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China F&B China soybeans 101

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Ten questions on soybeans in China

Global climate change is raising concerns about grain output in various countries. Soybeans are one of the most important grain crops in China. To address investors' questions about whether China has enough grain to feed the nation, this report serves as a handy guide to understanding the dynamics of supply/demand and price movements in soybeans.

Soybean is an important oil crop in China

Soybean planting area accounts for 60% of China's total oil crop planting area and 8-10% of total grain planting area, just behind rice, wheat and corn. The main production areas are in the northeast region, Huang Huai River Plain and middle/ downstream of Yangtze River.

Soybean demand and supply in China

USDA data show China consumed 59.43mt of soybean in 2009/10 (+16% yoy) and forecast this to increase by 12% yoy to 67.05mt in 2010/11. The USDA estimates soybean crushing volume to be c.53.1mt in 2010/11 and the rest to be for food/seed purpose or exports. On the supply side, China produced 15.2mt of soybeans last year. While the current drought has not affected soybean output, the key concern is reduced plantation area as relatively lower profitability has prompted some farmers to switch to other crops, such as corn and cotton. The USDA expects China's soybean output to drop to 14.3mt this year.

China is a net importer of soybeans

China imported 1.1m tons of soybeans in 1996, when it was first opened up to the global soybean market, but import volume has since increased 45x to reach 54.8m tons in 2010 (+28.8% yoy). This year COFCO estimates China's reliance on imported soybean will reach a record high (i.e., 77.8% of consumption is met by imports). Currently, China imports soybeans mainly from Brazil and the US (accounting for close to 80% of imports).

China's soybean price is influenced by global prices

As China relies heavily on imported soybeans to meet domestic demand, the domestic soybean price is influenced by global prices. The PRC government also monitors and regulates soybean prices via (1) national reserves procurement and release and (2) setting a floor procurement price for the national reserves.

Hong Kong-listed companies use soybeans as inputs

China Agri is one of the largest edible oil and oilseed meal producers in China. Last year, it sold 901,000t of soy oil. China Foods (sister company of China Agri) is the second-largest consumer-packed edible oil company. For Vitasoy, c.60% of sales come from soymilk/tofu. Companies that have indirect exposure to soybean price changes are animal-husbandry companies (e.g., China Modern Dairy) and animal feed companies (e.g., Global Bio-chem, which produces lysine, a complementary substitute to soymeal).

Industry valuation and risks

For China consumer staple companies, we use DCF and PE/G as the key valuation parameters. Downside risks include rising input costs and competition. Upside risks include stronger sales from improving macro, strong product innovation pipeline, good control on input costs and A&P spend.

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All prices are those current at the end of the previous trading session unless otherwise indicated. Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies. Deutsche Bank does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1. MICA(P) 146/04/2011.

Industry Update

Top picks			
China Foods (0	506.HK),HK	D6.25	Sell
China Modern	Dairy (1117	.HK),HKD2.44	Buy
Companies	featured		
China Foods (0	506.HK),HK	D6.25	Sell
	2010A	2011E	2012E
P/E (x)	38.0	28.9	23.1
EV/EBITDA (x)	15.0	12.6	10.7
Price/book (x)	2.4	2.8	2.6
China Modern	Dairy (1117.	.HK),HKD2.44	Buy
	2010A	2011E	2012E
P/E (x)	-	44.3	18.4
EV/EBITDA (x)	-	30.2	16.2
Price/book (x)	0.0	1.9	1.7

Ten questions on soybeans in China

Q1. How important are soybeans in China?

 Soybean planting area accounts for 8-10% of total grain planting area, just behind rice, wheat and corn. For oil crops, 60% of the total planting area is soybean.

Q2. Where are the major soybean-growing regions in China?

- The main production areas in China are in the northeast region, Huang-Huai River Plain, and middle and downstream of Yangtze River.
 - 1. **Northeast region:** This is the largest soybean production area in China, accounting for 45-50% of the country's soybean output. In this area, soybean is sowed during the last ten days of April to the first or middle ten days of May, and is harvested in September.
 - 2. Huang-Huai River Plain Region: This area mainly produces summer soybeans, which are sowed during the middle or last ten days of June and harvested during the middle or last ten days of September.
 - 3. Yangtze River Region: This region grows both summer and spring soybeans.



Source: Ministry of Agriculture

Figure 2: China soybean sowing and harvesting cycle

Production Areas	Sub-Production Areas	Including Regions	Sowing Time	HarvestTime	Growing Period	Comment
Region Region North Altiplano Spring Soybean Region	Northeast Spring Soybean Region	Heilongjiang Jilin Liaoning Part of Inner Mongolia	The last ten days of April to the middle ten days of May	September	100-150	1
		North of Hebei North of Shanxi North of Shaanxi Part of Inner Mongolia Part of Ningxia	1	1	105-145	1
	Northwest Spring Soybean Region	Part of Xinjiang Part of Gansu	The first ten days of May	The last ten days of September	120-140	/
Huang-Huai River Summer Soybean Region	Middle of Hebei and Shanxi, Summer and Spring	South of Hebei Middle, southeast of	I	1		One year, two harvests. Two year, three harvests
	Huang-Huai River Summer Soybean Region	Shandong Majority of Henan North of Jiangsu North of Anhui Southwest of Shanxi Guanzhong Plant Part of Gansu	The middle and last ten days of June	The middle and last ten days of September	90-110	1
Soybean Region	Yangtze River Summer and Spring Soybean Region	Jiangsu Zhejiang Jiangxi	1). Summer: The last ten days of May to the first ten days of June	1). Summer: The last ten days of September to the first ten days of October	120-150	1
		Hubei Hunan South of Henan South of Shaanxi	2). Spring: The first ten days of April	2). Spring: The last ten days of July to first ten days of August	95-120	1
	Southeast Autumn and Spring Soybean Region	South of Zhejiang South of Jiangxi	1). Autumn: After the harvest of rice at the end of July.	1). Autumn: The first ten days of November	1	/
		Majority of Fujian Taiwan	2). Spring: March - April	2). The middle or last ten days of July .	/	/
	Middle and South China, Spring, Summer and Autumn Soybean Region	West and South of Hunan Guangdong	1). Spring: the last ten days of March 2). Summer: June	 Spring: The last ten days of June to The first ten days of July Summer: October 	1	/
		Guangxi	3). Autumn: the last ten days of July to the first ten days of August	3). Autumn: The first or middle ten days of November	/	/
Soybe South	Southwest Altiplano Spring Soybean Region	Guizhou Yunan	1). The first or middle ten days of April after rape harvest	September	1	1
		West of Hunan West of Guangxi West of Sichuan	2). The first or middle ten days of May after wheat harvest	October	110-150	1
	South China Multi Soybean Region	South of Guangdong South of Guangxi	February or The first ten days of 2). Summer: The last ten days of	2). Summer: The middle or last	1	/
		South of Yunan	May or The first ten days of June 3). Autumn: The first ten days of	ten days of August 3). Autumn: The last ten days of		
		Part of Fujian	July 4). Winter: The last ten days of December, or The first ten days of January	September 4).Winter:The last ten days of		

Q3. What is the profitability of soybean planting in China?

The profitability of soybean planting in China has been relatively low due to high production costs and low procurement prices, dragged down by cheap imported soybeans. Per mu profit for soybeans was RMB215, which was lower than RMB300 for corn. The relatively lower profitability of soybean planting hurts farmers' planting interests. The decrease in soybean planting acreages in Heilongjiang has been estimated to be more than 5m mu in 2011.

- In China, the per hectare production cost of domestic soybeans in 1996 was RMB3,734, which rose to RMB5,220 in 2008. Soybean planting cost in Heilongjiang in 2010 was about RMB410/mu (c. RMB6,150/hectare), up RMB32/mu from the 2009 level (up 8.5% yoy). The planting cost in Anhui was RMB390/mu (c. RMB5,850/hectare), up RMB25/mu from the 2009 level (up 6.7% yoy).
- Production costs in the US, Brazil and Argentina meanwhile were all kept fixed or have only slightly increased in recent years. Data from 2000 to 2008 show that the soybean production cost in Heilongjiang, China, was RMB2.07/kg, compared with RMB1.36/kg in the US and RMB0.63/kg in Brazil.

Q4. What is the volume of soybeans produced each year in China?

- Due to the shrinking margin of soybean planting, China's planting acreage and total output of soybeans are at risk of decline. China's total soybean output dropped 3.6% yoy to 14.98m tons in 2009, and increased 1.5% yoy to 15.2mt in 2010. The planting area in 2010 fell 4.24% yoy to 8.8m hectares.
- Current drought has not affected soybean output; reduced soybean plantation area in 2011 a key concern.
 - China Grain Oil Information Centre estimates China's total soybean output may drop by 1.2mt yoy to 14mt as the soybean plantation area may shrink by 0.6m hectare to 8.2m hectares in 2011.
 - USDA expects China's soybean output to decrease to 14.3mt in 2011-12 due to the higher profit margin of other crops, such as corn. In Heilongjiang, a major soybean output region, output may drop 10-20% this year. In Central China, a more favorable climate and sowing conditions has given farmers more crop options to plant. In other areas, soybean plantation has been switched to cotton. According to the China Cotton Association, cotton planting area will grow 6.6% yoy to 5.4m hectares in 2011.
- The central government in China has established a national reserve policy for soybeans and other important grains at all administrative levels

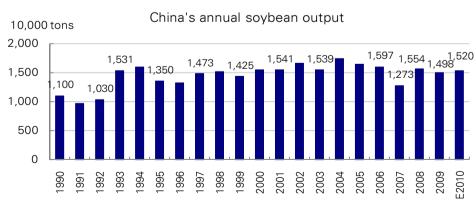


Figure 3: China's annual soybean output

Source: MoA

Figure 4: China's soybean ending stocks by yearend

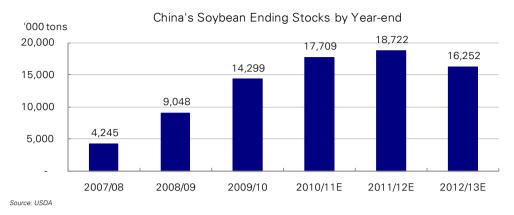


Figure 5: China's soybean planting acreage (1983-2010)

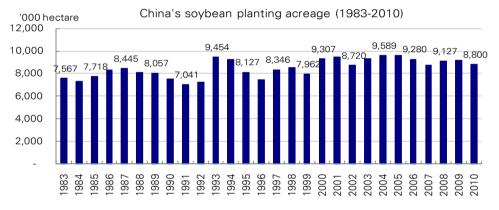
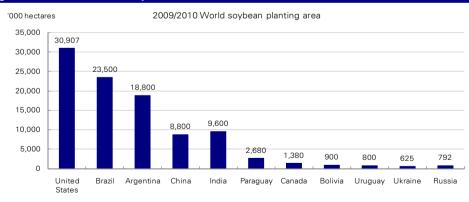


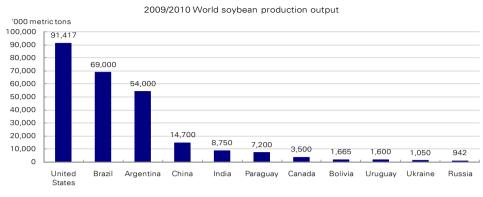


Figure 6: 2009-10 World soybean area



Source: USDA

Figure 7: 2009-10 World soybean production



Source: USDA

Q5. What is the annual volume of soybean consumption in China?

 USDA data show China soybean consumption in 2009/10 was 59.43mt (+16% yoy). The USDA estimates domestic soybean consumption in China in 2010/11 to be 67.05mt (+11.97% yoy). Apart from food, soybeans are used for seeds, soyoil crushing and exports.

1. Food

According to the latest report published by the China Soybean Industry Association, the total volume of soybeans used for food and food processing in 2010 was more than 10m tons, accounting for 65% of the total output.

2. Crushing

Driven by growing demand from the downstream animal-husbandry industry, soybean crushing volume in 2010/11 was estimated by USDA to increase by 14.89% yoy to 56.10mt, among which 10% was domestic soybeans crushed by small-scale processors with daily output capacity below 1,000 tons.

3. Export

China is the largest producer of food-use, non-genetically modified soybeans, and owns a 50% volume share in world soybean protein exports. The April CIF price of Canadian non-genetically modified soybeans was RMB5,200/ton, while non-genetically modified soybeans from the US were priced at USD1,000/ton. The CIF price of genetically modified soybeans from the US was RMB4,453/ton in April, the price of domestic non-genetically modified soybeans for export was USD700/ton (c.RMB4,592/ton). Domestic non-genetically modified and high-protein soybeans have obvious competitiveness.

 Compared with a 5% margin on edible-oil processing, soybean protein powder production is more profitable, with a higher margin of 27%; this therefore attracts more edible-oil processors to the business.

Figure 8: China's annual soybean consumption

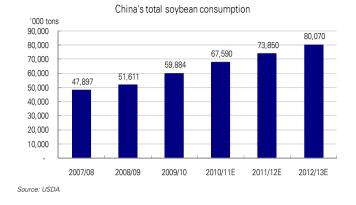


Figure 10: China soybean consumption (food/industry)

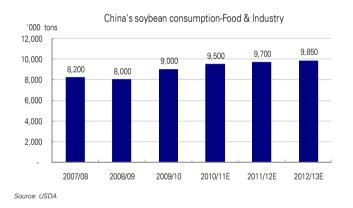


Figure 12: China's annual soybean consumption (export)

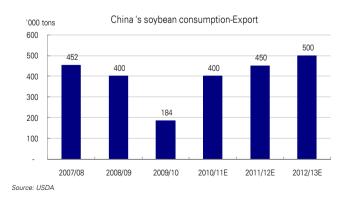


Figure 9: China's annual soybean consumption (seed)

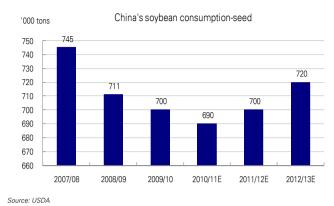
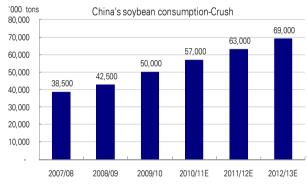


Figure 11: China's soybean consumption (crushing)



Source: USDA

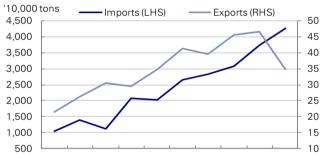
Q6. Is China a net importer or exporter of soybeans?

 China has been a net importer of soybeans during the past decade. It is now the world's largest consumer of soybeans and imports one-third of the total volume globally. China imports soybeans mainly from Brazil and the US, accounting for close to 80% of imports.

- China imported 1.1m tons of soybeans in 1996, when it was first opened up to the global soybean market, but import volume has since increased 45x to reach 54.8m tons in 2010 (+28.8% yoy).
- The highest monthly soybean import of 6.2m tons was recorded in June 2010. The fullyear average soybean import price was USD457.7/ton (+2.07% yoy) in 2010, and the highest monthly average import price reached USD532.3/ton in December.
- The current imported soybean price at port is c.Rmb3,920-3,960/t on average. The market has a mixed opinion on the imported soybean price due to reduced US planting acreage reported by USDA, but increased output in Brazil as forecasted by Oil World. According to the USDA's June report, China's soybean imports may drop to 54mt in 2010-11, far below the USDA's forecast at the beginning of the year. The price cap on soyoil and release of national soybean reserves in the spring slowed down China's import demand. The USDA expects China's soybean imports to recover to 58mt in 2011-12.
- According to COFCO's statistics, China's extent of import reliance on oilseeds (soybean, peanut, rapeseed and sunflower seed) increased to 54.2% in 2010-11. The reliance on soybean was the highest, at a record-high 77.8%.

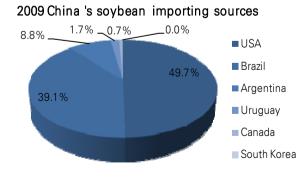
Figure 13: China's soybean export and import volume

Soybean exports and imports, (2000-2009), Volume



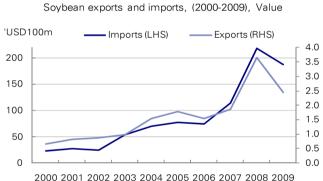
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 Source: Ministry of Commerce

Figure 15: China's soybean importing sources (value)



Source: Ministry of Agriculture

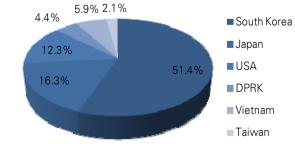
Figure 14: China's soybean export and import-value



Source: Ministry of Commerce

Figure 16: China's soybean export destinations (value)

2009 China's soybean export destinations



Source: Ministry of Agriculture

Figure 17: Global trade: major soybean exporting countries

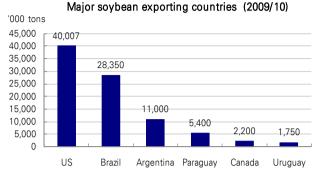
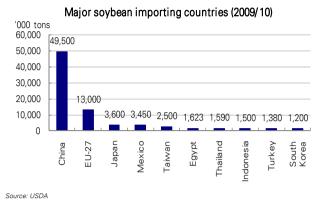


Figure 18: Global trade: major soybean importing countries



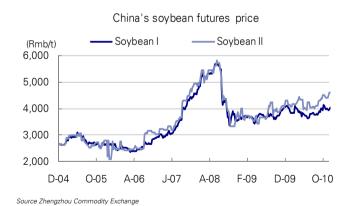
Q7. What are the factors affecting soybean prices?

- As China relies heavily on imported soybeans, domestic soybean prices are influenced by global prices. In 2010, soybean prices dropped sharply due to the expiration of the floor procurement price policy in May-June, and reached a low level in June-July of Rmb3,527/t.
- For the first nine months in 2010, the global soybean market was slack due to worries over a slow economic recovery. CBOT soybean index generally moved within the USD9.0-10.5 band. In Q4, CBOT soybean prices surged and hit a ceiling of USD13.5 at the beginning of November on a weak US dollar, and declining quality of US soybeans. Prices rebounded in late November as the US dollar strengthened, and reached a record high in December due to the drought impact in Argentina.

Figure 19: China's soybean price (wholesale)



Figure 20: China's soybean futures price



Source: Ministry of Commerce

Source: USDA

southean experting countries (2009/10)

Figure 21: Soybeans, No.1 yellow (spot)



Figure 22: US soybean CBOT futures price



- Domestic soybean price is also monitored and regulated by the central government in China to protect farmers' interests, mainly via: (1) national reserves procurement/release and (2) setting a floor procurement price for the national reserves.
- The PRC government assigned the China Grain Reserve Company and its subsidiaries to implement a procurement policy in northeast China from October 2008 to June 2009. About 7.25m tons of soybeans were procured in 2008-09 at RMB2.7/kg, accounting for 46.7% of total domestic soybean output and 83.7% of the total output in Heilongjiang, Inner-Mongolia, Jilin and Liaoning. Large-scale soybean processors in northeast China joined in as major parties of the procurement policy started from 2009.
- As the actual transaction price of domestic soybeans in 2010 was RMB4,000-4,100/ton, the floor procurement price policy thus had little effect.
- The PRC government conducted 18 auctions for national soybean reserves from 21 July 2009 to 25 November 2009, for which 8.41bn kg of the Third Grade reserved soybeans were auctioned at RMB3.75/kg. However, the actual transacted volume was 139.7m kg, with an effective transaction rate of 1.66%. Due to the price gap between domestic and imported soybeans, the national soybean reserves were not well-received by processers and few deals were reached. From December 2010 till now, 10 auctions were held, with an accumulated 2.89mt of national soybean reserves put on sale. Only 110,000 tons were sold, with an effective transaction rate of 0.38%.
- The floor procurement price for National Standard Third Grade soybean was RMB3.70/kg in 2008, RMB3.74/kg in 2009 and RMB3.8/kg in 2010. The price gap between adjacent grades was RMB0.04/kg.

Figure 23: China's soybean floor procurement price (National Standard Grade 3)				
Price	Duration			
RMB3.7/kg	1 Nov 2008-30 Apr 2009			
RMB3.74/kg	1 Dec 2009-30 Apr 2010			
RMB3.8/kg	1 Nov 2010-30 Apr 2011			
	Price RMB3.7/kg RMB3.74/kg			

Source: Ministry of Agricultur

Q8. What is the current situation of the soybean-crushing industry?

 The USDA expects the volume of soybean crushing to grow sustainably in the long run. The USDA estimated in its June report that 2010-11 crushing volume would grow 14.89% yoy to 56.10m tons and that 2011-12 crushing volume would grow 9.6% yoy to 61.50m tons.

- In 2010-11, by region, soybeans were mainly crushed in Shandong, Jiangsu, Guangdong and Guangxi provinces, which accumulatively accounted for 47% of the total crushing volume in China. However, their shares have been decreasing due to the trend of geographic diversification in the soybean-crushing industry.
- The domestic soybean-crushing industry is undergoing structural changes. Soy oil production is moving to coastal areas where imported soybeans are available at the ports. The scattered and small-scale processors are being phased out or acquired by large companies. The number of foreign-owned or -controlled companies is increasing, while the number of domestic companies is decreasing. About 80% of the soybean-crushing capacity in China is now controlled by foreign companies. Domestic players will likely quit the crushing industry, but still have a large presence in the food-processing industry, where only non-genetically modified and high-protein soybeans can be used.
- A total of 4.5m tons soybean-processing capacity was added in 2010, mainly by COFCO, China Textile and Guangdong Dongling etc. A Feedtrade report said COFCO may increase its soybean-processing capacity to 7.75m tons. China Textile was the largest soybean importer in 2009, with processing capacity of more than 5m tons. Guangdong Dongling added 1.25m tons of processing capacity in 2010 to 3m tons.
- The soybean-processing capacity in China will likely continue to expand in 2011. According to some findings, China would have more than 20 large soybean-crushing projects with 18m tons of new processing capacity to be put into use in 2011.

Q9. What is the market growth for soymeal and soyoil in China?

- The key products of soybean crushing are soymeal and soyoil (also called "crude soybean oil").
- **Soymeal** is primarily used as a protein source in animal feeds for producing poultry, beef, pork, milk butter and eggs. A small proportion of soymeal is used to make defatted soy flour, soy protein concentrates and isolates and textured soy protein products.
 - In China, demand from animal husbandry will likely drive up soymeal output growth by c.14% yoy to 43.5-44.5m tons in 2010-11 and keep an average growth rate of 11-12% in the next three years, based on data from Brilliant Futures.
 - Shandong, Jiangsu and Guangdong account for 38% of total domestic soymeal output.
- **Soyoil** is used to make a variety of products, such as salad, cooking oil and margarine. It also has limited industrial uses, such as in paints, varnishes and soaps.
 - Due to limited domestic supply of oil/fats and rising demand in 2010-11, the supply/demand gap of oil and fats rose from 42% ten years ago to a record high of 72%. The USDA reported in June that the total domestic use of soyoil of China in 2009-10 was 10.44m metric tons. It estimated the number to grow 12.26% yoy to 11.72m metric tons in 2010-11 and 9.39% yoy to 12.82m metric tons in 2011-12.
 - The PRC government began to implement restrictions on raw soyoil imported from Argentina beginning 30 March 2010, putting a halt on soyoil imports from Argentina in the following six months. Although the restriction was relaxed on 12 October 2010, only the three state-owned large oil companies – COFCO, China Textile and 93 Grain and Oils – can import raw soybean oil from Argentina. We expect the import restriction, intended to protect the domestic soybean-crushing industry from competition from cheaper imported soyoil, to be continued into 2011.

Figure 24: World soyoil production

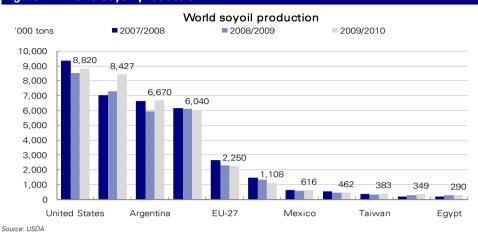


Figure 25: China's soymeal annual supply

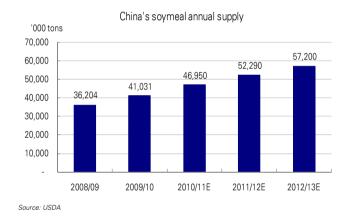
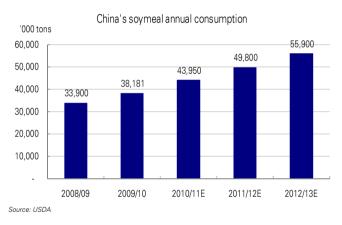


Figure 26: China's soymeal annual consumption



Q10. Which Hong Kong-listed companies use soybean as inputs?

- China Agri (0606.HK, NR) is one of the largest edible-oil and oilseed-meal producers in China. It sold 901,000t of soyoil (+28.3% yoy) in 2010. China Agri has entered into various commodity futures contracts to manage price exposures in future purchases or sales of soybean and soymeal. In its 2010 annual report, the company mentions a 5% increase in soybean price would lead to a 79% decline in profit before tax vs. reported number, assuming other variables are constant and no hedging investments available.
- China Foods (0506.HK, Sell) is China's second-largest consumer-packed edible oil company, after Wilmar (WLIL.SI, Hold, 5.42 SGD). It owns the Fortune brand and the sales channels. Its sister company, China Agri, is responsible for production. The PRC government has extended the current price cap on cooking oil (retail level) to mid-August 2011 to keep prices stable ahead of the mid-Autumn Festival.
- Vitasoy (0345.HK, NR, HK6.18)'s FY11 sales were derived 50% from soymilk, 10% tofu and the balance from RTD tea, distilled water, milk, juice and lunch boxes/snacks. The key raw materials are soybeans, milk powder and sugar. Vitasoy does not disclose the COGS breakdown.
- The other Hong Kong-listed companies that have indirect exposure to soybean price fluctuations are (1) animal husbandry companies such as China Modern Dairy (1117.HK, Buy), which is China's largest modern dairy farm operator. About 15% of dairy cattle

feedmix is corn/soybean; thanks to improving milk yield and economies of scale, the feed cost per kilogram of raw milk sold is on a downtrend, providing a cushion against higher corn/soybean prices; and (2) **animal feed companies** such as **Global Bio-chem** (0809.HK, NR, HK 2.10), which is China's largest lysine producer. Soymeal is a complementary substitute of lysine. Thus, higher soymeal prices would prompt some farmers to use more lysine.

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Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist	checklist				
Company	Ticker	Recent price*	Disclosure		
China Foods	0506.HK	6.24 (HKD) 16 Jun 11	6,8		
China Modern Dairy	1117.HK	2.42 (HKD) 16 Jun 11	7		

*Prices are sourced from local exchanges via Reuters, Bloomberg and other vendors. Data is sourced from Deutsche Bank and subject companies.

Important Disclosures Required by U.S. Regulators

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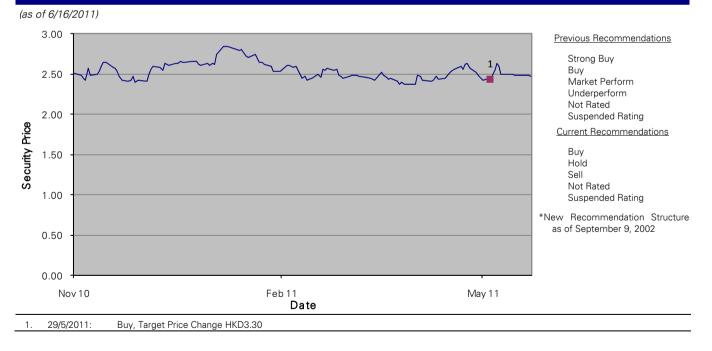
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Historical recommendations and target price: China Foods (0506.HK)



Historical recommendations and target price: China Modern Dairy (1117.HK)



Equity rating key

Equity rating dispersion and banking relationships

Buy: Based on a current 12- month view of total share-holder return (TSR = percentage change in share price from current price to projected target price plus pro-jected dividend yield), we recommend that investors buy the stock.

Sell: Based on a current 12-month view of total share-holder return, we recommend that investors sell the stock

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Notes:

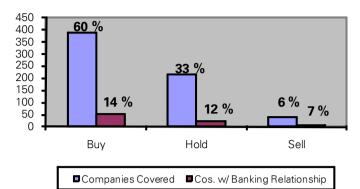
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Asia-Pacific Universe

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