CASE: E-693
DATE: 02/02/20

VENUS MEDTECH: GLOBAL INNOVATION IN THE RACE BETWEEN CHINA AND THE U.S.A.

Venus Medtech is both Chinese and global. [Cofounder and CEO] Eric Zi has such a unique experience as an R&D engineer who has worked in China and the United States. His passion for making the best medical devices possible is clearly evident in how he's built his company. Whereas other Chinese start-ups might have copied a first- or second-generation product from the west and commercialized it in China, Venus Medtech is actually innovating on its own. This will allow it to compete not just in China, but also challenge major device makers around the world.

—Nisa Leung, Managing Partner and Healthcare Principal at Qiming Venture Partners[1]

Zhenjun (Eric) Zi looked out his office window one late June afternoon in 2013. While his eyes followed a trio of traditional, red-sailed junks gliding through the center of Hangzhou on the Qiantang River, his mind remained fixed on the four term sheets spread across the desk on the far side of the room. Venus Medtech, his medical device start-up, needed to raise Series A financing for its next stage of growth. However, the enviable position of selecting among multiple offers did not sit well with him. Zi felt strongly that money was not simply money. The right venture capital firm had to offer much more than that. His start-up sought to commercialize, first in China and then in the U.S., the cutting-edge heart valve replacement technology it had developed in house. Picking the wrong venture capital (VC) investor now could jeopardize his vision for Venus Medtech as a Chinese firm that could out-innovate, not copycat, the U.S. manufacturers that historically had dominated the global cardiovascular device industry. Each of the four finalist venture capital firms, narrowed down from an original field of dozens, had plenty of strengths, but none was perfect. The first was a domestic healthcare fund that had little reach outside China. The second was a U.S. boutique healthcare VC firm that did not grasp the considerably different market reality across the Pacific. The third was the Chinese affiliate of a high-profile U.S. firm, only it lacked expertise in healthcare. The fourth was a

[1] All quotations of Nisa Leung are from an interview with the case authors on July 17, 2019.

Joseph Golden (MBA 2018) and Lecturer Peter Ziebelman prepared this case as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. Some aspects of the case have been altered for pedagogical purposes. The authors thank Nisa Leung for helping to develop this case.

Copyright © 2020 by the Board of Trustees of the Leland Stanford Junior University. Publicly available cases are distributed through Harvard Business Publishing at hbsp.harvard.edu and The Case Centre at thecasecentre.org; please contact them to order copies and request permission to reproduce materials. No part of this publication may be reproduced, stored in a retrieval system, used in a spreadsheet, or transmitted in any form or by any means — electronic, mechanical, photocopying, recording, or otherwise — without the permission of the Stanford Graduate School of Business. Every effort has been made to respect copyright and to contact copyright holders as appropriate. If you are a copyright holder and have concerns, please contact the Case Writing Office at businesscases@stanford.edu or write to Case Writing Office, Stanford Graduate School of Business, Knight Management Center, 655 Knight Way, Stanford University, Stanford, CA 94305-5015.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

cross-border VC firm with a strong healthcare investing track record in China and the U.S., but Zi wondered whether the general partner was stretched too thin by a large number of existing investments. Which term sheet would Zi pick?

ORIGINS

After receiving his master's degree in applied chemistry from Hefei University of Technology in 1998, Zhenjun (Eric) Zi pursued a career in medical devices. He joined MicroPort, a Shanghai-based company that was the first manufacturer of coronary artery stents in China, as an engineer. At MicroPort, Zi not only developed new technologies, but gained managerial experience, for he ultimately assumed supervisory responsibility over the company's R&D efforts, sales strategy, and technical staff training. In late 2002, Zi wanted a change, so he quit MicroPort to look for other opportunities. In January 2003, he cofounded Lifetech Scientific (Lifetech), a maker of minimally invasive medical devices for cardiovascular and peripheral vascular diseases.

Although Zi primarily worked out of Lifetech's headquarters in Shenzhen, his role, which involved spearheading business development and strategic planning efforts, required him to travel frequently to the United States, specifically to Irvine, California. The city, located roughly 40 miles southeast of Los Angeles in California's Orange County, served as an innovation hub for the U.S. medical device industry. It was home to the University of California, Irvine, a major research university with a top medical school, and Edwards Lifesciences, one of the world's leading manufacturers of heart-related medical devices. On his visits, Zi tapped into Irvine's deep pool of human capital in two ways. First, he recruited top-notch engineers to build out Lifetech's R&D staff. Second, he forged relationships with influential physicians, known as key opinion leaders (KOLs), who provided unique insights from their medical practices and research activities, and validated Lifetech's technology by association. Zi soon realized that access to world-class medical device experts also would enable his firm to pursue the emerging market opportunity then at the forefront of interventional cardiology: transcatheter heart valve replacement.

Unfortunately, one of Lifetech's VC backers, which had contributed $5 million of funding, demurred. It wanted Lifetech to take a more conservative approach and instead focus on developing a less speculative product pipeline that would appeal to large western medical device companies, such as Medtronic. This strategic disagreement presented Zi with a problem, for he had already hired a team of four engineers in Irvine and he did not want the talent to go elsewhere. Pressing his case with the dissenting VC firm, Zi struck an unconventional compromise: Lifetech would pursue more mainstream innovation, while Zi received permission to use his own personal resources to retain the recently hired engineers. He would then set them to work on what he believed was the bigger opportunity in transcatheter heart valve replacement.

Zi was not alone in his optimism for transcatheter heart valve replacement. He found a kindred spirit in Min (Frank) Zeng, a colleague of Zi's in the Irvine office of Lifetech. Zeng had received a bachelor's degree in solid mechanics from Tsinghua University, arguably the most prestigious university in China, in 1986, and a master's degree in mechanical engineering from the University of Texas at Austin in 1994. After completing graduate studies, he remained in the United States and worked as an engineer in the medical device industry for nearly a decade before crossing paths with Zi at Lifetech. Between 2003 and 2007, Zi and Zeng personally

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

bankrolled the transcatheter heart valve replacement team within Lifetech, contributing about $1 million in total. In 2009, a friend of Zi's in China invested a similar amount in the project, and a new company, Venus Medtech, was incorporated as an entity separate from Lifetech. Zi, abiding by the agreement he had struck, worked for both Lifetech and Venus Medtech until December 2011. Lifetech had completed an initial public offering in Hong Kong by then, so he resigned from the company and focused his efforts exclusively on Venus Medtech.

HEART VALVES

To fully understand Zi's vision, one had to appreciate the severity of the problem that he wanted to solve. The heart, at its most basic, was a muscular pump that moved the average human's five quarts of blood throughout the body.[2] With each heartbeat, the heart muscle contracted and relaxed. Contraction, known as systole, pushed blood out of the lower chambers of the heart, called ventricles, and into the arteries. Relaxation, or diastole, drew blood from the upper chambers of the heart, named atria, into the ventricles. See **Exhibit 1** for a diagram of the heart.

Coordination was critical, and the task of regulating the flow of blood belonged to four heart valves: tricuspid, pulmonary, mitral, and aortic. Blood first entered the heart from two large veins called the venae cavae. The venae cavae emptied deoxygenated blood that had circulated throughout the body into the right atrium of the heart. The tricuspid valve opened during diastole, allowing the deoxygenated blood to move from the right atrium into the right ventricle. Next, the right ventricle contracted (systole), forcing the deoxygenated blood out of the heart via the pulmonary valve. This valve connected to the pulmonary artery, which carried the blood to the lungs, where it received an all-important shot of oxygen. The now-oxygenated blood returned through the pulmonary valve to the heart for pumping, this time entering the left atrium. Diastole occurred on the left side of the heart just like it did on the right, only slightly later. Relaxation allowed blood to flow through the mitral valve into the left ventricle. During systole, the left ventricle contracted, pushing blood through the aortic valve and into the ascending aorta. From the ascending aorta, oxygenated blood traveled throughout the body.

It was a simple but elegant system, with valves serving effectively as gates. Unfortunately, valves did not always work properly.[3] While some problems stemmed from congenital defects, more often, valve performance degraded over time. As a result, people over the age of 65 suffered from valvular heart disease at far higher rates than their younger counterparts did. Another contributing factor was diet. People who consumed richer foods had a greater likelihood of developing calcium deposits on the leaflets of the valves. This build-up of material limited the valves' function.

The aortic valve frequently caused the most vexing health issues for patients. Two aortic valve ailments in particular, stenosis (involving the narrowing and hardening of the valve) and regurgitation (when the valve failed to close completely) were quite problematic. Once

[2] The following description of the heart's inner workings is based on "The Heart and Circulatory System – How They Work," Mayo Clinic, June 19, 2013, https://www.youtube.com/watch?v=CWFyxn0qDEU&t=7s (September 2, 2019).

[3] "Aortic valve disease – causes, symptoms, diagnosis, treatment, pathology," Osmosis, June 25, 2019, https://www.youtube.com/watch?v=ifSJGLC55SU (September 3, 2019).

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

symptoms of aortic stenosis appeared, patients faced a mortality rate greater than 50 percent within two years if they did not receive a valve replacement.[4] As for aortic regurgitation, acute forms could result in heart failure.[5]

Aortic valve disease was frighteningly common in the early years of Venus Medtech (see **Exhibit 2** for 2014 data).[6] On a global basis, roughly 42 million people suffered from the condition, of which more than 7 million lived in China. Treatment options were not ideal. In some cases, valve repair was possible, but replacement with an artificial valve was more likely. For decades, the standard of care had been open heart surgery to replace the faulty valve in a procedure known as surgical aortic valve replacement (SAVR). This was problematic, since many patients who suffered from aortic valve diseases were not healthy enough to be eligible for SAVR.

Then, in 2002, French cardiologist Alain Cribier performed the first minimally invasive aortic valve replacement.[7] Now, rather than opening up a patient's chest, heart surgeons could thread a catheter carrying a collapsible valve replacement through patient's femoral artery, move the device into place, and open it. This was a major breakthrough in interventional cardiology, and Cribier ultimately sold the start-up he had created to further develop the technology to Edwards Lifesciences in 2004. Edwards would receive regulatory approval to bring the first transcatheter aortic valve replacement (TAVR) device to market in the European Union in 2007 and in the United States in 2011.[8] Rival Medtronic entered the TAVR market via acquisition in 2009, but did not receive regulatory approval in the United States until 2014.[9] Later entrants to the market included major U.S. medical device makers Boston Scientific and Abbott Laboratories.[10]

Despite this innovation, TAVR was not very common when Zi was building Venus Medtech (**Exhibit 2**). Fewer than 57,000 patients underwent the procedure globally in 2014, representing less than 2 percent of eligible patients. Uptake was so low for three reasons. First, TAVR devices were expensive. While the average cost was roughly $27,000 per device, there was considerable variation globally, with prices in the U.S. well above $30,000. Second, there was a capacity problem. Relatively few surgeons were trained to perform the procedure, and many hospitals shied away from allowing it within their walls. Third, regulators in the European Union and the United States had been cautious in granting approvals for TAVR, restricting access for a number of years to only inoperable or high-risk SAVR patients.

For his part, Zi believed better device technology would lower cost and increase availability of TAVR procedures. He also knew that China, his home country, did not even offer the procedure,

---

[4] Venus Medtech, "Venus Medtech (Hangzhou) Inc., Stock Code: 2500 – Global Offering," November 28, 2019, http://www.venusmedtech.com/documents/files/prospectus/e101.pdf (December 10, 2019), p. 117.

[5] Ibid., p. 118.

[6] 2014 data were the earliest figures available to the case authors.

[7] Alain G. Cribier, "The Odyssey of TAVR from Concept to Clinical Reality." *Texas Heart Institute Journal*, April 2014, https://thij.org/doi/full/10.14503/THIJ-14-4137 (October 15, 2019).

[8] Lee Hambright and John Rogers, "U.S. Medical Devices: TAVR Primer – How big? How fast? Who wins?" Bernstein Research, March 15, 2019, p. 3.

[9] Ibid.

[10] Ibid.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

since no TAVR devices had received regulatory approval.[11] From a long-term perspective, he also worried that valvular heart diseases would only become more prevalent as the global population aged. The situation looked especially bad for China. After all, the country was expected to age rapidly in coming years (**Exhibit 3**). In addition, China's rising prosperity over the last several decades had led to a shift in diet towards richer foods that would likely exacerbate the problem.[12]

All was not lost, however. If there was a saving grace for China, it was that the two major trends driving economic prosperity, urbanization and the emergence of a middle class, would likely continue. According to a report published in *McKinsey Quarterly*, the number of urban households in China was expected to grow from 256 million in 2012 to 357 million in 2022 (**Exhibit 4**). Over the same period, the share of upper-middle-class households, defined as making the equivalent of $16,000 to $34,000 a year, would rise from 14 percent to 54 percent (**Exhibit 4**), while the mass middle class, which earned $9,000 to $16,000 a year, declined from 54 percent to 22 percent. This upward mobility would drive a 167 percent increase in total Chinese urban private consumption (**Exhibit 4**). Greater wealth would allow China to spend more on healthcare over time.[13] Long-term demographic changes made this shift in resource allocation even more imperative for the country, which, in 2013, spent far less than developed nations did on healthcare. According to World Health Organization data, China spent just 5.6 percent of GDP, or $531 billion, versus 10.3 percent ($507 billion) in Japan and 17.1 percent ($2,867 billion) in the U.S.[14] On a per capita basis, this translated to $370 in China, $3,965 in Japan, and $9,150 in the U.S., respectively.

STRADDLING THE PACIFIC

From the outset, Venus Medtech straddled the Pacific Ocean. While its world-class medical device experts, who had joined the start-up from the likes of Edwards and Medtronic, continued to work out of southern California, Zi set up headquarters in his native China. This highly strategic choice reflected Zi's ambitions to build a Chinese medical device powerhouse that could compete globally in transcatheter heart valve replacement. Extensive experience in both the United States and China taught Zi that going toe-to-toe with the western companies that dominated the industry would require advanced technology and considerable resources, and he believed having a foothold in both countries would allow his fledgling company to overcome these significant barriers to entry.

Developing cutting-edge medical devices also necessitated strong relationships with top-notch heart surgeons. These physicians could provide the engineers at a medical device manufacturer with key insights into the pain points that existing products on the market could not address.

---

[11] This changed in 2017, when Venus Medtech gained approval for, and brought to market, the VenusA-Valve.

[12] Ames Gross, "Heart Disease a Growing Threat in China," *MedTech Intelligence*, April 25, 2019, https://www.medtechintelligence.com/column/heart-disease-a-growing-threat-in-china/ (October 22, 2019).

[13] Bruno Lannes, Richard Hatherall, Jason Ding, Weiwen Han, and Mike Booker. "Consumption in China: Ten Trends for the Next Ten Years," Bain & Company, June 13, 2018, https://www.bain.com/insights/consumption-in-china-ten-trends-for-the-next-ten-years/ (November 1, 2019).

[14] "China Healthcare Market and Key Recent Policy Updates," CITIC Capital, 2016, https://kingcenter.stanford.edu/sites/default/files/China%20Healthcare%20Market%20and%20Key%20Recent%20Policy%20Updates.pdf (November 1, 2019), p. 3-4.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Feedback of this sort allowed engineers to focus their research and development efforts where it would matter most for both doctors and patients. The result would be better technology built into the next generation of products. And since the doctors actually performed the procedures that made use of the devices, they played a large role in the clinical trials that would determine product safety and efficacy, the two key factors that medical regulators in all major markets (e.g., the U.S. Food and Drug Administration) used to grant approval. In turn, once the device was on the market, a large body of clinical data that attested to its quality would strongly influence the decisions other surgeons would make regarding which device, among the handful of options from competing manufacturers, to use for their patients.

Zi knew that collaboration with interventional cardiologists would be essential if Venus Medtech was going to challenge the industry leaders. Although there were highly regarded doctors in many countries across North America, Europe, and Asia, their receptivity to working with device manufacturers in the never-ending quest to develop better technologies for patients varied. American physicians stood out from their counterparts elsewhere along this dimension, a reality that further convinced Zi of the necessity to build a strong presence in the U.S. But it was more than that, for Zi had learned that the most innovative doctors in the west had not always found the major device makers to be as cooperative as they would have hoped. He recalled one specific example that stuck with him:

> A cardiologist in Germany told me, "When I talk with the industry giants and tell them to make some change so that all new devices will have this feature or do this thing, I wait six months and then the engineers say, 'Oh, we cannot do that.'"[15]

Zi believed there had to be a better way to improve how medical insights translated into device engineering. His solution for strengthening the feedback loop involved leveraging the research and development organization he would build in China to complement the small team in Irvine. Greater responsiveness and speed would encourage American doctors to collaborate with an embryonic Chinese venture, instead of working solely with the industry giants. He explained:

> We wanted to combine international experts with Chinese engineers to do rapid prototyping. This insight was essential in differentiating Venus Medtech. I thought, what if a cardiologist shares an idea, based on an unmet clinical need, for a new device, and our engineer turns around a prototype six days later? When I ran this idea by American doctors, their response was, "I would like to work with you."

If Venus Medtech's small R&D department, led by the team in Irvine but primarily comprised of Chinese engineers back home, could develop cutting-edge products, Zi concluded that the main challenge would be building operational infrastructure as quickly as possible. China loomed large in his strategy, for it had unique features that would allow Venus Medtech to gain credibility and scale much more cheaply and rapidly than it could in the United States alone. According to Zi:

> We planned to do a lot of the early-stage work in the U.S., to form the new idea and to test it. We even were going to do some early-stage animal tests in the U.S. Then we

[15] All quotations of Zhenjun (Eric) Zi are from an interview with the case authors on May 16, 2019.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

> would move to China, where we would conduct the big animal study, followed by the main human clinical study. Of course, the cost would be much lower. If we did those studies in the U.S., it would cost $10 million to $20 million for one device. That same amount of money would allow us to run studies for four or five devices in China.

But lower cost and greater speed were means to an end, not ends in themselves. These advantages would enable the start-up to scale in stages, first at home in China. Success there would yield greater resources, which would facilitate entry into the major western markets, most notably the United States. Zi explained:

> Gaining traction in China would allow us to raise more capital. In turn, we would use those resources to carry out studies and obtain regulatory approval in China. Once we were on the market in China, we could make sales, which would generate some profits and attract additional venture financing. This would then support our efforts to bring our products from local to global, with the primary focus being on the United States. The cost of gaining approval in the U.S. for just one device is huge: you need $80 million to $100 million. Since we could never raise that much money without achieving some major milestones beforehand, it had to be the Chinese market first and the U.S. second. We needed to develop our technology and bring it to market in China, where commercialization would be cheaper and faster. Then we would have enough momentum to sustain us as we sought regulatory approval in the U.S.

FINDING THE RIGHT HOME

Zi's plan made sense, but he had to set down roots for his venture somewhere in China. His home country was not monolithic by any means, especially when it came to the entrepreneurial landscape. Top of mind for Zi in the early days of Venus Medtech was keeping a low profile. Since Zi had already built a reputation in the industry, he knew rivals likely would be watching his every move. This risk was particularly acute, because Venus Medtech was trying to design cutting-edge devices instead of fast-follower products. As Zi put it:

> We didn't want to let others know that we were working on transcatheter heart valve technology. We didn't want them to say, "Oh, Eric [Zi] did something, so let's try what he's doing." Since I always wanted to do something from zero to one, they were watching me. And if they saw, they might do something similar.

This risk made Shanghai, which historically had been the center of the Chinese medical device industry, particularly unattractive, despite its deep talent pool. Zi also was concerned about how closely the Shanghai municipal government worked with western medical device companies, who had brought many jobs to the city in recent years by opening research centers there. He noted:

> The government and people in Shanghai seem to be more inclined to work with large companies who can make big investments, particularly multinationals like Medtronic and J&J [Johnson & Johnson], than tiny start-ups. This reflects the fact that when big international players want to take their first step in China, they almost always go to Shanghai, since it's a major city with a lot talent and a deep financial market. Plus, all

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

> their [western] peers are already there, so they have to be there as well. As a result, domestic startups tend to receive less attention and support compared with those giants.

Another option was Shenzhen. Like Shanghai, it too was a major city, a financial capital, and home for many Chinese start-ups. Although it was not known as a medical device hub in the late 2000s, that was not necessarily a detractor, given Zi's concerns about copycats. He also had deep familiarity with the city from having spent time working there for Lifetech. However, he did not give Shenzhen serious consideration as a potential headquarters for Venus Medtech, because it lacked strong universities from which he hoped to recruit employees for both engineering and non-technical roles.

In Zi's mind, if Shanghai and Shenzhen were not workable options, that left Hangzhou. Hangzhou, the capital of Zhejiang Province in East China, had a booming economy that grew at a compounded annual rate of 13.7 percent from 2007 to 2012 and generated per capita disposable income 53 percent higher than the national average in 2012.[16] It primarily had built its industrial might on a foundation of technology companies, including from abroad. Foreign direct investment surged 11 percent annually between 2007 and 2011, with major companies like Motorola, LG Electronics, Panasonic, and Siemens maintaining sizable bases there.[17] Among the many homegrown enterprises in Hangzhou, none held more promise than Alibaba, the leading e-commerce company in China. The meteoric rise of Alibaba almost singlehandedly lifted the stature of Hangzhou's start-up scene to the heights of Beijing, Shanghai, and Shenzhen, and attracted copious amounts of talent to the city in the space of less than a decade.[18,19] Besides all the commercial activity, Hangzhou had a deep pool of knowledge workers, for it housed 38 colleges and universities, including prestigious Zhejiang University, within its limits.[20]

Despite all its prosperity, Hangzhou was not an immediately obvious location for a nascent medical device venture to set up shop, as the city could claim little in the way of a medical device industry. What healthcare activity that did occur within its limits centered almost exclusively on biopharmaceuticals, for local authorities had been successful, since the mid-1990s, in luring meaningful investments from Merck, Pfizer, and Sanofi, among other "Big Pharma" firms.[21] And, if anything, in the late 2000s, it seemed like civic leaders wanted to build on this strength, not diversify into other parts of healthcare. In its *Development Plan for the Biochemical Industry, 2010-2015*, the Hangzhou municipal government laid out new policies that would further incentivize pharmaceutical research and development activity.[22]

---

[16] KPMG, "Hangzhou: A biochemical industry base driven by innovation," May 2013, https://assets.kpmg/content/dam/kpmg/pdf/2014/01/Invest-Hangzhou-Biochemical-industry-201305.pdf (October 25, 2019), p. 21.

[17] Ibid., p. 22.

[18] Zen Soo and Celia Chen, "After Beijing and Shenzhen, which are China's rising tech hubs?" *South China Morning Post*, August 12, 2017, https://www.scmp.com/tech/start-ups/article/2106495/after-beijing-and-shenzhen-which-are-chinas-rising-tech-hubs (October 26, 2019).

[19] Maggie Zhang, "Hangzhou, China's answer to 'Silicon Valley', is a hit with returning graduates, study finds," *South China Morning Post*, July 2, 2018, https://www.scmp.com/business/companies/article/2152935/hangzhou-chinas-answer-silicon-valley-hit-returning-graduates (October 26, 2019).

[20] KPMG, op. cit., p. 23.

[21] KPMG, op. cit., p. 5.

[22] KPMG, op. cit.., p. 6.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

This apparent preference on the part of the municipal government did not deter Zi. He reasoned that if Venus Medtech set down roots in Hangzhou, city authorities, given their track record of supporting enterprises, would decide to nurture his new venture in a closely related yet clearly separate part of the healthcare industry. And, as head of the lone medical device start-up in town, Zi would not have to worry about potential rivals looking over his shoulder, which would be a very real concern in Shanghai. Zi's counterintuitive approach soon yielded results, for Hangzhou's leaders turned out to be more receptive than he ever could have imagined. He explained:

> Venus Medtech is based in Hangzhou's Hi-tech Industrial Zone.[23] The officials in charge of the Zone are very smart. They don't run the Zone like a traditional Chinese industrial zone. Instead, they look at it like a big incubator. They want to nurture high-technology companies, whether they're in Internet, software, electronics, or healthcare. They also have the advantage that land in Hangzhou costs a fraction of what it does in Shanghai or Shenzhen. In addition, they have various innovation funds that will selectively sponsor disruptive technology companies during various stages of their development.

Zi was quick to point out that despite their largesse, governmental authorities in China had no interest in acquiring an ownership stake in his start-up. He observed:

> For the [various levels of the] Chinese government, the target is not equity investment. They just want to help you so that your business will grow and industry will develop. A clear example of this is with early-stage financing. If the local authorities think your project is innovative and potentially disruptive, they are willing to help your start-up get free or low-interest loans from banks in the early stage. However, these loans must be repaid over time. Later on, when your company reaches certain milestones, either it gets VC investment, receives regulatory approval, or starts generating revenue, then you can apply for a larger loan. This can be really important for entrepreneurs who need a lot of capital over time, but don't want to dilute themselves by selling significant equity.

TOWARDS SERIES A FINANCING

By summer 2013, Zi's plans for Venus Medtech were becoming reality. The clinical trial for the start-up's main product, the VenusA-Valve, which held the potential to be a much better option for patients suffering from aortic stenosis, was well underway, and initial results looked promising. Just a few months earlier, in the spring, Venus Medtech had launched another clinical trial, this time for its VenusP-Valve. This new device addressed similar problems as the VenusA-Valve did, but targeted the pulmonary valve instead of the aortic valve.

[23] Hangzhou's Hi-tech Industrial Zone (HHTZ) was established as the successor to two different innovation zones that had been set on opposite sides of the Qiantang River in the 1990s but consolidated into one entity by local authorities in 2002. The Zone, although one of several in Hangzhou, achieved renown among entrepreneurs and government officials for its role in nurturing Alibaba. The e-commerce giant still maintained its headquarters there as of 2019. See "Introduction to the High-Tech Zone (Binjiang)," English translation, Hangzhou Hi-tech Industrial Zone, August 2, 2019, http://www.hhtz.gov.cn/art/2019/8/2/art_1487272_20481188.html (October 27, 2019).

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Optimism emanated from Venus Medtech's headquarters in Hangzhou and main research center, half a world away, in Irvine. Employees were not alone in their excitement. Little by little, over the course of 2011 and 2012, Zi had let outsiders in on what his company was building. News of the two clinical trials, especially the positive data coming out of the VenusA-Valve study, spread rapidly through the Chinese cardiology community. Whispers of promising technology out of China also made their way through the global medical device industry, prompting westerners to wonder how such a compelling start-up had maintained a low profile for so long.

Compared with existing products in the U.S. market, Venus Medtech's revolutionary TAVR device, the VenusA-Valve, more closely mimicked the structure and function of the human aortic valve, and delivered better performance through a design that uniquely leveraged the science of fluid mechanics. The VenusA-Valve's anti-calcification technology represented a significant development in the application of biological materials in the cardiovascular space. This innovation greatly enhanced the valve's durability, prolonged its working life, and significantly improved the patient experience. Besides potentially becoming the first TAVR device marketed in China, the VenusA-Valve also offered, through its stent platform, a treatment solution for two patient groups that existing U.S. products could not serve: bicuspid aortic valve patients and patients with severe aortic valve calcification.

Although Zi knew Venus Medtech would need substantially more capital to realize his vision, he had been patient in fundraising. He, along with Zeng and his friend from Hangzhou, had gotten the company this far using only personal resources, and his previous experience at Lifetech had taught him the importance of choosing investors wisely. On-and-off discussions with a handful of venture capital firms over the last three years had suggested to Zi there was plenty of interest among investors to provide Series A financing. Yet he had waited, digging deeper into his personal savings, rather than striking a deal prematurely. In June 2013, Zi felt the timing was finally right:

> We had finished around 20 or 30 cases in humans at Fuwai Hospital, the biggest heart center in China at that point. There was great feedback from both doctors and patients. The clinical data were pointing to very positive outcomes. That gave me the conviction to say, "Okay, it's time to raise [Series A]."

When Zi turned sought outside investors in mid-2013, he found that the upswing in venture capital investing that began in the United States in the wake of the Great Recession in 2009 extended far beyond its traditional home base in Silicon Valley. According to data from Preqin Pro, venture capital funds in Greater China had grown their assets under management (AUM) from $5.8 billion at the end of 2007 to $36.5 billion at the end of 2012 (**Exhibit 5**). This rapid rise allowed Greater China to increase its share of global venture capital AUM from 2.1 percent to 10.6 percent over the same period (**Exhibit 5**). There appeared to be plenty of runway ahead of the industry, as dry powder, or committed capital from limited partners that venture fund managers had not yet deployed, stood at $17.5 billion at the end of 2012 (**Exhibit 5**). Alongside the boom in AUM, Preqin Pro data revealed that deal volume in Greater China spiked (**Exhibit 6**). The number of venture capital deals in Greater China grew from 427 in 2007 to 822 in 2012, while the aggregate value of those deals leapt from $3.9 billion to $9.1 billion. Relative to the United States, which boasted the largest venture capital market in the world, Greater China kept pace in terms of deal count, but gained on the global leader in aggregate deal value (**Exhibit 7**).

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Specifically, in 2012, the aggregate deal value in Greater China reached 23.4 percent of the amount observed in the United States, up from 12.0 percent just five years earlier (**Exhibit 7**). And, most relevant for Zi, venture capitalists in Greater China by no means overlooked the opportunities in healthcare. Solid growth in funding between 2007 and 2012 allowed the category to keep pace with the broader industry and remain roughly 10 percent of overall deal volume, as measured by deal count and aggregate deal value (**Exhibit 8**).

FOUR FINALISTS

Investor appetite for Venus Medtech exceeded Zi's wildest expectations. Dozens of term sheets came flooding in from a wide range of venture capital firms. Sifting through the options consumed a full of week of Zi's time, but that effort allowed him to narrow down the field to four prospective investors. Each of the four had offered to buy a 20 percent stake for $25 million, or its equivalent in Renminbi, valuing Venus Medtech at $125 million on a post-money basis. Since Zi did not want to sell any more than 25 percent of his company during the Series A round, he had inquired whether the four competing firms would accept participating in a consortium, but they, individually, had demurred. Accordingly, Zi had to pick just one of the four offers. With the valuations being the same, he knew he would have to base his decision on what each investor brought to the table besides money.

HealthTech Venture Partners

Based in the Pudong district of Shanghai, HealthTech Venture Partners was one of China's leading healthcare-focused venture capital firms. The three general partners, who had founded the firm in the mid-1990s, each specialized in a different area of the Chinese healthcare ecosystem. The general partner in charge of investments in medical device companies was Dr. Clarence Peng. Peng had been trained as an interventional cardiologist in the early 1980s and had practiced for over decade before leaving a successful career in medicine to become a venture capitalist. He had gained fame, among the Chinese medical community at least, by the late 1980s for being a highly skilled surgeon. His services were in great demand then, and he had frequently traveled between the best hospitals in Beijing and Shanghai to perform a variety of procedures, including a number of surgeries on famous Chinese patients that involved cutting-edge stent technologies. Since pivoting to investing in the mid-1990s, Peng had backed a number of successful medical device companies. A few of his bets in cardiology had become big winners in China by being fast followers of western innovators like Edwards and Medtronic.

Zi had known Peng for a number of years and harbored great respect for him as both a doctor and an investor. However, Zi wondered whether Peng was the right partner at such an early stage of his company's journey. To be sure, Peng was a cardiology expert who could offer helpful advice on technical matters and product development. In addition, he had close relationships with everyone who mattered in China's medical establishment, and such connections would be invaluable as Venus Medtech tried to educate surgeons across the country about the superiority of its valves relative to the competition. The problem was that for all his stature in China, Peng was relatively unknown elsewhere, particularly in the U.S. This was the unsurprising result of Peng's lifelong hesitance to travel abroad, his insistence, as a venture capitalist, that his portfolio companies focus on the domestic marketplace, and his limited efforts over the years to make connections with investors outside of China. Zi, always thinking a few

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

steps ahead, worried that despite multiple reassurances over the phone, Peng did not fully share his global ambitions for Venus Medtech. There also was the possibility that Peng might push for a less innovative product pipeline, since copycatting western technology for the domestic market had been considered core to the strategies of the most successful start-ups he had backed in the past. Zi had found this to be an all-too-common trait among Chinese venture capitalists:

> Often, Chinese investors want to get a quick return on their money in two or three years. Unfortunately, that doesn't work well in medical devices, where it usually takes five, six, or even seven years before you can get some return. This tension becomes a bigger issue when true innovation is involved, since you need much more time to develop something new than to copycat somebody else's idea. As a result, domestic VCs tend to steer entrepreneurs towards taking a more incremental approach to research and development.

Concerns about strategic alignment loomed large in the context of the control provisions in HealthTech's term sheet. While Peng, like the other finalists, required board representation, he also demanded to have final say on changes to the number of directors, as well as appointments to fill any available seats. The venture capitalist also made his investment contingent upon a variety of veto rights, which would allow him to block future financing rounds, a sale of the company, or the transfer of its key assets, most importantly its intellectual property. Such terms, granting investors considerable, if not disproportionate, influence over a start-up's governance and direction, were not uncommon in China, but they did make HealthTech's offer substantially more onerous than the other options from which Zi could choose.

Other aspects of the offer were noteworthy for different reasons. HealthTech promised that it would close the deal in just thirty days, which was fairly standard in China but much shorter than the sixty days that were typical in the United States. The due diligence requirements did not seem particularly taxing from Zi's point of view, for HealthTech mainly wanted to conduct interviews with doctors at various hospitals about Venus Medtech's technology.

Since all of the limited partners (LPs) of HealthTech's funds were from mainland China, the firm raised capital in, and made investments with, Renminbi (RMB). This would certainly not cause many problems in the near term, since, despite the research center in Irvine, Venus Medtech primarily spent money at home, as part of the first, China-focused stage of its development. However, raising Series A funds in RMB theoretically presented some challenges down the road. Over time, Zi envisioned Venus Medtech would be a global company, commanding significant share of the large medical device markets of the U.S. and Europe. This meant that eventually he would need U.S. dollars more than Renminbi, a situation which likely would result in HealthTech not participating in future rounds of fundraising. In a similar vein, exit opportunities for Venus MedTech appeared less attractive if HealthTech came aboard as an investor, since it expressed a strong preference for an IPO on one of mainland China's domestic stock exchanges. This outcome might have been preferable for HealthTech and its LPs, but it limited the flexibility for Zi and Zeng, who had largely set up their personal financial affairs in Hong Kong and the United States. Restrictions on foreigners' participation in the main stock markets in Shanghai and Shenzhen, if unchanged, also limited Venus Medtech's long-term access to capital.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Davidson Lockhart

Davidson Lockhart was a boutique venture capital firm that, before submitting a term sheet to Zi at Venus Medtech, had solely invested in U.S. healthcare start-ups. The firm had two principals: Lamar Davidson and Jordan Lockhart. Davidson and Lockhart brought deep healthcare experience to the table. Davidson had earned his MD/MBA from Harvard in the early 1990s. Upon finishing his degrees, he went to work as a consultant in the New York office of McKinsey, where he primarily served clients in the pharmaceutical and biotechnology industries. A fortuitous meeting at J.P. Morgan's annual healthcare investment conference in San Francisco led Davidson to pivot to venture capital in 1999. The firm that recruited him, Orchard Point Ventures of Menlo Park, California, had primarily invested in software and communications equipment companies, but the general partner sensed an opportunity to launch a biotechnology practice and tapped Davidson to lead the effort. After four years of solid returns, Davidson wanted to raise a fund that invested in other parts of healthcare, so he called up Jordan Lockhart, who had been his undergraduate roommate at Princeton University. Lockhart had established himself as a thought leader in the medical device industry after earning his PhD from the University of California, Berkeley and spending nearly a decade in cardiovascular engineering and product management roles at Medtronic. In 2003, Lockhart joined Orchard Point, serving as co-head of healthcare investing with Davidson. By late 2009, Davidson and Lockhart had outgrown Orchard Point and decided to launch their own healthcare-focused venture capital firm. Davidson Lockhart set up shop in a small office on Hamilton Avenue in Palo Alto, California, and started making investments in the U.S. biotechnology and medical device industries in 2010.

Lockhart, who had heard about Venus Medtech through some of his engineering contacts in Irvine as early as summer 2011, lobbied Davidson to consider a sizable Series A investment. For a while, Davidson balked at the idea of expanding beyond the U.S. After all, Davidson argued, neither he nor Lockhart had any experience with the Chinese healthcare industry. That was a fair point, Lockhart conceded, but the medical device industry was global, and Venus Medtech had a clear plan to enter the U.S. market down the road.

Davidson raised other objections as well. Since Davidson Lockhart had U.S. LPs who committed capital and expected returns in U.S. dollars, Davidson was uncertain about how the firm could even make an investment in Venus Medtech. To this, Lockhart replied that Venus Medtech had employed a joint venture structure, with part of the company registered in mainland China and another portion domiciled offshore. He explained that Zi and Zeng had purposely set up their company this way due to their ambitions to grow Venus Medtech into a global player. It also meant that Davidson Lockhart could invest U.S. dollars, leaving foreign exchange concerns to Venus Medtech, which had historically been able to convert in and out of RMB with the help of domestic Chinese banks. Most important of all, the offshore structure meant that exit opportunities outside of mainland China were not only possible but likely. Typically, Lockhart noted, Chinese start-ups organized themselves with this joint venture structure to facilitate an eventual IPO in the U.S. or Hong Kong.

As Lockhart sought to reassure his partner, one major concern remained. Davidson worried whether Venus Medtech's technology was as game-changing as Lockhart thought it was. Davidson cited China's reputation for commercializing copycat products, not developing innovations itself. Lockhart knew the science much better than his partner, but ultimately,

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

clinical data was all that could change Davidson's mind. That empirical validation came in 2013, so Davidson Lockhart dashed off a term sheet to Zi.

The offer involved making a U.S. dollar investment in Venus Medtech. Zi believed he could exchange the capital for the RMB he needed, and doing so would not be particularly onerous from an administrative perspective. He also liked the idea of an investor who preferred a long-term exit outside mainland China. Governance terms were much more attractive than the provisions demanded by HealthTech, reflecting Silicon Valley venture capitalists' general tendency to grant entrepreneurs greater latitude.

As Zi saw it, there were two major issues with accepting the investment from Davidson Lockhart. First, the firm required a much more thorough due diligence effort before a deal would close in sixty, not thirty, days. Zi explained that this reflected the different type of due diligence that U.S. investors, relative to their Chinese counterparts, expected to be performed:

> There's quite a big difference on the due diligence work. U.S. investors typically are willing to pay a lot of money to do serious due diligence, most notably retaining expensive lawyers to vet the underlying intellectual property. But Chinese investors generally don't want to spend that much on due diligence. Instead, they prefer interviews with your customers and your partners. They don't want to deal with the attorneys. In some cases, the Chinese investors will do more interviews than it's really worth. They'll want to talk with as many physicians working with your devices as possible. Dozens even. They try to get as much positive feedback and negative feedback as they can. They want to learn. And after all that, they'll say, "OK, the technology looks solid. I want to invest in this start-up." But the U.S. investors don't work that way at all. They just want to get a report from their attorneys and other advisors they might bring in.

Besides a longer time to close, Zi had doubts about the value of Davidson Lockhart's expertise, at least at this point in Venus Medtech's development. Davidson Lockhart surely knew the U.S. market inside and out, but they had no background in China, where Venus Medtech planned to commercialize its technology first. Zi wondered whether the assistance that Davidson Lockhart could provide in navigating the U.S. regulatory environment would come too late, since Venus Medtech needed to achieve escape velocity at home before it could seriously entertain overseas expansion. And Lockhart's attitude towards Zi's concern suggested that the Silicon Valley firm was ill-prepared to handle the steep learning curve in China. According to Zi:

> The regulatory process in China is very different from that of the [U.S.] FDA. It takes a lot of time and effort to learn the nuances, just like it does for someone coming into the U.S. from the outside. Unfortunately, U.S. investors who have never invested in healthcare outside the U.S. often don't truly appreciate the depth of the complexities and nuances in China, even if they understand it somewhat on a conceptual level.

Eucalyptus Capital (China)

High-profile Silicon Valley venture capital firms also knocked on Zi's door in June 2013. Arguably the most prominent among these flashy suitors was the Chinese affiliate of Eucalyptus Capital. Eucalyptus Capital was a legendary firm on Sand Hill Road in Menlo Park, California.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Since its founding in 1980, Eucalyptus had backed a number of start-ups that grew into household names in the consumer internet and enterprise technology industries. The firm's strong track record over the years now allowed it to raise some of the largest funds in all of venture capital. Further supporting its fundraising prowess had been diversification efforts into other geographies beyond the United States. By the time Eucalyptus submitted an offer to Zi, its Chinese affiliate had been operating out of Hong Kong and investing throughout the Greater China region for a little more than a decade. A strong brand name and a couple of big winners in the China internet space had allowed the affiliate to follow the model set by its American parent.

The principal behind Eucalyptus's term sheet was Arnold Guo. Guo came from a wealthy family in Beijing, but he had spent most of his life outside of mainland China. He had attended an elite boarding school in New Hampshire before matriculating at Yale University, where he earned a degree in economics in the early 2000s. He then worked as a healthcare investment banker at Goldman Sachs in New York for two years and as a private equity associate for a life sciences fund managed by one of the big shops in San Francisco for a couple more. Business school at Harvard followed. A yearning to return to his homeland brought him to Eucalyptus Capital's Chinese affiliate in Hong Kong after graduation. Guo had been there ever since, although his role had required him to travel throughout China, especially the major innovation hubs of Shanghai, Shenzhen, and increasingly, Hangzhou.

Guo impressed Zi with his knowledge and professionalism, but the entrepreneur wondered whether the venture capitalist had enough experience. To be sure, Guo had a number of Chinese healthcare investments under his belt, and a few of them even had successful exits on domestic and foreign stock exchanges. His track record in medical devices, specifically, was less compelling. While he had backed one medical device company in six years at Eucalyptus, its business centered on orthopedics, not cardiology. Eucalyptus itself had been a pedestrian investor in healthcare overall, at least judging by the stops and starts it had experienced in a sub-scale practice back in Menlo Park over the years. The firm, both in the United States and in China, simply had not generated the same returns from its healthcare funds as it had with the technology investments upon which its global reputation rested. Nevertheless, Zi knew the Eucalyptus name meant a lot. He suspected the association would validate his entrepreneurial prowess and the potential growth trajectory of his start-up in a way no other VC firm could.

Zi also had concerns about the coordination between the Chinese affiliate in Hong Kong and the headquarters on Sand Hill Road. Guo gave Zi multiple assurances that he interacted with his Silicon Valley colleagues on a regular basis. He also stressed that the intra-firm linkages Eucalyptus had built between Menlo Park and international offices were unparalleled in the industry. None of the major global firms could match the investment Eucalyptus had made in this area, and smaller players, whether in the United States or in China, could not offer similar reach across the Pacific Ocean. In theory, the idea of leveraging the Chinese affiliate to open the door to Eucalyptus's Silicon Valley powerhouse was appealing to Zi, especially given his ambitions to enter the U.S. market eventually. However, his own due diligence efforts suggested that Guo might have oversold this aspect of Eucalyptus. A quick check of the portfolio companies of Eucalyptus's U.S. and Chinese funds showed no overlapping investments and little strategic coherence in the healthcare vertical. Phone calls with some personal contacts who were well placed in Silicon Valley venture capital circles also cast doubt on Guo's assertions.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

All that said, the offer had many attractive features. Eucalyptus would invest in U.S. dollars, although it had the capability to contribute Renminbi instead. The size of Eucalyptus's Chinese healthcare fund also made the probability of follow-on investments fairly high. The affiliate also committed to a long-term exit in either Hong Kong or New York. From a governance perspective, like Davidson Lockhart, Eucalyptus did not demand the type of veto rights that were fairly common in China but largely anathema in the United States. The due diligence process outlined in Guo's term sheet likewise echoed the lawyer-heavy approach advanced by the American boutique. It would take more time than the more informal Chinese method, but Zi felt that was a tradeoff worth making given the strength of Eucalyptus's brand. Finally, although perhaps most importantly to Zi, Guo voiced strong support for Venus Medtech's multi-stage growth strategy that would allow the company to eventually compete with the industry giants on a global basis.

White Crane Ventures

The fourth finalist for Venus Medtech's Series A round was White Crane Ventures. The firm styled itself as a cross-border venture capital firm, for it raised capital and made investments in both China and the United States. White Crane Ventures was founded in China in 2006 and by 2013, maintained offices in Hong Kong, Shanghai, Shenzhen, and Beijing. Its expansion into the U.S. occurred in 2010, when an office opened in Cambridge, Massachusetts, which was a major hub of the American biotechnology industry. Additional offices launched in Menlo Park, California and Seattle over the next two years.

Although the firm's four general partners each specialized in a specific vertical, the strength of White Crane Ventures always had been its healthcare practice. Managing Partner Beatrice Chung had run White Crane Ventures' healthcare investing from her native Hong Kong since Day One and had a long list of successes to her name, spanning biotechnology, medical devices, and diagnostics. She primarily focused on finding healthcare investments in China, but she had set up the firm's U.S. operations, which focused exclusively on biotechnology, and frequently traveled to the United States to stay on top of global innovation trends. Over time, she had built deep relationships in the healthcare ecosystems in China and the U.S., so much so that the CEOs of western pharmaceutical companies and medical device manufacturers sought her counsel on matters affecting both markets. Before becoming a venture capitalist, Chung had cofounded a Chinese holding company that operated and invested in innovative healthcare firms. Earlier in her life, she spent most of her time outside of China. Although raised in Hong Kong, she attended a New England preparatory school, completed her bachelor's degree at Cornell University, and earned her MBA from the Stanford Graduate School of Business (GSB).

Chung's track record and experience in China and the United States seemed like a perfect match for Venus Medtech. In addition, Zi liked how Chung shared his vision to create an innovative Chinese company that could compete globally on the strength of its own technology. He also felt that she took an unusual approach to governance, at least in comparison with other Chinese investors, including HealthTech. He explained:

> She didn't ask for veto rights. Her view was, "Why would I want to constrain you? You're the heart valve guy, not me. I'm investing in you as much as I'm investing in your company, because of what you know and how much I think you can innovate. If

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

> you accept our term sheet, I'll be here to help you do what you want to do. I'm not looking to give you trouble." This clearly differentiated her from other Chinese investors we spoke with. They demanded a lot of veto rights out of fear of what they didn't know and couldn't know.

If this attitude was one factor that made Chung appear unlike her Chinese venture capital peers, it was not the only contrast. The cross-border nature of her firm allowed her to raise capital from LPs in China as well as the United States. In turn, she could make investments on either side of Venus Medtech's joint venture structure, using U.S. dollars or Renminbi. Her due diligence methodology also was more American than Chinese. She demanded a 60-day due diligence period and thorough vetting of the start-up's intellectual property by a small army of lawyers.

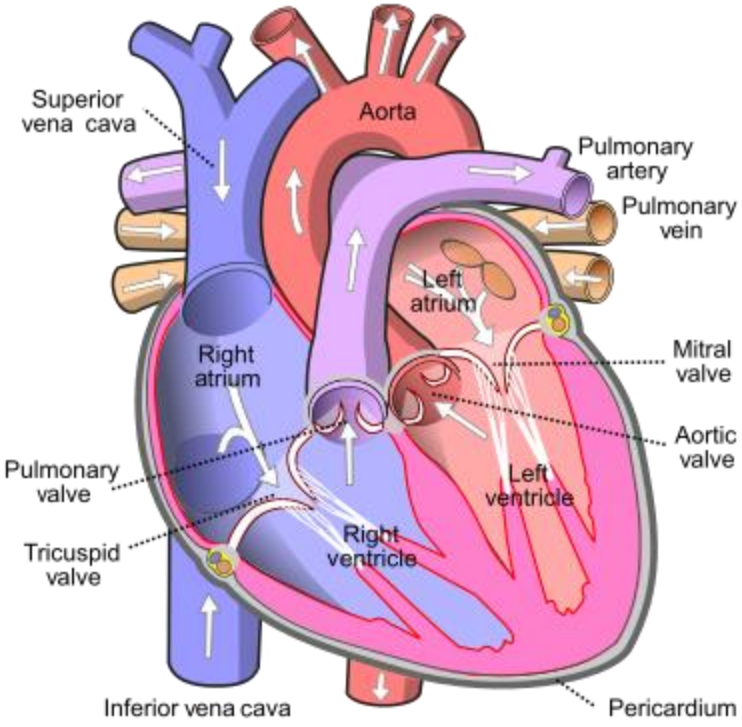
Zi had two misgivings about accepting money from White Crane Ventures, despite feeling Chung's term sheet checked many boxes. First, Zi wondered about the amount of bandwidth Chung could dedicate to Venus Medtech. She had responsibility for twelve to fifteen other healthcare investments, far more than her counterparts at the other finalist firms had. These portfolio companies, while mostly based in China, also included among their ranks U.S. start-ups. It remained an open question in Zi's mind whether anyone could possibly stay on top of so many different start-ups pursuing a wide range of market opportunities in two very different countries. Second, while White Crane Ventures had established a strong brand in China and was raising its profile in the United States, the firm simply could not match the name recognition and halo effect that Eucalyptus brought to the table.

CONCLUSION

As Zi looked out his office window in Hangzhou onto the Qiantang River that afternoon in late June 2013, he contemplated the competing term sheets. Each had distinct strengths, but also shortcomings. He had to make a decision. Which would he choose?

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 1
Diagram of the Human Heart



Source: Wikimedia Commons.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 2
Snapshot of the Transcatheter Aortic Valve Replacement (TAVR) Opportunity, 2014

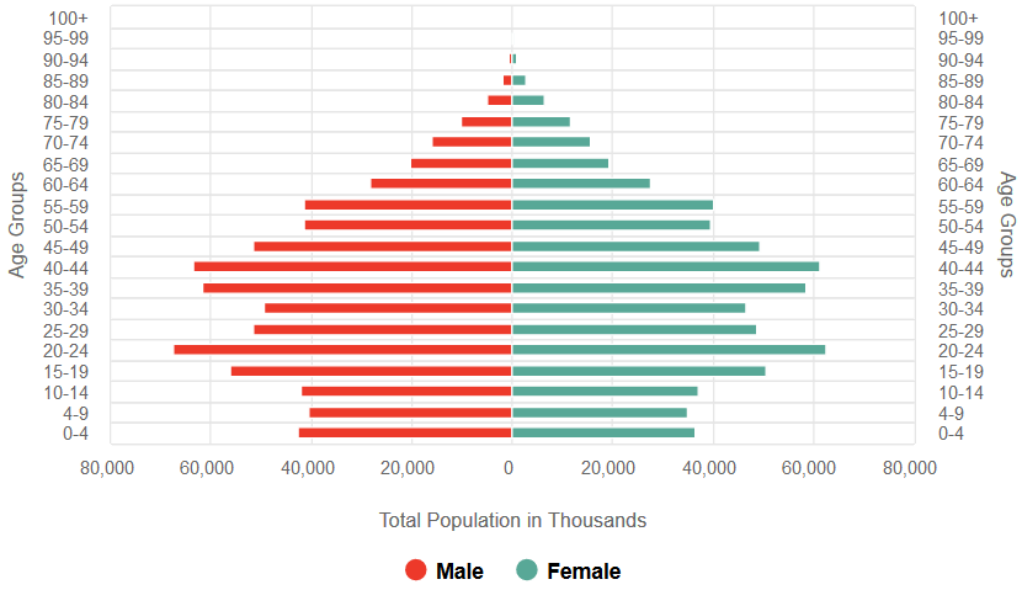
	Global	China
Population (millions)	7,256	1,364
# of Patients (millions)		
Aortic Stenosis	18.0	3.9
Aortic Regurgitation	24.1	3.5
Total Aortic Valve Disease	42.1	7.4
% of Population	*0.58%*	*0.54%*
# of Procedures (thousands)		
SAVR	209.4	NA
TAVR	56.7	-
Total Aortic Valve Replacements	266.1	NA
% of Total Patients	*0.6%*	*NA*
# of TAVR Eligible Patients (thousands)		
SAVR Low Risk	1,667.6	293.4
SAVR Intermediate Risk	328.4	115.0
SAVR High Risk	146.5	51.3
SAVR Ineligible	1,012.5	197.1
Total TAVR Eligible Patients	3,155.0	656.8
TAVR Penetration Rates		
% of Total Aortic Valve Replacements	21.3%	0.0%
% of TAVR Eligible Patients	1.8%	0.0%
TAVR Economics		
Cost of Device ($ thousands)	26,455	NA
Ex-Factory Device Revenues ($ millions)	1,500	NA

Source: Compiled by the case authors using data from the World Bank (population data) and a Frost & Sullivan report cited in Venus Medtech's November 2019 IPO prospectus (patient, procedure, and revenue data).

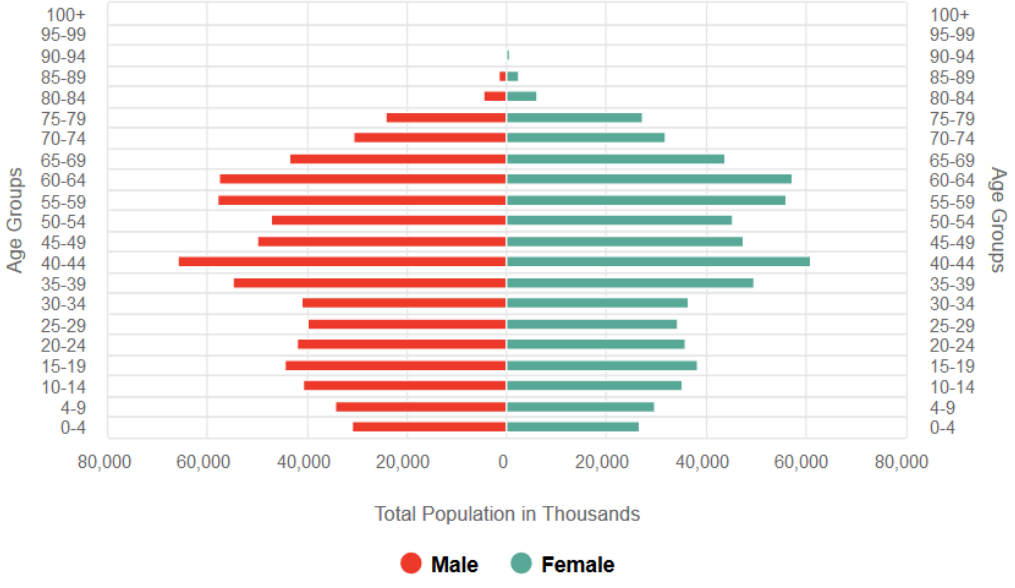
This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 3
The Expected Aging of China's Population Over Time

Panel A: China's Population Distribution by Age, 2010



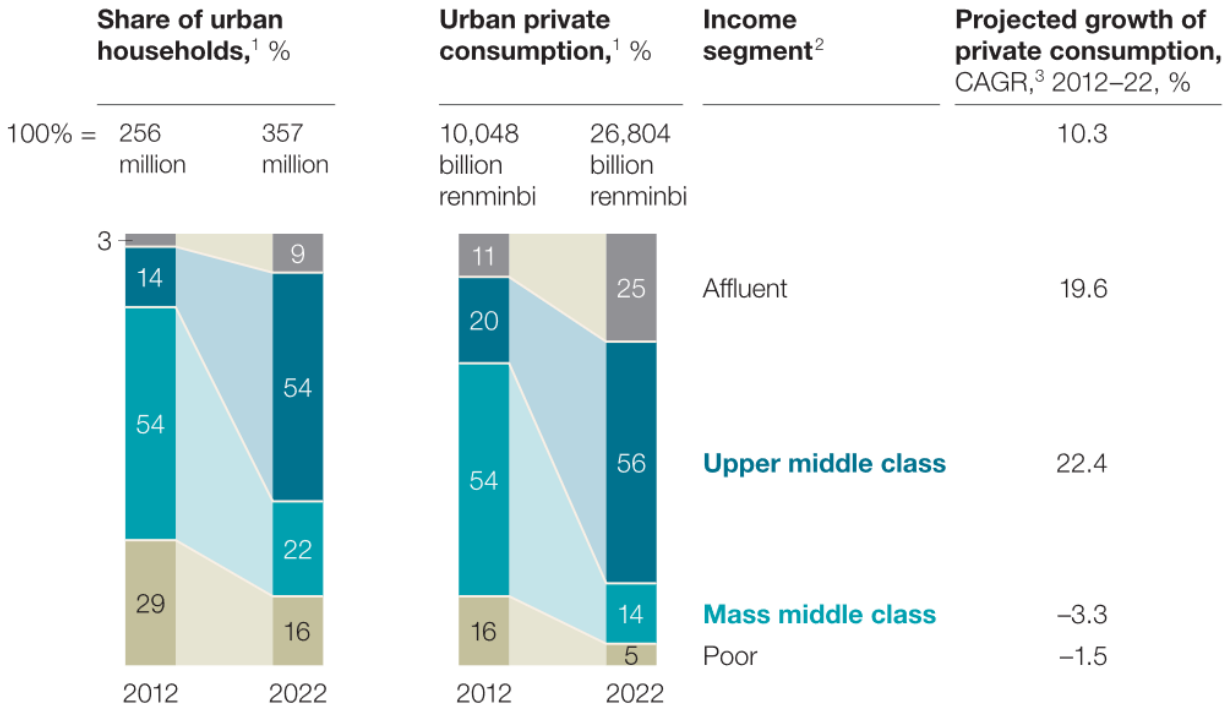
Panel B: China's Forecasted Population Distribution by Age, 2030



Source: Center for Strategic and International Studies/ChinaPower Project. Reprinted with permission.

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 4
McKinsey's Forecast of the Growth in China's Urban Middle Class, 2012-2022



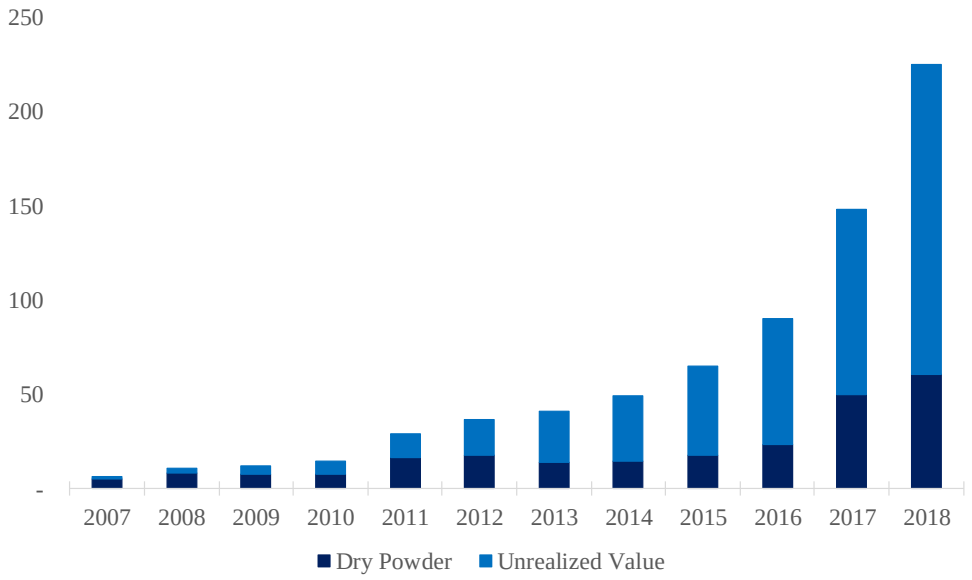
[1]Figures may not sum to 100%, because of rounding; data for 2022 are projected.
[2]Defined by annual disposable income per urban household, in 2010 real terms; affluent, >229,000 renminbi (equivalent to >$34,000); upper middle class, 106,000 to 229,000 renminbi (equivalent to $16,000 to $34,000); mass middle class, 60,000 to 106,000 renminbi (equivalent to $9,000 to $16,000); poor, <60,000 renminbi (equivalent to <$9,000).
[3]Compound annual growth rate.

Source: Exhibit from "Mapping China's middle class", June 2013, McKinsey & Company, www.mckinsey.com. Copyright (c) 2020 McKinsey & Company. All rights reserved. Reprinted by permission.

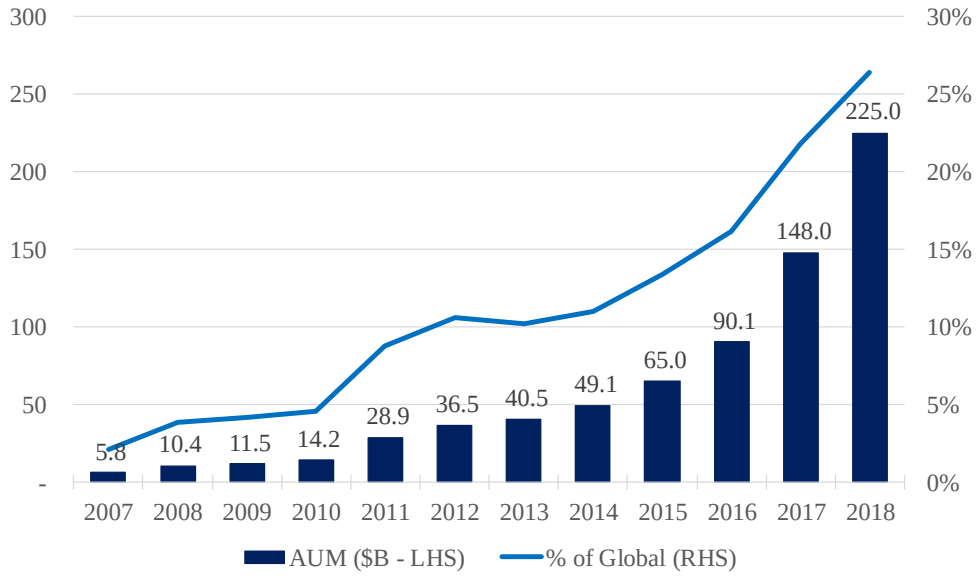
This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 5
Greater China Venture Capital Assets Under Management (AUM) Over Time

Panel A: Year-End Greater China VC AUM by Category - $ Billions



Panel B: Year-End Greater China VC AUM Relative to Global Total

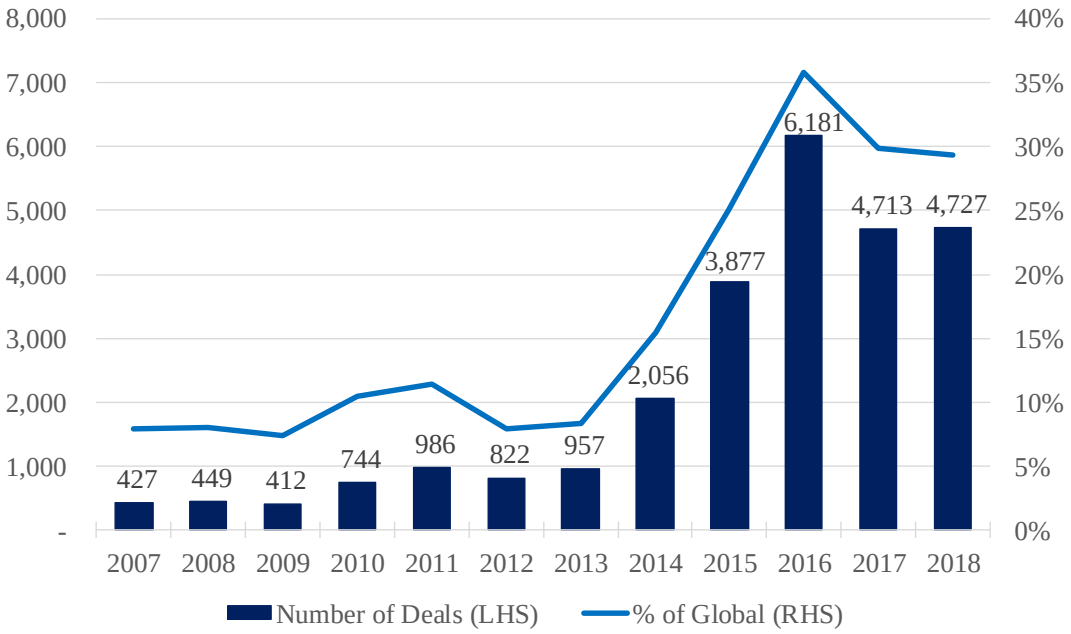


Source: Compiled by the case authors using Preqin Pro data (June 2019).

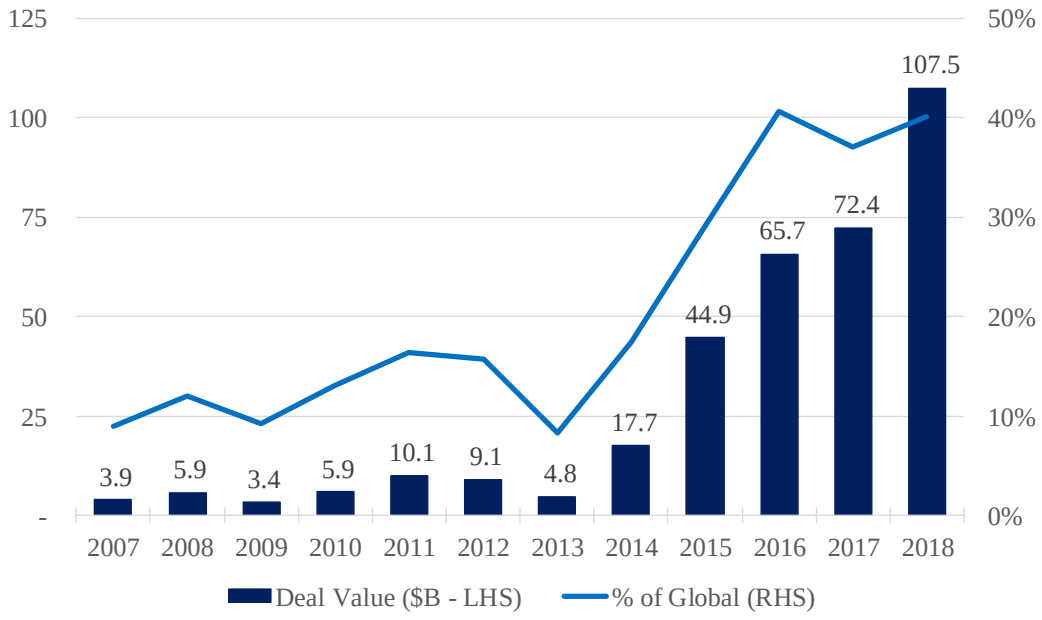
This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 6
Greater China Venture Capital Deal Volume Over Time

Panel A: Greater China VC Deal Count (Number of Deals)



Panel B: Greater China VC Aggregate Deal Value ($ Billions)



Note: Data exclude add-ons, grants, mergers, secondary stock purchases, and venture debt.
Source: Compiled by the case authors using Preqin Pro data (June 2019).

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 7
Quantitative Comparison of Greater China and U.S. Venture Capital Industries

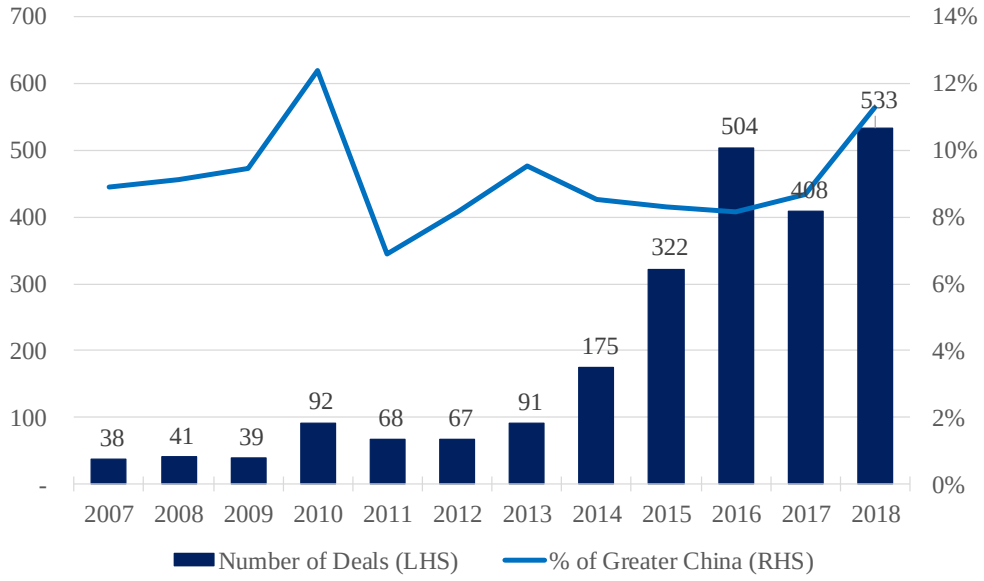
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of Deals												
Greater China	427	449	412	744	986	822	957	2,056	3,877	6,181	4,713	4,727
U.S.	3,442	3,520	3,628	4,374	5,295	6,418	6,806	7,068	6,584	5,782	5,635	5,781
Aggregate Deal Value ($ Billions)												
Greater China	3.9	5.9	3.4	5.9	10.1	9.1	4.8	17.7	44.9	65.7	72.4	107.5
U.S.	32.7	35.9	27.4	31.7	42.5	38.9	40.7	63.2	78.0	68.9	80.0	104.6
Average Deal Size ($ Millions)												
Greater China	9.2	13.1	8.3	8.0	10.2	11.1	5.0	8.6	11.6	10.6	15.4	22.7
U.S.	9.5	10.2	7.5	7.2	8.0	6.1	6.0	8.9	11.8	11.9	14.2	18.1
Greater China as % of U.S.												
Number of Deals	12.4%	12.8%	11.4%	17.0%	18.6%	12.8%	14.1%	29.1%	58.9%	106.9%	83.6%	81.8%
Aggregate Deal Value	12.0%	16.4%	12.5%	18.7%	23.7%	23.4%	11.8%	27.9%	57.5%	95.5%	90.5%	102.8%
Average Deal Size	97.0%	128.5%	110.0%	110.1%	127.4%	183.1%	83.7%	96.1%	97.7%	89.3%	108.2%	125.7%

Note: Data exclude add-ons, grants, mergers, secondary stock purchases, and venture debt.
Source: Compiled by the case authors using Preqin Pro data (June 2019).

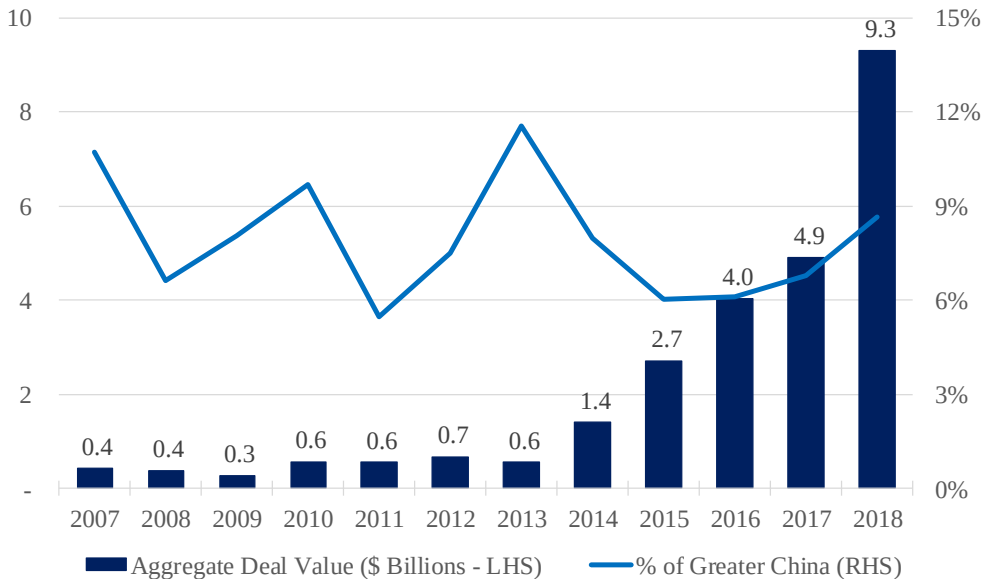
This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.

Exhibit 8
Healthcare Venture Capital Deal Volume in Greater China Over Time

Panel A: Greater China Healthcare VC Deal Count (Number of Deals)



Panel B: Greater China Healthcare VC Aggregate Deal Value ($ Billions)



Note: Data exclude add-ons, grants, mergers, secondary stock purchases, and venture debt.
Source: Compiled by the case authors using Preqin Pro data (June 2019).

This document is authorized for use only in Seungjoon Oh's 2024-2025-M4-Seungjoon Oh at Peking University Shenzhen from Apr 2025 to Jul 2025.