



Shifting trends in openness: Globalization vs. localization and impacts for multinational companies

Life sciences and medtech companies are increasingly global, and the global economy is moving toward a new normal—a shift away from peak globalization.¹ The United Nations' latest "World Openness Report 2023" shows "world openness" falling 0.4%—a downward trend amidst a growing move away from openness between countries, sectors, and regions.² Declining interdependence between countries may have negative consequences for global trade and overall prosperity.³

The Asia-Pacific (AP) region is expected to yield among the highest growth over the next several years—due to its sizable consumer base, increasing disease

incidence, and supportive regulatory frameworks⁴—and China and Japan are among the largest economies in the pharma and medical device markets (figure 1). In AP we see two understandable but diverging approaches being taken by the 2nd and 3rd largest life sciences countries in the world. China is advancing policies that prioritize its own national interests and technologies,⁵ while Japan's trade openness is at its highest level historically—at almost 47% and up about 10 points from 2021 to 2022⁶. The multiple factors driving these diverging models include trade corridors, macro political dynamics, access to talent, views on growth, and IP protection.

Figure 1. Top pharma and medical devices markets by country, growth forecast 2019 to 2028

Country	Top 5 Pharma Market by Country			Top 5 Medical Device Market by Country		
	2019 Sales (US\$ B)	2023 Sales (US\$ B) E	2028 Sales (US\$ B) F	2019 Sales (US\$ B)	2023 Sales (US\$ B) E	2028 Sales (US\$ B) F
US	453	571	704	165	205	262
China	121	165	237	30	43	61
Japan	106	100	163	33	33	43
Germany	77	87	111	32	37	46
France	41	47	57	18	20	24

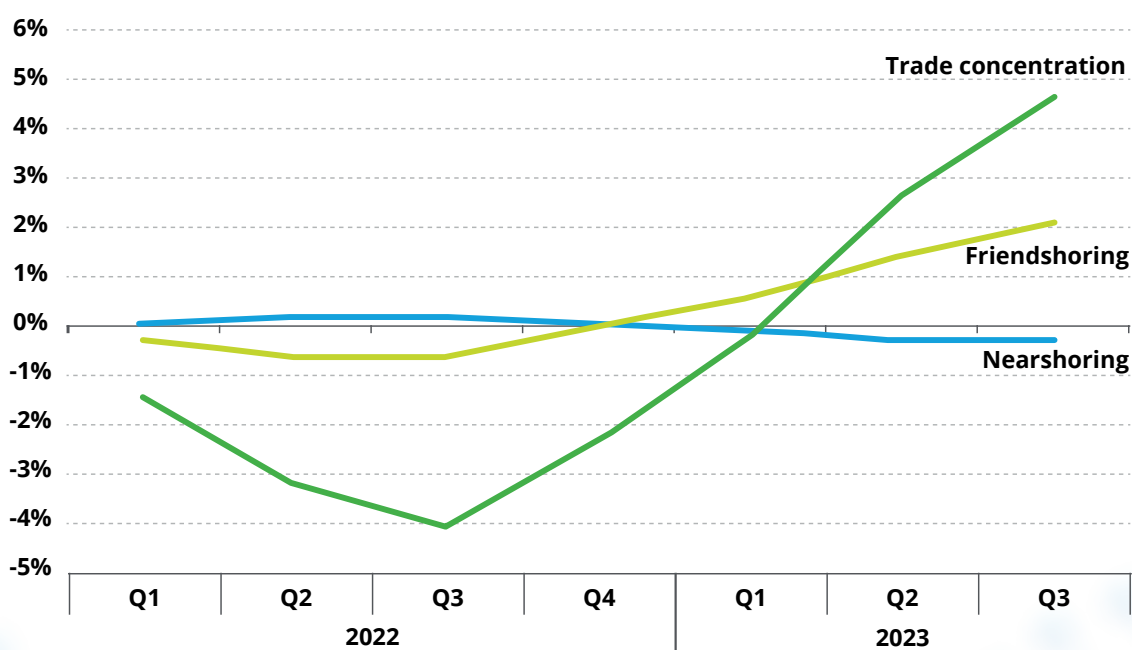
Source: EIU and Statista Market Insights

Globalization is not dead, but changing

Global connectedness may be measured by the flow of trade, capital, information, people, technology, and ideas—and while globalization is not dead, it is changing.⁷

During the pandemic, trade and supply chains were vital to increasing the production and distribution of medical supplies, including vaccines.⁸ However, in the past two years, global trade is noticeably more concentrated and geopolitically close, relying on a smaller pool of trading partners (figure 2).⁹

Figure 2. Global trade patterns' geopolitical turn, bilateral trade changes since Q1 2022



Source: UNCTAD, United Nations Trade Update 2023

On the whole, international trade flows are still proving resilient, while some stakeholders question the threat of *deglobalization*.¹⁰ The volume of cross-border engagement is a valuable measure for economic growth,¹¹ and the World Trade Organization (WTO) believes recent trends need monitoring.¹²

In 2024, marked difference in growth among regions is expected to continue,¹³ part of the glocalization trend—a blend of *globalization* and localization, involving:

- shorter supply chains,
- an emphasis on re-establishing domestic manufacturing capacity, and
- a more strategic role for government.¹⁴

Tracking trading patterns

After a dip in 2023, the expectation for growth in global trade is rising—3.3% growth is projected for 2024.¹⁵ The two emergingly divergent models in China and Japan, highlighted earlier, are also demonstrated by their current trading patterns:

Experts say China is likely to remain the world’s leading exporter for the near future, but its export dominance in the global economy may be peaking.¹⁶ Between EOY 2022 and EOY 2023, China’s exports decreased by US\$10.4 billion or -3.39%, primarily impacted by a decrease of over 20% in exports from China to the US.¹⁷ However, the US remains China’s top trading partner in exports followed by Vietnam, South Korea, and Japan. China increased imports in 2023, with the US, South Korea, and Australia as leading partners¹⁸ China’s growth objectives point to becoming a high-income economy, rather than simply raising GDP.¹⁹

Japan is the fourth largest economy by GDP, as Germany moved ahead of Japan in 2023 to claim third place behind the US and China.²⁰ Almost a quarter of Japan’s trade is with China,²¹ and Japan’s export of goods and services is on the rise—climbing 4.1% in 2022 above pre-pandemic levels.²² Japan exports almost equal to both the US and China.²³

Pharmaceutical goods import and export ratios

Pharmaceutical trade started to rise in the third quarter of 2023,²⁴ and the global market for pharmaceuticals is expected to reach almost US\$1.2 trillion in 2024.²⁵

Japan, the third largest pharmaceutical market, imports about three times the pharmaceutical products it exports (figure 3)²⁶ and is a critical export market for US pharmaceuticals.²⁷ Historically, Japan has accelerated economic growth with “external” globalization through expansion of trade and outward foreign direct investment (FDI).²⁸ As of 2021, Japan is the largest source of overall FDI into the US, with an FDI stock of US\$721 billion.²⁹

China has a relatively equal level of pharmaceutical product imports and exports.³⁰ Currently, the US and China are relying more on each other for pharmaceuticals, with the US exporting semi-finished/end products and China exporting API.³¹ The US imports US\$10.2 billion in pharmaceutical goods from China, while exporting US\$9.3 billion to China, driven by advanced medicines such as cancer treatments and antibiotics.³² Despite progress in some areas, barriers for trade with US companies remain challenging.³³

Figure 3. Comparison of 2021 pharmaceutical imports and exports, China, and Japan

Pharmaceutical Goods	China	Japan
Imports	US\$34.1B	US\$30.3B
Exports	US\$36.0B	US\$10.2B

Source: OECD (Organization for Economic Co-operation and Development)

US-China tech wars continue to affect medtech and technology companies

Revenue in the medical device market is projected to reach US\$182 billion for the US and US\$36.38 billion in China, in 2024.³⁴ The US is the top exporter and importer of medical instruments; China is fourth in imports, fifth in exports; and Japan is fifth in imports.³⁵

China and Japan lead exports for semiconductor devices that are essential for therapeutic medical devices; Hong Kong, China, and the US lead imports.³⁶ Integrated circuits dominate the semiconductor market, and China experienced sharp declines in these imports—a drop of 15.3% in 2022 and 15.2% through Q3 2023 YoY in the number of units.³⁷

Domestic production and exports are starting to show more resilience. In 2024, China is expected to lead chip recovery mid-2024, but the US plans more export controls on high-end AI chips.³⁸ In 2023, Japan also introduced export controls, limiting 23 different types of chips sales to China.³⁹

The demand for chips that are optimized for Generative AI and investment in AI-supporting servers is bolstering demand in Japan, according to the Semiconductor Equipment Association.⁴⁰ Despite being down at the beginning of the year, Japanese chip gear sales are forecast to climb 27% in the fiscal year⁴¹ that starts in April 2024.⁴² Japan's new industrial policies are aimed at restoring the international competitiveness of its semiconductor industry.⁴³

China's "new whole-nation system" was also put into place to advance its R&D, including spurring its semiconductor industry to catch up with global competitors.⁴⁴ Some believe current US tech

bans are stimulating a domestic ecosystem⁴⁵ and motivating China to deliver on its own technological breakthroughs.⁴⁶ But China still lags two to three generations behind Taiwan and South Korea in manufacturing the most advanced chips.⁴⁷

Multinational corporations (MNCs)—like Intel, GE, NVIDIA, and Qualcomm, among others—are lobbying government officials to find ways to temper the blow of export controls.⁴⁸ For example, NVIDIA introduced less powerful chips in China in December 2023 to comply with US export restrictions.⁴⁹

"MNCs need to monitor the global and China local environment closely, continue to leverage industry associations to influence government policy, and keep their China strategy adaptable to external changes."

—**Medtech** CEO of MNC operating in China⁵⁰

Heightened scrutiny for biotech foreign investments

China and the US share ties in biotech R&D and commerce, and the Committee on Foreign Investment in the United States (CFIUS) is increasing scrutiny of Chinese investment in the US biotech industry. Companies with "critical technology" or "sensitive personal data" are at greater risk and should be prepared for potential CFIUS challenges in 2024, related to foreign transactions for investment.⁵¹

Market leaders remain committed to business in China

As geopolitical tensions rise, many top life sciences and medtech MNCs report they remain committed to China in 2024, but expect more regulatory scrutiny and market access challenges.⁵² Pharmaceutical MNCs are reworking business models⁵³ as they watch price cuts play out and internal priorities shift.⁵⁴

Medtech and technology companies operating in China are also monitoring the macroeconomic situation as they remain susceptible to disruptions in supply chains.⁵⁵ Global political tensions in 2024 are the primary concern of 90% of US medical device executives in a survey of C-suite executives by the Deloitte Center for Health Solutions.⁵⁶

“The China pharma market will remain a very important focus for us, as its size and scale will continue to rise. The growth will be slower going forward (although we have the ambition to grow double digits in 2024). Currently our HQ leadership team has a very ‘balanced’ view on China—neither bullish nor negative.”

—**Pharmaceutical** CEO of MNC operating in China⁵⁷

Opportunities in the China market

For pharmaceutical MNCs, the vast size and scale of the China market is a magnet for expanding global plans,⁵⁸ and China is raising R&D investment by 10% in 2024 to speed up scientific and technological breakthroughs.⁵⁹ There is an opportunity to make

considerable progress in the development of treatments for chronic as well as rare diseases.⁶⁰ For the treatment of rare diseases, drug cost and affordability are in need of further legislative and policy support.⁶¹

China is also an attractive market for medical device companies looking to strengthen their industrial and supply chain resilience.⁶² Since Q3 2023, Medtronic started showing stronger-than-expected recovery for its procedure volume in China.⁶³ The company reports that the impact of value-based procurement (VBP) is “largely behind us as the majority of its product portfolio has been repriced.”⁶⁴ Medtronic CEO Geoff Martha says that the company is continuing to invest in China because “it’s a big market, and it’s growing.”⁶⁵

Acceleration of centralized anti-corruption efforts

Medtronic says it has not been affected by anti-corruption issues, which are expected to continue to be a factor in 2024.⁶⁶ China’s latest anti-corruption campaign by the central government in China includes rectification efforts by 14 government agencies, including China’s National Health Commission (NHC).⁶⁷ Research shows bribery has been the most common form of corruption in the medical sector, and new policies reflect a “zero-tolerance attitude.”⁶⁸ While healthcare providers are most often cited as taking bribes, pharmaceutical and medical equipment suppliers are also said to be paying the bribes.⁶⁹

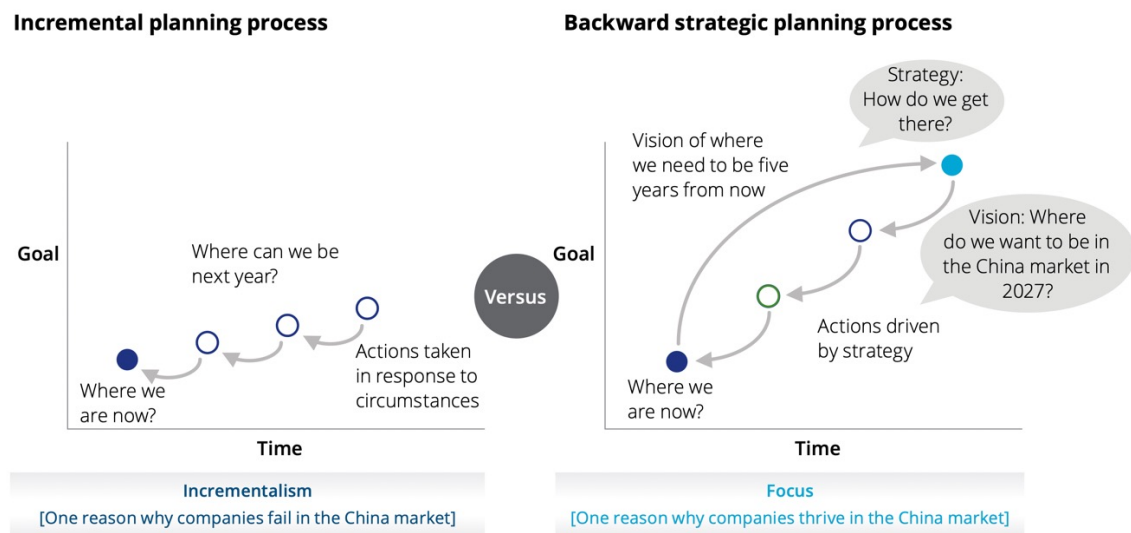
China’s rectification efforts are not likely to be short-term in duration or impact—possibly lasting for five years followed by rigorous and regular enforcement, according to recent research into the anti-corruption campaign by Deloitte China.⁷⁰ With tightened pharmaceutical regulation, pharmaceutical companies should urgently construct comprehensive and effective corporate systems to facilitate compliant business operations.⁷¹ In the context of rectification, product R&D can help pharmaceutical companies improve their competitiveness in China’s health care system.⁷²

Operating in China is complex

Changes in geopolitics, technology, regulations, and local competition makes operating in China challenging for MNCs. But addressing these challenges may

open up new markets and opportunities.⁷⁴ From the experiences of successful and unsuccessful MNCs in China, Deloitte China finds that it may be better to implement a strategy that is focused, as opposed to one that is reactive and incremental (figure 4).⁷⁵

Figure 4. Incremental vs. focused strategy



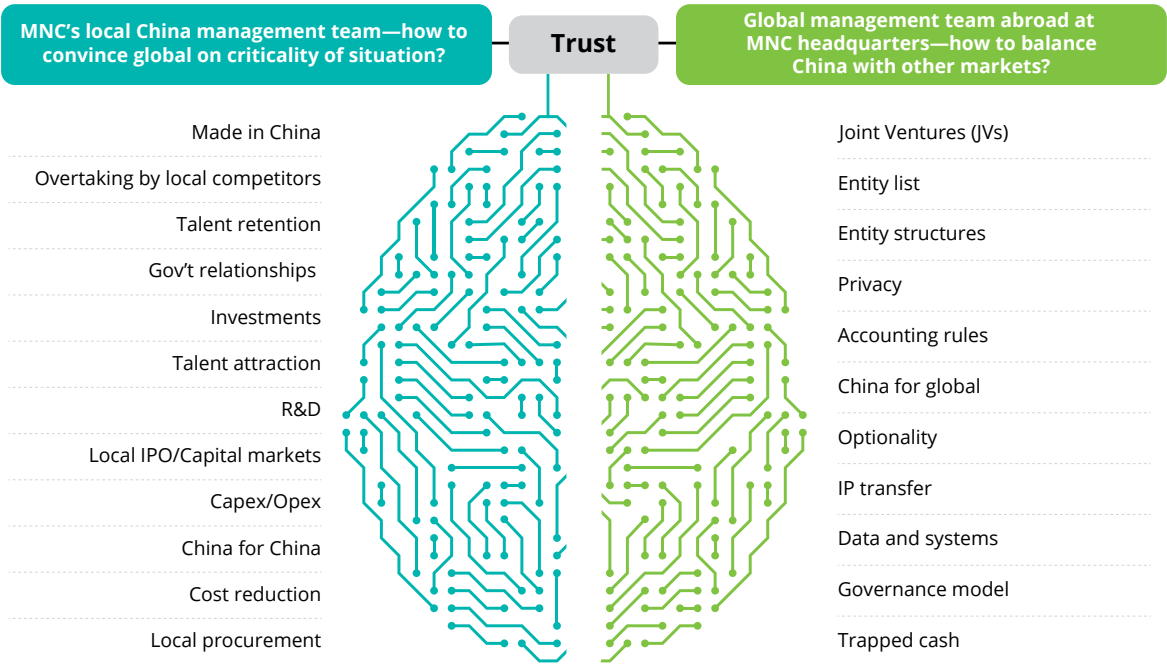
Source: Deloitte China, *MNC Localization 2.0*, 2022

Meeting the challenges of the China market

Alongside opportunities, MNCs operating in China face challenges, especially due to growing local competition. China's use of intellectual property (IP), forced technology transfer, and many market access matters may still impede multi-national firms from operating on equal footing with local Chinese firms.⁷⁶ Since the government of China introduced the "Made in China 2025" strategic plan in 2015, China has had its sights on capturing a much larger share of the biopharma and advanced medical device markets.⁷⁷

In recent years, alignment between an MNC's corporate office in China and its global headquarters outside of the country has been tricky. During the COVID-19 pandemic, MNCs' global leadership teams were unable to visit China, and without face-to-face interaction, some found challenges in effective communication. To bridge trust and improve communication between global and local management teams often includes balancing China with other markets, while also understanding the critical needs of local management in China. (figure 5).

Figure 5. Bridging trust between global and local management teams



Source: Deloitte analysis

China expects foreign MNCs operating in China to become more localized and support local growth.⁷⁸ Toward the end of 2023, Pfizer, GSK, Sanofi, and Biogen all tapped local collaborators to help commercialize their products in China.⁷⁹ As marketing responsibilities shift to other firms, job cuts are expected at each of the leading drugmakers.⁸⁰

“MNCs need to work out a balanced action plan to address the short-term challenges—geopolitical conflicts, volume-based procurement (VBP), diagnosis-related group/diagnosis-

based intervention packet (DRG/ DIP), ‘buy local’—while also seeing China’s long-term opportunities, like ‘Healthy China 2030,’ therapy penetration to cover a broader population, and the potential growth in health care expenditures as a percentage of GDP, from about 7% in 2020 to 9% in 2030.”

—**Medtech** CEO of MNC operating in China⁸¹

Drug and device pricing impacts in China

China's regulatory changes have been altering portfolios and business models for MNCs, and in particular, go-to-market strategies.⁸² China's VBP, DRG (fixed payment), and DIP (price-adjusted payment) pricing plans seek to reduce the cost of drugs and devices by awarding large volume sales to tender winners with the lowest price in cities, provinces, or the country.⁸³

As the Chinese government sees the benefits of these price cuts, it has expanded product categories.⁸⁴ At the end of 2023, China rolled out its fourth national high value consumables VBP, and tenders expect to be carried out in mid-2024. Some medtech devices saw dramatic price reductions—11 artificial intraocular lens products averaged 58% in price cuts, and 19 sports medicine products averaged 72% in price cuts.⁸⁵

Drug products also underwent price cuts in late 2023, averaging 58% as part of the ninth national pharma VBP. Of more than 260 drug products undergoing preliminary bids, only five are supplied by four foreign companies.⁸⁶

“By 2024, about 80% of high-value consumables will go through VBP, and VBP-winning products are the major products that China patients can have

access to under the current policy. We saw there are clear needs from China patients for differentiated, better quality, and more advanced technology/innovation products. MNCs need to continue to influence the government to enable this offering to patients through the public hospital evaluation system, DRG/DIP payment exception, and commercial insurance, etc.”

—Medtech CEO of MNC operating in China⁸⁷

Advancing a localization strategic plan

Localization has been a continuous theme in the evolving China market, and MNCs should be advancing their localization plans—to not just be competitive in the China market but also to address the increasing risks surrounding supply chain disruption and technology and data sovereignty. There is no one-size-fits all formula, and each company is at a different stage (figure 6).

Figure 6. Stages of advancing a localization plan in China for MNCs



Source: Deloitte analysis

Building local support in China

Life sciences and medtech MNCs are expected to show support for local initiatives.⁸⁹ The Healthy China 2030 initiative is China's health reform to improve the country's public health services, medical industry, and food and drug safety. Its focus is on prevention rather than treatment.⁹⁰

Recently, Pfizer demonstrated its support of Healthy China 2030 by signing an agreement with China to cooperate on improving the country's health coverage. The memorandum of understanding with the Health China Research Center plans to support public health research and improve the health of rural populations.⁹¹

Bringing talent back home, attracting new sources of R&D innovation

Over the last 25 years, China's R&D spending to GDP share has risen from 0.56% to 2.4% and is likely to surpass Japan and Germany in the next decade, given its current momentum.⁹² Local Chinese companies have been spending relentlessly on R&D and, as a result, are making advances on the technology front.⁹³

To capture its share of biopharma and medical device markets, China knows it must innovate, not just copy, to succeed. In recent years, it launched more than 200 talent recruitment programs to attract high-caliber scientists globally. China's Thousand Talents Program (TPP) recruits Western-educated Chinese STEM researchers back to China. A recent study found TPP to be successful in attracting promising young scientists with cash and lab support, but less successful in luring high-caliber researchers. These more established researchers prefer the West for less "administrative intervention."⁹⁴

However, the research also shows that over time, the support has enabled returning foreign-educated researchers to surpass their peers who stayed abroad in publishing productivity. Productivity rose 27%, including publication in high-caliber journals.⁹⁵

There are more than 1,600 MNC R&D centers operating in China, and more than US\$38 billion worth of intellectual property has been imported.⁹⁶ Currently,

China is encouraging foreign investors to establish R&D centers in China to undertake major scientific research projects.⁹⁷

In August 2023, the China State Council released "Opinions to Further Optimize the Environment for Foreign Investment and Increase Efforts to Attract Foreign Investment".⁹⁸ The opinions in the policy call for relevant departments to develop a convenient management mechanism for cross-border data transfer security. The policy also conveys that the Chinese government intends to facilitate the entry-exit and residence of foreign executives and technical personnel (and their families) from foreign-invested enterprises.^{99, 100}

China CEO insights on innovation in 2024

In surveying CEOs from MNCs operating in China,¹⁰¹ many identified innovation as a primary driver for success in China, but there were various views on the state of innovation and how to generate true innovation. Some felt that digital innovation has been applied widely, while others say that the state of AI and "the tools available are behind what is done elsewhere in the world." One pharmaceutical CEO says that the "vibrant growth of domestic innovation injects new vitality into the China pharmaceutical market, but also intensifies competition." Another believes that "the most important initiatives for 2024 will be around 'education and engagement' of patients and health care providers in China."

"MNCs need to continue to accelerate innovative product launches in China while at the same time creating differentiation and value propositions in specific areas, striking a better balance between price and quantity, and exploring various payment methods in order to maximize the value of innovative drugs."

—Pharmaceutical CEO of MNC operating in China¹⁰²

Active globalization efforts in Japan

Expanding footprints of Japanese pharma companies

The Japanese pharmaceutical industry has been actively participating in globalization efforts and activities—increasing their global presence through M&A, collaborations, broader R&D, and expansion into emerging markets. They are less dependent on local revenue, generating more than half of their revenue outside of Japan. Takeda, the largest pharmaceutical company in Japan and currently 17th largest in the world, leads in its globalization efforts with a global presence in more than 80 countries.¹⁰³ With over 20 years of a deliberate strategy to expand and serve globally and more recently- 10 years of comprehensive transformation already underway, Takeda is an ‘exceptional’ Japanese head quartered company but one which is really a globally “headquartered” across Japan, the US and Europe (Switzerland). Takeda has been led by Christophe Weber, its first non-Japanese CEO, for almost 10 years. He shared in an interview

in 2021, “When I joined the company in 2014, the ambition was to make two big changes. One was to transform the R&D capabilities so we could improve productivity. The second was to globalize the company, to increase scale, so we could be more competitive.”¹⁰⁴ During this journey, Takeda has acquired multiple other multi-national pharmaceutical companies (e.g., Millennium Pharmaceuticals, Shire Pharmaceuticals among others) and committed to a global enterprise business model and strategy. Its early commitment to a comprehensive globalization path is distinctive in the Japanese pharmaceutical market.¹⁰⁵

After Takeda, Astellas Pharma has the maximum presence outside Japan, both in terms of facilities and leadership locations, and conducts business in approximately 70 countries around the world. In contrast, Shionogi has a more limited presence outside Japan, as its R&D centers are concentrated in Japan. However, most of the Japanese pharmaceutical companies are expanding their presence in the US followed by Asia-Pacific (APAC) and Europe (figure 7).

Figure 7. Geographic presence and expanding footprint of Japanese pharma companies (beyond Takeda)

	Geographic presence						Locations of key leaders	Regions where companies are expanding footprint
	Japan	North America	Europe	APAC*	South America	Middle East and Africa		
astellas	: 3 : 3	: 7 : 1	: 1 : 3	: 1 : 1				 US Ireland
Otsuka	: 25 : 10	: 6 : 2	: 4 : 4	: 4 : 12 : 2	-	: 1		 US India Europe
Daiichi-Sankyo	: 4 : 5 : 1	: 1 : 1	: 2 : 2	: 4 : 1 : 2	: 1 : 1			 Australia Brazil
YOWA KIRIN	: 4 : 2	: 1		: 2 : 1 : 1	-			 US UK China
Sumitomo Pharma	: 3 : 3 : 3	: 1 : 2	: 1	: 1	-	-		 US Taiwan, China Singapore Hong Kong
SHIONOGI	: 3 : 3			: 1	-	-		 South Korea Singapore India CEE

Global headquarters Offices R&D presence Manufacturing hubs Distribution centers/warehouses

Notes: 1. APAC—Asia Pacific, includes all of Asia and Oceania, except Japan. | 2. CEE—Central and Eastern Europe. | 3. Firms have multiple offices across regions. 4. For Otsuka and Sumitomo Pharma, some of the R&D facilities are combined with manufacturing hubs.

Source: Deloitte Japan analysis

Making progress in the globalization journey

US and EU pharmaceutical companies utilize a functional management approach in managing business functions, organized by disease region (figure 8). Early-stage pharmaceutical companies in Japan are managed by region. By prioritizing regional business expansion, these companies are looking at increasing market share in a region or country.

More advanced pharmaceutical companies in Japan have started the move towards managing by global function, rather than region. This approach is more centralized where multiple regions are managed by the headquarters across an optimal distribution of tasks and resources.

To increase R&D productivity, some companies are looking at moving more R&D functions outside of Japan, but talent is scarce. In 2024, these companies can expect increased competition for talent with global expertise.

Growing optimism for growth through collaborations

In 2024, as leading life sciences and medtech companies look to balance both a global and local perspective in Japan, more are exploring collaborations to drive growth.¹⁰⁶ Bristol Myers Squibb (BMS) aims to double the size of its Japan business over the next decade, driven not only by its internal products and pipeline but also through partnerships.¹⁰⁷ Currently, as

much as 60% of the drug giant’s development pipeline is externally sourced, with BMS poised to further promote collaborations that bolster its portfolio.¹⁰⁸

BMS in Japan generated sales of approximately US\$1.4 billion in 2022, and the company’s “Japan Moonshot program” is designed with the aim of doubling this revenue over 10 years by:

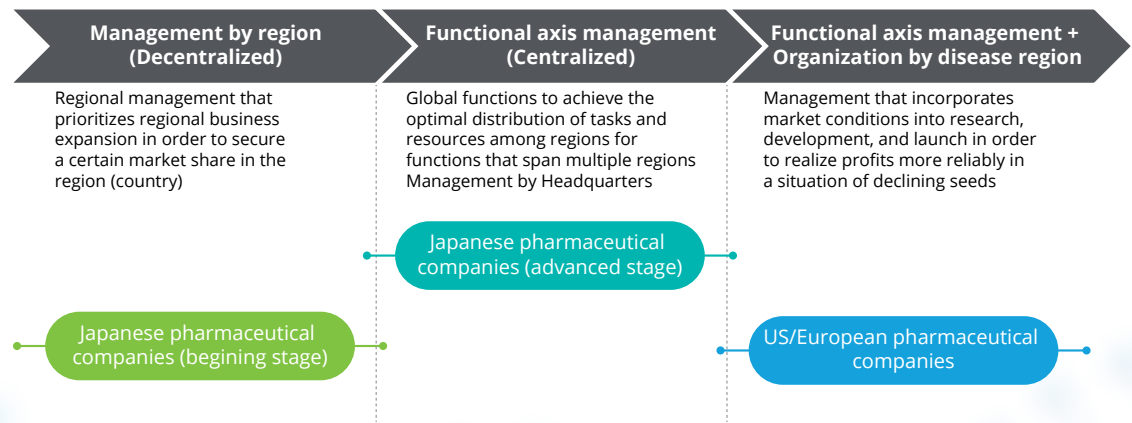
- Gaining new drug approvals
- Growing existing products including through label expansions
- Accessing external innovation¹⁰⁹

A string of product launches are also part of the doubling plan.¹¹⁰ Of nine new medicines already approved by the US FDA, three have attained the green light in Japan, and others are either under regulatory review or in mid- to late-stage clinical development.¹¹¹ There are more programs underway pursuing regulatory approval in Japan as well as plans to expand access to existing products.¹¹²

BMS’s R&D strategy in Japan is leveraging new uses for AI/ML, focusing on three areas:

- Identifying new molecular candidates to improve the odds of success
- Tapping into AI/ML to accelerate clinical trials and create better programs
- Incorporating new technologies into patient outcome studies¹¹³

Figure 8 Approaches between US/EU and Japanese companies as they globalize



Source: Deloitte Japan analysis

Takeda's expansion into emerging markets

Already Japan's largest and most global pharmaceutical company, Takeda is moving forward on a plan to grow its emerging market business to US\$9 billion by 2030.¹¹⁴ Its regional strategy includes delivering health care and medicines to 85% of the world's population.¹¹⁵ The World Health Organization's (WHO) Strategic Advisory Group of Experts (SAGE) recently recommended Takeda's dengue vaccine, QDENGAR, for introduction in areas with a high dengue disease burden.¹¹⁶

Dengue fever is among the most common mosquito-borne viral disease, causing more than 390 million infections per year, and is endemic in more than 100 countries.¹¹⁷ Brazil was the first country to make Takeda's vaccine available in the public health system for children and adults.¹¹⁸ QDENGAR is also currently available in countries in Europe, Indonesia, Thailand, and Argentina.¹¹⁹ Argentina is currently undergoing its worst dengue outbreak in 20 years with over 100,000 infections registered in 2024 alone.¹²⁰

Expanding R&D in Japan and international collaborations

The biopharmaceutical industry has invested more than US\$92 billion in R&D in Japan over the last decade, developing over 1,500 new medicines and supporting over 140,000 jobs in Japan.¹²¹ As of Q1 2024, 70 research-oriented pharmaceutical members make up the Japan Pharmaceutical Manufacturing Association, whose "Industry Vision 2025" is to provide innovative drugs to 8 billion people worldwide by 2025.¹²²

Embarking on a strategic turnaround for innovation

Japan has an internationally unique innovation system in which all new drugs were created by incumbent pharmaceutical companies, like Takeda, which has the largest R&D budget of the Japanese pharma companies.¹²³ There is a shift taking place with the rise of personalized medicine towards first-in-class drugs for orphan diseases,¹²⁴ with the establishment of start-ups as an important pathway for new drug R&D.¹²⁵ The start-up sector in the life sciences has been historically weaker in Japan than elsewhere.¹²⁶

Japan has started a strategic turnaround for the biopharmaceutical market with the "*Japan Bioeconomy Strategy*," which aims to transform Japan into the

world's most advanced bioeconomy society by 2030.¹²⁷ The government of Japan has allocated funds to promote biomanufacturing technologies with significant investments in biopharmaceuticals, regenerative medicine, cell, and gene therapies (CGTs) and advanced therapy medicine products (ATMPs).

The Bioeconomy Strategy encompasses a broader spectrum than the "*Vision Plan*," spearheaded by the Ministry of Health, Labor, and Welfare (MHLW), which is focused specifically on revitalizing Japan's pharmaceutical sector with particular emphasis on innovation, global competitiveness, and R&D investment.¹²⁸ Strengthening collaboration with biology research in academia is a way to improve the drug discovery competitiveness of Japanese companies.¹²⁹

Attracting new talent and researchers

The Japanese market for new and patented pharmaceuticals is expected to reach more than US\$72 billion by 2027, making it the second largest in the world after the US.¹³⁰ In 2023, the Japanese government committed to investing circa US\$75 billion in an endowment fund for select universities to produce world-class research and compete globally. Other organizations are also creating novel funding opportunities.¹³¹

“We specialize in young researchers, especially those who have returned from abroad and need funding for start-ups. We are trying to nurture those that will become excellent researchers in the future, with a small budget.”

—Yukihide Hayashi, head of the **Life Science Foundation of Japan**

Scientists, like biophysicist Kazuhiro Maeshima, benefited from years of research overseas before returning to Japan. Maeshima joined the Genome Dynamics Laboratory at the National Institute of Genetics (NIG), based in Shizuoka, with one attraction the level of academic freedom. “Essentially, we can do what we want. This may be pretty rare in Japan, but we believe it’s a critical factor in performing exciting research,” he says.¹³² Maeshima is also interested in collaborating internationally, and currently is working with colleagues in Australia because of their relatively small, high-quality research community.¹³³

Focus on R&D hiring in Japan

Japan’s human capital for R&D has been growing more slowly than its peers.¹³⁴ In 2024, R&D now accounts for 40% of jobs for new grads hired at pharmaceutical companies, according to responses by 52 companies surveyed in Japan.¹³⁵ The trend was more evident at top-tier companies, like Chugai Pharmaceutical, where R&D dominated with 80% of new hires; Chugai also had the most hires with 155.¹³⁶ At Daiichi Sankyo and Ono Pharmaceutical, R&D jobs were also the majority, accounting for 60% of hires.¹³⁷ For all companies, new sales jobs accounted for just 20%.¹³⁸

The generics manufacturer Nichi-Iko Pharmaceutical resumed hiring new grads for FY2024 after a two-year drought.¹³⁹ All 25 new hires were assigned to the production and quality team.¹⁴⁰ Others leading increases in the number of jobs YoY included Nippon-Kayaku (+42), Eli Lilly (+17) and Mitsubishi Tanabe^{141, 142}

Looking back at FY2023, Chugai hired the most mid-career personnel in R&D, accounting for 40% of jobs, and no sales hires were made. About 20% of Ono Pharmaceutical’s mid-career hires were for R&D jobs.¹⁴³

Microsoft to invest approximately \$2.9 billion to boost AI and jobs in Japan

Microsoft is planning an AI-related reskilling program in Japan that will train 3 million workers over three years. The investment also includes setting up a new Tokyo-based lab for R&D in robotics and AI.¹⁴⁴ Under the plan, Microsoft plans to install advanced AI semiconductors at two existing facilities in eastern and western Japan.¹⁴⁵

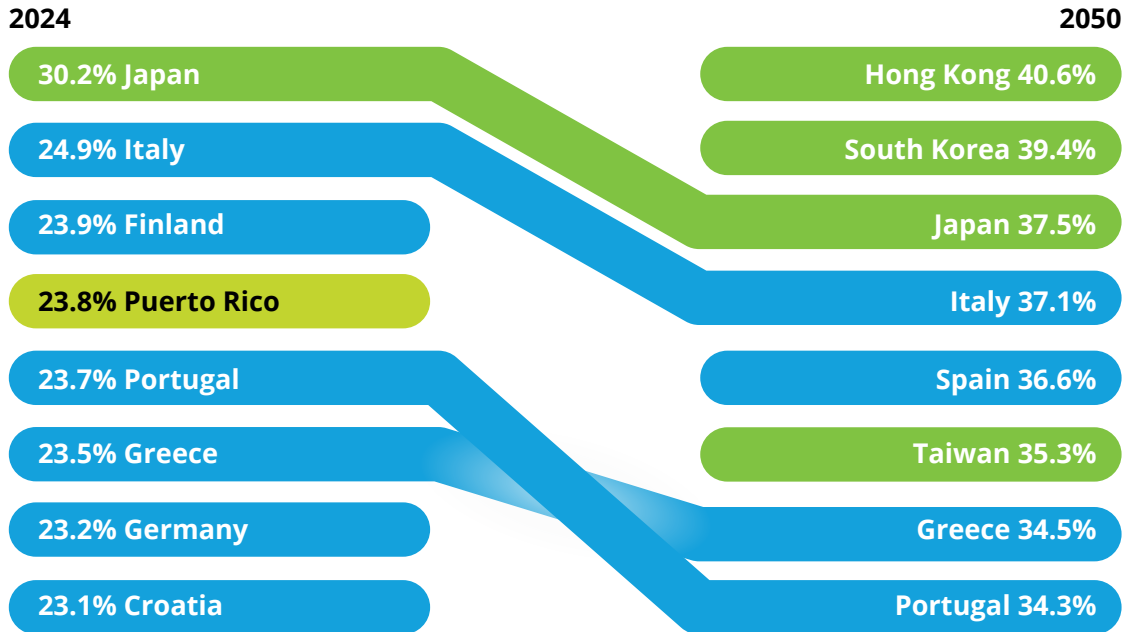
Meeting the challenges of an aging population in Japan and risks to society

One of the biggest challenges facing Japan is the rise in its aging population—one in 10 people are over 80 years of age. Japan currently has the highest percentage of citizens aged 65 or older among countries or territories with over a million people (figure 9). Around the world, aging is becoming a leading issue for governments and health care ecosystems as the number of people worldwide over 60 years of age will rise to reach nearly 2 billion by 2050.

Figure 9: World's oldest populations

Estimated share of a population in countries and territories with over a million people aged 65 or older, in 2024 and 2050.

■ Europe ■ Asia ■ Caribbean



Source: Statista, United Nations Population Division

Births dropping, companies making shifts to address aging market

As more people age, the number of births in Japan dropped to new lows in 2023, and leaders are assessing the demographic crisis as well as the future impacts to society with an aging population.¹⁴⁹ China also released data showing that its population shrank in 2022—for the first time in six decades.¹⁵⁰

Companies are starting to address these shifts. For example, Oji Holdings, a maker of diapers in Japan, is wrapping up its domestic output of infant diapers later this year to boost production of sanitary items for adults, mainly in nursing homes.¹⁵¹

The demand for elderly care is driving the development of innovative technologies, like automation for managing care.¹⁵² These advancements support independent living and can help reduce the burden on caregivers and nursing staff by using tools to monitor and address senior's needs.¹⁵³ In 2024, companies at the forefront of such technologies are poised to benefit from the growing demand.¹⁵⁴

New digital and AI technologies for assisted living and elderly care

Lifelens, created by Panasonic, allows tech-enhanced rooms to automatically monitor patients. Hitowa Care Services' newest retirement home is a Lifelens partner

in Japan and uses cameras in each of its rooms to record patients while an AI system analyzes the data.¹⁵⁵ The technology also uses sensors that report whether a person is in bed or not and can keep track of the patient's heartbeat.¹⁵⁶

The Japanese market for diagnostic and therapeutic AI health care tools is projected to be worth around \$114 million by 2027.¹⁵⁷ Entrepreneurial physicians in Japan are helping to develop new AI health care tools for improving the speed and accuracy with which doctors can make diagnoses.¹⁵⁸

For example, Japanese companies hold a 98% share of the global market for endoscopes but diagnosing cancer from images captured by endoscopy is highly challenging.¹⁵⁹ Japanese startup AI Medical Services (AIM) has developed an AI tool to improve diagnostic accuracy by training on more than 200,000 high-resolution videos of the stomach.¹⁶⁰ Gastric cancer remains the third leading cause of death worldwide, and its incidence is particularly high in Asia.¹⁶¹ Asian-Americans are also more affected.¹⁶² Japan and Korea have national stomach cancer screening programs because the incidence of gastric cancer is so high.¹⁶³

Digital therapeutics are also seeing more adoption as chronic diseases rise.¹⁶⁴ US-based Welldoc and Japan's Astellas Pharma are collaborating for a clinical trial using Welldoc's BlueStar digital health app for diabetes management.¹⁶⁵

More opportunities for digital services to promote a healthy life expectancy

Increasing adoption of technology among the older generation presents opportunities for businesses to reach a wider customer base through digitalization, including managing their health.¹⁶⁶ By helping people stay mobile and free of debilitating age-related diseases, they can enjoy a better "healthy life expectancy."¹⁶⁷

However, when life expectancy grows faster than healthy life expectancy, the result is often lower quality of life and higher medical and social security costs.¹⁶⁸ MNCs, like Swiss pharma company Novartis, are looking for ways to lower costs in Japan by collaborating within the health care ecosystem as it faces the challenges of an aging society.¹⁶⁹ Novartis is working to raise awareness and improve management of cardiovascular disease—one of Japan's top social burdens affecting its middle-aged to elderly population. The Swiss company is collaborating with academia, local government authorities, and industry partners in various regions within the country.¹⁷⁰

In Japan, the senior life environment is built on an outdated model of life span, instead of extending health span.¹⁷¹ To deal effectively with its aging society, Japan should consider a new socially inclusive system for people expected to live into their nineties or more.¹⁷² Extending healthy life span is further discussed in the patient section of this outlook, *"Achieving better patient outcomes with personalized experiences and authentic shared decision making"*.

Moving forward amidst shifts in openness

To flourish in a hypercompetitive global environment and achieve leadership in life sciences requires sustained supportive policies and investment in R&D.¹⁷³ Shifting trends in openness—and how a country views its place in the world—are expected to continue to influence internal and external innovation and quality of care. Successful life sciences and medtech companies are paying attention to these shifts and remaining equipped with geopolitical expertise, while also developing strategies and actions to adapt to the challenges of this changing landscape.¹⁷⁴

Contacts

Jens Ewert

Leader
Deloitte China
jensewert@deloitte.com.cn

Alan MaCharles

Partner
Monitor Deloitte
amaccharles@deloitte.com.cn

Oliver Steck

Principal
Deloitte United States
osteck@deloitte.com

Angela Bowden

Partner
Deloitte United Kingdom
acbowden@deloitte.co.uk

Carrie Xiao

Leader
Deloitte China
carriexiao@deloitte.com.cn

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Endnotes

Extracting value from Generative AI and emerging technologies

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