China Investment 2013:
Up, Up and Away

A five-year analysis of investment activity
in China's life science industry
2008-2012

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China Investment 2013: Up, Up and Away

ChinaBio® LLC provides consulting and advisory services to Western life science companies seeking to enter the China market directly or through strategic partnerships or acquisition. This paper presents an analysis of the trends and activity of strategic partnership transactions in the pharmaceutical industry in China developed by our research group using ChinaBio's proprietary data. For more information please see www.chinabiollc.com or contact us at info@chinabiollc.com.

On the first day of the Chinese New Year 2013, the Year of the Snake, Bloomberg News reported that China had surpassed the U.S. to become the world's top trading partner. And as China's role on the world stage becomes ever more important, the China government has set an even more ambitious goal: to become the global leader in life science innovation.

To achieve this goal, the central government has committed well over $200 billion to nurturing the life science industry, an investment that is now bearing fruit. Not long ago, China's life science industry was synonymous with generic drugs and APIs. Now, it has become a place where the innovative science developed in its leading universities and institutes is being transformed into novel drugs, diagnostic tests and medical devices for the commercial market.

While much of this activity is being driven by government funding, there is an increasingly important contribution being made through commercial investment vehicles such as venture capital, corporate investment, merger and acquisitions and IPOs. In each of the last three years, over $10 billion has been invested in China's life science industry from commercial sources, adding to the $40+ billion per year from China's various government agencies.

In 2012, there was a significant increase in financial activity surrounding China's life science sector – another unmistakable sign of underlying strength in the sector. With the exception of IPOs, every metric of the sector was higher in 2012 than in 2011. (See Figure 1.)

2012 Life Science Trends

Area	Trend
VC Investment	↑↑
IPO	↓
M&A	↑
Partnering	↑↑

Figure 1. Financial trends in China life science (Source: ChinaBio)

Analysis of over 1,000 deals from 2007-2012 in ChinaBio's proprietary database, including VC investments, M&A activity, IPOs and partnering deals, clearly illustrates an increasing maturity in China's life science investment environment. As compared to 2011, the monetary totals were higher in all categories of financial activity, and the average deal value in each category also rose significantly, often by a factor of two. Indeed, the average deal size is now approaching Western levels, especially in the pharmaceutical sector, and diagnostics and medical device sectors are also gaining strength.

There are also consistent indications that China is becoming a notable player on the global stage, with an increasing number of financings and partnering transactions involving cross-border exchanges. Pharmaceutical partnering deals, one of the best gauges of China's trend toward globalization, became very international in 2012, with the number cross-border deals increasing 48% over 2011, the fifth consecutive year of increasing cross-border activity. (See our white paper, *China Partnering 2013: Global Connections*, to be published in May 2013.)

Innovation: When, not if

Once considered a far-fetched dream, China's aspiration to become a powerhouse of first-rank science that rivals the West, is now within reach. Over the past two decades, China has built a formidable infrastructure to support innovation in life science, establishing four major clusters of innovation, hundreds of life science parks and incubators, and a large number of internationally rated academic and research institutions across China. (See Figure 2.)

Figure 2: China is reaching the critical mass necessary to support innovation
(Source: ChinaBio, MOE, SIPO)

There are four major, geographically defined biopharma clusters in China, including Beijing, Shanghai/Suzhou, Guangzhou/Shenzhen, and Chongqing/Central China areas, with Shanghai taking center stage. Similar to the major biopharma hubs in the U.S., these clusters greatly facilitate technological advances, and they provides most, if not all, of the necessary elements of the research, development, and manufacturing value chain crucial for life science companies.

In addition to the maturing infrastructure, the influx of “sea turtles” or “returnees,” Chinese with Western education or industry experience who have returned to China for better opportunities, is a huge factor in the growth of China’s life science sector. With the recession in the West, in contrast with the booming economy in China and high demand for Western-trained employees, the number of returnees has skyrocketed in recent years.

To date, there have been over one million returnees across all industry sectors, with the vast majority (70% or 700,000) having returned to China in just the last five years. ChinaBio estimates that approximately 200,000 of the returnees are in the life science industry, bringing a wealth of talent and experience to China. (See Figure 3.)

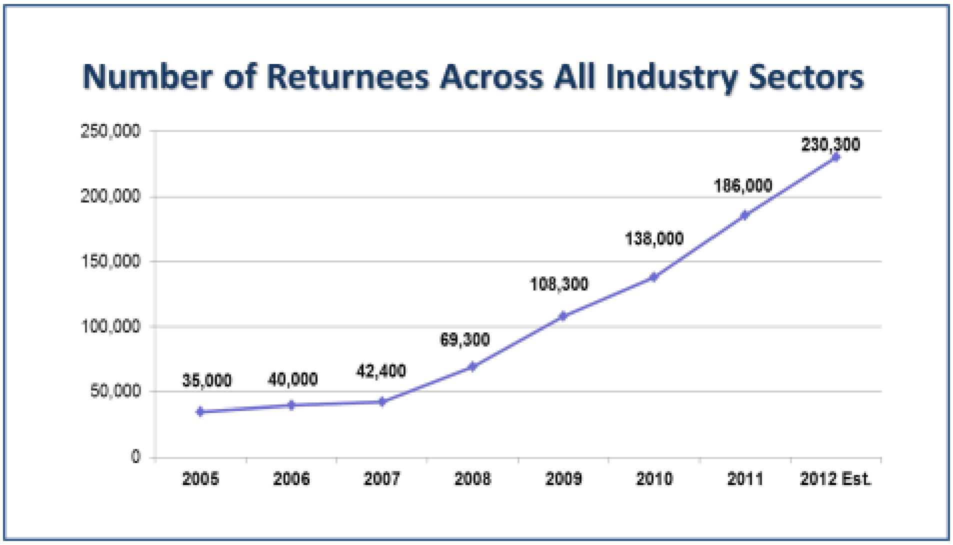

Figure 3: Returnees provide a significant talent pool to China’s life science industry
(Source: Ministry of Education; Analysis: ChinaBio)

Over the last five years, the growth of returnees has been an astonishing 40% CAGR. The returnees have significantly changed the way China’s life science companies do business. Not only do the returnees bring global experience to China’s domestic companies, they also understand Western-style collaborations and strategic alliances. It is increasingly common for Chinese companies to have one or more members of the management team who are able to effectively negotiate partnerships in English and/or other European languages. This paradigm shift over just the last few years is transforming the business landscape in China and accelerating cross-border investment and partnering activity.

At least in part as a result of the influx of returnees, Western pharma have tacitly declared that China has become an indispensable part of their global plans as demonstrated by the race to create ever-larger R&D centers in China. Last year, Merck made a $1.5 billion commitment to build a global R&D center in Beijing, edging out Novartis' previous $1.2 billion commitment for its new R&D center in Zhangjiang Hi-Tech Park in Shanghai. Novartis plans to increase its R&D employee count from 160 to over 1,000, while Merck will plans to have over 600 employees in its first R&D center in China. Merck will continue to maintain its China headquarters in Shanghai.

R&D activities in China have traditionally been perceived as an inexpensive option for increasingly cost-conscious pharma. And while China still offers significant savings for preclinical and clinical development, the focus has shifted to its rapidly growing market. Growing at an average of over 20% per year, China has now surpassed Europe and will soon pass Japan by 2015 to become the #2 pharmaceutical market.

This is creating a paradigm shift among the big pharma to develop products specifically for the domestic market, especially innovative products that command higher pricing and better margins. There are also some Western pharma who understand that importance of branded generics in China, and they are developing relationships with domestic pharma to develop and distribute these products in China.

China has thus become an increasingly important component in pharma's global drug development strategy. Indeed, for Westerners, the question is not if or even when, but how to participate and succeed in what is now the third largest and fastest growing pharma market in the world. And this is happening at the same time most big pharma are shuttering their R&D facilities in the West.

VC Investment: Nearly a record year

VC investment in life science in China is back, up 72% after a disappointing 2011, with a total of $982 million and 32 deals reported. This figure is only slightly lower than the record-breaking year of 2010, when total VC investment exceeded $1 billion for the first time.

2012 was also significant because the average investment for the reported deals increased 64% over 2011 to an amazing $45 million. This is likely the result of both a higher interest in participating in China life science, more large China- focused funds of $500 million or more being raised, as well as an increased availability of late stage and pre-IPO opportunities.

The average deal size of life science VC investment in China has been increasing steadily for several years, from an average of $12 million in 2008 to $45 million in 2012 – almost quadrupling in just five years. This is also in stark contrast to VC deals in life science in the U.S., which have seen average investment dropping from $10-12 million per deal a few years ago, to closer to $6-7 million after 2008. (See Figure 4.)

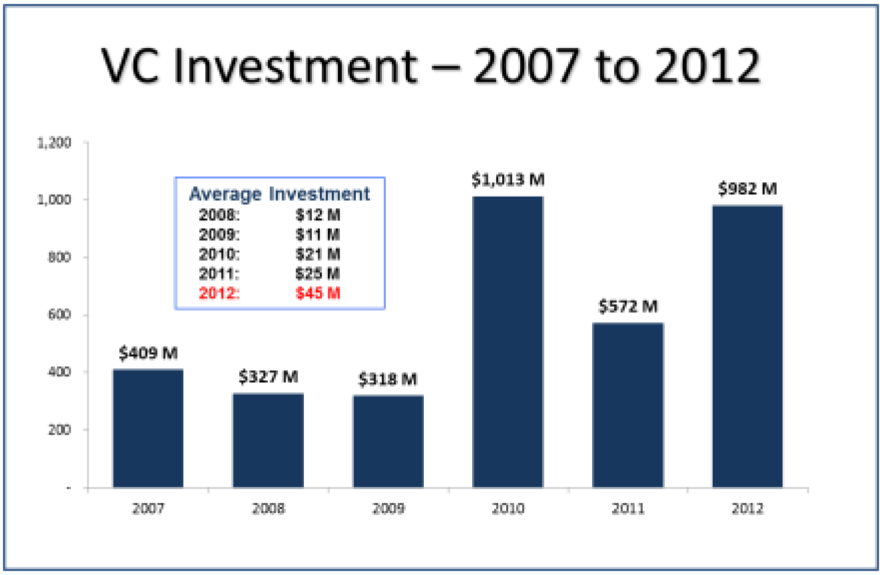

Figure 4. VC investment up significantly in 2012, nearly reaching $1 billion
(Source: ChinaBio)

Across the different sectors, investment in pharmaceutical companies accounted for the vast majority of VC deals in 2012, about 60%, both in the number of deals (18) and the total amount invested ($651 million), followed by medical devices, services and diagnostics. (See Figure 5.)

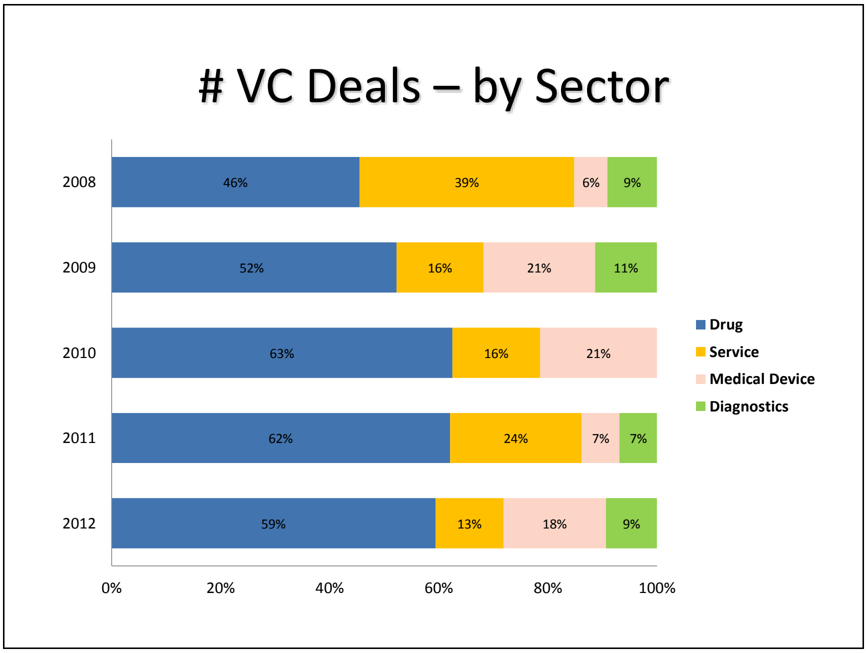

Figure 5. VC investment dominated by drugs, but devices and diagnostics growing
(Source: ChinaBio)

VC investments from 2008-2012 have undergone a significant paradigm shift, from VC's interest from relatively low-risk investments in revenue-producing CRO services into the innovation-based, capital intensive pharma sector. In 2008, pharmaceutical companies commanded just 16% of the year's VC-invested capital, while in 2012, drug companies attracted 66% of VC's capital. As pharmaceuticals are often considered one of the most risky sectors of life science investment, this growth indicates investors increasing confidence in China's ability to innovate. The shift into the pharmaceutical sector indicates an increasing willingness for China's VC industry to take greater risk for potentially higher rewards.

Just a short while ago, the $100 million raised by Ascletis in its Series A financing in 2011 sent a shock-wave through China's life science community as the largest VC deal to date. But the bar has now been raised significantly.

In February 2012, the Pacific Alliance Group announced the largest investment of the year – $250 million in Shaanxi Bicon Pharmaceutical. Bicon is a private, wholly foreign-owned pharmaceutical company located in Xi'an, an ancient city best known for its Terracotta warriors. In the past 15 years, Bicon has acquired more than 10 API and finished pharmaceutical product companies in central China. Bicon plans to build a large complex in Jiangsu province that includes both state-of the art R&D and manufacturing space, and to make strategic acquisitions that will enable it to expand both domestically and globally.

The diagnostics sector, once considered to have a low barrier of entry and to be less capital intensive, is also in the process of transformation. The second largest deal of 2012 was a $222 investment in Beijing Genomic Institute (BGI) by Sequoia, China Everbright and Shenzhen Capital. BGI has been in the headlines recently with its $117 million acquisition of California's Complete Genomics in September 2012. BGI plans to use this capital to make other strategic acquisitions as well as investments in R&D.

Other diagnostic deals also represented high quality Chinese diagnostic companies with strong management teams, unique product offerings, and top-tier investors. For example, Kindstar Global, which provides esoteric diagnostic testing services to hospitals and physicians throughout China, raised a $20 million C round from KPCB, WI Harper and Baird Capital.

IPO Activity: Down but not out

The dramatic drop in IPO activity in 2012 runs counter to the general trend of optimism in China's life science industry, but mirrors the significant slow-down of U.S. and global IPO activities in the technology sectors. Only 12 China life science companies were able to successfully execute IPOs in 2012, mustering only $1.4 billion. This was a dramatic 73% decline from 2011's very respectable $5.2 billion from 30 IPOs. The average funds raised per IPO also fell from $174 million in 2011 to $112 million last year, a decline of 36%. (See Figure 6.)

Figure 6. IPOs down on all counts: number of deals, values and total raise (Source: ChinaBio)

As with the trend in VC investment, a large percentage of the capital from IPOs in 2012 (67%) was raised by pharmaceutical companies totaling $921 million. Over half of this came from the single largest life science IPO of the year, Shanghai Fosun. In other major sectors, medical device IPOs raised $238 million and diagnostics, $140 million.

Despite the lackluster IPO market, the long-anticipated IPO from Shanghai Fosun Pharma staged a respectable $512 million capital raise on the Hong Kong exchange. Although the transaction was the year's largest, it still represented somewhat of a disappointment for one of the top pharmaceutical companies in China. The IPO was postponed, then cut in size, and ultimately priced at the lower end of expectations. Additionally, Fosun was the only pharma to successfully debut on a foreign exchange (Hong Kong) last year. All of the other life science IPOs took place on the domestic Shenzhen and ChiNext exchanges.

Among other notable transactions above the $100 million mark were Xizang Haisco Pharma, Yantai Dongcheng Biochemicals, and Changsha Sinocare. Tibet-based Haisco Pharma, which produces TCM drug formulations and active pharmaceutical ingredients, raised $127 million in Shenzhen. Yantai Dongcheng Biochemicals completed at $111 million IPO, also in Shenzhen. Dongcheng's main products are heparin sodium and chondroitin sulphate, a dietary supplement that treats osteoarthritis. Changsha Sinocare, a Hunan-based medical device company, also completed a $101 million offering in Shenzhen. Sinocare is one of China's largest manufacturers of blood glucose monitoring systems.

While IPOs were definitely a disappointment in 2012, the slowdown had the positive effect of bringing valuations more in line with those of life science companies elsewhere in the world. This may have stimulated, at least to some extent, increased VC and M&A activity.

M&A Transactions: A record year

In contrast to the lack of enthusiasm in the IPO market, 2012 was a record year for life science M&A transactions. Even though the total number of transactions in 2012 was down by 36%, the total deal value was almost 10% higher than 2011. Not only did the total deal value exceed $4 billion for the first time, individual deal values also increased significantly, bringing them more in-line with Western deals. (See Figure 7.)

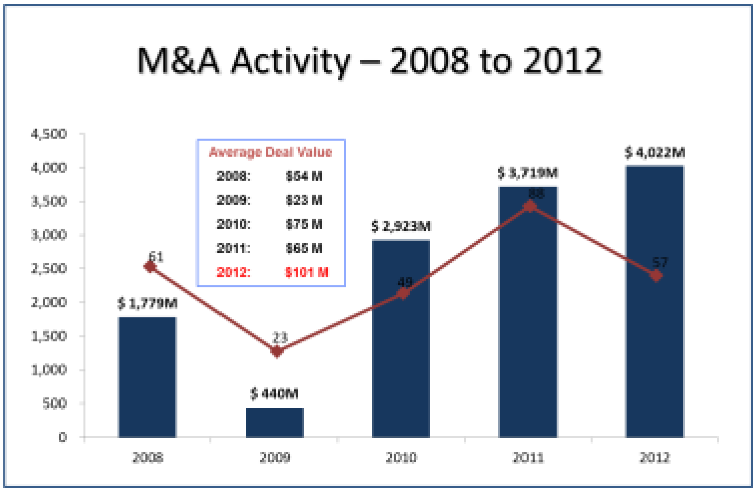

Figure 7. M&A has a record year with total deal value over $4 billion for the first time
(Source: ChinaBio)

Not surprisingly, pharmaceutical companies were the focus of the majority of the transactions, representing 67% (39) of the deals and 56% ($2.4 billion) of the funds. Pharmaceuticals also garnered the largest deal of 2012 at over $1 billion, with diagnostics and medical devices following closely behind.

China Pharmaceutical Group's $1.1 billion acquisition of Robust Sun Holdings, a pharmaceutical company with a focus on CNS, from Joyful Horizon, was the largest life science M&A transaction in 2012. Interest in CNS continues to increase in China, as it is a new therapeutic area recognized by the government as a medical condition only about 10 years ago.

Then there was Medtronic's purchase of Changzhou Kanghui Medical Innovation, which focuses on trauma and joint replacement products, for $816 million. This was the second largest M&A transaction in 2012, and the largest for cross-border deals. The acquisition of Kanghui provides Medtronics with a large and well-established distribution network in China's second and third tier cities, as well as additional domestic-branded products.

Aside from the mega deals, another notable deal mentioned previously is the acquisition of California's Complete Genomics by Beijing Genomics Institute (BGI). The deal was symbolically significant: it involved a Chinese company paying a substantial sum to acquire a U.S. company with promising cutting edge technology. This is a reversal from the traditional cross-border deal and signals an increasing level of maturity for China life science.

Partnering: Cross-border deals dominate

Partnering activity is an important indicator of globalization in China as it gives an especially close read of cross-border activity. Based on the analysis of over 600 partnership deals from 2008-2012 in ChinaBio's proprietary database, overall partnering activity in China has more than doubled during the five year period.

Cross-border partnering deal activity in pharmaceuticals grew even more rapidly, increasing 143% over the same period. In fact, 87% of the announced pharma partnering deals in 2012 were cross-border deals between Western and Chinese companies. (See Figure 8.)

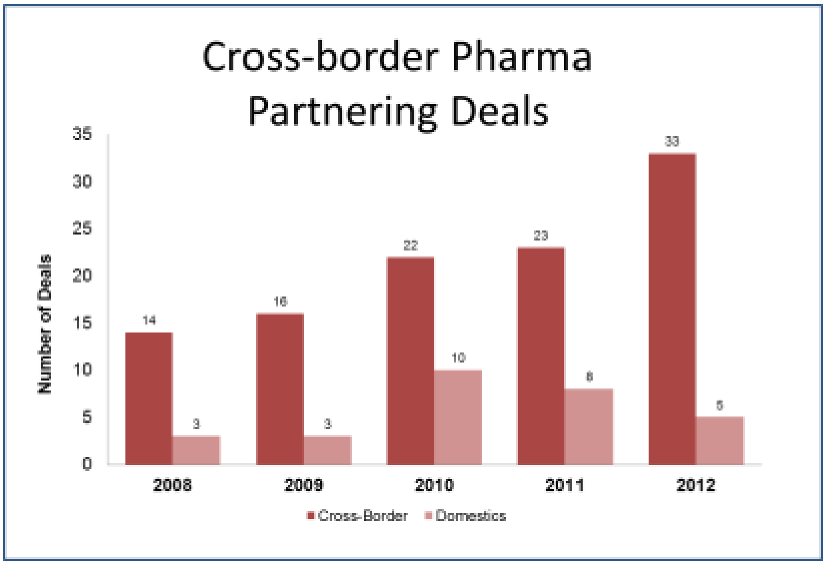

Figure 8. Cross-border deals dominate pharma partnering (Source: ChinaBio)

2012 was also a very busy year for Western pharmaceutical companies setting up partnerships and JVs with Chinese companies targeting the lucrative branded generics market. In addition to the big pharma, an increasing number of mid-size Western companies also are teaming up with well-established large Chinese companies to gain a share of the growing China market.

While many of these partnerships were for the in-licensing and distribution of Western proprietary products in China, an increasing number involved drug development, including both branded generics as well as innovative therapeutics.

By far, the highest deal value reported last year was the JV between Pfizer and Zhejiang Hisun Pharma, a $295 million transaction focused on developing branded generics for China. Similarly, in January 2012, Amerigen and Shanghai Fosun also announced a partnership to co-develop a large portfolio of differentiated generics for sale in the U.S. and China.

The increasing appetite of Chinese companies for higher-priced innovative products, driven in great part by the government, also made 2012 a very busy year for in-licensing and co-development partnerships. Zhejiang Conba Pharma snared the China rights to the anti-inflammatory developed by Evotec AG of Germany, for a potential deal value of $95 million including upfront and milestone payments. This is indicative of the trend for Chinese companies to be more willing to pay an upfront and milestones, even for assets that are pre-clinical in China.

2012 also saw the growth of global pharmaceutical companies' interest in China-only rights for novel drugs, a recognition of China's growing importance. The most notable example in 2012 was the $150 million co-development and co-commercialization deal between AstraZeneca and Ironwood Pharmaceuticals for Ironwood's linaclotide in China. With the rising importance of the China pharmaceutical market, China-only deals may one day be as common as Japan-only deals are today.

There has also been an increase in cross-border research and collaboration deals for innovative products in China. The partnership between Sanofi and Sinopharm to jointly research the causes and potential treatments for rare diseases clearly indicates an increasing interest of multinational pharmaceutical companies to develop therapeutics specifically to the China market.

Another interesting example of the changing partnership landscape in China is the alliance between AstraZeneca and WuXi AppTec to develop an innovative monoclonal antibody for arthritis and other autoimmune/anti-inflammatory disorders. This is also an example of the rising interest for biologics in China, even in the face of the associated regulatory challenges. China requires any biologic drug that has not been previously approved elsewhere in the world to be manufactured locally before SFDA will grant the approval. As AstraZeneca does not yet have biologics manufacturing capability in China, WuXi's new biologic CMO capability announced last year make it an indispensable part of the partnership.

Note: More information on partnering activity will be available in our white paper, *China Partnering 2012: Global Connections*.

Conclusion: China and the snake

As evidenced by the agreements between WuXi AppTec and AstraZeneca and between BGI and Complete Genomics, China's foremost life science companies are rapidly moving toward commercial parity with their Western counterparts. At the same time, China has become a necessary strategic component for Western life science companies' strategic plans – China's 1.3 billion citizens have finally become a market too big to ignore.

As of today, China is no longer an untapped market, or in the traditional sense, even an emerging market. China is expected to be the second largest pharma market in 2015. Western-style marketing practices and strategies can be effectively applied to patient populations in tier one cities, such as Beijing, Shanghai and Guangzhou, making them readily accessible to most Western companies.

With an eye toward continued double-digit growth in China's life science sectors, many Western companies have also begun to expand into the second and third tier cities, which are expected to generate much of this growth. These markets can be much more difficult to reach than the tier one cities, and local Chinese companies with existing sales and marketing channels are becoming much sought-after partners for Western companies wishing to access a larger portion of the China market.

China's rapid growth is also stimulating significant venture capital and private equity investments in China life science, even though the public markets in the sector have slowed. M&A activity is also increasing rapidly, through domestic industry consolidation and both domestic companies attempting to become global players, and Western companies positioning to quickly access China's now significant market for pharma, diagnostics and medical devices.

On February 10th, 2013, China ushered in the Year of the Snake. In China, the Snake is much more positively regarded than it is in the West. It is considered intelligent, enigmatic and intuitive. The Year of the Snake is believed to generate philosophers, teachers – and financiers – and to be a good year for business.

China has built a strong foundation for its life science industry, capable of supporting innovation and commercialization on par with the West. The Year of the Snake may well prove to be the year that China moves even closer to its potential as a global powerhouse in life science.

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Acknowledgements

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