

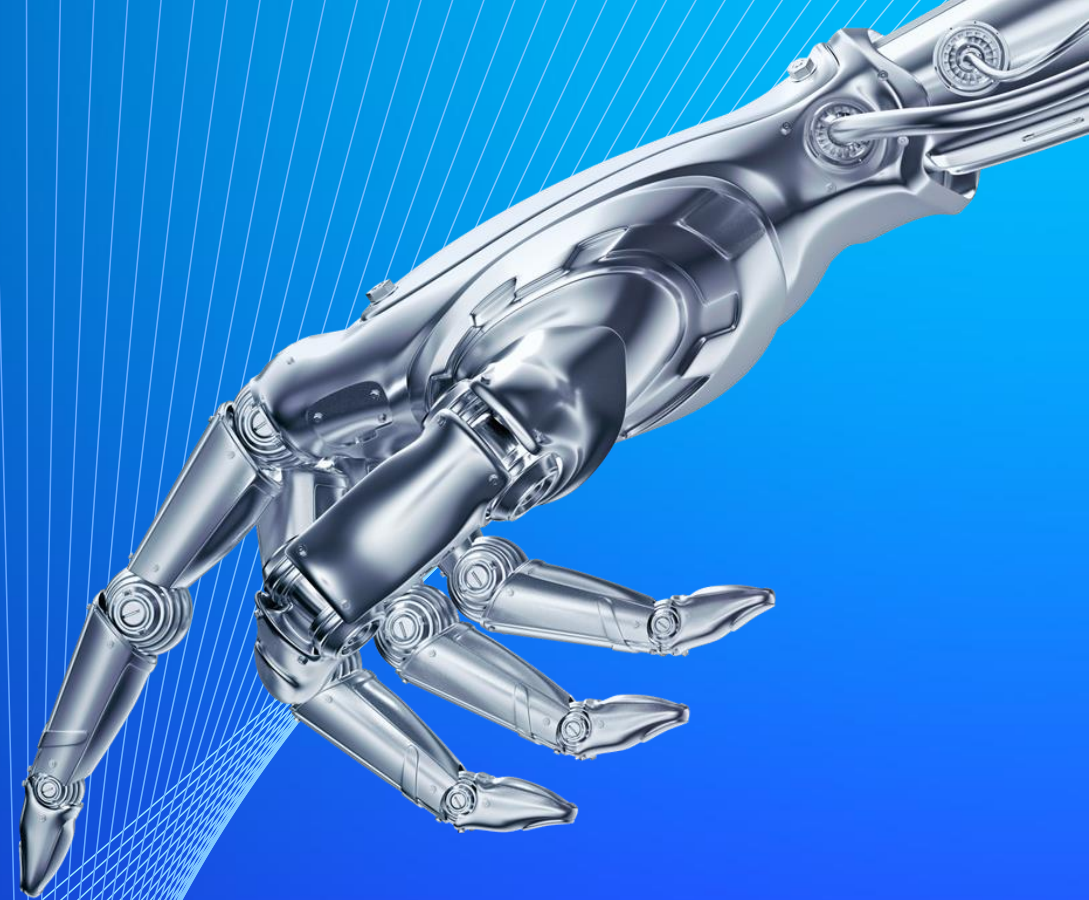
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China MedTech: Value creation in time of market uncertainties

November, 2023



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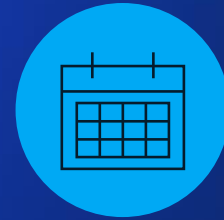
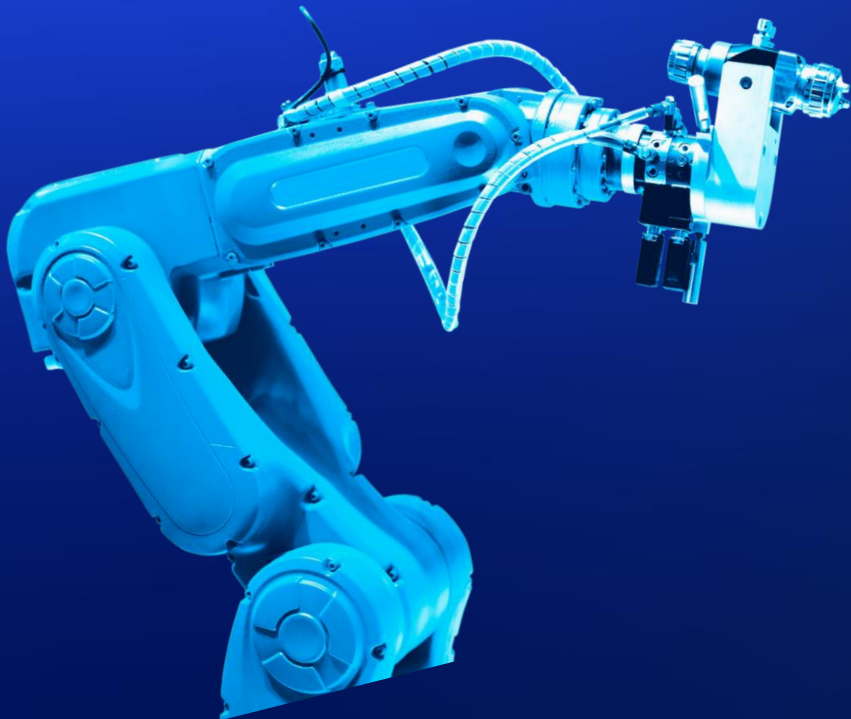


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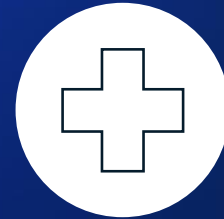
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China MedTech: Value creation in time of market uncertainties



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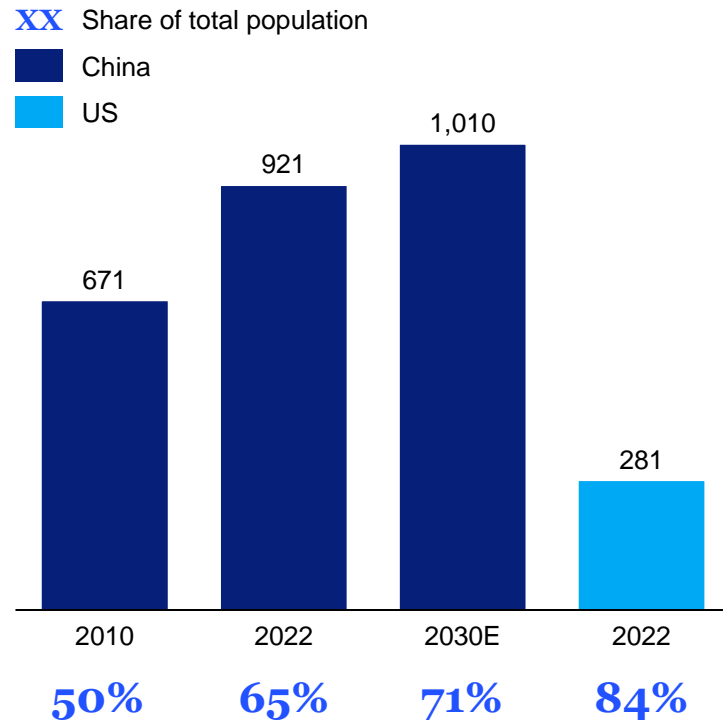
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Globalization as a priority...with varying progress



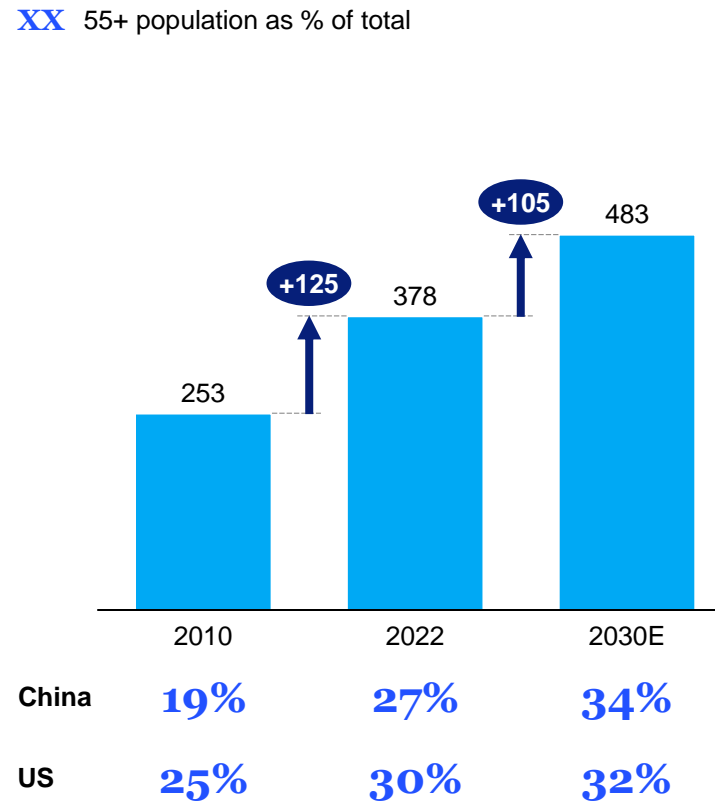
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Investment gradually slows down

1. Strong fundamentals; shaky economic recovery

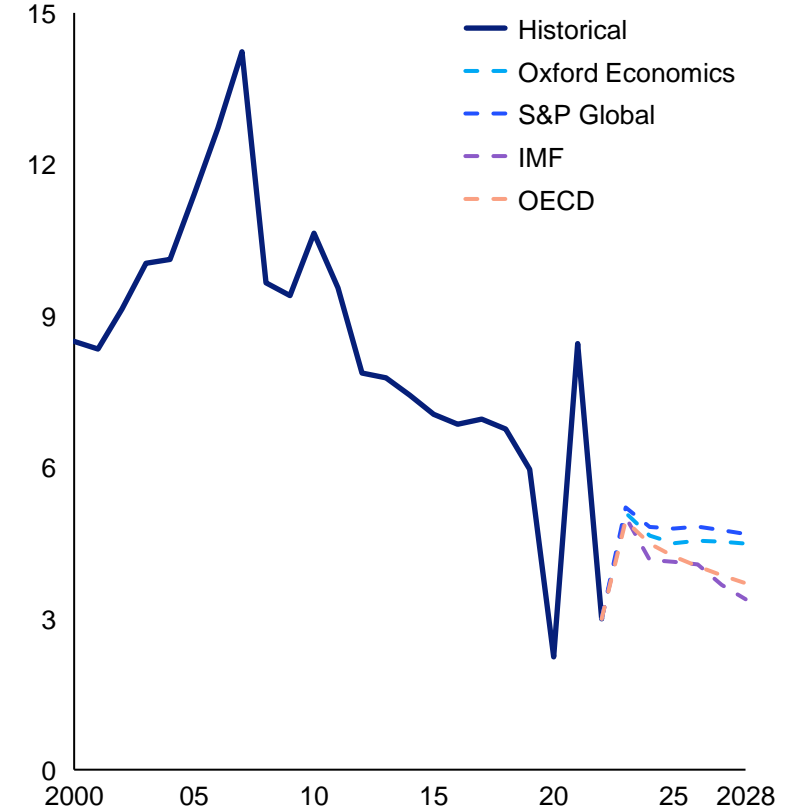
Total urban population in China
of individuals, Mn



Population over 55 years old
of individuals, Mn







China Real GDP growth 2000-2028, Percent



2. Persistent cost containment measures, becoming more rational

VBP scope has expanded and rules become more rationalized

	Breadth of category	47 out of top 50 hospital spending categories are impacted
	Tender format	Provincial alliance VBP is the mainstream (15+ in 2022) Acts as “testing ground” to manage complex tenders
	Tendering rules	Price drop is not the only factor Quality and supply are being more emphasized beyond price drop
	Price drop level	50%-80% in general as to hospital price drop Price drop of some innovative categories is lower than previous commoditized products (e.g., 30-50% for EP)
	Volume impact	Price drop cannot guarantee total volume uptake though category specifics remain Fundamentals keep driving robust natural market growth

Potential future scenarios



Cost containment mechanism is evolving, e.g., pilot of **VBP-DRG interlock** in Beijing



Reward to innovation expected to be improved, e.g., increasing procurement budget for innovative equipment and AI diagnostic system



A higher bar of innovation is expected to be applied to **clinically differentiated** products, e.g., eligibility of DRG-exempted innovative products is strictly defined

3. Changing procurement behaviors

Observations of procurement changes



Changing **decision makers**, more **gov't-led** centralized bidding in capital equipment and VBP in consumable/ IVD



Increasing **demand for cost effective** products and solutions, driven by cautious spending



More **efficiency and transparency** during procurement process, e.g., AR improvement, unified coding

Potential implications to MedTech players

- **GTM model upgrade** could be considered
 - **GTM efficiency** improvement, e.g., leaner distribution structure
 - **Cross-portfolio key account model** is becoming more important
- **Tiered portfolio** could help address various customer segments
- **Upskilled or new capabilities are expected to be crucial**
 - **Non-clinical stakeholders and key accounts** engagement
 - **Health economics**
 - **Clinical sales** instead of relationship sales

4. Innovation is accelerating in terms of quantity, quality and speed



Innovation in “quantity”

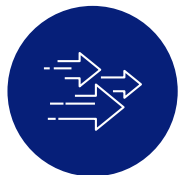
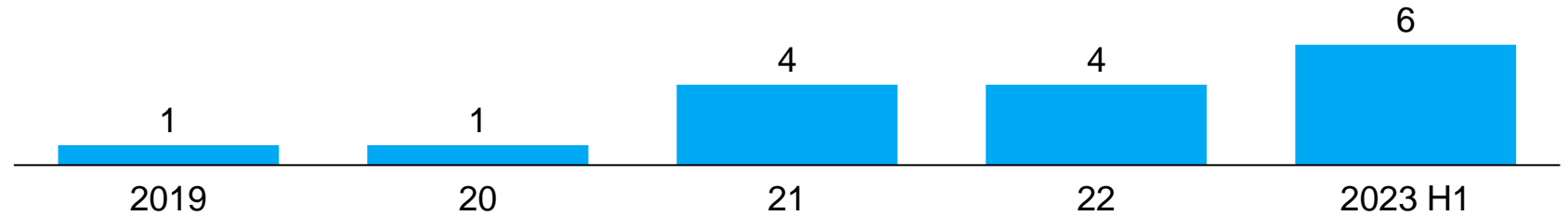
x2

green channel approved products in 2022 vs. 2020



Innovation in “quality”

FDA breakthrough designation products from Chinese local MedTech players



Innovation in “speed”

~1

year launch advancement for PFA (Pulsed Field Ablation), 2023-24E

vs.

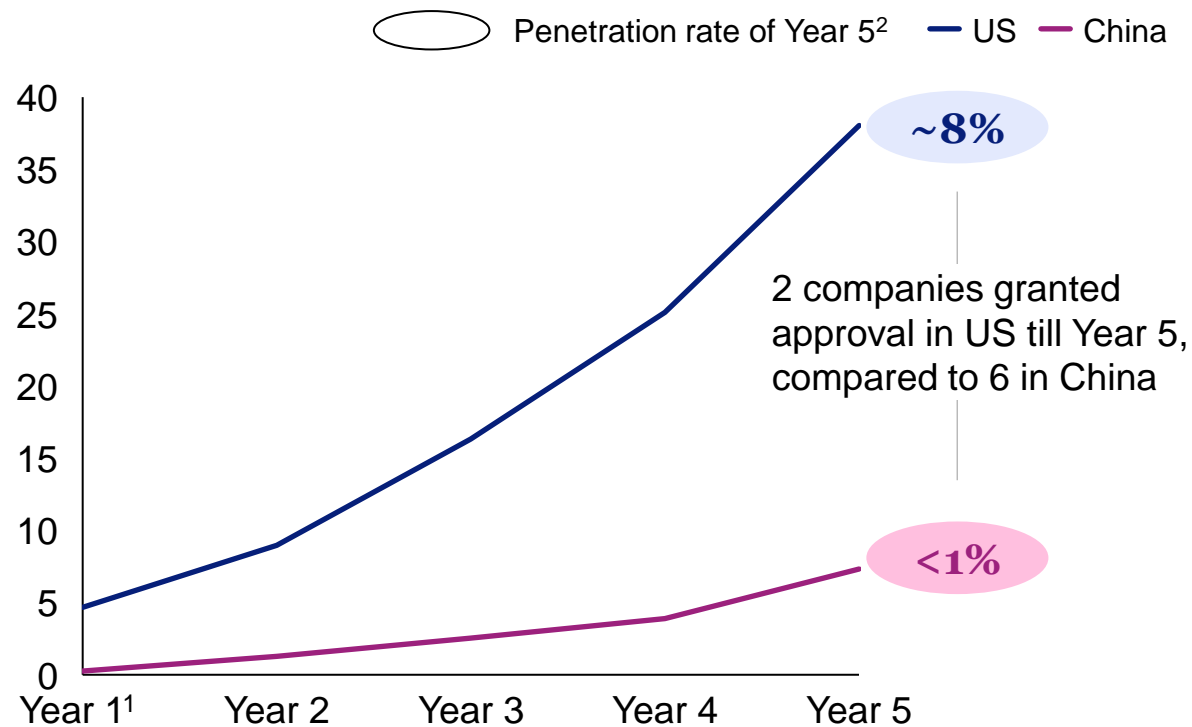
~10

years launch gap for RFA (Radiofrequency Ablation), before 2010

4. Local innovators face potential challenges in commercializing innovations

China is trailing in commercial uptake compared to developed countries...

TAVR launch curve comparison between China and US, # Total TAVR implanted in K



Local innovative companies need more time to generate healthy financials

10 years after the companies' first product launched
(Innovative listed diabetes care management companies as an example)

	Global	Local
EBIT margin	(6%)	(80%)
SG&A to revenue	45%	85%
R&D to revenue	15%	30%

Similar challenge observed in other categories, e.g., cardiovascular

1. Was set as Year 1 for China (first approval in early 2017); 2012 set as Year 1 for US (first approval in late 2011) 2. For eligible patient only

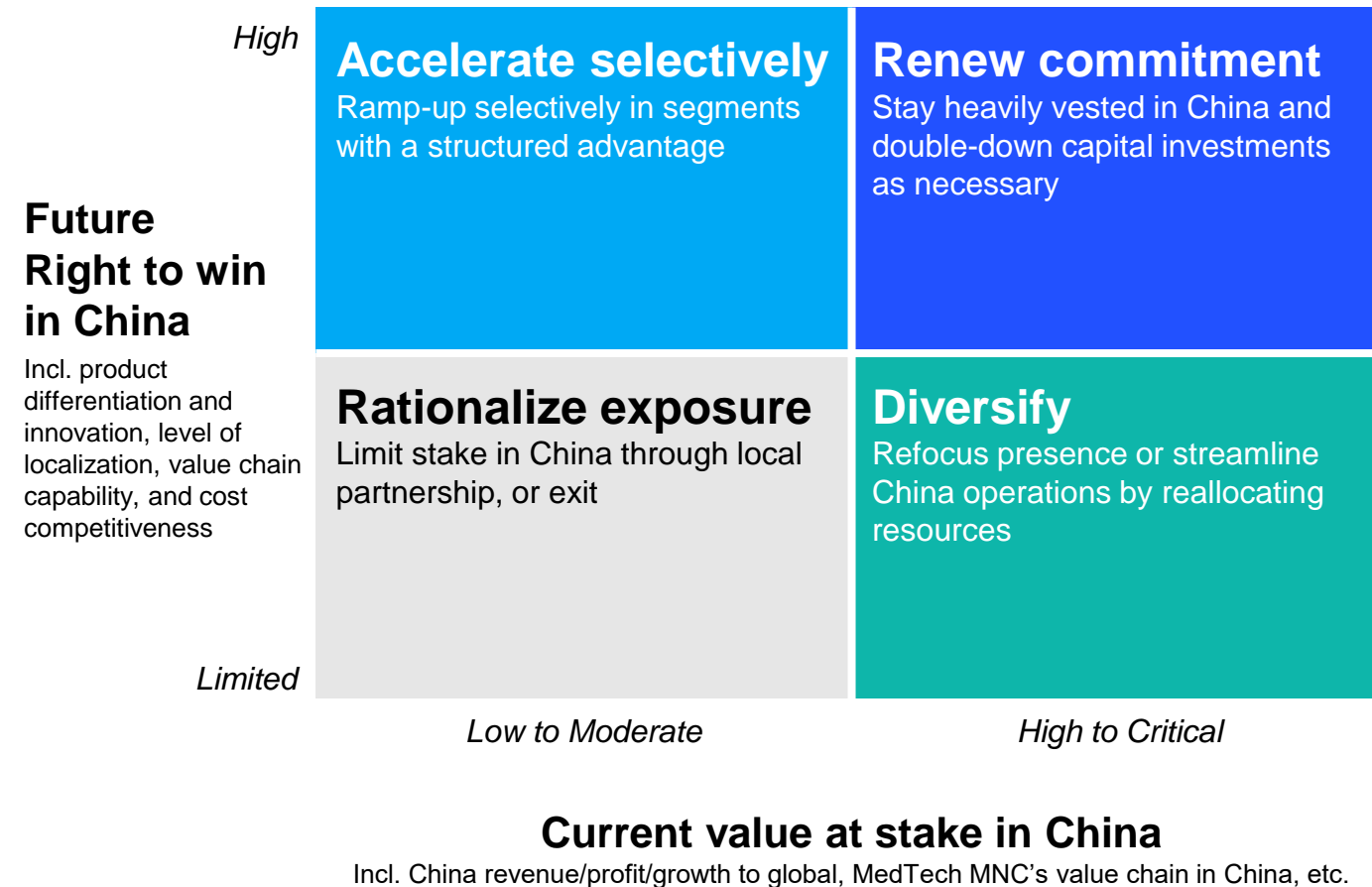
Source: Press search, DRG, CapitalIQ, McKinsey analysis (Oct. 23)

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5. MedTech MNCs are reconfiguring their China strategies

ILLUSTRATIVE

Four courses of action for MedTech MNCs to consider in China

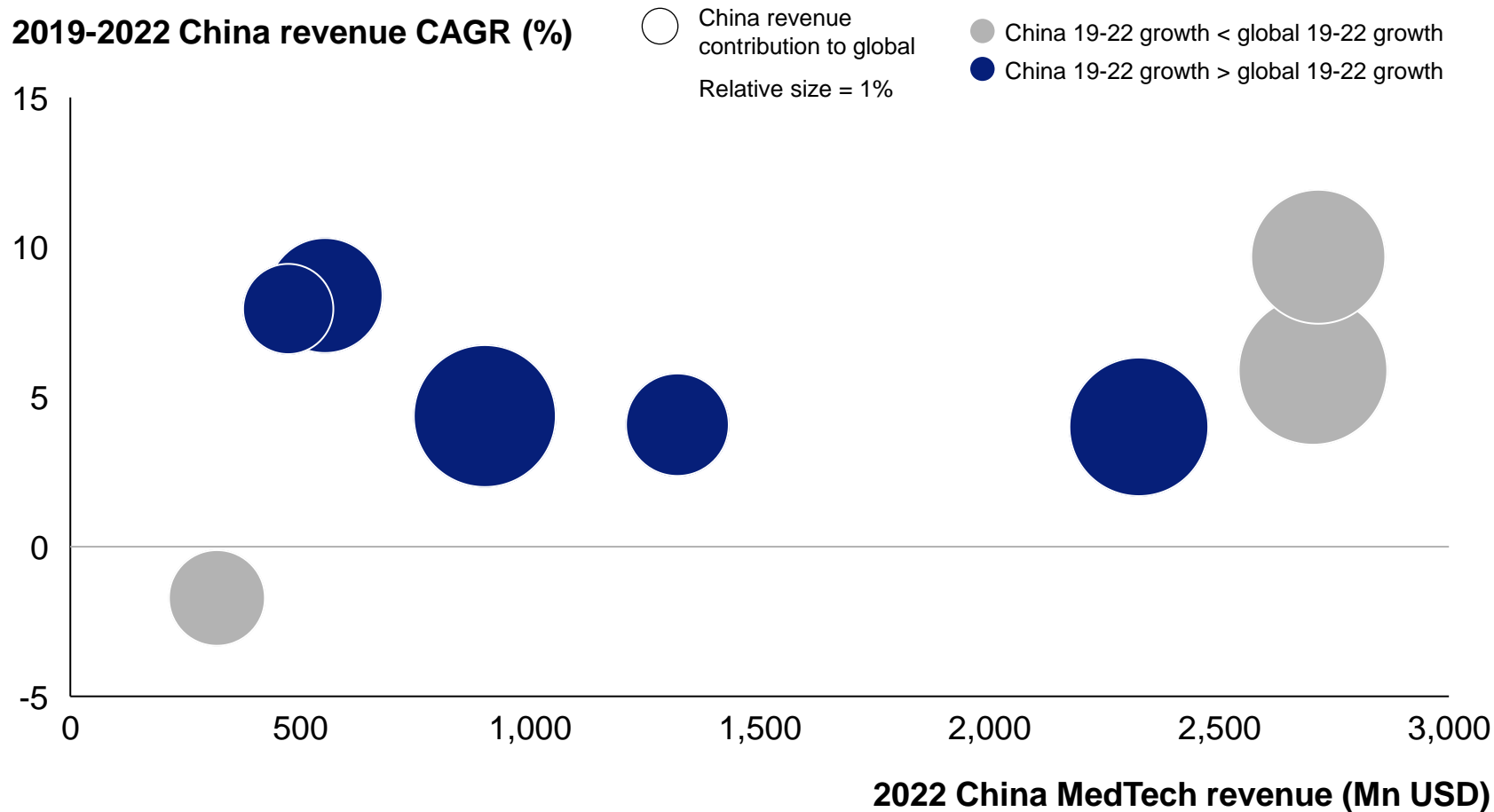


Potential implications to MNCs

- MNCs have **urgency** to evaluate, and more importantly, to **decide** on its China strategy at **both corporate and business segment levels**
- **Maintaining access** to China's upsides while **managing complexity** will be the imperatives for MNCs
- **Partnership is a potential strategic move in multiple quadrants**
 - Renew commitment: acquire local identity and ecosystem engagement
 - Accelerate selectively: leverage local partnership to enter /expand market
 - Diversify: license-out or leverage local distribution partnership

5. MNC MedTech performance in China diverges, opportunity for growth remains for different scale of companies

Business performance of selective MedTech MNCs in China¹



- Scale matters in China but small/ mid-scale MNCs with innovative portfolio and localization commitment can also enjoy fast growth
- Leading MNCs' China growth can still outpace global despite challenges in 2022 due to COVID

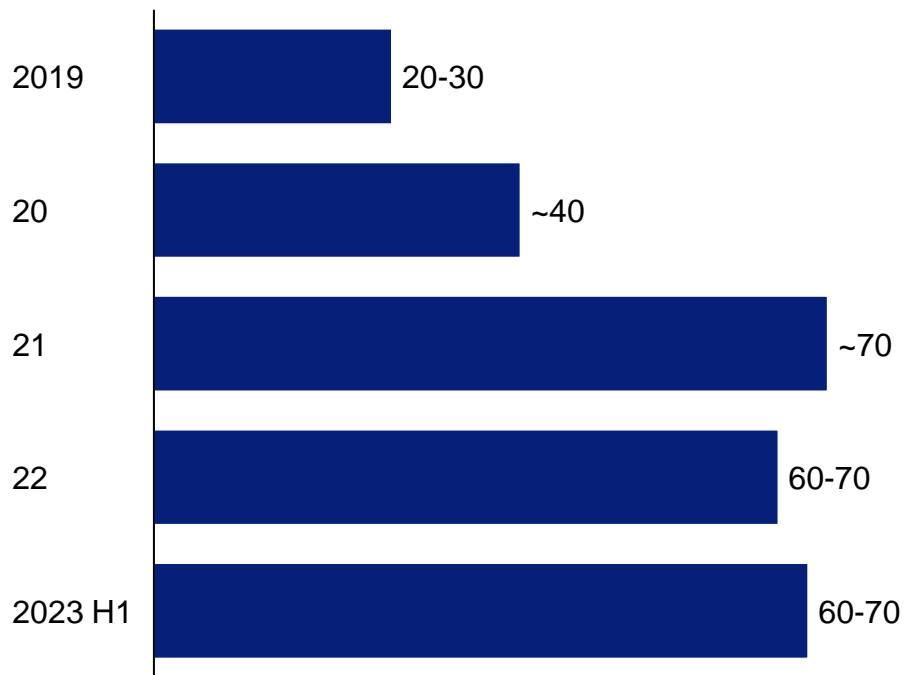
1. Only include top 20 global MedTech companies with public available China revenue in both 2019 and 2022; Eight companies in total are included in the analysis

6. Collaboration between MNCs and locals is on the rise

Not Exhaustive

Increasing number of collaborations between MNCs and locals

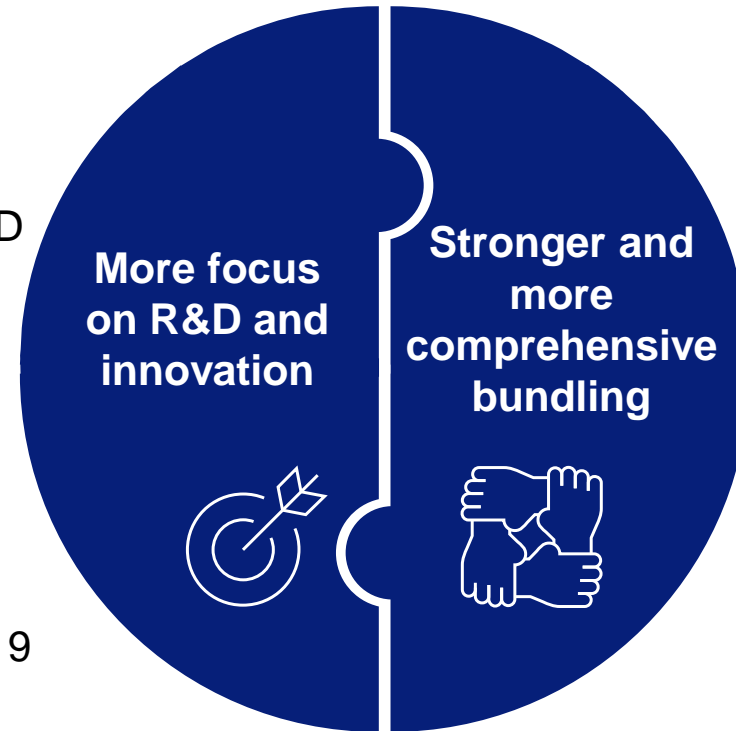
Collaboration announced between leading MNCs and locals¹



1. Leading MNC include top 15 MNCs, locals defined as Chinese counter part incl. Chinese MedTech, digital players, hospitals, gov't etc.; Incl. collaborations with public news available

Trends of collaboration in recent years

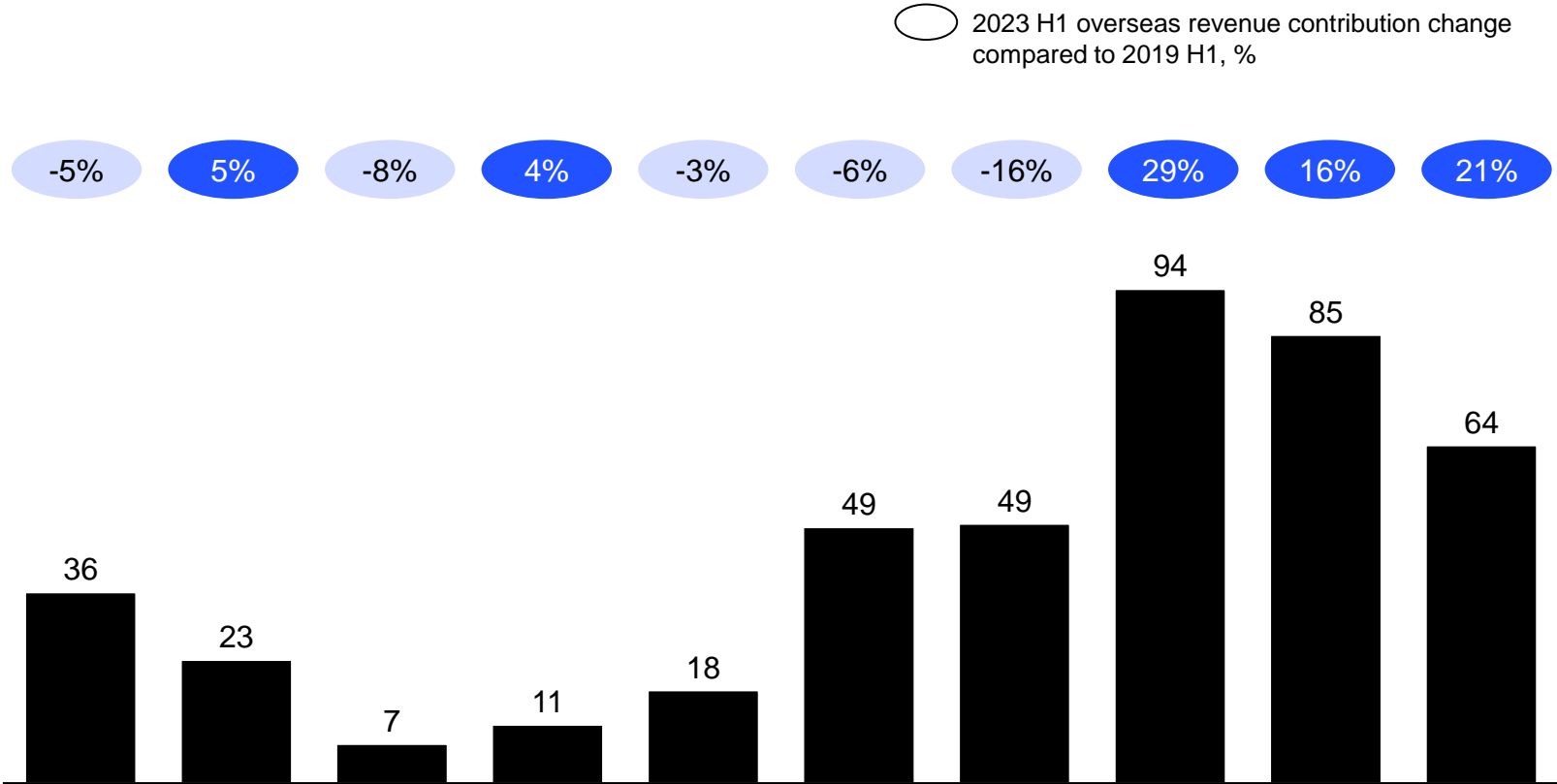
~40% collaborations include co-R&D or enhance innovation capability as one of the major goals in 2022, compared to **~25%** in 2019



Example as both financial acquisition and strategic cooperation; with deep collaboration along value chain/ across regions

7. Globalization as a priority, with varying progress

Overseas revenue contribution for top 10 local listed MedTech companies¹, %



1. Selecting companies with publicly available 2023 H1 and 2019 H1 overseas revenue, excl. distributors; Ranked by 2023 H1 revenue

NOT EXHAUSTIVE

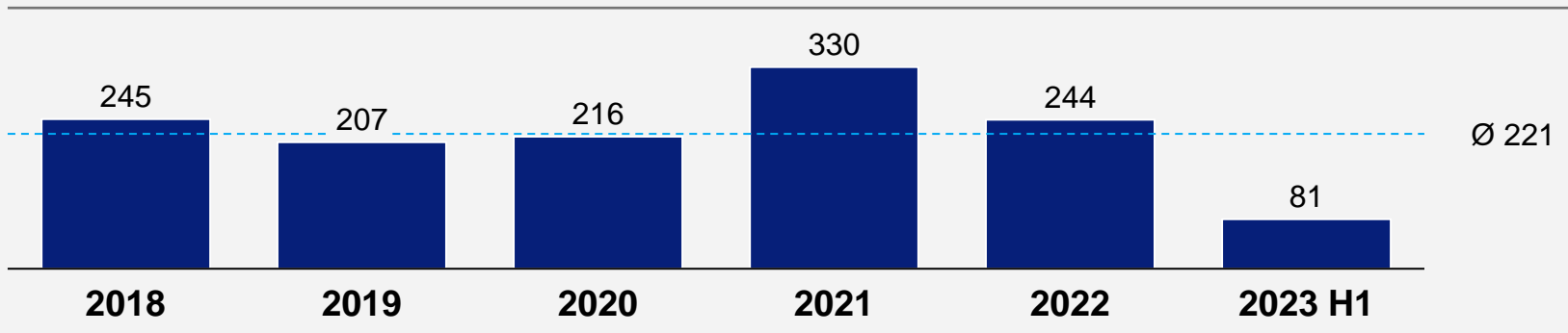
Key learnings of successful globalization

- Understanding fundamentals** about overseas markets solidly and prioritizing across markets smartly
- Identifying the right commercial model** and sourcing the **right partner**
- Establishing operational and organizational efficiency** with **robust talent support**

8. PE/VC activity slows down but corporate funds are becoming actively established

NOT EXHAUSTIVE

 # PE/VC transactions in MedTech in Greater China, 2018 – 2023 H1¹



 Selective examples of MedTech companies establishing corporate fund

Medtronic launched China Venture Fund II

~1.2 Bn RMB investment
Mindray became the LP of leading healthcare venture FirstRed

~20 IVD companies set up corporate fund

1. Include deals captured in IT JUZI database

Source: IT JUZI, Press search, McKinsey analysis (Oct. 23)

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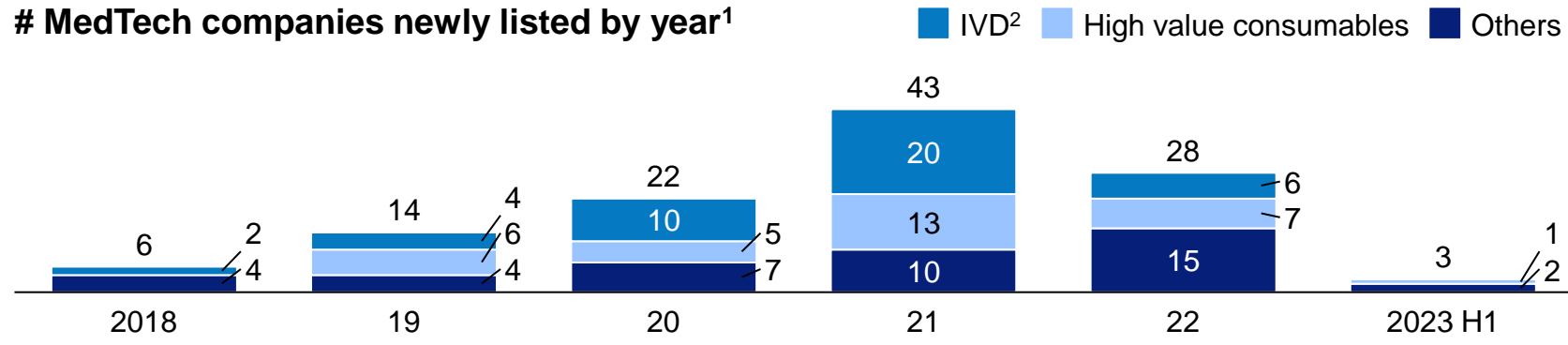
Factors co-leading to the MedTech PE/ VC new normal

- Difficulty in new fund raising
- Poor portfolio performance especially in profitability
- Challenges of exit

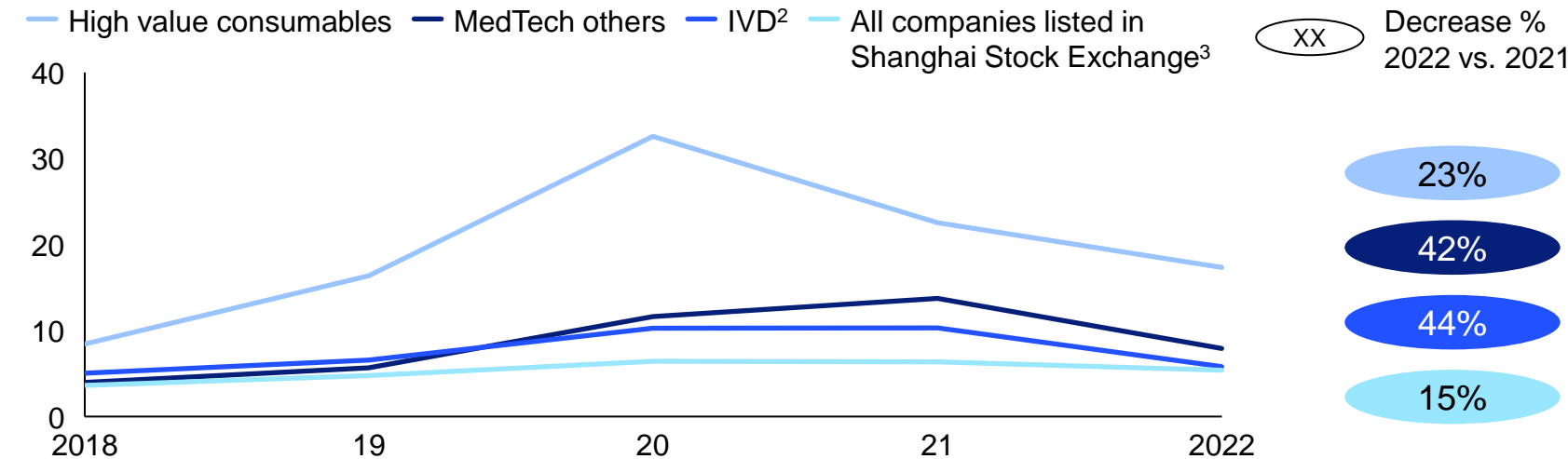


8. IPO number and valuation decrease; listed companies also have challenges in scaling up

MedTech companies newly listed by year¹



MedTech valuation change by year, P/S ratio at year end as example



Innovative Chinese MedTech companies have struggled to build scale

HKEX 18A listed MedTech companies as example (total # as 16)

1

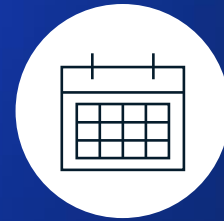
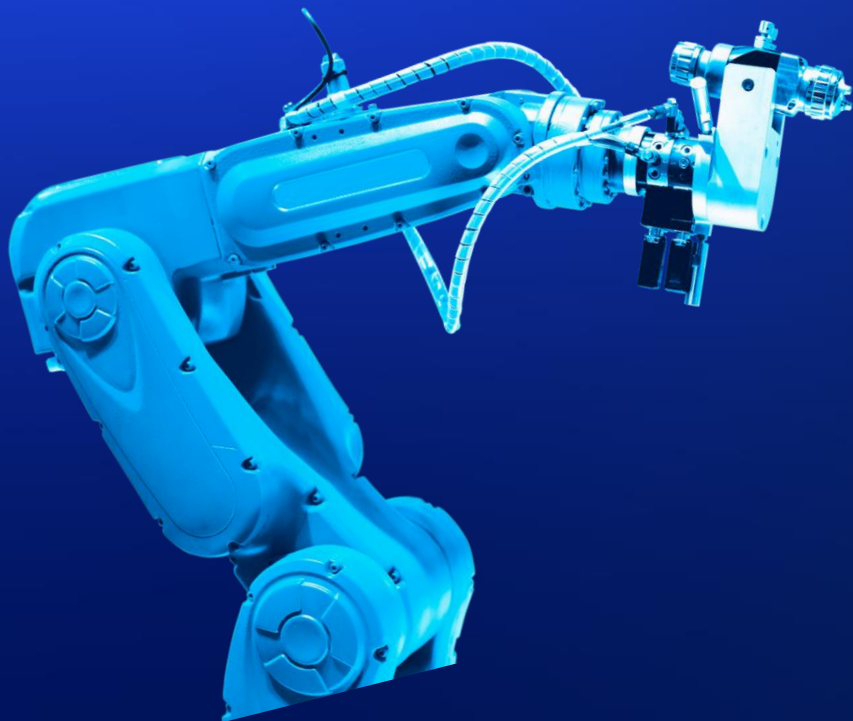
2022 revenue >\$100 mn

3

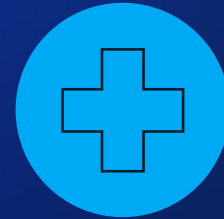
Latest market cap >\$1 bn

1. For MedTech companies (including upstream and downstream, e.g., Dian Diagnostics, Vazyme, iRay); listing on Shanghai Stock Exchange (STAR included), Shenzhen Stock Exchange, Beijing Stock Exchange, Hongkong Stock Exchange and Nasdaq; 2. IVD is categorized if IVD business (including life science, e.g., mass spectrometer) has revenue contribution >50%, including IVD manufacturer, supplier, distributor and life science player; 3. Incl. STAR market

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2022-23 in the mirror



**China MedTech: Value creation
in time of market uncertainties**



Closing thoughts

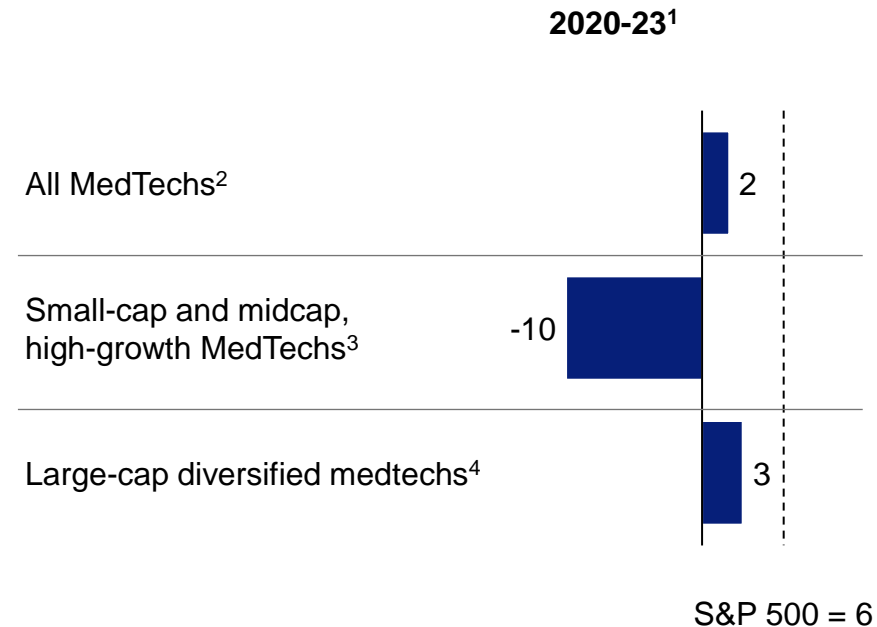
MedTech companies face challenges in creating value

Challenges of MedTech companies faced in value creation

- Scalability and profitability, the “invest to grow mode” is no longer sustainable and investors increasingly value profitability
- Rationalized expectation and reward on innovation/ small size MedTech, and the historical “bubble” on valuation is hard to replicate in future

For global listed MedTechs

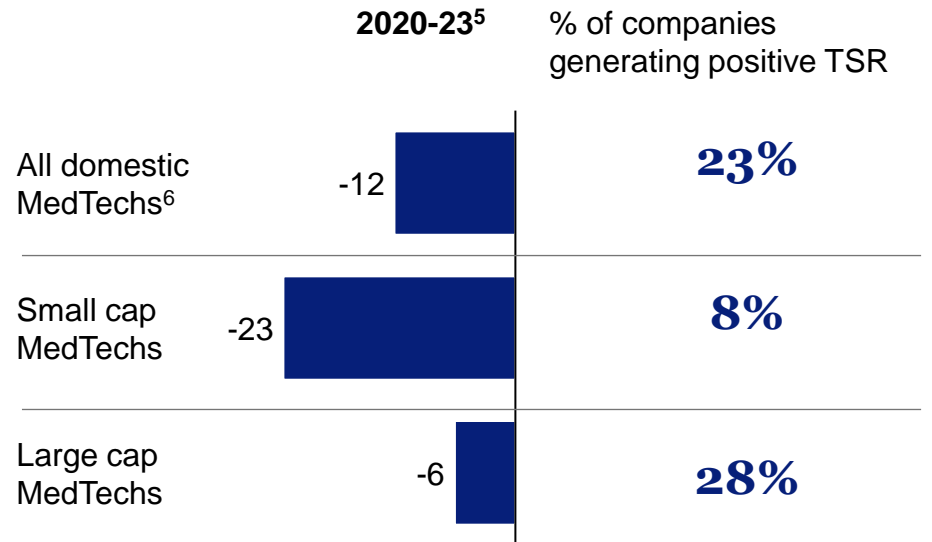
Annualized total shareholder returns (TSR) CAGR, %



- **MNCs in China** also facing challenges, e.g., share loss, decreasing in competency compared to local

For China listed MedTechs

TSR CAGR, %



- **Less than 1/4** Chinese listed MedTechs managed to achieve positive TSR growth
- **Bifurcation remains** in value creation
 - Large range of TSR from ~-70% to ~+80%
 - High TSR companies observed in almost all sub MedTech segments, e.g. imaging, implants, IVD, home use and low value consumables

1. As of May 2023; 2. The 100 largest publicly traded MedTech companies by market cap as of May 20, 2023.; 3. All publicly traded MedTech companies with a market cap between \$0.1 billion and \$10.0 billion and with growth expectations in excess of 10% CAGR.; 4. The 30 largest publicly traded MedTech companies by market cap with multiple franchises contributing at least 20% of sales, as of May 20, 2023. 5. The first to fourth quantiles are ranked according to the market value in July 2023. The calculation is based on the market value at the end of the IPO year to the end of the range (for example, for a company with an IPO in 2021, calculate the TSR of the company in the range from the end of 2021 to 2023), by July 2023 6. For all listed China MedTech companies (including upstream and downstream, e.g., Dian Diagnostics, Vazyme, iRay); listing on Shanghai Stock Exchange (STAR included), Shenzhen Stock Exchange, Beijing Stock Exchange, Hongkong Stock Exchange and Nasdaq

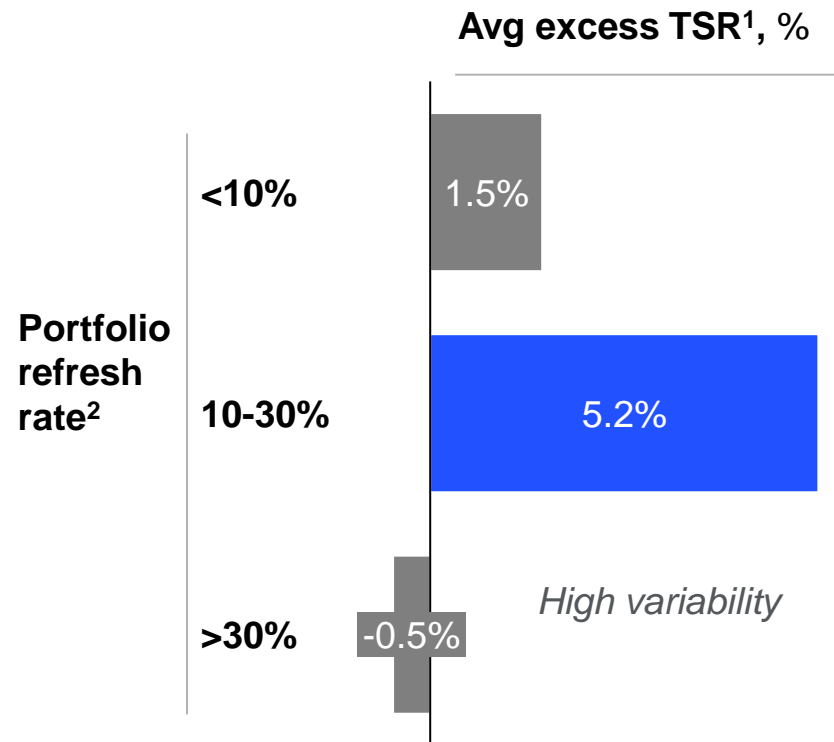
Leaders in China could consider pursuing five levers to enhance value creation

- 1 Active portfolio management and expansion
- 2 Launch excellence
- 3 Go to market model transformation
- 4 Operation excellence
- 5 Global business build



1. MedTech companies could consider active portfolio management to generate higher shareholders return

MedTechCos who actively manage portfolios generate higher TSR...



Benefits of active portfolio management



Focuses organization on core strategic areas where positioned to outperform given relative attractiveness and right to win



Improves overall company's financial profile by divesting underperforming and non-strategic businesses



Creates balance sheet flexibility to enter attractive segments and accelerate growth and strategic vision achievement

1. Dec 2007-17 (N=209)

2. Percent change of revenue source over 10 year period

Source: Press search, McKinsey analysis (Oct. 23)

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1. Market presents viable opportunities for portfolio expansion through inorganic approaches

M&A: Rising domestic opportunities for MedTech leaders to expand segment and build scale



MedTech innovators in China **face difficulty in building scale** and “hot” segments are flooded with new entrants, creating **opportunity for consolidation**

of cardiovascular products in “Green Channel” as example

Segments with 10+ products

7

EP, Imaging, TAVR, TMVR, IC stent, PV stent, PV – AAA/ TAA¹

Segments with 5-9 products

7

Renal denervation, VAD, TTVR, IC DCB/ balloon, PV DCB/ balloon, CRM, LAA



New financial market rules **dis-incentivize pre-profit companies from listing on public exchange²**, pushing companies to seek M&A as a viable exit path



In-licensing/distribution: Increasingly used by MedTechCos to expand into new segments

Selected examples

Genesis MedTech



Shockwave

Licensed-in China right of IVL device as part of a larger strategic collaboration

China Grand Pharma



Cardiofocus

Licensed-in China right of revolutionary catheter ablation technology for AFib treatment for up to \$20mn upfront payment & milestone

1. Incl. PV- AAA, PV- TAA and combined

2. 《证监会统筹一二级市场平衡 优化IPO、再融资监管安排》、《证监会进一步规范股份减持行为》、《证券交易所调降融资保证金比例，支持适度融资需求》

2. Getting the launch right is critical for innovators and requires systematic planning and holistic capabilities building

Potential levers to consider for a successful launch of MedTech innovation

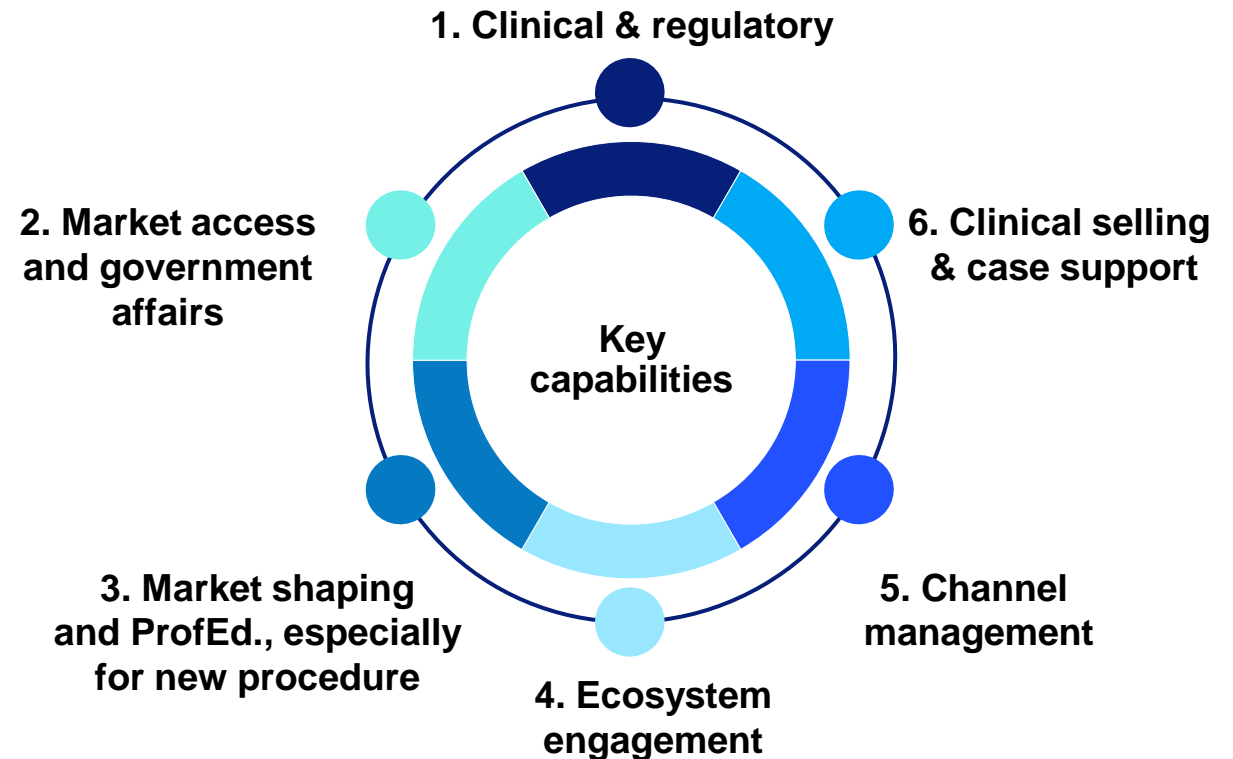
Build a star team with the institutionalized capabilities – **relying on single/a few executives from MNCs not enough!**

Clinical evidence is critical across all stages of MedTech innovation lifecycle¹; **integrated evidence generation** requires advanced planning

Innovation is not only for KOLs, investment to **meet the demand of and train your “average customers”** is key to success

Alignment internally and with investors to set **realistic timeline expectation for profitability**

Critical institutionalized capabilities to consider for build



1. Across regulatory approval, market access, reimbursement, and clinical education

3. MedTech companies could consider leveraging three main pillars to rewire the commercial model



1 | Managing key accounts/ Central bidding capabilities

Expand KA team to enable faster hospital listing or cross-portfolio sales
Strengthen government affairs with key procurement authorities



2 | Reallocating resources

Reallocate or combine resources between VBP and non-VBP impacted product teams
Streamline channel to reduce dependence on distributors and their responsibilities



3 | Building new or upskilling capabilities

Accelerate **digitalization and new models** to broaden reach to fragmented emerging market and improve selling efficiency
Explore **local partnership and local investment** to co-create broader market opportunities
Strengthen functional capabilities in health economics, clinical sales, etc.

4. China MedTech companies have been experiencing three major operation challenges to support local and global expansion



Capacity expansion

An on-time and in-budget manufacturing capacity expansion to meet growth aspiration: **most of the top 20 engaged major CapEx in 2022**



Manufacturing costs or procurement spend

Reduction of manufacturing costs or overall procurement spend in face of VBP and increasing local competition, e.g., **35 out of top 50 local listed MedTechs faced a decrease of gross margin in 2022**



Global operations

Upgrade of the supply operating system to support global operations, including **Sales and Operations Planning (S&OP)** processes and organization, **reliable Quality Assurance system, etc.**

4. China MedTech companies could systematically consider operation capability building to counter such challenges

Top China MedTech companies¹ P&L, 2022

		Example levers in manufacturing/supply chain/quality	Impact
Revenue (Index)	100%	Revenue	
Raw materials	30-40%	Design-to-Value (DtV): e.g., competitor tear-down Productivity ramp-up: e.g., OEE and processing time optimization CapEx Excellence: e.g., mega project mgt. for on-time mass production and output ramp-up Supply Network design: network for growth, cost, service, and resilience	<i>Enabler for 5-15% product margin improvement</i>
Other COGS expenses	10-20%	COGS	
Gross profit	40-60%	Design-to-Cost (DtC): e.g., clean sheet, spec optimization, in product design excellence to improve COGS Procurement excellence: strategic sourcing and advanced analytics	<i>10-30% cost saving</i>
SG&A	10-20%	SG&A	
Net operating profit	20-40%	Digital-enabled planning: e.g., tech/org enablers for multinational order-to-delivery operations Need-based staffing: e.g., productivity improvement through workflow mapping Multi-variant SC optimization: e.g., a business optimizer for real-time trade-off decision for efficiency, resilience etc.	<i>20-50% supply chain productivity improvement</i>
		Enabler	
		Supply resilience: Business continuity planning (BCP) for potential risk Smart Quality: Digitized Quality System that automates deviation detection, accelerates corrective actions follow-through and closing	<i>Enabler</i>

1. Based on top 20 SH/SZ listed MedTech companies' 2022 MedTech business rev. (all >3bn RMB); Other COGS expenses include direct labor, mfg. costs and logistics

5. Globalization – opportunities vs. challenges

Deep-dive next page

Globalization- an increasingly important strategic move for leading local players

- With increasing competition and pricing pressure in domestic market, leading locals need a **“2nd growth engine”**
- Ex-China regions contribute **~85%** of global market, with **unmet needs** and **under-served by leading MNCs in developing markets** (e.g., SEA, ME, India, LatAm)

47 out of top 50 leading local MedTech stated globalization as a strategic priority

Challenges ahead in globalization journey

- In-depth **understanding of overseas markets’** customer needs and tailored GTM model
- **Market access:** high registration hurdle, brand recognition
- **Value propositions:** same quality at lower price?
- **GTM efficiencies:** narrow portfolio, broad (direct/indirect) coverage
- **Lack of local talent** and global organization governance
-

Example unlocks for a globalization strategy

- Clear globalization roadmap with quick wins
- **Ecosystem partnership** in ex-China markets and with domestic players
- New business models (e.g., CDMO, gov’t programs)
- Localized supply chain and org (“dual circulation”)
- ...

5. Globalization – ecosystem partnership



Platform build

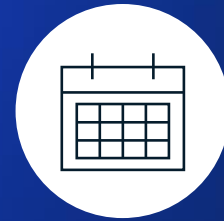
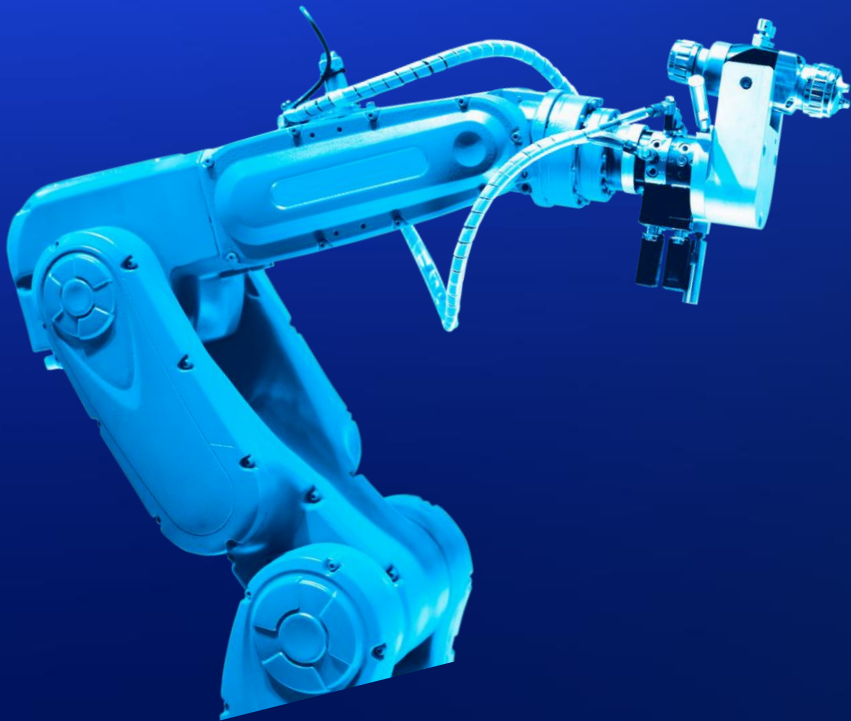
AstraZeneca, together with 10+ Chinese innovators in medtech, biotech, digital/AI, industry associations and investors, visited government officials, healthcare companies, hospital group heads in Middle East and Brazil for co-developing globalization opportunities



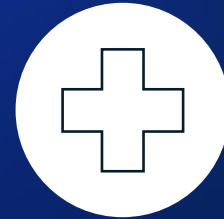
Dual circulation

Boston Scientific acquired a majority stake in Acotec. Collaborations along value chain include global commercialization, product development and manufacturing for both China and global markets

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2022-23 in the mirror



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Closing thoughts

Closing thoughts: What will matter most for MedTech leaders in China

1. China remains the **second largest and one of the fastest growing markets** in global MedTech, but **new winning recipes** are required
2. With continuous price containment, MedTech companies need to **act now to transform GTM model** for efficiency and **conduct active portfolio management** for sustained growth
3. MNC MedTech players need to re-assess their future right to win in China and re-confirm the strategic position of China at both corporate level and BU level
4. Local MedTech players need to **expand product portfolio, double down on globalization**, and **accelerate new capability building**
5. **Active ecosystem collaboration (incl. MNCs and locals)** to leverage each others' competitive advantages will be critical for the success

For more on China life sciences and healthcare...



McKinsey China Life Sciences Practice leadership



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McKinsey IVD Globalization Roundtable 2023



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China International Medical Equipment Fair 2023



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