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Whitepaper for Healthcare Industry Investment in the Context of "One Belt, One Road"

November 2017

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Healthcare Industry

pwc

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Content

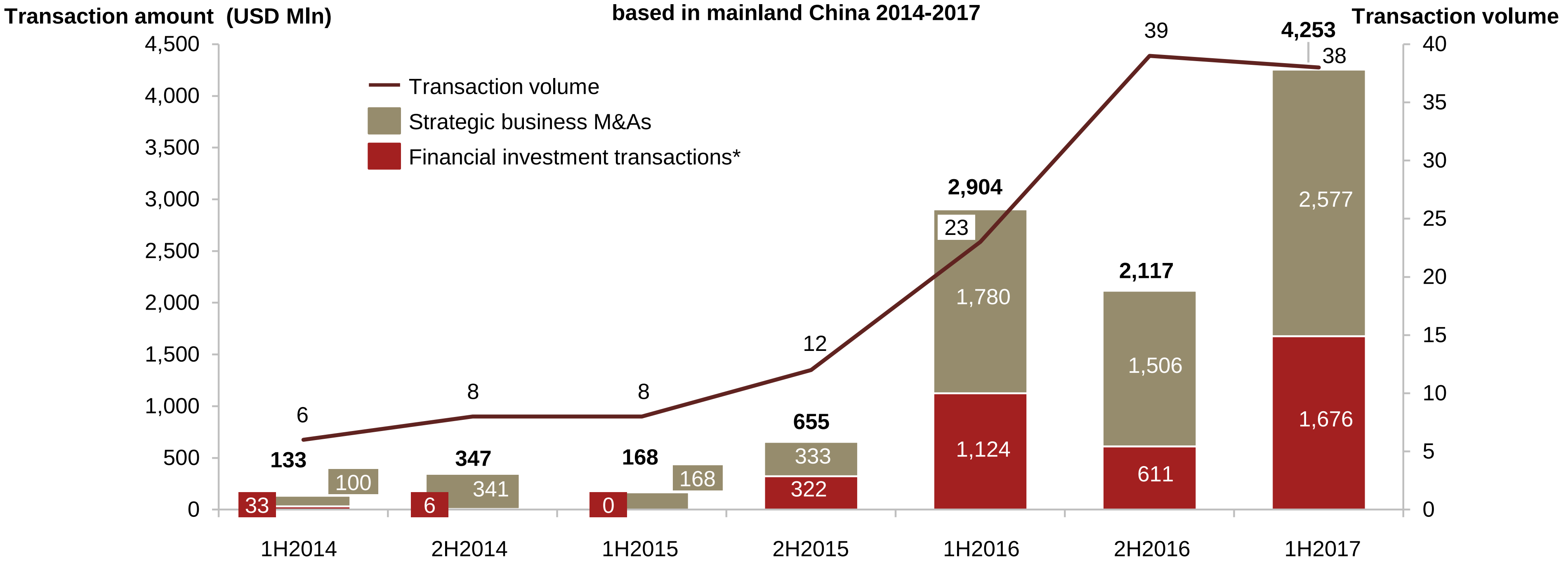
- **Introduction to Overseas Investment in Healthcare Industry under the "One Belt, One Road" Strategy**

- **Focused Introduction to Countries along the "One Belt, One Road"**

Investment and transactions in the healthcare industry under "One Belt, One Road"

In the recent three years, most of overseas M&As made by enterprises based in mainland China in the medicine field (including bio-pharmaceutical and medical instrument) are strategic business M&As, which have surged since the second half of 2016.

Volume and amount of overseas M&As in the medicine field made by enterprises based in mainland China 2014-2017

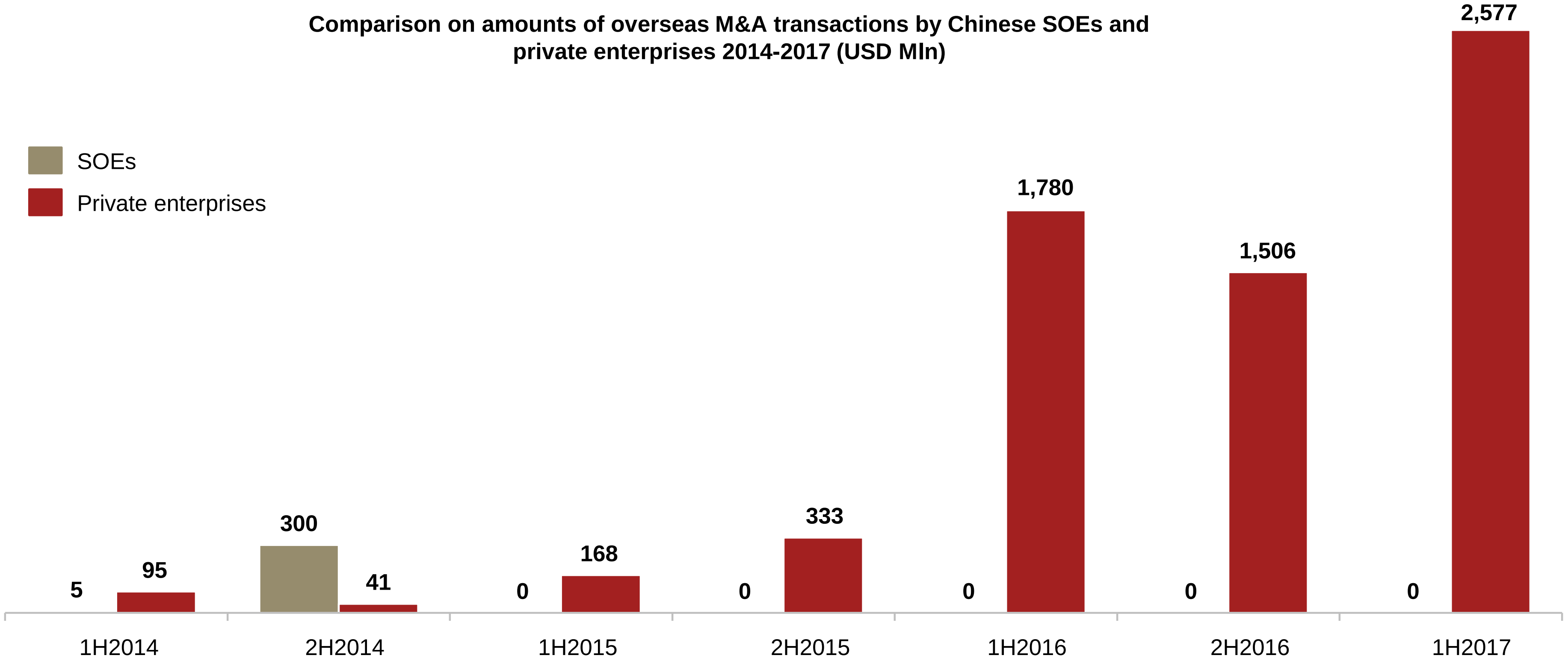


- Note: Strategic business M&A refers to the investment transaction where the business of the acquired company is incorporated into the existing business scope of the buyer.
- Financial investment transaction refers to the investment M&A for the purpose of gaining profits through future sales, which mainly includes but not limited to private equity fund and venture investment fund.

Data source: Thomson Reuters, PwC analysis

Investment and transactions in the healthcare industry under "One Belt, One Road"

A majority of the Chinese enterprises engaging in overseas investment and transactions in the medicine field are private businesses, indicating that China's private businesses are initiatively expanding their reach in overseas medicine markets.

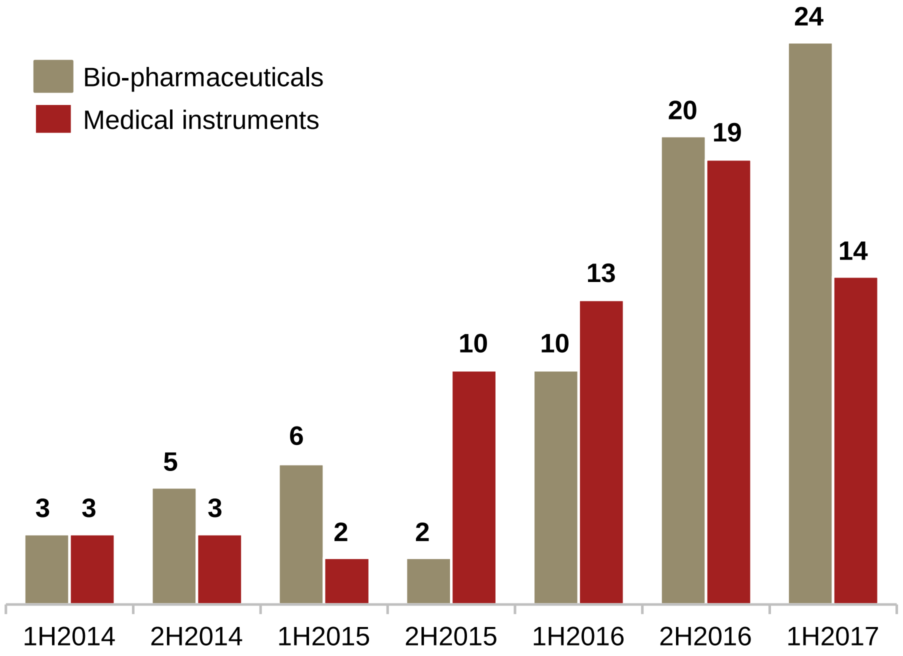


Data source: Thomson Reuters, PwC analysis

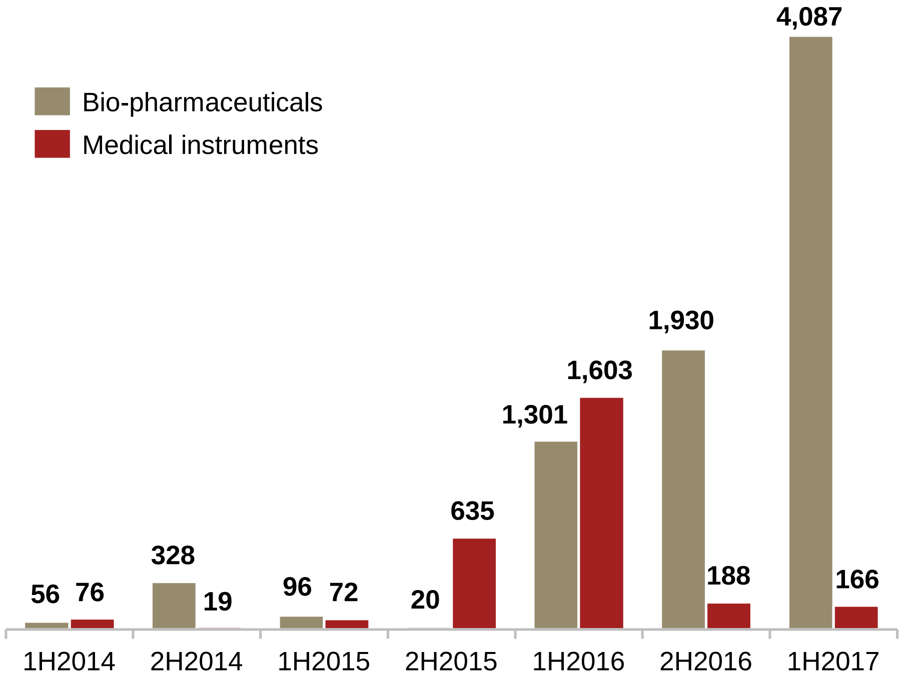
Investment and transactions in the healthcare industry under "One Belt, One Road"

Among the Chinese enterprises engaging in overseas investment and transactions in the medicine field, except for the period between the second half of 2015 and the first half of 2016, both the transaction volume and amount of bio-pharmaceuticals are higher than those of medical instruments. This kind of situation is particularly notable in the recent year

Comparison on the transaction volumes of overseas M&As in bio-pharmaceuticals and medical instruments by Chinese enterprises 2014-2017



Comparison on the transaction amounts of overseas M&As in bio-pharmaceuticals and medical instruments by Chinese enterprises 2014-2017

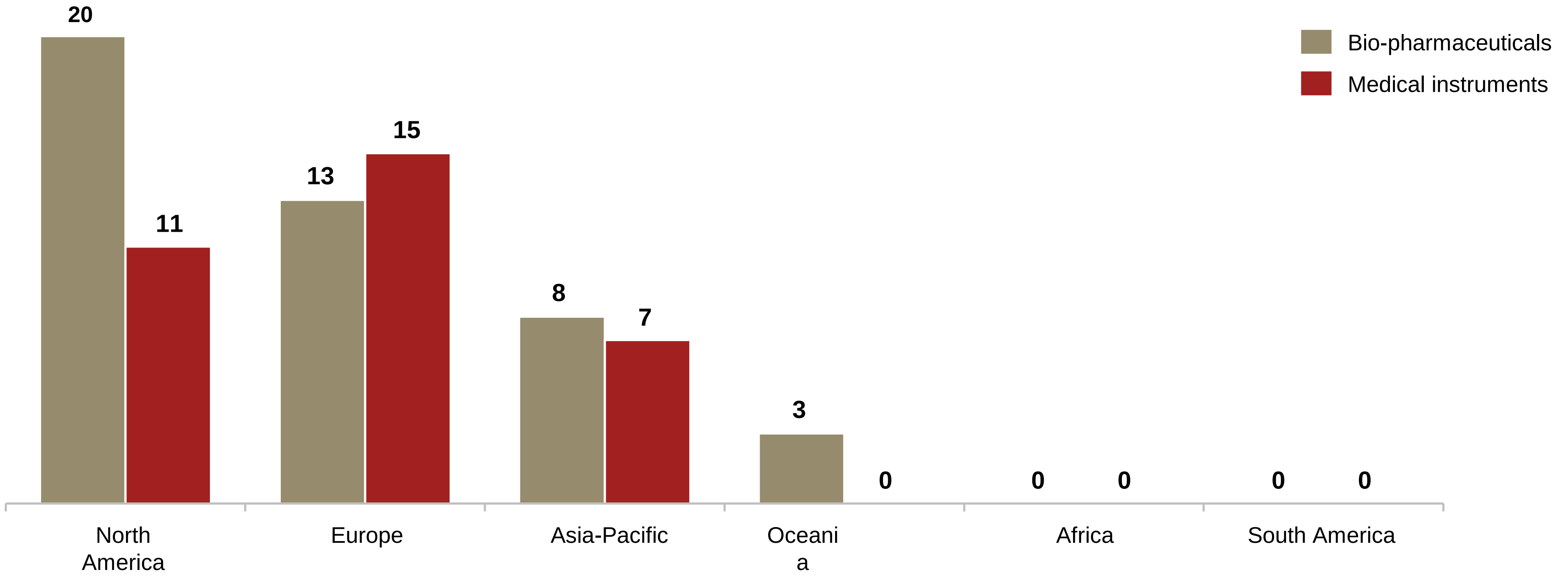


Data source: Thomson Reuters, PwC analysis

Investment and transactions in the healthcare industry under "One Belt, One Road"

In terms of the regions where Chinese enterprises invest in the medicine field, North America and Europe, where health industry is rather developed, are still the primary investment destinations, and a small number of investment transactions are also found in Asia-Pacific region including Singapore, a country along the "One Belt, One Road"

Distribution of transaction volumes in regions where Chinese enterprises made overseas medicine M&As between second half of 2016 and first half of 2017

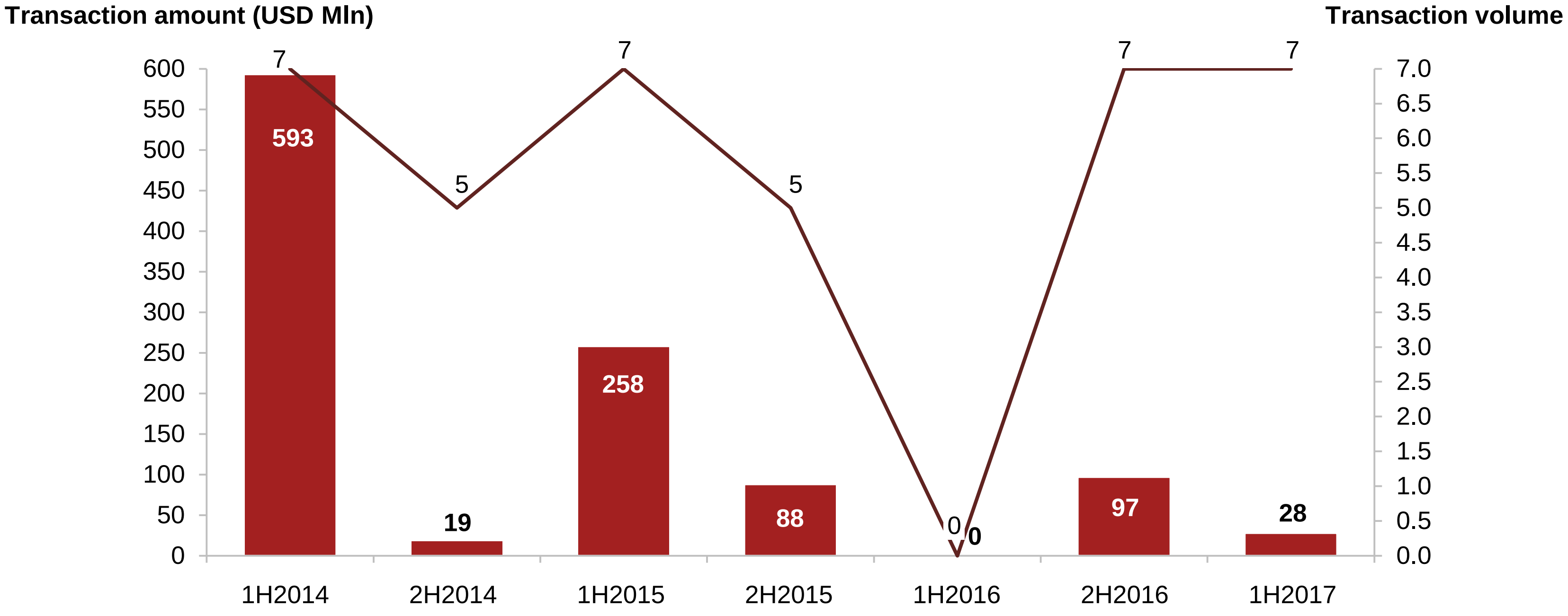


Data source: Thomson Reuters, PwC analysis

Investment and transactions in the healthcare industry under "One Belt, One Road"

In sharp contrast with the vigorous strategic layout of Chinese enterprises in overseas medicine industry, fewer foreign companies seek investment in this sector in China, and the transaction amount exhibits a downward trend year on year.

Transaction volume and amount of inbound M&As by foreign enterprises 2014-2017



Data source: Thomson Reuters, PwC analysis

Top ten M&As in countries along the "One Belt, One Road" by Chinese enterprises in latest three years

Date	Chinese buyer	Target company	Transaction amount (USD100 mln)	Transaction details
2016.07	Fosun International Limited	Indian pharmaceutical company Gland Pharma	10.9	Fosun acquired around 74% stake of Indian injection generic drug manufacturer Gland Pharma, to accelerate its global reach in the export of generic drugs
2015.11	CITIC Private Equity Funds Management Co., Ltd. (CITICPE)	Singapore-based medical instruments company Biosensors International	10.5	CITICPE acquired Biosensors International, a company based in Singapore for research, production and sales of heart stent and critical care, among other medical instruments, to enhance its own competitiveness in the medical instrument market in Asia
2015.08	Tencent	Indian Internet medical enterprise Practo	0.90	Tencent led round-C financing, to support Practo's provision of mobile search of doctor resources for patients
2014.11	Jiangsu-based SanPower Group	Israeli medical service enterprise Natali	0.70	Acquire 100% stake of the largest private medical care service company in Israel - Natali, which primarily provides services such as remote monitoring, remote medical service and home-based assistance
2017.05	Lippo China Resources Limited	Singapore-based medical service enterprise Healthway Medical	0.68	Acquire 82.5% stake of Healthway Medical Group, which owns more than 80 professional medical institutions in Singapore, and provides medical services including family doctor, specialist clinic for dentistry and ophthalmology, and aesthetic medicine
2016.07	Jiangsu-based SanPower Group	Singapore-based cord blood bank Cordlife Group	0.64	Acquire 20.0% stake of Cordlife Group, with an aim to realize coordinated development of medical and elderly care business, and global cord blood business of the group
2017.04	Tencent	Indian Internet medical enterprise Practo	0.55	Tencent led round-D financing, to support Practo's PractoRay, a digital medical management product provided for doctors
2016.03	Jiangsu-based SanPower Group	Israeli elderly care service enterprise A.S. Nursinng	0.35	The acquired has more than 30 years of experience in the elderly care service area, owns 25 branches in Israel, around 6,000 nurses, and maintains long-term cooperation with social security institutions and relevant departments and commissions of Israel
2015.09	Haisco Pharmaceutical Group Co., Ltd.	Israeli medical instruments enterprise SMI	0.18	Become the largest shareholder of Sensible Medical Innovations (SMI), and acquire the 20-year exclusive dealership of its core product ReDS (new non-invasive medical monitoring and imaging equipment) in China
2015.06	Haisco Pharmaceutical Group Co., Ltd.	Israeli medical instruments enterprise MST	0.11	Acquire 26.7% stake of Medical Surgery Technologies (MST), and acquire the 15-year exclusive dealership of its core product AutoLap (primarily for abdominal operation) in China

Data source: MergerMarket， PwC analysis

Summary of Major Discoveries

- Since 2014, the overseas investment transactions made by enterprises based in mainland China in the medicine field have surged, with the transaction volume climbing by over six times, the transaction amount in the first half of 2017 reaching USD4,353 million (approx. CNY28.95 billion), and the compound annualized growth rate increasing to 85%. Two reasons can explain this phenomenon: on the one hand, the booming Chinese M&A market results in a declined number of quality targets with higher valuation, thus domestic enterprises shift their focus to the overseas to acquire target companies at a more proper valuation; on the other hand, the Chinese yuan is under the pressure of devaluation in recent years, driving domestic enterprises to acquire overseas assets.
- Private enterprises dominate the overseas medicine M&A market, whose transaction amount in recent three years is as high as 21 times that of SOEs. This is in line with Chinese government's support of medical cause run by non-governmental sectors, and the increasingly important role of private businesses in the medical and health market.
- In terms of specific industries, different from the medical instrument industry, domestic enterprises prefer to make overseas investment transactions in the bio-pharmaceuticals industry. However, regardless of the segment, domestic enterprises that engage in overseas investments mainly aim at introducing the overseas advanced medical resources or business models into China, to accelerate its domestic strategic layout in the healthcare business, and take the acquired firms as the platform for global expansion.
- In terms of investment destination, Chinese enterprises remain preferring to invest in the healthcare industry of developed regions such as Europe and North America. The major reason is that these countries and regions are equipped with the most advanced medical technologies, platforms and brands in the world, and have immense and mature consumption markets.
- Compared with the overseas M&As by domestic enterprises, foreign companies engage in much fewer investment transactions in the medicine field in China, with the transaction amount much smaller as well. It demonstrates that in the medicine investment area, "going out" outpaces "bringing in" of overseas resources, and the main reason is that domestic pharmaceutical enterprises have much space to improve their R&D capacity.

Outlook

- The central government released the Notice on *Further Guiding* and *Standardizing Overseas Investment Directions* in August 2017, which has clearly specified that "priority should be given to promoting overseas investment of infrastructure that is conducive to 'One Belt, One Road' development and connectivity of surrounding infrastructure", "investment cooperation with overseas hi-tech enterprises and advanced manufacturing enterprises should be intensified, and setup of overseas R&D centers is encouraged"; the Notice has provided a good policy foundation for domestic enterprises to invest in the overseas medicine field, particularly in the countries along the "One Belt, One Road". Hence, the growth trend in the medicine investment by Chinese enterprises is expected to continue.
- In light of the "One Belt, One Road" strategy, Asia-pacific region is expected to be an emerging investment destination focused by Chinese investors. At the same time, the countries and regions in Europe and North America, domestic investors, especially private businesses, perhaps face greater pressure and challenges in overseas investment. For instance, in acquiring high-tech firms in the sensitive industries, in February 2016, a semi-conductor manufacturer rejected the USD2.6 billion takeover offer of a company under China Resources (Holdings) Co., Ltd., due to the regulatory pressure of the American authority.
- Moreover, with the continuous promotion of the "One Belt, One Road" strategy, an increasingly number of overseas investors may access to China to invest in the medicine field, particularly in the areas that promote development of the pension services in China.

Investment opportunities in the overseas healthcare industry

The PwC transaction data platform shows that the targeted investment destinations in the overseas health market are mainly distributed in countries like Israel and Germany, covering segments such as medical instrument, bio-pharmaceutical and medical testing.

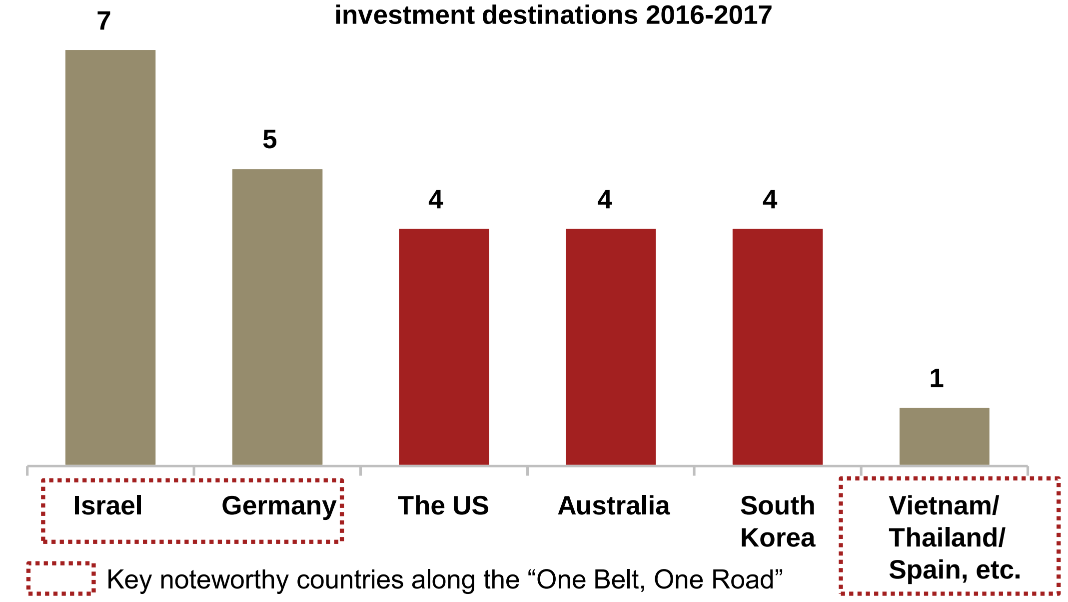
Distribution of investment destinations

Currently, a large number of overseas healthcare investment targets are distributed in five countries, namely Israel, Germany, the US, Australia and South Korea, many of which belong to key countries along the "One Belt, One Road" .

Distribution of targeted investment segments

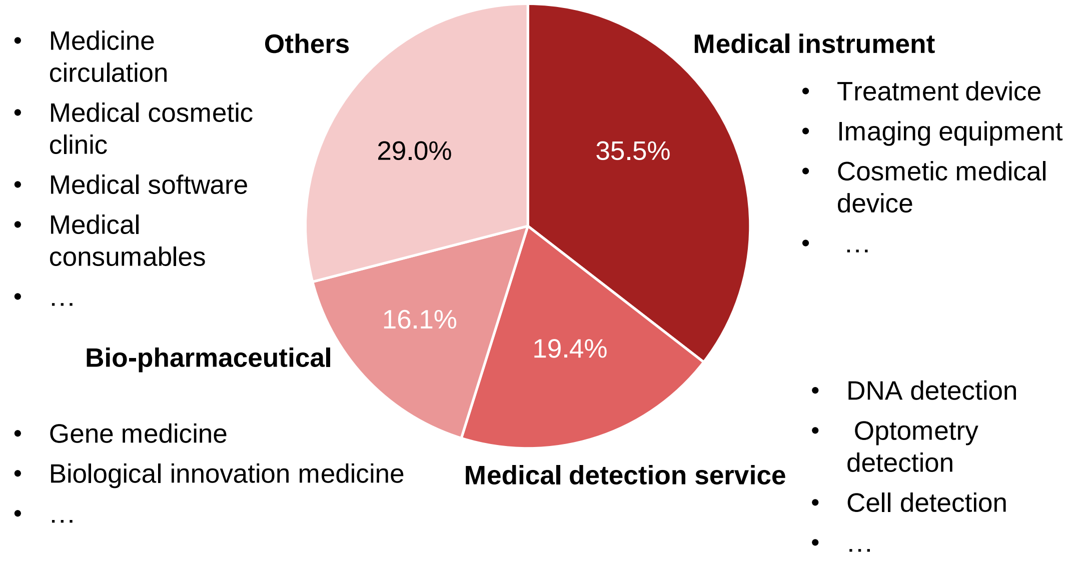
Currently, the overseas healthcare investments are mainly distributed in medical instruments, bio-pharmaceuticals and medical detection services, which fully echo the technological direction and market dynamics.

Distribution of overseas healthcare investment destinations 2016-2017



Data source: Deal Sourcing Platform， PwC analysis

Distribution of targeted investment segments in the overseas healthcare industry 2016-2017



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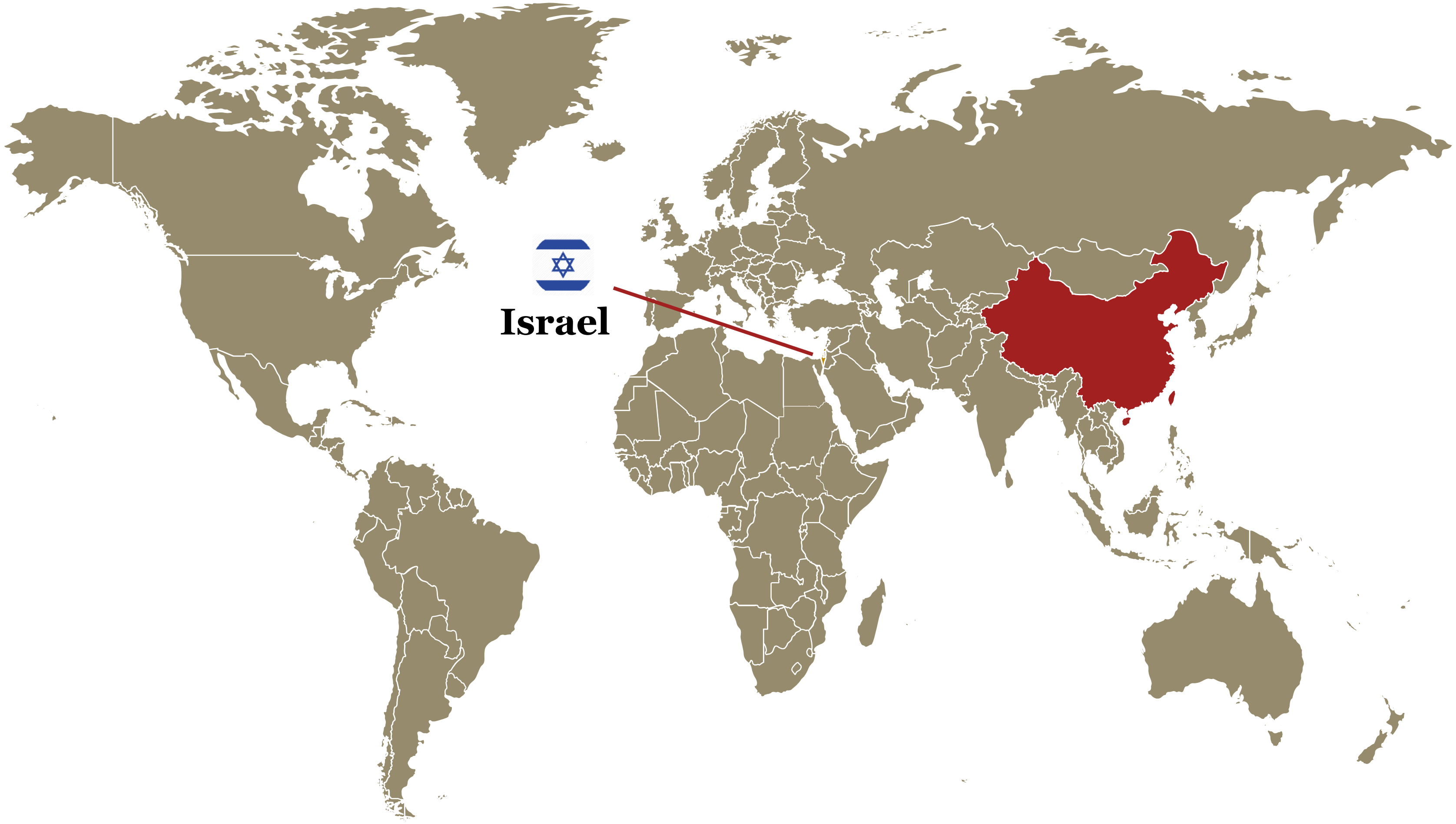
- **Introduction to Overseas Investment in Healthcare Industry under the "One Belt, One Road" Strategy**
- **Focused Introduction to Countries along the "One Belt, One Road" : Israel**

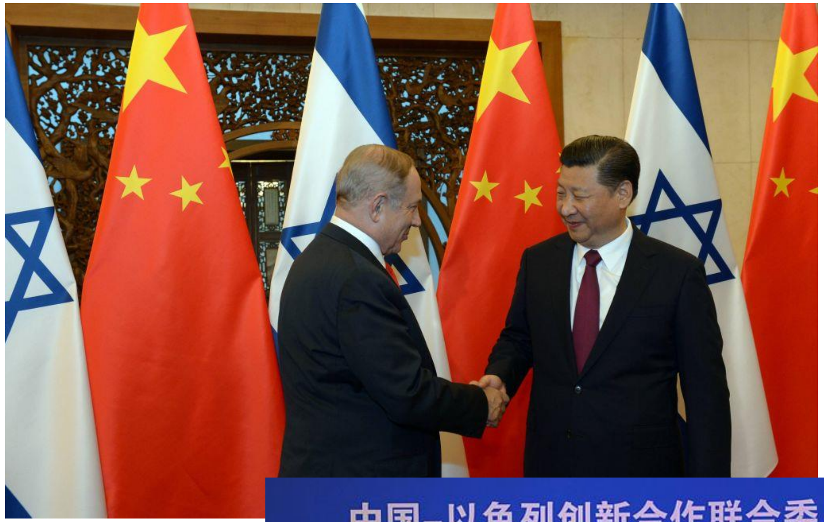
Focused introduction to countries along the "One Belt, One Road": Israel, a country with pharmaceutical industry as the pillar



Israeli government commits to fully supporting implementation of the "One Belt, One Road" Initiative through technological cooperation

Prime Minister of Israel expressed support for the "One Belt, One Road" Initiative during his visit to China

- In March 2017, on the occasion of the 25th anniversary of the establishment of diplomatic relations between China and Israel, Prime Minister of Israel Netanyahu led a business delegation consisting of the minister of economy and industry, the minister of health, and the minister of science & technology and space, to pay a visit to China at the invitation of Chinese President Xi Jinping
- The Chinese and Israeli governments signed **10 bilateral cooperative agreements** including those for medical care, scientific and technological development, environmental protection and joint R&D, and other related parties signed **21 business agreements**, with the total amount reaching **USD2 billion**. In addition, the two sides also signed an agreement on the construction of "**a comprehensive partnership for innovation**" , marking an important stage of bilateral relations between China and Israel
- During PM Netanyahu's visit in China, he said that Israel would fully support the implementation of the "One Belt, One Road" Initiative, and expected **that Israeli advanced technologies in the areas such as medical care, communication, big data and environmental protection would find application in China**



Investment opportunities in the healthcare industry of Israel

Digital medical care

- In March 2016, the governments of China and Israel signed the first agreement for cooperation in the health area, identifying first aid preparation, **digital medical care** and health policy reform as the specific cooperative fields, with an aim to enhance the trade and investment of both countries in these domains.
- Israeli digital medical enterprises mainly engage in five sectors, namely health data analysis, telemedicine, clinical process management, wearable and sensing devices, and personal health management tools. Particularly, more than half of start-ups specialized in **health data analysis** and **personal health management tools are in the stage of seed money raising or even more initial stage**, which are expected to become potential investment targets of Chinese enterprises.
- The booming development of health data analysis and personal health management tools is attributed to the growing aging population of Israel; at the same time, limited by the resources of Israel, the medical instruments and digital medical products that can help patients (especially old-age patients) to monitor the health conditions and medicine taking conditions boast exceptional application prospect.

Instruments for minimally invasive operation

- In line with the global surging demand on minimally invasive operation, various instruments and technologies for minimally invasive operation also embrace massive demand in Israel.
- Currently, **surgical robots** developed by few enterprises worldwide have gained approval from Food and Drug Administration of the US (FDA), three of which are located in Israel. These surgical robots are able to help surgeons control surgical operation tools more clearly, accurately and flexibly, when performing minimally invasive operation for patients.
- Apart from surgical robots, medical instruments enterprises in Israel also excel in R&D and production of minimally invasive operation instruments that are used for operations having higher potential risks and higher precision requirements, **such as spinal operation**, **neural operation and ophthalmologic operation**.

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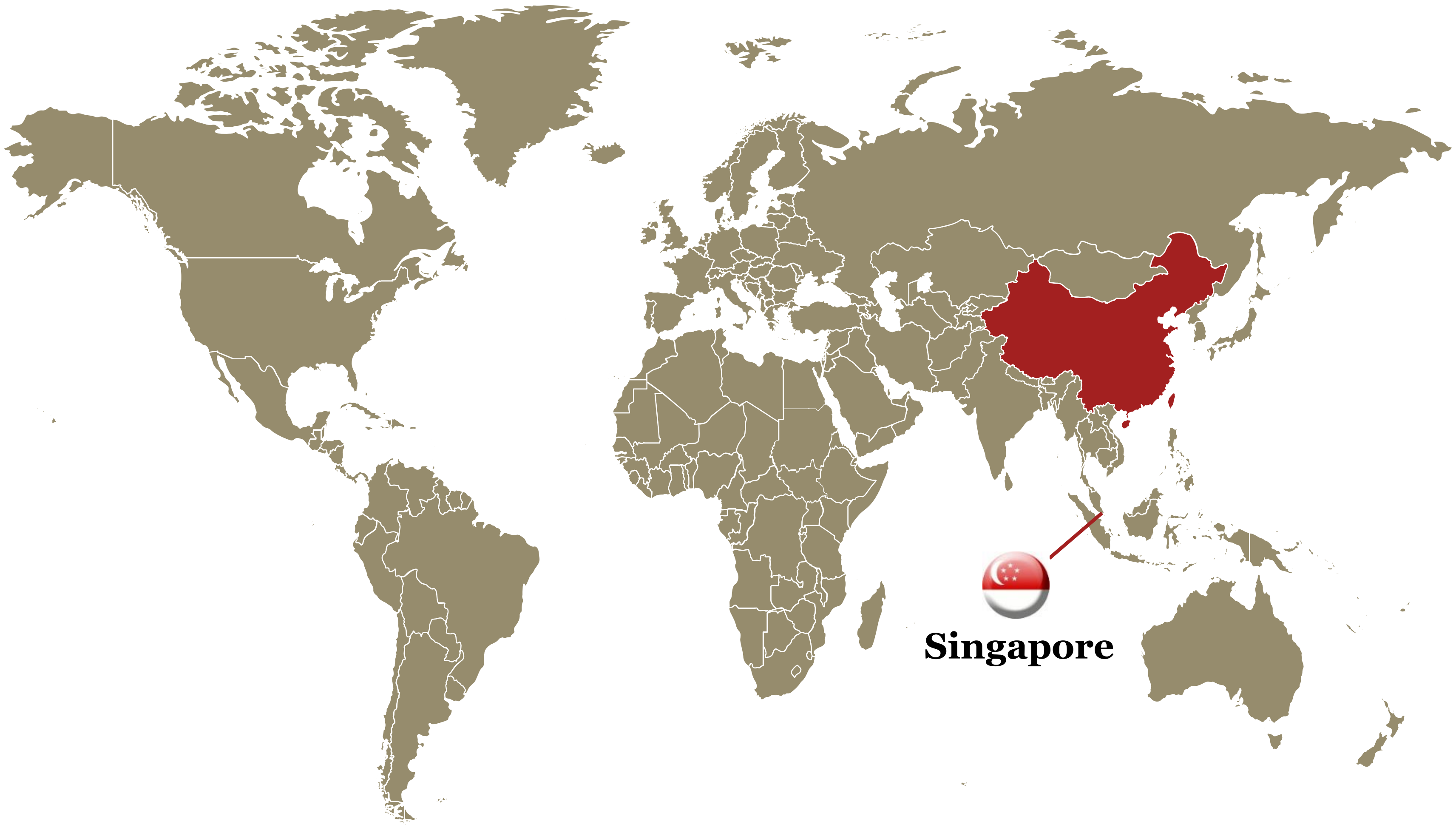
- **Introduction to Overseas Investment in Healthcare Industry under the "One Belt, One Road" Strategy**

- **Focused Introduction to Countries along the "One Belt, One Road" : Singapore**

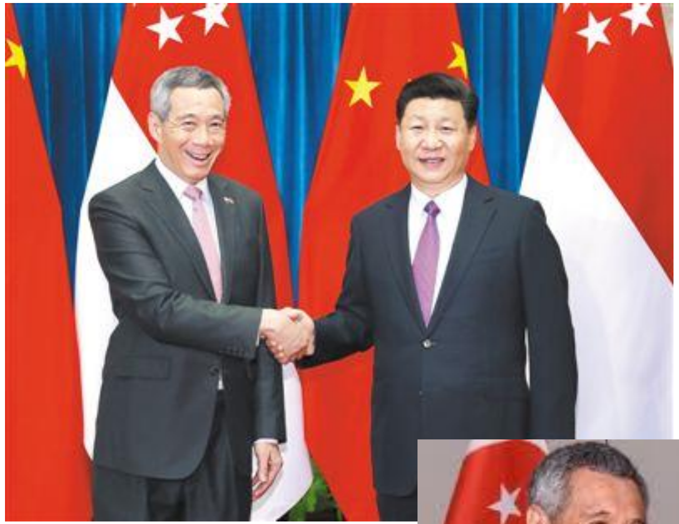
Focused introduction to countries along the "One Belt, One Road" : Singapore — a world-class healthcare center



Singapore government identifies the construction of the "One Belt, One Road" Initiative as the key cooperative area for China and Singapore

Prime Minister of Singapore visited China to support the "One Belt, One Road" Initiative

- In September 2017, Prime Minister of Singapore Lee Hsien Loong paid a visit to China, during which he and Chinese President Xi Jinping jointly **determined to take the construction of the "One Belt, One Road" Initiative as the key cooperative area of the two countries**, and the sides will build strategic connectivity demonstration projects in the future.
- Singapore supports joint building of "One Belt, One Road" and setup of Asian Infrastructure Investment Bank (AIIB), to propel the common development of the region and the world, and deepen cooperative ties between China and ASEAN.
- PM Lee Hsien Loong said that, the investment in Singapore accounts for **one third** of Chinese investment in all the countries along the "One Belt, One Road" ;and Singaporean investment in China takes up **85%** of all the investments made by countries along the "One Belt, One Road" in China.
- During the meeting with Chinese premier Li Keqiang, PM Lee Hsien Loong said that, Singapore is willing to engage in the construction of "southern channel" together with China, and enhance cooperation in areas such **as finance, investment, aviation, and information technology**. At the same time, the mediation centers of the two countries will team up to resolve potential cross-border commercial disputes arising from the construction under the "One Belt, One Road" Initiative.



Investment opportunities in the healthcare industry of Singapore

Medical diagnostics	Enterprises in the medical diagnostics may consider utilizing the "Diagnostics Development Hub" funded project of the Singaporean government. The program was initiated with USD60 million financing from National Research Foundation of Singapore, and undertaken by Agency for Science, Technology and Research (A*STAR); It primarily supports R&D and launch of products of **immunochemistry, point-of-care testing and molecular diagnosis** for disease phenotype of Asian people.
Digital health	In view of the worldwide rising of digital health, Singaporean investment institution EDBI and Philips set up an investment alliance at the beginning of 2016, to fund for innovation projects in the digital health area, with focus put on projects such as **telemedicine and remote monitoring of health conditions**, which is expected to provide funds for enterprises engaging in development of population health management products.
Rehabilitation assistance device	Rehabilitation assistance device is one of the healthcare segments that enjoy the fastest growth in Singapore. As the social population aging deepens in Singapore and even in the Asian region, **the assistance devices that help old-age patients to facilitate body functional recovery** will usher in a rapid growth in market demand. At the same time, demands on instruments and consumables for joint replacement of hip joint and knee joint will also increase.
Chronic disease management	Data provided by International Diabetes Federation shows that, the number of diabetics in Singapore ranks the second globally, and the morbidity of diabetics among adults has reached as high as 12.8%. Thus, enterprises engaging in **disease management for areas such as diabetics, obesity, hypertension and related complications** will enjoy favorable business prospect.
Dental product	Dental product is also one of the fastest growing segments in the healthcare area in Singapore, in particular, **digital dentistry** relying on computer technology and assistant device for disease diagnosis and treatment is expected to be a potential area enjoying rapid development.

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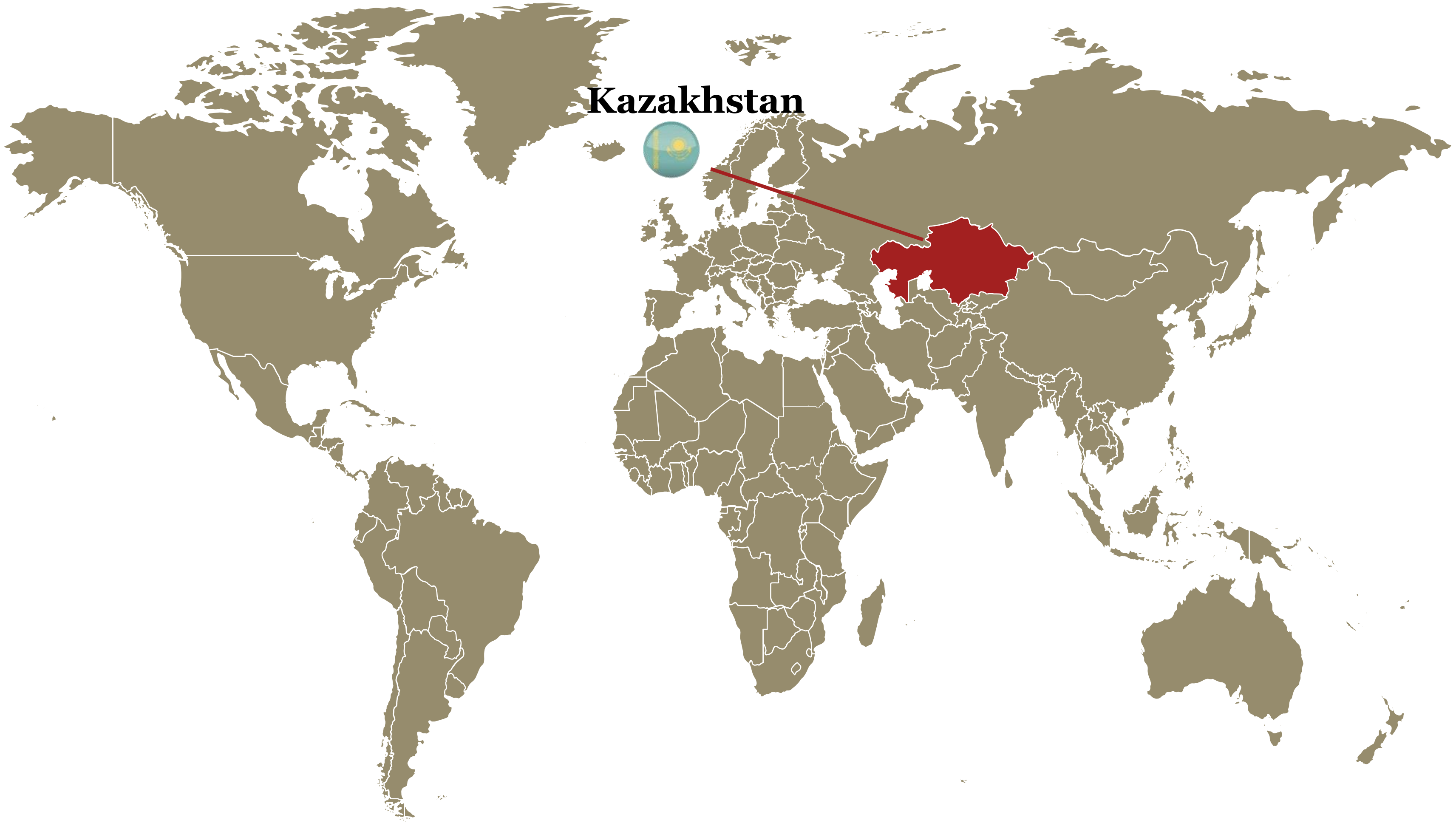
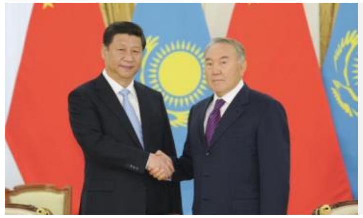
- **Introduction to Overseas Investment in Healthcare Industry under the "One Belt, One Road" Strategy**
- **Focused Introduction to Countries along the "One Belt, One Road" : Kazakhstan**

Focused introduction to countries along the "One Belt, One Road" : Kazakhstan — an energy superpower in Central Asia



China and Kazakhstan have maintained amicable relations, the government of Kazakhstan responds to the “One Belt, One Road” Initiative actively, and the bilateral economic and trade cooperation has been deepened

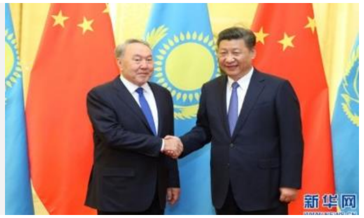


In Sept. 2013, Chinese President Xi Jinping proposed the vision of jointly building the "Silk Road Economic Belt" for the first time during his state visit to Kazakhstan.

In Dec. 2014, Chinese Premier Li Keqiang visited Kazakhstan, and reached a consensus with Prime Minister of the country, Karim Masimov, to jointly promote the investment cooperation between the two countries.

In Sept. 2016, when the President of Kazakhstan attended G20 summit in Hangzhou, governments of the two countries signed the plan for connection of "Bright Road" new economic policy and "Silk Road Economic Belt".

In May 2017, President Xi Jinping met with President of Kazakhstan, Nazarbayev, in the Great Hall of the People, Beijing, who came to attend the "One Belt, One Road“ Forum for International Cooperation.



Source of pictures: xinhuanet. Com; Data source: Desk research, PwC analysis

Great achievements in China-Kazakhstan cooperation

In 2013, Kazakhstan became the first country that supports the vision of "Silk Road Economic Belt".

In Sept. 2014, Kazakhstan Stock Exchange formally launched listing transactions with Chinese yuan and Tenge, and designated Bank of China Kazakhstan as the sole bank for clearing with yuan, making Kazakhstan the first country in Central Asia that supports listing transaction with yuan.

From 28th to 31thJan.， 2015, entrepreneurs of the two countries have established capacity cooperation for more than 40 projects.

Two large enterprises based in Kazakhstan have been listed in Hong Kong, and both the scale and maturity date of swap between currencies of the two countries are growing and extending steadily.

By May 2017, China and Kazakhstan has implemented 51 projects in capacity cooperation, which are valued at USD26 billion in total.

In summary, the pharmaceutical industry is the most critical link in the healthcare industry of Kazakhstan, and the industry with the largest investment potential

Shortage of medicine is the most prominent problem in the health area

- Kazakhstan government only provides basic medical services and partial normal medications, while a massive number of unconventional drugs (e.g. proprietary drug), and instruments (e.g. dentures) need to be bought by the people on their own expense.
- The foundation of pharmaceutical industry in Kazakhstan is extremely outdated, with more than 70% drugs needing to be imported; local enterprises could only produce partial conventional drugs, and all proprietary drugs need to be imported, even some transfusion products need to be imported as well.
- Many of the imported drugs are relatively expensive, further intensifying the spending burden on the people.

Pharmaceutical industry has largest investment potential in the health care area

Government rolls preferential policy to support pharmaceutical industry development

- In May 2013, No. 40 decree of Supreme Eurasian Economic Council (Kazakhstan is one of its members) decided to list the **pharmaceutical industry as an industry with priority development.**
- Kazakhstan 's Plan for Strategic Development of Health 2020 also listed the **pharmaceutical industry as an industry with priority development.**
- Between 2016 and 2020, the government is expected to invest USD33 million for the pharmaceutical industry development, and plans to **increase the proportion of domestically made drugs to 50% by 2018.**
- The GMP standard adopted in Kazakhstan has further standardized and promoted the development of pharmaceutical industry in the country.

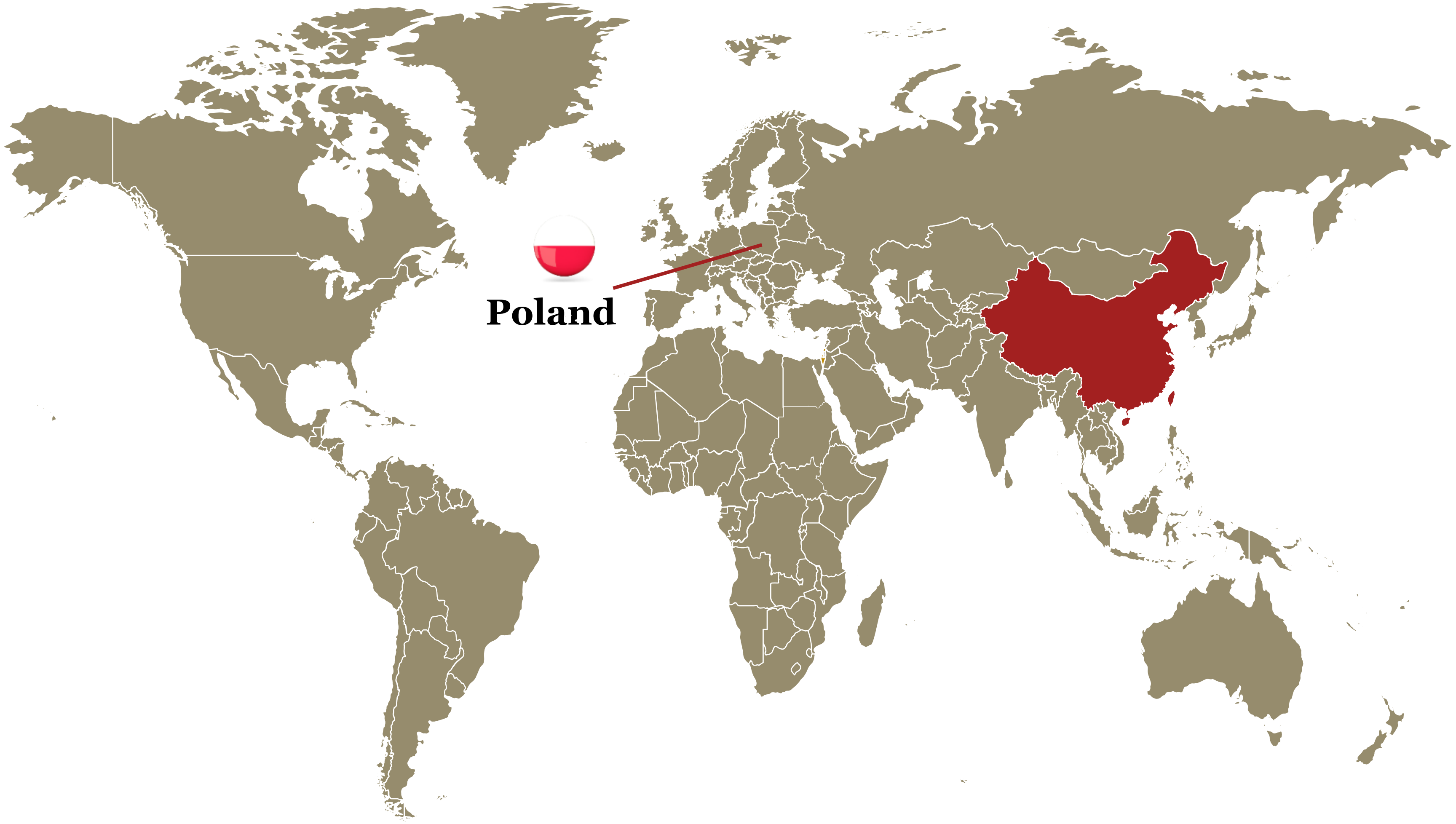
- In general, Kazakhstan government is striving to shake off the disadvantaged situation where most foreign businesses invest in the energy sector, and investment policies favoring traditional industries such as energy and mineral resources and products are being tightened.
- As the pharmaceutical industry is currently the most important link in the healthcare area, the government has rolled out various encouragement policies, so that investors can enjoy some fee reduction and exemption for foreign-invested pharmaceutical business that attains a certain scale (larger than USD21.3 million).
- Therefore, **the pharmaceutical industry has the largest investment potential in the healthcare area of this country; China and some Central Asian countries have successively started out arrangement in this field**

Data source: world bank, AIPM, AESGP, BMI, Central Banks, Schneider, PwC analysis

Content

- **Introduction to Overseas Investment in Healthcare Industry under the "One Belt, One Road" Strategy**
- **Focused introduction to Countries along the "One Belt, One Road" : Poland**

Focused introduction to countries along the "One Belt, One Road" : Poland — the sixth largest economy in Europe



As a strategic partner of China, Poland responds to the "One Belt, One Road" Initiative actively, and maintains close economic ties with China

1989 — Poland started market economic transformation

- Poland's economy has grown rapidly, and maintains positive growth since 1992.
- The trade ties between Poland and China started to **grow steadily**.

2004 — Poland joined EU

- The economic and trade ties between China and Poland are **accelerated.**
- Poland became an important business and trade partner of China among EU countries.

2012 — Leaders of China and Central and Eastern Europe (CEE) held first meeting

- The incumbent premier of China Wen Jiabao visited Poland.
- The China — CEE "1+16" cooperative mechanism was launched.
- Poland became China's first **comprehensive strategic partner** in the CEE region.

2013至今

Poland actively responds to the "One Belt, One Road" Initiative

Sign MOU on "One Belt, One Road" Initiative

- **In Nov. 2015:** Chinese President Xi Jinping invited President of Poland Duda to make an official visit to China. The two sides signed the MOU on "One Belt, One Road" Initiative.
- The China-Poland MOU on "One Belt, One Road" includes the cooperative agreement for **construction of Central Railway** by China Railway Corporation and Poland, and the **Framework Agreement** signed by China Export and Credit Insurance Corp. and Poland Investment and Trade Agency.

Take the lead to be a founding member of AIIB

- **In August 2015**, Poland became the first country of CEE to join the AIIB as a founding member. President of Poland Duda said Poland's joining in AIIB marks the first step of **implementing the "One Belt, One Road" strategy**, and Poland hopes to become an important partner of "One Belt, One Road" .

AIIB | ASIAN INFRASTRUCTURE INVESTMENT BANK

Actively participate in the construction of traffic network system of Central Europe

- **Rail transit：**actively participate in the construction of 9,800 km-long **Chengdu-Europe Express**, which starts from Chengdu, China, and terminates at Lodz, the second largest city of Poland, and was put into operation in 2013.
- **Marine transport：** the deepwater ports represented by Gdansk in the north of Poland, are expanding the **China-Europe ship route**, and currently the throughput of the port used by China accounts for 8% in the non-EU market.

Areas with investment opportunities in the healthcare industry of Poland

Bio-pharmaceutical	The bio-pharmaceutical industry is the future pillar industry for national economy as identified by the Polish government, in which the "Kazimierz Biotechnology Development Center" is a national key project, which aims to facilitate Polish enterprises in developing **biosimilar products**. Poland is home to a number of talents in the bio-pharmaceutical sector, and its **lower labor costs** can help its enterprises to expand overseas market. At present, Polish bio-pharmaceutical giants represented by Bioton have established global cooperation with companies such as **Bayer and Actavis**.
Herbal medicine	**The tradition of planting herbs has lasted more than 100 years** in Poland, and there are over 3,000 kinds of herbs, such as Chamomile, calendula, aloe, ginseng, and Ginkgo biloba, accounting for 50% of the herb market of CEE (around USD400 million). The herbs in Poland and the sources of traditional Chinese medicine **are highly similar**, laying solid foundation for cooperative development. Poland also has the tradition of **acupuncture and moxibustion** apart from herbs, and the country's government has listed acupuncture into the medical system of Poland, which provides opportunity for expansion of clinics of traditional Chinese medicine in Poland.
Private medical institution	Currently the healthcare service system of Poland is still dominated by **public medical care**, and owing to the sound social welfare system, the treatment fees of public medical care can basically covered by medical insurance; however, this has also led to multiple problems, such **as lower medical care efficiency, and longer time for waiting appointment** (especially for chronic disease), thus the public has more demand on quality medical services. At the same time, **there are a small number of private medical institutions** in Poland, leaving much room for investment.
Medical information system	Currently, the information technology degrees of public hospitals in Poland vary a lot, **and the overall level of information technology is relatively low.** Going forward, Poland government plans to bridge the information platforms of hospitals, build a **networking platform** to enable sharing of data between hospitals, so as to realize optimized allocation of medical resources. There lacks professionals of information technology in Poland, thus experienced system suppliers are needed to realize this goal.

Thank you!