StepStone
inside private markets

Healthcare and Life Sciences:
The Evolution of China's Next Big Market

"The greatest wealth is health."

– Virgil

China's economic growth rate may have slowed, but its healthcare sector is ramping up. While total GDP grew by 7.7% over the past five years, spending on healthcare grew at nearly double the rate over the same period. That momentum is expected to propel China's healthcare market from US$640 billion in 2015 to more than US$1.1 trillion by 2020.

More important than the headline numbers, the growth of spending on healthcare in China reflects a profound structural transformation of the economy. With the country's aging population, evolving disease profile, newfound wealth and new sources of innovation, healthcare is on the verge of becoming China's next big market similar to internet technology ten years ago.

Like the tech boom, private equity and venture capital investors have a central role to play in the healthcare market's development. Whether seeding the industry champions who will soon define China's nascent healthcare landscape, or backing the cutting-edge startups to be acquired by them, savvy investors have already seen many opportunities to put capital to work. StepStone has written this report to help investors understand the significance of China's healthcare industry, the speed of its development and strategies for gaining exposure to the country's next wave of growth.

August 2017

Richer & Greyer

Understanding the future of China's healthcare industry starts with an appreciation of the country's demographics. After the second world war, a high birth rate and a dramatic rise in life expectancy from 40 years to 70 years led China's population to double to more than one billion in less than 30 years—creating the world's largest population of baby boomers by the early 1980s.[1]

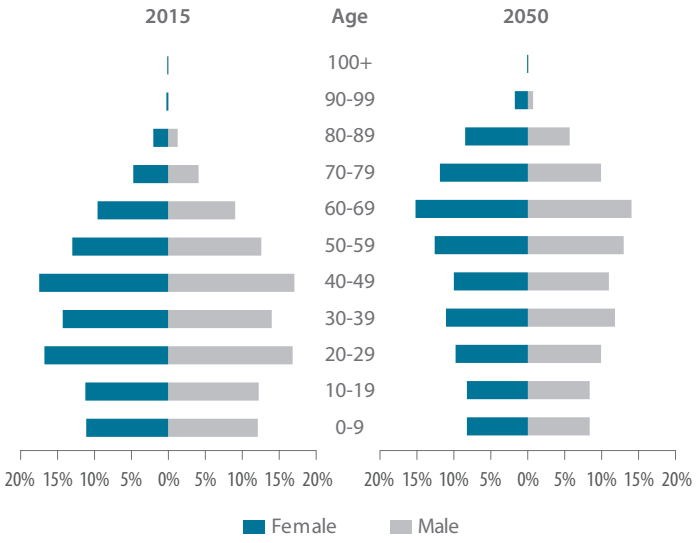
Although Deng Xiaoping ended the baby boom with the one-child policy in 1979, his market reforms were to reap the demographic dividends the boom generated. Over the next three decades, a human tidal wave was unleashed as hundreds of millions of baby boomers reached adulthood and made their way from China's countryside to its cities. Urban residents as a percentage of the population rose from less than 20% in 1980 to more than 50% by 2010.

This unprecedented economic expansion occurred on the back of a virtually unlimited supply of labor and entrepreneurial ingenuity that founded, ran and worked in the "factory of the world." Per capita income increased by 25 times during this period. With newfound wealth, these baby boomers have since supported a buoyant consumer economy, driving the country's current transition away from export-led manufacturing and toward an economy led by the consumption of goods and services.

As these baby boomers turn grey, their disproportionate weight in the Chinese population means that the country will age faster than any other country. According to the United Nations, it will take China just two decades between 2017 and 2037 for the proportion of the elderly population (those aged 65 and older) to double, compared to 23 years in Japan, 60 years in Germany and the US, and 115 years in France.[2] By 2050, China's elderly population is expected to exceed 330 million (equal to the present population of the United States) and to account for roughly one-third of China's total population (**Figure 1**).

As China's baby boomers reach old age, the country's disease profile has begun converging with the developed world,

FIGURE 1 | CHINA POPULATION PYRAMID 2015 VS 2050



Source: International Monetary Fund.

corresponding to a dramatic rise in the number of age-related and chronic ailments. Cardiovascular disease, cancer and chronic respiratory infection, not the infectious diseases of old, are the leading causes of death in China today. These and other non-communicable diseases, estimated to be behind up to 85% of deaths, are being exacerbated by diets high in salt, sugar and fat, and sedentary urban lifestyles. Tobacco and alcohol use compound the negative health effects of these trends—China accounts for one-third of all cigarettes smoked globally, with two-thirds of Chinese men reported as smokers. Outdoor air pollution, considered to be among the worst in the world, and contaminated soil, food and drinking water expose the Chinese population to other environmental carcinogens.

While the Chinese account for roughly one-fifth of the world's population, they are annually diagnosed with almost a quarter of the world's new cancer cases and suffer close to one-third of global cancer deaths.[3] In addition, the World Health Organization ("WHO") estimates that approximately

[1] Dudley L. Poston and David Yaukey, *The Population of Modern China* (New York: Plenum Press, 1992), 15.
[2] Richard Jackson, "The Aging of China," *Center for Strategic and International Studies: Critical Questions*, April 2016.
[3] Chen, W., Zheng, R., et al (2016), *Cancer statistics in China.* CA: A Cancer Journal for Clinicians, 66: 115–132.

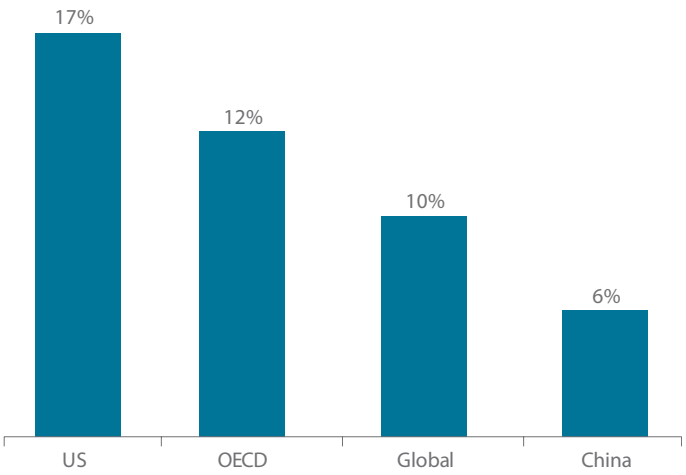
230 million Chinese suffer from cardiovascular disease, and annual cardiovascular events will increase by 50% by 2030, based on population aging and growth alone. Meanwhile, China is home to one in three diabetics globally, with approximately 130 million adults afflicted by the disease.[4] Yet these historical statistics, sizeable as they are, do not account for the majority of China's baby boomers who are just reaching retirement age.

RISING HEALTHCARE DEMAND

China's baby boomer generation is distinct not just for being the country's largest, it is also wealthier than any preceding generation. Driven by baby boomers, China's economy has already surpassed much of the world on a range of metrics: it is home to the world's largest box office and outbound tourism market; it also has a longer high speed rail network and greater online retail volume than the rest of the planet combined. Yet given China's previously small proportion of the elderly to the overall population, the country's healthcare system has been a conspicuous laggard. While ten out of the top 50 companies in the US by market capitalization are healthcare companies, in China the comparable number is zero. As seen in **Figure 2**, China spent just 6% of GDP in 2014 on healthcare, compared to an average of 10% globally, 11% in Communist Cuba, 12% among the OECD and 17% in the US. Put another way, China has to care for 22% of the world's population with only 3% of the world's healthcare resources.

Historical underspending in China continues to widen the gap in the quality of care between China and other more developed countries. For example, only one quarter of Chinese cancer patients go into remission, compared to 65% in developed countries; the five-year cancer survival rate was 30% in China, compared to 66% in the US.[5] Almost 10% of Chinese are infected with hepatitis B compared to 1% in North America and Western Europe, where the virus has been preventable with a vaccine available since 1983.[6] While close to 10% of Chinese are diabetic, accounting for one-third of cases worldwide, only 25% of Chinese diabetics receive treatment, compared with 63% in the US and 50% in Japan.[7]

FIGURE 2 | 2014 HEALTHCARE SPENDING AS % OF GDP



Source: WHO Global Health Expenditure database, June 2017.

As China's baby boomers reach old age, they are the first generation with the resources to close the spending gap. By 2022, more than 75% of China's urban households are expected to qualify as middle class (defined by McKinsey & Company as households earning between US$9,000

China has to care for 22% of the world's population with only 3% of the world's healthcare resources.

[4] "China's Diabetes Problem: From 1% to 10% in 36 Years", *Wall Street Journal*, November 14 2016.
[5] Supra note 3.
[6] World Health Organization, Hepatitis B Fact Sheet, July 2016.
[7] World Health Organization, "Rate of Diabetes in China 'Explosive'", April 2016.

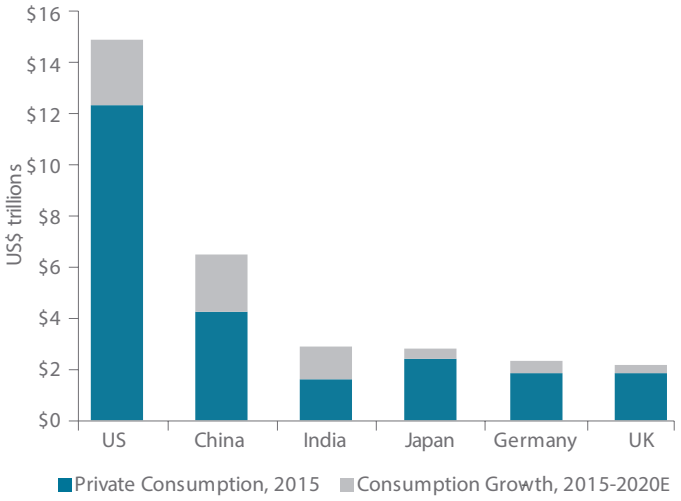
to US$34,000 a year), giving them an average income on purchasing-power-parity terms in the same range as Brazil and Italy. Since more than 600 million Chinese are expected to fall within this range by 2022, China's middle class would qualify as the third most populous country in the world.[8] Meanwhile, the Boston Consulting Group expects total private consumption to grow at a CAGR of 9% between 2015 and 2020, translating to a 55% increase from US$4.2 trillion to US$6.5 trillion—in line with the growth in personal incomes, and 40% higher than the rate of GDP growth (**Figure 3**).

Multiple sectors, ranging from education to entertainment, stand to benefit from China's ongoing consumption boom. But China's middle and upper classes have never set their sights so squarely on healthcare sector. Not only are baby boomers demanding more and better drugs, treatments and services, they are the first generation with significant numbers who can afford them. As age-related and chronic diseases continue to soar, healthcare is quickly growing its share of a growing consumer wallet. Due to inability of public health insurance to keep up with demand, at 63% China already has one of the world's highest proportions of healthcare spending paid out-of-pocket, and that figure is only expected to grow.[9] Pent-up demand has already prompted spending on healthcare to more than double to US$640 billion between 2010 to 2015; McKinsey & Company expects it to exceed US$1.1 trillion by the end of the decade (**Figure 4**).[10]

Access & Innovation

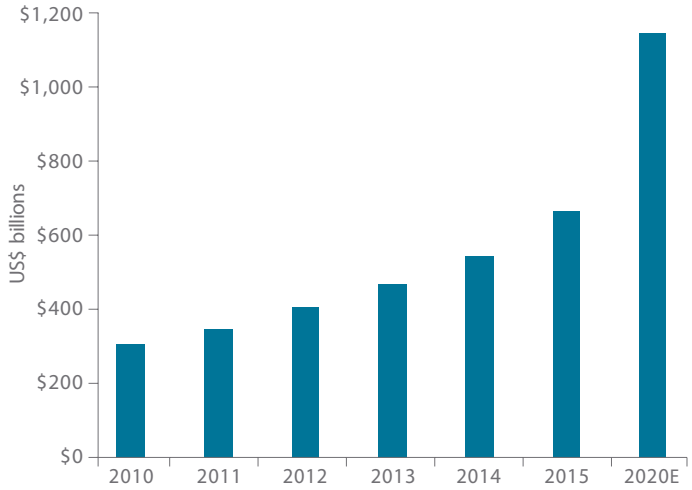
Perhaps China's most underdeveloped and underpenetrated sector, healthcare is poised to be the country's next big market to evolve, attracting investors who are looking for the same type of explosive growth that underpinned China's prior booms in manufacturing and internet technology. With the nascent healthcare market still fragmented, few companies public and bank financing scarce, private equity and venture capital investors have an historic opportunity to fund the companies that will grow to supply China's swelling demand for healthcare.

FIGURE 3 | GROWTH IN PRIVATE CONSUMPTION, 2015-2020E



Source: Boston Consulting Group, Economist Intelligence Unit.

FIGURE 4 | CHINA HEALTHCARE SPENDING, 2010-2020E



Source: McKinsey & Company, US Department of Commerce.

[8] "Mapping China's Middle Class", *McKinsey Quarterly*, June 2013.
[9] *Citi Research*, "Chinese Healthcare Sector Handbook 2015".
[10] Department of Commerce, International Trade Administration, "Country Case Study: China 2016".

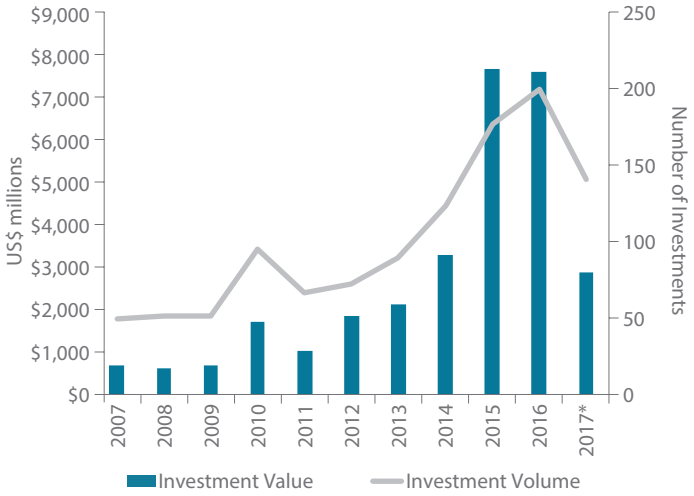
As seen in **Figure 5**, interest from private equity and venture capital investors has increased exponentially over the past five years, with investment value rising at a 33% CAGR to reach US$7.6 billion last year.

Meanwhile, a crop of local healthcare sector specialists is emerging: StepStone tracked just five such managers in China in 2010; today we track 25. Cumulative fundraising by healthcare sector-focused funds over the last five years has risen to US$6.8 billion (**Figure 6**). All of this has led to a proliferation of strategies around healthcare investing.

Due to historical underinvestment, opportunities exist in almost all of China's healthcare subsectors. For example, China's overcrowded, understaffed and underfunded hospitals are receiving a long-awaited injection of private capital after government restrictions on hospital investment loosened in 2015. Private equity has a number of options to invest in this space: building new facilities or consolidating existing ones; entering the general hospital segment or focusing on specialty hospitals and clinics. Larger checks and lower technical barriers to entry, have led this segment to be dominated largely by China's generalist funds. However, the question remains whether healthcare delivery offers suitable investments for private equity given their investment horizon. For example, Trustbridge Partners' greenfield development of Shanghai Jiahui International Hospital, a specialty private facility, broke ground in 2014 and is not expected to be complete until 2018. Whether starting from scratch or consolidating existing facilities, private equity managers may find that building to a scale needed for exit can often take longer than expected.

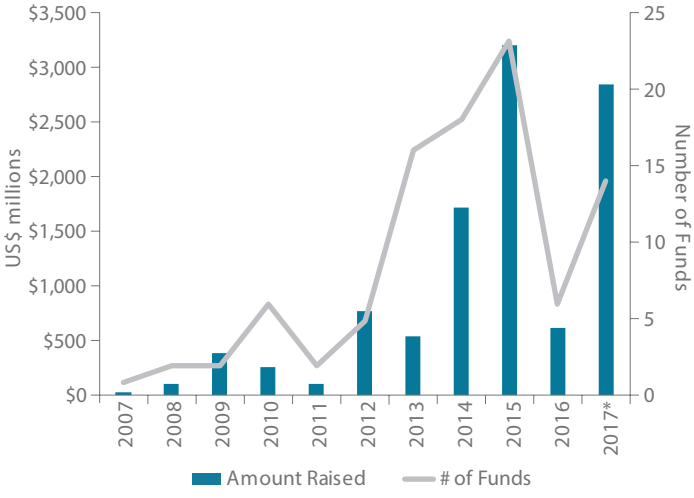
Private investors have also given a much-needed boost to the medical technology sector, which has yet to penetrate the market fully. For instance, the ratio of device to drug sales in China is five to one; in the OECD it is one to one. Homegrown products are climbing the value chain—rising from disposable gloves to radiotherapy equipment and complex DNA sequencing machines—and investors see huge opportunities for import substitution as well as exportation. China's diagnostics industry is benefiting from the US$9 billion

FIGURE 5 | CHINA HEALTHCARE PRIVATE EQUITY INVESTMENT



Source: StepStone Private Markets Intelligence, June 30, 2017.
*Annualized

FIGURE 6 | CHINA HEALTHCARE SECTOR FUNDRAISING



Source: StepStone Private Markets Intelligence, June 30, 2017.
*Annualized

Precision Medicine Initiative announced by the government in 2015, which aims to raise the cost efficiency of care through big data. In parallel, venture capital investors are flocking to healthcare apps and wearables that track vital signs and connect patients with doctors in innovative ways.

The US$108 billion pharmaceuticals sector represents the largest opportunity set for investors in China's healthcare market. Although the biggest in the world after the US, China's pharmaceutical market is much less sophisticated but catching up quickly. The US allocates 70% of total pharmaceutical spending to patented (i.e., innovative) medications, whereas China allocates just 22%. In the US, comparatively little is spent on generic and over-the-counter drugs; China is the world's largest market for generics.

China's byzantine drug approval process has long discouraged innovative therapies. It used to take China's Food and Drug Administration ("CFDA") one year just to approve clinical trials for a drug, as opposed to months in the US. While the average review time for an application was three years, some companies waited as long as eight years for their drug to be evaluated.

Deterred by the CFDA, Chinese pharmaceutical firms historically spent less than 5% of sales on R&D, according to the WHO. Their multinational peers, on the other hand, spend 14-18%.[11] Instead, Chinese pharmaceutical firms mainly sold cheap, generic medicines, earning razor-thin margins in a fragmented market comprised of thousands of tiny manufacturers and distributors. Anemic R&D spending led to brain drain, further setting back the cause for domestic life sciences innovation.

As a result of these factors, all of China's top ten drugs by sales are dated, having been launched globally in the 1980s and early 1990s. On average, Chinese patients have waited five to six years after a drug's launch in the US and Europe before it is approved for use domestically. For example, only 21% of drugs launched globally between 2008 and 2013 were available in China as of 2015, according to IMS Health.[12] Revolutionary new hepatitis C treatments, shown to cure more than 90% of patients within a few months, have yet to make it to China, which has one of the world's highest rates of the disease. Older, less effective therapies that come with heavy side effects are the only alternative.

Fed up with the slow pace of regulatory approval, patients are looking abroad, driving tremendous growth in outbound medical tourism. Hepatitis C patients, for example, can travel to India, Laos or Bangladesh, where Gilead Science's blockbuster drug Sovaldi is available at a much lower cost than in the US. As long as an equivalent drug remains unavailable in China, the market potential of medical tourism for hepatitis C alone is estimated to exceed US$50 billion.[13] According to the travel booking site, Ctrip, the number of outbound medical tourism trips from China increased by more than 500% in 2016 over the previous year, underscoring the tremendous shortage.[14]

The country's pharmaceutical market is starting to overcome these challenges through a combination of public policy and private investment. The government is encouraging the pharmaceutical market to consolidate. By raising standards on good manufacturing practices, hiring more enforcement staff at the Ministry of Health and calling for bioequivalence testing, China's government hopes to disqualify the vast majority of generics currently marketed by 2018, and to force thousands of subpar, subscale domestic manufacturers to shut down.[15]

Regulatory risk will remain an issue that investors need to be aware of. China's regulators have twin motives that can sometimes be at cross purposes: encouraging healthcare innovation and making healthcare accessible to all. The latter has occasionally driven regulators to curb prices on certain drugs. Including a drug on the National Reimbursement List means that it is covered by China's public insurance system; in return, however, the drug maker is forced to sell at mandated prices that tend to be below market levels. Such pricing pressure has fallen heavily on manufacturers in the fragmented generics market, where the government is trying to reduce inefficiency and promote consolidation.

[11] *The Economist*, "Chinese pharma firms target the global market", March 2017.
[12] *Financial Times*, "China Healthcare: Missing a Beat", December 2015.
[13] *Wall Street Journal*, "New Travel Horizons: Hepatitis C Tourism From China", March 2016.
[14] *China News Service*, "Outbound medical tourism grows five-fold in 2016", December 2016.
[15] Department of Commerce, International Trade Administration, "Country Case Study: China 2016".

By contrast, regulators' recent approach to more innovative drugs has been encouraging. In particular, China's government has shown it is serious about reforming the CFDA. After hiring more staff and eliminating redundant applications for generics, the CFDA approved 90% more applications for new drugs in 2015 compared to 2014. In early 2016, the CFDA announced a "green-channel" approval pathway that would expedite applications for innovative therapies that address a pressing clinical need such as AIDS, tuberculosis, viral hepatitis or cancer. A similar American program that was launched in the 1990s improved innovative drug approvals significantly. In 2015, for the first time, the CFDA permitted pharmaceutical companies to conduct trials in China and other countries simultaneously. Any clinical data obtained from international multi-center clinical trials involving a Chinese institution will be accepted as part of the application in China. Taken together, the CFDA's flurry of reforms since 2015 represents a bold and unprecedented move to rewrite the rules in favor of innovation.

HOME COURT ADVANTAGE

Eyeing a gold rush, multinational pharmaceutical firms are capitalizing on China's regulatory reforms and seeking approval to market some of their best-selling drugs globally. Yet for a number of reasons domestic firms will win in the long run. Investors have heard this tale before. When multinational smartphone companies outsourced their manufacturing to China, they transferred valuable technology that ultimately made Chinese phones competitive; when government regulations kept Google and Facebook from making inroads in China, they created an opening for Alibaba, Baidu and Tencent.

Even as multinational pharmaceutical firms faced with exorbitant research, development and manufacturing costs in their home countries continue to outsource to China, Chinese scientists are increasingly leaving their multinational employers to start their own ventures. Concentrated in Shanghai, now one of the world's centers for pharmaceutical

China is expected to become the world's largest R&D spender by 2020.

R&D, these ventures are incubating in an environment fertilized by rising public and private investment and nurtured by favorable government policy, perched at the doorstep of the world's second-largest and rapidly growing pharmaceutical market.

China's growing dynamism in the life sciences sector is based on a strong foundation of research. China already spends more on research than the European Union. In 2014, China's gross domestic expenditure on R&D ranked second in the world; it grew at a CAGR of 27% between 2010 and 2014, far outpacing the rate of GDP growth. As a result of this growth, China is expected to surpass the US to become the world's largest R&D spender by 2020.[16]

China also has more scientists than any other country. But with a population of 1.3 billion and counting, it trails other countries in terms of the density of its scientific workforce, suggesting room for even more growth. As part of a new five-year plan, China's government has pledged to boost research funding to 2.5% of the country's GDP by 2020, from 2.0% in 2015. According to the World Intellectual Property Organization, China passed the US in 2011 to become the world leader in the number of patent applications received, and the number of articles published by Chinese authors in high-impact journals (e.g., *Science* and *Nature*) is also on the rise. Chinese authors are now present in one-fifth of the world's most-cited papers.

[16] Adjusted for purchasing-power-parity.

China's life sciences ecosystem is also being nourished by the disaggregation of global value chains that has occurred across all industries. Multinational pharmaceutical companies cannot help but outsource their research to China. Development costs globally for a prescription drug now stand at US$2.6 billion, a 145% increase from a decade ago.[17] As several patents on blockbuster drugs have expired over the past few years, multinational pharmaceutical companies have been under pressure to maintain profits by cutting costs.

More than 300 Contract Research Organizations ("CROs") in China provide preclinical and clinical research services to these companies, allowing them to leverage the country's relatively cheap, highly-skilled scientific workforce and large patient pool. Projected to grow at almost 25% per year, China's CRO industry is expected to more than double its revenues to US$6.4 billion by 2017.

On top of China's low-cost R&D capabilities, multinational pharmaceutical companies see outsourcing as their ticket into the Chinese market. In the same way global automakers and Hollywood moviemakers have had to locate an increasing portion of their production and financing in China to gain market access from authorities, regulators at the CFDA are prioritizing drugs that have had the highest amount of value-added development done in China.

At the same time as multinationals are shifting their research operations to China, Chinese researchers abroad are returning home as well. According to the Center for China & Globalization, between 1987 and 2014 7.4% of the 1.8 million repatriates or "returnees" were employed in the biotechnology and healthcare sectors; unofficial estimates suggest that nearly one-third of those returnees engage in high-value R&D activities.[18] Many of them have chosen to leave their multinational employers to strike out on their own. Like the technology entrepreneurs who paid their dues in Silicon Valley before returning home to start China's internet boom in the 2000s, (cf. *Asia Venture Capital*, a StepStone Research Paper), returnees are capitalizing on the country's vibrant and growing life sciences ecosystem.

HOMEGROWN INNOVATION

Some ventures, like Shanghai-based Hua Medicine, are buying the rights to develop new compounds in China from multinational companies, leveraging the lower cost structure of research and inflow of research talent in China. Zai Lab, which raised US$100 million in Series B funding from a group of backers including Sequoia Capital last year, is populating its immediate pipeline by licensing experimental medicines, including a potential treatment for lung cancer from Sanofi and a liver drug candidate from Bristol-Myers Squibb. CStone Pharma, which raised US$150 million in Series A funding last year, has pursued a similar strategy. Many pharmaceutical firms worldwide are choosing to license out drug candidates have emerged in their labs but for which their squeezed R&D budgets are insufficient to carry out clinical trials in China.

As multinational pharmaceutical companies and the CROs that serve them lose their most talented scientists to the call of entrepreneurship, both are relying on M&A, joint ventures and partnerships with these scientists' new companies to come up with novel drug candidates. For example, Suzhou's Innovent Biologics recently entered a US$450 million partnership with Eli Lilly to collaborate on R&D and commercialize new cancer treatments. BeiGene (NASDAQ: BGNE), located in Beijing's Zhongguancun Life Science Park, licensed two drug candidates to Merck in 2013. Both were founded by returnees who gave up lucrative jobs to found their own companies.

Replicating innovative drugs that are commercially available elsewhere is another strategy that domestic companies have pursued. Although China has one of the world's highest rates of hepatitis C, treatments such as Gilead Sciences's Sovaldi have not been made available in the country. Ascletis, a company founded by former head of R&D and BD for GSK's antiviral product division, is developing its own equivalent direct-acting antiviral cure. Ascletis believes its product's molecular structure is different enough from Sovaldi to avoid patent infringement; however, in clinical trials it appears to be just as effective. While Gilead is scrambling to restart the CFDA approval process for Sovaldi, Ascletis has already gained

[17] *Chemical & Engineering News*, "Tufts Study Finds Big Rise In Cost Of Drug Development", November 2014.
[18] Xiaoru Fei, Joseph Wong, "The Rise of Chinese Innovation in the Life Sciences," The National Bureau of Asian Research, April 2016.

fast-track approval from government regulators, putting it on a path to become the first to market in China. To help its commercialization effort, the company recently raised US$100 million in a round led by C-Bridge Capital and Goldman Sachs.

In-licensing, out-licensing, or developing in-house equivalents to globally innovative assets are appealing strategies to private investors in China because they exploit the scientific and regulatory arbitrage between China and more advanced economies. In doing so, they reduce much of the development risk inherent to healthcare investing in more advanced economies, while retaining much of the upside. In cases similar to hepatitis C, where patients are spending more than US$50 billion for the option to purchase effective treatments, the upside for companies such as Ascletis can be very high indeed. Private investors are taking notice. In 2016, CStone, Innovent and Ascletis raised more than US$500 million of financing. CStone and Innovent were among the world's ten largest financing rounds in the life sciences last year,[19] a testament to China's growing importance in the global life sciences ecosystem.

This is just the beginning. China's homegrown life sciences players are still developing: most are not yet mature enough to develop an innovative drug from start to finish, and many must still partner with multinationals to commercialize and distribute their products globally. Yet these homegrown innovators are being given a helping hand by regulators who are tipping the scales toward Chinese-discovered compounds and giving an advantage to domestic firms. As such, these homegrown life sciences players are catching up quickly.

In 2015, China joined the short list of countries that have developed a new drug from scratch when Chipscreen Biosciences, founded in Shenzhen by yet another returnee from the US, received regulatory approval for a drug targeting a rare lymph node cancer. Chidamide is the first drug to be fully developed in China, the first of its kind to be approved by the CFDA for sale, and just the fourth globally in a cutting-edge class of drugs called histone deacetylase inhibitors. Its R&D costs were only a tenth of what it would have cost in the US. Chipscreen is now in clinical trials for potential commercialization in Japan as well as the US. While most Chinese pharmaceutical companies have started with either an initial focus on drug development or on production, Chipscreen and others have had the flexibility, and in fact have planned all along, to grow into fully scaled, integrated pharmaceutical firms encompassing development, production and distribution, in China and globally.

> The CFDA's flurry of reforms represents a bold move to rewrite the rules in favor of innovation.

As China's pharmaceutical companies come into their own, capital markets are opening. Last year saw two notable NASDAQ IPOs for China-based pharmaceutical companies, BeiGene and Chi-Med, both led by foreign-born CEOs who got US investors interested in the China healthcare story. BeiGene raised US$756 million in January 2016; Chi-Med raised US$650 million a few months later.

However, given the hefty valuations at which healthcare stocks in China trade relative to exchanges overseas, many investors have preferred to list at home. Hangzhou-based Betta Pharma, which sells just one lung cancer drug called Conmana, increased by as much as US$5.6 billion in market value last year after raising US$110 million in a public offering on the Shenzhen Stock Exchange. Some investors have even taken US-listed Chinese companies private to relist them domestically: last year the world's largest CRO, Wuxi PharmaTech, was taken private for US$3.3 billion, demonstrating healthy investor appetite for access to China's healthcare story.

[19] *Biobay*, "GEN: Two Chinese Pharmaceutical Enterprises Rank in 2016 World's Top 10 in Financing".

Healthy Investing Strategies

Despite the compelling opportunity set in China's healthcare sector, private investors must guard against irrational exuberance. For one, the large number of funds being raised should warrant caution. While some managers are well equipped to capitalize on the opportunity set in China's healthcare sector, others may be more opportunistic in their reasons for fundraising. At the same time, the newness of the opportunity set means that few managers possess a meaningful track record.

StepStone's team in China has built a critical mass of knowledge on the healthcare sector and manager landscape. StepStone finds that the most successful managers tend to have the following qualities:

- Strong scientific and industry expertise—The technical barriers to entry are very high in healthcare, where professionals with scientific and industry expertise, in addition to strong networks, are needed to source and assess the right investment opportunities. This is particularly the case in pharma and devices; it is also relevant for effective service delivery.
- Focused sub-sector strategy—The best healthcare managers recognize the heterogenous nature of the sector and develop specific theses via extensive research to formulate targeted strategies in the sub-sectors they believe are most attractive.
- Strategic angle and support—Given the nascence of the healthcare sector in China, support from a strategic partner can be important. Provided that governance and alignment of interest is structured appropriately, managers can leverage the infrastructure, capabilities and brand name of a strategic sponsor to great effect.

In addition to manager quality, investors should also consider their risk-return appetite and tailor their investment strategy accordingly. China's generalist funds tend to concentrate on later stage opportunities, primarily in healthcare services or in pre-IPO and public-to-private pharmaceuticals and medical technology companies, where the technical barriers to entry tend to be lower. China's healthcare-focused specialists, on the other hand, tend to focus less on services and more on products, and these can be split into two categories: later stage and early stage. A later stage fund, which typically pursues a blend of late stage venture capital opportunities, growth equity and the occasional buyout, would serve first-time investors well.[20]

Many later stage managers aim to invest at inflection points in a company's growth, when the early stage scientific and regulatory risk on its key products has been substantially mitigated but when valuations have not yet risen accordingly. As competition heats up, this window of opportunity will narrow, but skillful managers with strong networks can retain an edge in identifying de-risked products that have strong underlying science, high visibility to regulatory approval and a clear path to commercialization. Such exposure is complemented by shorter hold, pre-IPO opportunities and/or buyouts to generate a balanced risk-return profile suitable for first-time investors.

Earlier stage venture capital investors may also generate attractive risk-adjusted returns in China's healthcare sector and can be suitable for some investors. Exploiting the scientific and regulatory arbitrage between China and more advanced economies can potentially reduce much of the development risk inherent to early stage healthcare investing in more advanced economies. For example, a pre-revenue investment can be de-risked if the company was founded

[20] No healthcare-focused manager in China has pursued a buyout strategy to date. Given the underdevelopment of the healthcare sector in China, buyout targets remain few in number. Instead, most growth equity managers will opportunistically pursue buyouts when available.

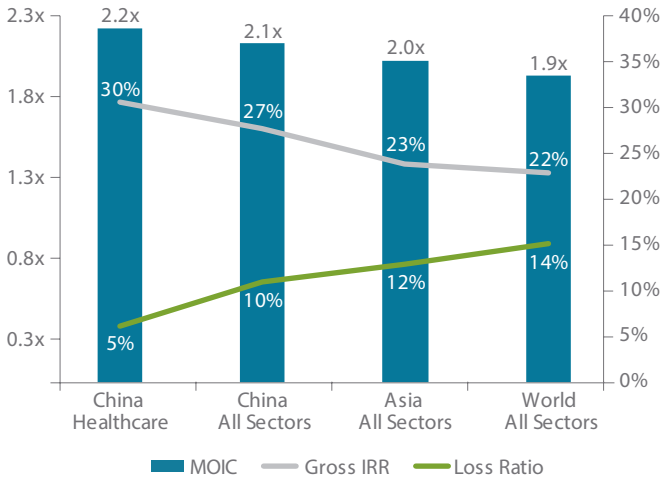
by a scientist with substantial research experience abroad, and who has licensed in a mature and proven product from overseas to develop and commercialize in China. Familiarity with the local regulatory process and authorities, and a deep understanding of the product's underlying science, can go a long way to mitigating risk. If the technology is targeting a large and unmet need in China, then the upside can be high.

Conclusion

Though conducting the appropriate due diligence and picking the right strategy is certainly not easy, the rewards for those who get it right can be handsome. According to StepStone's proprietary database of managers' asset-level performance, investments in Chinese healthcare companies outperformed the benchmark for all sectors by 300 basis points in IRR, with half the loss ratio (**Figure 7**).

As one of China's most underdeveloped and underpenetrated sectors, we believe healthcare is the next big market to evolve, attracting private investors potentially looking for the same type of explosive growth that underpinned China's prior booms in manufacturing and internet technology. Pent-up demand from China's aging population and rising disposable income, combined with generally favorable regulatory reform, world-class R&D infrastructure and an influx of talent and money are now putting China's healthcare sector on that same trajectory. China could be home to more than one big, globally competitive multinational pharmaceutical firm as early as 2025, similar to the way Alibaba, Baidu and Tencent became some of the world's largest companies by market capitalization.[21] We believe savvy private investors have an opportunity to access China's nascent healthcare companies on the ground floor to ride the country's next wave of growth.

FIGURE 7 | BENCHMARKING CHINA HEALTHCARE



Source: StepStone Private Markets Intelligence, June 30, 2016.

[21] Le Deu, Franck. "Building Bridges to Innovation." BioCentury China Healthcare Summit, 18-19 October 2016, Grand Hyatt Shanghai. Conference Presentation.

StepStone is a global private markets firm overseeing approximately US$120 billion of private capital allocations, including over US$31 billion of assets under management.

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