Joinn Laboratories (6127 HK)

China-based DSA leader with global vision

Initiate at BUY. Joinn is a pioneer and a leader in China drug safety assessment (DSA) market with an established network covering both China and US markets. Our DCF-based TP of HK$107.65 implies 45x FY22E P/E and 34x FY23E P/E. In terms of P/E multiple, Joinn's H share is currently trading at c. 20% discount to its H share peers, and c. 40% discount to its A share peers. We expect the stock to rerate on solid earnings growth.

- **Joinn is a leader in the fast-growing China DSA market.** According to F&S, Joinn is the largest player in China non-clinical DSA market with 16% market share as of 2019. As an early mover in China's DSA sector, Joinn was the 2nd independent company to pass NMPA's (then CFDA) GLP inspections in 2005 and the 1st private CRO in China to pass US FDA GLP inspection. According to F&S, among all domestic drug candidates whose INDs were accepted by China CDE during 2017-19, Joinn provided relevant non-clinical DSA services for over 15% of all chemicals and 45% of all biologics candidates. Given the high entry barriers of DSA sector, such as GLP qualifications and limited supply of research models, as well as fast growing demand in innovative drug R&D, Joinn will maintain its industry leading position, in our view.
- **Explore opportunities beyond DSA sector.** Leveraging its extensive experiences in non-clinical studies and large customer base, Joinn has expanded its business to early-stage clinical trial services which share certain common bioanalytical methods and practices with pre-clinical studies. Joinn acquired US-based Biomere in 2019 to enhance the drug discovery capability as well as to expand business network in the US. Through investing a minority stake in Joinn Bio, a biologics CDMO company, Joinn leverages its rich experiences in biologics DSA to explore the business opportunities in the rapidly growing biologics CDMO market.
- **Charles River Lab (CRL) shows Joinn a sustainable development path.** CRL is the largest global pre-clinical CRO service provider with a long development history. We summarized the key success factors of CRL, which could provide as a good reference for Joinn, including 1) service business as long-term focus; 2) acquisition as a key growth driver; and 3) overseas expansion; and 4) strengthening discovery capabilities.
- **Strong growth momentum.** We forecast Joinn's revenue to grow by 45%/40%/37% YoY in 2022E/23E/24E, representing a 40% CAGR in 2022-24E, driven by 1) rising domestic demand for high quality DSA services, 2) continuous growth from overseas market, and 3) synergies between non-clinical and clinical business. We expect net income to increase by 35%/32%/31% YoY in 2022E/23E/24E. We derive our target price of HK$107.65 based on a 9-year DCF valuation (WACC: 10.9%, terminal growth rate: 3.0%). Catalysts: fast new order growths; new capacities commencing operations.

Earnings Summary

(YE 31 Dec)	FY20A	FY21A	FY22E	FY23E	FY24E
Revenue (RMB mn)	1,076	1,517	2,193	3,066	4,196
YoY growth (%)	68	41	45	40	37
Net income (RMB mn)	313	557	749	992	1,299
EPS (RMB)	0.99	1.51	1.97	2.60	3.41
Consensus EPS (RMB)	N/A	N/A	1.89	2.45	3.08
P/E (x)	49.9	32.7	25.1	19.0	14.5
P/B (x)	12.8	2.5	2.4	2.2	2.0
ROE (%)	36.8	45.6	10.5	12.9	15.4
Net gearing (%)	Net cash	Net cash	Net cash	Net cash	Net cash

Source: Company data, Bloomberg, CMBIGM estimates

BUY (Initiation)

Target Price	HK$107.65
Up/Downside	+86.89%
Current Price	HK$57.60

China Healthcare Sector

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Stock Data

Mkt Cap (HK$mn)	41,474
Avg 3mths t/o (HK$mn)	37
52w High/Low (HK$)	138.00/48.50
Total Issued Shares (mn)	381

Source: Bloomberg

Shareholding Structure

Management	32.7%
H-share investors	18.7%
ZhongOu Fund	4.1%
Others	44.5%

Source: Company data

Share Performance

	Absolute	Relative
1-mth	0.2%	-0.3%
3-mth	-0.6%	11.3%
6-mth	-38.2%	-27.0%

Source: Bloomberg

12-mth Price Performance

Source: Bloomberg

Auditor: KPMG

Contents

Investment Thesis

Fast growing DSA sector with high entry barriers

Non-clinical drug safety assessment (DSA) is the largest component in global preclinical CRO market but only accounted for less than 25% share of China preclinical CRO market, indicating large room for growth of DSA market in China. China non-clinical DSA market is fragmented, leaving large potential for market consolidation. According to F&S, Joinn is the largest player in China non-clinical DSA market with 16% market share as of 2019.

Stringent qualifications such as Good Laboratory Practice (GLP) are required for conducting DSA studies by all major healthcare authorities in the world. However, obtaining GLP certification or passing GLP inspections are typically time-consuming and costly, which becomes the biggest entry barrier for participants in DSA sector. As a result, only a small number of facilities are able to pass GLP inspections. Among all the 18 companies that have passed GLP inspections by the NMPA, Joinn ranked second in terms of the timeline of the inspection pass.

Non-human primates are most homologous to humans and are particularly useful in the evaluation of biologics drugs, which makes non-human primate research models important strategic resources. Due to strict regulations on sales of non-human primates by Chinese government and the surging demand for non-human primates in China, the prices of non-human primates have increased significantly since 2017. To hedge the rising pricing of non-human primates, China-based non-clinical DSA companies are actively expanding their non-human primates breeding capability by acquisition or in-house expansion.

Joinn, a leader in China DSA sector

As an early mover in China's DSA sector, Joinn was the second independent company to pass NMPA's (then CFDA) GLP inspections in China in 2005 and the first private CRO in China to pass US FDA GLP inspection. Joinn has widely participated in the drug innovation in China and its service quality is highly recognized worldwide. According to F&S, among all domestic drug candidates whose INDs were accepted by China CDE during 2017-19, Joinn provided relevant non-clinical DSA services for over 15% of all chemical drug candidates and 45% of all biologics drug candidates.

Joinn has an established a wide facility network located in China and the US. The acquisition of Biomere in 2019 largely enhanced Joinn's presence in the US with facilities in biotech hubs. As China and the US are the two largest economies with the most active pharmaceutical R&D activities in the world, Joinn's Sino-US network gives the Company unparalleled positioning in the long run.

Joinn is well positioned to overcome the tight supply and the rising costs of non-human primates. Joinn procured the majority of its non-human primate research models from quality third-party suppliers via long-term purchase contracts. Joinn has established animal breeding facilities in Beijing, Suzhou and Nanning and is actively expanding breeding facilities in Suzhou, Guangzhou and Wuzhou.

Explore business opportunities beyong DSA

With more than 20 years' of experiences in DSA sector, Joinn is now strategically expanding its services to both upstream and downstream areas. Joinn has enhanced its capabilities in drug discovery and screening services, including pharmacology, toxicology and DMPK studies. At the same time, through its extensive experience in non-clinical studies, regulatory knowledge and large customer base, Joinn has expanded its business to early-stage clinical trial and related services which share certain common bioanalytical

methods and practices with pre-clinical studies. The Company acquired US-based Biomere in 2019 to enhance the drug discovery capability as well as to expand business network in the US. Furthermore, through investing a minority stake in Joinn Bio, a biologics CDMO company, Joinn can effectively leverage its rich experiences in biologics DSA to explore the business opportunities in the rapidly growing biologics CDMO market.

Clarles River Lab shows Joinn a sucessful growth path

Founded in 1947, Charles River Lab (CRL) is a pioneer as well as the largest global pre-clinical CRO service provider. We believe a comprehensive analysis of CRL will help us better understand the development rationale of pre-clinical CRO companies based in China, such as Joinn, as well as the development trend of China pre-clinical CRO industry.

Service business as long-term focus. Joinn has been concentrating in providing preclinical services, particularly DSA services, since the establishment of the Company in 1998. The Company's service-focus strategy is consistent with CRL's strategy since 1999. We think non-clinical services are more scalable than research model business and Joinn's service-focus strategy will lead to sustainable business growth in the long run.

Acquisition as a key growth driver. M&As has become key growth drivers for CRL over the history, which could be successful experiences to be learnt by Joinn. With the completion of its HK IPO in early-2021, Joinn is both financially sufficient and fundamentally ready to accelerate M&A activities. In addition, the Global CRO market, including discovery, preclinical and clinical areas, is fragmented and leaves abundant room for consolidation. We believe Joinn has large potential in global expansion over the long term.

Joinn to expand overseas leveraging cost advantages and overseas acquisitions. Joinn has consistently generated higher gross margins than CRL, which was attributed to lower operating costs for Joinn, particularly labor costs, in our view. Joinn's non-clinical services maintained over 49% gross margin from 2014 to 2021 while gross margin of CRL's discovery and safety assessment services deteriorated from 34% in 2015 to 28% in 2021. In 2019, labor costs accounted for 36% of Joinn's total cost of sales. Considering the generally lower salary level in China than that in the US, we expect Joinn to continue to attract overseas customers thanks to cost advantages. After the acquisition of Biomere in 2019, Joinn will become more active in the global pre-clinical service market, in our view.

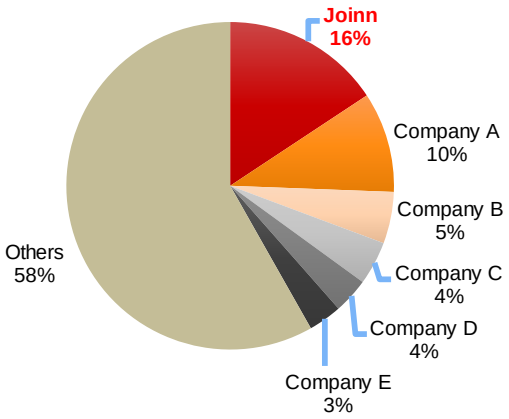
Joinn to enhance discovery capacity. A well-established discovery capacity can effectively help CROs to gain pre-clinical projects. Discovery works generate necessary know-hows on drug candidates which is fundamental to pre-clinical work. We notice significant synergies between CRL's discovery business and DSA business. According to CRL, ~50% of clients using its discovery services continue to cooperate with the company for DSA services. Joinn is still at early stage of developing its drug discovery business and it intends to grow its discovery capability by acquiring some specialized discovery service providers. We expect Joinn to also establish an integrated platform of discovery and DSA capabilities and to generate great synergies between the two businesses.

Initiate at BUY

We forecast Joinn's revenue to grow by 45%/40%/37% YoY in 2022E/23E/24E, representing a 40% CAGR in 2022-24E, driven by 1) rising domestic demand for high quality DSA services, 2) continuous growth from overseas market, and 3) synergies between non-clinical and clinical business. We expect net income to increase by 35%/32%/31% YoY in 2022E/23E/24E. We derive our target price of HK$107.65 based on a 9-year DCF valuation (WACC: 10.9%, terminal growth rate: 3.0%), implying 45x FY22E P/E and 34x FY23E P/E.

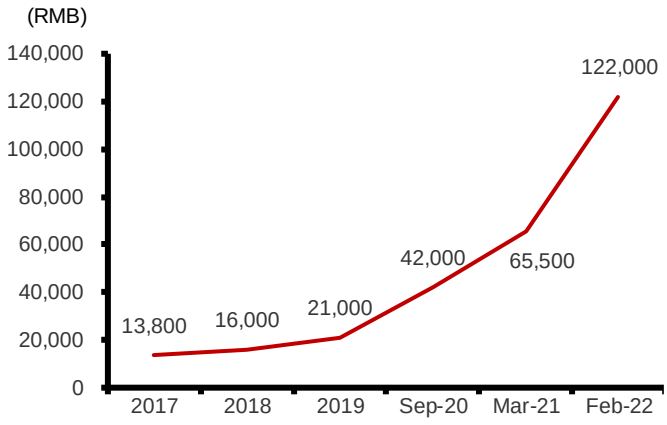
Focus Charts

Figure 1: Breakdown of China non-clinical drug safety assessment market



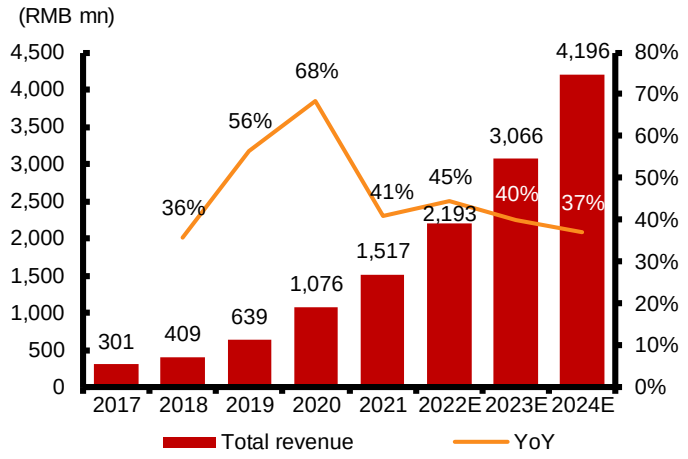
Source: F&S, CMBIGM

Figure 2: Historical prices of representative non-human primate research models in China



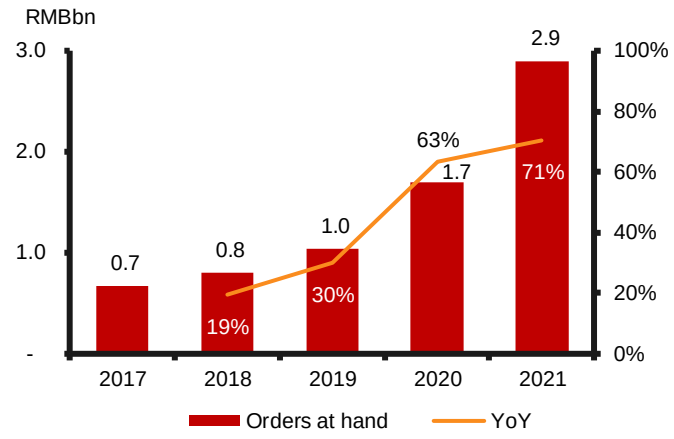
Source: F&S, NIFDC, CMBIGM

Figure 3: Revenue forecasts of Joinn



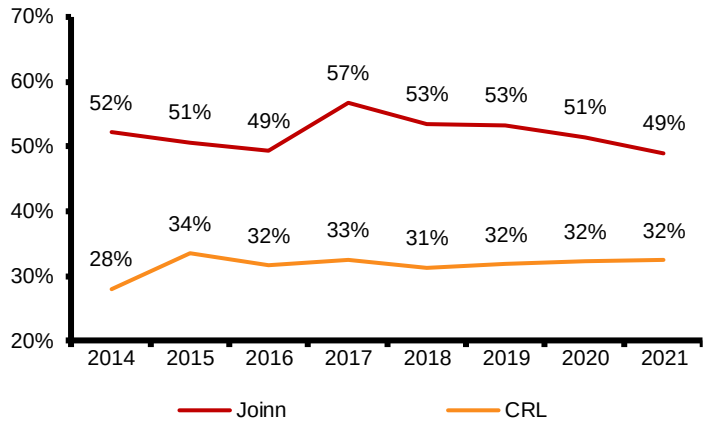
Source: Company data, CMBIGM estimates

Figure 4: Joinn's total orders in hand



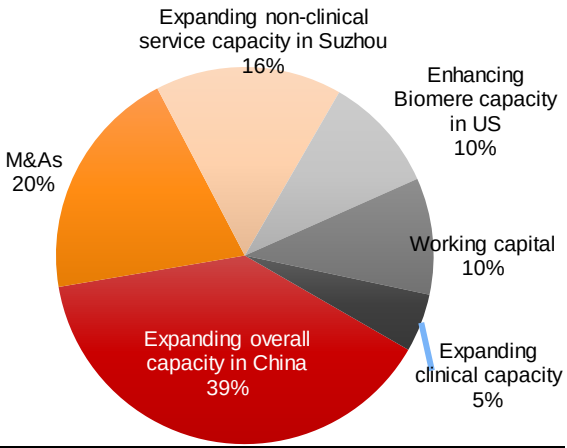
Source: Company data, CMBIGM

Figure 5: Comparison of gross margins of preclinical services between Joinn and CRL



Source: Company data, CMBIGM

Figure 6: Joinn's intended use of HK IPO proceeds (2021)



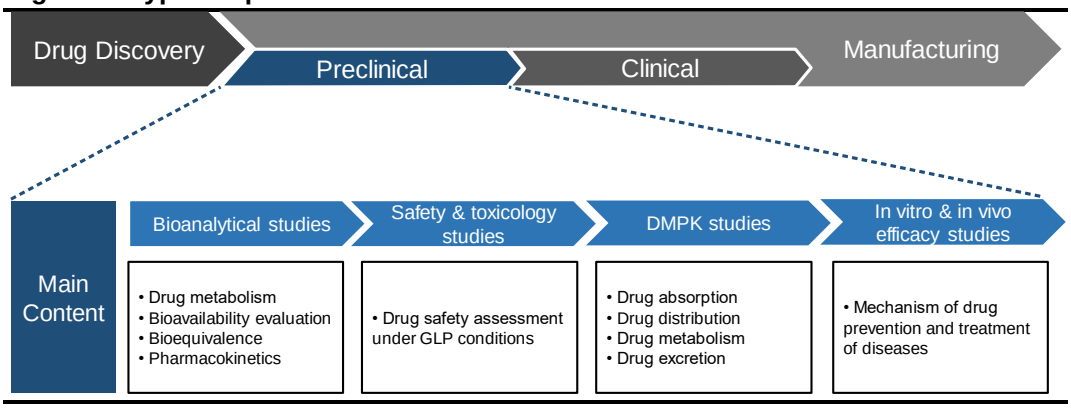
Source: Company data, CMBIGM

Fast growing DSA sector with high entry barriers

Large growth potential of DSA sector in China

The pre-clinical CRO services cover the development and breeding of research models, pharmacokinetics, pharmacology and toxicology, safety assessment, biological analysis, and analytical chemistry. Due to the increasingly stringent criteria for IND approvals in China, small-and medium-sized pharmaceutical companies typically cannot carry out the pre-clinical evaluations entirely by themselves because of their lack of experienced professionals and GLP certification. Thus, the outsourcing penetration rate of drug safety assessment (DSA) is the highest among all drug R&D work.

Figure 7: Types of preclinical CRO services

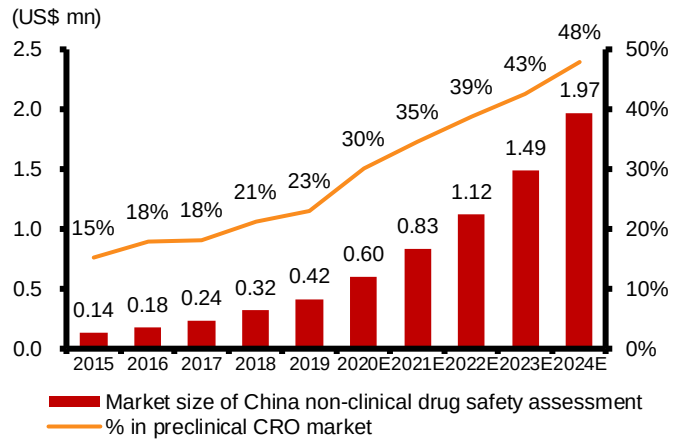


Source: F&S, CMBIGM

Non-clinical drug safety assessment (DSA) provides safety data and serves the basis for designing first-in-human (FIH) clinical trials of drug candidates. Non-clinical DSA is the largest component in global preclinical CRO market, indicating significant room for growth. Frost & Sullivan estimates that non-clinical DSA accounted for more than 50% of global preclinical CRO market during 2015-2019. Driven by the fast demand growth in overall CRO market and faster growth in preclinical CRO segment than other CRO service segments, non-clinical DSA is expected to gain bigger share in global preclinical CRO market, reaching 64% by 2024E. In comparison, non-clinical DSA accounted for less than 25% share in China preclinical CRO market before 2019 while the percentage will reach 48% by 2024E thanks to the exceptional demand growth in China.

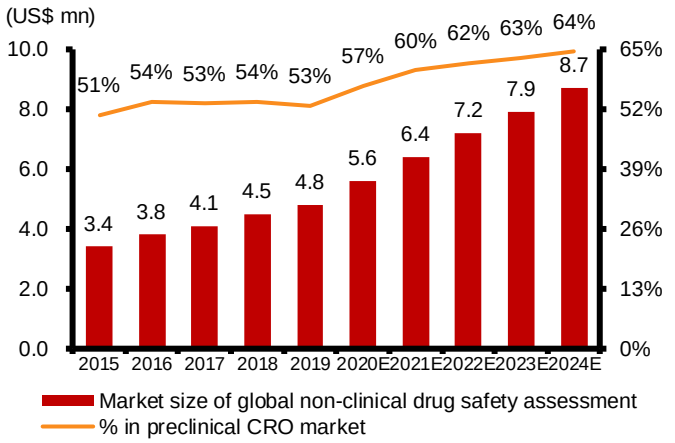
China non-clinical DSA market is fragmented, leaving large potential for market consolidation. According to F&S, Joinn is the largest player in China non-clinical DSA market with 16% market share as of 2019.

Figure 8: Market size of China non-clinical drug safety assessment



Source: F&S, CMBIGM

Figure 9: Market size of global non-clinical drug safety assessment



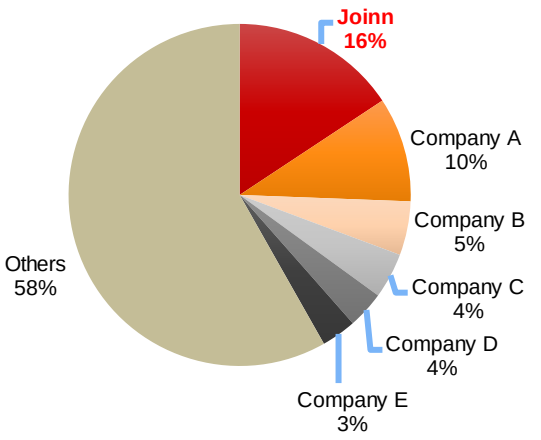
Source: F&S, CMBIGM

Figure 10: Comparison of China and global CRO market size growth

CAGR	2015-2019	2019-2024E
China		
Non-clinical drug safety assessment	31.7%	36.5%
Preclinical	20.3%	18.2%
All stage	27.3%	26.5%
Global		
Non-clinical drug safety assessment	9.4%	12.5%
Preclinical	7.9%	8.2%
All stage	9.0%	8.9%

Source: F&S, CMBIGM

Figure 11: Breakdown of China non-clinical drug safety assessment market



Source: F&S, CMBIGM

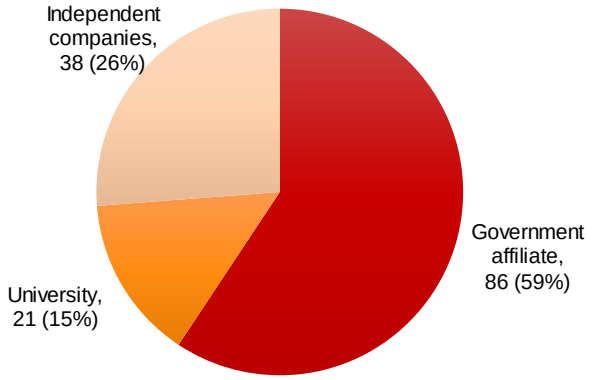
High entry barriers of DSA sector

Stringent qualifications such as Good Laboratory Practice (GLP) are required for conducting DSA studies by all major healthcare authorities in the world. However, obtaining GLP certification or passing GLP inspections are typically time-consuming and costly, which becomes the biggest entry barrier for participants in DSA sector. During GLA inspections, healthcare authorities usually have a comprehensive evaluation on relevant facilities and equipment, experience and expertise of management and operations teams, and management system and operation of DSA studies, etc. In the meantime, institutions involved in non-clinical DSA have to make significant and continuous capital investments to upgrade relevant facilities and equipment to meet changing compliance requirement.

As a result, only a small number of facilities are able to obtain GLP inspections or pass GLP inspections. Based on data compiled by us, since 2003, a total of 145 facilities (including facilities that passed multiple rounds of GLP inspections during past years) have passed GLP inspections by the NMPA (then CFDA). Among all the 18 companies that have passed GLP inspections by the NMPA, Joinn ranked second in terms of the timeline of the

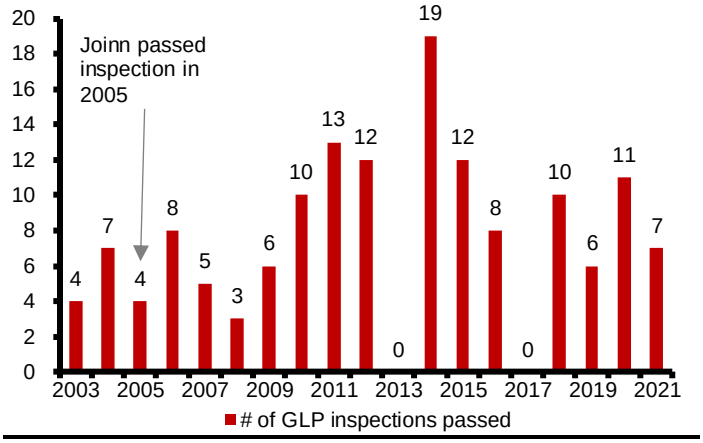
inspection pass. Joinn passed its first GLP inspection conducted by NMPA in 2005 and subsequently passed every GLP inspection conducted by NMPA.

Figure 12: Breakdown of NMPA GLP inspection pass by the nature of entity



Source: NMPA, CMBIGM
Note: including facilities that passed multiple rounds of GLP inspections during past years

Figure 13: Number of GLP inspection pass by the NMPA



Source: NMPA, CMBIGM
Note: including facilities that passed multiple rounds of GLP inspections during past years

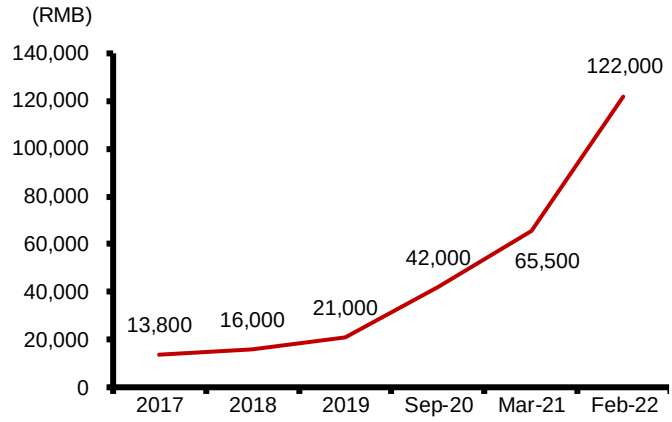
Scarcity of biological assets

Research models, including rodents and non-human primates, are critical assets to non-clinical DSA sector, while the cost of research models has significant impact on the profitability of non-clinical DSA sector. According to Joinn, cost of supplies (物资成本) was the most significant component of its total costs of services, accounting for 45.9% of its total cost of services in 2019. Thus, cost control is one of the key success factors for non-clinical DSA companies.

Non-human primates are most homologous to humans and are particularly useful in the evaluation of biologics drugs, which makes non-human primate research models important strategic resources. Due to strict regulations by Chinese government, non-human primate research model suppliers were only allowed to sell a limited number of non-human primate research models in accordance with the annual quota determined by the National Forestry and Grassland Administration (国家林业和草原局). Even though the total number of non-human primate research models that are permitted to be sold annually has been increasing over the years, the demand for non-human primate research models still exceeds the limited supply in China.

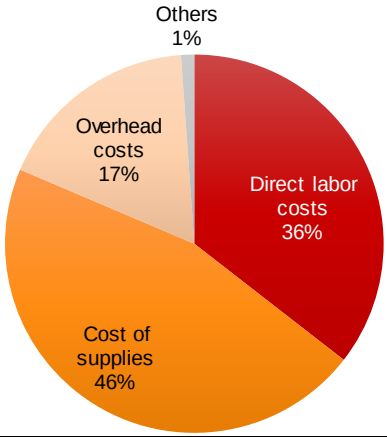
Given the growing number of biological drug development projects, especially the surging demand for the development of vaccines and antibodies against COVID-19, the prices of non-human primates have increased significantly. According to data from F&S and China's National Institutes for Food and Drug Control (NIFDC), the average price of representative non-human primate research models has rocketed by almost 800% from 2017 to early 2022, while the price was above RMB120,000 in early 2022.

Figure 14: Historical prices of representative non-human primate research models in China



Source: F&S, NIFDC, CMBIGM
Note: Historical prices during 2017 and Sep-20 were based on F&S data while prices in Mar-21 and Feb-22 were based on procurement announcements of NIFDC.

Figure 15: Cost of services breakdown of Joinn (2019)



Source: Company data, CMBIGM

To hedge the rising pricing of non-human primates, China-based non-clinical DSA companies are actively expanding their non-human primates breeding capability by acquisition or in-house expansion. Considering the long breading time of non-human primates and strict regulations of non-human primates breeding, we believe leading DSA companies enjoy significant competitive advantages thanks to their abundant reserve of non-human primate supplies.

Figure 16: Leading China-based CROs actively expanding research animal breeding capability

Company	Ticker	Year	Action	Location	Details
Joinn	603127 CH /6127 HK	2019	Expansion	WuZhou	In construction of 376,667 sq.m. non-human primate research model facility
		2019	Renovation	Suzhou	Completed the 10,800 sq.m. animal rooms renovation
		2021	Expansion	Guangzhou	In construction of DSA facility, which includes animal rooms; phase 1 to be ready in 2023
		2021	Expansion	Chongqing	In construction of DSA facility, which includes animal rooms; phase 1 to be ready in 2024
		2021	Renovation	Suzhou	Completed the renovation of 7,500 sq.m. animal rooms
		2021	Expansion	Suzhou	In construction of 20,000 sq.m. animal rooms facility; to be ready in 2H22
WuXi AppTec	603259 CH /2359 HK	2019	Acquisition	Guangzhou	Acquired Suzhou Kanglu (苏州康路生物), a research animal model breeding company
		2021	Expansion	Suzhou	New animal rooms commenced operation
		2021	Expansion		Aiming to almost double animal room space by 2023
Pharmaron	300759 CH /3759 HK	2021	Expansion	Ningbo	In construction of preclinical DSA facility; to become ready in 1H24
		2021	Acquisition	Zhaoqing	Acquired 50.01% stake of Zhaoqing Chuangyao (肇庆创药) , a research animal breeding company in Guangdong Province
		2021	Acquisition	Zhanjiang	Acquired 100% stake of Zhongke Lingrui (中科灵瑞), a research animal breeding company in Guangdong Province

Source: Company data, CMBIGM

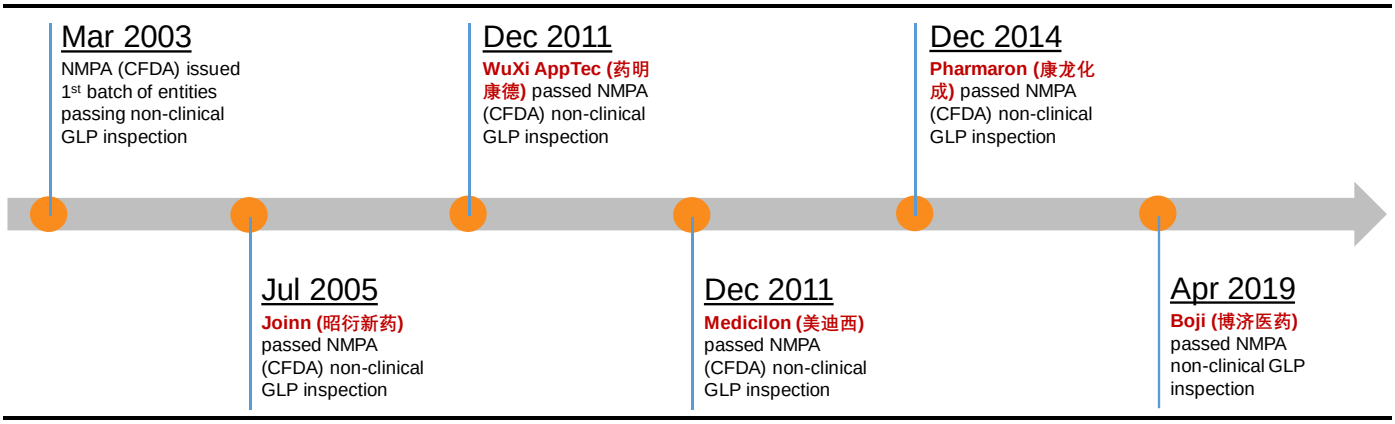
Joinn, a poineer in China DSA sector

Joinn has first-mover advantages with full suite of qualifications and capabilities

As one of the pioneers in China CXO industry, Joinn was established in 1995. Joinn has completed A-share listing in 2017 and H-share listing in 2021.

Joinn's business segments include non-clinical studies services (mainly non-clinical DSA services), clinical trial and related services (clinical CRO and clinical testing services) and sales of research models. Non-clinical studies services are the majority source of revenue and contributed over 97% of the total revenue since 2017.

Figure 17: Timeline of China-based CROs passing NMPA GLP inspections



Source: NMPA, CMBIGM

Note: Since the implementation of "药物非临床研究质量管理规范认证管理办法" in Apr 2007, NMPA (CFDA) started to issue GLP certificates to entities that passed GLP inspections.

As an early mover in China's DSA sector, Joinn was the second independent company to pass NMPA's (then CFDA) GLP inspections in China as early as in 2005. To date, Joinn has successfully passed GLP inspections by major global healthcare authorities, including US FDA, OECD, AAALAC and NMPA. Joinn was the first private CRO in China that had passed US FDA GLP inspection and also the only one that had passed the inspection for four times, and the first private CRO in China to obtain all of AAALAC, OECD GLP and NMPA GLP certifications. Joinn's facilities in Beijing and Suzhou have passed all NMPA GLP inspections since 2005. In addition, Joinn's US subsidiary Biomere successfully passed its FDA inspection in 2019.

With full-suite of qualifications, Joinn has accumulated many first-hand project experiences and further strengthened its leading positioning in the DSA sector.

Figure 18: Qualifications obtained by Joinn

Time	Type	Issuing agency	Facility
Certificates granted			
2011	GLP	China NMPA	Beijing, China
2008	AAALAC	AAALAC	Beijing, China
2008	AAALAC	AAALAC	Suzhou, China
2013/2014/2020	GLP	China NMPA	Suzhou, China
2015/2017	GLP	OECD	Suzhou, China
Inspections passed			
2005/2014/2017/2020	GLP	China NMPA	Beijing, China
2012/2015/2018	AAALAC	AAALAC	Beijing, China

Figure 19: Joinn's leading position in qualifications and project experiences

Events
The **first** private CRO in China to pass US FDA GLP inspection
The **first** private CRO in China to obtain all of AAALAC, OECD GLP and NMPA GLP certification
The **first** CRO in China to support filing of NMPA and FDA dual IND drug applications
Conducted non-clinical DSA for the **first** ADC drug candidate in China that was approved for clinical studies
Conducted non-clinical DSA for the **first** bispecfic mAB in China that was approved by NMPA for clinical studies
Conducted non-clinical DSA for the **first** stem cell drug candidate in China that was approved for clinical studies

2009/2013	GLP	US FDA	Beijing, China	The **first** CRO in China to provide commercial carcinogenicity studies
2016	GLP	South Korea MFDS	Beijing, China	The **first** CRO in China to systemically accumulate two-year experience of carcinogenicity studies on rodents
2012/2015/2018	AAALAC	AAALAC	Suzhou, China	Performed the first non-clinical DSA of the **first** biosimilar product approved in China
2016/2019	GLP	US FDA	Suzhou, China	The **first** CRO in China to build a proprietary ophthalmology laboratory
2017/2020	GLP	China NMPA	Suzhou, China	The **first** CRO in China to complete the full non-clinical toxicological assessment for the IND applications of the first domestic Category I inhaled small molecule new drug and the first domestic Category I inhaled biologics
2021	GLP	OECD	Suzhou, China	
2019	GLP	US FDA	Massachusetts, US	

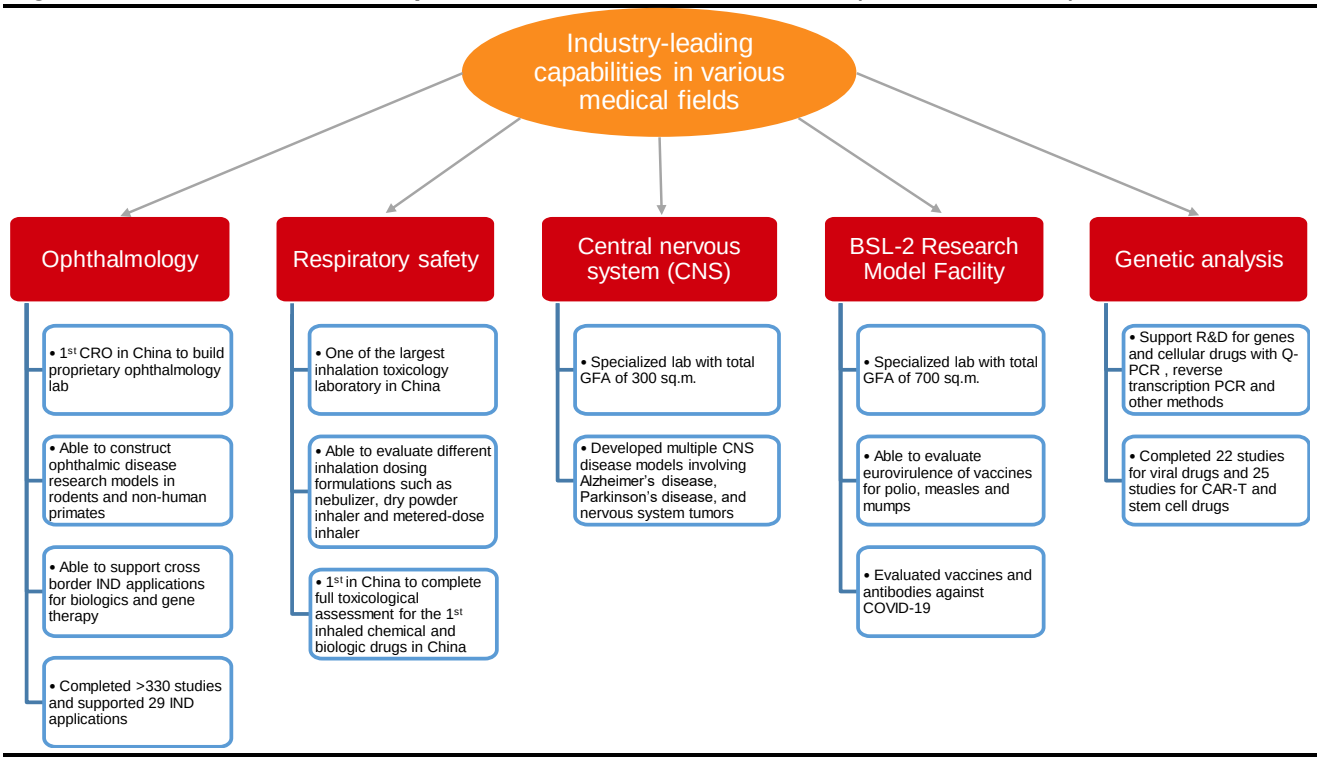
Source: Company data, CMBIGM

Source: Company data, CMBIGM

Joinn has well-developed, industry-leading capabilities in various medical field. Joinn has built the 1st proprietary ophthalmology lab in China which allows the Company to conduct state-of-the-art ocular assessments for biologic, gene and stem cell therapies. According to F&S, Joinn has established the largest laboratory in China specializing in inhalation toxicology studies based on the OECD guidance and have completed the first pre-clinical toxicity assessment of a Category I small molecule as part of an IND-enabling submission in China.

Joinn had participated in hundreds of drug safety assessment studies for innovative drugs, including assessments for antibody drugs, cellular therapies, gene therapies, oncolytic virus treatment, and other antibody-drug conjugates. Joinn was the first CRO in China to conduct non-clinical drug safety assessment studies for a novel gene therapy, and independently conducted the assessment of SBN1 (ADV P53), the world's first approved gene therapy drug. Joinn also conducted non-clinical drug safety assessments for 1) the first antibody-drug conjugate (ADC) drug candidate in China that was approved by the NMPA for clinical studies, 2) the first bispecific monoclonal antibody in China that was approved for clinical studies, and 3) the first stem cell drug candidate approved by the NMPA for clinical studies.

Figure 20: Joinn's diversified capabilities in various medical fields (as of 7 Feb 2021)

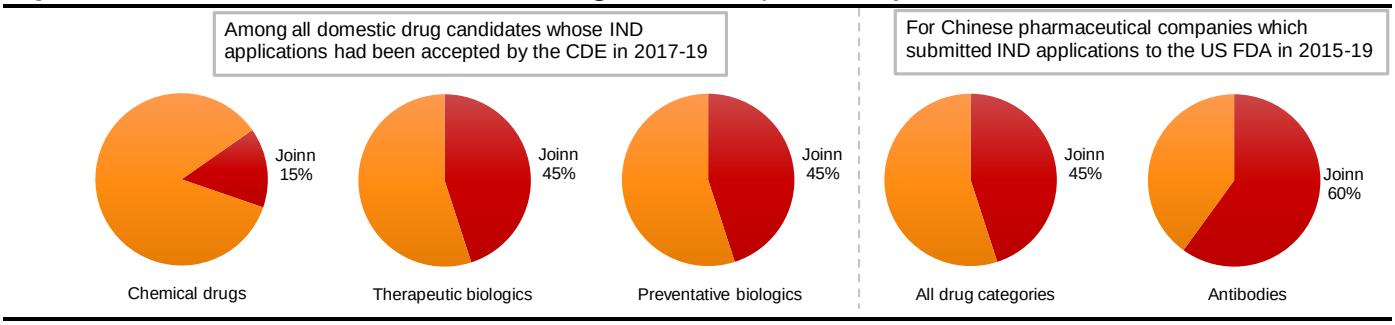


Source: Company data, CMBIGM

As the pioneer in domestic non-clinical DSA sector, Joinn has widely participated in the drug innovation in China and its service quality is highly recognized worldwide. According to F&S, among all domestic drug candidates whose INDs were accepted by China CDE during 2017-19, Joinn provided non-clinical DSA services for over 15% of all chemical drug candidates and 45% of the therapeutic and preventative biologics. For Chinese pharmaceutical companies which submitted IND applications to the US FDA in 2015-19, over 45% of all drug candidates and over 60% of antibody drugs used services from Joinn.

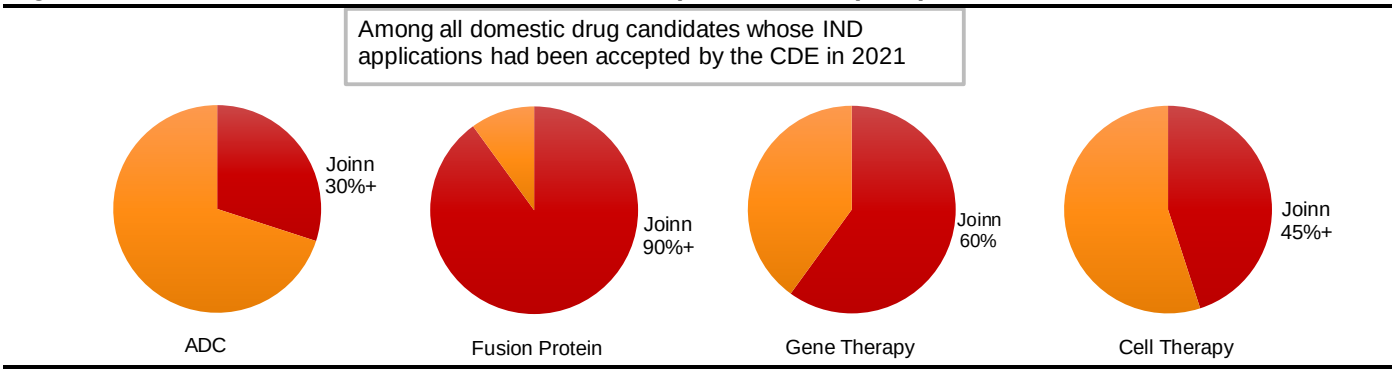
In addition, Joinn quickly sets itself as a major non-clinical DSA service provider for novel therapies, such as ADCs and cell & gene therapies. According to the Company, among IND applications accepted by CDE in 2021, Joinn provided services to more than 30% of all ADCs applications, 60% of all gene therapy applications and more than 45% of all cell therapy applications. Orders from gene and cell therapies reached more than RMB290mn, up by over 80% YoY.

Figure 21: Joinn's involvement in Chinese drug innovation (2015-2019)



Source: F&S, CMBIGM

Figure 22: Joinn's involvement in R&D of novel therapies in China (2021)



Source: Company presentation, CMBIGM

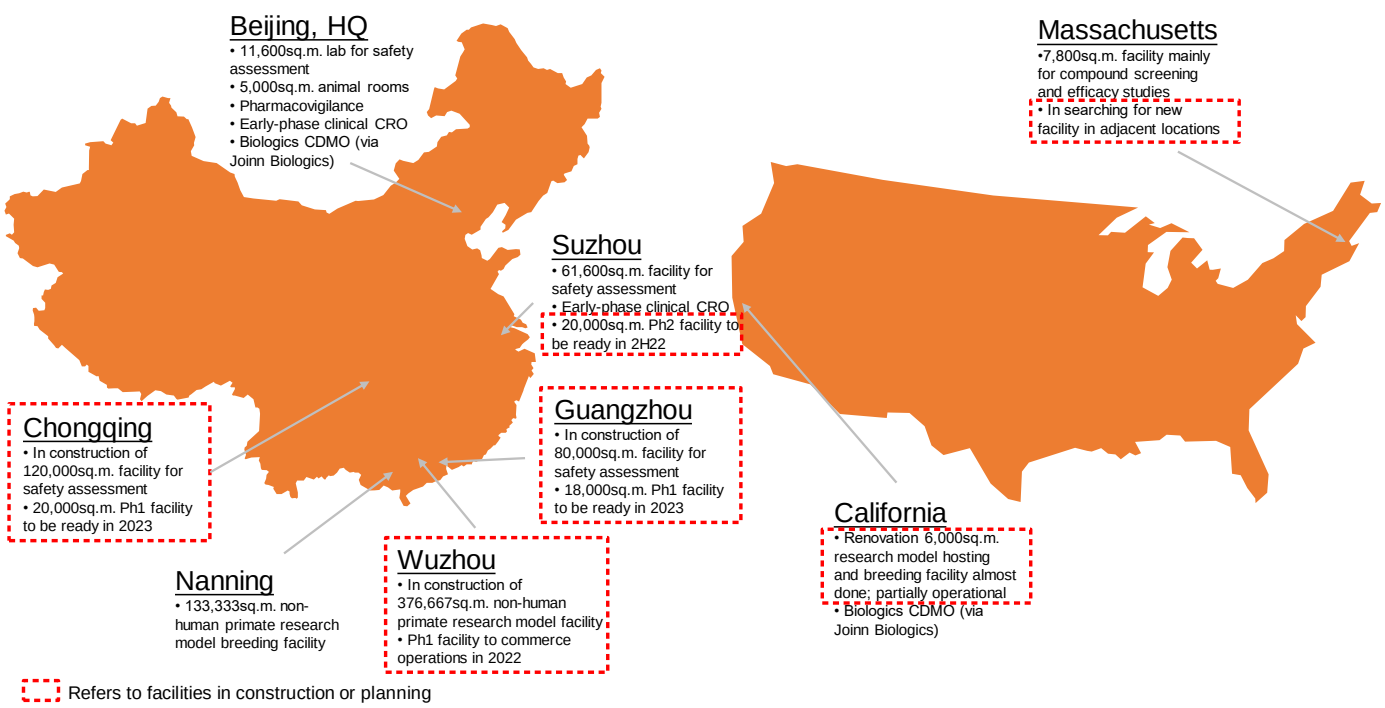
Exapnding facility network in China and the US

Joinn has established a wide facility network in China and the US. In China, Joinn is able to provide full-scale services in non-clinical services and is diversifying its services to clinical CRO services, co-managed phase I clinical research units (CRUs), and bioanalytical services.

In 2019, Joinn acquired Biomere, a discovery-based, specialty CRO located in Worcester, Massachusetts with an international customer base and strong reputation in customer services. The acquisition of Biomere largely enhanced Joinn's presence in the US with facilities in biotech hubs.

Most importantly, Joinn's facilities have passed GLP inspections by healthcare authorities in China and the US. Joinn is able to leverage its multi-national operation network to provide comprehensive services, expand customer pool and improve regulatory know-hows. As China and the US are the two largest economies with the most active pharmaceutical R&D activities in the world, Joinn's Sino-US network gives the Company unparalleled positioning in the long run.

Figure 23: GLP-compliant facility network of Joinn



Source: Company data, CMBIGM

Joinn has strategic reserve of biological assets

Joinn is well positioned to overcome the tight supply and the rising costs of non-human primates. Joinn has established stable cooperation relationship with its major non-human primate suppliers and is actively expanding its in-house breeding capabilities.

Joinn procured the majority of its non-human primate research models from quality third-party suppliers. As Joinn has entered into long-term purchase contracts with some suppliers of non-human primate research models, coupled with its bargaining power from the large procurement volume and long-term relationship with suppliers, Joinn is able to obtain a sufficient supply of non-human primate research models at reasonable prices. As of Sep 30, 2020, Joinn has seven years of cooperation with its largest supplier, 5 years with its third largest supplier and 4 years with its fourth largest supplier.

Figure 24: Joinn's long-term cooperation with suppliers (2017-9M20)

Customer	Start year of cooperation	Major materials purchased	2017	2018	2019	9M20
Supplier A	2014	Research models	18.70%	9.40%	22.80%	29.40%
Supplier J	2020	Research models				5.40%
Supplier K	2016	Research models				4.30%
Supplier L	2017	Research models				3.00%
Supplier C	2012	Research models	7.80%		3.00%	2.50%
Supplier B	2015	Research models, other	9.50%			

Supplier D	2016	Equipment, other consumables	6.90%	9.20%		
Supplier E	2016	Research models	6.80%			
Supplier F	2013	Engineering project		25.50%	6.60%	
Supplier G	2018	Equipment, other consumables		5.30%	10.40%	
Supplier H	2018	Research models		4.10%		
Supplier I	2019	Engineering project			4.10%	
Top 5 total			49.70%	53.50%	46.90%	44.60%

Source: Company data, CMBIGM
Note: All suppliers listed above are based in China

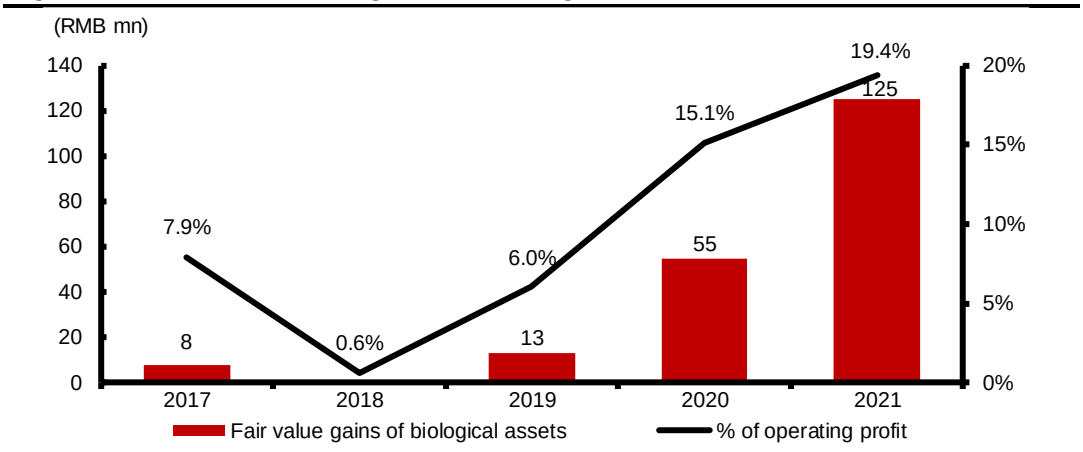
In order to largely increase the scale of non-human primate research models in the long run, Joinn has established animal breeding facilities in Beijing, Suzhou and Nanning and is actively expanding breeding facilities in Suzhou, Guangzhou and Wuzhou.

In Nov 2015, Joinn purchased the first large batch of non-human primate research models for breeding from an independent third party, and have been hosting its non-human primate colonies in its Nanning facilities. Join is actively expanding its research animal breeding facilities. Joinn's approximately 7,500 sqm animal breeding facility in Suzhou was put into use by the end of 2021. Joinn also plans to add approximately 20,000 square meters of facilities in Suzhou which is mainly intended for animal breeding facilities, and is expected to be available for use in the 2H22. In addition, Joinn's new facilities located in Wuzhou will commence operation in 2022 with a breeding capacity of over 15,000 research animals.

We think Joinn may also expand the reserve of research animal models via acquisitions of research animal breeding companies.

Joinn enjoys significant cost advantages thanks to its reserve of biological assets, especially non-human primates. In 2022, Joinn recognized RMB125mn fair value gain from biological assets in 2021, up 129% YoY, which was mainly due to the large rise in non-human primate prices. As of end-2021, Joinn has a total of RMB235mn biological assets, indicating the Company's abundant reserves and consistent cost advantages.

Figure 25: Joinn's fair value gain from biological assets



Source: Company data, CMBIGM

Low exposure to geopolitical risks

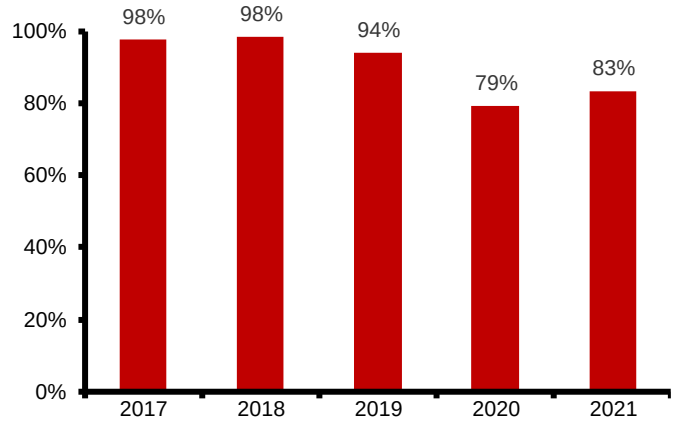
Joinn is less exposed to geopolitical risk than many other CRO companies. Joinn has generated majority of its revenue from China, contributing 83% of its total revenue in 2021.

During 2017 and 9M20, majority of Joinn's Top 5 customers are China based. Thus, Joinn's revenue growth will be mainly driven by the R&D outsourcing demand in China.

Nevertheless, Joinn aims to develop into a global CRO company by further expanding its global footprint. In 2019, the Company acquired Biomere, a discovery-based, specialty CRO located in Worcester, Massachusetts in the US. Joinn also completed the renovation of the 6,000 sqm facilities in California, which will further enhance Joinn's presence in the US. In 2021, Joinn has 16% of its revenue from the US market. We believe overseas expansion will provide as an important long-term growth driver for Joinn.

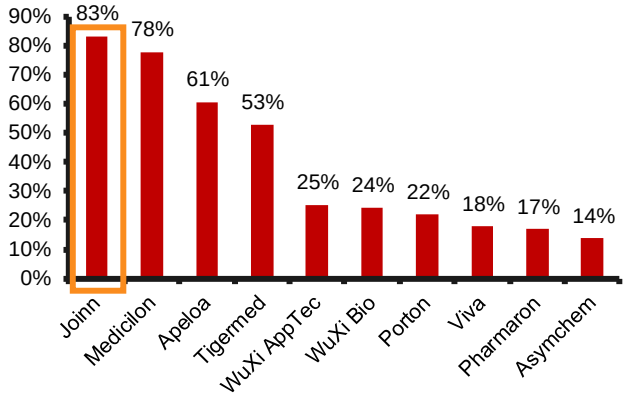
Meanwhile, majority of Joinn's suppliers are also based in China, indicating limited overseas supply chain risk for the Company.

Figure 26: Joinn's historical proportion of revenue from China



Source: Company data, CMBIGM

Figure 27: Percentage of revenue from China for listed China-based CXOs (2021)



Source: Company data, CMBIGM

Figure 28: Majority of Joinn's top 5 customers are China based (2017-9M20)

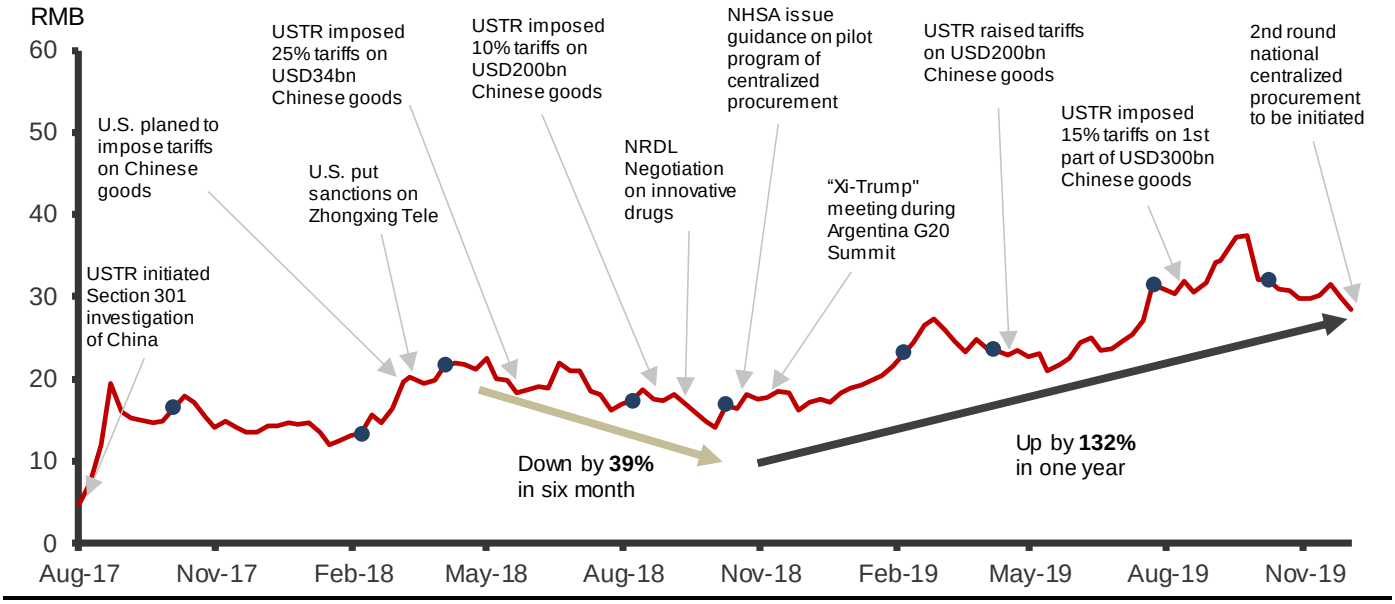
Customer	HQ	Start year of cooperation	Major services provided	2017	2018	2019	9M20
Company I	US	2020	Non-clinical studies				4.2%
Company A	China	2009	Non-clinical studies	4.2%	2.3%		3.2%
Company J	US	2018	Non-clinical studies				2.3%
Company K	China	2019	Non-clinical studies				2.0%
Company L	China	2014	Non-clinical studies				1.6%
Staidson Group	China	2009	Non-clinical studies, research models, pharmacovigilance	4.4%	3.6%	3.2%	
Company B	China	2013	Non-clinical studies	2.7%	3.2%	2.1%	
Company C	China	2015	Non-clinical studies	2.3%			
Company D	China	2010	Non-clinical studies	2.2%			
Company E	China	2016	Non-clinical studies		5.2%		
Company F	China	2009	Non-clinical studies		3.3%	2.5%	
Company G	China	2017	Non-clinical studies			4.1%	
Company H	US	2019	Non-clinical studies			2.5%	
Top 5 combined				**15.8%**	**17.6%**	**14.4%**	**13.3%**

Source: Company data, CMBIGM

Historically, geopolitical factors only had short-term impact on the share price of Joinn (A share) and the recovery of share price was sharp and quick. For example, share prices of Joinn dropped by 39% from May 2018 to Nov 2018 due to the impact of US-China trade

war. The stock then rebounded sharply by 132% in the following 12 months driven by the Company's strong earnings growth.

Figure 29: Joinn (A-share)'s historical share price performance amid China-US trade tensions



Source: Bloomberg, Government websites, CMBIGM

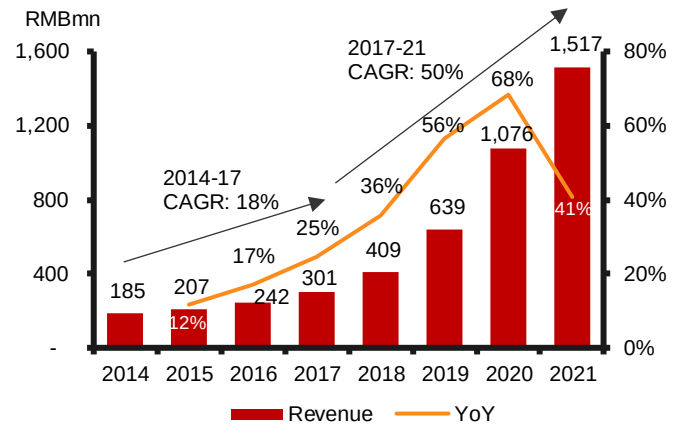
Note: Blue dots indicate positive earnings announced by Joinn. USTR: United States Trade Representative. NHSA: China National Health Security Administration. NRDL: China National Reimbursement Drug List.

Earnings growth continue to accelerate

Joinn's revenue growth accelerated after its A-share IPO in 2017. Joinn booked a revenue CAGR of 18% in 2014-17, while the growth substantially accelerated to 50% CAGR in 2017-21.

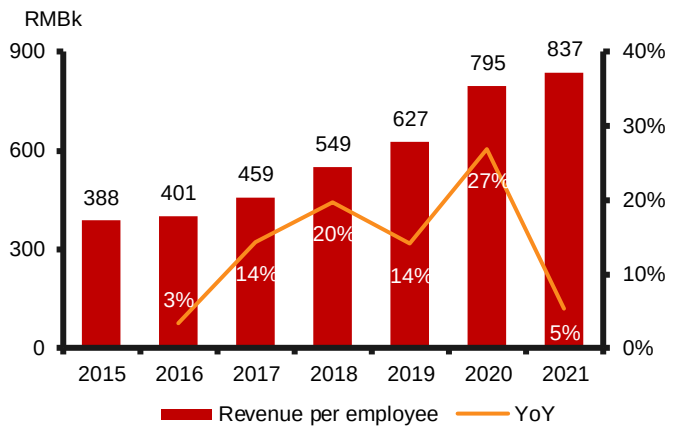
Joinn consistently improved its operating efficiency thanks to the economies of scale and growing competency. Revenue per employee increased at a CAGR of 14% over 2014-21.

Figure 30: Revenue of Joinn



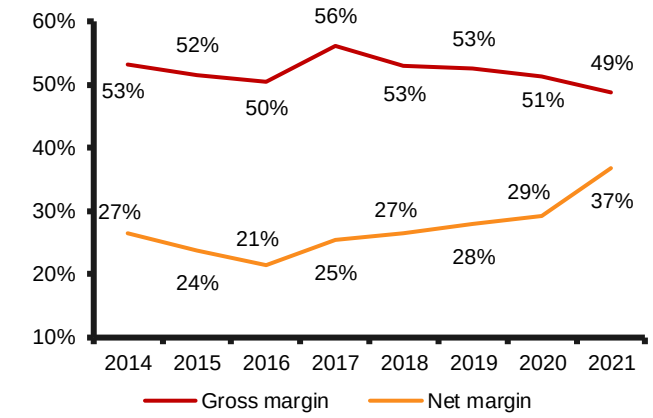
Source: Company data, CMBIGM

Figure 31: Revenue per employee of Joinn



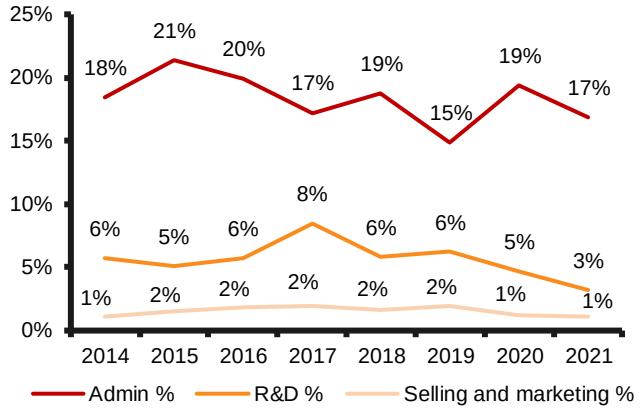
Source: Company data, CMBIGM

Figure 32: Gross margin and net margin of Joinn



Source: Company data, CMBIGM

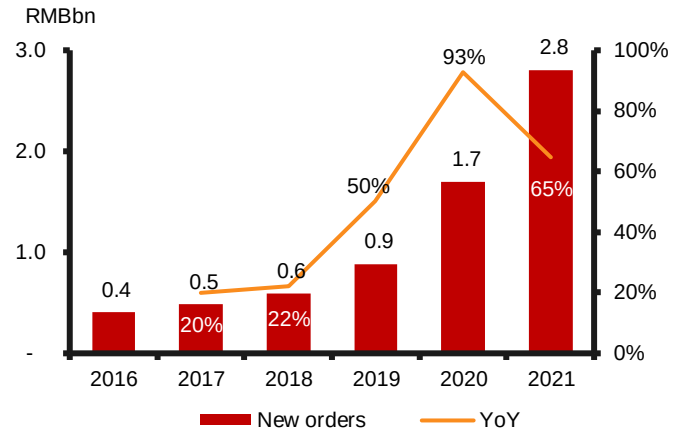
Figure 33: Operating expense ratios of Joinn



Source: Company data, CMBIGM

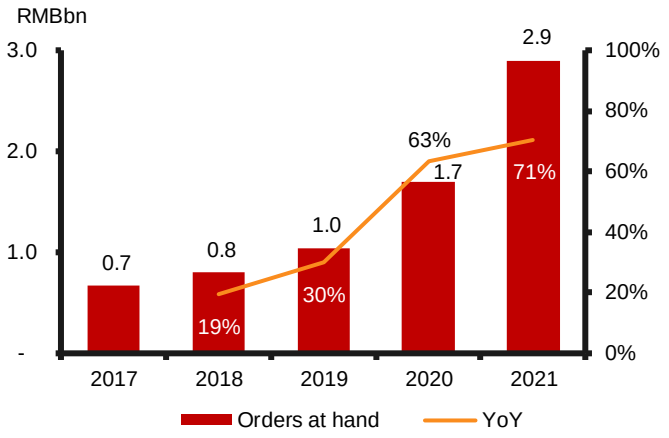
Thanks to the strong demand in DSA services and Joinn's strengthening competitiveness, the Company's new orders and total orders in hand have experienced accelerating growth since 2019. During 2021, Joinn added RMB2.8bn new orders (+ 64% YoY), including RMB280mn new orders earned by Biomere (75% YoY). As of end-2021, Joinn had a total of RMB2.9bn orders in hand (+67% YoY). The strong orders growth will continue to drive the revenue increase for Joinn in 2022E and beyond, in our view.

Figure 34: Joinn's new orders



Source: Company data, CMBIGM

Figure 35: Joinn's total orders in hand



Source: Company data, CMBIGM

Explore business opportunities beyond DSA

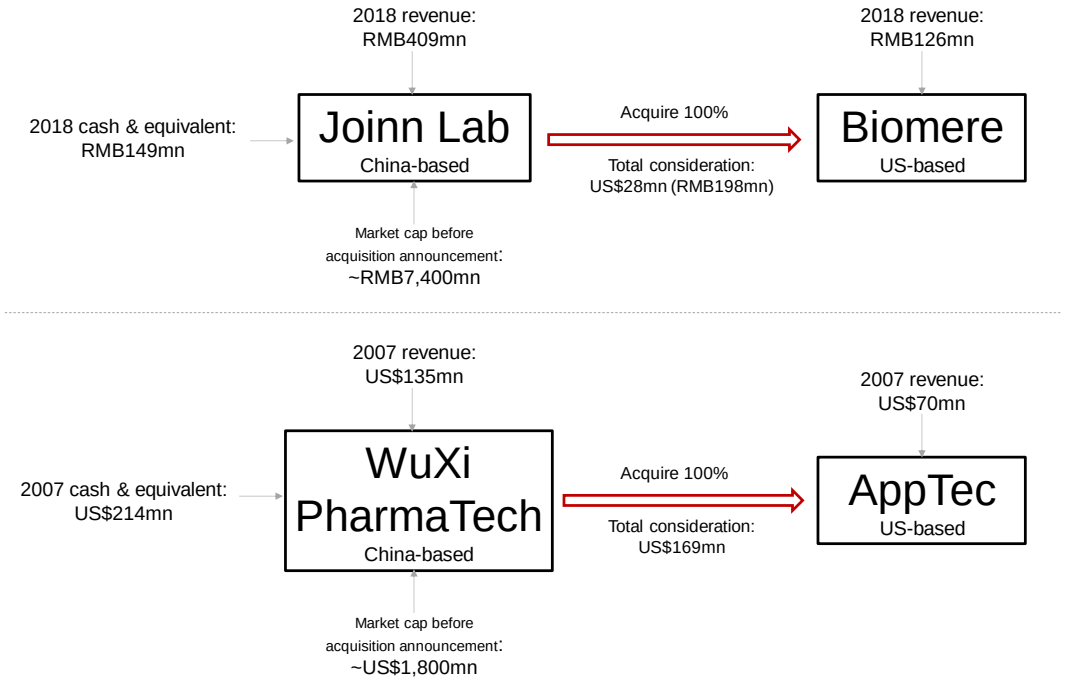
With more than 20 years' of experiences in DSA sector, Joinn is now strategically expanding its services to both upstream and downstream areas. Joinn has enhanced its capabilities in drug discovery and screening services, including pharmacology, toxicology and DMPK studies. At the same time, through its extensive experience in non-clinical studies, regulatory knowledge and large customer base, Joinn has expanded its business to early-stage clinical trial and related services which share certain common bioanalytical methods and practices with pre-clinical studies.

The Company acquired US-based Biomere in 2019 to enhance the drug discovery capability as well as to expand business network in the US. Furthermore, through investing a minority stake in Joinn Bio, a biologics CDMO company, Joinn can effectively leverage its rich experiences in biologics DSA to explore the business opportunities in the rapidly growing biologics CDMO market.

Acquisition of Biomere to expand overseas network

Biomere acquisition is a strategic step for Joinn. Joinn acquired 100% equity interests of Biomere in Dec 2019 with a total cash consideration of US$28mn, which was the largest acquisition deal in Joinn's history. We think that Joinn's acquisition of Biomere is comparable to WuXi AppTec's acquisition of AppTec in 2008 which paved the way for global expansion. Through the acquisition of AppTec, WuXi AppTec obtained biologics capabilities and expertise, gained a significant US operational footprint, and expanded its customer base and addressable market size. Similarly, we believe the acquisition of Biomere will substantially enhance Joinn's capability in drug discovery and pharmacology, and help Joinn to enhance its presence in the US market.

Figure 36: Joinn and WuXi AppTec's overseas acquisition deals



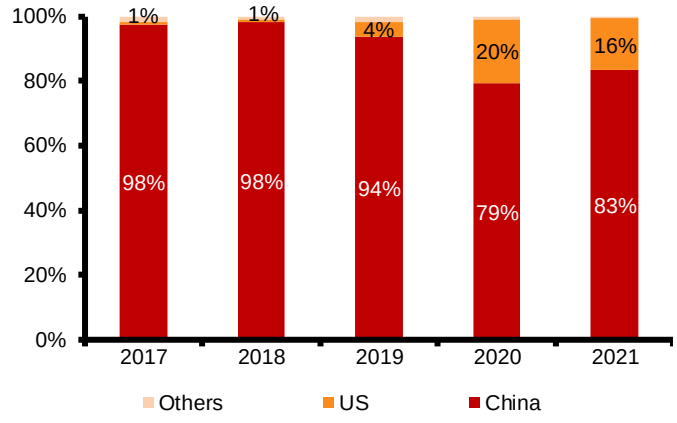
Source: Company data, CMBIGM
Note: Biomere acquisition was announced in May 2019 and AppTec acquisition was announced in Jan 2008. WuXi PharmaTech was renamed to WuXi AppTec after acquiring AppTec.

Biomere effectively expands Joinn's geographic coverage to the US. As a US-based specialty CRO, Biomere has R&D facilities located in Massachusetts, a biotech hub of US.

Combined with the facilities in California set up by Joinn, the Company aims to establish a strategic bi-coastal presence in the US with each of its US facilities located close to the two life science centers in the US, which will largely help the Company to access US customers.

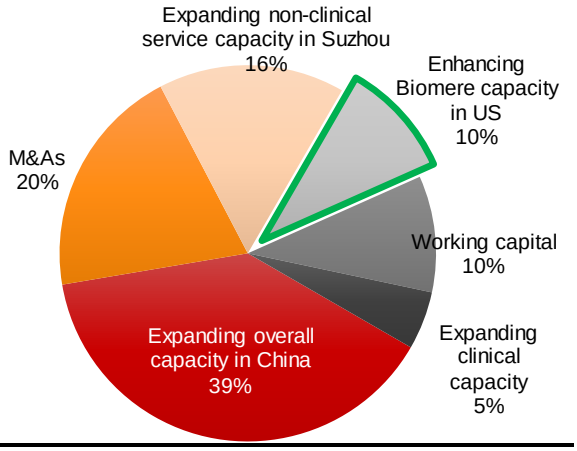
In fact, Joinn allocates 10% of its HK IPO proceeds, or ~RMB625mn, for the further enhancement of Biomere capability in the US. In 2021, Joinn generated 16% of total revenue from the US, which was mainly contributed by Biomere, vs less than 1% in 2018.

Figure 37: Geographical split of Joinn's revenue (2017-2021)



Source: Company data, CMBIGM
Note: Joinn completed acquisition of Biomere in Dec 2019

Figure 38: Joinn's intention of use of HK IPO proceeds (2021)

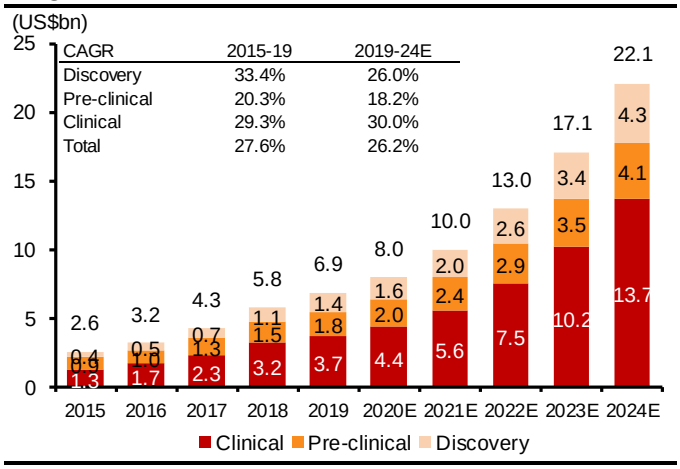


Source: Company data, CMBIGM

Clinical trial services offer great synergies with DSA business

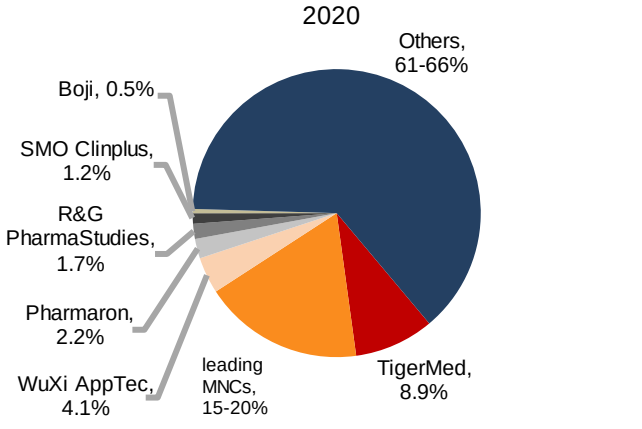
China clinical CRO market is fragmented yet represents the largest component of China CRO market, creating large business opportunities for new entrants. According to Frost & Sullivan, clinical CRO market accounted for 55% of the overall CRO market in China in 2020 and clinical CRO market is expected to grow faster than the overall CRO market in 2019-24E. Based on our estimates, Tigermed is the largest clinical CRO by revenue, while Tigermed only took 8.9% of China market share in 2020.

Figure 39: Breakdown of China CRO market by R&D stage



Source: F&S, CMBIGM

Figure 40: Market share of China clinical CRO market



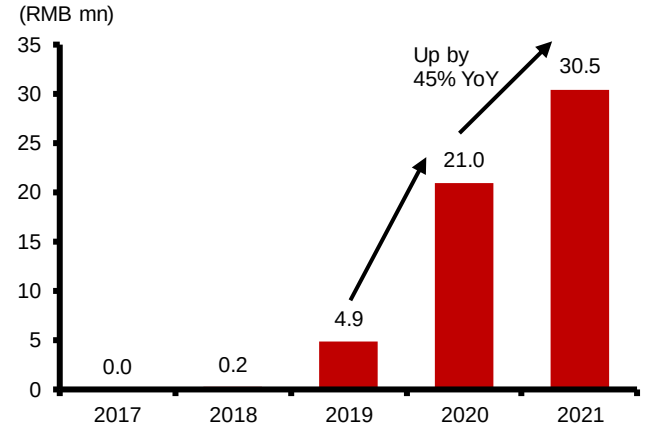
Source: F&S, Company data, CMBIGM
Note: Based on market size data from F&S and reported clinical CRO revenue from companies. Market share of leading MNCs is based on CMBIGM estimates.

By leveraging its large customer base for non-clinical services Joinn successfully expanded its business to clinical trial and related services, with a particular focus on early-stage clinical trials. As phase 1 studies share certain common bioanalytical methods and practices with non-clinical studies, we believe Joinn will effectively extend its services to early-stage clinical trials as the customer's drug candidates moving into clinical stages.

Joinn's clinical trial and related services include 1) clinical CRO services, 2) co-managed Ph 1 clinical research units (CRUs) and 3) bioanalytical services. For clinical CRO services, Joinn provides a variety of services including clinical trial operations, medical writing and translation, medical registration services, statistical analysis, independent audits and pharmacovigilance. For the CRU support services, Joinn has established non-exclusive collaboration with three publicly owned Grade III hospitals, in order to provide early-stage clinical trials for customers, including Phase I clinical trials and bioequivalence studies. In addition, leveraging its expertise in non-clinical studies, Joinn also provides bioanalytical services, including biomarker analysis and immunogenicity analysis.

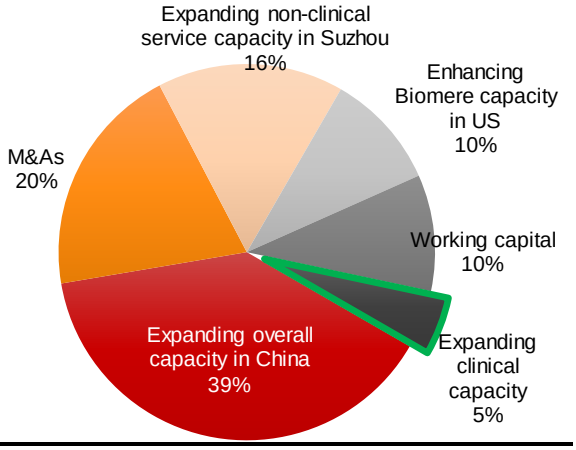
Additionally, Joinn allocates 5% of its H-share IPO proceeds, or ~RMB313mn, to expand its clinical services. Joinn will continue to add experienced staff and to expand facilities for clinical trial services, in order to rapidly scale its clinical CRO business. In 1H21, clinical orders surged over 150% YoY to ~RMB40mn. During full-year of 2021, revenue from clinical services amounted to RMB31mn, up by 45% YoY. Although Joinn's clinical services are still at the early stage of development, we believe the business could experience fast growth driven by Joinn's enhanced clinical service capabilities.

Figure 41: Joinn's clinical trial and related services revenue



Source: Company data, CMBIGM

Figure 42: Joinn's intention of use of HK IPO proceeds (2021)



Source: Company data, CMBIGM

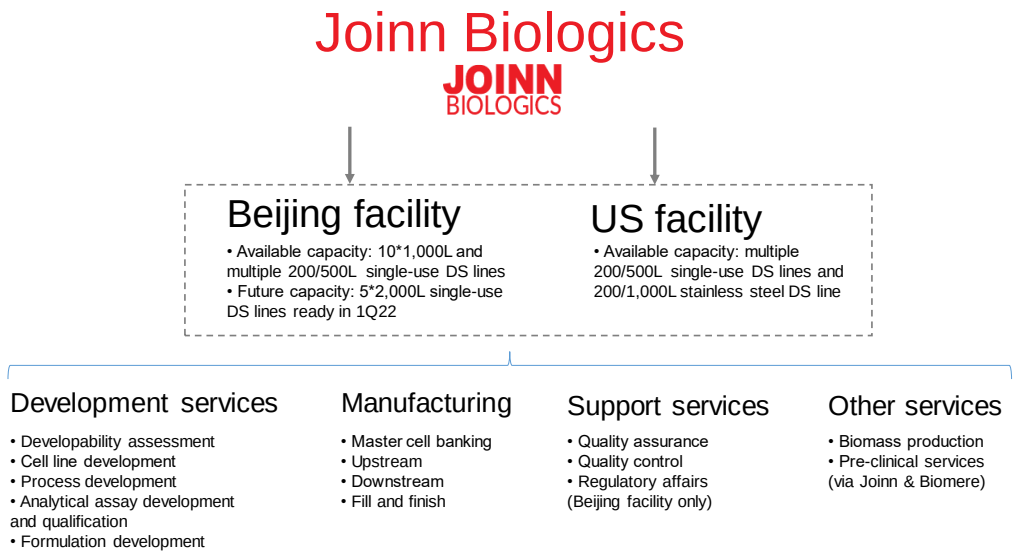
Exlpore opportunities in biologics CDMO market

Joinn's rich experiences in non-clinical DSA services for biologics serves as a good entry point for Joinn to explore opportunities in biologics CDMO market. According to F&S, among all domestic drug candidates whose INDs were accepted by China CDE during 2017-19, Joinn provided non-clinical DSA services for c. 45% of the therapeutic and preventative biologics.

To capture the great potential of biologics CDMO market, Joinn Biologics (Joinn Bio) was founded in 2018 with facilities located in both China and US and offers a comprehensive range of biological CDMO services. Joinn Bio offers its clients a reliable option for further DSA work at Joinn, while also secures potential contracts for Joinn when early-stage biological drug candidates advance to preclinical and clinical development stage. As Join

Bio is still at the early stage of business development, it recognized a net loss of US$10.9mn in 2020.

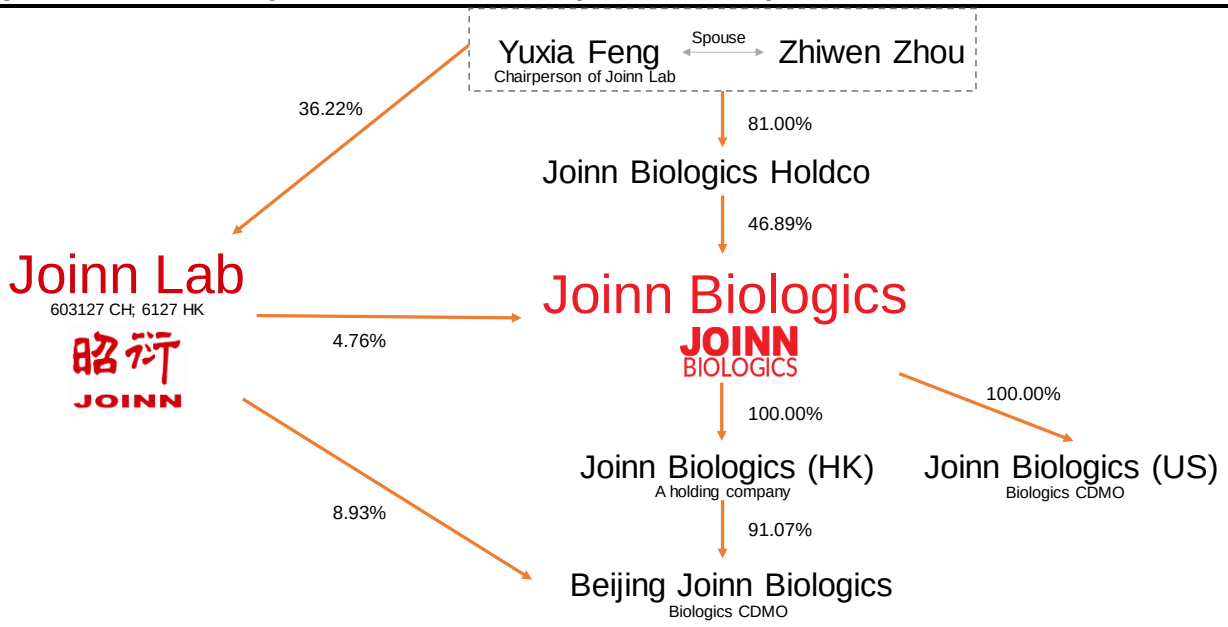
Figure 43: Capacities of Joinn Bio



Source: Company data, CMBIGM; Note: DS refers to drug substance

We should note that Joinn doesn't consolidate Joinn Bio's financial results as Joinn holds a minority stake in Joinn Bio. Joinn Biologics Holdco, the largest shareholder of Joinn Bio, is controlled by the couple of Yuxia Feng who are also the largest shareholder of Joinn with 36.22% stake. Joinn invested US$50mn in Joinn Bio in Dec 2021 for 4.76% stake of Joinn Bio. Meanwhile, Joinn directly hold 8.93% stake in Joinn (Beijing) Biotech (北京昭衍生物技术有限公司), which is the operational entity of Joinn Bio in China.

Figure 44: Shareholding structure of Joinn Bio (as of Dec 2021)



Source: Company data, CMBIGM; Note: JOINN Biologics Holdco is the largest shareholder of Joinn Bio.

Comparison with Charles River Lab

Charles River Lab – a global leading preclinical CRO

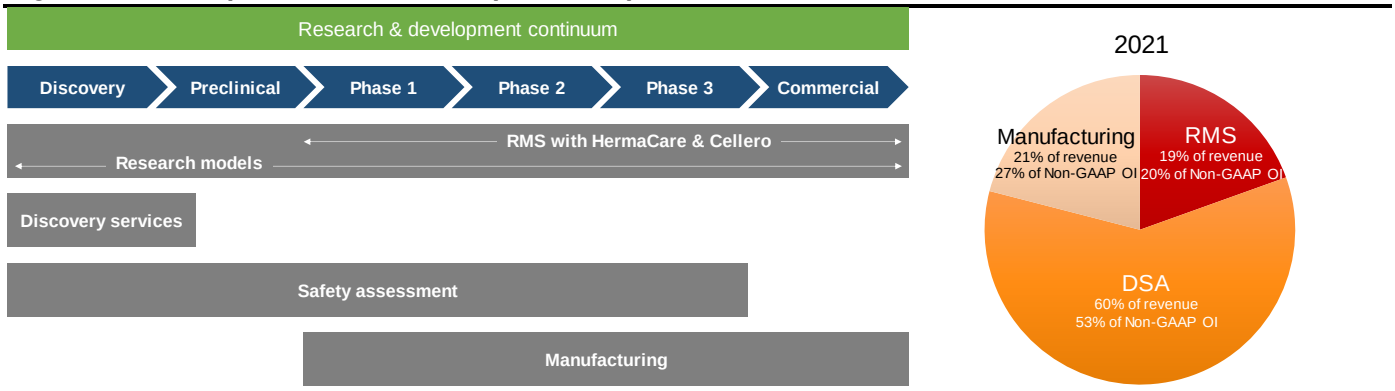
Founded in 1947, Charles River Lab (CRL) is a pioneer as well as the largest global pre-clinical CRO service provider. We believe a comprehensive analysis of CRL will help us better understand the development rationale of pre-clinical CRO companies based in China, such as Joinn, as well as the development trend of China pre-clinical CRO industry.

CRL, the world's largest provider of research model and drug safety assessment services

CRL is a full service, non-clinical CRO. After more than 75 years' operation history, CRL has developed as the world's largest provider of research model and DSA services. In 2021, CRL booked a total revenue of US$2,756mn, representing a YoY growth of 21% and a 5-year CAGR of 20%.

CRL has three reporting segments: 1) research models and services (RMS), 2) discovery and safety assessment (DSA) and 3) manufacturing solutions (Manufacturing). CRL is a global leader in the production and sale of the most widely used rodent research model strains and purpose-bred rats and mice. In 2021, RMS accounted for 19.5% of CRL's total revenue. DSA business segment provides services including innovative drug discovery and development, safety testing and others. In 2021, DSA segment represented 59.5% of CRL's total revenue. CRL's Manufacturing segment is comprised of Microbial Solutions, Biologics Solutions, and Avian Vaccine Services. In addition, Manufacturing accounted for 21.0% of the total revenue in 2021.

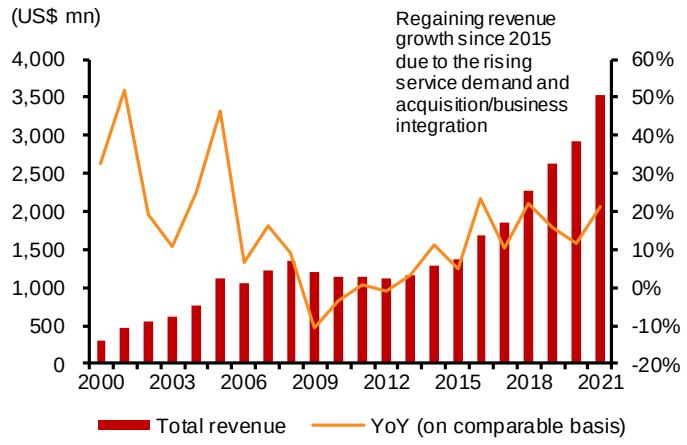
Figure 45: CRL's portfolio of services (as of 2021)



Source: Company data, CMBIGM; Note: OI refers to operating income.

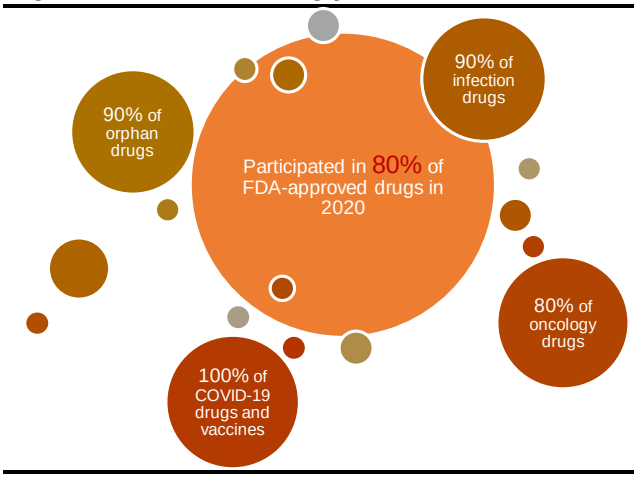
According to the Company, CRL takes 36% share in both the global research model market and the global DSA market, ranking No.1 in both markets. CRL's services are highly recognized and widely used by pharmaceutical/biotech companies worldwide. CRL participated in the R&D of 80% of FDA-approved drugs in 2020, including 100% of the COVID-19 drugs and vaccines.

Figure 46: Revenue and revenue growth of CRL



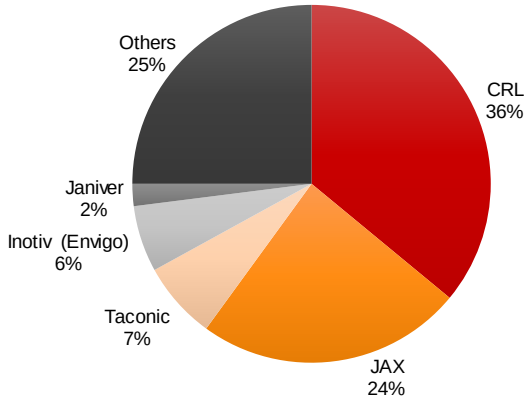
Source: Company data, CMBIGM
Note: YoY growth in 2006 and 2010 was based on restated numbers

Figure 47: Global leading position of CRL



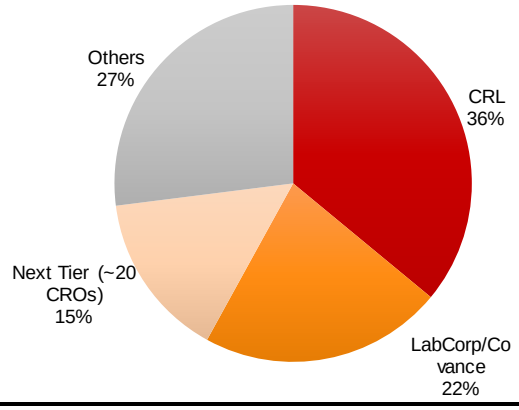
Source: Company data, CMBIGM

Figure 48: Global market breakdown of research models and associate services (as of Jan 2022)



Source: CRL management estimates, CMBIGM
Note: JAX stands for Jackson Laboratory

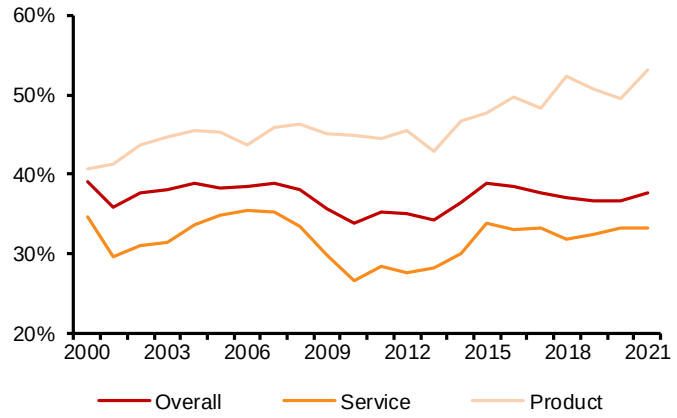
Figure 49: Global market breakdown of outsourced safety assessment services (as of Jan 2022)



Source: Wall Street research, L.EK. Consulting, and CRL management estimates, CMBIGM

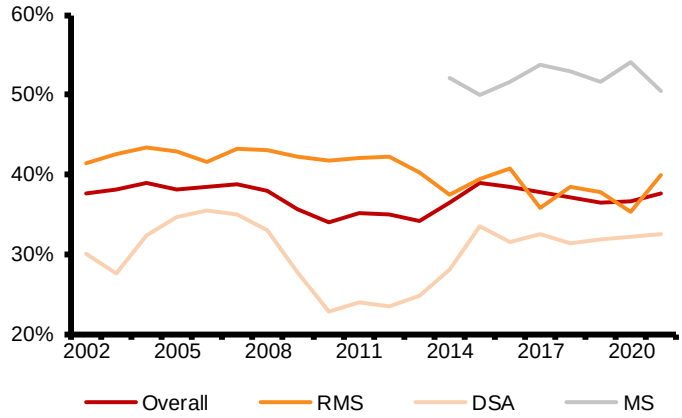
CRL's blended gross margin remained relatively stable since 2000, thanks to its increasing pricing power on services which was offset by rising labor and raw material costs. During 2013 and 2021, manufacturing solutions segment delivered gross margins of 49-54% and the DSA segment had gross margins of 25-34%.

Figure 50: CRL's gross margins by service/ product



Source: Company data, CMBIGM
Note: Cost of sales exclude amortization of intangible assets.

Figure 51: CRL's gross margins by segment

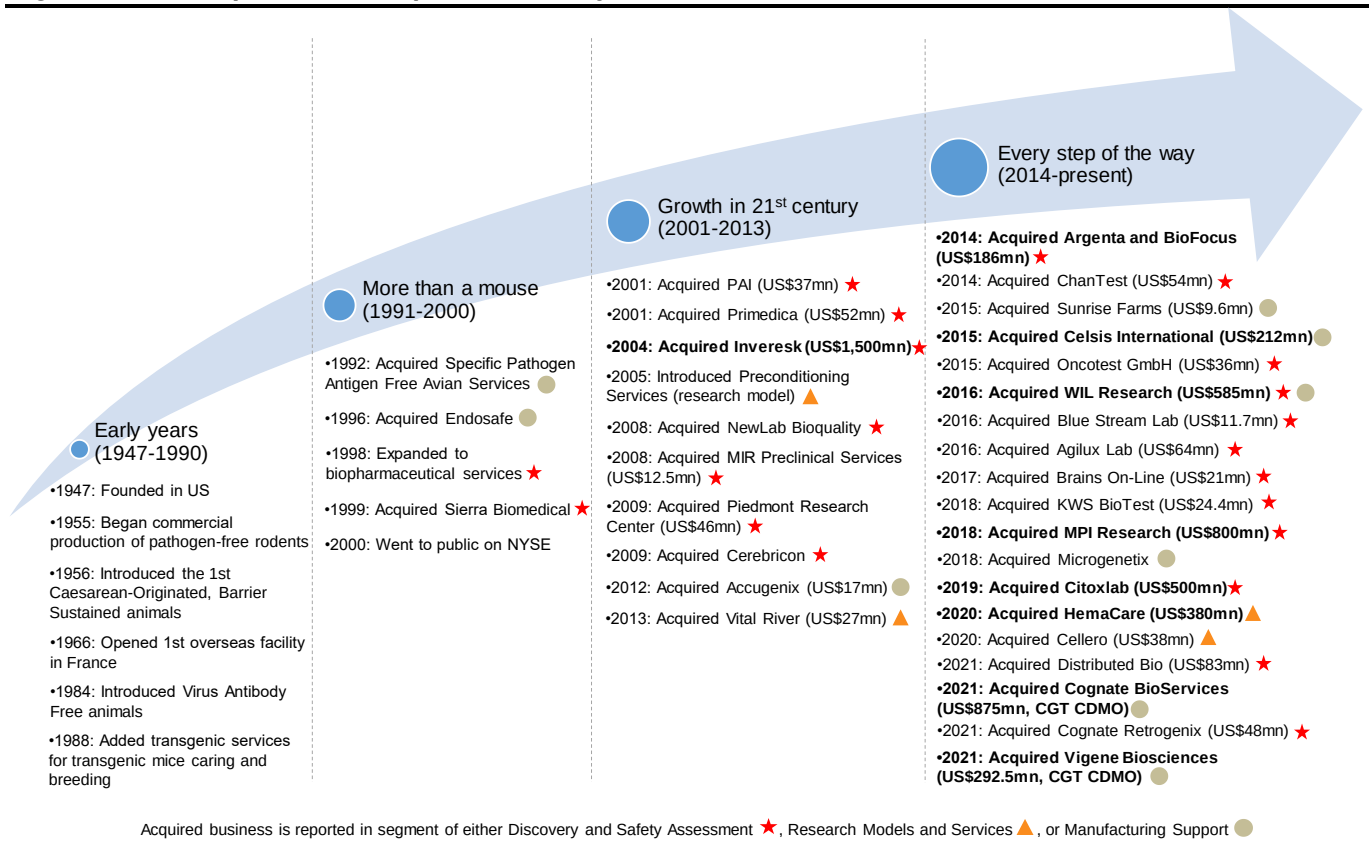


Source: Company data, CMBIGM
Note: RMS refers to Research Models and Services. DSA refers to Discovery and Safety Assessment. MS refers to Manufacturing Solutions. MS was reported under RMS before 2014. Cost of sales excluded amortization of intangible assets.

M&As play a vital role in CRL's development history

M&As characterize the last 20 years of development of CRL, especially since 2014. CRL switched to a service-oriented strategy from a product-oriented strategy in 1999, as service business is more scalable and highly complemented to research model business. Under this strategy, CRL proactively seeks M&A opportunities to enhance its service capabilities.

Figure 52: Development and acquisition history of CRL

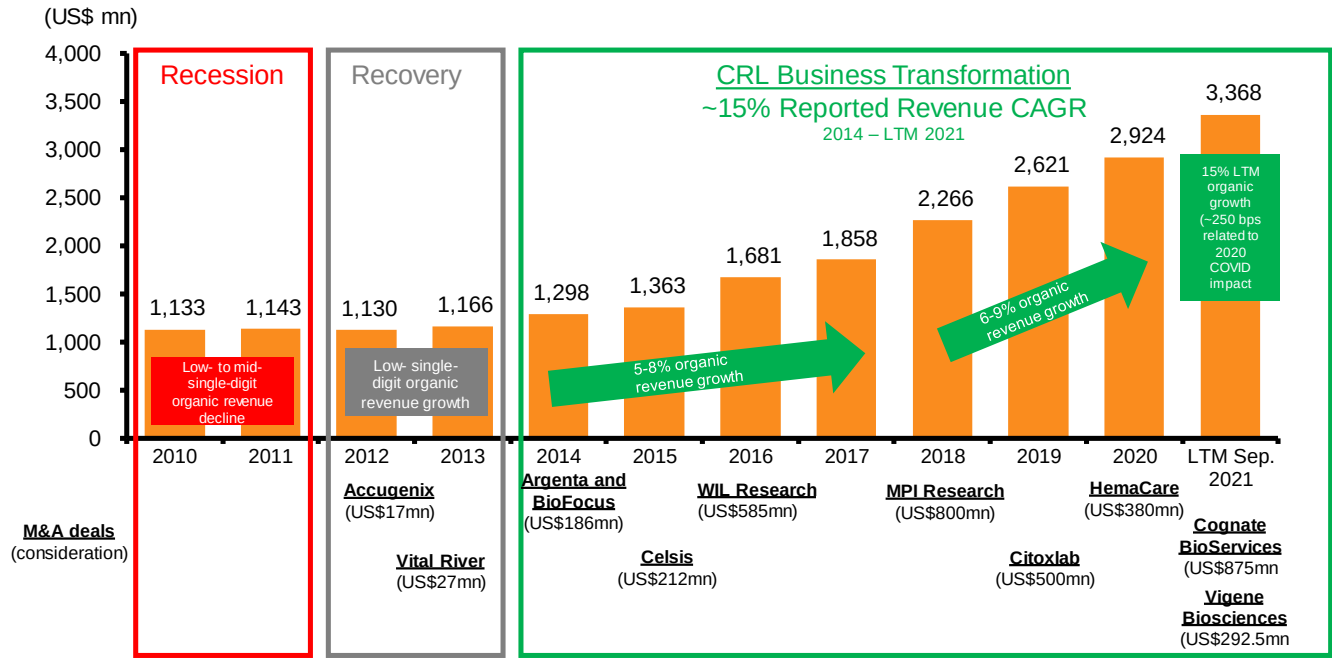


Source: Company data, CMBIGM
Note: Acquisitions with transaction value above US$100mn are highlighted in bold

Important M&A deals in CRL's history include the acquisition of Inveresk in 2004 (deal size of US$1.5bn, the largest M&A deal in CRL's history), WIL Research in 2016 (deal size of US$585mn), and MPI Research in 2018 (deal size of US$800mn). We notice that the focus of CRL's M&As has shifted to cell and gene therapy CDMO area since 2020. Based on data provided by CRL, M&As contributed about half of its growth over 2014-2020 and CRL will continue to put M&As as top priority of its growth strategy.

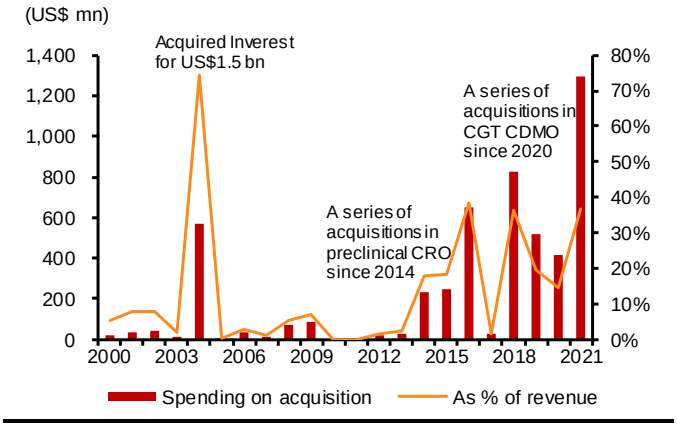
CRL's spending on acquisitions have maintained at a high level, which was generally over 15% of its revenue since 2014 (except 2017). During 2020 and 2021, CRL has invested US$1.7bn on six acquisitions. Thanks to active M&As, CRL's reported revenue growth has outpaced organic growth in the past seven years. CRL also has a relatively low capex ratio as % of revenue (lower than 6.5% since 2014) because of the company's key focus on external expansion via M&As.

Figure 53: CRL's reported revenue growth outpaced organic growth thanks to M&As



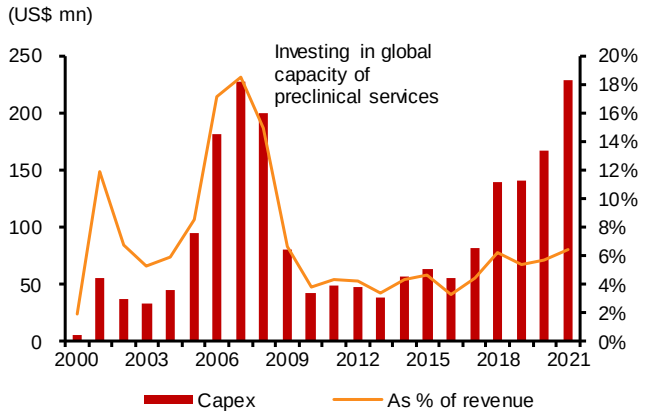
Source: Company presentation, CMBIGM

Figure 54: CRL's spending on acquisitions



Source: Company data, CMBIGM
Note: Spending on acquisitions is net of cash acquired

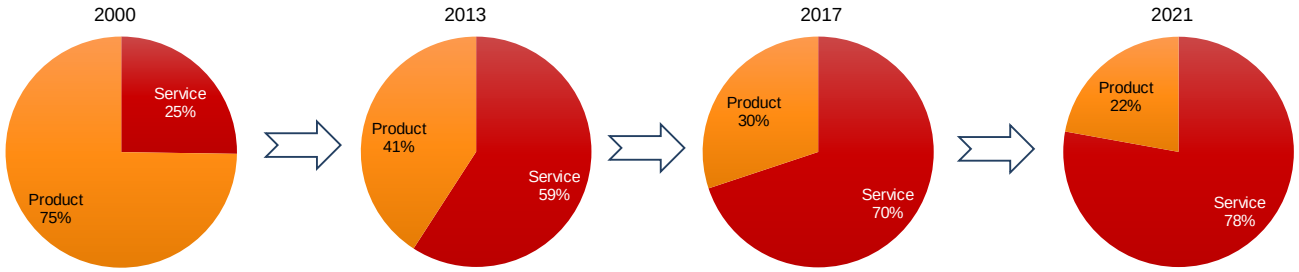
Figure 55: CRL's capex



Source: Company data, CMBIGM

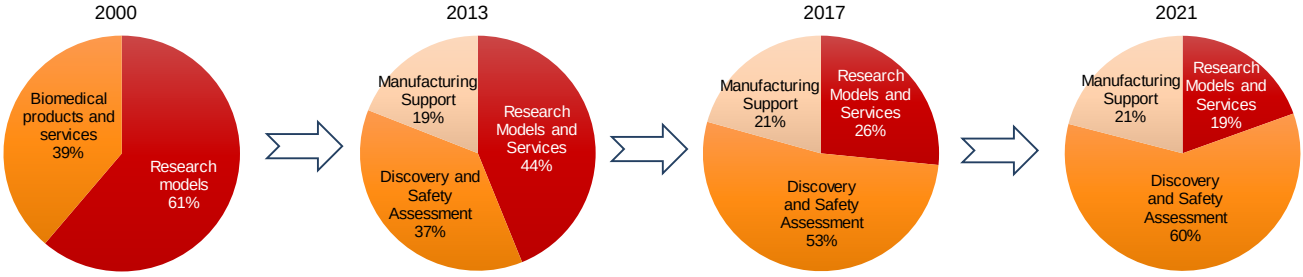
CRL's revenue mix has changed substantially along with the Company's M&A activities. Service revenue only accounted for 25% of CRL's total revenue in 2000, while the percentage increased to 59% in 2013 and further rise to 78% in 2021. By business segment, the proportion of revenue from discovery and safety assessment segment exceeds that of research model segment, contributing 60% of CRL's total revenue in 2021.

Figure 56: Revenue mix changes of CRL by service/ product



Source: Company data, CMBIGM

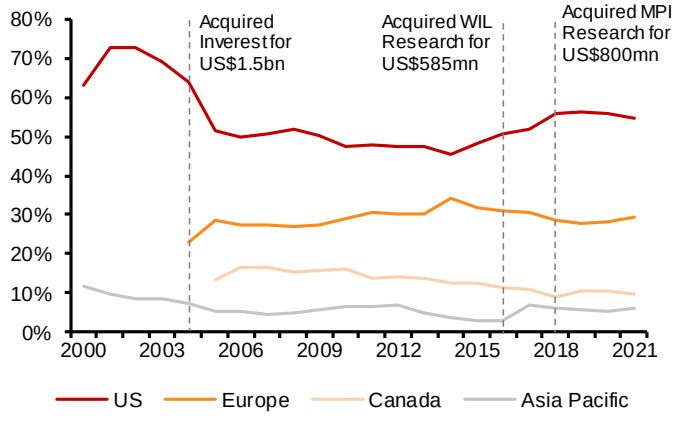
Figure 57: Revenue mix changes of CRL by segment



Source: Company data, CMBIGM

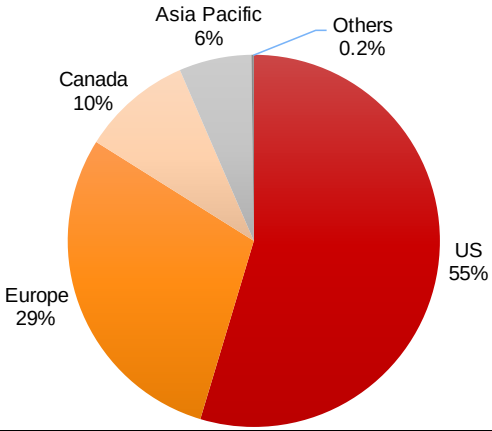
M&As has also helped CRL to geographically diversify its business while US still remains as the largest market for CRL. CRL's proportion of revenue from the US has gradually decreased from over 70% in 2001 to 45% in 2014. In 2021, the US market contributed 55% of CRL's total revenue, followed by 29% from Europe and 10% from Canada. With US continuing to be an R&D hub for pharmaceutical/biotech companies, we expect US market to continue to be the largest revenue source for CRL.

Figure 58: Historical geographic revenue breakdown of CRL



Source: Company data, CMBIGM
Note: Asia Pacific refers to Japan before 2017.

Figure 59: Geographic breakdown of CRL's revenue (2021)



Source: Company data, CMBIGM
Note: Others include operations in Brazil and Israel.

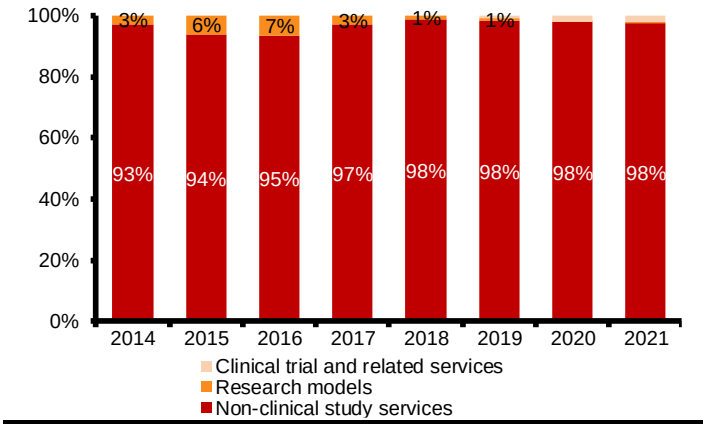
What can Joinn learn from CRL

Service business as long-term focus

Joinn has been concentrating in providing preclinical services, particularly DSA services, since the establishment of the Company in 1998. The Company's service-focus strategy is consistent with CRL's strategy since 1999. To date, non-clinical services account for the majority of revenue of Joinn. We think non-clinical services are more scalable than research model business and Joinn's service-focus strategy will lead to sustainable business growth in the long run.

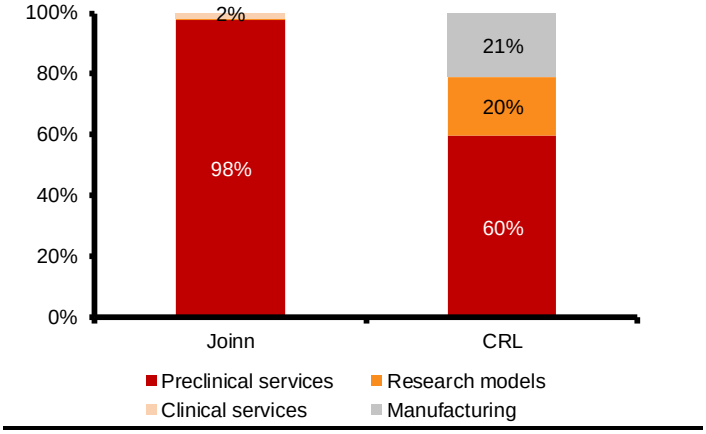
Joinn's revenue from research models declined sharply after 2016, as the Company used the majority of its internally-bred/hosted research models for conducting DSA projects for clients, instead of directly selling these research models to external customers. This helps Joinn to effectively control its cost of services, considering the fast increasing prices of research models, especially non-human primates.

Figure 60: Joinn's historical revenue breakdown by segment



Source: Company data, CMBIGM

Figure 61: Comparison of revenue breakdown between Joinn and CRL (2021)

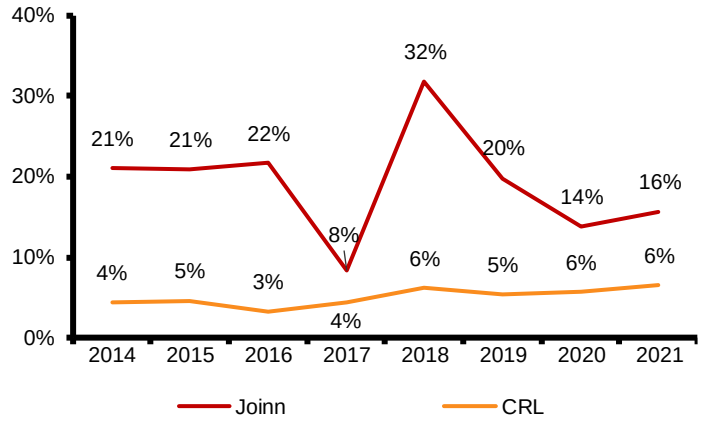


Source: Company data, CMBIGM

Acquisition as a key growth driver

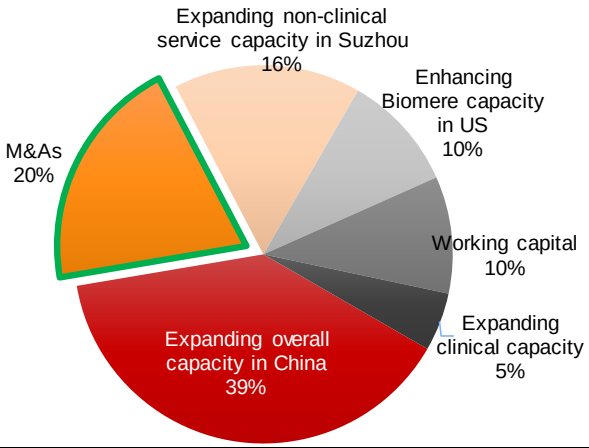
Joinn emphasized the organic growth by continuously investing in capex, resulting into a much higher capex ratio as % of revenue than that of CRL. We believe M&As has become key growth drivers for CRL over the history, which could be successful experiences to be learnt by Joinn. Joinn was not active in M&As until its acquisition of Biomere in 2019. With the completion of its HK IPO in early-2021, Joinn is both financially sufficient and fundamentally ready to accelerate M&A activities. Actually, Joinn plans to use 20% of its HK IPO proceeds, or ~RMB1,250mn, in M&As to enhance its capabilities and to expand overseas by 2023.

Figure 62: Comparison of capex as % of revenue between Joinn and CRL



Source: Company data, CMBIGM

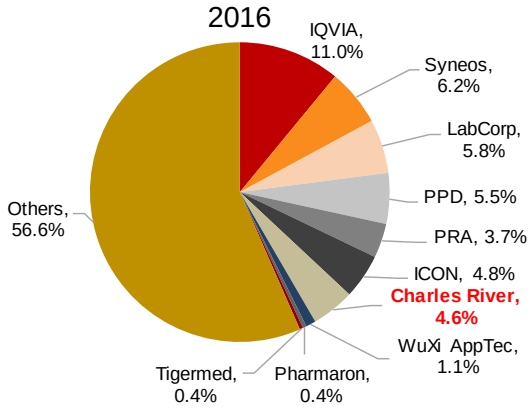
Figure 63: Joinn's intended use of HK IPO proceeds (2021)



Source: Company data, CMBIGM

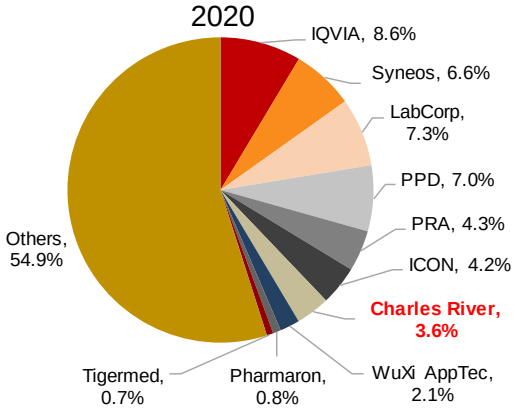
The Global CRO market, including discovery, preclinical and clinical areas, is fragmented and leaves abundant room for consolidation. Based on data from Frost & Sullivan and our estimates, the top 5 CROs took 33.7% share of global CRO market in 2020 and China-based CROs have been gaining market share from their global competitors since 2016. Given that Joinn generated 21% of its total revenue from overseas market in 2020, which was one of the lowest among major listed Chinese CXOs, we believe Joinn has large potential in global expansion over the long term.

Figure 64: Global CRO market landscape (2016)



Source: Company data, CMBIGM
Note: Based on market size data from F&S and reported CRO revenue.

Figure 65: Global CRO market landscape (2020)



Source: Company data, CMBIGM
Note: Based on market size data from F&S and reported CRO revenue.

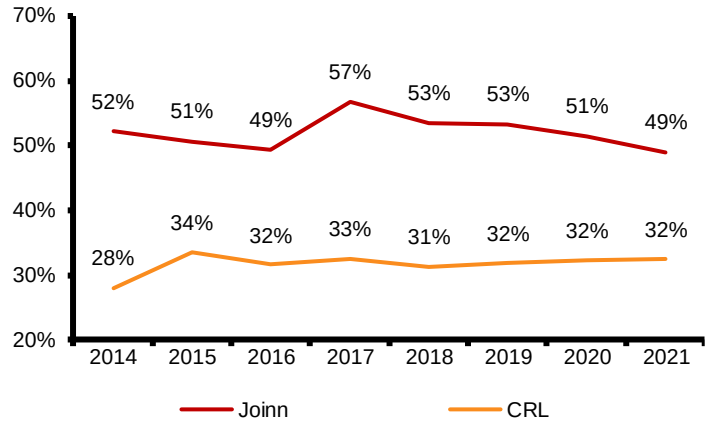
Joinn to expand overseas leveraging cost advantages and overseas acquisitions

Joinn has consistently generated higher gross margins than CRL, which was attributed to lower operating costs for Joinn, particularly labor costs, in our view. Joinn's non-clinical services maintained over 49% gross margin from 2014 to 2021 while gross margin of CRL's discovery and safety assessment services were kept at 32-34% over 2015-21. In 2019, labor costs accounted for 36% of Joinn's total cost of sales.

Considering the generally lower salary level in China than that in the US, we expect Joinn to continue to attract overseas customers thanks to cost advantages. After the acquisition

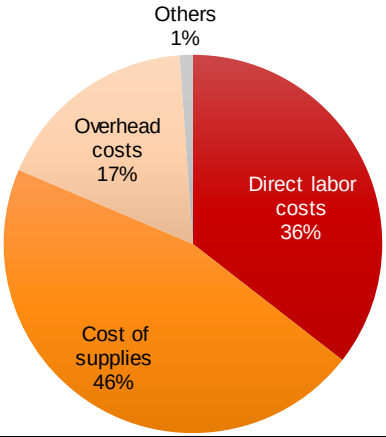
of Biomere in 2019, Joinn will become more active in the global pre-clinical service market, in our view.

Figure 66: Comparison of gross margins of preclinical services between Joinn and CRL



Source: Company data, CMBIGM
Note: Preclinical services refers to non-clinical studies services for Joinn and discovery and safety assessment for CRL. Cost of sales for CRL excludes amortization of intangible assets

Figure 67: Cost of services breakdown of Joinn (2019)



Source: Company data, CMBIGM

Joinn to enhance discovery capacity

A well-established discovery capacity can effectively help CROs to gain pre-clinical projects. Discovery works generate necessary know-hows on drug candidates which is fundamental to pre-clinical work. We notice significant synergies between CRL's discovery business and DSA business. According to CRL, ~50% of clients using its discovery services continue to cooperate with the company for DSA services. Through M&As, CRL has established a full spectrum of discovery capabilities. In 2014, CRL acquired Argenta and BioFocus, which substantially enhanced the company's discovery capabilities. CRL continued to acquire Agilux Lab, an integrated discovery service provider of small and large molecules, in 2016 and Distributed Bio, a next-generation antibody discovery company, in 2021 to further expand CRL's discovery capacity.

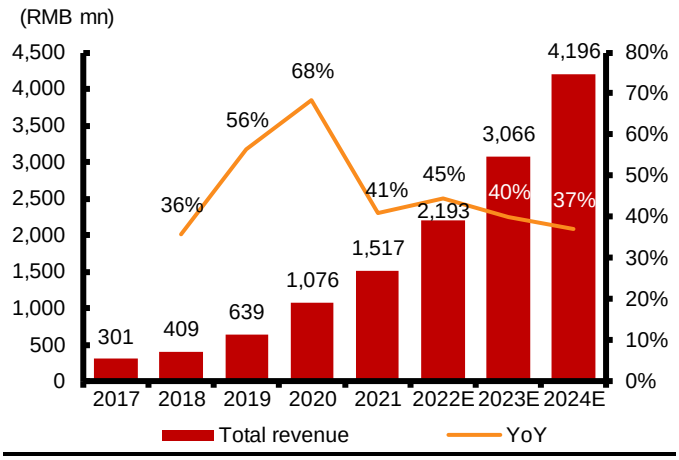
Joinn is still at early stage of developing its drug discovery business. The Company intends to grow its discovery capability by acquiring some specialized discovery service providers. We expect Joinn to also establish an integrated platform of discovery and DSA capabilities and to generate great synergies between the two businesses.

Strong financial performance

Expect revenue/net income to grow at 40%/33% CAGR in 2020-24E

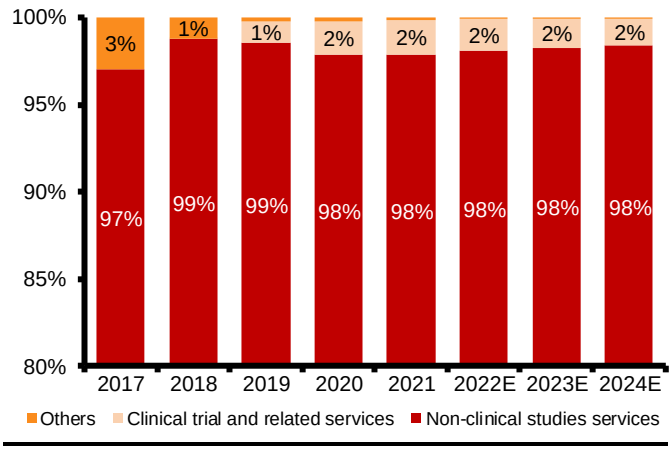
We forecast total revenue to grow by 45%/40%/37% YoY in 2022E/23E/24E, representing a CAGR of 40% during the period, driven by 1) rising domestic demand for high quality DSA services, 2) continuous growth from overseas market, and 3) synergies between non-clinical and clinical stage business.

Figure 68: Joinn's revenue forecasts



Source: Company data, CMBIGM estimates

Figure 69: Joinn's revenue breakdown



Source: Company data, CMBIGM estimates
Note: Others include sales of research models and inter-segment elimination

We believe Joinn will take advantages of its stable supplies of research models, especially non-human primates, to manage cost of services. We estimate the gross profit margin to be 46.2%/46.7%/46.7% YoY in 2022E/23E/24E. Combining with the improving economies of scale, we expect net income to increase by 35%/32%/ 31% YoY in 2022E/23E/24E.

Figure 70: P&L forecasts (2019-2024E)

(YE 31 Dec) RMB mn	2019	2020	2021	2022E	2023E	2024E
Revenue	**639**	**1,076**	**1,517**	**2,193**	**3,066**	**4,196**
YoY	*56.4%*	*68.3%*	*41.0%*	*44.6%*	*39.8%*	*36.9%*
Cost of services	(311)	(525)	(781)	(1,180)	(1,634)	(2,235)
% of revenue	*-48.6%*	*-48.8%*	*-51.5%*	*-53.8%*	*-53.3%*	*-53.3%*
Gross profit	**329**	**551**	**736**	**1,013**	**1,432**	**1,961**
GPM	*51.4%*	*51.2%*	*48.5%*	*46.2%*	*46.7%*	*46.7%*
Other gains and losses, net	30	32	113	119	113	111
% of revenue	*4.7%*	*2.9%*	*7.5%*	*5.4%*	*3.7%*	*2.6%*
Gains arising from changes in fair value of	13	55	125	160	180	200
% of revenue	*2.0%*	*5.1%*	*8.3%*	*7.3%*	*5.9%*	*4.8%*
Selling and marketing expenses	(12)	(13)	(16)	(22)	(31)	(42)
% of revenue	*-2%*	*-1%*	*-1%*	*-1%*	*-1%*	*-1%*
General and administrative expenses	(103)	(211)	(264)	(340)	(460)	(608)
% of revenue	*-16.1%*	*-19.7%*	*-17.4%*	*-15.5%*	*-15.0%*	*-14.5%*
Research and development expenses	(40)	(51)	(48)	(66)	(92)	(126)
% of revenue	*-6.2%*	*-4.7%*	*-3.1%*	*-3.0%*	*-3.0%*	*-3.0%*
Finance cost	0	-4	-4	-4	-4	-4
% of revenue	*-0.1%*	*-0.3%*	*-0.3%*	*-0.2%*	*-0.1%*	*-0.1%*
Share of losses of an associate	0	0	0	0	0	0
% of revenue	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Profit before tax	**217**	**359**	**642**	**860**	**1,139**	**1,491**
PBT margin	*33.9%*	*33.3%*	*42.3%*	*39.2%*	*37.1%*	*35.5%*
Income tax expense	(29)	(47)	(86)	(112)	(148)	(194)
% tax rate	*13.4%*	*13.1%*	*13.3%*	*13.0%*	*13.0%*	*13.0%*
Total net profit	**188**	**312**	**556**	**749**	**991**	**1,298**
Minority Interests	(0)	(1)	(1)	(1)	(1)	(1)
Net profit attributable to shareholders	**188**	**310**	**555**	**748**	**990**	**1,296**
NPM	*29.3%*	*28.8%*	*36.6%*	*34.1%*	*32.3%*	*30.9%*
YoY	*78.3%*	*65.4%*	*79.1%*	*34.7%*	*32.3%*	*31.0%*

Source: Company data, CMBIGM estimates

Valuation

Initiate BUY with TP HK$107.65 (86.9% upside)

We use DCF methodology to value Joinn and derive our TP of HK$107.65 based on 9-year DCF model (WACC: 10.9%, terminal growth rate:3%), representing 45x FY22E P/E and 34x FY23E PE. We believe Joinn will continue to consolidate market share in the DSA market thanks to its good service quality, integrated expertise, strong economies of scales as well as the abundant growth opportunities in overseas market.

Figure 71: DCF valuation for Joinn

DCF Valuation (in RMB mn)	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	785	1,070	1,070	1,391	1,794	2,296	2,916	3,674	4,593
Tax rate	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%	13.0%
EBIT*(1-tax rate)	683	931	931	1,210	1,561	1,998	2,537	3,197	3,996
+ D&A	150	217	270	351	452	579	735	927	1,158
- Change in working capital	(210)	(340)	(76)	(99)	(127)	(163)	(207)	(261)	(326)
- Capx	(700)	(700)	(600)	(600)	(600)	(600)	(600)	(600)	(600)
FCFF	**(76)**	**108**	**524**	**862**	**1,286**	**1,814**	**2,466**	**3,263**	**4,228**
Terminal value									**54,884**

Terminal growth rate	**3.0%**
WACC	**10.9%**
Cost of Equity	13.8%
Cost of Debt	5.0%
Equity Beta	0.9
Risk Free Rate	3.0%
Market Risk Premium	12.0%
Target Debt to Asset ratio	30.0%
Effective Corporate Tax Rate	15.0%
Terminal value (RMBmn)	21,569
Total PV (RMBmn)	28,556
Net debt (RMBmn)	(5,106)
Minority interest (RMBmn)	7
Equity value (RMBmn)	33,654
# of shares (mn)	381
Price per share (in RMB)	88.27
Price per share (in HK$)	**107.65**

Source: CMBIGM estimates

Figure 72: Sensitivity analysis of DCF model

		Terminal growth rate				
		4.0%	3.5%	3.0%	2.5%	2.0%
WACC	9.9%	141.14	132.84	125.74	119.59	114.22
	10.4%	128.83	121.98	116.05	110.87	106.30
	10.9%	118.37	112.65	**107.65**	103.25	99.33
	11.4%	109.38	104.56	100.31	96.54	93.16
	11.9%	101.59	97.49	93.84	90.59	87.66

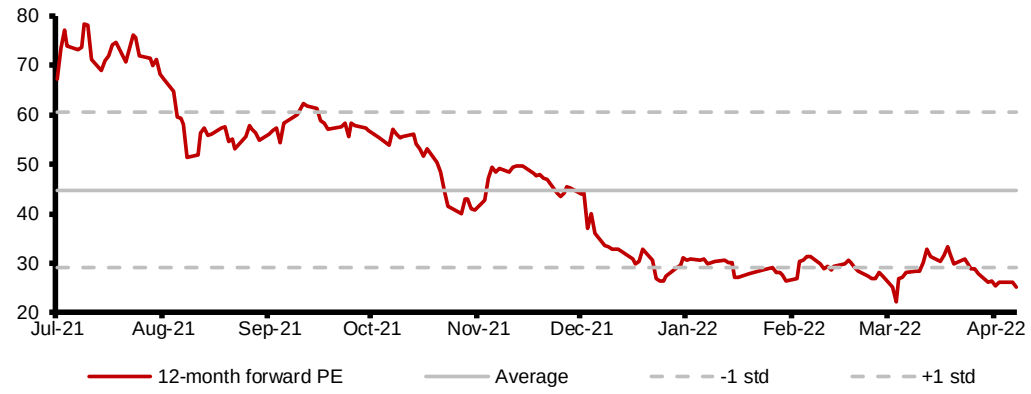
Source: CMBIGM estimates

Figure 73: Peer's valuation

Company	Ticker	Rating	Mkt. Cap (US$mn)	Net profit YoY			P/E (x)		P/B (x)		ROE (%)	
				FY22E	FY23E	FY24E	FY22E	FY23E	FY22E	FY23E	FY22E	FY23E
H-share												
WuXi AppTec	2359 HK	NR	46,897	64.4%	20.2%	34.8%	32.5	27.0	6.0	5.1	18.7	19.5
WuXi Bio	2269 HK	BUY	32,396	45.1%	41.3%	38.8%	41.8	29.6	5.6	4.7	13.4	15.7
Pharmaron	3759 HK	NR	14,043	27.0%	33.3%	31.9%	30.5	22.8	5.2	4.3	18.8	20.7
Tigermed	3347 HK	NR	12,890	36.3%	31.7%	32.8%	37.8	28.7	3.1	2.7	14.8	14.9
Asymchem	6821 HK	NR	12,197	135.7%	-1.8%	18.2%	18.8	19.3	3.0	2.7	17.1	13.7
Joinn	6127 HK	Buy	5,288	34.4%	32.3%	31.0%	25.1	19.0	2.4	2.2	8.7	9.8
						Average	**31.1**	**24.4**	**4.2**	**3.6**	**15.3**	**15.7**
A-share												
WuXi AppTec	603259 CH	BUY	46,897	64.4%	20.2%	34.8%	36.3	30.2	6.5	5.4	17.8	18.1
Pharmaron	300759 CH	NR	14,043	31.1%	34.3%	34.9%	43.6	32.4	7.7	6.3	18.2	19.9
Tigermed	300347 CH	BUY	12,890	36.3%	31.7%	32.8%	50.9	38.7	4.0	3.4	15.5	15.8
Asymchem	002821 CH	NR	12,197	140.4%	5.1%	19.6%	32.2	30.1	5.2	4.5	19.4	17.7
Porton	300363 CH	NR	6,978	159.9%	13.6%	20.9%	32.7	28.8	8.4	6.5	25.0	22.2
Joinn	603127 CH	NR	5,288	34.4%	32.3%	31.0%	48.8	36.9	4.7	4.2	9.4	10.9
						Average	**40.7**	**32.8**	**6.1**	**5.1**	**17.5**	**17.4**
Foreign CXOs												
Lonza	LONN SW	NR	49,777	8.2%	19.2%	16.4%	40.8	34.6	4.6	4.3	10.9	12.6
Samsung Bio	207940 KS	NR	44,827	46.9%	31.9%	14.5%	106.6	83.4	9.7	8.4	9.9	11.5
IQVIA	IQV US	NR	44,748	12.8%	13.2%	14.3%	23.4	20.5	6.6	6.0	30.7	31.7
ICON	ICLR US	NR	19,855	47.3%	14.1%	18.0%	21.1	18.2	2.4	2.2	11.5	12.4
Charles River	CRL US	NR	14,083	15.2%	16.1%	16.5%	24.8	21.6	4.5	3.7	20.2	20.0
Syneos	SYNH US	NR	8,051	16.0%	12.3%	11.2%	15.6	13.6	2.1	1.9	14.8	15.3
						Average	**38.7**	**32.0**	**5.0**	**4.4**	**16.3**	**17.2**

Source: Bloomberg, CMBIGM estimates, as of Apr 19, 2022

Figure 74: 12-month forward PE ratio of Joinn



Source: Bloomberg, CMBIGM, as of Apr 19, 2022

Financial Summary

Income statement

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
Revenue	**1,076**	**1,517**	**2,193**	**3,066**	**4,196**
Non-clinical studies services	1,053	1,484	2,152	3,013	4,127
Clinical trial and related	21	31	39	51	66
Others	27	93	102	113	124
Cost of services	(525)	(781)	(1,180)	(1,634)	(2,235)
Gross profit	**551**	**736**	**1,013**	**1,432**	**1,961**
Other gains and losses, net	32	113	119	113	111
Gains arising from	55	125	160	180	200
Selling and marketing exp.	(13)	(16)	(22)	(31)	(42)
General and administrative exp.	(211)	(264)	(340)	(460)	(608)
R&D expenses	(51)	(48)	(66)	(92)	(126)
Finance costs	(4)	(4)	(4)	(4)	(4)
Share of losses of an associate	0	(0)	0	0	0
Profit before taxation	**359**	**642**	**860**	**1,139**	**1,491**
Income tax	(47)	(86)	(112)	(148)	(194)
Profit for the year	**312**	**556**	**749**	**991**	**1,298**
Non-controlling interests	(1)	(1)	(1)	(1)	(1)
Profit attributable to shareholders	**313**	**557**	**749**	**992**	**1,299**

Cash flow summary

YE 31 Dec (RMB mn)	FY19A	FY20A	FY21E	FY22E	FY23E
Profit before tax	**217**	**359**	**642**	**860**	**1,139**
D&A	45	83	104	150	217
Change in working capital	(77)	52	25	(210)	(340)
Tax paid	(22)	(33)	(86)	(112)	(148)
Others	(14)	(23)	4	(156)	(176)
Net cash fr. operating act.	**149**	**438**	**689**	**533**	**692**
Capex	(121)	(141)	(306)	(700)	(700)
Acquisition of subsidiaries	(197)	0	0	0	0
Other investing activities	214	(110)	(1,802)	0	0
Net cash fr. investing act.	**(104)**	**(251)**	**(2,109)**	**(700)**	**(700)**
Net proceeds from shares issued	19	33	5,319	0	0
Bank borrowing	0	4	0	0	0
Other financing activities	(37)	(87)	0	(192)	(252)
Net cash fr. financing act.	**(17)**	**(50)**	**5,319**	**(192)**	**(252)**
Effect of foreign exchange	1	(9)	(50)	0	0
Net change in cash	28	128	3,849	(358)	(260)
Cash at beginning of the year	149	177	305	4,154	3,796
Cash at the end of the year	177	305	4,154	3,796	3,536

Balance sheet

YE 31 Dec (RMB mn)	FY20A	FY21A	FY22E	FY23E	FY24E
Non-current assets	**990**	**2,723**	**3,272**	**3,755**	**4,086**
PP&E	646	815	1,376	1,871	2,214
Intangible assets	63	57	45	33	21
Goodwill	125	122	122	122	122
Biological assets	19	74	74	74	74
Other non-current assets	137	1,654	1,654	1,654	1,654
Current assets	**1,183**	**5,814**	**5,858**	**6,151**	**6,838**
Cash at bank and on hand	309	4,154	3,796	3,536	3,531
Inventories	91	106	149	206	282
Trade and bills receivables	91	116	149	209	286
Biological assets	67	160	320	500	700
Other current assets	624	1,278	1,444	1,700	2,039
Current liabilities	**774**	**1,214**	**1,247**	**1,280**	**1,324**
Interest- bearing borrowings	3	5	5	5	5
Trade payables	60	54	86	119	163
Contract liabilities	584	972	972	972	972
Other current liabilities	127	184	184	184	184
Non-current liabilities	**177**	**178**	**178**	**178**	**178**
Interest- bearing borrowings	21	5	5	5	5
Other non-current liabilities	155	173	173	173	173
Total net assets	**1,222**	**7,144**	**7,706**	**8,448**	**9,421**
Minority interest	(1)	8	7	6	5
Shareholders' equity	**1,223**	**7,136**	**7,698**	**8,442**	**9,416**

Key ratios

YE 31 Dec	FY20A	FY21A	FY22E	FY23E	FY24E
Sales mix (%)					
Non-clinical studies services	98	98	98	98	98
Clinical trial and related	2	2	2	2	2
Others	2	6	5	4	3
Total	**102**	**106**	**105**	**104**	**103**
Profit & loss ratios (%)					
Gross margin	51	49	46	47	47
EBITDA margin	41	44	43	42	40
Pre-tax margin	33	42	39	37	36
Net margin	29	37	34	32	31
Effective tax rate	13	13	13	13	13
Balance sheet ratios					
Current ratio (x)	153	479	470	481	517
Trade receivables turnover days	32	25	25	25	25
Trade payables turnover days	33	27	27	27	27
Net debt to total equity ratio (%)	Net cash	Net cash	Net cash	Net cash	Net cash
Returns (%)					
ROE	36.8	45.6	10.5	12.9	15.4
ROA	38.6	50.5	17.5	21.7	26.2
Per share value					
EPS (RMB)	0.99	1.51	1.97	2.60	3.41
DPS (RMB)	0.30	0.37	0.49	0.65	0.85
BVP (RMB)	3.87	19.37	20.21	22.16	24.71

Source: Company data, CMBIGM estimates

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