Completed 06 Sep 2016 01:30 PM HKT
Disseminated 07 Sep 2016 09:27 PM HKT

J.P.Morgan

Asia Pacific Equity Research
07 September 2016

Bloomage Biotechnology Corporation Ltd

Fully Integrated Cosmetology Provider, Initiate with OW

Initiation
Overweight

CHINA CONNECT

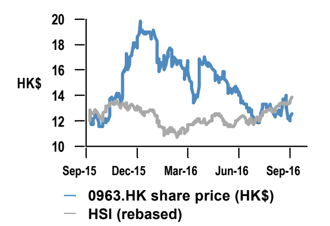
0963.HK, 963 HK
Price: HK$12.64
Price Target: HK$20.00

Hong Kong
Healthcare
Isabella Y. Zhao, CFA AC
(852) 2800-8534
isabella.zhao@jpmorgan.com
Joanne Cheung
(852) 2800-8596
joanne.cy.cheung@jpmorgan.com
J.P. Morgan Securities (Asia Pacific) Limited

We initiate coverage of Bloomage with an OW rating and Dec-17 PT of HK$20.00. Bloomage is China's largest Hyaluronic Acid (HA) raw material and end product provider with fully integrated value chain coverage; we project 29%/21% top/bottomline CAGR in 2016-2018E supported by its continuous new products launch and channel expansion.

- **First and only integrated cosmetology provider with distinct advantages:** Bloomage is the first and only aesthetic ecosystem provider with differentiated products & service along the full value chain: 1) it is the largest HA raw material provider with dominant market share; 2) it has a rapidly developing HA end product business; 3) robust growth in Bio-Mesotherapy, aesthetic devices and skin care products & services.
- **Accelerated growth ahead with multiple drivers:** Bloomage continues to enrich its end product portfolio to target different market segments and will launch: 1**)** 2nd generation HA dermal filler (Dermallure) in 2H16 for middle-end customers; 2) 3rd generation HA dermal filler with the European brand –Vivacy lab – targeted at high-end customers in 2017; 2) introduce 3rd generation of Botox with JV partner Korean Medytox in 2018 & Medytox HA dermal filler in 2020. All of these imply long-term earnings upside potential.
- **Attractive valuation:** Trading at 14x 2017 P/E, vs. historical range of 13-33x, and a 40% discount to its peers, the stock has fallen 31% YTD vs +1% on the MSCI Healthcare Index as investors priced in expectations of increasing competition and declining margins. We believe Bloomage will continue to expand market share with stable non-GAAP net margin as gross margin contraction is offset by better cost control. In our view the shares deserve a re-rating given the company's full value chain coverage & faster earnings growth with new products launches. Our PT implies 65% upside potential, 21x 2017 P/E.
- **Risks:** 1) stricter government regulations; 2) rising competition from rivals; 3) declining gross margin on higher than expected price pressure; 4) potential execution risk on expansion into new business/regions.

Price Performance



	YTD	1m	3m	12m
Abs	-31.7%	0.2%	-5.7%	5.2%
Rel	-42.6%	-6.6%	-18.2%	-9.7%

Bloomage Biotechnology Corporation Ltd (Reuters: 0963.HK, Bloomberg: 963 HK)

Rmb in mn, year-end Dec	FY14A	FY15A	FY16E	FY17E	FY18E
Revenue (Rmb mn)	481	651	835	1,029	1,269
Net Profit (Rmb mn)	162	190	195	245	314
Adj EPS (Rmb)	0.49	0.63	0.66	0.82	1.04
DPS (Rmb)	0.01	0.02	0.02	0.02	0.03
Revenue growth (%)	28.3%	35.2%	28.3%	23.2%	23.4%
Adj EPS growth	71.7%	29.3%	4.9%	24.8%	25.9%
ROCE	30.7%	16.8%	12.3%	13.4%	14.7%
ROE	24.6%	22.3%	17.9%	18.7%	19.5%
Adj P/E	22.4	17.3	16.5	13.2	10.5
P/BV (x)	4.8	3.0	2.6	2.1	1.8
EV/EBITDA (x)	15.7	10.1	7.4	5.6	4.4
Dividend Yield	0.1%	0.2%	0.2%	0.2%	0.3%

Source: Company data, Bloomberg, J.P. Morgan estimates.

Company Data	
Shares O/S (mn)	344
Market Cap (Rmb mn)	3,750
Market Cap ($ mn)	561
Price (HK$)	12.64
Date Of Price	05 Sep 16
Free Float(%)	-
3M - Avg daily vol (mn)	0.70
3M - Avg daily val (HK$ mn)	8.83
3M - Avg daily val ($ mn)	1.1
HSI	23,266.70
Exchange Rate	7.76
Price Target End Date	31-Dec-17

See page 37 for analyst certification and important disclosures, including non-US analyst disclosures.

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Key catalysts for the stock price:	Upside risks to our view:	Downside risks to our view:
• Largest HA raw material provider with dominating market share • Rapidly developing HA end product business • Robust growth in Bio-Mesotherapy, aesthetic device and skin care products & services • Strong Cash flow for future M&A opportunities	• Higher than expected growth of Licensed HA Dermal filler market in China • Early approval of Neuronox by CFDA • Early launch of Vivacy's products in China • More than expected synergies realized in the strategic investments	• Strict government regulations • Declining gross margin on higher than expected price pressure • Potential execution risk on expansion into new business/regions

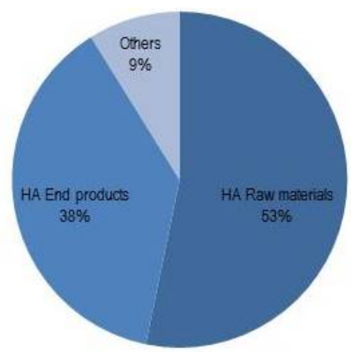
Key financial metrics	FY15	FY16E	FY17E	FY18E
Revenues (LC mn)	650.9	835.0	1,028.7	1,269.0
Revenue growth (%)	35.2%	28.3%	23.2%	23.4%
EBITDA (LC mn)	296.2	383.3	470.4	539.3
EBITDA margin (%)	45.5%	45.9%	45.7%	42.5%
Tax rate (%)	20.0%	20.0%	20.0%	20.0%
Net profit (LC mn)	216.4	233.5	291.5	367.0
EPS (LC)	0.628	0.659	0.823	1.036
EPS growth (%)	29.3%	4.9%	24.8%	25.9%
DPS (LC)	0.02	0.02	0.03	0.03
BVPS (LC)	3.46	4.01	4.80	5.81
Operating cash flow (LC mn)	185.2	239.9	372.1	352.9
Free cash flow (LC mn)	(81.8)	139.7	269.3	226.0
Interest cover (x)	0.0	0.0	0.0	0.0
Net margin (%)	33%	28%	28%	29%
Sales/assets (X)	0.30	0.34	0.37	0.40
Debt/equity (%)	84.5%	72.0%	63.2%	53.6%
Net debt/equity (%)	-14.9%	-38.9%	-49.8%	-51.7%
ROE (%)	22.3%	17.9%	18.7%	19.5%
Key model assumptions	**FY16E**	**FY17E**	**FY18E**	**FY19E**
HA end products price cut	5%	5%	5%	5%
GM	67.0%	66.0%	65.5%	64.0%
NM	28.0%	28.3%	28.9%	27.9%

Source: Company and J.P. Morgan estimates.

Valuation and price target basis

Our Dec-17 price target of HK$20.0 is based on DCF analysis of our updated financial models. We have conservatively applied a terminal growth rate of 4%

2016E Business Segments



Source: Bloomberg, Company and J.P. Morgan estimates.

Sensitivity analysis	EBITDA		EPS	
Sensitivity to	2016E	2017E	2016E	2017E
10% price cut	-3.1%	-3.1%	-3.0%	-3.1%
50bp increase in selling cost ratio	-1.0%	-1.0%	-1.0%	-1.0%
Effective tax rate up by 100bp	0.0%	-1.1%	0.0%	-1.1%
0.5% increase in GM	1.6%	1.5%	1.5%	1.5%

Source: J.P. Morgan estimates.

JPMe vs. consensus, change in estimates

EPS (LC)	2016E	2017E
JPMe old	NA	NA
JPMe new	0.66	0.82
% chg	*Na*	*NA*
Consensus	0.70	0.85

Source: Bloomberg, J.P. Morgan estimates.

Comparative metrics

	CMP	Mkt Cap	P/E (x)		EV/EBITDA (x)		P/BV (x)		YTD
	LC	HKD Mn	FY16E	FY17E	FY16E	FY17E	FY16E	FY17E	Stock perf.
BLOOMAGE BIOTECHNOLOGY	12.28	4,991	17.6	14.3	11.6	10.0	2.7	2.3	(35.9)
SHANGHAI HAOHA-H	37.35	5,978	16.8	14.1	9.1	7.4	1.76	1.59	(25.8)
MEDY-TOX INC	3,146.49	17,823	43.0	33.4	32.0	25.2	15.1	10.8	(11.7)
L'OREAL	1,510.00	847,630	27.1	25.2	16.3	15.1	4.0	3.7	14.6
UNILEVER PLC-ADR	377.13	1,131,047	23.3	21.6	15.3	14.2	7.2	6.5	15.4
PROCTER & GAMBLE	684.00	1,825,954	22.7	21.0	14.7	14.0	4.1	4.1	13.8
ESTEE LAUDER	695.01	254,188	25.8	23.3	14.6	13.4	8.4	7.9	2.8
SHISEIDO CO LTD	196.38	78,547	32.7	32.6	13.2	11.1	2.5	2.4	4.5

Source: Bloomberg, J.P. Morgan estimates, Price as September 2, 2016

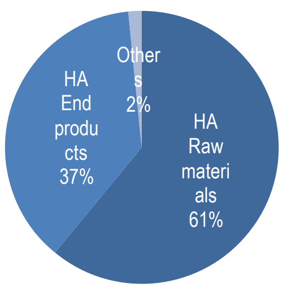
Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Table of Contents

Investment Summary

Bloomage Biotechnology Corporation Limited is a leading player in the field of biomedicine and cosmetics in China, focusing on the production, manufacture and distribution of hyaluronic acid (HA) raw materials and end products. It is the leading manufacturer of HA raw material under pharmaceutical, cosmetic and food grade, in the world. It started R&D and sales of HA end product in 2012 to transform itself from a sole HA raw material provider into a medical aesthetics solution provider.

Revenue breakdown by business segment (2015)



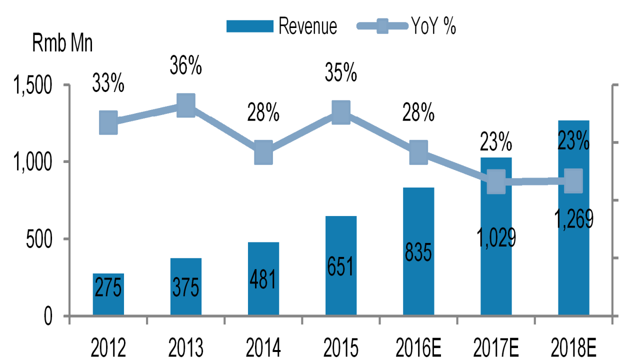
Source: Company

Bloomage Biotechnology is the world's largest producer of HA raw materials. The global HA raw material market is set to grow by a CAGR of 8% during 2014-18, according to Frost and Sullivan with most of the growth in pharmaceutical and cosmetic grade HA. Bloomage holds the largest market share with steady sales growth and average gross margins of 60-70% respectively in 2012-2015. In our view, Bloomage will continue to maintain its market leading position in the HA raw material market, owing to its unique fermentation technology, production capabilities, product variety and large customer base.

More importantly, China's aesthetic medical service industry is set to experience substantial growth driven by its ageing population, increased disposable income and increased attention towards beauty, among other factors. It's also one of the attractive industries with recurring revenue and high ASPs without government price control as is the case for drugs.

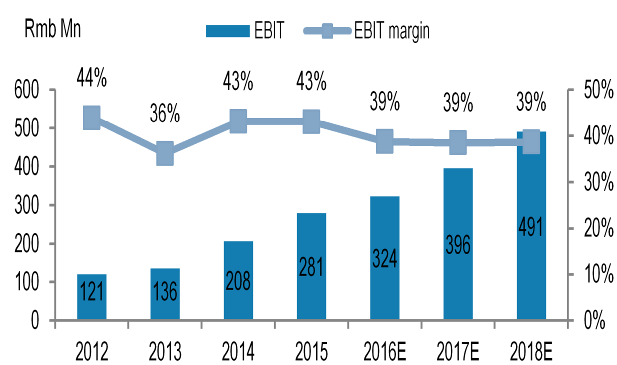
Bloomage entered the HA end products market in 2012 with the launch of BioHyalux, a HA dermal filler (Hyalux acid injectable to smooth the faces). BioHyalux has quickly become the No. 1 domestic and No. 2 overall product in terms of sales. Furthermore, Bloomage has also continued to expand along the value chain with more products and service offering such as: 1) it acquired major stake in Vivacy, a French premium HA filler producer, which provides the company exclusive rights to distribute Vivacy's products in APAC and develop higher price Vivacy dermal filler in China. 2) It entered into a joint venture with Korean MedyTox, world's leading BTX manufacturer, to offer its products in China. 3) Offering mesotherapy, aesthetic device and skin care products & services. Bloomage aims to become the first and only medical aesthetic solution provider.

Figure 1: Bloomage – Revenue and growth rate 2012-2018E



Source: J.P. Morgan estimates for FY16E to FY18E, Company data for FY12-FY15

Figure 2: Bloomage – EBIT & EBIT Margin Trend 2012-2018E



Source: J.P. Morgan estimates for FY16E to FY18E, Company data for FY12-FY15

1H16 Results Takeaways

- **Sales grew 34% y/y; gross margin declined due to new trading business segment.** Bloomage recorded total sales of Rmb418mn in 1H16, representing an increase of 34% yoy. The increase is driven by 33% increase in HA end products business and 11% increase in HA raw material business. The company has established a new business line focusing on distribution & trading of cosmetic products and medical devices, mostly from exclusive distribution of Viviacy HA filler products in Asian countries. Given that the segment is still in initial stage, its gross margin was 22%, which pulled down the overall gross margin to 68% in 1H16 from 73% in 1H15.

- **Vivacy performed well in Korea, Japan and Thailand.** The new segment will focus on expanding the distribution network of Vivacy's products overseas, given that it has good performance in Korea, Japan and Thailand with market share of c67%. Mgmt. guided that the segment will see 3ppt increase in gross margin in 2017 as Vivacy's product will be launched in China during 1Q17. Afterwards, there will be no entry of similar products for next 1 to 2 years, therefore, the margins should be stable.

- **Focusing on the US and India for expansion.** Mgmt believes that Bloomage's HA products can fend off its competitors even in the global arena with its sticky customer base and strong cost advantage. Bloomage's HA raw materials quality has succeeded to retain its key customers e.g. Bausch Lomb since 2010 and it is the only Chinese player in the market of medical grade HA. Given its cost advantage in labor and utilities, the company is able to expand its business globally while continue to enjoy high gross margin of c90% from its medical grade HA business. Mgmt is currently exploring pharmaceutical companies in the US and India for M&A opportunities, according to the company.

- **Dermallure (Bloomage's 2nd generation of HA dermal filler) has received CFDA approval.** Dermallure will be another HA filler product of Bloomage after BioHyalux with improved formula and anesthetic agent. It will reduce pain of injections and is more easy to use by doctors. The product obtained CFDA approval in May 16 and is expected to launch in September 2016 the earliest. Together with BioHyalux, the new product will allow Bloomage to cover various consumer groups in the HA filler market and, therefore, further leverage on the boom of HA filler usage in China driven by increasing no. of licenses being granted to aesthetic clinics.

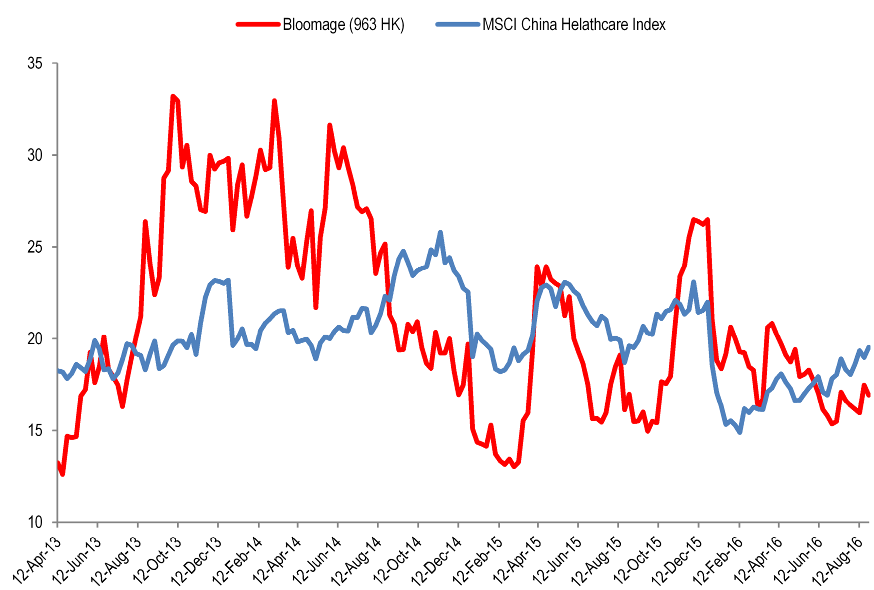
Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Why own the stock now? Valuation analysis and view

The stock has fallen by 31% vs. MSCI healthcare index down by 0.4% YTD as the market has concerns about rising competition from new HA products approval in China & declining margins.

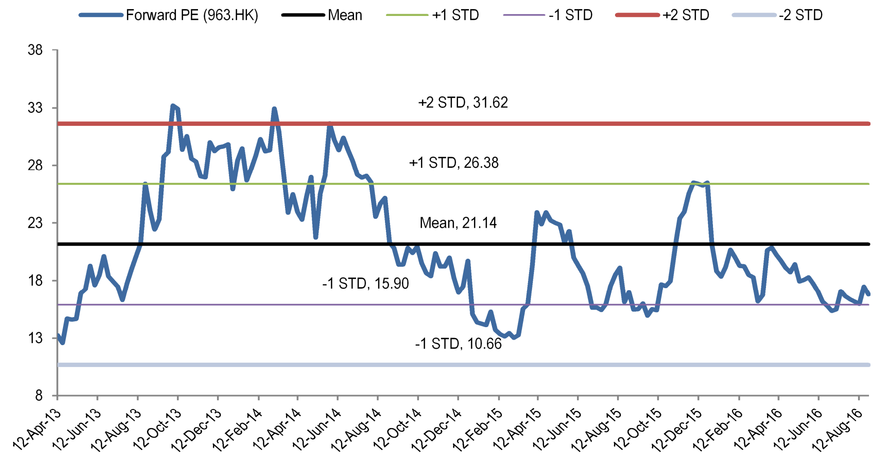
However, we think the market has overacted. We conservatively assume gross margin declined to 67.0%, 66.0% and 65.5% in 2016-2018, below street consensus of 70.5% and 67.2% and 67.0% in 2016 - 2018, respectively. We believe the new product launches will help offset the margin pressure & support long-term earnings growth. We project a healthy 22% bottom line CAGR in 2016-2018. Trading at 13x 2017e EPS vs. its historical range of 13x-33x, we think Bloomage is undervalued as a full value chain and aesthetic ecosystem solution provider.

Figure 3: Bloomage vs. MSCI Index Forward P/E Multiple- rerating is possible



Source: Bloomberg, J.P. Morgan estimates

Figure 4: Bloomage is trading at 13x Forward P/E vs. historical range of 13x-33x



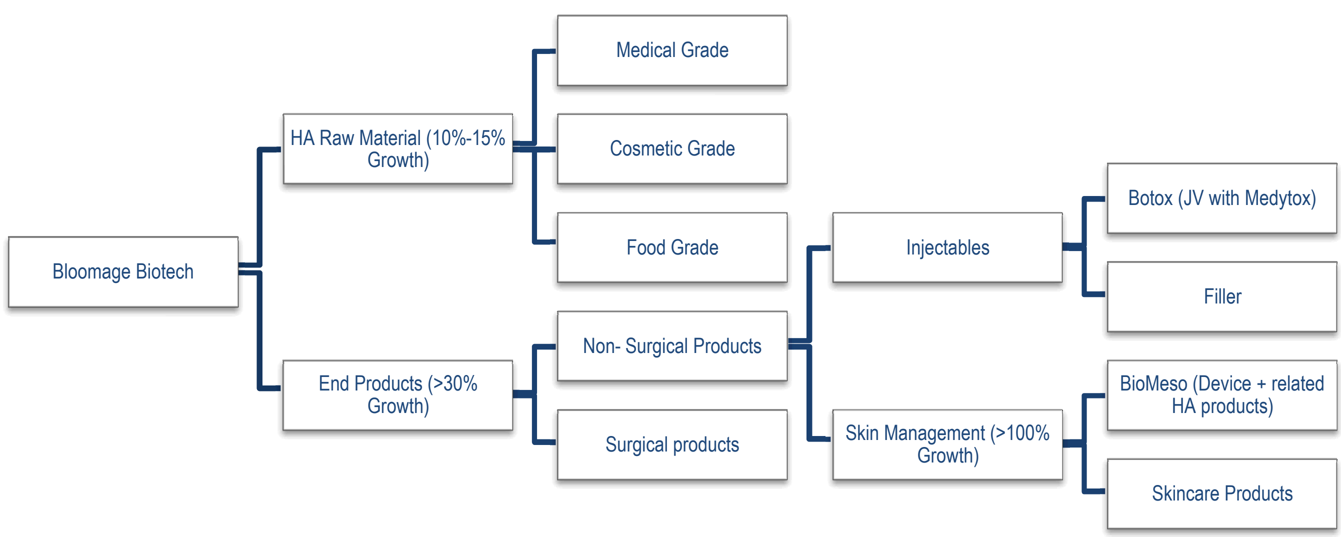
Source: Bloomberg, J.P. Morgan estimates

Investment Positives

First and only fully integrated medical aesthetic solution provider with full value chain coverage

Since 2014, Bloomage has been systematically transformed into China's first solution provider with business coverage along the full aesthetic ecosystem value chain: products + services + solutions +platform. Not only the HA raw materials and HA end products, Bloomage now offers a full range products & services to cosmetic customers across the skin care consumption cycle, thus largely increasing the synergies & consumer stickiness.

Figure 5: Product portfolio: Full value-chain coverage, with multiple growth drivers



Source: Company data

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Table 1: Key growth drivers for Bloomage in the future

	Key Growth drivers
2013-14	BioHyalux
2015-16	BioHyalux + BioMeso (Device + related HA products)
2017-18	Vivacy filler + BioHyalux (New) + HA Skincare products
2019-20	Medytox's Toxin + Medytox Filler

Source: Company data

Largest HA raw material provider with distinct competitive edges

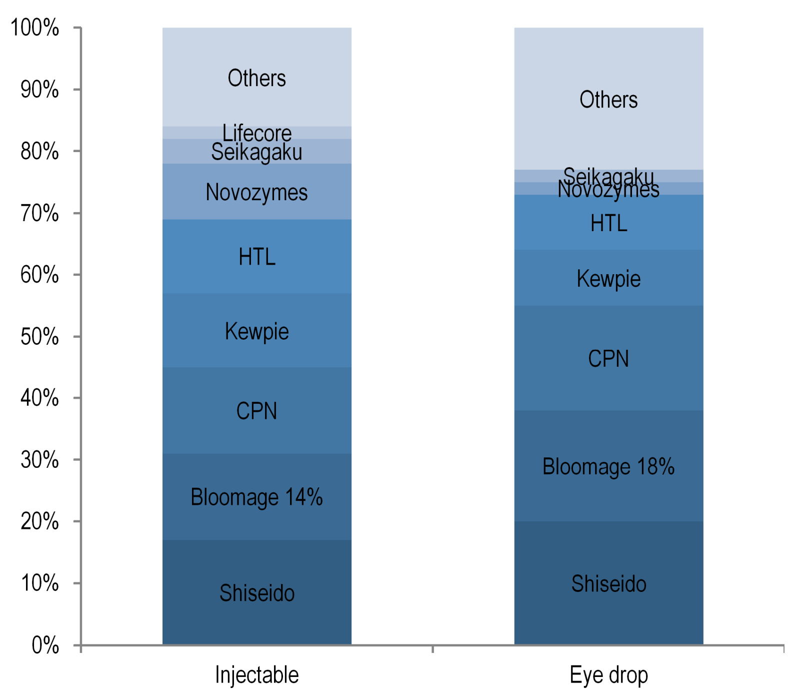
Bloomage is the largest HA raw material manufacturer in China. According to the company, Bloomage has a 65% share in China's HA raw material market, 90% share in China's medical grade HA raw material market, and more than 50% share of China's HA export market, in terms of sales in 2015. Bloomage has built clear competitive edges in product technology, production capacity, and customer base, which create strong entry barriers, in our view.

Globally competitive with strong cost advantage and outstanding quality

Global medical grade HA raw materials market is dominated by large overseas brands, e.g. Shiseido, CPN and Kewpie. Notably, Bloomage stood out as the second largest player in the market in terms of volume in 2014. It is expected that Bloomage will maintain its market position because of its strong customer franchise and cost advantage. Bloomage has a group of enduring large customers like Bausch Lomb who focus more on quality and supply chain management. So they tend to have higher cost for switching from Bloomage. Accordingly, none of the key customers has switched to a competitor since 2010, which creates sticky revenue streams for Bloomage. In China, Bloomage is able to maintain a 30-35% price premium vs. domestic suppliers with its outstanding product quality.

Globally, although Bloomage's products are 15-20% cheaper, its product's quality is comparable to those by overseas brands. Bloomage has been enjoying high gross margin of >90% due to its cost advantage on labor and utilities and, most importantly, its HA bio-fermentation technology. Bio-fermentation has emerged as the new technique for HA production with lower production cost and is more environmental friendly compared to traditional approach of HA extracted from rooster combs. Given that Bloomage is the only approved producer of fermentation-based HA raw material in China, it is capable of maintaining its price level with its monopolistic position in the market. According to the company, its fermentation technology has been improving with increasing fermentation yield in the process of HA production, which will help to maintain its position as the largest local supplier.

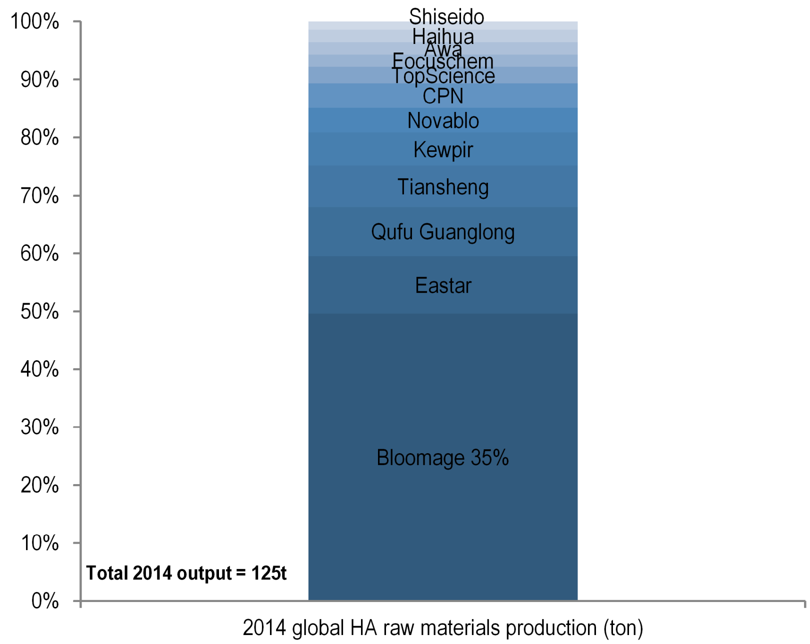
Figure 6: Global HA raw material producer's market share, injectable and eye drops, 2014



Source: Company report, J.P. Morgan.

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Figure 7: Global HA raw material producers' market share, 2014



Source: Company report, J.P. Morgan.

Table 2: Bloomage's HA raw material products' competitive advantages

	Pharmaceutical grade	Cosmetics grade	Food grade
Certificate	• DMF(From FDA& Health Canada & FGU in Russia) • CEP (from EDQMin Europe) • KDMF(from MFDS in Korea) • MF(from PMD Ain Japan) • GMP(from CFDA in China) • FDA (US)	• Any specification from official institutions • Ecocert certifications	na
Production capacity	50 tones	150 tones	200 tones
Quality	• Molecular weight (customized) • HA purity • Protein impurity • Nucleic acid • Endotoxin • Bacteria counts	• Molecular weight (customized) • HA purity • Protein impurity • Heavy metal • Bacteria counts • HA Industry Standard in China	• Purity (HA assay): >91.0% • Impurity (protein assay): no requirement • Bacterial endotoxins: no requirement • Molecular weight: no requirement • Bacteria counts: <100CFU/g
Customer base	A group of enduring large and reputable customers with high share of wallet	Other large customers served	na
Market share	Domestic: 15-20%; Intl: 90-95%	Domestic: 30-35%; Intl: 60-70%	Intl: 55-60%
Competitors	Domestic: None; Intl.: Japan Shiseido, Czech Republic CPN, France HTL.	Domestic: DC; Intl.: Japan Kewpie, Czech Republic CPN.	Domestic: FF, IO
Unit price (Rmb.kg)	RMB 30,000-200,000	RMB 5,000-15,000	RMB 1,000-5,000
Gross margin	85%	>70%	20-50%
Sales of % total	20-30%	60-70%	10%
Sales growth forecast	10-15%	15-20%	10%

Source: Company reports, J.P. Morgan estimates.

Figure 8: Global cosmetics HA raw material products market overview

	Premium	High-end	Low-end
Product specs	Molecular weight >2M Daltons or <10K Daltons	- Molecular weight ~0.1-2M Daltons - High quality required (e.g. protein assay)	- Molecular weight ~0.1-2M Daltons - Low quality requirement
% of the revenue	~25%, expected to remain similar	~58%, expected to increase in the future	~17%, expected to decline in the future
Applications	For high functional requirement products (e.g. high permeability requirement)	Skincare, color cosmetics	Skincare, haircare & shower gel
In China:			
Major customer	Large MNC and local companies, e.g. P&G China, Jahwa	Large MNC and Local companies, e.g. Jahwa, Shiseido China	OEMs
Major supplier	Bloomage	Bloomage, local players	Local smaller players
In other country:			
Major customer	Large MNC and local companies	- Large MNC companies,(P&G US)	na
Major supplier	Kewpie, Shiseido	Bloomage, Kewpie	na

Source: Company report, J.P. Morgan.

Fast growing end products business with multiple product combination strategy

Bloomage began to enter the higher profitability cosmetic end products market when it received CFDA approval of its HA dermal filler in 2012. Since then**,** Bloomage has continued to introduce new products & services in the end product business. Bloomage has maintained a 30%-35% price premium verses local suppliers given its: 1) strong customer base which values its stable product quality, and 2) strategic focus on more profitable high to premium end products.

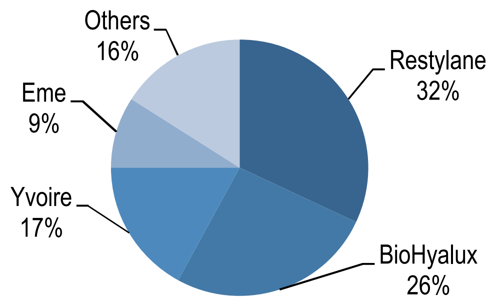
Bloomage's R&D team comprised of c80 people and is expected to continue developing more products with high production yield i.e. HA+ material. It will further differentiate Bloomage's products. Currently, its products include:

1. No.1 domestic **HA dermal filler in four years:** In 2012, Bloomage launched China's first domestically produced HA dermal filler, BioHyalux, becoming the first Chinese company to receive China Food and Drug Administration (CFDA) approval for its pure HA dermal fillers. Clinical studies conducted during 2012 show that BioHyalux can improve nasolabial fold wrinkles, with results lasting more than 15 months, with its safety and cosmetic augmentation effect proven to be on par with that of Restylane, the original HA dermal filler brand.

Since its launch in July 2012, BioHyalux has quickly gained market share from competitors, from 10% in 2013 to around 30% at the end of 2015, in terms of sales, penetrating the HA dermal filler market by offering value for money choices. It is now widely sold in c4000 clinics/hospitals in over 163 Chinese cities and 21 provinces. Its large sales and distribution team of 120 people (vs 30-100 people by other players) directly manages over 800 aesthetic institutions. Bloomage also adopts a channel rebate system that offers attractive rebate with diversified approaches e.g. discount, events supports, etc. According to the company, the team is well-regarded amongst newly-opened hospitals as it provides them with training and product distribution solution. BioHyalux sales reached Rmb243mn in 2015, up from merely Rmb8.8mn in 2012 or a 190% CAGR, accounting for 37% of Bloomage's 2015 total sales.

According to Bloomage, BioHyalux is the single largest domestically produced HA dermal filler with market share by volume of 26%, following foreign brand Restylane of 32% share. BioHyalux's success is driven by the cost advantage from its vertically integrated HA raw material supplies, which is of outstanding quality and at lowest cost compared to other local peers. Bloomage is capable of launching new products with its innovative R&D team. "Dermalure" was recently approved by the CFDA – it will be a new HA filler product with improved formula and Lidocaine, a anesthetic agent. The product is more easy to use by doctors and comes with less pain during injection.

Table 3: China's HA filler market share by volume, 2015



Source: Company report, J.P. Morgan.

Table 4: Bloomage's HA dermal filler products

Products	Description
BioHyalux	It's an injectable hyaluronan soft tissue filling gel launched in 2012. It's mainly used for smoothing facial wrinkles and skin anti-aging.
Hymois	Medical Sodium Hyaluronate gel for ophthalmological use
Hyprojoint	Bone products for intra-articular injection

Source: Company data

2. **Aesthetic devices:** Bloomage signed exclusive distribution agreements with several foreign medical device companies to offer aesthetic devices (e.g., lasers, radio frequency (RF) devices, micro-needling, and rollers) to clinics and aesthetic hospital chains. Also, Bloomage has its own cosmetology equipment in late-stage clinical trials.

3. **Bio-Mesotherapy** (non-surgical cosmetic treatment/injections for superficial layers of the skin, such as: 1) **Aqua shining injections**, which inject HA into the dermis using micro-needles, costing less than Rmb3,000 per treatment with repeated injections every three months. Bloomage is China's first domestic company to introduce HA injections (Aqua shining) to add moisture to the dermis by using micro-needles. Such treatment is used to maintain elasticity, hydration, and even out skin tone. Aqua Shining costs less than Rmb4,000 per dose, and injections are generally repeated every three months – versus HA dermal filler treatments, which cost more than Rmb6,000-8,000 per dose, with results lasting more than six months. Bloomage is now offering Aqua shining machines to clinics, which also helps support sales of its BioHyalux HA injectable, in our view

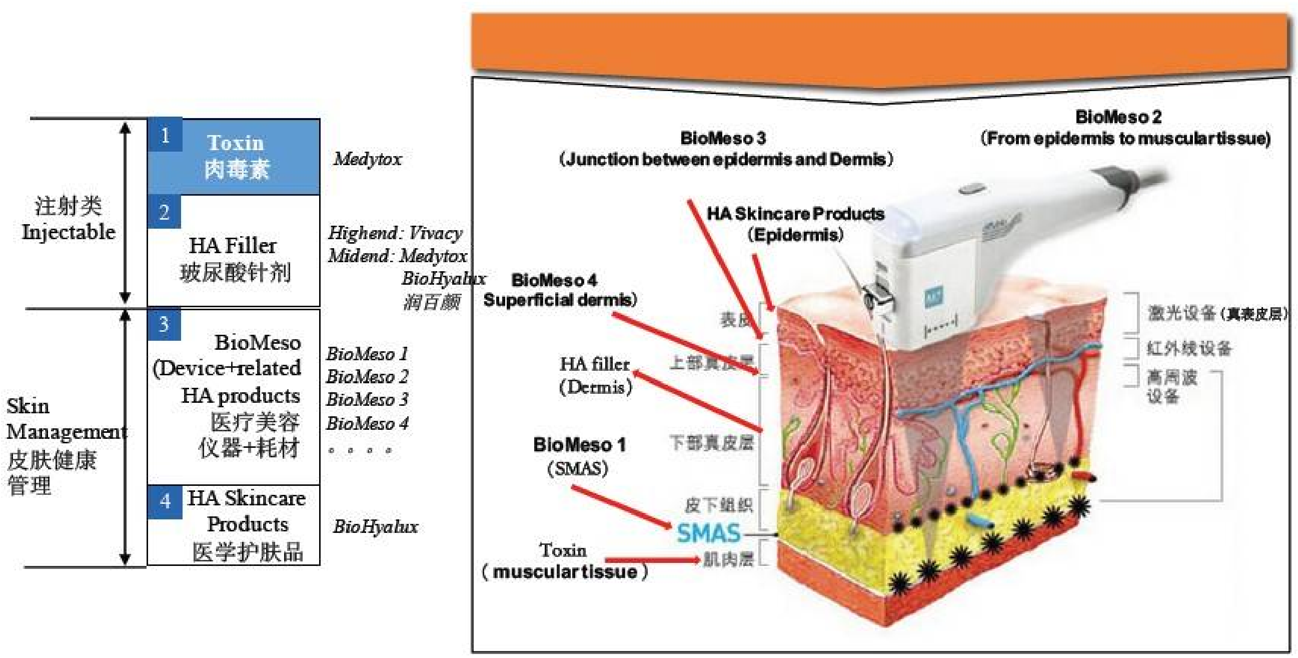
4. **Ultherapy Lifting** is non-invasive procedure that stimulates collagen using ultrasound to lift, tone and tightens loose skin. In addition to supplying HA injectable, Bloomage also provides medical devices (micro-needles, rollers and radio frequency devices & services as the full solution provider to the doctors/clinics). We believe such differentiated products and services will

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

increase customer stickiness and recurring revenue streams, and further strengthen its market position.

5. **Skin management consumables:** We view the skin care/skin rejuvenation segment as offering the most sales growth potential – with a repeating revenue stream and with service items that have high customer stickiness. China Cosmetology Association forecasts that professional skin care product sales will grow at more than a 15% CAGR, 2014-18, reaching Rmb74.4bn. We expect such growth to be supported by several dynamics, including: aesthetic surgery hospital focus on dermatology departments, the development of life beauty departments such as laser, skin care in aesthetic surgery hospitals, and awareness of the need for maintenance after laser treatment, each of which also yield opportunities for skin care product sales, as seen in the US, Europe, Korea, Hong Kong and Taiwan markets. In 2014, Bloomage launched its own branded professional skin care products series, especially for skin care/recovery after injection of HA dermal filler. Bloomage now has more than 220 medical skin care products. We expect these skin care consumables to contribute to Bloomage's top-line, beginning in 2017.

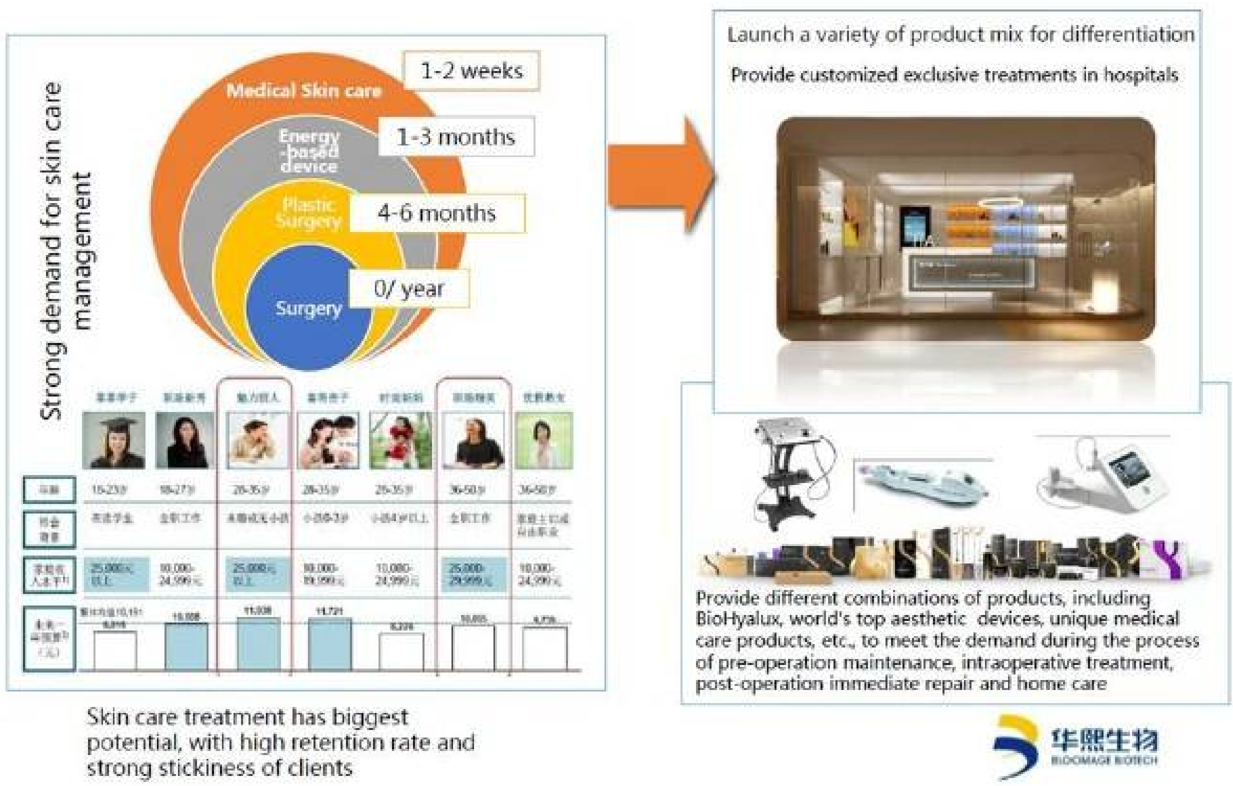
Figure 9: Multiple product portfolio of Bloomage to enhance competitive ability



Source: Company data

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Figure 10: Differentiated products & solutions to address the complete consumption cycle



Source: Company data

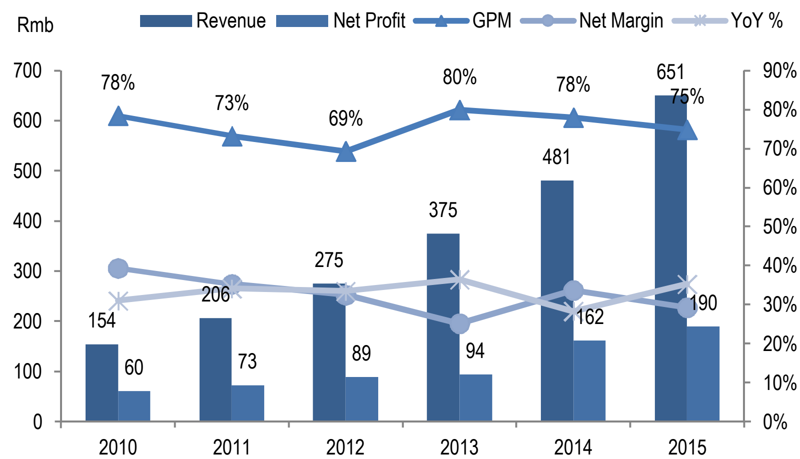
Premium pricing power without government control

Different from other pharmaceutical products & services which are under government control, the aesthetic services are considered discretionary consumption. Customers who elect such procedures are not patients who require medical attention; rather, they are willing to pay to improve appearance, and thus have less price sensitivity.

According to a 2013 Frost & Sullivan survey, 75% of cosmetic procedure customers spend Rmb16,000 to Rmb30, 000 per procedure. Thus, unlike pure pharmaceutical companies, Bloomage's product mix fosters more attractive blended gross margins: for example, for HA raw material products for medical, cosmetic and food grades, Bloomage sets pricing based on customer order & specifications. Unit pricing ranges from Rmb1,000-5,000 for food grade to Rmb30,000-200,000 for medical grade, with step-ups in gross margin, from 20-30% for food grade to above 80% for medical grade. Thus, blended gross margin can be as high as 70% – versus a 2014 average of 30% for chemical pharmaceuticals peers.

In addition, Bloomage's sales CAGR (at 33%, 2012-15) is outpacing the pharmaceutical industry average (at 12%), as most of the company's products are out-of-pocket expenses for customers and are not subject to the tendering process. Although fierce competition is a headwind, we expect Bloomage's high gross margin/high sales growth to persist, given the company's competitive advantages (e.g., largest production capacity, effective production method, continuous new product launches at higher ASPs) and full value chain cost advantage.

Figure 11: Higher profitability than industry average, 2012-2015



Source: Company data, J.P. Morgan

Table 5: Increasing ASPs of Key products

Grade	Unit Price (Rmb/kg)	Gross Margin
Medical injection	RMB 30,000-200,000	>90%
Cosmetic	RMB 7,000-20,000	60%-70%
Food	RMB 2,000-4,000	10%-20%
HA dermal filler	RMB 1,600	>80%
Blended Gross Margin		**>70%**

Source: Company data, J.P. Morgan

Enriched product pipeline with long term growth potential

1. **Strategic investment in Vivacy** -In May 2015, Bloomage announced the strategic investment of a 33.4% stake in the French premium HA filler producer, Vivacy. We believe the deal will benefit Bloomage in three ways:
    - Gain access to Vivacy's top-of-class technology of HA end products and explore the anti-aging market in Asia Pacific, whose population is becoming wealthier by the day.
    - Strengthen its competitive advantage in the booming Chinese beauty care/ dermatology market while gaining access to other specialties such as ophthalmology and gynecology.
    - International market expansion by leveraging on Vivacy's distribution network, creating an opportunity for greater geographical coverage of its proprietary HA end products.

Notably, Vivacy's HA filler, Stylage®, is developed by the same team as Juverdem, but with much improved technology. Stylage® adopts the most advanced cross-link technology that allows obtaining a high performance product with extraordinary elasticity and makes it possible to achieve natural looking results. Stylage® is developed by Vivacy with its proprietary patented HA cross-link technology, namely IPN-LIKE, which makes HA dermal filler injection last longer, easier to use and with less side effects.

Bloomage has begun to distribute Vivacy's Stylage in overseas markets. Bloomage will record revenue as trading business with net profit margin around 22%, according to management; we believe it offers long term topline upside.

2. **Joint venture with Korean Medytox**, which will allow Bloomage to introduce Neoronox (a BTX product by Medytox) in China. Also, MedyTox has one of the most advanced R&D capabilities in BTX product which can help Bloomage to expand its product base in end product category. The product will complement Bloomage's product offering and will fit right into the aim to build an integrated medical aesthetic solution provider.

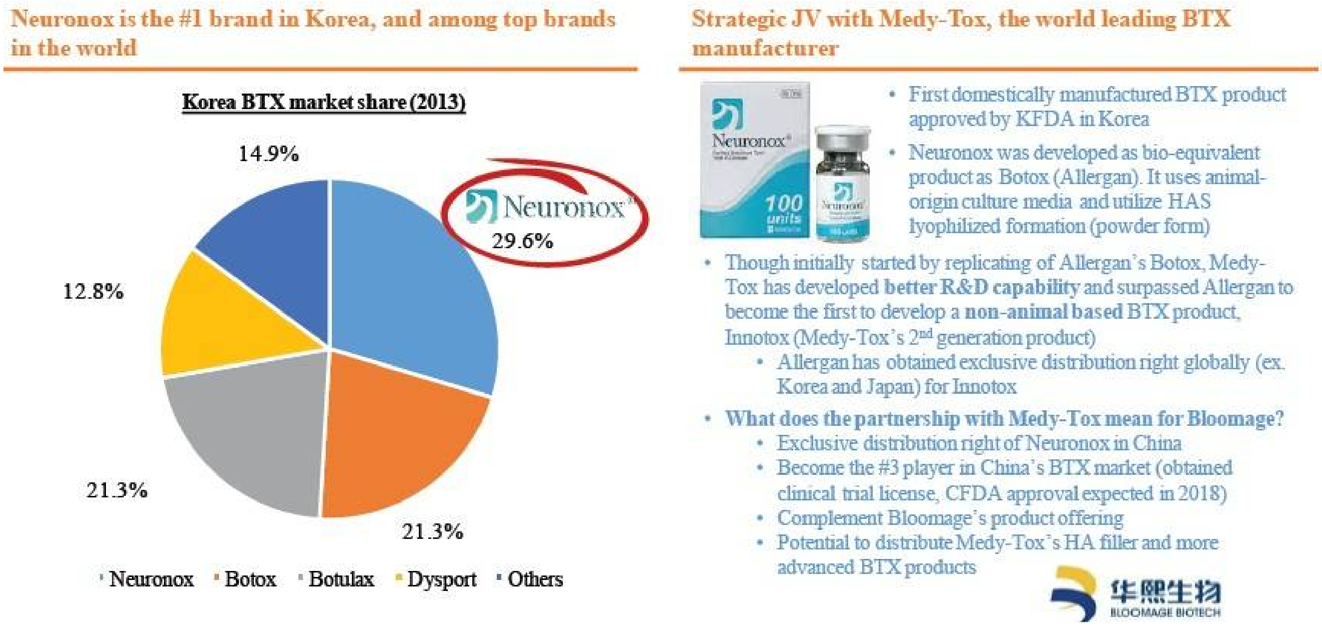
Medytox, a botulinum toxin brand, occupied the highest market share in Korea, in term of sales in 2014, and is also the fourth biotech company in the world to have successfully developed and produced botulinum toxin, leveraging on its technical capabilities. Sales volume of its botulinum toxin product currently is ranked No.1 in Korea. MedyTox has the one of the most advanced R&D capability in BTX products and could help Bloomage in future product expansion in the end product segment.

At present, MedyTox product has been approved for sale in 27 countries around the world. The JV between Bloomage and Medytox, Medyloom, is principally engaged in the registration, promotion and sales of certain products, mainly consisting of botulinum toxin products in China. Bloomage and Medytox each have a 50% shareholding interest in Medybloom. According to Bloomage management, it has submitted an application and received clinical trial approval.

The registration process to sell its Botox product may take two to three years to be approved, and management expects it to launch in 2018. The deal will allow Bloomage to enter China's large and rapidly growing Botox market which was estimated to be over Rmb500mn (licensed products) in 2015 with over 20% growth, according to China Aesthetic Industry Association

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Figure 12: Competencies of Medytox in Korea



Source: Company data

Investment Risks

Highly regulated industry

The pharmaceutical industry in China is highly regulated with extensive government supervision and regulations on the quality of medical facilities, equipment, and the price and procurement of pharmaceuticals. For example, Bloomage is required to obtain drug manufacturer permits for its production facilities. In addition, each product is required to obtain a medical approval document. Each drug manufacturer's permit and medicine approval documents are subject to periodic renewals and the compliance standards may also change from time to time. Furthermore, the production facilities need to get good manufacturing practice (GMP) certification. Registrations of new products for sale undergo a lengthy CFDA approval process that may take at least two to three years. Bloomage's sales growth or profitability may be adversely affected, should the company fail to acquire or renew any approval documents, if there are changes to the compliance standards, or if new laws and regulations are implemented that may prohibit or restrict its business.

Increasing competition in HA market

The HA dermal filler market in China is becoming more competitive. Before 2014, there were only three dermal filler brands approved and sold in China: Restylane (Galderma), BioHyalux (Bloomage) and EME (Beijing Aimeike). Among these, Restylane and BioHyalux dominated the China market in terms of sales with approximately 45% and 30% share in 2014, respectively.

Since then, more domestic and foreign competitors have received approval and are entering the market, namely: Shanghai Hahai's Matrifill, Beijing Mengborun Biological; Korean company LG Healthcare's YVOIRE, Taiwanese company Scivision Biotech's Facille. Restylane and EME have also renewed their CFDA approvals. In addition, some companies are currently awaiting CFDA approval. The new competitors may have a better brand image and product quality with more sales and marketing experience. For example, Scivision has established itself in the Taiwan, Philippine and Korea markets. We believe new entrants/competitors could negatively affect Bloomage's sales. In addition to approved products, there are an extremely high number of low-cost counterfeit products in China, some of which can even be purchased online for patients to use at home without supervision. Based on Bloomage's estimates, counterfeit products accounted for more than 50% of the total market in 2014, in terms of sales. This has created an extremely difficult environment for companies with approved products, forcing them to lower their prices in order to effectively compete.

Price pressure & declining gross margin may continue

As of 2015, Bloomage generated more than 61% of its revenue from the sale of HA raw materials, of which sales of medical grade HA, cosmetic grade HA and food grade HA contributed approximately 30%, 60% and 10% of total HA raw material sales, respectively. In recent years, the price of cosmetic grade HA and food grade raw materials have declined due to increasing competition and discounts offered to key customers to gain more market share. The average unit price for cosmetic grade HA raw materials decreased from Rmb7,000 per kg in 2005 to Rmb4,500 per kg in 2014, and the selling price for food grade HA raw materials decreased from Rmb7,760 per kg in 2012 to Rmb3,000 per kg in 2014. Although market prices stabilized in 2015, competition continues to intensify and Bloomage could further reduce its selling prices to increase volume sales and gain market share. Revenue growth may be adversely affected if Bloomage is unable to increase volume sales despite reducing selling prices. Gross margin has declined from 81.9% in 2009 to 69.3% in 2012 with decreasing selling prices for its major products (cosmetic and food grade HA). Since the introduction of HA end product BioHyalux, which has higher gross margin of 80-90%, overall gross margin recovered to 78.0% in 2014, but dropped again to 74.9% in 2015. Notably, 1H16 gross margin further decreased by 5.7ppt to 67.5% due to the introduction of new trading business for its cosmetic products and medical devices. We expect gross margin to continue to decline as price pressure on HA end products & trading business.

Execution risks as it enters new businesses

Bloomage's growth strategy is to continue to expand along the aesthetic value chain by offering various HA end products, devices and skin care products. Sales and marketing know-how differs for each market segment and requires significant resources to build up its distribution channels and sales & marketing teams. Successful implementation and execution of Bloomage's business plan depends on a number of factors including: 1) continuous growth in the HA market, which is subject to consumer demand for cosmetic and healthcare products/services, 2) the availability of funding, 3) competition and 4) government policies. Any failure or material delay in the execution or implementation of such plans may have an adverse effect on Bloomage's profitability and prospects.

Valuation

Our Dec-17 PT is based on a DCF valuation that assumes a market risk premium of 6.0% and a risk-free rate of 4.2% (yield on 10-year government notes in China). We assume a beta of 0.86. Accordingly, WACC is assumed at 9.4%. We estimate free cash flow for Bloomage until 2020 and assume a terminal growth rate of 4%.

Table 6: Bloomage -Base case DCF analysis

Rmb mn	2015	2016E	2017E	2018E	2019E	Terminal
Cash flow estimates						
Sales	651	835	1,029	1,269	1,560	1,928
EBIT	281	324	396	491	577	678
NOPAT	225	253	309	383	450	529
Capex, net	(267)	(100)	(103)	(127)	(109)	(116)
Depreciation	30	36	51	72	80	84
Change in working capital	(122)	(92)	(29)	(121)	(63)	(165)
Free Cash Flow	**(134)**	**96**	**229**	**207**	**358**	**332**

WACC calculation		**DCF Assumptions:**	
Liabilities as a % of EV	0%	Terminal growth	4.0%
WACC	9.4%	Risk-free rate	4.2%
		Market risk	6.0%
Enterprise NPV	**6,148**	Beta	0.86
+ Net cash (debt), current	178	Cost of debt	5.0%
- Minorities (Market value)	(0)		
+/- Other items	0	Implied exit P/E multiple (x)	20x
= Equity value	**6,326**		
/ Number of shares	362		
= Equity value per share (HK$)	20.0		

Source: Company data, J.P. Morgan estimates

We also analyze the DCF's price sensitivity to WACC and the terminal multiple.

Table 7: Bloomage – Sensitivity analysis based on WACC and perpetual terminal growth rate

		Terminal growth rate					
		2.5%	**3.5%**	**4.0%**	**4.5%**	**5.0%**	**5.5%**
WACC	**8.0%**	19.8	23.7	26.3	29.8	34.4	40.8
	8.5%	18.2	21.4	23.5	26.2	29.6	34.2
	9.0%	16.9	19.6	21.3	23.4	26.1	29.5
	9.4%	16.0	18.3	19.8	21.6	23.8	26.6
	9.9%	15.0	17.0	18.2	19.7	21.5	23.7
	10.4%	14.1	15.8	16.9	18.1	19.6	21.4
	10.9%	13.3	14.8	15.8	16.8	18.1	19.5

Source: Company data, J.P. Morgan estimates

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Table 8: Peer valuation

HKD					EV/Sales			EV/EBITDA			PEG			P/E						
Ticker	Name	Price (LC)	Mkt Cap (HKD mn)	EV (HKD mn)	2015	2016E	2017E	2015	2016E	2017E	2015	2016E	2017E	2015	2016E	2017E	Dividend	YTD(%)	EPS CAGR 2015-2018E	P/Sales (2015)
963 HK Equity	BLOOMAGE BIOTECHN	12.28	4,447	4,991	6.6x	5.1x	4.1x	14.9x	11.6x	10.0x				18.7x	17.6x	14.3x	0.22	-35.9 %	27.9 %	6.2x
	Cosmetic Related Companies																			
086900 KS Equity	MEDY-TOX INC	3,146.49	17,823	17,597	23.4x	20.1x	16.0x	38.4x	32.0x	25.2x				46.9x	43.0x	33.4x	0.38	-11.7 %	66.1 %	29.3x
OR FP Equity	L'OREAL	1,510.00	847,630	773,708	3.5x	3.5x	3.3x	17.3x	16.3x	15.1x	4.2x	4.0x	3.7x	33.7x	27.1x	25.2x	1.78	14.6 %	14.9 %	3.9x
UL US Equity	UNILEVER PLC-ADR	377.13	1,131,047	1,244,369		2.7x	2.6x		15.3x	14.2x	3.8x	3.7x	3.4x	25.2x	23.3x	21.6x	2.86	15.4 %	4.9 %	2.5x
PG US Equity	PROCTER & GAMBLE	684.00	1,825,954	1,980,281	3.9x	3.9x	3.8x	15.5x	14.7x	14.0x	3.6x	3.7x	3.4x	23.4x	22.7x	21.0x	3.02	13.8 %	5.3 %	3.1x
EL US Equity	ESTEE LAUDER	695.01	254,188	260,953	3.0x	2.8x	2.7x	16.6x	14.6x	13.4x	2.9x	2.3x	2.1x	27.6x	25.8x	23.3x	1.34	2.8 %	5.2 %	3.0x
JNJ US Equity	JOHNSON&JOHNSON	925.34	2,531,743	2,404,836	4.4x	4.3x	4.1x	14.0x	12.3x	11.6x	3.0x	2.8x	2.6x	19.8x	17.8x	16.8x	2.60	18.6 %	13.1 %	4.7x
4911 JT Equity	SHISEIDO CO LTD	196.38	78,547	76,694	1.2x	1.2x	1.1x	13.7x	13.2x	11.1x				31.3x	32.7x	32.6x	0.76	4.5 %		1.4x
AVP US Equity	AVON PRODUCTS	45.21	19,760	34,460	0.7x	0.8x	0.7x	15.2x	9.4x	7.8x					51.6x	17.0x	2.06	44.0 %	-267.5 %	0.4x
	Average				**5.7x**	**4.9x**	**4.3x**	**18.7x**	**16.0x**	**14.0x**	**3.5x**	**3.3x**	**3.1x**	**29.7x**	**30.5x**	**23.9x**	**1.85**	**12.8 %**	**-22.6 %**	**6.0x**
	China Listed Biotech Companies																			
002422 CH Equity	SICHUAN KELUN-A	17.97	25,883	32,473	3.5x	3.3x	3.0x	17.7x						36.0x	31.6x	27.2x	0.90	-16.0 %	-14.5 %	2.7x
600739 CH Equity	LIAONING CHENG-A	20.47	31,332	39,838	3.9x	3.7x	3.6x	188.1x						4669.1x	26.3x	20.8x		-21.9 %	-8.5 %	3.2x
002007 CH Equity	HUALAN BIOLOGI-A	43.52	40,499	38,685	20.1x	17.1x	13.3x	41.4x	33.9x	26.3x				50.6x	45.4x	35.2x	0.67	37.5 %	26.7 %	22.5x
002038 CH Equity	BEIJING SL -A	36.63	25,099	23,845	19.1x	17.9x	14.8x	42.0x	30.6x	22.2x				47.9x	38.6x	31.0x	0.63	-5.2 %	7.8 %	18.2x
600867 CH Equity	TONGHUA DONGBA-A	26.01	36,917	38,173	18.5x	16.3x	13.3x	40.6x	37.6x	31.5x				56.2x	48.6x	38.0x	0.74	-0.2 %	107.9 %	17.9x
600161 CH Equity	BEIJING TIAN-A	45.13	23,277	25,820	13.4x	12.7x	10.0x	45.8x						390.5x	264.6x	84.0x		11.3 %	-45.1 %	11.2x
002030 CH Equity	DA AN GENE CO -A	31.47	22,828	23,337	12.3x			118.2x						185.4x			0.08	-27.5 %	8.4 %	14.4x
002550 CH Equity	CHANGZHOU QIAN-A	9.63	12,336	12,529	13.9x	13.4x	12.1x	46.1x	38.8x	30.8x				39.0x	27.7x	29.6x	0.90	-24.2 %	18.9 %	
300255 CH Equity	HEBEI CHANGSHA-A	10.03	9,380	9,988	8.6x	7.8x	6.5x	34.0x	30.0x	24.4x				43.8x	40.2x	32.0x	0.34	-10.9 %	15.2 %	8.4x
002675 CH Equity	YANTAI DONGCHE-A	18.79	12,441	12,762	12.3x	9.6x	7.4x	58.8x	36.8x	22.4x				106.4x	70.4x	34.1x	0.23		-10.0 %	10.3x
600866 CH equity	STAR LAKE BIOS-A	7.44	4,804	5,106	7.1x										14.9x			-22.1 %		
	Average				**12.1x**	**11.3x**	**9.3x**	**63.3x**	**34.6x**	**26.3x**	**0.0x**	**0.0x**	**0.0x**	**562.5x**	**60.8x**	**36.9x**	**0.56**	**-7.9 %**	**10.7 %**	**12.1x**
	Hong Kong Listed Chinese Biotech Companies																			
6826 HK equity	SHANGHAI HAOHA-H	37.35	5,978	3,380	4.5x	3.6x	3.0x	12.7x	9.1x	7.4x				17.3x	16.8x	14.1x	1.27	-25.8 %	25.1 %	7.4x
587 HK equity	HUA HAN HEALTH I	0.54	3,992	920	0.5x	0.4x	0.4x	0.7x	1.0x	0.8x				4.8x	6.0x	5.4x	5.00	-50.0 %	25.5 %	1.8x
775 HK equity	CK LIFE SCIENCES	0.73	7,016	10,591	2.1x			18.6x						24.9x			1.23	5.6 %	17.7 %	
1349 HK equity	SHANGHAI FUDAN-H	7.44	6,867	6,495	9.2x	8.0x	5.9x	32.4x	26.3x	17.4x				44.1x	38.8x	28.5x	0.48	-10.3 %	23.2 %	9.6x
950 HK equity	LEE'S PHARM	6.85	4,040	3,763	4.1x	3.8x	3.2x	10.8x	10.9x	10.1x				16.3x	16.0x	14.8x	1.52	-28.5 %	20.8 %	3.7x
8153 HK equity	CODE AGRICULTURE	2.44	1,063	1,376	70.7x													98.4 %	39.7 %	
1061 HK equity	ESSEX BIO-TECH	3.47	1,942	2,019	2.9x	2.4x	1.9x	13.0x	12.4x	9.7x				16.8x	14.8x	12.0x	0.72	-28.0 %	38.3 %	2.9x
8329 HK equity	SHENZHEN NEPTU-H	0.59	990	919	1.1x			10.4x						29.8x				-10.6 %	1.1 %	
690 HK equity	UNI-BIO GROUP	0.19	986	876	7.1x													7.3 %	-20.4 %	
	Average				**11.4x**	**3.7x**	**2.9x**	**14.1x**	**11.9x**	**9.1x**	**0.0x**	**0.0x**	**0.0x**	**22.0x**	**18.5x**	**14.9x**	**1.70**	**-4.7 %**	**19.0 %**	**5.1x**
	US Listed Biotech Companies																			
CBPO US Equity	CHINA BIOLOGIC P	869.58	23,387	22,523	9.0x	8.4x	7.1x	19.6x	19.3x	16.2x	1.8x	1.6x	1.3x	31.7x	26.8x	22.5x		-21.3 %	26.7 %	10.3x
SVA US Equity	SINOVAC BIOTECH	45.72	2,602	2,536	6.3x													3.1 %		
	Average				**7.6x**	**8.4x**	**7.1x**	**19.6x**	**19.3x**	**16.2x**	**1.8x**	**1.6x**	**1.3x**	**31.7x**	**26.8x**	**22.5x**	**0.00**	**-9.1 %**	**26.7 %**	**10.3x**
	US Biotech Companies																			
GILD US Equity	GILEAD SCIENCES	596.29	786,939	772,078	3.1x	3.3x	3.4x	4.6x	4.9x	5.1x	2.9x	3.0x	3.0x	6.5x	6.5x	6.6x	2.29	-23.2 %	126.2 %	3.1x
AGN US Equity	ALLERGAN PLC	1,829.89	724,588	1,065,977	8.7x	9.2x	8.5x	34.0x	17.8x	15.6x	1.2x	1.3x	1.1x	199.0x	16.8x	13.8x		-24.5 %		5.1x
AMGN US Equity	AMGEN INC	1,316.58	985,330	971,219	5.6x	5.5x	5.3x	11.1x	10.2x	9.5x	2.1x	1.9x	1.7x	17.3x	14.9x	13.6x	2.23	6.6 %	18.8 %	5.9x
CELG US Equity	CELGENE CORP	818.09	634,143	695,475	8.8x	8.1x	6.8x	27.4x	16.1x	12.7x	1.0x	0.8x	0.7x	36.4x	18.3x	15.0x		-11.9 %	8.4 %	8.8x
BIIB US Equity	BIOGEN INC	2,431.92	532,912	527,209	6.0x	5.9x	5.7x	11.3x	11.0x	10.9x	2.1x	1.8x	1.7x	17.7x	15.6x	15.0x		2.4 %	39.3 %	6.5x
ALXN US Equity	ALEXION PHARM	959.07	215,081	232,658	10.6x	9.7x	8.2x	31.6x	20.3x	16.1x	0.9x	0.9x	0.7x	56.5x	26.6x	20.9x		-35.2 %	25.5 %	10.6x
CMRX US Equity	CHIMERIX INC	35.83	1,656	(461)														-48.4 %	28.2 %	21.3x
	Average				**7.1x**	**7.0x**	**6.3x**	**20.0x**	**13.4x**	**11.6x**	**1.7x**	**1.6x**	**1.5x**	**55.6x**	**16.5x**	**14.1x**	**2.26**	**-19.2 %**	**41.1 %**	**8.8x**
	US Speciality Pharma Companies																			
TEVA US Equity	TEVA PHARM-ADR	397.22	363,109	436,238		2.5x	2.2x		7.1x	5.9x	1.2x	1.3x	1.1x	33.8x	9.7x	8.5x	2.65	-20.5 %	18.8 %	2.4x
MYL US Equity	MYLAN NV	309.97	165,816	221,077	2.9x	2.5x	2.2x	10.4x	7.9x	6.4x	1.3x	1.1x	0.9x	13.7x	8.1x	6.9x		-26.1 %	8.2 %	2.2x
ENDP US Equity	ENDO INTERNATION	153.71	34,242	93,579	3.3x	3.1x	2.9x		7.5x	6.8x	0.9x	0.9x	0.8x	64.0x	4.3x	4.0x		-67.6 %	-10.1 %	1.4x
MNK US Equity	MALLINCKRODT	561.62	60,498	105,329	3.7x	4.0x	3.9x	9.2x	9.0x	8.6x	1.1x	1.0x	1.0x	14.3x	9.4x	8.6x		-3.0 %		2.3x
	Average				**3.3x**	**3.0x**	**2.8x**	**9.8x**	**7.9x**	**6.9x**	**1.1x**	**1.1x**	**1.0x**	**31.5x**	**7.9x**	**7.0x**	**2.65**	**-29.3 %**	**5.6 %**	**2.1x**
	Average of all above		**280,845**	**298,323**	**9.0x**	**6.7x**	**5.7x**	**30.9x**	**17.5x**	**14.3x**	**2.1x**	**2.0x**	**1.8x**	**185.1x**	**32.4x**	**22.2x**	**1.47**	**-7.2 %**	**11.4 %**	**7.7x**

Source: J.P. Morgan estimates, Bloomberg, Price as of 2, September,. 2016

Financial Analysis

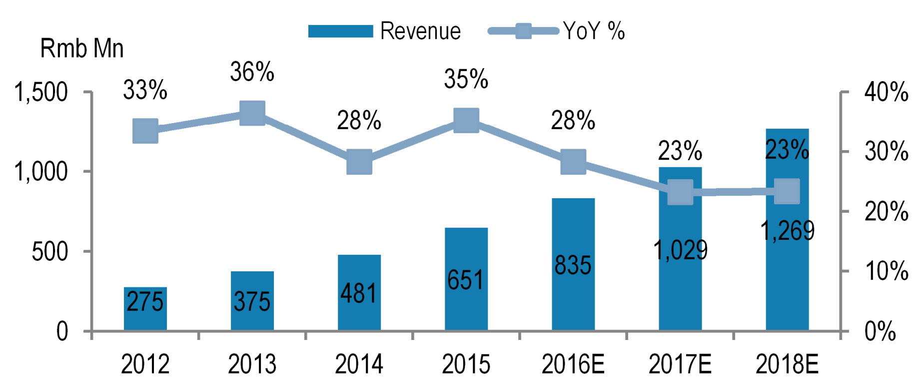
Revenue and Cost Analysis

Bloomage increased its total sales at a CAGR of 33% in 2012-15, to Rmb651mn in 2015. Of which, HA raw material sales rose at a CAGR of 14% to Rmb397mn in 2015 (up from Rmb265mn in 2012) and HA end product sales increased by more than 30 times to Rmb243mn in 2015 (up from just Rmb8.8mn in 2012), accounting for 61% and 37% of total sales in 2015, respectively.

In 1H16, the total sales rose at a CAGR of 34% yoy to Rmb418mn. HA raw material sales rose at a CAGR of 11% yoy to Rmb234mn and HA end product sales rose at a CAGR of 33% to Rmb133mn, accounting for 56% and 32% of total sales respectively. In the same period, the company established a separate business line for trading of cosmetic products and medical devices. It generated Rmb51mn revenue, accounting for 12% of total revenue.

We project total sales to increase at a CAGR of 23% in 2016-18, to Rmb834mn in 2016, Rmb1,029mn in 2017 and Rmb1, 269mn in 2018, largely driven by: 1) HA raw material sales CAGR of 12% to Rmb445mn in 2016, Rmb498mn in 2017 and Rmb558mn in 2018; and 2) HA end product sales CAGR of 35% to Rmb316mn in 2016, Rmb427mn in 2017 and Rmb577mn in 2018.

Figure 13: Sales revenue and growth rate (2012-2018E)



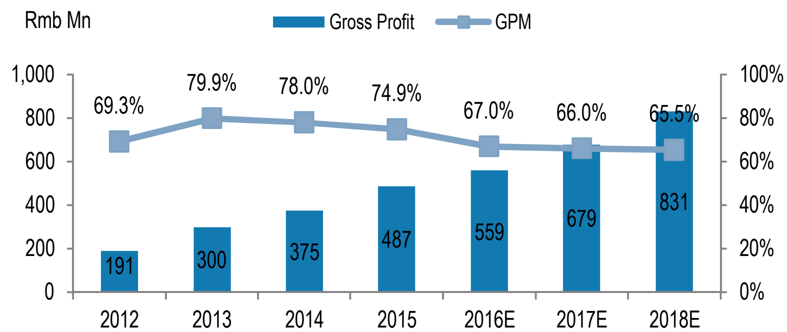
Source: Company data, J.P. Morgan estimates

Declining gross margin

Bloomage's overall gross margin mainly comes from two segments: 1) HA raw material products, of which medical grade has the highest gross margin of above 90%, cosmetic grade has gross margin of 60%-70% and food grade has the lowest gross margin of 10-20% in 2015; and 2) HA end products, mainly dermal fillers with >85% gross margin in 2014. Bloomage's overall gross margin improved from 69.3% in 2012 to 79.9% in 2013 mainly on a larger contribution from HA end products. However, overall gross margin dropped to 74.9% in 2015 because of increasing price pressure on HA raw material cosmetic grade and intense competition from domestic players for HA dermal fillers. In 1H16, its gross margin fell 5.7ppt to 67.5%, which is due to the introduction of its new trading business for cosmetic products and medical devices; its gross margin was only 21.9%.

Going forward, we believe the gross margin will continue to trend down, as the distribution of Vivacy products overseas only carry gross margin of 25%. We forecast this trend to persist and overall gross margin to continue to decline to 67.0% in 2016 and 66.0% in 2017 and 65.5% in 2018, respectively.

Figure 14: Gross Profit and Gross Margin



Source: J.P. Morgan estimates, Company data

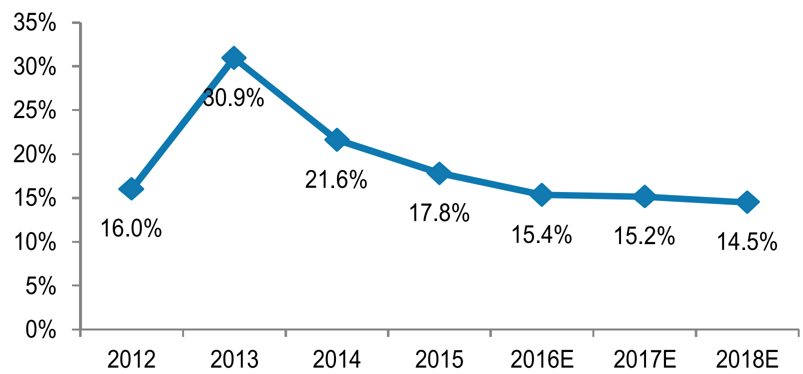
Lower Non-GAAP SG&A expense ratio ahead

Bloomages's distribution and selling expense ratio has increased from 12.1% in 2012 to 16.5% in 2015, as the company increased its advertising and promotion costs for HA end products, new generation HA dermal filler and skin care products. Excluding the amortization cost of Vivacy acquisition which was estimated**, by us,**at Rmb20mn per year, we project its selling expense ratio to decrease to 14.5% in 2016E and 14.0% and 2017E and 14.0% in 2018E, respectively, as higher promotion costs offset increasing operating leverage.

Bloomage's G&A expenses include R&D expense, employee benefit expenses, operating lease expenses, utilities and office expenses, amortization and depreciation, professional and consultancy fees and traveling and entertainment fees. R&D expense is typically around 10% of total revenue given the company invests heavily in R&D of new products. Bloomage's G&A expense ratio increased from 16.0% in 2012 to 30.9% in 2013 because the company grew its sales team for HA end products. This ratio then declined to 21.8% in 2015 on increasing operating leverage. In 1H16, the ratio further declined to 17.6%.

Notably, Bloomage implemented a share option incentive program in 2014 for key management and sales personnel. Excluding the share-based compensation expense, which is estimated by management to be Rmb22mn in 2016E, Rmb19mn in 2017E and Rmb17.5mn in 2018E, we estimate G&A to trend down to 15.4% in 2016E owing to further cost optimization of the sales and distribution team with the new trading business line, then gradually trend down to 15.2% in 2017E and 14.5% in 2018E on increasing operating leverage.

Figure 15: SG&A as % of total revenue

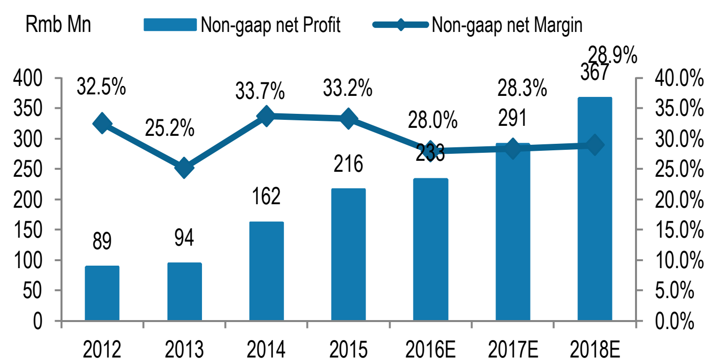


Note: SG&A expense on Non-GAAP basis; Source: Company data, J.P. Morgan estimates

Non-GAAP Bottom-line Growth CAGR

Bloomage's net income increased at a CAGR of 30% from Rmb89mn in 2012 to Rmb190mn in 2015. In 2016-18, we expect the company's net profit to grow at a CAGR of 27% to Rmb195mn in 2016E, Rmb246mn in 2017E and Rmb314mn in 2018E. Excluding share-based compensation, depreciation and amortization, we expect non-GAAP net income to grow at a CAGR of 25% to Rmb233mn in 2016E, Rmb291mn in 2017E and Rmb367mn in 2018E.

Figure 16: Non-GAAP Net income and net income margin 2012-2018E



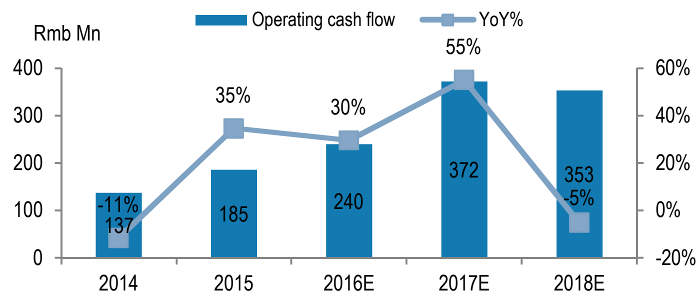
Source: Company data, J.P. Morgan estimates

Strong operating cash flow & lower capital expenditure

The company's net cash generated from operating activities was Rmb155mn in 2013 and Rmb137mn in 2014 and 185mn in 2015. As of 2015, Bloomage has cash and cash equivalents of Rmb651mn. We believe sufficient capital would further provide management flexibility for expanding the business into new business segments and/or regions. Bloomage's capital expenditure has been used for acquisitions, production facility expansions, and to purchase PPE. In 2014, Bloomage completed the expansion of its production facilities. Bloomage spent RMB 266mn during 2015 on capex. We forecast capex of Rmb100mn for 2016E, Rmb103mn for 2017E and Rmb127mn in 2018E.

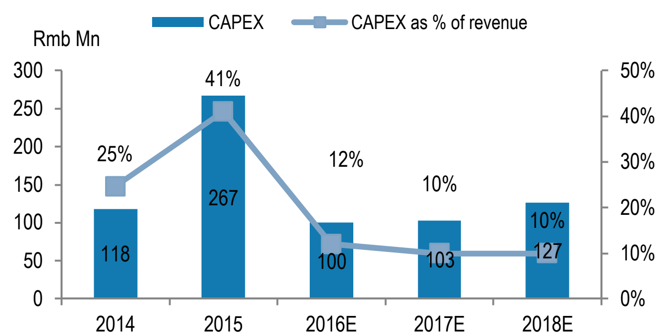
Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Figure 17: Operating Cash Flow



Source: Company data, J.P. Morgan estimates

Figure 18: Lower Capex 2014-2018E



Source: Company data, J.P. Morgan estimates

Table 9: Bloomage Biotechnology: Non-GAAP Income Statement

Rmb mm, year-end Dec	2012A	2013A	2014A	2015A	2016E	2017E	2018E
Revenue	**275.0**	**375.2**	**481.3**	**650.9**	**835.0**	**1028.7**	**1269.0**
%YoY change (%)	na	36%	28%	35%	28%	23%	23%
COGS	(84.3)	(75.3)	(105.9)	(163.6)	(275.5)	(349.7)	(437.8)
%YoY change (%)	na	-11%	41%	55%	68%	27%	25%
Gross Profit	190.6	299.9	375.4	487.2	559.4	678.9	831.2
%YoY change (%)	na	57%	25%	30%	15%	21%	22%
Gross margin	69.3%	79.9%	78.0%	74.9%	67.0%	66.0%	65.5%
SG&A	(44.1)	(116.1)	(104.1)	(115.9)	(128.3)	(155.9)	(184.0)
Distribution Expenses	(33.2)	(58.6)	(74.6)	(107.1)	(121.3)	(143.9)	(177.7)
Other Income	8.7	13.0	13.0	15.8	13.3	16.3	20.2
Other expense	(1.2)	(2.4)	(1.9)	0.6	0.7	0.9	1.1
EBITDA	**131.7**	**149.8**	**223.2**	**296.2**	**383.3**	**470.4**	**539.3**
EBITDA margin	48%	40%	46%	46%	46%	46%	42%
EBIT	**120.8**	**135.7**	**207.7**	**254.6**	**284.6**	**360.9**	**432.6**
EBIT margin	44%	36%	43%	39%	34%	35%	34%
Pretax Income	111.8	125.8	198.1	263.9	291.8	364.4	458.8
%YoY change (%)	na	13%	58%	33%	11%	25%	26%
Tax Expense	(22.5)	(31.4)	(36.1)	(47.5)	(55.1)	(69.1)	(88.6)
Effective tax rate	20%	25%	18%	18%	19%	19%	19%
Net Income (non-GAAP)	**89.3**	**94.4**	**162.1**	**216.4**	**233.5**	**291.5**	**367.0**
%YoY change (%)	na	5.7%	71.7%	33.5%	7.9%	24.8%	25.9%
Net margin	32.5%	25.2%	33.7%	33.2%	28.0%	28.3%	28.9%

Source: Company data, J.P. Morgan estimates

Table 10: Bloomage Biotechnology: Balance Sheet

CNY mm, year-end Dec	2012A	2013A	2014A	2015A	2016E	2017E	2018E
Cash and Equivalents	120.8	169.4	187.8	651.1	1024.6	1320.7	1535.6
Inventories	32.7	42.5	55.1	117.6	173.2	195.9	266.1
Trade receivables	51.4	74.1	158.3	211.8	262.9	321.9	399.6
Restricted cash	0.3	36.0	15.8	255.0	255.0	255.0	255.0
Other receivables	9.1	13.0	19.4	40.1	40.1	40.1	40.1
Total current assets	259.3	432.0	516.4	1275.5	1755.8	2133.6	2496.4
Property, Plant and Equipment	123.1	119.6	375.6	362.7	426.7	478.3	533.5
Lease Payments	63.1	61.8	60.5	59.2	59.2	59.2	59.2
Intangible Assets	0.9	1.1	1.2	208.1	145.7	87.4	52.4
Deferred tax assets	–	7.7	11.4	11.6	11.6	11.6	11.6
Other LT assets	–	–	–	35.7	35.7	35.7	35.7
Total assets	**215.0**	**336.3**	**449.0**	**923.7**	**684.2**	**641.9**	**662.1**
Trade payables	12.5	21.6	30.7	117.8	132.3	185.2	212.2
Other current liabilities	23.3	37.1	105.9	–	–	–	–
Total current liabilities	48.7	122.6	160.7	624.1	638.6	691.5	718.5
Deferred tax liabilities	0.7	–	–	–	–	–	–
Deferred income	2.4	36.6	9.3	16.2	16.2	16.2	16.2
Total liabilities	97.3	204.0	212.9	1007.2	1021.7	1074.6	1101.6
Issued capital	2.8	3.0	3.0	3.1	3.1	3.1	3.1
Retained earnings	374.1	561.3	749.5	1188.8	1415.2	1697.8	2053.7
Non-controlling interests	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total Equity	376.9	564.3	752.5	1191.9	1418.3	1700.9	2056.8
Total Liability and Equity	**474.3**	**768.3**	**965.4**	**2199.2**	**2440.0**	**2775.5**	**3158.5**

Source: Company data, J.P. Morgan estimates

Table 11: Bloomage Biotechnology: Cash Flow Statement

CNY mm, year-end Dec	2012A	2013A	2014A	2015A	2016E	2017E	2018E
EBIT	120.8	135.7	207.7	254.6	284.6	360.9	432.6
D&A	10.4	12.8	14.1	40.2	98.7	109.5	106.7
Change in working capital	-24.8	(23.0)	(62.6)	(121.8)	(92.2)	(28.8)	(120.8)
Tax expense	(22.5)	(31.4)	(36.1)	(47.5)	(55.1)	(69.1)	(88.6)
Other	(0.3)	61.2	14.3	59.6	4.0	(0.4)	23.0
Net cash from operating activities	83.6	155.3	137.5	185.2	239.9	372.1	352.9
Capital expenditures	(46.5)	(114.1)	(118.4)	(267.0)	(100.2)	(102.9)	(126.9)
Interest income	3.2	3.4	5.3	2.5	–	–	–
Others	(96.9)	(56.9)	41.7	(417.3)	214.9	35.7	–
Net cash used in investing activities	(140.3)	(167.6)	(71.4)	(681.7)	114.8	(67.1)	(126.9)
Free cash flow	**(56.6)**	**(12.3)**	**66.1**	**(496.6)**	**354.7**	**305.0**	**226.0**
Proceeds from issue of shares	–	–	–	156.3	–	–	–
Proceeds from bank loans	0	36.0	–	454.4	–	–	–
Dividends paid	(2.8)	(5.0)	(5.0)	(6.6)	(7.1)	(8.9)	(11.2)
Net cash (used in) from financing activities	(11.0)	62.8	(47.7)	975.3	(7.1)	(8.9)	(11.2)
Change in cash	**(67.7)**	**50.5**	**18.4**	**478.7**	**347.6**	**296.1**	**214.9**
Cash at beginning of year	188.8	120.8	169.4	187.8	677.1	1024.6	1320.7
Effect of changes in foreign exchange	(0.3)	(1.9)	0.0	10.5	–	–	–
Time deposits							
Cash at end of year	**120.8**	**169.4**	**187.8**	**677.1**	**1024.6**	**1320.7**	**1535.6**

Source: Company data, J.P. Morgan estimates

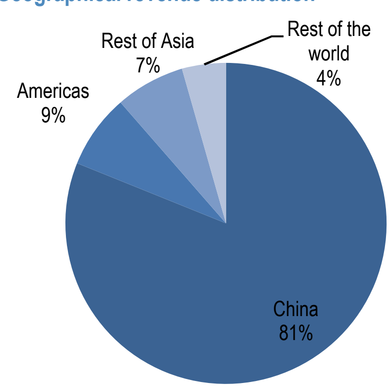
Company Overview

Bloomage Biotechnology Corporation Limited is a leading player in the field of biomedicine and cosmetics in China. The company was incorporated on April 3rd, 2006 in Cayman Islands and listed on the Hong Kong Stock Exchange on September, 2008 at HK$1.00 per share. The group employs a total of 717 people located mainly in PRC (China). The company's core business is manufacturing and distribution of hyaluronic acid (HA) raw materials, used as a direct ingredient in pharmaceutical, cosmetic and health products. It is the world's largest producer of HA raw materials.

The company operates through a chain of 16 subsidiaries including Bloomage Freda Biopharmaceutical Co., Ltd. ("Bloomage Biopharm"), Beijing Bloomage Hyinc Technology Company Limited ("Beijing Bloomage Hyinc") and Shandong Bloomage Hyinc Biopharm Company Limited ("Shandong Bloomage Hyinc"). Also, its sales to the largest and five largest customers accounted for approximately 7% and 24.9% of the revenue respectively.

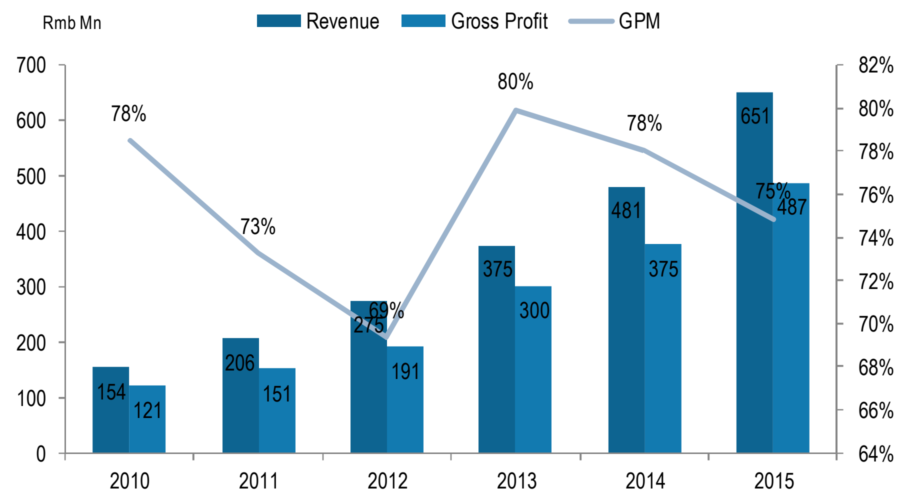
Out of the total RMB 650.9mn revenue for 2015, 81.1% came from PRC. Out of the rest majority came from Americas. The company's sales team covers 21 provinces and 163 cities serving over 750 medical clinics. In order to capitalize on the huge potential of Chinese (2019: 800b RMB) and Global medical aesthetics market, the company is strategically transforming from being a sole HA raw material producer to an integrated medical aesthetics solution provider.

Figure 19: Geographical revenue distribution



Source: Company data

Figure 20: Revenue, Gross Profit and Gross Margin Trend

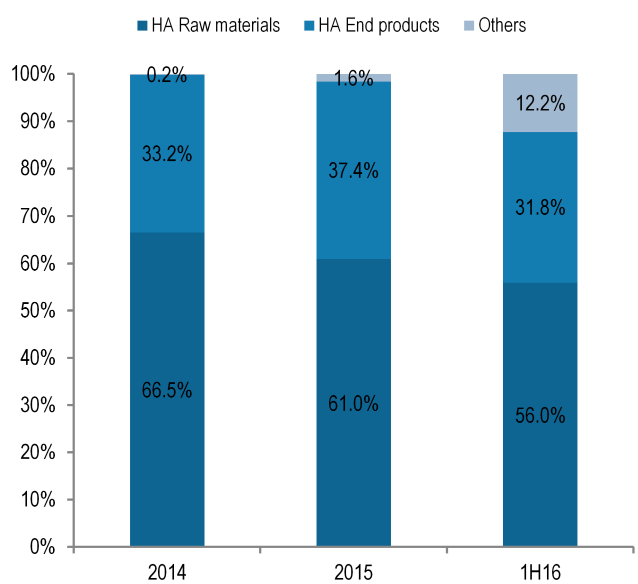


Source: Company data

Business Segments

The 3 major segments of the company are production and sales of HA raw material, production and sales of HA end products and trading of cosmetic products and medical devices (introduced in 1H16). Revenue from the HA end products have increased by 52% in 2015. As of 1H16, revenue from the trading business segment accounted for 12.2% of total revenue.

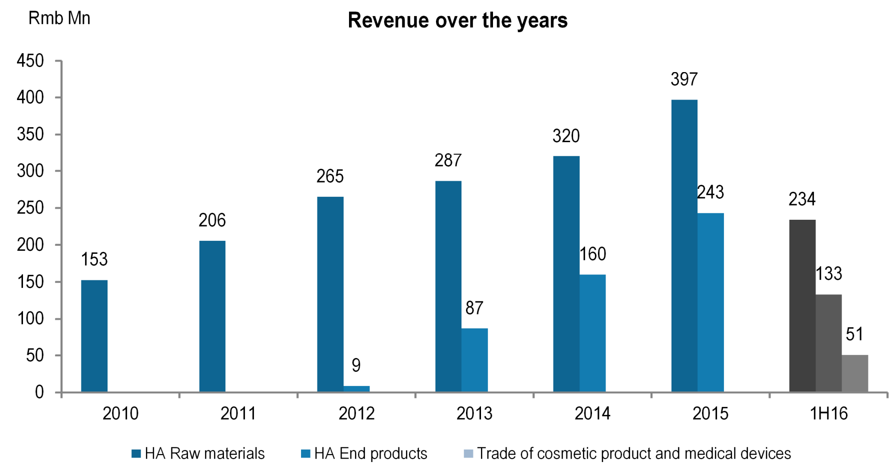
Figure 21: Revenue Share of different segments



Source: Company data

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Figure 22: Revenue distribution of Bloomage over the years



Source: Company data

HA Raw materials

HA raw materials products of the company can be classified into 3 major grades, namely medicine grade, cosmetic grade and food grade. The whole project spectrum consists of more than 70 products. The company has around 50% and 20% market share in Chinese and global HA raw material supply, according to management. Bloomage has taken significant leaps in the technology behind HA raw materials manufacturing. It has also developed certain new HA materials.

Table 12: Major HA raw material products offered by Bloomage

Products	Description
Hyatrue	Hyatrue is a pharmaceutical grade sodium hyaluronate developed by Bloomage Freda Biopharm Co., Ltd., which can be used as an API or excipient for drugs and medical devices in ophthalmic preparations, in-articular injections, anti-adhesive preparations, topical preparations for wound healing and soft tissue filler, etc. It includes Medical Grade Sodium Hyaluronate and Injection Grade Sodium Hyaluronate.
Haplex	Food grade HA.
	Used in health and ordinary food for skin moisture, anti-aging and improving joint function.
Freda	Cosmetic grade HA.
	Used in skin care, makeup, cleansing and hair products.
Hyacolor	Hyacolor, as the moisturizing solution for color cosmetics, was launched into the market in October 2013. The product is made of Sodium Hyaluronate (HA) and botanical oils through a special technological process. The active ingredient HA is evenly dispersed in the oil phase in the form of microsphere. Hyacolor can be used as a good humectant for makeup products, such as lipstick, foundation, etc. By combining the natural moisturizing factor-HA with color cosmetics, this new and unique product provides a look of natural beauty.
Hyacross	Hyacross Hyaluronic Acid Elastomer is a crosslinked polymer derived from natural Hyaluronic Acid (HA). It has smooth and not sticky feeling. Hyacross improves the skin barrier function, reduces the water evaporation from cuticle and prevents the skin damage caused by external aggressions like UV ray, pollution, etc.
CationHA	cationHA, as a conditioning moisturizer, is a complex association between cationic and Sodium Hyaluronate HA with different molecular weights. It helps to reduce the inflammation to the skin caused by surfactants present in formulas and feeling smooth.
MiniHA	miniHA can be applied in anti-aging, repairing and moisturizing products, such as eye cream, mask, serum, sunblock cream, BB cream, lipstick, etc.
Gabarelax	A new type of food raw material which helps people feel relaxed and happy.
Gabacare	An anti-aging new material

Source: Company data

Bloomage continues to maintain its monopoly over the HA raw material sector in the PRC, in part due to both its unique fermentation process and its continuous drive to improve on its technical and manufacturing capabilities.

HA end products

Through the launch of HA end products Bloomage is trying to enter into the booming medical cosmetics end consumer market. The expected market size of China professional skin care products in 2018 will be RMB 74.42 billion. In recent years the group has successfully launched several major products, most notably BioHyalux which is used for facial cosmetic surgery injections. Other products include Hymois (Medical Sodium Hyaluronate gel for ophthalmological use), HA+ medical skin care products, Hyprojoint (intro-articular injection) and medical beauty devices.

As evident from the graph above, the share of HA end products in the company's overall revenue increased from 33% in 2014 to 37% in 2015, which accounted for a 58% increase in the revenue attributable to this sector.

Table 13: HA end product products offered by Bloomage

Products	Description
BioHyalux	It's an injectable hyaluronan soft tissue filling gel launched in 2012. It's mainly used for smoothing facial wrinkles and skin anti-aging.
Hymois	Medical Sodium Hyaluronate gel for ophthalmological use
Hyprojoint	Bone products for intra-articular injection

Source: Company data

Trading Business

In 1H16, the company established a separate business line for trading of cosmetic products and devices. This segment purchases products from external suppliers and sells them to external customer. In 1H16, this segment generated Rmb51mn revenue and contributed 12% of total revenue. Its gross margin is 21.9%.

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

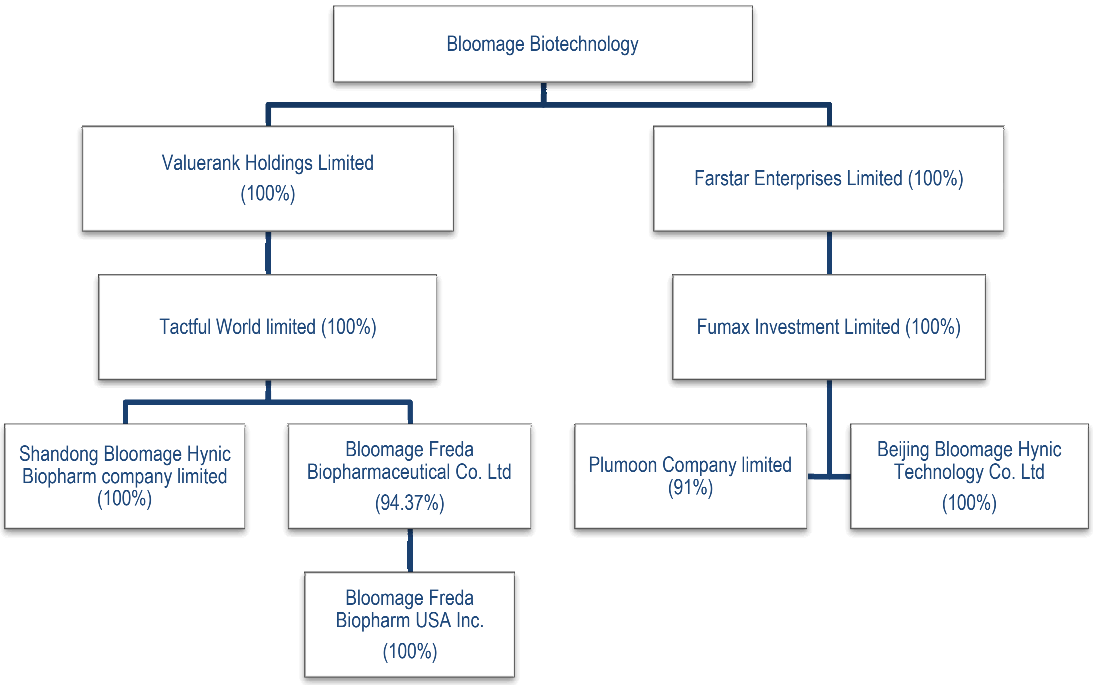
SWOT Analysis

Strengths	Weaknesses
• Bloomage is the world's largest producer of HA raw materials • Leading HA fillers and HA medical skin care manufacturer in china • Bloomage's medical grade HA raw material is on-par with overseas suppliers but cheaper, placing it in a strong position on overseas market • It has achieved world's highest production yield, which provides it a cost advantage • Strong R&D team with over 60 **people** with PhD & 20 years of experience • Broad sales channel covering over 710 hospitals • China's first medical aesthetics ecosystem offering products, services, solutions and platform • BioHyalux enjoys 26% market share in 1H16 according to management, in China's end product market with high product quality and relatively low price • Experienced management and operating team	• Bloomage's operations are mostly concentrated in China • High revenue concentration on HA cosmetic food grade raw material • Limited budget powering on HA raw material price • Heavy reliance of a few suppliers. 43.7% of the purchases come from 5 suppliers
Opportunities	**Threats**
• China's licenses filler market volume is expected to grow at a CAGR of 6. in the next 5 years, according to Bloomage • With an increasing ageing population in China, demand to reduce skin aging from aesthetics medical customers will increase • Continuously increasing disposable income will drive the consumption of medical aesthetics in China • By forming strategic alliances with Vivacy and MedyTox, Bloomage can take advantage of R&D facilities. Also it can enter into the European medical aesthetics market	• Allegran's Juvedram was approved by Chinese regulators. Though it is priced higher than Biohyalux, it will still increase the competition in the market • In order to tap the growing Chinese market, other global players might enter the market • The penetration of fake & cheap aesthetics products can harm the sales of Bloomage's products since its price is least among its competitors • Legal issues relating to side effects or failed aesthetics treatments can damage the brand image as well as revenue

Source: J.P. Morgan

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Company Shareholding Structure



Source: Company data

Company History

1990
- The first company in China to research HA by biofermentation successfully

1998
- Bloomage Freda was founded, and realized the industrial production of HA.

2008
- Bloomage Biotech was listed in Hong Kong Stock Exchange on Oct. 3rd, 2008, (Stock Code: 00963.HK)

2011
- Cosmetic grade HA products received ECOCERT certificate for organic ingridients in cosmetics
- Launched MiniHA and became the world's first manufacturer to industrialize production og Oligo HA by enzyme degradation

2012
- The manufacturing facilities successfully passed an on-site inspection by the US FDA & KFDA.
- Biohyalux, the first HA dermal filler made in China, was approved by CFDA. HYMOIS was approved by CFDA.

2013
- Hyprojoint & Biohyalux got the CE certification

2014
- Bloomage Biotech is listed on Forbes "2014 Top 200 best small and medium public companies in Asia"

2015
- Acquired 33.41% stakes in European Laboratoroies Vivacy for international development
- Formed Joint Venture with Korean MedyTox for exploiting China’s botulinum toxin market
- GIC acquired 4.46% stakes in Bloomage Biotechnology

Source: Company data

Key Senior Management profile

Ms. Zhao Yan, Chairman and Executive Director. Ms. Zhao, aged 49, is the director of several subsidiaries of the Company. Ms. Zhao started her business from 1989 and had engaged in various sectors, including real estate development, culture and sports, biotechnology, investment and management. She has over 26 years’ experience in investment and management. Presently, Ms. Zhao is also the chairman of Bloomage International Investments Group Inc. (“Bloomage International”). Ms. Zhao is the sole director and shareholder of AIM First Investments Limited which holds approximately 50.5% of the shares of the Company.

Bloomage Central Property Management Co. Ltd., of which Ms. Zhao has 87% stake, has been leasing an office property in Beijing to Beijing Bloomage Hyinc, a principal subsidiary of the company. The lease contract terms are reviewed by INEDs regularly to ensure that they are in normal commercial terms. The most recent renewal was in January 2016 for a lease term of 1 year (3 years in last renewal) incepting on 1 Jan 2016 (1 Jan 2013) with an annual rental cap of Rmb6.75mn (Rmb 6.25mn).

On 22 May 2014, AIM First Investments Limited ("AFI", the controlling shareholder of the Company), Ms. Zhao Yan (as warrantor for AFI), Wealthy Delight Group Limited ("Wealthy Delight") and Mr. Jin Xuekun (as warrantor for Wealthy Delight) entered into an option agreement (the "Option Agreement"). Pursuant to the Option Agreement, AFI granted a call option (the "AFI Call Option") to Wealthy Delight for the purchase of 9,960,000 shares of the Company (the "Option Shares") held by AFI. The AFI Call Option is exercisable from 22 May 2014 to 22 May 2019 at HK$5.80 per share (the "Transfer Price"). Also, pursuant to the same Option Agreement, Wealthy Delight granted a call option to AFI to require Wealthy Delight to transfer the Option Shares or any part thereof held by Wealthy Delight to AFI at the Transfer Price on the condition that AFI Call Option has been exercised by Wealthy Delight and Mr. Jin resigns as the chief executive officer of the Company due to personal reasons. The call option granted by Wealthy Delight to AFI is exercisable from the completion date of the transfer of the relevant Option Shares under the AFI Call Option to 22 May 2019. The Transfer Price and/or the number of the Option Shares are subject to adjustment upon any consolidation or subdivision of shares of the Company during the term of the Option Agreement. The arrangements under the Option Agreement are to provide incentive to Mr. Jin to remain as the chief executive officer of the Company.

Mr. Jin Xuekun, Executive Director, the Chief Executive Officer and Remuneration Committee Member of the Company. Mr. Jin, aged 51, is the director of several subsidiaries of the Company and the general manager of Beijing Bloomage Hyinc Technology Company Limited ("Beijing Bloomage Hyinc"). Mr. Jin previously worked in various large international medical instrument groups. Mr. Jin has over 20 years' experience in the sales and marketing of international medical instruments in the PRC. Mr. Jin is fully responsible for the Group's business planning and operations management. Mr. Jin had been an independent non-executive Director from 18 June 2012 to 29 October 2013.

On 29 October 2013, 6,640,000 share options to subscribe for a total of 6,640,000 shares were granted to Mr. Jin Xuekun under the Scheme, each share option shall entitle Mr. Jin to subscribe for one share at the exercise price of HKD16.652 per share, subject to achievement of the performance target for the relevant period before the share option can be exercised. 25% of the share options may be exercised within the period from 23 December 2014 to 22 December 2018, 25% of the share options may be exercised within the period from 23 December 2015 to 22 December 2018, 25% of the share options may be exercised within the period from 23 December 2016 to 22 December 2018, and the remaining 25% share options may be exercised within the period from 23 December 2017 to 22 December 2018. Details of the grant of share options are set out in the announcement of the Company dated 29 October 2013.

Mr Jin. is granted with non-secured loan facilities by the company. The facility amount is HKD49.40mn at 2% p.a repayable on demand. No loan was drawn by Mr Jin. as at end-2015. Mr. Jin is also involved in an option agreement with Mr Zhao Yan, the Chairman and Executive Director of the Company, for more detail please refers to Ms. Zhao's session.

Ms. Liu Aihua, Executive Director, the Chief Operating Officer and Nomination Committee Member of the Company. She had been the chief executive officer of the Company from 18 June 2012 until 20 December 2013, and had been the general manager of Bloomage Freda Biopharmaceutical Co., Ltd. ("Bloomage Biopharm") and Shandong Bloomage Hyinc Biopharm Company Limited ("Shandong Bloomage Hyinc") and resigned in January 2016 and March 2016 respectively. Ms. Liu had worked for Jinan Yongning Pharmaceutical Ltd. during the period between August 1983 and July 1998 and was responsible for research and technical management. Ms. Liu has over 30 years' experience in both of pharmaceutical research and management. Ms. Liu is the director of several subsidiaries of the Company.

Mr. Gong Anmin, Chief financial officer of the Company since January 2014. Mr. Gong is also the general manager of Bloomage Biopharm and Shandong Bloomage Hyinc. Mr. Gong graduated with a bachelor's degree in economics from the Central University of Finance and Economics in 1988 and completed an international MBA program organized by the China Center for Economic Research at Peking University from 2000 to 2002, and was awarded a masters degree of business administration by Fordham University of the US in 2002. He had worked in several large state-owned enterprises and foreign enterprises for years, and thus has extensive experience in financial management and corporate governance.

Ms. Wang Aihua, Executive Director. Aged 37, Ms Wang graduated from Yanshan University in 1999 with a bachelor's degree in economics major in international economic and trading. She further obtained a master of business administration degree from Yanshan University in 2004 with a major in the management science and engineering from 2001 to 2004. Ms. Wang worked as an analyst for Golden Credit Rating International Co., Ltd. and was responsible for analysis and assessment of company solvency and major loan projects. She is responsible for the office operation of the Board and capital management of the Group. Ms. Wang is the director of several subsidiaries of the Company. She joined the Group in December 2008.

Ms. Wang. is granted with non-secured loan facilities by the company. The facility amount is HKD2.47mn at 2% p.a repayable on demand. No loan was drawn by Ms. Wang. as at end-2015.

Mr. Yau Wai Yan, Non-executive Director and the Company Secretary of the Company since 18 January 2016. Mr. Yau, aged 40, is an associate member of the Hong Kong Institute of Certified Public Accountants. Mr. Yau graduated from the Hong Kong University of Science and Technology with a bachelor's degree in professional accounting. Prior to joining the Company, Mr. Yau had worked for an international accounting firm for over 10 years. Mr. Yau is the financial controller, the authorized representative of the Company and is a director of a subsidiary of the Company.

Mr. Yau. is granted with non-secured loan facilities by the company. The facility amount is HKD2.47mn at 2% p.a repayable on demand. No loan was drawn by Mr. Yau. as at end-2015.

Isabella Y. Zhao, CFA
(852) 2800-8534
isabella.zhao@jpmorgan.com

Investment Thesis, Valuation and Risks

Bloomage Biotechnology Corporation Ltd *(Overweight; Price Target: HK$20.00)*

Investment Thesis

Bloomage is the first and only aesthetic ecosystem provider with differentiated products & service along the full value chain: 1) largest HA raw material provider with dominating market share; 2) rapidly developing HA end product business; 3) robust growth in Bio-Mesotherapy, aesthetic device and skin care products & services. We expect it continue to grow the bottom line rapidly at a CAGR of more than 20% from FY16-18.

Valuation

Our Dec-17 PT of HK$20.00 is based on a DCF valuation that assumes a market risk premium of 6.0% and a risk-free rate of 4.2% (yield on 10-year government notes in China). We assume a beta of 0.86. Accordingly, WACC is assumed at 9.4%. We estimate free cash flow for Bloomage until 2020 and assume a terminal growth rate of 4%.

Risks to Rating and Price Target

Key risks to our rating and price target: 1) strict government regulations affecting the approval of pipeline; 2) rising competition from overseas and domestic rivals; 3) declining gross margin on higher than expected price pressure; 4) potential execution risk on expansion into new business/regions.

Bloomage Biotechnology Corporation Ltd: Summary of Financials

Income Statement					
Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E
Revenues	481	651	835	1,029	1,269
% change Y/Y	28.3%	35.2%	28.3%	23.2%	23.4%
Gross Profit	375	487	559	679	831
% change Y/Y	25.2%	29.8%	14.8%	21.4%	22.4%
EBITDA	223	322	423	506	598
% change Y/Y	49.0%	44.4%	31.1%	19.7%	18.1%
EBIT	208	281	324	396	491
% change Y/Y	53.0%	22.6%	11.8%	26.8%	19.8%
EBIT Margin	43.2%	43.1%	38.8%	38.5%	38.7%
Net Interest	(10)	(17)	(47)	(47)	(30)
Earnings before tax	198	238	251	314	403
% change Y/Y	57.5%	20.1%	5.3%	25.3%	28.2%
Tax	(36)	(48)	(55)	(69)	(89)
as % of EBT	18.2%	20.0%	22.0%	22.0%	22.0%
Net income (reported)	162	190	195	245	314
% change Y/Y	71.7%	17.5%	2.6%	25.3%	28.2%
Shares outstanding	333	333	333	333	333
Adj. EPS	0.49	0.63	0.66	0.82	1.04
% change Y/Y	71.7%	29.3%	4.9%	24.8%	25.9%

Cash flow statement					
Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E
EBIT	208	281	324	396	491
Depr. & amortization	15	42	99	109	107
Change in working capital	(63)	(122)	(92)	(29)	(121)
Taxes	(44)	(39)	(58)	(73)	(92)
Cash flow from operations	137	185	240	372	353
Capex	(118)	(267)	(100)	(103)	(127)
Net Interest	(10)	(17)	(47)	(47)	(30)
Other	30	(265)	215	36	0
Free cash flow	29	(68)	177	307	250
Equity raised/(repaid)	0	156	0	0	0
Debt raised/(repaid)	(43)	446	0	0	0
Other	0	380	0	0	0
Dividends paid	(5)	(7)	(7)	(9)	(11)
Beginning cash	169	188	677	1,025	1,321
Ending cash	188	651	1,025	1,321	1,536
DPS	0.01	0.02	0.02	0.02	0.03

Balance sheet					
Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E
Cash and cash equivalents	188	651	1,025	1,321	1,536
Accounts receivable	158	212	263	322	400
Inventories	55	118	173	196	266
Others	115	295	295	295	295
Current assets	516	1,276	1,756	2,134	2,496
LT investments	72	71	71	71	71
Net fixed assets	376	363	427	478	533
Total Assets	965	2,199	2,440	2,776	3,158
Liabilities					
Short-term loans	0	473	473	473	473
Payables	31	118	132	185	212
Others	130	33	33	33	33
Total current liabilities	161	624	639	691	719
Long-term debt	0	327	327	327	327
Other liabilities	9	16	16	16	16
Total Liabilities	213	1,007	1,022	1,075	1,102
Shareholders' equity	752	1,192	1,418	1,701	2,057
BVPS	2.26	3.58	4.26	5.11	6.17

Ratio Analysis					
Rmb in millions, year end Dec	FY14	FY15	FY16E	FY17E	FY18E
Gross margin	78.0%	74.9%	67.0%	66.0%	65.5%
EBITDA margin	46.4%	49.5%	50.6%	49.2%	47.1%
Operating margin	43.2%	43.1%	38.8%	38.5%	38.7%
Net margin	33.7%	33.2%	28.0%	28.3%	28.9%
Sales per share growth	24.0%	34.8%	28.3%	23.2%	23.4%
Sales growth	28.3%	35.2%	28.3%	23.2%	23.4%
Net profit growth	71.7%	17.5%	2.6%	25.3%	28.2%
EPS growth	71.7%	29.3%	4.9%	24.8%	25.9%
Interest coverage (x)	23.2	19.3	9.0	10.8	19.9
Net debt to equity	(25.0%)	(14.9%)	(38.9%)	(49.8%)	(51.7%)
Working Capital to Sales	0.7	1.0	1.3	1.4	1.4
Sales/assets	0.6	0.4	0.4	0.4	0.4
Assets/equity	1.3	1.6	1.8	1.7	1.6
ROE	24.6%	22.3%	17.9%	18.7%	19.5%
ROCE	30.7%	16.8%	12.3%	13.4%	14.7%

Source: Company reports and J.P. Morgan estimates.

Analyst Certification: The research analyst(s) denoted by an “AC” on the cover of this report certifies (or, where multiple research analysts are primarily responsible for this report, the research analyst denoted by an “AC” on the cover or within the document individually certifies, with respect to each security or issuer that the research analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect his or her personal views about any and all of the subject securities or issuers; and (2) no part of any of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst(s) in this report. For all Korea-based research analysts listed on the front cover, they also certify, as per KOFIA requirements, that their analysis was made in good faith and that the views reflect their own opinion, without undue influence or intervention.

Important Disclosures

- **Market Maker/ Liquidity Provider:** J.P. Morgan Securities plc and/or an affiliate is a market maker and/or liquidity provider in securities issued by Bloomage Biotechnology Corporation Ltd.
- **Other Significant Financial Interests:** J.P. Morgan owns a position of 1 million USD or more in the debt securities of Bloomage Biotechnology Corporation Ltd.
- MSCI: The MSCI sourced information is the exclusive property of MSCI. Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, redisseminated or used to create any financial products, including any indices. This information is provided on an 'as is' basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI and the MSCI indexes are services marks of MSCI and its affiliates.

Company-Specific Disclosures: Important disclosures, including price charts and credit opinion history tables, are available for compendium reports and all J.P. Morgan–covered companies by visiting https://jpmm.com/research/disclosures, calling 1-800-477-0406, or e-mailing research.disclosure.inquiries@jpmorgan.com with your request. J.P. Morgan’s Strategy, Technical, and Quantitative Research teams may screen companies not covered by J.P. Morgan. For important disclosures for these companies, please call 1-800-477-0406 or e-mail research.disclosure.inquiries@jpmorgan.com.

Bloomage Biotechnology Corporation Ltd (0963.HK, 963 HK) Price Chart

Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.

The chart(s) show J.P. Morgan's continuing coverage of the stocks; the current analysts may or may not have covered it over the entire period.
J.P. Morgan ratings or designations: OW = Overweight, N= Neutral, UW = Underweight, NR = Not Rated

Explanation of Equity Research Ratings, Designations and Analyst(s) Coverage Universe:
J.P. Morgan uses the following rating system: Overweight [Over the next six to twelve months, we expect this stock will outperform the

average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Neutral [Over the next six to twelve months, we expect this stock will perform in line with the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Underweight [Over the next six to twelve months, we expect this stock will underperform the average total return of the stocks in the analyst's (or the analyst's team's) coverage universe.] Not Rated (NR): J.P. Morgan has removed the rating and, if applicable, the price target, for this stock because of either a lack of a sufficient fundamental basis or for legal, regulatory or policy reasons. The previous rating and, if applicable, the price target, no longer should be relied upon. An NR designation is not a recommendation or a rating. In our Asia (ex-Australia) and U.K. small- and mid-cap equity research, each stock's expected total return is compared to the expected total return of a benchmark country market index, not to those analysts' coverage universe. If it does not appear in the Important Disclosures section of this report, the certifying analyst's coverage universe can be found on J.P. Morgan's research website, www.jpmorganmarkets.com.

J.P. Morgan Equity Research Ratings Distribution, as of July 1, 2016

	Overweight (buy)	Neutral (hold)	Underweight (sell)
J.P. Morgan Global Equity Research Coverage	43%	45%	12%
IB clients*	52%	49%	37%
JPMS Equity Research Coverage	42%	50%	8%
IB clients*	68%	65%	51%

*Percentage of investment banking clients in each rating category.
For purposes only of FINRA/NYSE ratings distribution rules, our Overweight rating falls into a buy rating category; our Neutral rating falls into a hold rating category; and our Underweight rating falls into a sell rating category. Please note that stocks with an NR designation are not included in the table above.

Equity Valuation and Risks: For valuation methodology and risks associated with covered companies or price targets for covered companies, please see the most recent company-specific research report at http://www.jpmorganmarkets.com, contact the primary analyst or your J.P. Morgan representative, or email research.disclosure.inquiries@jpmorgan.com.

Equity Analysts' Compensation: The equity research analysts responsible for the preparation of this report receive compensation based upon various factors, including the quality and accuracy of research, client feedback, competitive factors, and overall firm revenues.

Registration of non-US Analysts: Unless otherwise noted, the non-US analysts listed on the front of this report are employees of non-US affiliates of JPMS, are not registered/qualified as research analysts under NASD/NYSE rules, may not be associated persons of JPMS, and may not be subject to FINRA Rule 2711 and NYSE Rule 472 restrictions on communications with covered companies, public appearances, and trading securities held by a research analyst account.

Other Disclosures

J.P. Morgan ("JPM") is the global brand name for J.P. Morgan Securities LLC ("JPMS") and its affiliates worldwide. J.P. Morgan Cazenove is a marketing name for the U.K. investment banking businesses and EMEA cash equities and equity research businesses of JPMorgan Chase & Co. and its subsidiaries.

All research reports made available to clients are simultaneously available on our client website, J.P. Morgan Markets. Not all research content is redistributed, e-mailed or made available to third-party aggregators. For all research reports available on a particular stock, please contact your sales representative.

Options related research: If the information contained herein regards options related research, such information is available only to persons who have received the proper option risk disclosure documents. For a copy of the Option Clearing Corporation's Characteristics and Risks of Standardized Options, please contact your J.P. Morgan Representative or visit the OCC's website at http://www.optionsclearing.com/publications/risks/riskstoc.pdf

Legal Entities Disclosures
U.S.: JPMS is a member of NYSE, FINRA, SIPC and the NFA. JPMorgan Chase Bank, N.A. is a member of FDIC. **U.K.**: JPMorgan Chase N.A., London Branch, is authorised by the Prudential Regulation Authority and is subject to regulation by the Financial Conduct Authority and to limited regulation by the Prudential Regulation Authority. Details about the extent of our regulation by the Prudential Regulation Authority are available from J.P. Morgan on request. J.P. Morgan Securities plc (JPMS plc) is a member of the London Stock Exchange and is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. Registered in England & Wales No. 2711006. Registered Office 25 Bank Street, London, E14 5JP. **South Africa**: J.P. Morgan Equities South Africa Proprietary Limited is a member of the Johannesburg Securities Exchange and is regulated by the Financial Services Board. **Hong Kong**: J.P. Morgan Securities (Asia Pacific) Limited (CE number AAJ321) is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission in Hong Kong and/or J.P. Morgan Broking (Hong Kong) Limited (CE number AAB027) is regulated by the Securities and Futures Commission in Hong Kong. **Korea**: This material is issued and distributed in Korea by or through J.P. Morgan Securities (Far East) Limited, Seoul Branch, which is a member of the Korea Exchange(KRX) and is regulated by the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS). **Australia**: J.P. Morgan Australia Limited (JPMAL) (ABN 52 002 888 011/AFS Licence No: 238188) is regulated by ASIC and J.P. Morgan Securities Australia Limited (JPMSAL) (ABN 61 003 245 234/AFS Licence No: 238066) is regulated by ASIC and is a Market, Clearing and Settlement Participant of ASX Limited and CHI-X. **Taiwan**: J.P.Morgan Securities (Taiwan) Limited is a participant of the Taiwan Stock Exchange (company-type) and regulated by the Taiwan Securities and Futures Bureau. **India:** J.P. Morgan India Private Limited (Corporate Identity Number - U67120MH1992FTC068724), having its registered office at J.P. Morgan Tower, Off. C.S.T. Road, Kalina,

Santacruz - East, Mumbai – 400098, is registered with Securities and Exchange Board of India (SEBI) as a 'Research Analyst' having registration number INH000001873. J.P. Morgan India Private Limited is also registered with SEBI as a member of the National Stock Exchange of India Limited (SEBI Registration Number - INB 230675231/INF 230675231/INE 230675231) and Bombay Stock Exchange Limited (SEBI Registration Number - INB 010675237/INF 010675237). Telephone: 91-22-6157 3000, Facsimile: 91-22-6157 3990 and Website: www.jpmipl.com. For non local research reports, this material is not distributed in India by J.P. Morgan India Private Limited. **Thailand**: This material is issued and distributed in Thailand by JPMorgan Securities (Thailand) Ltd., which is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission and its registered address is 3rd Floor, 20 North Sathorn Road, Silom, Bangrak, Bangkok 10500. **Indonesia**: PT J.P. Morgan Securities Indonesia is a member of the Indonesia Stock Exchange and is regulated by the OJK a.k.a. BAPEPAM LK. **Philippines**: J.P. Morgan Securities Philippines Inc. is a Trading Participant of the Philippine Stock Exchange and a member of the Securities Clearing Corporation of the Philippines and the Securities Investor Protection Fund. It is regulated by the Securities and Exchange Commission. **Brazil**: Banco J.P. Morgan S.A. is regulated by the Comissao de Valores Mobiliarios (CVM) and by the Central Bank of Brazil. **Mexico**: J.P. Morgan Casa de Bolsa, S.A. de C.V., J.P. Morgan Grupo Financiero is a member of the Mexican Stock Exchange and authorized to act as a broker dealer by the National Banking and Securities Exchange Commission. **Singapore:** This material is issued and distributed in Singapore by or through J.P. Morgan Securities Singapore Private Limited (JPMSS) [MCI (P) 193/03/2016 and Co. Reg. No.: 199405335R], which is a member of the Singapore Exchange Securities Trading Limited and/or JPMorgan Chase Bank, N.A., Singapore branch (JPMCB Singapore), both of which are regulated by the Monetary Authority of Singapore. This material is issued and distributed in Singapore only to accredited investors, expert investors and institutional investors, as defined in Section 4A of the Securities and Futures Act, Cap. 289 (SFA). This material is not intended to be issued or distributed to any retail investors or any other investors that do not fall into the classes of "accredited investors," "expert investors" or "institutional investors," as defined under Section 4A of the SFA. Recipients of this document are to contact JPMSS or JPMCB Singapore in respect of any matters arising from, or in connection with, the document. **Japan**: JPMorgan Securities Japan Co., Ltd. and JPMorgan Chase Bank, N.A., Tokyo Branch are regulated by the Financial Services Agency in Japan. **Malaysia**: This material is issued and distributed in Malaysia by JPMorgan Securities (Malaysia) Sdn Bhd (18146-X) which is a Participating Organization of Bursa Malaysia Berhad and a holder of Capital Markets Services License issued by the Securities Commission in Malaysia. **Pakistan**: J. P. Morgan Pakistan Broking (Pvt.) Ltd is a member of the Karachi Stock Exchange and regulated by the Securities and Exchange Commission of Pakistan. **Saudi Arabia**: J.P. Morgan Saudi Arabia Ltd. is authorized by the Capital Market Authority of the Kingdom of Saudi Arabia (CMA) to carry out dealing as an agent, arranging, advising and custody, with respect to securities business under licence number 35-07079 and its registered address is at 8th Floor, Al-Faisaliyah Tower, King Fahad Road, P.O. Box 51907, Riyadh 11553, Kingdom of Saudi Arabia. **Dubai**: JPMorgan Chase Bank, N.A., Dubai Branch is regulated by the Dubai Financial Services Authority (DFSA) and its registered address is Dubai International Financial Centre - Building 3, Level 7, PO Box 506551, Dubai, UAE.

Country and Region Specific Disclosures

U.K. and European Economic Area (EEA): Unless specified to the contrary, issued and approved for distribution in the U.K. and the EEA by JPMS plc. Investment research issued by JPMS plc has been prepared in accordance with JPMS plc's policies for managing conflicts of interest arising as a result of publication and distribution of investment research. Many European regulators require a firm to establish, implement and maintain such a policy. Further information about J.P. Morgan's conflict of interest policy and a description of the effective internal organisations and administrative arrangements set up for the prevention and avoidance of conflicts of interest is set out at the following link https://www.jpmorgan.com/jpmpdf/1320678075935.pdf. This report has been issued in the U.K. only to persons of a kind described in Article 19 (5), 38, 47 and 49 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is only available to relevant persons and will be engaged in only with relevant persons. In other EEA countries, the report has been issued to persons regarded as professional investors (or equivalent) in their home jurisdiction. **Australia:** This material is issued and distributed by JPMSAL in Australia to "wholesale clients" only. This material does not take into account the specific investment objectives, financial situation or particular needs of the recipient. The recipient of this material must not distribute it to any third party or outside Australia without the prior written consent of JPMSAL. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Corporations Act 2001. **Germany:** This material is distributed in Germany by J.P. Morgan Securities plc, Frankfurt Branch and J.P.Morgan Chase Bank, N.A., Frankfurt Branch which are regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht. **Hong Kong:** The 1% ownership disclosure as of the previous month end satisfies the requirements under Paragraph 16.5(a) of the Hong Kong Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission. (For research published within the first ten days of the month, the disclosure may be based on the month end data from two months prior.) J.P. Morgan Broking (Hong Kong) Limited is the liquidity provider/market maker for derivative warrants, callable bull bear contracts and stock options listed on the Stock Exchange of Hong Kong Limited. An updated list can be found on HKEx website: http://www.hkex.com.hk. **Japan:** There is a risk that a loss may occur due to a change in the price of the shares in the case of share trading, and that a loss may occur due to the exchange rate in the case of foreign share trading. In the case of share trading, JPMorgan Securities Japan Co., Ltd., will be receiving a brokerage fee and consumption tax (shouhizei) calculated by multiplying the executed price by the commission rate which was individually agreed between JPMorgan Securities Japan Co., Ltd., and the customer in advance. Financial Instruments Firms: JPMorgan Securities Japan Co., Ltd., Kanto Local Finance Bureau (kinsho) No. 82 Participating Association / Japan Securities Dealers Association, The Financial Futures Association of Japan, Type II Financial Instruments Firms Association and Japan Investment Advisers Association. **Korea:** This report may have been edited or contributed to from time to time by affiliates of J.P. Morgan Securities (Far East) Limited, Seoul Branch. **Singapore:** As at the date of this report, JPMSS is a designated market maker for certain structured warrants listed on the Singapore Exchange where the underlying securities may be the securities discussed in this report. Arising from its role as designated market maker for such structured warrants, JPMSS may conduct hedging activities in respect of such underlying securities and hold or have an interest in such underlying securities as a result. The updated list of structured warrants for which JPMSS acts as designated market maker may be found on the website of the Singapore Exchange Limited: http://www.sgx.com.sg. In addition, JPMSS and/or its affiliates may also have an interest or holding in any of the securities discussed in this report – please see the Important Disclosures section above. For securities where the holding is 1% or greater, the holding may be found in the Important Disclosures section above. For all other securities mentioned in this report, JPMSS and/or its affiliates may have a holding of less than 1% in such securities and may trade them in ways different from those discussed in this report. Employees of JPMSS and/or its affiliates not involved in the preparation of this report may have investments in the securities (or derivatives of such securities) mentioned in this report and may trade them in ways different from those discussed in this report. **Taiwan**: This material is issued and distributed in Taiwan by J.P. Morgan Securities (Taiwan) Limited. **India:** For private circulation only, not for sale. **Pakistan:** For private circulation only, not for sale. **New Zealand:** This material is issued and distributed by JPMSAL in New Zealand only to persons whose principal business is the investment of money or who, in the course of and for the purposes of their business, habitually invest money. JPMSAL does not issue or distribute this material to members of "the public" as determined in accordance with section 3 of the Securities Act 1978. The recipient of this material must not distribute it to any third party or outside New Zealand without the prior written consent of JPMSAL. **Canada:** The information contained herein is not, and under no circumstances is to be construed as, a prospectus, an advertisement, a public offering, an offer to sell securities described herein, or solicitation of an offer to buy securities described herein, in Canada or any province or territory thereof. Any offer or sale of the securities described herein in Canada will be made only under an exemption from the requirements to file a prospectus with the relevant Canadian securities regulators and only by a dealer properly registered under applicable securities laws or, alternatively, pursuant to an exemption from the dealer registration requirement in the relevant province or territory of Canada in which such offer or sale is made. The information contained herein is under no circumstances to be construed as investment advice in any province or territory of Canada and is not tailored to the needs of the recipient. To the extent that the information contained herein references securities of an issuer incorporated, formed or created under the laws of Canada or a province or territory of Canada, any trades in such securities must be conducted through a dealer registered in Canada. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed judgment upon these materials, the information contained herein or the merits of the securities described herein, and any representation to the contrary is an offence. **Dubai:** This report has been issued to persons regarded as professional clients as defined under the DFSA rules. **Brazil**: Ombudsman J.P. Morgan: 0800-7700847 / ouvidoria.jp.morgan@jpmorgan.com.

General: Additional information is available upon request. Information has been obtained from sources believed to be reliable but JPMorgan Chase & Co. or its affiliates and/or subsidiaries (collectively J.P. Morgan) do not warrant its completeness or accuracy except with respect to any disclosures relative to JPMS and/or its affiliates and the analyst's involvement with the issuer that is the subject of the research. All pricing is indicative as of the close of market for the securities discussed, unless otherwise stated. Opinions and estimates constitute our judgment as of the date of this material and are subject to change without notice. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instrument. The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. The recipient of this report must make its own independent decisions regarding any securities or financial instruments mentioned herein. JPMS distributes in the U.S. research published by non-U.S. affiliates and accepts responsibility for its contents. Periodic updates may be provided on companies/industries based on company specific developments or announcements, market conditions or any other publicly available information. Clients should contact analysts and execute transactions through a J.P. Morgan subsidiary or affiliate in their home jurisdiction unless governing law permits otherwise.

"Other Disclosures" last revised July 9, 2016.