 12/31/10				
			IB Serv./Past 12 Mos.	
Rating	Count	Percent	Count	Percent
BUY [OP]	84	53.2	16	19.0
HOLD [MP]	72	45.6	2	2.8
SELL [UP]	2	1.3	0	0.0

Explanation of Ratings

Outperform (Buy): We expect this stock to outperform its benchmark over the next 12 months.

Market Perform (Hold/Neutral): We expect this stock to perform in line with its benchmark over the next 12 months.

Underperform (Sell): We expect this stock to underperform its benchmark over the next 12 months.

The degree of outperformance or underperformance required to warrant an Outperform or an Underperform rating should be commensurate with the risk profile of the company

For the purposes of these definitions the relevant benchmark will be the S&P 600® Health Care Index for issuers with a market capitalization of less than $2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over $2 billion.

From October 1, 2006 through January 8, 2009, the relevant bencharks for the above definitions were the Russell 2000® Health Care Index for issuers with a market capitalization of less than $2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over $2 billion.

Definitions of Leerink Swann Ratings prior to October 1, 2006 are shown below:

Outperform (Buy): We expect this stock to outperform its benchmark by more than 10 percentage points over the next 12 months.

Market Perform (Hold/Neutral): We expect this stock to perform within a range of plus or minus 10 percentage points of its benchmark over the next 12 months.

Underperform (Sell): We expect this stock to underperform its benchmark by more than 10 percentage points over the next 12 months.

For the purposes of these definitions, the relevant benchmark were the Russell 2000® Health Care Index for issuers with a market capitalization of less than $2 billion and the S&P 500® Index for issuers with a market capitalization over $2 billion.

Important Disclosures

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