Initiating Coverage Report

January 21, 2025

Price (20 Jan 2025)	HK$5.57
Target Price (31 Jan 2026)	HK$11.0
Expected share price return	97.7%
Market Cap	HK$67,46M

Price Performance (6660.HK)

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AIM Vaccine (6660.HK): Strategic Leadership Amid Changes in China's Vaccine Market Supply and Demand Dynamics

- AIM Vaccine (6660.HK) stands out as a leading, full-industry-chain vaccine company in China, with strong R&D, manufacturing, and commercialization capabilities. The company has built a robust portfolio with five advanced vaccine technology platforms, four wholly-owned manufacturing facilities, and eight commercialized products (i.e. freeze-dried human rabies, HBV, and HAV vaccines). Its pipeline of 22 vaccine candidates targets 13 disease areas, including leading global vaccine categories. Operating in all 31 provinces in China and expanding internationally with exports to Pakistan, Tajikistan, Egypt, and Côte d'Ivoire, AIM Vaccine is strategically positioned for growth. By 2025, the company's core products (HBV and rabies vaccines) are expected to stabilize, while next-generation products—such as serum-free rabies, PCV13, MCV4, and mRNA-based RSV and shingles vaccines—are set to drive transformative growth (2024-2027E revenue CAGR 47%, 2025E breakeven, 2027E NP RMB 1.52 billion). Using a DCF model, we derive a 12-month target price of HK$11.0 (January 2026), reflecting a 97.7% upside from the closing price on January 20, 2025. We initiate coverage with a Buy rating, supported by AIM Vaccine's robust pipeline, technological leadership, and international growth potential.

- **Investment Thesis：**

1) **Industry Consolidation & Leadership in High-Value Segments:** The Chinese vaccine market is evolving, aligning with global trends toward consolidation and dominance by high-value products and leading enterprises. As the supply side consolidates, companies with globally competitive technology, diverse product portfolios, and strong R&D-to-sales execution will prevail. AIM Vaccine, with its differentiated advantages, is uniquely positioned to lead in the domestic market while scaling internationally.
2) **Comprehensive & Iterative Product Portfolio:** AIM Vaccine's extensive portfolio targets high-value categories, including a robust rabies vaccine lineup (Vero cell, serum-free, human diploid, and mRNA) and pneumococcal vaccines (PCV13, PPSV23, and PCV20). Taking rabies vaccines as an example, by transitioning from traditional Vero cell-based vaccines to advanced serum-free, human diploid and mRNA platforms, the company enhances its market share, pricing power, and profitability. Other blockbuster pipeline candidates, such as MCV4, the EV71-CA16 bivalent hand-foot-month vaccine, and mRNA-based RSV and shingles vaccines, further underpin long-term growth.
3) **Advanced R&D and Manufacturing Capabilities:** AIM Vaccine leverages five cutting-edge vaccine technology platforms—bacterial,

viral, genetically engineered, combination, and mRNA—along with GMP-certified facilities to ensure consistent quality and supply stability. Its validated mRNA platform, proven during COVID-19, reinforces its leadership in next-generation vaccine innovation.

4) **Expansive Distribution Network & Global Reach:** The company's comprehensive sales network spans all 31 provinces in China, effectively navigating both public and private markets. Internationally, AIM Vaccine is expanding rapidly, exporting products such as rabies and meningococcal vaccines to emerging markets like Pakistan, Egypt, Tajikistan, and Côte d'Ivoire. Efforts to secure WHO prequalification could open significant opportunities in low- and middle-income countries.

- **Market Differentiation:** While market sentiment often centers on competitive pressures and pricing challenges within China's vaccine industry, we adopt a more optimistic view. AIM Vaccine's diversified product portfolio, technological edge, and global expansion strategy create a compelling investment opportunity. With a suite of high-value products launching in the near term and profitability set to rebound from 2025, the company is positioned for strong growth and a potential re-rating of its valuation.

- **Valuation & Investment Recommendation:** We project 2032 financial metrics: risk-adjusted revenue of RMB 9.949 billion, net profit attributable to the parent company of RMB 3.939 billion, and free cash flow of RMB 2.789 billion. Using a Discounted Cash Flow (DCF) model and applying a 15% discount rate and 2% perpetual growth rate, we estimate a 12-month valuation (January 2026) of RMB 12.58 billion, equating to 3.19x 2026 sales and 1.26x risk-adjusted peak sales in 2032. This offers a 97.7% upside from the closing price on January 20, 2025. We initiate coverage with a Buy rating, citing the company's strong growth prospects and attractive valuation.

- **Risk Factors：** Intense Competition & Market Share Loss; R&D and Product Launch Risks; Challenges in Promoting New Products; Technology Development Risks; Vaccine Quality Concerns; Geopolitical Risks

		2023	2024E	2025E	2026E	2027E
Revenue (miliion RMB)		1,187	1,247	1,462	3,807	5,514
	yoy	-6%	5%	17%	160%	45%
Profit/(Loss) attributable to the parent company(million RMB)		-1,301	-242	7	765	1,515
	yoy	NM	NM	103%	10896%	98%
EPS		-1.07	-0.21	0.01	0.66	1.31
Diluted EPS		-1.07	-0.21	0.01	0.66	1.31
P/S		5.7	5.4	4.6	1.8	1.2
ROE		-50.1%	-7.0%	0.2%	18.1%	26.4%

Source: Fosun International Securities

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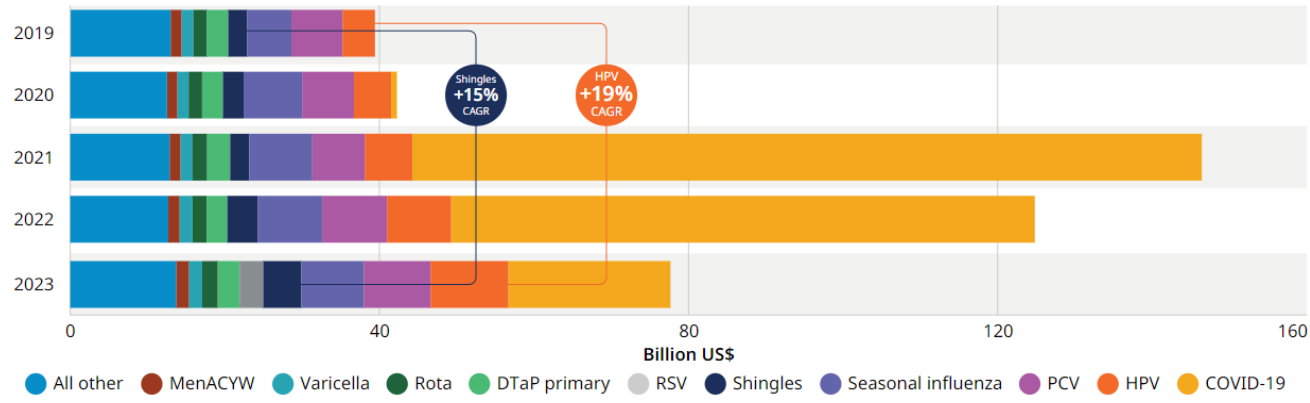
1. Investment Thesis: A Comprehensive Leader in China's Vaccine Market Poised for Dominance Through Supply-Side Consolidation and Differentiation

1.1 Industry Logic: China's Vaccine Market Mirroring Global Trends—Dominated by High-Value Products and Leading Enterprises

Globally, the vaccine market is concentrated, with a few high-value products and dominant players leading the sector. China's vaccine industry is undergoing a similar transformation, shifting from fragmentation to a more consolidated structure, where mature products compete on volume and innovative, high-value products capture the majority of market share. This dual trend reflects the natural evolution of the industry.

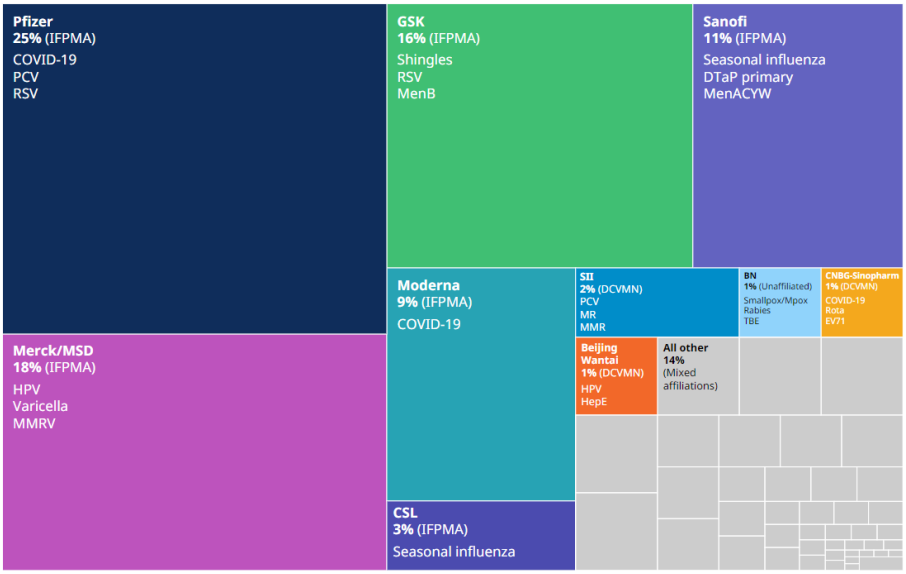
With demand-side pressures easing, the Chinese vaccine market is entering a phase of supply-side consolidation. As competition intensifies, only companies with leading global technologies, comprehensive product portfolios, and strong R&D, manufacturing, and sales capabilities will emerge as market leaders. These players will dominate the domestic market and have the potential for global expansion through differentiated competitive advantages.

EXHIBIT 1: Vaccine value (US$) from 2010-2023, showing the top 10 vaccines by value



Source: World Health Organization "Global vaccine market report 2024", Fosun International Securities

EXHIBIT 2: Share of global vaccine market by financial value in 2023



Source: World Health Organization "Global vaccine market report 2024", Fosun International Securities

1.2 Company Logic: A Comprehensive Leader with a Differentiated Product Portfolio

AIM Vaccine is a large vaccine company in China, with over 90% of its revenue coming from rabies vaccines and hepatitis B vaccines. AIM Vaccine's leadership in mature vaccine segments, notably in HBV and rabies vaccines, underscores its ability to capture substantial market share and deliver strong financial performance. AIM Vaccine stands out as a unique and dominant player in China's vaccine industry, offering a comprehensive and differentiated product portfolio across multiple high-value categories. Its rabies vaccine series (Vero cell, human diploid, serum-free, and mRNA) and pneumococcal vaccine portfolio (PCV13, PPSV23, and PCV20) exemplify the company's iterative and innovative strategy, which allows it to scale high-value vaccines quickly while leveraging established distribution channels for mature products.

The company is strategically positioned as a leading player in the global vaccine market, supported by a robust and integrated business model. The company spans the full vaccine value chain, from research and development (R&D) to manufacturing and distribution, which not only ensures operational efficiency but also drives cost control and maintains high product quality. This vertical integration provides AIM Vaccine with a significant competitive advantage in an industry characterized by strict regulatory standards. The company's portfolio is further strengthened by its five technology platforms, which foster innovation and enable the development of differentiated products in a highly competitive market.

1) Comprehensive Product Portfolio and Iterative Strategy

AIM Vaccine's substantial investment in R&D underscores its commitment to innovation and high-value product development. The company's pipeline includes 22 vaccine candidates targeting 13 disease areas, with a strong emphasis on high-growth, high-margin segments. Five blockbuster vaccines are expected to be approved and launched within the next three years.

AIM Vaccine's iterative product strategy ensures its leadership in vaccine innovation. For example, the company's progression from Vero cell to human diploid, serum-free, and mRNA rabies vaccines highlights its commitment to staying ahead of market trends. This approach enhances market share, pricing power, and profit margins. The human diploid rabies (HDC) vaccine is priced 4-5 times higher than its Vero cell counterpart, while the serum-free vaccine may command a higher price compared to the HDC vaccine, owing to its enhanced safety profile. According to CIC Report, the Chinese rabies vaccine market is projected to grow significantly, reaching RMB 14.8 billion by 2030, with the serum free and HDC (human diploid cell) rabies vaccine segments expected to account for RMB 3.8 billion and RMB 5.5 billion. As the potential global leader in serum-free and mRNA rabies vaccines, we expect AIM Vaccine is well-positioned to capture over a third of the market by value.

Key pipeline products and growth drivers include:

- **Serum-free Rabies Vaccine (expected to be approved in 2026):** A next-generation vaccine offering enhanced safety, scalability, and production efficiency; The **high-titer human diploid rabies vaccine (expected to be approved in 2027)** has pioneered the breakthrough of the traditional technical bottlenecks of low virus titer and small production volume, with optimized and innovative purification processes.
- **13-Valent Pneumococcal Conjugate Vaccine (PCV13, expected to be approved in 2025) and 23-Valent Pneumococcal Polysaccharide Vaccine (PPSV23, expected to be approved in 2026)** and **20-Valent Pneumococcal Conjugate Vaccine (PCV20):** High-value products addressing the growing global demand for pneumococcal disease prevention. AIM Vaccine's PCV13 stands out as a front-runner in clinical development, bolstered by **head-to-head comparison trials against Pfizer's PCV13**. Phase III clinical results highlight strong immunogenicity and safety profiles, with all serotypes meeting non-inferiority benchmarks and 10 serotypes demonstrating superiority over the comparator. Upon approval and market launch, this product holds significant potential to catalyze substantial revenue growth for the company, positioning it as a key player in the PCV13 market.

- ✧ **Quadrivalent Meningococcal Conjugate Vaccine (MCV4, expected to be approved in 2027)**: Meeting unmet needs in meningococcal prevention with expanded coverage.
- ✧ **EV71-CA16 Bivalent hand-foot-month Vaccine:** Providing dual protection against hand, foot, and mouth disease.
- ✧ **mRNA-based vaccines for RSV and shingles/herpes zoster**

2) Strong R&D and Manufacturing Capabilities

AIM Vaccine operates five vaccine technology platforms—bacterial, viral, genetically engineered, combination, and mRNA—enabling continuous innovation. The company's mRNA platform, validated during the COVID-19 pandemic, lays a strong foundation for future growth, both domestically and internationally. Its GMP-certified manufacturing facilities ensure high-quality production and stable supply, reinforcing its competitive position.

3) Extensive Distribution Network and Market Penetration

AIM Vaccine's products are distributed across all 31 provinces, autonomous regions, and municipalities in China, with a robust presence in both public and private markets. The company's sales team, including former multinational vaccine experts, provides deep knowledge of China's complex distribution landscape. This network will be critical to the rapid adoption of new products.

4) Global Expansion Potential

AIM Vaccine is actively developing international markets, particularly in Southeast Asia, Africa, South America, and the Middle East. Its freeze-dried human rabies and MPSV4 vaccines have been successfully exported to countries like Côte d'Ivoire, Pakistan, Egypt, and Tajikistan. Obtaining WHO prequalification for its vaccines will further strengthen its ability in supplying products to low- and middle-income countries, boosting global growth opportunities.

EXHIBIT 3: Platform technologies of vaccine

Platform	Description	Advantages	Representative product
Bacterial vaccine	• Bacterial vaccine is directed against the pathogenic bacteria causing the infection • Bacterial vaccine contains killed or attenuated bacteria that activate the immune system, which antibodies are built against the particular bacteria, and prevents bacterial infection later	• Simple manufacturing process • Strong immune response can be triggered	• MCV4, PCV13
Viral vaccine	• Viral vaccine contains either inactivated viruses or attenuated viruses which include the live form of the viruses • The viruses are not pathogenic but can induce an immune response	• Simple manufacturing process • Strong immune response can be triggered	• Human rabies vaccine
Combination vaccine (combined bacteria and virus together)	• Combination vaccine take two or more vaccines that could be given individually and put them into one shot in order to prevent several disease simultaneously • Bacteria vaccine and viral vaccine can be combined together	• Prevent infection from different diseases simultaneously • Prevent infection caused by different strains of the same pathogen or different serotypes • Simplified vaccination procedure	• DTP-Hib combination vaccine
Genetically engineered vaccine	• Genetically engineered vaccine is produced through recombinant technology • It involves inserting the DNA encoding an antigen (such as a bacterial surface protein) that stimulates an immune response into bacterial or mammalian cells, expressing the antigen in these cells and then purifying it from them	• Suitable for people with weakened immune system • Strong and long-lasting immune response can be triggered • Without risk of being infected by bacteria or virus	• Recombinant HBV vaccine (Hansenula Polymorpha)
mRNA vaccine	• mRNA vaccines provide the cells with a blueprint to construct the protein, and the process allows the host to mount an immune response against the constructed foreign protein	• Cost-effective • Mass production is achievable • High efficiency against mutant virus • Without risk of gene integration	• COVID-19 mRNA vaccine

Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

EXHIBIT 4: AIM Vaccine's four individual Licensed Manufacturing Facilities

Name	Location	GFA (sq.m.)	Annual bulk production capacity (million doses)	Responsible products	Production Line(s)
AIM Rongyu Licensed Manufacturing Facility	Ningbo, Zhejiang Province	25,318	25.0	Freeze-dried human rabies vaccine (Vero cell)	Two
AIM Honesty Licensed Manufacturing Facility	Dalian, Liaoning Province	11,877	45.0	Recombinant HBV vaccine (Hansenula Polymorpha)	One
AIM Action Licensed Manufacturing Facility	Taizhou, Jiangsu Province	18,711	5.3	Inactivated HAV vaccine	One
AIM Persistence Licensed Manufacturing Facility	Ningbo, Zhejiang Province	72,313	16.0	Bivalent inactivated HFRS vaccine (Vero cell), mumps vaccine and Group A, C, Y and W135 MPSV (MPSV4)	Three

Source: AIM Vaccine INTERIM REPORT 2024, Fosun International Securities

1.3 Valuation and Profitability: Industry Recovery and Pipeline Launches to Drive Earnings and Valuation Rebound

The negative impact of COVID-19, macroeconomic pressures and regulator's anti-Corruption efforts on AIM Vaccine's financials has largely been absorbed, and the company's revenue and profitability are expected to rebound significantly from 2025. This recovery will be fueled by the launch of high-value products, which will leverage existing distribution channels for swift market penetration and accelerated growth. With supply-side consolidation in the vaccine industry, AIM Vaccine is well-positioned to emerge as a dominant player in both domestic and international markets.

We have employed the Discounted Cash Flow (DCF) valuation method, projecting the following financial metrics for 2032:

- **Risk-adjusted Revenue:** RMB 9,949.338 million.
- **Net Profit:** RMB 4,146.269 million.
- **Net Profit Attributable to Parent Company:** RMB 3,938.955 million.
- **Free Cash Flow:** RMB 2,789.438 million.

Using a discount rate of 15% and a perpetual growth rate of 2%, we estimate the company's valuation for the next 12 months (January 2026) to be RMB 12.58 billion. This valuation is approximately 1.26 times the company's projected risk-adjusted peak sales in 2032, and is approximately 3.19 times the company's Net Profit Attributable to Parent Company in 2032. This offers a 97.7% upside from the January 20, 2025, closing price.

2026 P/S ratio Comparison (Exhibit 43 in 5.3 Valuation):

- Global Peers: AIM Vaccine's 2026 P/S ratio (2.1) is lower than Merck (3.5), Pfizer (2.4), and Sanofi (2.5), suggesting that global vaccine giants are priced at a premium, likely due to their established market presence, diversified portfolios, and stronger revenue streams.
- Chinese Peers: For 2026E, its implied PS ratio (2.1) is lower than several peers such as Walvax and Kangtai, which have PS ratios of 4.6 and 3.8. The relatively lower PS suggests either higher revenue growth potential is already priced in for peers, or AIM Vaccine has lower expected growth or profitability compared to its counterparts. Companies like Zhifi consistently show lower PS ratios across the years (1.4 in 2024, 1.7 in 2026), indicating either lower growth expectations or market undervaluation.

- ✧ AIM Vaccine has a lower valuation than some Chinese competitors (e.g., Walvax, Kangtai) and global giants. This indicates room for improvement in profitability and market share. AIM Vaccine's 2026 P/S ratio of 2.1 reflects moderate growth expectations. AIM Vaccine's negative net income (-1,301.0 million RMB) may be a factor in its relatively lower P/S ratio compared to global peers. Investors might be cautious about its ability to translate revenue into profits.

In conclusion, AIM Vaccine is positioned as a comprehensive leader in China's vaccine market, with a differentiated product portfolio, strong R&D and manufacturing capabilities, and a clear path to global expansion. With multiple high-value products set to launch in the coming years, the company's revenue and profitability are expected to recover strongly, potentially driving a significant re-rating of its valuation. For investors seeking exposure to the vaccine industry, AIM Vaccine offers a compelling combination of innovation, leadership, and growth potential.

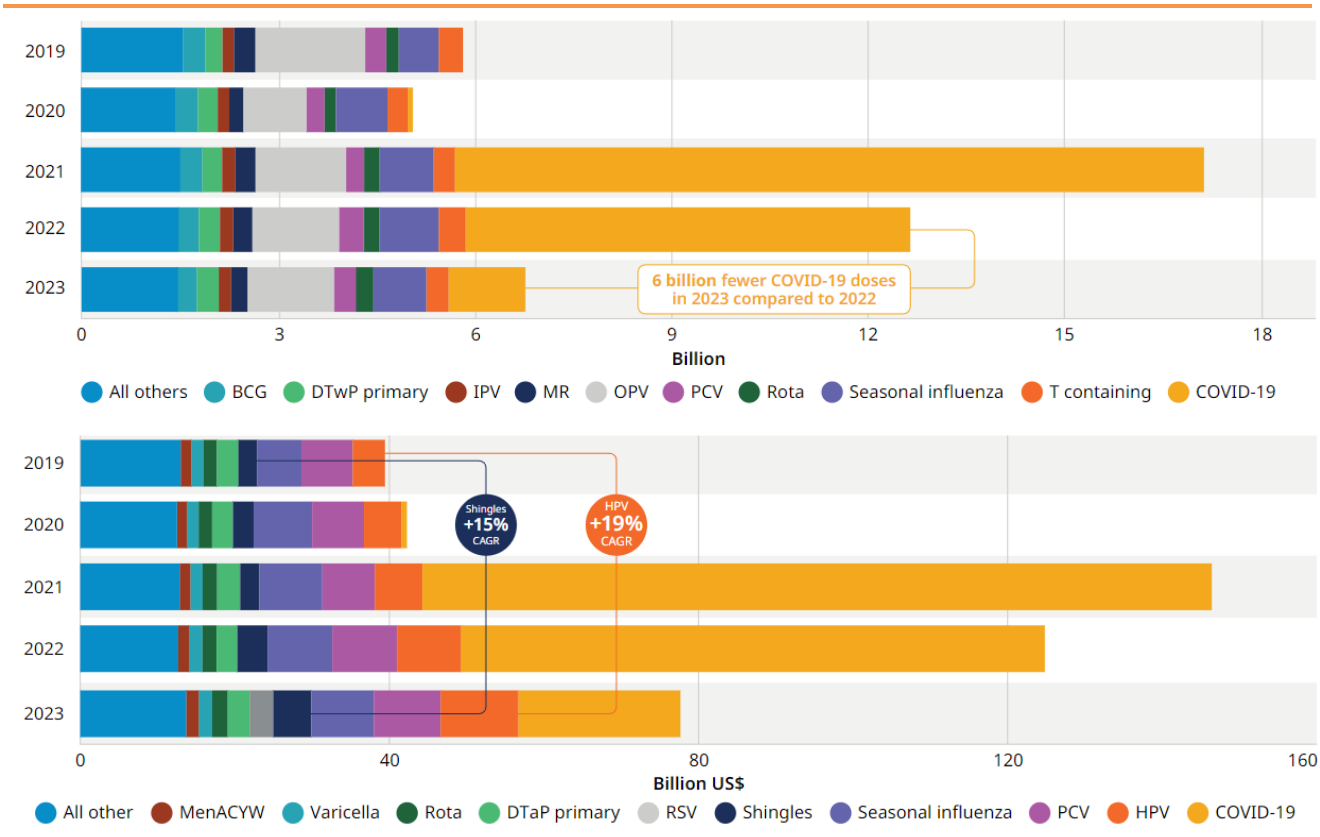
2. Vaccine Industry: China's Alignment with Global Trends Through High-Value Vaccines and Leading Enterprises

2.1 Global Vaccine Market

2.1.1 Demand Trends: Mature Vaccines Drive Volume at Low Prices, While High-Value Vaccines Dominate Market Share and Growth

The global vaccine market reached 7 billion doses in 2023, representing a five-year compound annual growth rate (CAGR) of 3%, while its market value surged to US$77 billion, reflecting a robust five-year CAGR of 15%, according to the WHO's *2024 Global Vaccine Market Report*. However, COVID-19 vaccines had the highest dollar market value in 2023 at US$20 billion, representing 27% of the total vaccine market. This value is more than twice that of the next highest vaccine on the list. Excluding COVID-19 vaccines, high-value categories such as HPV, PCV, seasonal influenza, shingles, and RSV collectively accounted for over 60% of market share and growth in 2023, underscoring the industry's shift toward premium, differentiated products.

EXHIBIT 5: Top 10 Vaccines by volume (doses) and Top 10 Vaccines by value (US$) from 2019-2023



Source: World Health Organization "Global vaccine market report 2024", Fosun International Securities

Four vaccines overlap between the top 10 by volume and the top 10 by value: COVID-19 vaccine, Rota (Rotavirus vaccine), seasonal influenza (flu) vaccine, and PCV (pneumococcal vaccine). Mature vaccines such as DTwP primary (Diphtheria, Tetanus, and whole-cell Pertussis vaccine) are increasingly being replaced by DTaP (Diphtheria, Tetanus, and acellular Pertussis vaccine) due to its reduced side effect profile. Similarly, IPV (Inactivated Poliovirus Vaccine) and OPV (Oral Polio Vaccine) are often incorporated into combination vaccines like Sanofi Pasteur's pentavalent DTaP-IPV-Hib product. T-containing vaccines (tetanus toxoid-containing vaccines) are typically booster shots administered when the protective effect of combination vaccines against tetanus (DTwP/DTaP) weakens (usually after 10 years). Low-cost, high-volume vaccines, such as BCG (Bacillus Calmette-Guerin vaccine, typically used for tuberculosis) and MR (measles-rubella vaccine), remain critical for disease prevention in lower-income regions but have limited overlap with the high-value

segment. Over time, these mature vaccines are likely to be supplanted by innovative, higher-value and combination alternatives, aligning with the broader industry shift toward premium, differentiated products.

Among the top ten vaccines by value (excluding COVID-19), key products include HPV (human papillomavirus vaccine), PCV (pneumococcal vaccine), seasonal influenza (flu) vaccine, Shingles (Herpes Zoster vaccine), RSV (respiratory syncytial virus vaccine), DTaP primary (Diphtheria, Tetanus, and acellular Pertussis vaccine), Rota (rotavirus vaccine), Varicella (Chickenpox vaccine), and MenACYW (Meningococcal vaccine (A, C, Y, and W-135 serogroups)). HPV vaccines (CAGR: +19%) and shingles vaccines (CAGR: +15%) emerged as the fastest-growing segments over the past four years, driven by increasing demand and expanding global coverage. In 2023, Merck's HPV vaccine, Gardasil, achieved sales of $8.9 billion, a 29% increase from the previous year. GSK's shingles vaccine, Shingrix, generated $4.3 billion in revenue in 2023, marking a 17% growth. These figures underscore the substantial growth and market share of high-value vaccines, driven by increasing demand and the introduction of innovative products.

However, the vaccine market is currently navigating several challenges, including regulatory hurdles and increased competition from emerging biotech firms. Pfizer's Prevnar family, encompassing the 13-valent and 20-valent pneumococcal vaccines, reported $6.44 billion in sales in 2023, marking a modest 3% increase from the previous year. This underscores the difficulties in achieving substantial growth in a competitive landscape. RSV (Respiratory Syncytial Virus) vaccines and monoclonal antibodies (mAbs) ranked as the sixth most valuable market, driven by high prices and strong early demand, but then encountered significant safety-related headwinds in 2024. These issues have cast doubt on their commercial trajectory in 2025, highlighting the risks associated with scaling innovative vaccine technologies in highly regulated markets. GSK's Arexvy vaccine experienced a significant 74% year-over-year decline in sales during the third quarter of 2024, generating £188 million ($244 million), which fell short of market expectations of £238 million. Similarly, Moderna reduced its 2025 sales forecast by $1 billion, citing the slow adoption of its RSV vaccine and waning demand for COVID-19 vaccines. Market projections have also been adjusted. Airfinity Limited revised its U.S. RSV vaccine market estimate for older adults from $4.7 billion to $1.7 billion annually by 2030, with 2024 revenues expected to reach $2.2 billion. Despite these setbacks, companies like Pfizer have managed to increase their market share in the RSV vaccine sector. Pfizer's Abrysvo vaccine captured over 50% of the shipped volume in the third quarter of 2024, indicating strategic gains even amid a contracting market.

To maintain and enhance their market positions, vaccine manufacturers must adeptly navigate these obstacles by continuing to innovate and expand their product offerings. This includes developing combination vaccines, investing in next-generation immunizations, and implementing cost-cutting measures to adapt to the evolving market landscape. Such strategies are essential for sustaining growth and competitiveness in the face of ongoing industry challenges.

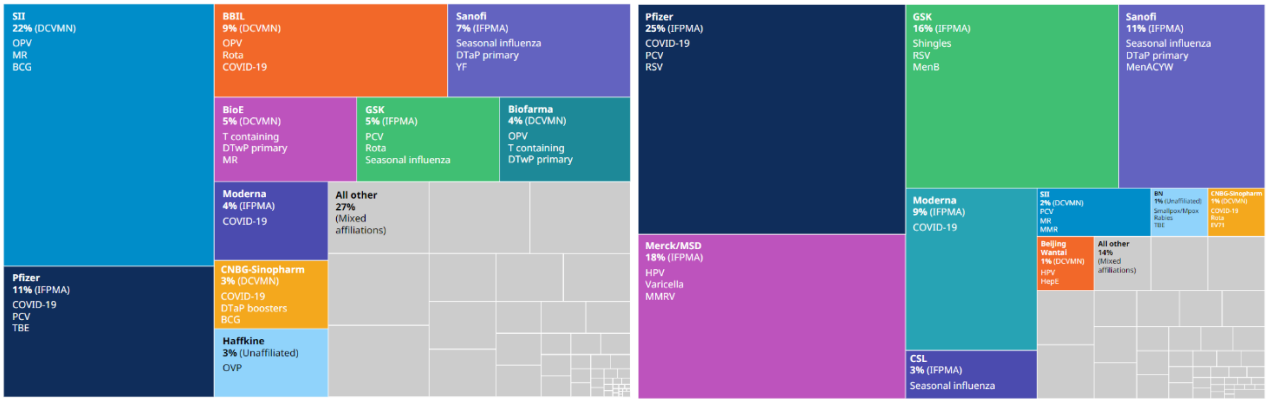
2.1.2 Supply Side: Dominance of Industry Giants and High Barriers to Entry through Rapid Innovation

The global vaccine market remains highly concentrated between a limited number of manufacturers with a stable competitive landscape, with the largest 10 manufacturers accounting for 73% of vaccine dose volumes and capturing 85% of global financial value, underscoring the sector's oligopolistic nature. More than 90 manufacturers account for the remaining global volumes. Manufacturers affiliated with the Developing Country Vaccine Manufacturers Network (DCVMN) sold more than 50% of vaccine doses procured globally, representing 11% of the global financial value, while manufacturers affiliated with the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) accounted for approximately 85% of financial value, representing 34% of total volume.

Four major players—Merck, GSK, Pfizer, and Sanofi—collectively hold approximately 70% of market share, reinforcing their dominance in the high-value vaccine segment through continuous product innovation and robust R&D pipelines. Manufacturers affiliated with the DCVMN including Serum Institute of India (SII), Bharat Biotech (BBIL), Biological E (BioE) and PT Biofarma (Biofarma) have broad vaccine portfolios with multiple technologies. These companies primarily sell their products to low-income countries (LICs) and low middle-income countries (LMICs).

Chinese manufacturers, leveraging export experience gained during the COVID-19 vaccine rollout, have made strides in strengthening their overseas distribution networks. However, the incremental market share achievable through cost-effective products alone is limited. Only CNBG-Sinopharm is one of the TOP 10 vaccine manufacturers by volume. Beyond the largest manufacturers that sell more than 100 million doses annually, the number of manufacturers selling between 10 and 100 million doses annually has increased by 14 from 28 in 2019 to 42 in 2023 with half of the increase being manufacturers in China. To compete effectively and capture greater share, Chinese companies must develop more differentiated offerings, focusing on superior indications, enhanced efficacy, improved safety profiles, or greater accessibility to penetrate the premium vaccine market and challenge the incumbents' dominance.

EXHIBIT 6: Share of market of volume (left) and value (right) by manufacturer in 2023



Source: Companies' annual reports, Frost & Sullivan analysis, CIC Report, Fosun International Securities

EXHIBIT 7: Top 10 Vaccine by sales of manufacturer in 2022 (left) and 2021 (excluding COVID-19 vaccine, right)

Ranking	Vaccine	Manufacturer	Revenue, 2022	Vaccine Category
1	Comirnaty	Pfizer/BioNTech	USD 40.8 billion	Covid-19 mRNA vaccine
2	Spikevax	Moderna	USD 21.8 billion	Covid-19 mRNA vaccine
3	Gardasil, Gardasil 9	MSD	USD 6.9 billion	HPV vaccine
4	Prevnar Family	Pfizer	USD 6.3 billion	Pneumonia
5	Shingrix®	GSK	USD 3.6 billion***	Shingles
6	Fluzone, Flublok (flu vaccine)	Sanofi	USD 3.1 billion*	Influenza
7	Polio/Pertussis/Hib Vaccines	Sanofi	USD 2.4 billion**	Polio, Pertussis, and Hib Infection and etc.
8	ProQuad/M-M-R II/Varivax	MSD	USD 2.2 billion	Measles, Mumps, Rubella and Varicella
9	Ad26.COV2.S	J&J	USD 2.2 billion	Adenovirus-vectored Vaccines for COVID-19
10	Vaxzevria	AstraZeneca	USD 1.8 billion	Adenovirus-vectored Vaccines for COVID-19

Rank	Product name	Indication	Company	Revenue[1] (billion USD)	Global first approval year	NMPA approval year	Corresponding pipeline/product of AIM Vaccine
1	Gardasil/Gardasil 9	HPV	MSD	5.67	2006/2014	2017/2018	√ HPV2/HPV9 candidates
2	Prevnar 13	Pneumococcal disease	Pfizer	5.27	2011	2017	√ PCV13 candidate
3	Vaxigrip, Fluzone	Influenza	Sanofi	2.89	2009	N/A	√ Tetravalent influenza and universal influenza candidates
4	Pentacel/Pentaxim	DTP-Hib-IPV	Sanofi	2.37	2008	2011	√ DTP-Hib combination candidate
5	Shingrix	Herpes zoster	GSK	2.24	2017	2020	√ Shingles/Herpes Zoster candidate
6	ProQuad, M-M-R II and Varivax	Measles, mumps, rubella, varicella	MSD	2.14	2005	N/A	√ Mumps vaccine product
7	Pneumovax 23	Pneumococcal disease	MSD	0.89	1983	2005	√ PPSV23 candidate
8	Fluarix, FluLaval	Influenza	GSK	0.88	2005	N/A	√ Tetravalent influenza and universal influenza candidates
9	Bexsero	Meningitis	GSK	0.85	2015	N/A	√ MPSV4 vaccine product and MCV4 candidate
10	Infanrix/Pediarix	DTaP vaccines	GSK	0.71	2003	N/A	√ DTaP vaccine candidate
Total				23.91			

Source: Companies' annual reports, Frost & Sullivan analysis, CIC Report, Fosun International Securities

(1) Merck/MSD: Expanding Indications Drive HPV and Pneumococcal Vaccine Growth

Overview of Merck Vaccine Segment

Merck's vaccine segment encompasses nine key products, generating $13.3 billion in revenue for 2023. Its flagship offerings include Gardasil (HPV vaccine, both quadrivalent and nonavalent), ProQuad (MMRV vaccine for measles, mumps, rubella, and varicella), Varivax (varicella vaccine), and Vaxneuvance (15-valent pneumococcal conjugate vaccine). Additionally, Merck recently launched the Capvaxive (V-116), a 21-valent pneumococcal conjugate vaccine designed for adults, which could unlock new opportunities in the pneumococcal market.

HPV Vaccine

Gardasil remains Merck's blockbuster product, achieving $8.9 billion in revenue in 2023. In H1 2024, sales reached $4.73 billion (+7% YoY), with Q3 sales at $2.3 billion (-10% YoY). Despite double-digit growth outside China, sales in the Chinese market—representing

60-70% of Merck's overseas Gardasil sales—declined due to reduced CDC-driven academic and vaccination promotion activities and inventory issues at its distributor, Zhifei Biological. Looking ahead, competition in China's HPV vaccine market is intensifying, with Wantai Bio and Watson Bio accelerating their nonavalent HPV vaccine rollouts. Merck projects Q3 and Q4 Chinese sales to remain at approximately $500 million each, with annual revenue stabilizing at $2-3 billion in the coming years. One key growth driver is Gardasil's expanded indication for males, with its quadrivalent HPV vaccine approved in January 2025 for use in Chinese males aged 9-26, marking the first male-focused HPV vaccine in the region. Additionally, Merck is leveraging initiatives like simplified two-dose regimens to bolster global adoption.

Pneumococcal Vaccines

Merck's pneumococcal vaccine portfolio is undergoing a strategic transition from polysaccharide vaccines to conjugate vaccines with longer immunity duration. While Pneumovax 23, its 23-valent polysaccharide vaccine approved in 1977, peaked at $1.1 billion in 2020, its H1 2024 revenue fell to $120 million (-36% YoY). In contrast, the 15-valent conjugate vaccine Vaxneuvance, approved in 2021, continues to gain momentum, with H1 2024 sales of $408 million (+49% YoY) and Q3 revenue of $239 million (+13% YoY). The recently approved Capvaxive (V-116), a 21-valent conjugate vaccine targeting invasive pneumococcal diseases in adults, could further accelerate growth. Covering serotypes responsible for 85% of cases in individuals aged 65 and older, Capvaxive has been endorsed by the CDC for use in adults aged 50-64, supported by promising Phase III trial data published in *The Lancet* in mid-2024.

MMRV and Varicella Vaccines

ProQuad (MMRV) and Varivax (varicella vaccine) delivered a combined H1 2024 revenue of $1.187 billion (+7% YoY). ProQuad, approved in 2005, has maintained steady growth, with revenue reaching $2.4 billion in 2023. However, competition from GSK and other manufacturers promoting similar combination vaccines is intensifying, posing challenges in the coming years.

Other Vaccines

Merck's portfolio includes additional stable performers:

- ✧ RotaTeq (rotavirus vaccine): Approved in 2006, generating $600-800 million annually.
- ✧ Vaqta (hepatitis A vaccine): Approved in 1996, contributing $100-200 million in annual sales.
- ✧ Zostavax (shingles vaccine): Approved in 2006, peaked at $800 million in 2014 but has since declined due to newer competition.

Pipeline and Outlook

Merck is also advancing its RSV monoclonal antibody, Clesrovimab, currently in Phase III clinical trials. Early Phase 2b/3 data for infants showed positive outcomes, achieving both primary and secondary clinical endpoints.

Merck's strategic focus on expanding indications, enhancing vaccine efficacy, and addressing unmet needs positions it well for sustained leadership in the global vaccine market. However, challenges such as increasing competition in key markets and inventory-related headwinds in China remain areas to monitor closely.

(2) Pfizer: RSV Vaccine Gains Traction Amid Declining COVID-19 Sales

Overview of Pfizer Vaccine Segment

In 2023, Pfizer captured 25% of the global vaccine market, driven primarily by $11.22 billion in sales of its COVID-19 vaccine. However, this represents a steep 70% decline from its $37.81 billion peak in 2022. Further declines are evident in 2024, with COVID-19 vaccine revenue dropping 88% year-over-year in the first half to $548 million. As a result, Pfizer is likely to lose its position as the global vaccine market leader in 2024, potentially ranking third or fourth.

Pfizer's vaccine portfolio boasts several flagship products, including Comirnaty (COVID-19 vaccine), the Prevnar series (13-valent/20-valent pneumococcal conjugate vaccines, 7-valent pneumococcal conjugate vaccine), and Abrysvo (bivalent RSV vaccine). Other notable offerings include FSME-IMMUN/TicoVac (tick-borne encephalitis vaccine), Nimenrix (quadrivalent meningococcal conjugate vaccine covering serogroups A, C, W-135, and Y), and Trumenba (meningococcal group B vaccine). Pfizer is advancing its COVID-19/flu combination vaccine, now in Phase 3 clinical trials. Notably, the vaccine demonstrated a significant antibody response to the H5 influenza virus during Phase 1, positioning it as a differentiator in the market.

The Prevnar Series: Steady Performance Amid Growing Competition

Beyond COVID-19, Pfizer's Prevnar series of pneumococcal vaccines remains a cornerstone of its vaccine business. Acquired during the 2009 Wyeth acquisition, the series debuted with Prevnar 13 the same year, followed by Prevnar 20 in 2021. Annual sales for the Prevnar series have consistently exceeded $5 billion since 2015, with 2023 revenue surpassing $6.4 billion and $3.05 billion in H1 2024 (a 1% year-over-year increase).

Despite being the world's best-selling pneumococcal vaccines, the Prevnar series faces rising competition. Merck's Vaxneuvance (15-valent conjugate vaccine) and Capvaxive (21-valent conjugate vaccine) are notable challengers globally. In emerging markets like China, Pfizer contends with local players such as Watson Biotech (13-valent conjugate vaccine) and GSK's Synflorix (10-valent conjugate vaccine).

Abrysvo: A Promising Entry in the RSV Vaccine Market

Launched mid-2023, Abrysvo achieved nearly $900 million in first-year revenue. In the first three quarters of 2024, sales reached $356 million, down 5% year-over-year but still outperforming GSK's RSV vaccine. Abrysvo has captured over 50% market share among retail and clinic channels, with retail share growth sustained for nine consecutive weeks, now at 43%. Recent FDA approval for expanded use in 18–59-year-old patients at increased risk of RSV-related lower respiratory tract disease broadens its potential market.

Secondary Vaccine Assets: Modest but Growing Contributions

Among Pfizer's other vaccine products, Nimenrix (approved in 2012) delivered peak sales of under $300 million in 2022. Meanwhile, Trumenba (approved in 2014) remains in its growth phase, with sales continuing to climb.

Outlook

While Pfizer remains a dominant player in the vaccine market, declining COVID-19 vaccine revenues and increased competition in key segments pose challenges to maintaining its market share. However, the company's innovation pipeline, particularly in combination vaccines and expanded RSV indications, could offset these pressures and sustain long-term growth. Investors should monitor clinical trial progress, competitive dynamics, and Pfizer's efforts to diversify beyond its legacy products.

(3) GSK: Pipeline Innovation Balances Underperforming RSV Vaccine

Overview of GSK Vaccine Segment

In 2023, GSK's vaccine segment generated approximately £9.9 billion in revenue. For the first half of 2024, revenue reached £4.276 billion (around $5.473 billion), reflecting an 8% year-over-year (YoY) growth. However, Q2 growth slowed to 3%. Consequently, GSK revised its full-year growth forecast downward from "high single digits to low double digits" to "low to mid-single digits."

GSK's portfolio of vaccine products includes several key contributors to its financial performance: Shingrix (Shingles Vaccine), Arexvy (RSV Vaccine), Bexsero (Meningococcal B Vaccine), Menveo (Quadrivalent Meningococcal Vaccine). Other notable vaccines include Rotarix (rotavirus), Boostrix (tetanus, diphtheria, pertussis), Hepatitis vaccines (A, B, and combination), Infanrix/Pediarix, Fluarix/FluLaval

(influenza), Synflorix (10-valent pneumococcal), Priorix/Varilrix (measles, mumps, rubella), Cervarix (HPV), and various pandemic vaccines.

Shingrix: A Dominant Product Facing Headwinds

Launched in 2017 as the first shingles vaccine, Shingrix achieved over £3.4 billion in revenue in 2023, accounting for 35% of the vaccine segment's sales. In 2024 H1, sales reached £1.777 billion (+7% YoY). However, Q2 sales declined by 4% YoY due to weakening U.S. demand, partially offset by international market growth. While 2024 annual sales are expected to stagnate, GSK aims to enhance uptake by expanding indications and optimizing vaccination strategies.

Arexvy: Underperforming RSV Vaccine

Introduced in 2023, Arexvy generated over £1.2 billion in its debut year. However, revenue has been negatively impacted by the U.S. Centers for Disease Control and Prevention (CDC) narrowing its vaccination recommendation from all individuals aged 60+ to only those 75+ or at high risk between 60-74. Seasonal demand fluctuation and channel inventory clearance further contributed to a 74% YoY decline in Q2 sales, totaling £62 million. H1 2024 revenue reached £244 million, with Q3 sales dropping to £188 million (-72% YoY). Arexvy's underperformance contrasts starkly with Pfizer's RSV vaccine, Abrysvo.

Bexsero and Menveo: Key Growth Drivers

Meningococcal vaccines Bexsero and Menveo drove substantial growth in H1 2024, with revenues of £449 million (+12% YoY) and £164 million (+35% YoY), respectively. Bexsero, launched in 2013, delivered £850 million in 2023 revenue. Menveo, approved in 2010, generated £380 million in 2023. Notably, GSK is targeting 2025 approval for MenABCWY, a 5-in-1 meningococcal vaccine poised to be a future growth catalyst.

Performance of Other Vaccines

- ✧ Rotarix (Rotavirus): Approved in 2006, £600 million in 2023 sales.
- ✧ Boostrix (Tetanus, Diphtheria, Pertussis): Approved in 2005, £600 million in 2023 sales.
- ✧ Hepatitis Vaccines: Including Engerix, Fendrix, Havrix, and Twinrix, these vaccines reached a peak sales figure of £870 million in 2019.
- ✧ Infanrix/Pediarix: Approved in 1997, peaked at £860 million in 2013.
- ✧ Fluarix/FluLaval (Influenza): Approved in 2005, peaked at £730 million in 2020.
- ✧ Synflorix (Pneumococcal Conjugate): Approved in 2009, peaked at £500 million in 2017.
- ✧ Cervarix (HPV): Approved in 2009, peaked at £500 million in 2011.

Outlook

GSK's vaccine segment offers a mix of mature cash-generating assets and emerging growth opportunities. The underperformance of Arexvy and plateauing Shingrix sales highlight potential risks, but pipeline innovations like MenABCWY provide optimism. Strategic adaptations and market expansions will be critical for sustaining long-term growth.

(4) Sanofi: Beyfortus and Combination Vaccines Lead Growth Momentum

Overview of Sanofi Vaccine Segment

Sanofi's vaccine division demonstrated robust growth in 2023 and early 2024, driven by its diverse portfolio and the successful launch of key products. In 2023, the vaccine segment generated approximately $8.5 billion (€7.7 billion at an 11% contribution margin). In 2024, Sanofi's vaccine segment demonstrated strong performance, with Q3 revenue reaching €3.802 billion, a significant 25.5% year-over-year (YoY) increase. For the first half of 2024, revenue stood at €2.319 billion, showing modest growth of 0.3% YoY. Key contributors to the segment's success included influenza vaccines, generating €1.913 billion, polio/pertussis/Hib combination vaccines at €760 million,

meningococcal/pneumococcal/travel vaccines contributing €485 million, and the RSV monoclonal antibody Beyfortus, which added €645 million.

Sanofi's flagship products include seasonal influenza vaccines, polio vaccine (Imovax Polio) and its combination variants (e.g., Pentaxim, a 5-in-1 vaccine for pertussis, diphtheria, tetanus, polio, and Hib), and MenQuadFi (quadrivalent meningococcal conjugate vaccine).

Seasonal Influenza Vaccines

Influenza vaccine sales are highly seasonal, with revenue peaking in Q3 and Q4. In Q3 2024, influenza vaccines contributed €1.913 billion, reflecting a 10.9% YoY increase. Despite this growth, Sanofi forecasts a potential low-single-digit decline in influenza vaccine revenue for the full year.

Polio vaccine and Combination Vaccines

Polio, pertussis, diphtheria, and Hib combination vaccines, including Pentaxim, generated €760 million in Q3 2024, marking a modest 2.0% YoY growth. These vaccines were significant contributors to Sanofi's H1 2024 revenue of €2.319 billion (+0.3% YoY).

Meningitis and Pneumococcal Vaccines

Sanofi reclassified meningococcal, pneumococcal, and travel-related vaccines into a single category in 2023. In Q3 2024, this category achieved €485 million in revenue, a 13.1% YoY increase, reflecting solid demand for meningococcal and pneumococcal vaccines.

Beyfortus (Nirsevimab): A Breakthrough RSV Therapy

Unlike traditional vaccines, Beyfortus is a monoclonal antibody therapy for RSV prevention, launched in 2023. In its debut year, Beyfortus generated €550 million in revenue. In Q3 2024, sales surged to €645 million (+381.8% YoY), driven by strong adoption. Sanofi anticipates Beyfortus sales to exceed €1 billion in 2024, underscoring its status as a major growth driver.

Future Pipeline and Outlook

In 2024, Sanofi acquired rights to Novavax's COVID-19 and influenza combination vaccine for $1.27 billion, positioning the company to capitalize on evolving market dynamics.

Sanofi's vaccine portfolio balances stable revenue streams from established products with high-growth opportunities like Beyfortus and its COVID-19/flu combo vaccine. While influenza vaccine sales may face modest headwinds, the overall vaccine segment is projected to grow at a high single-digit rate in 2024. Investors should monitor the performance of Beyfortus and the progress of pipeline products as critical drivers of long-term value.

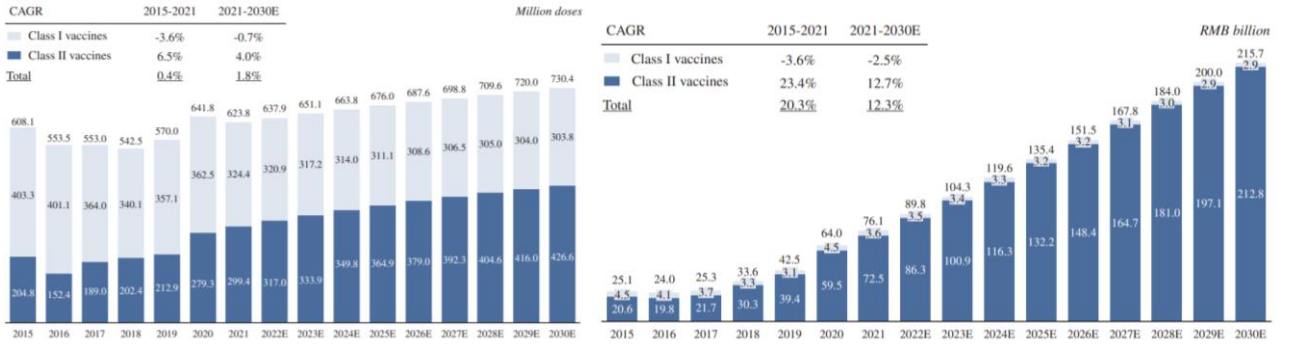
2.2 China's Vaccine Market

2.2.1 Demand Dynamics: Recovery from Price Pressure and Growth Driven by High-Quality Innovations and Non-NIP Vaccines

China's vaccine market, excluding COVID-19 vaccines, demonstrated robust growth, expanding from RMB 85.07 billion in 2022 to RMB 101.77 billion in 2023, according to 2024 statistics. However, 2024 presented a complex demand environment influenced by several factors: the lingering effects of the pandemic, macroeconomic challenges, intensified anti-corruption measures, and a declining birth rate. Despite these headwinds, the medium- to long-term outlook remains positive. As government priorities align with rising public health awareness, the market is expected to achieve steady growth, closely tracking nominal GDP growth rates after surpassing the RMB 100 billion threshold. A key factor contributing to the gap between China's vaccine market and those in developed markets like the U.S. and Europe is the pricing disparity in innovative vaccine products. Mature vaccines, having undergone intense price competition, now prioritize volume growth and channel control over capturing significant market value, creating space for value growth in high-value

innovative vaccine products through structural optimization.

EXHIBIT 8: Market size of the vaccine market in the PRC, by approved lot release volume (left) and sales revenue (excluding COVID-19, right), 2015-2030E



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

(1) Demand Challenges: Navigating Pandemic Recovery, Macroeconomic Pressures, Anti-Corruption Campaigns, and Declining Birth Rates

Over the past five years, the vaccine industry in China has transitioned from the pandemic-driven growth surge to a period of significant adjustment. Performance metrics and valuations have declined to their lowest levels. This pessimistic outlook necessitates a deeper analysis of the evolving dynamics influencing supply and demand within the market.

Revenue Growth: Among the 12 A/H-share listed vaccine companies, only three reported year-on-year growth in Q3 2024, reflecting subdued market sentiment and investor underweighting of the sector.

EXHIBIT 9: Revenue Growth Rate of 12 A/H-Share Listed Vaccine Companies Over the Past Three Years

Ticker	Company	1Q22	2Q22	1H22	3Q22	4Q22	FY22	1Q23	2Q23	1H23	3Q23	4Q23	FY23	1Q24	2Q24	1H24	3Q24	Main products
06660.HK	AIM			-12%			-20%			-9%			-6%			-1%		Rabies, HBV vaccine
300122.SZ	Zhifei	125%	3%	39%	9%	18%	25%	26%	40%	33%	57%	31%	38%	2%	-48%	-25%	-69%	HPV vaccine
300142.SZ	Walvax	51%	85%	74%	74%	4%	47%	27%	-21%	-8%	-27%	-31%	-17%	-28%	-38%	-34%	-29%	PCV13, HPV vaccine
300601.SZ	Biokangtai	215%	23%	74%	-44%	-54%	-14%	-14%	3%	-5%	0%	71%	10%	-40%	-24%	-31%	11%	PCV13, rabies vaccine
300841.SZ	Kanghua	13%	25%	20%	73%	-24%	12%	4%	-9%	-4%	-10%	50%	9%	12%	21%	17%	-10%	Rabies vaccine
301207.SZ	Hualan Vaccine	3%	157%	82%	-40%	-15%	2%	893%	-100%	-34%	214%	160%	18%	-76%	-73%	4%	-41%	Flu vaccine
603392.SS	Wantai	285%	142%	202%	67%	18%	95%	-9%	-54%	-30%	-70%	-79%	-51%	-74%	-52%	-67%	-28%	HPV vaccine
688185.SS	CanSino	7%	-92%	-69%	-92%	-73%	-76%	-80%	-157%	-98%	93%	-45%	-67%	14%	-353%	1254%	76%	MCV4
688276.SS	BcHT	-44%	-10%	-24%	17%	-20%	-11%	30%	25%	27%	61%	183%	70%	51%	-8%	11%	-40%	Shingles vaccine
688319.SS	Olymvax	-16%	70%	38%	19%	-13%	12%	25%	-7%	0%	-14%	-19%	-9%	6%	-7%	-3%	35%	Tetanus vaccine
688670.SS	GDK	-60%	92%	-49%	-37%	126%	-19%	752%	433%	676%	-103%	-86%	-58%	-95%	-108%	-97%	-665%	Flu vaccine
688739.SS	CDBio	-39%	-11%	-25%	-15%	29%	-13%	-4%	1%	-1%	-3%	-9%	-4%	3%	0%	1%	-9%	Rabies vaccine

Source: Companies' financial reports, Fosun International Securities

Inventory: Among the 11 companies analyzed, only Zhifei and Chengdu Olymvax saw an increase in inventory days in 9M24 compared to both 9M23 and 1H24. This suggests that, aside from Zhifei—whose main product is Gardasil—other companies with self-manufactured vaccines have been able to manage production capacity effectively, avoiding an inventory buildup despite declining revenue.

EXHIBIT 10: Inventory days of 11 Listed Vaccine Companies Over the Past Three Years

Days Inventory Outstanding	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2024 Q1	2024 Q2	2024 Q3
AIM								646		579	
Zhifei	96	98	112	111	109	111	96	80	103	142	210
Walvax	654	547	582	560	554	644	598	620	681	643	623
BioKangtai	287	300	335	652	710	653	599	509	615	620	597
Chengdu Kanghua	434	464	427	508	629	692	685	585	706	694	673
Hualan Vaccine	—	289	—	230	550	—	—	—	—	497	364
Wantai	192	186	188	228	273	344	390	409	452	466	481
CanSino	219	350	546	681	1046	—	—	—	—	—	410
CDBio	—	—	—	675	642	629	600	575	576	532	514
GDK	—	486	558	216	290	413	—	—	—	—	—
Olymvax	—	704	737	715	703	776	750	859	968	1111	1119

Source: Bloomberg, Fosun International Securities

Accounts Receivable: As cash constraints within the CDC system persist and consumer spending remains subdued, 7 out of 11 companies reported an increase in accounts receivable days in 9M24 compared to the same period in 2023. Additionally, 5 companies saw higher AR days in 9M24 than in 1H24, and they also saw an increase in accounts receivable days in 9M24 compared 9M23.

EXHIBIT 11: Accounts Receivable days of 11 Listed Vaccine Companies Over the Past Three Years

Days Sales Outstanding	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2024 Q1	2024 Q2	2024 Q3
AIM								316		332	
Zhifei	127	136	146	160	182	180	174	164	185	201	251
Walvax	226	225	204	217	209	257	271	296	309	362	360
BioKangtai	153	166	195	240	268	296	299	267	299	345	334
Chengdu Kanghua	196	223	213	277	282	311	334	312	303	299	301
Hualan Vaccine	—	157	—	323	253	—	—	—	—	173	421
Wantai	108	100	104	102	151	170	199	230	435	492	474
CanSino	23	64	75	179	350	—	—	—	—	—	296
CDBio	—	—	—	208	213	229	241	229	227	247	257
GDK	—	146	483	392	286	165	—	—	—	—	—
Olymvax	—	201	214	278	254	291	314	362	341	369	353

Source: Bloomberg, Fosun International Securities

Pandemic and Macroeconomic Pressures Leading to Demand Volatility:

The COVID-19 pandemic and macroeconomic challenges have led to fluctuating vaccine demand. A decline in both government and consumer purchasing power has created industry overcapacity and increased competition, triggering price wars for certain vaccine products. Despite this, opportunities have emerged for leading companies with innovative products and distinct competitive advantages.

From 2023 to 1Q24, growth in the vaccine sector slowed due to high base effects from the pandemic. Demand continued to weaken in 2Q24 due to anti-corruption efforts and unfavorable macroeconomic conditions. However, market expectations started to recover by the end of September, driven by stronger-than-expected economic and capital market stimulus policies. Despite these improvements, the third-quarter performance was weak, with most companies missing earnings expectations.

Data from the National Health Commission indicates that hospital visits remained stable or increased in most months of 2024 compared to 2023, reflecting continued demand for essential medical services. However, demand for non-essential, self-paid products has been significantly impacted by low consumer confidence since 2022.

The key factor determining the industry's inflection point will be the timing of supply-side adjustments. While competition intensifies for certain vaccines (e.g., PCV13 and HPV), the current demand trough also presents opportunities. The exit of companies with narrow

product portfolios could accelerate, while firms with broader and more diverse pipelines are expected to increase market share. Even during challenging periods, vaccines such as CanSino's MCV4 have shown strong growth, illustrating the potential for select products.

Impact of Anti-Corruption Campaigns on Academic and Vaccination Promotion

The ongoing anti-corruption campaign has directly impacted the promotion of academic and vaccination initiatives, restricting these activities. Indirectly, this has led to reduced inventory levels at local CDC vaccination centers, particularly in light of high channel inventory levels.

Drawing parallels to the medical device sector's recovery in 4Q24, we believe that the healthcare industry rectification which began in 2Q23 is now entering a phase of normalization. This could alleviate some of the overall suppression of medical demand. Based on current inventory levels, channel destocking appears to be near its conclusion, with six out of 11 listed companies reporting sequential growth in Q3. We believe the destocking phase has finished, and purchasing intentions could rebound in 2025.

Additionally, vaccines sold through non-CDC channels (e.g., rabies and tetanus vaccines) have exhibited more resilient sales growth, indicating that certain vaccine segments remain relatively unaffected by these challenges.

Declining Birth Rates and the Shift toward Adult Vaccines as a Growth Driver

Declining birth rates are expected to reduce demand for pediatric vaccines in the coming years. However, the introduction of innovative vaccines, such as those for shingles, is likely to offset this decline by driving growth in the adult vaccine market.

China's vaccine market remains poised for expansion due to several factors: the introduction of high-quality innovative vaccines, increasing penetration of non-NIP vaccines, and the growth potential of emerging technologies like mRNA. Prior to COVID-19, government policies around adult vaccination was unclear. Post-pandemic, however, the CDC has clarified recommendations for vaccines targeting adults, including pneumonia, influenza, and shingles vaccines for those aged 60 and above.

Adult vaccination programs, which can be rolled out swiftly, also present significant growth opportunities. Vaccines targeting broader populations, such as CMV vaccines for pregnant women and bivalent hand-foot-and-mouth disease vaccines, are expected to drive demand in new markets.

(2) Government Regulatory Support and Commercial Health Insurance

Policy Reforms and Industry Focus

Since 2023, China's National Health Commission, Medical Insurance Bureau, and Drug Administration have centered their efforts on enhancing regulatory management within the medical industry, emphasizing key areas such as review, registration, and payment systems. On June 6, 2024, the General Office of the State Council released the "Key Tasks for Deepening the Reform of the Medical and Health System in 2024," highlighting seven major areas and 22 specific tasks. Among these, promoting the Sanming healthcare reform experience was prioritized, serving as a model for broader system reforms aimed at improving efficiency and equity in healthcare access.

Additionally, local medical insurance bureaus in major cities such as Beijing and Shanghai have implemented supportive policies targeting innovative medical devices. These policies are expected to create a conducive environment for accelerating the growth of vaccines and other pharmaceutical products.

Looking ahead, the potential optimization of healthcare policies in 2025, combined with expected government measures to stimulate consumption and looser monetary policies, could substantially enhance vaccine purchasing power from both government agencies and individual consumers. These factors are likely to alleviate the current oversupply situation, positioning the vaccine industry for a rebound.

The combination of supportive government policies, evolving regulatory frameworks, and the growing role of commercial health insurance forms a strong foundation for the healthcare industry's future. With favorable macroeconomic and policy conditions expected to improve in 2025, alongside the rapid expansion of CHI, the vaccine and pharmaceutical sectors are positioned for significant growth, presenting investors with attractive opportunities in both near-term recovery and long-term development.

The Impact of New Commercial Health Insurance Policies on the Vaccine Industry

One of the most influential factors shaping the vaccine industry soon may be the introduction of new commercial health insurance policies. These policies aim to complement the basic medical insurance system, providing additional financial protection for high-value vaccines and innovative treatments.

Short-Term Growth Opportunities: China's basic medical insurance (BMI) system continues to face significant financial pressures, resulting in constrained coverage and reduced payment capacity for drugs and medical devices. This has opened the door for commercial health insurance (CHI) to act as an effective supplement for individuals seeking access to higher-quality medical resources. Data indicates that China's CHI premium income reached approximately RMB 800 billion in 2022, marking over 15% year-on-year growth. The expansion of CHI is expected to inject substantial capital into the pharmaceutical and biotechnology sectors, driving revenue growth for related companies.

Long-Term Market Potential: As demand for premium medical services rises, CHI is poised for significant expansion. In the U.S., CHI accounts for over 50% of healthcare payments, whereas in China, this figure stands at approximately 10%, highlighting considerable room for growth. Projections indicate that China's CHI market size could surpass RMB 1.5 trillion by 2025, driven by improvements in the CHI payment system and increasing consumer adoption.

This expansion is expected to provide additional funding for healthcare payments and upstream R&D innovation, fostering sustainable growth across the industry. CHI's ability to supplement BMI and channel more funds into healthcare will play a crucial role in driving innovation, supporting the development of new vaccines and medical technologies, and meeting the growing demand for high-quality medical services.

CHI's rapid growth trajectory is set to transform the healthcare landscape in China. By alleviating financial burdens on the BMI system and introducing substantial capital to support medical R&D, CHI offers a dual benefit: enabling broader access to advanced healthcare solutions while driving innovation and development in the pharmaceutical and biotechnology industries. With an improving payment infrastructure and robust market demand, CHI represents a critical growth engine for the healthcare sector in the years ahead.

(1) Enhanced Market Expansion for High-Value Vaccines

Commercial health insurance has emerged as a critical funding source for vaccines not covered by the National Reimbursement Drug List (NRDL). In 2024, the market size of commercial health insurance reached RMB 900 billion, covering 200-300 million people. This expansion has facilitated the inclusion of high-value vaccines, such as pneumococcal conjugate vaccines (PCV) and human papillomavirus (HPV) vaccines, in insurance plans.

For instance, city-specific commercial health insurance programs, known as "Huiminbao," have gained momentum. These programs provide supplementary coverage for critical illnesses and innovative vaccines, bridging the gap between basic medical insurance and the high costs of advanced vaccines. By reducing out-of-pocket expenses, these policies have significantly improved vaccine accessibility, particularly for middle-income families.

(2) Driving Innovation in Vaccine Development

The integration of commercial health insurance with the vaccine industry has also spurred innovation. Policies that support the inclusion of innovative vaccines in insurance plans have encouraged domestic vaccine manufacturers to invest in advanced technologies, such as mRNA and recombinant protein vaccines. For example, companies like CanSino Biologics and Walvax Biotechnology have reported growth in revenue from innovative products, such as meningococcal vaccines, despite overall market challenges.

Moreover, the government's emphasis on streamlining clinical trial approvals and providing fiscal subsidies for research and development has further incentivized innovation. The National Medical Products Administration (NMPA) has implemented a pilot program to expedite the review process for innovative vaccines, reducing approval times to 30 working days in pilot areas. This has created a favorable environment for the development of next-generation vaccines.

(3) Improving Accessibility and Equity

One of the most significant impacts of commercial health insurance policies is the improvement in vaccine accessibility and equity. Non-National Immunization Program (non-NIP) vaccines, which are primarily financed out-of-pocket, have historically faced low coverage rates due to high costs. However, the inclusion of these vaccines in commercial insurance plans has reduced financial barriers, particularly for underserved populations.

For example, the coverage rate for HPV vaccines, which was previously below 30% in some regions, has seen a notable increase due to insurance support. Similarly, the affordability of PCV vaccines has improved, leading to higher vaccination rates among children in both urban and rural areas. This shift has contributed to reducing regional disparities in vaccine coverage.

(4) Challenges and Future Outlook

Despite the positive impact, challenges remain. The high cost of innovative vaccines and the limited scope of some insurance plans continue to pose barriers to universal access. Additionally, the sustainability of funding for commercial health insurance programs, particularly in less economically developed regions, remains a concern.

Looking ahead, the vaccine industry is expected to benefit from continued policy support and the growing role of commercial health insurance. The development of more tailored insurance products, coupled with advancements in vaccine technologies, will likely drive further growth. Companies that adapt to these dynamics and focus on high-value, innovative products are well-positioned to thrive in the evolving landscape.

By enhancing market expansion, driving innovation, and improving accessibility, these policies have played a crucial role in addressing gaps in the basic medical insurance system. As the industry continues to evolve, the synergy between commercial health insurance and vaccine development will be key to achieving universal health coverage and improving public health outcomes.

(3) Price Reduction Issues: Market Dynamics and Long-Term Prospects

Vaccine Pricing Regulations: Vaccine companies in China must participate in centralized bidding processes to sell vaccines to CDCs. There is no fixed price ceiling for vaccines; pricing is determined through competitive bidding, influenced by market factors and the demand of CDCs. Vaccines are not covered by the National Medical Reimbursement Drug List. Vaccine pricing is influenced by supply and demand factors, with no clear downward pricing trend anticipated for vaccines, particularly for Class I vaccines due to ongoing public health needs and funding policies.

- Pricing Principles: 1) Reasonable Pricing: Prices are set based on market factors and CDC demand. 2) Independent Pricing: Companies have the right to set their own bidding prices, which are then negotiated.

- Bidding Process: 1) For Class I vaccines (Paid for by the government, funded through public health initiatives, and exempt from national medical insurance schemes), the National Health Commission (NHC) and the Ministry of Finance coordinate annual bidding, and the price of the winning bidder becomes the national price. 2) For Class II vaccines (Paid for by individuals, with no reimbursement

from national medical insurance schemes), the price varies regionally, as provinces handle their own bidding processes. 3) Prices may change yearly based on competition, public health needs, and funding considerations.

Recent market sentiment toward China's vaccine sector has been dampened by significant price reductions and weaker sales of key vaccines, including HPV and influenza vaccines. However, these challenges overshadow the long-term growth potential driven by other blockbuster vaccines. The vaccines most impacted by price cuts include influenza, bivalent HPV, tetanus, 23-valent pneumococcal polysaccharide, measles-mumps-rubella (MMR), recombinant hepatitis B, rabies, and varicella vaccines.

HPV Vaccines: Market Shifts and Competitive Pressure

HPV vaccines have also faced significant price compression. Walvax's successful bid in Shandong Province for bivalent HPV vaccines reduced the price to RMB 27.5 per dose, marking a steep decline from the original price of RMB 329 when launched in 2019. Similar downward pricing trends are anticipated across the sector, with bivalent vaccines expected to drop below RMB 50 per dose.

The expansion of the nine-valent HPV vaccine's coverage age range to females aged 9–14 and 27–45 has broadened the target population. However, the increased import volume of nine-valent vaccines has constrained the market for bivalent vaccines, particularly in the self-paid segment. Notably, domestic HPV vaccine approvals (batches) declined significantly in the first half of 2024, with bivalent and quadrivalent approvals falling by 92%, while nine-valent approvals declined by only 5%.

The anti-corruption campaign has further disrupted HPV vaccine demand. Merck reported a significant drop in shipments from its distributor (Zhifei Biological) to vaccination sites in Q2 2024. This decline was attributed to reduced CDC vaccine inventories, which have shrunk from 3–6 months' supply to about one month or less. Despite these challenges, Merck's Gardasil maintained its market share, reflecting its resilient demand.

GSK management also highlighted tightened CDC budgets during their Q2 2024 earnings call, noting constrained purchasing power for high-cost vaccines such as Gardasil, which costs approximately $200 per dose for Gardasil 9.

Influenza Vaccines: Price Wars Eroding Margins

The quadrivalent influenza vaccine has become the focal point of intense price competition in 2024, with average price cuts exceeding 30%. Key players such as Hualan Vaccine, Sinopharm, Beijing Sinovac, and Jindike have aggressively reduced prices, bringing them below RMB 100 per dose.

In May 2024, Sinopharm subsidiaries in Changchun, Wuhan, and Shanghai initiated the price reductions, slashing prices from RMB 128 to RMB 88 per dose. Private firms followed suit, driving prices further down to around RMB 80 per dose. Influenza vaccines, which are high-margin products, have faced scrutiny under the anti-corruption campaign, making them primary targets for price cuts.

Shingles Vaccines: Differentiation through Cost and Coverage

Shingles vaccines present an area of differentiation, with GSK's vaccine requiring two doses at a total cost of approximately RMB 3,200. In contrast, domestic competitor CanSino Biologics offers a single-dose shingles vaccine priced at RMB 1,400, with an expanded age range covering individuals aged 40 and above. While CanSino's shingles vaccine is more cost-effective, its efficacy and acceptance in the market are yet to match GSK's established product. Notably, GSK has maintained its premium pricing strategy, signaling confidence in its value proposition.

Investment Implications

Despite the immediate pressures from price reductions, the long-term growth trajectory of China's vaccine market remains robust, supported by:

- ✧ Product Differentiation: Blockbuster vaccines with high efficacy and broader age coverage, such as Gardasil and premium shingles vaccines, continue to command strong market interest.
- ✧ Policy Environment: Regulatory clarity and improved healthcare budgets in 2025 may alleviate pricing pressures and stabilize demand.
- ✧ Market Expansion: The widening age ranges for vaccines such as HPV and shingles present growth opportunities, particularly in underpenetrated adult vaccination segments.

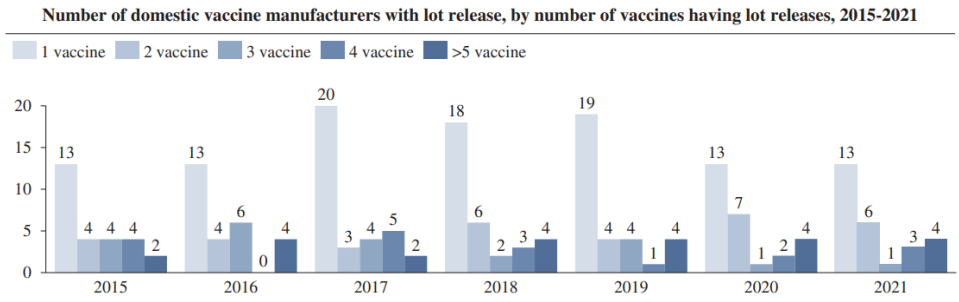
In the near term, price wars and anti-corruption measures may weigh on margins, but the vaccine sector's ability to innovate and expand coverage bodes well for sustainable growth.

2.2.3 Supply-Side: Market Concentration and Emergence of Oligopolies

(1) Market Concentration, Innovation, and Global Expansion in China's Vaccine Industry

The competitive landscape of China's vaccine industry is reaching maturity, with accelerating consolidation and increased market concentration. According to data from the first half of 2023, there are 41 vaccine manufacturers in China, but 48.7% (20 companies) produce only a single vaccine. Excluding the six subsidiaries of the state-owned China National Biotech Group (CNBG), only four companies manufacture more than five vaccine types.

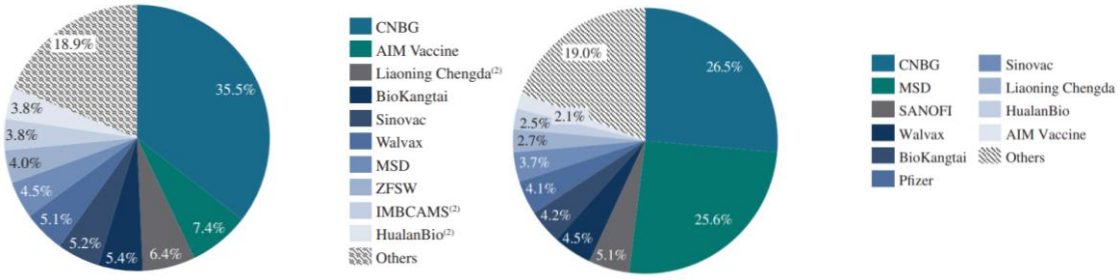
EXHIBIT 12: Number of domestic vaccine manufacturers with lot release, by number of vaccines having lot releases, 2015-2021



Number of vaccines having lot release in 2021	Company
5+	• CNBG • Walvax • Sinovac • BioKangtai
4	• AIM Vaccine • ZFSW • IMBCAMS
3	• Olymvax

Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

EXHIBIT 13: Top 10 vaccine manufacturers in the PRC, by approved lot release volume (left) and by sales revenue (only in-house developed, right), 2021



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

The influx of homogeneous products could significantly shorten product life cycles, even for blockbusters, and led to margin compression. Over the past few years, mounting demand-side pressures have hastened the exit of smaller players, further consolidating the supply side. For mature vaccines, high sales barriers and stable competitive dynamics prevail. Since the enactment of the Vaccine

Administration Law in June 2019, the industry has shown a clear trend toward higher concentration. As the market undergoes a "survival of the fittest" phase, with demand-side pressures beginning to ease, two parallel trends are emerging:

- ✧ Price reductions and increased sales volumes for mature products.
- ✧ Market dominance of high-quality, innovative products.

This dynamic indicates that as competition for certain products stabilizes, companies with globally leading technologies, diversified product portfolios, robust end-to-end capabilities, and strong international expansion potential will likely emerge as industry leaders.

Innovation: Shifting from Imitation to Global Leadership

In recent years, Chinese pharmaceutical innovation has progressed beyond the traditional "follow-on" approach, producing a growing number of me-better, best-in-class, and first-in-class candidates. The surge in licensing agreements for innovative drugs has delivered significant returns for leading biotech firms. Although the vaccine segment's pace of catching up and surpassing global innovation lags innovative drugs due to technological and clinical barriers, notable progress has been made. Beyond traditional inactivated and attenuated vaccines, Chinese companies have achieved breakthroughs in advanced platforms such as recombinant protein vaccines, mRNA vaccines, and adenoviral vector vaccines. Key players like Walvax Biotechnology, CSPC Pharmaceutical Group, and Abogen Biosciences have advanced mRNA vaccine candidates into clinical trials, targeting diseases such as COVID-19, shingles, and respiratory syncytial virus (RSV).

Global Expansion: Export Opportunities and Strategic Partnerships

The globalization of China's vaccine industry has accelerated, catalyzed by experience gained during the export of COVID-19 vaccines. Companies are focusing on regions with rapid population growth and significant market potential, including Southeast Asia, the Middle East, North Africa, and South America.

Examples of successful internationalization include:

- ✧ AIM Vaccine Biosciences: Exported its quadrivalent meningococcal polysaccharide vaccine to Egypt and Central Asian countries.
- ✧ Kangtai Biological Products: Secured export certificates for its acellular DTP-Hib combination vaccine, 23-valent pneumococcal polysaccharide vaccine, and recombinant hepatitis B vaccine (yeast-based). It has also formed partnerships in over 10 countries, including Indonesia, Pakistan, Saudi Arabia, Bangladesh, Egypt, and Bahrain.
- ✧ Walvax Biotechnology: Its bivalent HPV vaccine achieved WHO Prequalification, facilitating discussions with multiple countries for regulatory approvals. Walvax also secured a five-year procurement agreement with Morocco's MarocVax for its 13-valent pneumococcal vaccine and signed a distribution and localization agreement with Egypt's VBC.

In conclusion, the industry's future lies in leveraging technological advancements and strategic collaborations to strengthen its foothold in international markets while driving further innovation domestically.

(2) Key players in China's Vaccine Market

The vaccine industry in China is marked by intense competition, with AIM Vaccine facing significant challenges from key players like Zhifei Biological Products (Zhifei Bio), CanSino Biologics (Kangtai Bio), and Walvax Biotechnology (Walvax Bio). Leading Chinese vaccine companies are navigating an evolving market shaped by innovation, regulatory dynamics, and international expansion opportunities. Their ability to achieve key milestones, capitalize on emerging opportunities, and mitigate risks will determine their competitive positioning and growth trajectory in the coming years.

Zhifei Biological Products (Zhifei Bio):

Zhifei Bio benefits from a robust portfolio, including HPV4/9 vaccines (in partnership with Merck), a shingles vaccine (in collaboration with GSK), and several self-developed vaccines such as tuberculosis-related products. However, revised contract terms with Merck may

lead to declining revenues from HPV4/9 vaccines starting in 2024. The company's pipeline is promising, with anticipated launches of the human diploid rabies vaccine, PCV15, and a quadrivalent influenza vaccine within three years. Strategic opportunities lie in faster-than-expected adoption of tuberculosis vaccines and potential partnerships with multinational corporations, but the company remains vulnerable to the shrinking total addressable market (TAM) for HPV vaccines and revenue volatility. It is currently trading at price-to-earnings (P/E) ratios in line with pre-COVID historical averages, despite potential concerns about future growth.

Walvax Biotechnology (Walvax Bio):

Walvax Bio is a leader in PCV13, HPV2, and meningococcal vaccines, but it faces significant competitive pressures, particularly in the HPV and PCV segments. Its valuation exceeds the average for the Chinese vaccine industry but also reflects market concerns about competitive pressures for its HPV2 and PCV13 vaccines. Walvax's HPV2 sales estimates are 10%-20% lower than consensus due to intensifying competition. Despite this, the company is making strides in developing HPV9 vaccines and expanding HPV2 and PCV13 offerings. Key opportunities include higher-than-expected HPV vaccine sales and leveraging its mRNA platform for new products. However, risks such as lower-than-anticipated sales of HPV2 and PCV13, as well as setbacks in mRNA vaccine development, present significant challenges.

CanSino Biologics (Kangtai Bio):

CanSino Bio has shown resilience, with strong growth in PCV13 partially offsetting revenue declines from COVID-19 vaccines. Its product lineup includes the HBV vaccine, DTaP-Hib combination vaccine, and the recently approved human diploid rabies vaccine. Despite these strengths, the company faces valuation pressures, with its forward P/E ratio at historic lows, reflecting investor skepticism about sustained growth amid declining COVID-19 vaccine sales and anti-corruption policies. The launch of the quadrivalent influenza vaccine and DTaP-Hib-IPV combination vaccine, as well as potential mRNA platform advancements, represent key growth drivers. Risks include underperformance in PCV13 and rabies vaccine sales, the impact of volume-based procurement (VBP) policies, and pipeline-related uncertainties.

In summary, AIM Vaccine's competitors leverage diverse strengths such as established product portfolios and innovation pipelines. However, they also contend with revenue pressures, regulatory challenges, and competitive dynamics, which create opportunities for differentiation and strategic positioning in the market.

3. AIM Vaccine: Transitioning to High-Value Vaccines with Differentiated Advantages

3.1 Company Overview: A Full-Industry-Chain Vaccine Powerhouse

Founded on November 9, 2011, AIM Vaccine Co., Ltd. has emerged as a leading private vaccine enterprise in China, distinguished by its full-industry-chain model that integrates research and development (R&D), manufacturing, and commercialization. With five advanced vaccine technology platforms, four state-of-the-art manufacturing facilities, and an annual production capacity of 91.3 million doses, AIM Vaccine has established itself as the second-largest vaccine supplier in China (by volume), with market leadership in hepatitis B (HBV) and rabies vaccines. Beyond a broad market presence across all 31 provinces in China, the company exports rabies and meningococcal vaccines to regions such as Southeast Asia, Africa, South America, and the Middle East, expanding its international footprint. The company's pipeline includes 22 innovative vaccine candidates targeting 13 disease areas, covering the world's top 10 vaccine categories.

3.1.1 Historical Development: From Acquisitions to Transformation

AIM Vaccine's origins can be traced back to Shenyang Wharton Biotechnology Co., Ltd., established in November 2011. Over the years, the company has grown through a series of strategic acquisitions and transformations, which have strengthened its product portfolio and market position.

History: Key Acquisitions and Expansions:

1. AIM Honesty (Hepatitis B Vaccine):

In 2015, AIM Vaccine acquired AIM Honesty, which had obtained New Drug Application (NDA) approvals for its recombinant HBV vaccine (Hansenula Polymorpha) in 2004 and 2013. This acquisition established AIM Vaccine as a leader in the HBV vaccine market, with a 45.4% market share in approved lot releases by 2021.

2. AIM Action (Hepatitis A Vaccine):

In 2016, AIM Vaccine took a controlling interest in AIM Kanghuai (later rebranded as AIM Action), which had secured NDA approval for its inactivated HAV vaccine (HDC) in 2015. This acquisition expanded the company's portfolio to include HAV vaccines, further diversifying its revenue streams.

3. AIM Persistence (Meningococcal, Mumps, and HFRS Vaccines):

In 2017, AIM Vaccine acquired AIM Weixin (rebranded as AIM Persistence), which held NDA approvals for hemorrhagic fever with renal syndrome (HFRS) and mumps vaccines. This acquisition strengthened the company's position in the meningococcal vaccine market, particularly with the launch of its Group A, C, Y, and W135 meningococcal polysaccharide vaccine (MPSV4) in 2020.

4. AIM Honor (Rabies Vaccine):

Through the acquisition of AIM Honor, AIM Vaccine gained control of Rong'an Bio, a leading producer of human rabies vaccines (Vero cell) in 2019. This acquisition positioned AIM Vaccine as the second-largest supplier of rabies vaccines in China, with a 21.5% market share. In 2020, AIM Vaccine acquired 20% equities of Rong'an Biology to make it a wholly owned subsidiary.

5. AIM Explorer and Liverna (mRNA):

In 2018, AIM Vaccine established AIM Explorer, focusing on bacterial vaccine R&D. In 2020, AIM Vaccine acquired 49% equities of AIM Explorer and AIM Explorer became a wholly owned subsidiary of AIM Vaccine.

In 2021, AIM Vaccine acquired 50.1546% equities of Liverna to further accelerate research of mRNA COVID-19 vaccine and production layout. These moves underscored the company's commitment to innovation and next-generation vaccine development.

6. Restructuring and Listed on the Main Board of the Hong Kong Stock Exchange

In September 2020, AIM Vaccine completed restructuring and transformed into a joint-stock limited liability company, marking a significant milestone in its growth trajectory. The company adopted International Financial Reporting Standards (IFRS) and implemented amendments to IFRS 16 to address COVID-19-related rent concessions, further strengthening its financial governance. AIM Vaccine listed on the Main Board of the Hong Kong Stock Exchange in 2022.

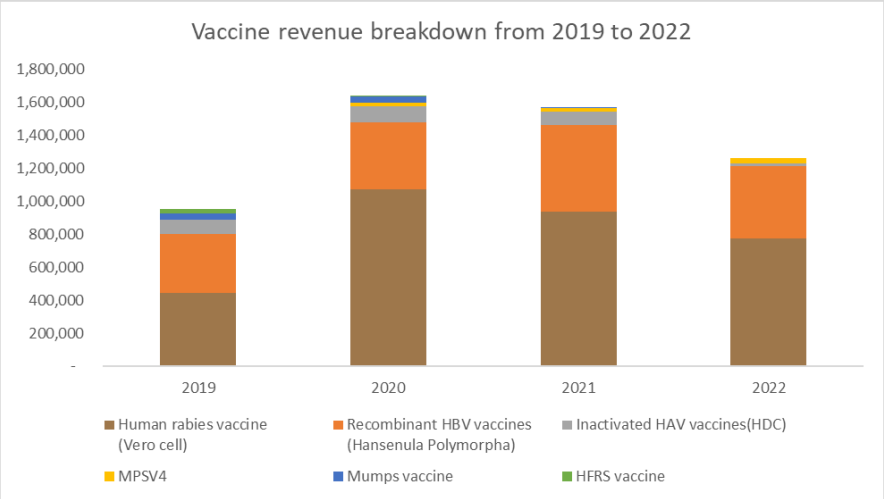
In 2024, AIM Vaccine completed Phase III clinical trials for PCV13 and formally submitted it for market registration; the serum-free iterative rabies vaccine was also submitted for pre-application for market registration. AIM Vaccine now stands as a key player in China's vaccine industry, characterized by its integrated business model, advanced technology platforms, and commitment to high-value vaccine innovation. These strengths, coupled with a strategic focus on global market expansion, position the company as a compelling investment opportunity in the fast-growing vaccine sector.

3.1.2 Market position, core strengths and growth drivers

AIM Vaccine is strategically positioned as a leading player in the global vaccine market, supported by a robust and integrated business model. The company spans the full vaccine value chain, from research and development (R&D) to manufacturing and distribution, which not only ensures operational efficiency but also drives cost control and maintains high product quality. This vertical integration provides AIM Vaccine with a significant competitive advantage in an industry characterized by strict regulatory standards. The company's portfolio is further strengthened by its five technology platforms, which foster innovation and enable the development of differentiated products in a highly competitive market.

AIM Vaccine's leadership in mature vaccine segments, notably in HBV and rabies vaccines, underscores its ability to capture substantial market share and deliver strong financial performance. AIM Vaccine stands out as a unique and dominant player in China's vaccine industry, offering a comprehensive and differentiated product portfolio across multiple high-value categories. Its rabies vaccine series (Vero cell, human diploid, serum-free, and mRNA) and pneumococcal vaccine portfolio (PCV13, PPSV23, and PCV20) exemplify the company's iterative and innovative strategy, which allows it to scale high-value vaccines quickly while leveraging established distribution channels for mature products.

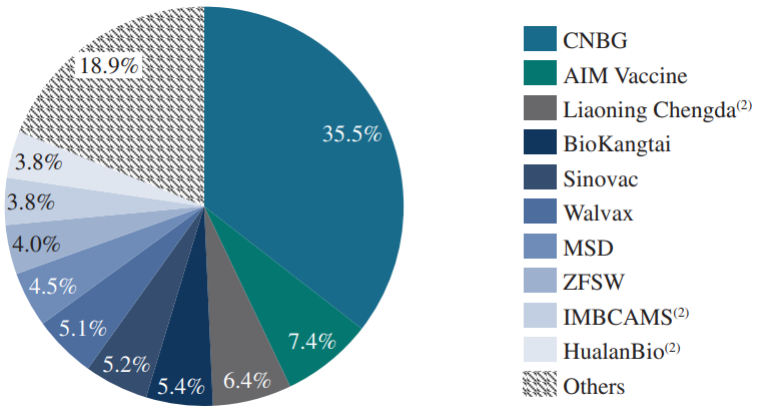
EXHIBIT 14: Vaccine revenue breakdown of AIM Vaccine, from 2019 to 2022



Source: AIM Vaccine's financial reports, Fosun International Securities

In China, AIM Vaccine is the second-largest vaccine manufacturer by volume, just behind China National Biotec Group (CNBG). The company holds dominant positions in critical vaccine markets, with a leading share in the hepatitis B vaccine (HBV) segment, driven by its Hansenula Polymorpha-based HBV product. In the rabies vaccine market, AIM Vaccine is the second-largest player, with a 21.5% market share in 2023. These achievements are attributed to the company's strategic focus on R&D excellence, advanced manufacturing capabilities, and a comprehensive distribution network. AIM Vaccine operates GMP-certified manufacturing facilities, ensuring reliable and high-quality production. Additionally, the company's nationwide distribution infrastructure across China positions it well to meet the growing demand for vaccines in the domestic market.

EXHIBIT 15: Top 10 vaccine manufacturers in the PRC, by approved lot release volume, 2021



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

AIM Vaccine's strategic vision extends beyond China, with a clear focus on global expansion. The company is actively pursuing opportunities in emerging markets, where vaccine demand is surging due to increased public health awareness and government vaccination programs. This international expansion presents significant revenue growth potential while diversifying market risks. By tapping into new high-growth regions, AIM Vaccine can further solidify its position as a global leader in the vaccine industry. With a strong pipeline, a commitment to R&D, and a solid operational foundation, AIM Vaccine is well-positioned to deliver sustainable long-term growth and create significant value for shareholders.

(1) Strong R&D Pipeline and Future Growth Drivers

AIM Vaccine's substantial investment in R&D underscores its commitment to innovation and high-value product development. The company's pipeline includes 22 vaccine candidates targeting 13 disease areas, with a strong emphasis on high-growth, high-margin segments. Five blockbuster vaccines are expected to be approved and launched within the next three years.

AIM Vaccine's iterative product strategy ensures its leadership in vaccine innovation. For example, the company's progression from Vero cell to human diploid, serum-free, and mRNA rabies vaccines highlights its commitment to staying ahead of market trends. This approach enhances market share, pricing power, and profit margins. The human diploid rabies vaccine is priced 4-5 times higher than its Vero cell counterpart, and the company's rabies vaccine portfolio is expected to grow from RMB 2.65 billion in 2023 to over RMB 15 billion. As the potential global leader in serum-free and mRNA rabies vaccines, AIM Vaccine is well-positioned to capture over a third of the market by value.

Key pipeline products and growth drivers include:

- **Serum-free Rabies Vaccine (expected to be approved in 2026):** A next-generation vaccine offering enhanced safety, scalability, and production efficiency; The **high-titer human diploid rabies vaccine (expected to be approved in 2027)** has pioneered the

breakthrough of the traditional technical bottlenecks of low virus titer and small production volume, with optimized and innovative purification processes.

- ✧ **13-Valent Pneumococcal Conjugate Vaccine (PCV13, expected to be approved in 2025) and 23-Valent Pneumococcal Polysaccharide Vaccine (PPSV23, expected to be approved in 2026)** and **20-Valent Pneumococcal Conjugate Vaccine (PCV20):** High-value products addressing the growing global demand for pneumococcal disease prevention.
- ✧ **Quadrivalent Meningococcal Conjugate Vaccine (MCV4, expected to be approved in 2027)**: Meeting unmet needs in meningococcal prevention with expanded coverage.
- ✧ **EV71-CA16 Bivalent Vaccine:** Providing dual protection against hand, foot, and mouth disease.
- ✧ **mRNA-based vaccines for RSV and shingles/herpes zoster**

The following table summarizes AIM Vaccine's candidate portfolio:

EXHIBIT 16: AIM Vaccine's vaccine candidate portfolio, 2024

Technology platform	Indication	Vaccine Candidate	In-house R&D/ Joint Development	Preclinical	CTA	Phase I	Phase II	Phase III	NDA & NDA Approval
Bacterial vaccine	Pneumonia disease	13-Valent Pneumonia Conjugate Vaccine (PCV13)	In-house R&D	Pre-application for marketing registration has been submitted					
		20-Valent Pneumonia Conjugate Vaccine (PCV20)	In-house R&D	Pre-application for clinical trials has been submitted					
		24-Valent Pneumonia Conjugate Vaccine (PCV24)	In-house R&D	Plan to submit CTA in 2025					
		23-Valent Pneumonia Polysaccharide Vaccine (PPSV23)	In-house R&D	Plan to submit pre-application for marketing registration in 2024					
	Meningococcal disease	Tetravalent Meningococcal Conjugate Vaccine (MCV4)	In-house R&D	Phase II clinical trial is ongoing, and plan to start Phase III in 2025					
		Hexavalent Meningococcal Vaccine	In-house R&D	Preclinical Research					
	Group B strep disease	Hexavalent Group B Streptococcus Polysaccharide Conjugate Vaccine	In-house R&D	Plan to submit CTA in 2025					
	Tetanus	Absorbed Tetanus Vaccine	In-house R&D	CTA has been submitted					
	Hib infection	Haemophilus Influenzae Type B (Hib) Conjugate Vaccine	In-house R&D	Pre-application for clinical trials has been submitted					
Viral vaccine	HFMD	EV71-CA16 Bivalent HFMD Vaccine (HDC)	In-house R&D	Plan to start Phase I in 2024					
	Influenza	Quadrivalent Influenza Virus Vaccine (MDCK Cells)	In-house R&D	CTA has been submitted					
	Rabies	Iterative Serum-free Rabies Vaccine	In-house R&D	Plan to submit application for marketing registration in 2024					
		Novel-process Highly-effective Human Diploid Rabies Vaccine	In-house R&D	Pre-application for clinical trials has been submitted					
mRNA vaccine	Rabies	Iterative mRNA Rabies Vaccine	In-house R&D	CTA under assessment					
	Shingles/Herpes zoster	mRNA Shingles/Herpes Zoster Vaccine	In-house R&D	Pre-application for clinical trials has been submitted					
	Respiratory syncytial virus infection	mRNA Respiratory Syncytial Virus Vaccine (RSV)	In-house R&D	Pre-application for clinical trials has been submitted					
	Influenza	mRNA Influenza Vaccine	In-house R&D	Preclinical Research					
	COVID-19 infection	Bivalent Delta-Omicron BA.5 mRNA COVID-19 Vaccine	In-house R&D	Plan to submit for marketing in 2024					
Combination vaccine	DTP	Diphtheria, Tetanus and Pertussis and Haemophilus Influenzae Type B (DTP-Hib) Combination Vaccine	In-house R&D	Plan to submit CTA in 2025					
		Diphtheria, Tetanus and Acellular Pertussis Combined Vaccine (DTaP)	In-house R&D	Plan to submit CTA in 2025					
		Diphtheria, Tetanus and Acellular Pertussis (Components) Combined Vaccine (DTcP)	In-house R&D	Plan to submit CTA in 2025					
Genetically engineered vaccine	Meningococcal disease	Recombinant Group B Meningococcal Vaccine	In-house R&D	Preclinical Research					

Source: AIM Vaccine's INTERIM REPORT 2024, Fosun International Securities

(2) Innovation Through Diversified Technology Platforms

The cornerstone of AIM Vaccine's innovation strategy is its five advanced technology platforms:

EXHIBIT 17: Platform technologies of vaccine

Platform technologies of vaccine

Platform	Description	Advantages	Representative product
Bacterial vaccine	• Bacterial vaccine is directed against the pathogenic bacteria causing the infection • Bacterial vaccine contains killed or attenuated bacteria that activate the immune system, which antibodies are built against the particular bacteria, and prevents bacterial infection later	• Simple manufacturing process • Strong immune response can be triggered	• MCV4, PCV13
Viral vaccine	• Viral vaccine contains either inactivated viruses or attenuated viruses which include the live form of the viruses • The viruses are not pathogenic but can induce an immune response	• Simple manufacturing process • Strong immune response can be triggered	• Human rabies vaccine
Combination vaccine (combined bacteria and virus together)	• Combination vaccine take two or more vaccines that could be given individually and put them into one shot in order to prevent several disease simultaneously • Bacteria vaccine and viral vaccine can be combined together	• Prevent infection from different diseases simultaneously • Prevent infection caused by different strains of the same pathogen or different serotypes • Simplified vaccination procedure	• DTP-Hib combination vaccine
Genetically engineered vaccine	• Genetically engineered vaccine is produced through recombinant technology • It involves inserting the DNA encoding an antigen (such as a bacterial surface protein) that stimulates an immune response into bacterial or mammalian cells, expressing the antigen in these cells and then purifying it from them	• Suitable for people with weakened immune system • Strong and long-lasting immune response can be triggered • Without risk of being infected by bacteria or virus	• Recombinant HBV vaccine (Hansenula Polymorpha)
mRNA vaccine	• mRNA vaccines provide the cells with a blueprint to construct the protein, and the process allows the host to mount an immune response against the constructed foreign protein	• Cost-effective • Mass production is achievable • High efficiency against mutant virus • Without risk of gene integration	• COVID-19 mRNA vaccine

Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

These platforms enable the company to address both established market demands and emerging public health challenges. For instance, AIM Vaccine leverages its mRNA platform to develop next-generation vaccines targeting respiratory syncytial virus (RSV), shingles/herpes zoster, and COVID-19, placing the company at the forefront of global vaccine innovation.

Through these platforms, AIM Vaccine is not only broadening its portfolio but also enhancing vaccine safety, efficacy, and scalability—core attributes that drive long-term competitive differentiation.

(3) Integrated Industry Model Ensuring Quality and Efficiency

AIM Vaccine operates across the entire vaccine value chain, encompassing research and development (R&D), manufacturing, and distribution. This comprehensive approach ensures strict quality control, operational efficiency, and cost-effectiveness.

The company's three GMP-certified manufacturing facilities in Ningbo, Dalian, and Taizhou are equipped with advanced technology and adhere to rigorous quality standards. These facilities produce a diverse portfolio of vaccines, including those for hepatitis B (HBV), hepatitis A (HAV), rabies, and meningococcal diseases. Notably, AIM Vaccine's Hansenula Polymorpha-based HBV vaccine is recognized as the gold standard in China due to its genetic stability, high purity, and superior antigen expression capabilities.

EXHIBIT 18: Key information of AIM Vaccine's four individual Licensed Manufacturing Facilities as of June 30, 2024

Name	Location	GFA (sq.m.)	Annual bulk production capacity (million doses)	Responsible products	Production Line(s)
AIM Rongyu Licensed Manufacturing Facility	Ningbo, Zhejiang Province	25,318	25.0	Freeze-dried human rabies vaccine (Vero cell)	Two
AIM Honesty Licensed Manufacturing Facility	Dalian, Liaoning Province	11,877	45.0	Recombinant HBV vaccine (Hansenula Polymorpha)	One
AIM Action Licensed Manufacturing Facility	Taizhou, Jiangsu Province	18,711	5.3	Inactivated HAV vaccine	One
AIM Persistence Licensed Manufacturing Facility	Ningbo, Zhejiang Province	72,313	16.0	Bivalent inactivated HFRS vaccine (Vero cell), mumps vaccine and Group A, C, Y and W135 MPSV (MPSV4)	Three

Source: AIM Vaccine's INTERIM REPORT 2024, Fosun International Securities

In addition to its manufacturing capabilities, AIM Vaccine benefits from a robust distribution network that spans all 31 provinces in China, serving both public and private sectors. This extensive network supports the company's domestic leadership in the vaccine market.

(4) Global Market Expansion: Unlocking International Growth

Recognizing the untapped potential in global markets, AIM Vaccine has implemented a robust international expansion strategy. The company focuses on regions with high demand for vaccines, particularly Southeast Asia, Africa, South America, and the Middle East.

In 2024, AIM Vaccine achieved significant milestones by exporting its freeze-dried rabies vaccine to Côte d'Ivoire and Pakistan, and its MPSV4 vaccine to Egypt and Tajikistan. These developments reflect the company's growing presence in emerging markets, which are characterized by high disease burdens and underpenetrated healthcare systems.

To strengthen its global competitiveness, AIM Vaccine is pursuing World Health Organization (WHO) prequalification for its vaccines. This accreditation will enable the company to access additional international markets, including those supported by global health organizations such as UNICEF and Gavi.

In conclusion, AIM Vaccine's strategic focus on innovation, manufacturing excellence, and global market penetration ensures its ongoing commitment to safeguarding public health while delivering significant value to investors. As global demand for high-quality vaccines continues to rise, AIM Vaccine is well-positioned to capitalize on these opportunities. For investors seeking exposure to the healthcare sector, particularly in the rapidly expanding vaccine market, AIM Vaccine offers a unique combination of innovation, market leadership, and global growth potential.

3.2 Marketed Products: The Quartet of Rabies Vaccines Undergoes Iteration, forming a Gradient Competitive Advantage, Leveraging Mature Channels + Rapid Scaling of High-End Products to Continuously Increase Market Share

3.2.1 Rabies Vaccine Quartet: Vero (Launched in 2007) / Human Diploid / Serum-Free / mRNA Vaccines

AIM Vaccine has established itself as a key player in the rabies vaccine market, leveraging its advanced R&D capabilities and diversified portfolio of vaccines, including the freeze-dried human rabies vaccine (Vero cell), human diploid cell (HDC) rabies vaccine, serum-free rabies vaccine, and mRNA rabies vaccine. With its Vero cell-based rabies vaccine generating steady revenue, next-generation vaccines poised to revolutionize the market, AIM Vaccine is well-positioned to capture a significant share of the RMB 15-20 billion Chinese rabies vaccine market by 2032, driven by rising awareness of rabies prevention and the need for safer, more effective vaccine options.

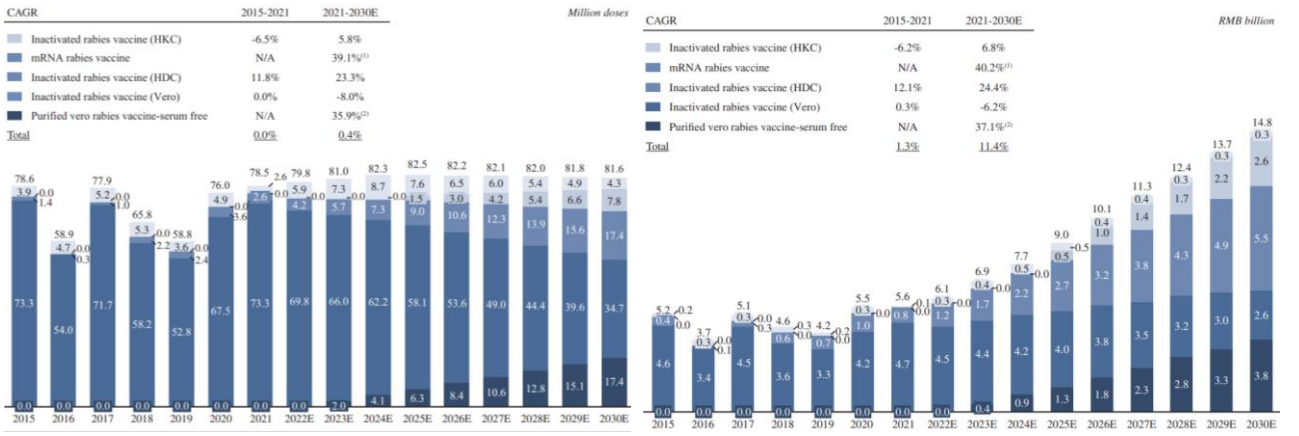
The company's progression from Vero cell to human diploid, serum-free, and mRNA rabies vaccines highlights its commitment to staying ahead of market trends. This approach enhances market share, pricing power, and profit margins. The human diploid rabies vaccine is priced 4-5 times higher than its Vero cell counterpart, and the company's rabies vaccine portfolio is expected to grow from RMB 2.65 billion in 2023 to over RMB 15 billion. As the potential global leader in serum-free and mRNA rabies vaccines, AIM Vaccine is well-positioned to capture over a third of the market by value.

(1) Market Dynamics: Addressing Supply Shortages and Rising Demand

The rabies vaccine market in China has experienced significant fluctuations in recent years, driven by regulatory changes, supply shortages, and increasing competition. Following the 2018 "rabies vaccine scandal" involving Changchun Changsheng Biotechnology, which led to a temporary shortage of rabies vaccines, AIM Vaccine emerged as a reliable supplier, helping to stabilize the market. The company's GMP-certified manufacturing facilities and efficient production capabilities have enabled it to respond effectively to market demands, ensuring a steady supply of high-quality vaccines.

According to CIC Report, the Chinese rabies vaccine market is projected to grow significantly, reaching RMB 14.8 billion by 2030, with the serum free and HDC (human diploid cell) rabies vaccine segments expected to account for RMB 3.8 billion and RMB 5.5 billion. AIM Vaccine is well-positioned to capture a significant share of this market, particularly with its next-generation vaccines. The company's serum-free rabies vaccine, which is currently in Phase III clinical trials, is expected to be a game-changer, offering a safer and more effective alternative to existing vaccines. AIM Vaccine aims to capture 35% of the market share for serum-free rabies vaccines by 2030, driven by its superior product quality and strong distribution network.

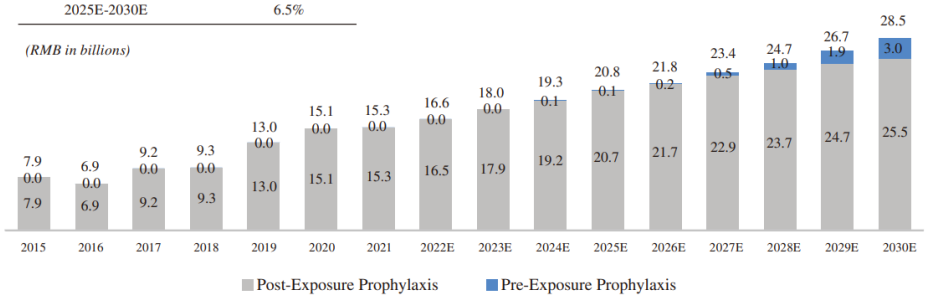
EXHIBIT 19: Market size of human rabies vaccine market in the PRC, by approved lot release volume (left) and by sales revenue (right), 2015-2030E



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

EXHIBIT 20: Global Human Rabies Vaccine Market, 2015-2030E

Period	CAGR
2015-2021	11.6%
2021-2025E	8.0%
2025E-2030E	6.5%



Source: Company public disclosure, Frost & Sullivan Analysis

Source: Beijing Luzhu GLOBAL OFFERING, Frost & Sullivan Analysis, Fosun International Securities

(2) Competitive Landscape: A Fragmented Market with Growth Potential

The Chinese rabies vaccine market is highly competitive, with more than 11 companies currently producing human rabies vaccines (There were 13 human rabies vaccines registered in the CDE, while 3 of them had not generated any revenue in 2021. This excludes human rabies vaccines which did not have any batches issued by the NMPA in the last five years). Chengda Bio, a major competitor, has historically dominated the market, with its Vero cell-based rabies vaccine accounting for a significant portion of its revenue. However, Chengda Bio's market share has been declining in recent years, from a peak of 73.08% in 2019 to 43.95% in 2023, due to increasing competition and regulatory challenges. In contrast, AIM Vaccine has been steadily gaining market share, with its batch issuance volume increasing from 18.1% in 2021 to 21.5% in 2023.

EXHIBIT 21: Human rabies vaccines with approved lot release volume and their market share in the PRC, 2021

Manufacturer	Cell Line	Administration	Approval Date	Price, 2021
Hualan Bio	PVCV	Pre-exposure: Three doses Post-exposure: Four doses (2-1-1) or five doses	January 29, 2023	/
Shandong Yidu Biotechnology		Pre-exposure: Three doses Post-exposure: Four doses (2-1-1) or five doses	July 12, 2021	/
Changchun Institute of Biological Products		Four-dose or five dose	April 30, 2021	/
Changchun Zhuoyi Biological		Pre-exposure: Three doses Post-exposure: Five doses	November 23, 2016	RMB65-93
Dalian Aleph Biomedical		Pre-exposure: Three doses Post-exposure: Five doses	September 28, 2016	RMB58.5-91.0
Liaoning Chengda Biotechnology	PVCV	Pre-exposure: Three doses Post-exposure: Four doses (2-1-1) or five doses	March 6, 2007	Frozen-dried: RMB60-258.5 Non-frozen-dried: RMB42.09-104
Rongan Biological		Pre-exposure: Three doses Post-exposure: Five doses	September 30, 2007	RMB53.85-87
Promise Biological		Pre-exposure: Three doses Post-exposure: Five doses	May 8, 2008	RMB53
Jilin Maifeng Biopharmaceutical		Pre-exposure: Three doses Post-exposure: Five doses	January 9, 2008	/
Liaoning Yisheng Biopharma		Pre-exposure: Three doses Post-exposure: Five doses	November 6, 2006	RMB68.5-243.5

Henan Grand Biopharmaceutical	Hamster Kidney Cell	Pre-exposure: Three doses Post-exposure: Five doses	June 12, 2007	RMB46.2-89.5
Zhongke Biopharm		Pre-exposure: Three doses Post-exposure: Five doses	May 28, 2007	RMB58.8-95
Chengdu Kanghua Biological Products	HDCV	Pre-exposure: Three doses Post-exposure: Five doses	April 28, 2012	RMB275-320

Company	Product name	Medium	Virus strain	Immune procedure	Storage	Approval date	Lot release in 2021 (million doses)	Market share (based on lot release)	Market share (based on revenue)
Liaoning Chengda Co., Ltd.	Rabies Vaccine (Vero Cell) for Human Use, Freeze-dried	Vero cell	PV2061	2-1-1	2~8℃, 36 months	2015/8/15	~39.9	50.8%	45.5%
Rong'an Bio	Rabies Vaccine (Vero Cell) for Human Use, Freeze-dried	Vero cell	aG	Standard 5 doses	2~8℃, 36 months	2012/9/4	~14.2	18.1%	16.2%
Changchun Zhuoyi Biological Co., Ltd.	Rabies Vaccine (Vero Cell) for Human Use, Freeze-dried	Vero cell	CTN-1V	Standard 5 doses	2~8℃, 12 months	2016/11/23	~8.6	10.9%	9.8%
Yisheng Biopharma	Rabies Vaccine (Vero Cell) for Human Use, Freeze-dried	Vero cell	Unknown	Standard 5 doses	2~8℃, 36 months	2015/8/15	~5.9	7.4%	6.7%
Dalian Aleph Biomedical Co., Ltd.	Rabies Vaccine (Vero Cell) for Human Use	Vero cell	CTN-1V	Standard 5 doses	2~8℃, 18 months	2016/9/28	~5.7	5.8%	5.2%
Chengdu KangHua	Rabies Vaccine (Human diploid cell) for Human Use, Freeze-dried	Human diploid cell	Unknown	Standard 5 doses	2~8℃, 36 months	2017/3/3	~2.6	3.4%	13.7%
Henan Grand Biopharmaceutical Co., Ltd.	Rabies Vaccine (Hamster kidney cell) for Human Use	Hamster kidney cell	Unknown	Standard 5 doses	2~8℃, 18 months	2010/12/31	~2.4	3.1%	2.5%
Zhongke Biopharm Co., Ltd.	Rabies Vaccine (Hamster kidney cell) for Human Use	Hamster kidney cell	aG	Standard 5 doses	2~8℃, 18 months	2000/2/2	~0.2	0.3%	0.2%
Changchun Institute of Biological Products Co., Ltd.	Rabies Vaccine (Vero Cell) for Human Use, Freeze-dried	Vero cell	aG	Standard 5 doses	2~8℃, 36 months	2021/5	~0.2	0.3%	0.3%

Source: AIM Vaccine and Beijing Luzhu GLOBAL OFFERING and financial reports, CIC Report, DataYes Inc., Frost & Sullivan Analysis, Fosun International Securities

There are currently four types of commercially available rabies vaccines: hamster kidney cell vaccines, purified chick embryo cell vaccines (PCEC), purified Vero cell vaccines (PVCV), and human diploid cell vaccines (HDCV). Among these, hamster kidney cell vaccines are less popular in the global market. For purified Vero cell vaccines (PVCV), the main manufacturers include Liaoning Chengda Biotechnology, which holds a market share of 54.3%, and Rongan Biological, with a market share of 24.4%. As for human diploid cell vaccines (HDCV), Chengdu Kanghua Biological Products dominates the market with a 100% share.

EXHIBIT 22: Global Human Rabies Vaccine Market, 2015-2030E

Cell Line	Hamster Kidney Cell	PCEC	PVCV
Features	The first approved cell culture rabies vaccine was the hamster kidney cell rabies vaccine, which was developed in China in 1980 with an aluminum adjuvant and the strain being the Beijing aG strain, inactivated with formaldehyde.	PCEC vaccine was cultured in primary chicken embryo fibroblasts with the Flury LEP-C25 virus strain, inactivated with 0.025% β-propiolactone and then concentrated and purified using density gradient centrifugation.	The Vero cell line, was established in 1962 and supports infection with multiple genotypes of the Lisa virus genus. PVCV vaccine was first approved in Europe and now are being massively producing in many developing countries.
Advantages	Mild adverse effects, relatively good efficacy and safety, as well as relatively low price.	Clinical experience in over 60 countries over the last 30 years has shown that the vaccine is immunogenic, effective and safe.	Can be grown and infected on microcarriers and cultured in fermentation instillations, immortalized cell lines have an almost unlimited growth capacity and can be produced on a large scale.
Disadvantages	Less effective in terms of safety and efficacy comparing to HDCV and PVCV rabies vaccines.	Currently no PCEC vaccine available in China. It is difficult to be massively produced and relatively expensive.	Immortalized cell lines have potential cancer risk.
Mainly Used in	China	Australia, Europe, India and U.S.	China, India
Major manufactures	Henan Grand Biopharmaceutical, Zhongke Biopharm	GSK, ChiroRab	Liaoning Chengda Biotechnology, Rongan Biological, Sanofi Pasteur, Indian Immunologicals, Serume Institute of India

Cell Line	HDCV	Recombinant Protein
Features	The first human diploid cell line, WI38, was established in 1961 to avoid problems arising from the use of primary tissue culture, such as allergy to animal proteins. It is currently produced using MRC5 human embryonic fibroblasts, inoculated with the Pitman Moor L503 3M strain.	Currently, there is no recombinant rabies vaccine launched in the market. All the products are in R&D. Only the product from CPL Biologicals, a biopharma company in India is recorded to enter Phase III clinical experiments. The non-replicating virus-based vaccine uses a viral vector that cannot be replicated in the host and can express the G protein of the rabies virus, thereby causing an immune response.
Advantages	Recommended by the WHO as the "gold standard" rabies vaccine. HDCV vaccine induces a more intense immune response in test animals and humans and is less likely to cause adverse reactions.	The vaccine produced by this technology has a high degree of safety for the host body.
Disadvantages	It has high cost, therefore, is mainly used in developed countries. In China, there is only one manufacturer, Chengdu Kanghua Bio, which listed its HDCV rabies vaccine in 2015.	The production cost of the vaccine produced by this technology will be higher, so the price will be higher in the future.
Mainly Used in	China, Europe, U.S., Australia	/
Major manufactures	Chengdu Kanghua Biological Products, Sanofi Pasteur	/

Source: Beijing Luzhu GLOBAL OFFERING, Frost & Sullivan Analysis, Fosun International Securities

(3) AIM Vaccine's Growth Drivers: Innovation and Market Expansion

Market Positioning and Competitive Advantage

AIM Vaccine has been steadily gaining market share, with its batch issuance volume increasing from 18.1% in 2021 to 21.5% in 2023. The company distinguishes itself through advanced manufacturing capabilities and a robust R&D pipeline. 1) The company's serum-free rabies vaccine, expected to launch by 2026 as the first globally, is anticipated to be a significant growth driver, offering a safer and more effective alternative to traditional Vero cell-based vaccines. 2) The company is poised to capitalize on the growing demand for human diploid cell (HDC) rabies vaccines, which currently represent only 5.8% of the market. With a production capacity ten times larger than its competitors, AIM Vaccine is well-equipped to meet this demand.

Growth Strategy: Innovation and Market Expansion

AIM Vaccine's growth strategy is twofold, focusing on innovation and market expansion. The company is heavily investing in next-generation rabies vaccines, including the serum-free rabies vaccine and mRNA rabies vaccine, both of which are expected to drive future growth. The serum-free rabies vaccine, with a design capacity of 10 million doses per year, is set to revolutionize the market by providing a safer and more effective alternative to existing vaccines.

In addition to its innovation efforts, AIM Vaccine is actively expanding its presence in emerging markets, particularly in Southeast Asia, Africa, and South America, where the burden of rabies is high. The company's international business department is spearheading global strategies, with a focus on obtaining World Health Organization (WHO) prequalification for its vaccines. This would enable AIM Vaccine to supply its products to low- and middle-income countries, where the need for affordable and effective rabies vaccines is most acute.

Revenue Growth and Future Prospects

AIM Vaccine's rabies vaccine portfolio is expected to be a key driver of revenue growth in the coming years. While the company's Vero cell-based rabies vaccine continues to generate steady revenue, the next-generation vaccines are anticipated to contribute significantly to future growth. The Chinese rabies vaccine market is projected to reach RMB ~20 billion by 2034, with AIM Vaccine's serum-free and HDC rabies vaccine expected to capture a 35% market share in the Chinese rabies vaccine market by 2034, translating into as much as RMB 7 billion in revenue.

In summary, AIM Vaccine's competitive edge, innovative growth strategy, and market expansion efforts position it as a strong player in the rabies vaccine market. The company's focus on next-generation vaccines and international market penetration underscores its potential for significant revenue growth and market leadership in the coming years.

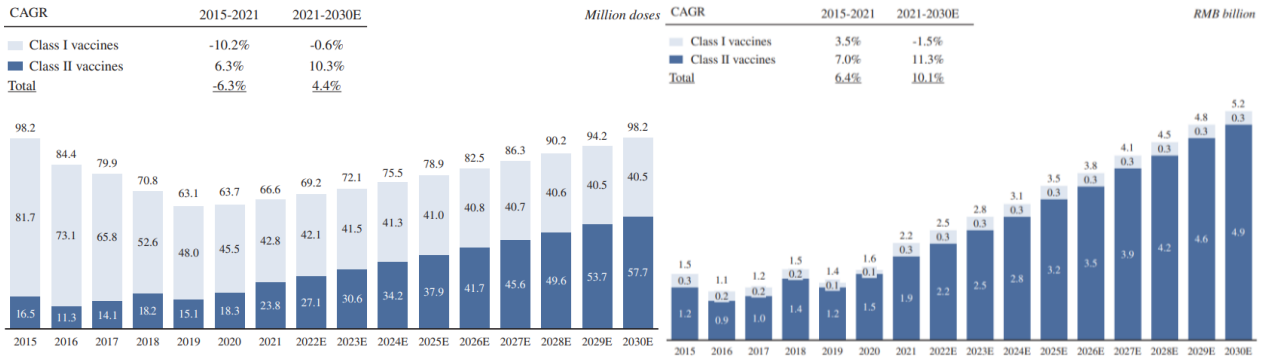
3.2.2 Hepatitis B Vaccine：A Market Leader with Growth Potential in the Adult Segment

AIM Vaccine Co., Ltd., through its subsidiary AIM Honesty, has established itself as a dominant player in the hepatitis B (HBV) vaccine market in China. The company's recombinant HBV vaccine (Hansenula Polymorpha) has been a cornerstone of its success, with a historical record of providing immunoprotection to 80% of Chinese newborns and nearly 500 million doses administered over the years. As the largest recombinant HBV vaccine manufacturer in China from 2015 to 2021 in terms of approved lot release volume, AIM Vaccine has consistently demonstrated its ability to meet the high demand for HBV vaccines, particularly in the public sector, where it supplies vaccines for national immunization programs. With its proven track record of providing high-quality vaccines to millions of Chinese newborns and its strategic initiatives to expand into the adult market, AIM Vaccine is well-positioned to capitalize on the growing demand for HBV vaccines in China and beyond.

Market Growth: The HBV vaccine market in China grew from RMB 1.5 billion in 2015 to RMB 2.2 billion in 2021, and is expected to reach RMB 5.2 billion by 2030, with a CAGR of 10.1%. The decreased approved lot release volume from 2015 to 2020 was primarily due to the decrease in the Class I vaccine market segment, which was associated with the decreased number of newborns in China. Such decrease also led to the decreased sales revenue from the Class I vaccine market segment and partially offset the overall increase of the whole market in terms of sales revenue during the same period.

Newborns have a vaccination rate over 99%, but only 47.3% of adults aged 15-59 have positive anti-HBs, indicating a significant opportunity in adult vaccination. The market for Class II HBV vaccines is projected to grow at a CAGR of 10.3% in volume and 11.3% in revenue from 2021 to 2030, driven by increasing adult vaccination.

EXHIBIT 23: Market size of HBV vaccine market in the PRC, by approved lot release volume (left) and by sales revenue (right), 2015-2030E



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

(1) Market Leadership in Hepatitis B Vaccines

AIM Vaccine's recombinant HBV vaccine (Hansenula Polymorpha) has been a market leader in China, accounting for 45.4% of total approved lot releases in 2021. The vaccine, which uses the Hansenula Polymorpha yeast expression platform, offers several advantages over other HBV vaccines, including better genetic stability, higher purity, and stronger antigen expression capabilities. These attributes have made it the preferred choice for both public health programs and private markets. In 2021, AIM Vaccine held a 24.0% market share in sales revenue, making it the third-largest HBV vaccine supplier in China.

EXHIBIT 24: HBV vaccines with approved lot release volume in the PRC, 2021

Company	Product name	Antigen expressed cell	Antigen	Immune procedure	Storage	Approval Date	Lot release in 2021 (million doses)	Market share (based on lot release)	Market share (based on revenue)
AIM Honesty	Recombinant hepatitis B vaccine (Hansenula polymorpha)	Hansenula polymorpha	HBsAg	3 doses	2~8°C, 36 months	2015/8/15	~30.3	45.4%	24.0%
Ncpc Genetech Biotechnology Co., Ltd.	Recombinant hepatitis B vaccine (CHO)	CHO	HBsAg	4 doses	2~8°C, 36 months	2010/9/20	~11.3	16.9%	43.5%
GlaxoSmithKline Biologicals	Recombinant hepatitis B vaccine (Saccharomyces cerevisiae)	Saccharomyces cerevisiae	HBsAg	4 doses	2~8°C, 18 months	2012/10/30	~0.8	1.2%	0.8%
Shenzhen Kangtai Biological Products Co., Ltd.	Recombinant hepatitis B vaccine (Saccharomyces cerevisiae)	Saccharomyces cerevisiae	HBsAg	4 doses	2~8°C, 36 months	2011/12/31	~24.3	36.5%	31.6%

Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

The company's success in the HBV vaccine market is underpinned by its long-standing expertise and strong R&D capabilities. AIM Vaccine obtained New Drug Application (NDA) approvals for its HBV vaccine in 2004 and 2013, solidifying its position as a pioneer in the field. Over the years, the company has built a reputation for quality and reliability, with its HBV vaccine being widely used in national immunization programs and private markets across China.

(2) The Growing Adult HBV Vaccination Market

While AIM Vaccine has traditionally focused on newborn and pediatric vaccination, the company is now targeting the adult HBV vaccination market, which is emerging as a new growth opportunity. The World Health Organization (WHO) has set an ambitious goal to eliminate hepatitis B as a public health threat by 2030, which involves expanding HBV vaccination to the entire population, including

adults. In line with this goal, various provinces in China have issued guidelines to implement catch-up vaccination programs for adults, particularly those at higher risk of HBV infection.

AIM Vaccine has been actively promoting adult HBV vaccination projects in several provinces and cities, collaborating with local Centers for Disease Control and Prevention (CDCs) to conduct screening and vaccination programs. These initiatives are expected to drive significant growth in the adult HBV vaccination market, which has historically been underpenetrated. The company's Hansenula Polymorpha-based HBV vaccine, with its proven safety and efficacy, is well-positioned to capture a significant share of this growing market.

(3) Competitive Advantages: Technology and Market Position

AIM Vaccine's Hansenula Polymorpha-based HBV vaccine offers several competitive advantages that set it apart from other HBV vaccines in the market. The Hansenula Polymorpha yeast expression platform is widely recognized as the best manufacturing technology route for HBV vaccines, offering better genetic stability, higher purity, and stronger antigen expression capabilities compared to other platforms such as Saccharomyces cerevisiae and Chinese hamster ovary (CHO) cells. Additionally, AIM Vaccine's HBV vaccine is manufactured using a patented process that prolongs the action time of antigens in the human body, strengthens the immune response, and provides longer-lasting protection. The vaccine also contains no preservatives, antibiotics, or bovine serum albumin, further enhancing its safety profile.

The company's strong market position is further reinforced by its extensive distribution network and long-standing relationships with public health authorities. AIM Vaccine's HBV vaccine has been a key component of China's national immunization program, ensuring a steady revenue stream from the public sector. In the private market, the company's brand recognition and reputation for quality have enabled it to maintain a strong market share, even as competition in the HBV vaccine market intensifies.

(4) AIM Vaccine's Growth Potential

AIM Vaccine's recombinant HBV vaccine (Hansenula Polymorpha) has been a significant contributor to the company's financial performance, particularly in the Class II vaccine segment. In 2021, the vaccine accounted for a substantial portion of the company's revenue, driven by its dominant market share in both the public and private sectors. With the adult HBV vaccination market expected to grow significantly in the coming years, AIM Vaccine is well-positioned to capture additional revenue from this segment.

The company's strategic focus on expanding its presence in the adult vaccination market aligns with the WHO's goal of eliminating hepatitis B as a public health threat by 2030. By leveraging its existing distribution channels and strong relationships with public health authorities, AIM Vaccine is expected to drive significant growth in the adult HBV vaccination market, particularly in high-risk populations such as healthcare workers, travelers, and individuals with chronic liver disease.

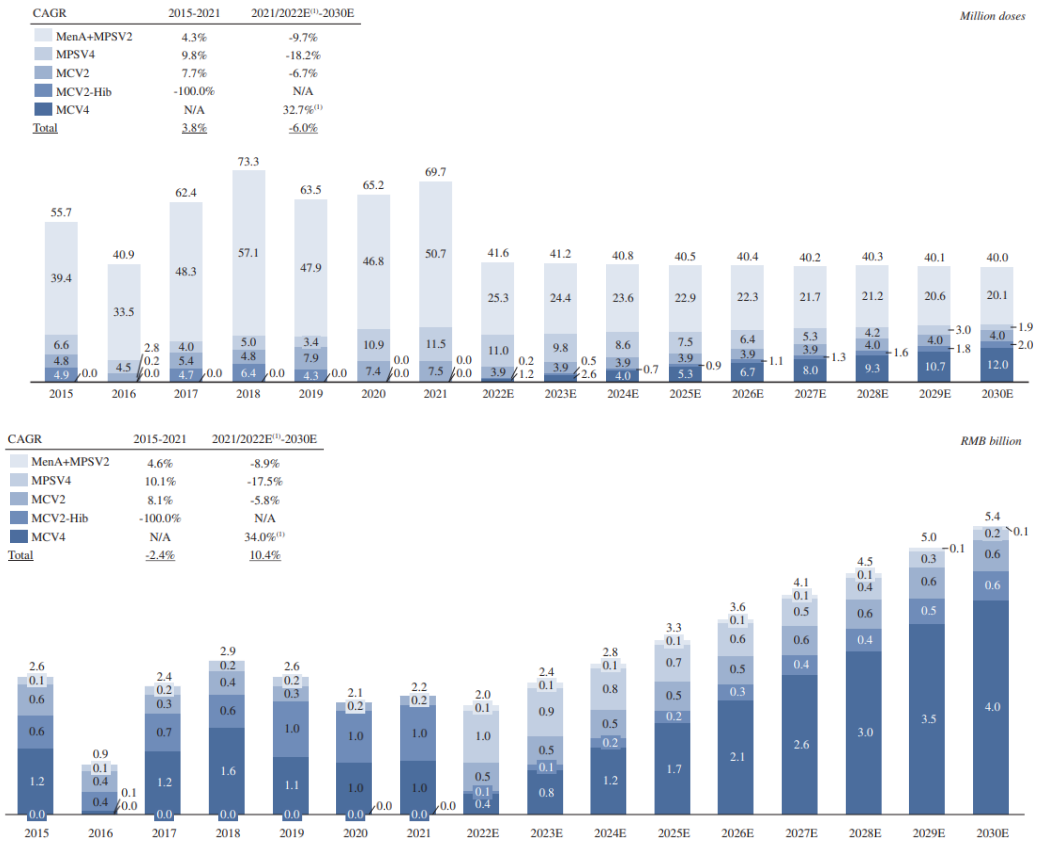
3.2.3 Meningococcus: Strategic Moves with MPSV4 and MCV4

AIM Vaccine has been making significant strides in the meningococcal vaccine market with its Meningococcal Polysaccharide Vaccine Serogroup A, C, Y, and W135 (MPSV4) and its next-generation Meningococcal Conjugate Vaccine (MCV4). These vaccines target meningitis, a serious disease that can lead to severe complications, including brain damage, hearing loss, and even death, if not prevented or treated promptly. With the NDA approval for MPSV4 in 2018, AIM Vaccine has been steadily expanding its footprint in both domestic and international markets, leveraging its strong R&D capabilities and strategic market positioning. By leveraging its strong R&D capabilities, advanced manufacturing infrastructure, and expanding international presence, AIM Vaccine is well-positioned to capture significant market share in both domestic and emerging markets. With the upcoming launch of MCV4 and the continued success of MPSV4, AIM Vaccine is on track to achieve its ambitious sales targets and make a meaningful impact on global public health.

(1) Market Potential and Competitive Landscape

In China, the market for meningococcal vaccines is growing rapidly, driven by increasing awareness of the disease and the government's efforts to expand vaccination coverage. CanSino Biologics, a major competitor in the Chinese vaccine market with marketed MCV4 product, currently generates annual sales of RMB 600-700 million from its meningococcal vaccine products. AIM Vaccine's goal is to surpass this figure and establish itself as a leading player in the market. AIM Vaccine aims to achieve RMB 1 billion in sales for its meningococcal vaccine products, with MPSV4 and MCV4 playing a central role in this strategy.

EXHIBIT 25: Market size of meningococcal vaccine market in the PRC, by approved lot release volume (up) and by sales revenue (down), 2015-2030E



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

The global market for meningococcal vaccines is also highly competitive, with several multinational companies dominating the space. However, AIM Vaccine is well-positioned to capture a significant share of the market, particularly in China and other emerging economies. The company's MPSV4 has already established a strong foothold in the domestic market, and the upcoming launch of MCV4 is expected to further strengthen its competitive position.

(2) MPSV4: A Proven Solution for Meningitis Prevention

MPSV4, which covers serogroups A, C, Y, and W135, is a critical tool in the prevention of epidemic cerebrospinal meningitis. The vaccine is designed for individuals over the age of two and has been widely recognized for its safety and efficacy. AIM Vaccine's MPSV4 is unique in the Chinese market as it does not contain any antibiotics or preservatives, yet maintains excellent stability and a shelf life of up to three years. This has allowed the company to establish a strong presence in the domestic market, with the product being sold in all 31 provinces, cities, and autonomous regions across China.

The NDA approval for MPSV4 in 2018 marked a significant milestone for AIM Vaccine, enabling the company to commercialize the product and meet the growing demand for meningococcal vaccines in China. The vaccine has been particularly effective in preventing meningitis outbreaks, especially in regions where the disease is endemic. AIM Vaccine has also successfully exported MPSV4 to countries such as Egypt and Tajikistan, demonstrating its ability to compete in the international market.

(3) MCV4: The Next-Generation Meningococcal Vaccine

Building on the success of MPSV4, AIM Vaccine is developing the Meningococcal Conjugate Vaccine (MCV4), which is currently in Phase II clinical trials. MCV4 is expected to offer several advantages over the polysaccharide vaccine, including a stronger and more durable immune response. Unlike MPSV4, which primarily stimulates an antibody response against the capsular polysaccharides, MCV4 also induces a cell-mediated immune response, providing more comprehensive and long-lasting protection against meningococcal disease.

The development of MCV4 is part of AIM Vaccine's broader strategy to iterate and upgrade its vaccine portfolio. By leveraging the existing distribution channels established for MPSV4, AIM Vaccine aims to rapidly scale up the commercialization of MCV4 once it receives regulatory approval. The company expects MCV4 to become a blockbuster product, with the potential to generate significant revenue in both domestic and international markets.

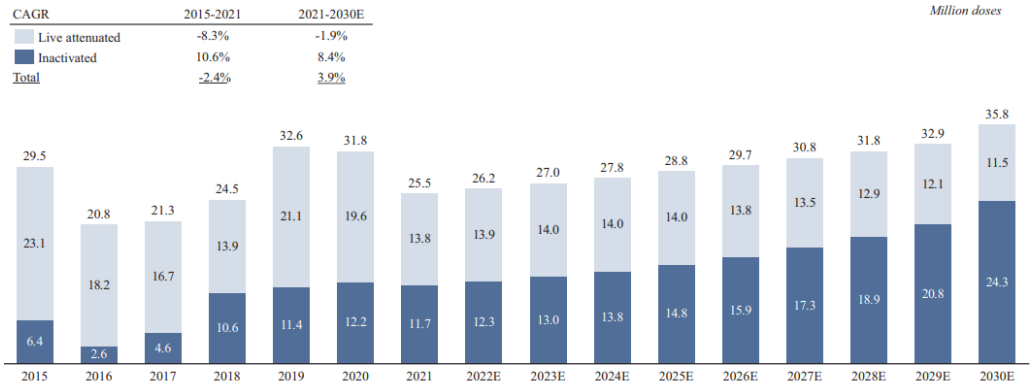
In addition to its focus on meningococcal vaccines, AIM Vaccine is also developing a **hexavalent meningococcal vaccine**, which is currently in the preclinical research stage. This vaccine, which targets six different serogroups of meningococcal bacteria, represents the next frontier in the company's efforts to combat meningitis and other invasive meningococcal diseases.

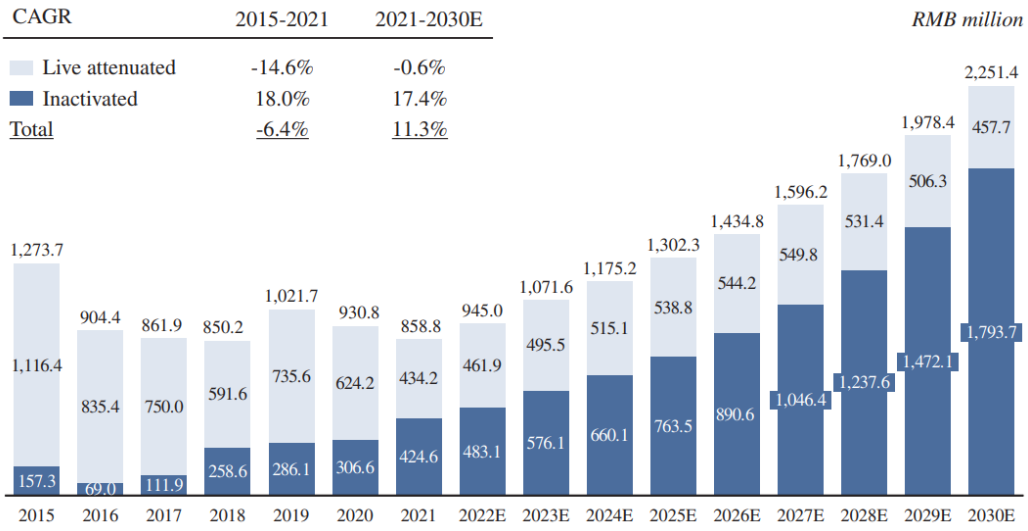
3.2.4 Other Marketed Products

(1) Inactivated Hepatitis A Vaccine (HAV Vaccine)

Competitive Edge: Through AIM Action (one of the only two domestic manufactures of inactivated hepatitis A vaccine), AIM Vaccine holds a strong position (2nd) in the market for inactivated hepatitis A vaccines. The company's Human diploid cell (HDC)-based HAV vaccine has been approved since 2015, allowing it to capitalize on increasing demand for safer alternatives.
Public Health Contribution: This vaccine contributes significantly to public health initiatives aimed at controlling hepatitis A outbreaks, especially in regions where sanitation standards may be lower.

EXHIBIT 26: Market size of HAV vaccine market in the PRC, by approved lot release volume (up) and by sales revenue (down), 2015-2030E





Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

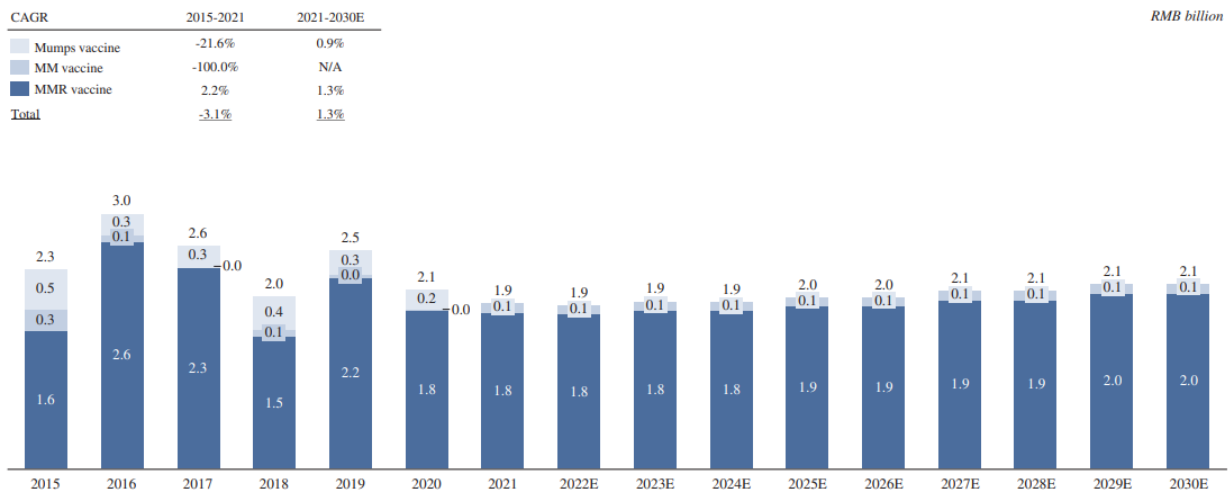
(2) Live Attenuated Parotitis (Mumps) Vaccine

Launch Year: 2004.

Status: Production resumed in 2022 and is gradually recovering

Proven Track Record: AIM Weixin's mumps vaccine, approved since 2004, indicates the company's capability to produce high-quality viral vaccines. Although measles vaccine information was not explicitly provided, it can be inferred that the company also participates in the measles vaccine market given its broad portfolio.

EXHIBIT 27: Market size of mumps vaccine market in the PRC, by sales revenue, 2015-2030E



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

Note: MMR vaccine refers to measles mumps and rubella combined vaccine. MM vaccine refers to measles and mumps combined vaccine.

(3) Inactivated hemorrhagic fever with renal syndrome (HFRS) Vaccine (Bivalent Inactivated Vero)

Launch Year: 2007.

Status: Production resumed in 2022 and is gradually recovering.

Niche Market Dominance: AIM Weixin's HFRS vaccine represents a specialized product within the company's portfolio. This vaccine addresses a specific but important public health concern related to hantavirus infections. The vaccine serves as a targeted intervention tool in areas prone to hantavirus outbreaks, contributing to regional disease control efforts.

3.3 Pipeline Products: Pneumococcal Vaccines and Other Categories Continue to Replicate the Gradient Competitive Scaling Logic of Rabies Vaccines, with Multiple Differentiated Blockbuster Vaccines Set to Launch Sequentially

3.3.1 Pneumococcal Vaccines: PCV13, PPSV23, and PCV20

AIM Vaccine's pneumococcal vaccine portfolio, including PCV13, PPSV23, and PCV20, addresses a critical unmet need in both pediatric and adult populations. The global supply gap for PCV13, combined with the untapped adult market in China, presents significant growth opportunities. PCV20, as a next-generation vaccine with broader serotype coverage, has the potential to dominate the market and drive long-term revenue growth. By leveraging its established distribution network and investing in market education, AIM Vaccine is well-positioned to become a leader in the pneumococcal vaccine market, both domestically and internationally.

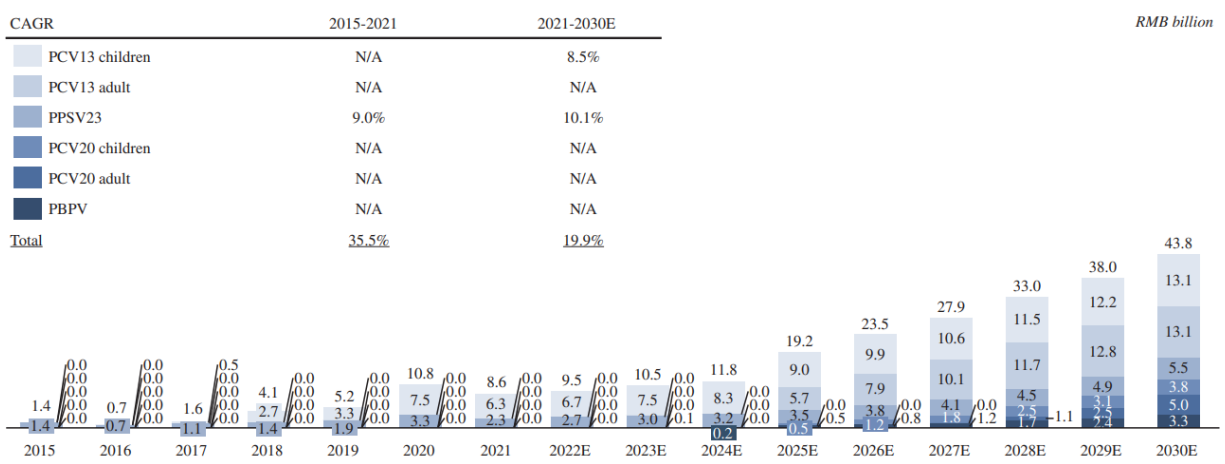
(1) Market Potential

Global Market: The global pneumococcal vaccine market was valued at RMB 10.75 billion in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 22.7%, reaching RMB 24 billion by 2025. The introduction of higher-valent vaccines like PCV20 and PCV24 is expected to drive further growth, as they offer more comprehensive protection and longer-lasting immunity.

China Market: The penetration rate of PCV13 in China is currently 25.9%, compared to over 80% in the U.S., indicating significant room for growth. As awareness increases and the adult market opens, the demand for pneumococcal vaccines is expected to surge.

EXHIBIT 28: Market size of pneumococcal vaccine market in the PRC, by sales revenue, 2015-2030E

CAGR	2015-2021	2021-2030E
PCV13 children	N/A	8.5%
PCV13 adult	N/A	N/A
PPSV23	9.0%	10.1%
PCV20 children	N/A	N/A
PCV20 adult	N/A	N/A
PBPV	N/A	N/A
Total	35.5%	19.9%



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

Market Drivers:

PCV13 (13-Valent Pneumococcal Conjugate Vaccine): The market potential for PCV13 is substantial, primarily driven by the need for market education and awareness. Currently, the vaccine is approved for children under 6 years old in China, but the adult market, particularly for the elderly, remains untapped. Globally, PCV13 is recommended by the World Health Organization (WHO) for inclusion in national immunization programs for newborns, yet there is an annual global supply gap of 200 million doses. This unmet demand highlights the significant growth potential for PCV13, especially as China gradually opens its adult market. In China, the penetration rate of PCV13 among children is still growing, with the 5-6 age group not yet fully covered. As the market matures, the focus will shift to expanding access to older children and adults, particularly the elderly, who represent a major market segment globally.

PPSV23 (23-Valent Pneumococcal Polysaccharide Vaccine): PPSV23 is not considered a blockbuster product due to its lower efficacy compared to conjugate vaccines. However, it plays a role in price competition, targeting cost-sensitive markets. Its primary use is in older adults and individuals with specific health conditions, but it is not expected to drive significant revenue growth.

PCV20 (20-Valent Pneumococcal Conjugate Vaccine): PCV20, as a next-generation vaccine, offers broader protection by covering 20 pneumococcal serotypes, compared to PCV13's 13 serotypes. This makes it a highly attractive product for both children and adults. While PCV20 has not yet been approved for younger age groups internationally, its potential as a first-in-class product in China could allow AIM Vaccine to leverage its existing distribution channels for rapid market penetration.

(2) Competitive Landscape:

From a competitive landscape perspective, the global PCV13 market is highly concentrated, with only three companies approved for supply.

Global Players: Pfizer dominates the global pneumococcal vaccine market with its PCV13 product, which accounted for 72.6% of approved lot releases and 88.3% of sales in 2022. However, the market is evolving, with next-generation vaccines like PCV20 and PCV24 expected to capture significant market share due to their broader serotype coverage and improved efficacy.

Domestic Players: In China, the market is still developing, with limited competition in the high-valent pneumococcal vaccine segment. AIM Vaccine's PCV20 has the potential to become a market leader, particularly if it secures first-mover advantage.

EXHIBIT 29: PCV13 vaccines with approved lot release volume in the PRC, 2021

Company	Product name	Type	Serotype	Immune procedure	Storage	Approval date	Lot release in 2021 (million doses)	Age coverage	Time spent from preclinical study to initiating Phase III
Pfizer	PCV13	Conjugate vaccine	13	4 doses	2~8°C, 36 months	2017/5/18	~5.5	6 weeks to 15 months	~6-7 years
Walvax Biotechnology Co., Ltd.	PCV13	Conjugate vaccine	13	4 doses	2~8°C, 36 months	2019/12/30	~5.0	6 weeks to 5 years old	~11-12 years
Minhai Biotechnology Co., Ltd.	PCV13	Conjugate vaccine	13	4 doses	2~8°C, 36 months	2021/9/10	N/A	2 months to 5 years old	~12 years

Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

(3) Competitive Advantages

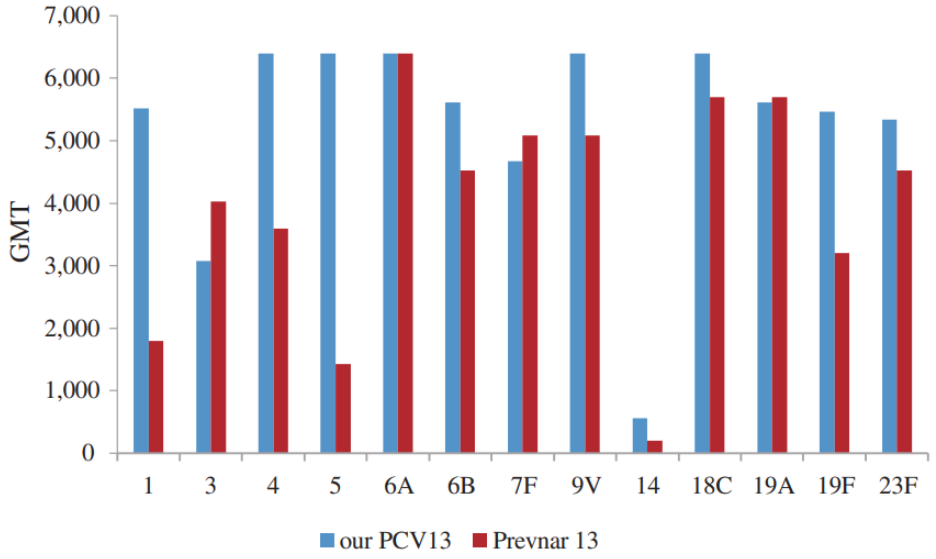
AIM Vaccine's PCV13 stands out as a front-runner in clinical development, bolstered by **head-to-head comparison trials against Pfizer's PCV13**. Phase III clinical results highlight strong immunogenicity and safety profiles, with **all serotypes meeting non-inferiority benchmarks and 10 serotypes demonstrating superiority over the comparator**. Upon approval and market launch, this product holds significant potential to catalyze substantial revenue growth for the company, positioning it as a key player in the PCV13 market.

PCV13 and PPSV23: AIM Vaccine's PCV13 and PPSV23 vaccines are expected to launch by late 2025 to early 2026, addressing the global supply shortage of PCV13. The company plans to expand PCV13's indications to include adults, particularly the elderly, which will significantly increase its market potential. The ability to serve both pediatric and adult populations positions AIM Vaccine as a key player in the pneumococcal vaccine market.

PCV20: As a first-in-class product in China, PCV20 has the potential to dominate the market by offering superior protection against a broader range of pneumococcal serotypes. Its development as an iterative product to PCV13 allows AIM Vaccine to capitalize on its established distribution network, ensuring rapid market uptake. The vaccine's ability to address both pediatric and adult markets further strengthens its competitive advantage.

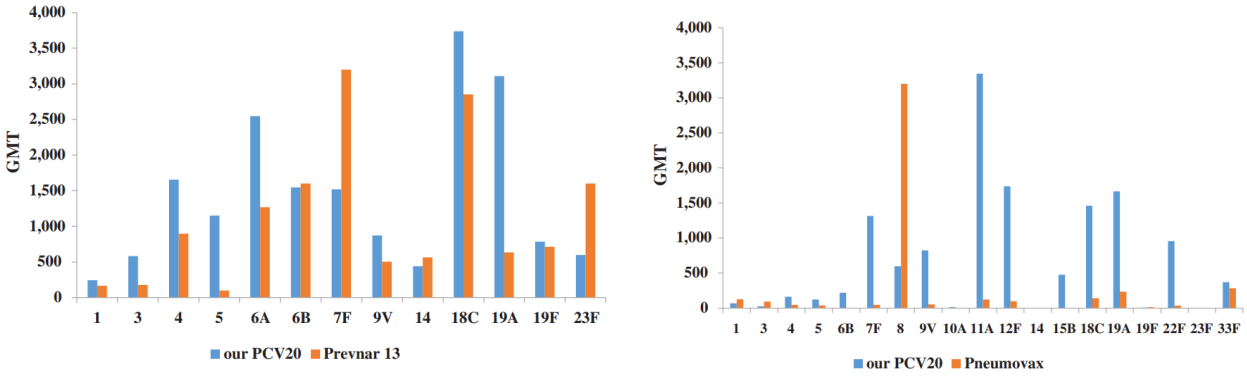
Preclinical studies of AIM Vaccine's PCV13 candidate showed promising immunogenicity and favorable safety profile:

EXHIBIT 30: Immunogenicity Study of AIM Vaccine's PCV13 Candidate Compared to Prevnar 13 in Rabbits



Source: AIM Vaccine GLOBAL OFFERING, Fosun International Securities

EXHIBIT 31: Immunogenicity Study of AIM Vaccine's PCV20 Candidate Compared to Prevnar 13 and Pneumovax in Rabbits



Source: AIM Vaccine GLOBAL OFFERING, Fosun International Securities

(4) AIM Vaccine's Strategic Focus:

✧ Market Education: AIM Vaccine is investing in market education to increase awareness of pneumococcal diseases and the benefits of vaccination, particularly among adults and the elderly.

- ✧ Rapid Scaling: The company's established distribution channels and production capacity will enable rapid scaling of PCV13, PPSV23, and PCV20, ensuring timely market penetration and revenue growth.
- ✧ Global Expansion: AIM Vaccine is exploring opportunities to enter international markets, particularly in regions with high unmet demand for pneumococcal vaccines.

3.3.2 mRNA Vaccines: Validated Platform Technology for COVID-19, Laying the Foundation for Future Commercial Success in Shingles and RSV

The mRNA platform, validated by COVID-19 vaccine development, provides a strong foundation for future innovations in shingles, RSV, and other infectious diseases. AIM Vaccine's mRNA shingles vaccine has demonstrated superior efficacy and safety compared to existing products, with significant market potential in China and globally. The lack of patent barriers allows for expansion into international markets. The RSV vaccine addresses a critical unmet need, particularly in children and the elderly. AIM Vaccine's focus on adult safety and efficacy positions it well in a competitive but rapidly growing market.

As one of the first vaccine companies in China to obtain independent patents for mRNA technology and one of the earliest developers of mRNA vaccine platforms in the country, the company has currently secured 9 clinical approvals for mRNA vaccines. The mRNA vaccine products include a bivalent mRNA broad-spectrum COVID-19 vaccine, an mRNA rabies vaccine, an mRNA shingles vaccine, and an mRNA respiratory syncytial virus (RSV) vaccine. According to company data, the mRNA rabies vaccine is the first non-COVID mRNA vaccine to be accepted in China and has now received clinical approval domestically.

AIM Vaccine's mRNA vaccine platform technology primarily includes: an mRNA sequence design and optimization platform, a plasmid template development and production technology platform, and an mRNA raw material and LNP formulation development and production technology platform. Compared to other vaccine technology platforms, mRNA vaccines offer the following advantages:

- ✧ **High Safety:** Non-infectious, non-integrating genetic material that does not integrate into the genome and is easily degraded in the body.
- ✧ **Rapid Expression:** Can quickly express target antigens in cells, generating efficient immune protection.
- ✧ **Dual Immunity:** Induces both humoral and cellular immunity, effectively preventing viral infections and combating viral mutations.
- ✧ **Rapid Manufacturing and Lower Costs:** The production process for mRNA vaccines is simple, with shorter production cycles, enabling rapid large-scale production and easy standardization.
- ✧ **Rapid Adaptation:** Can quickly adapt to new viral variants or different pathogens by simply modifying the mRNA sequence, offering high flexibility.
- ✧ **Platform Technology:** Highly versatile, applicable for developing vaccines against various pathogens.

AIM Vaccine employs an advanced "one-step" process to produce mature mRNA and utilizes established lipid nanoparticle (LNP) technology for mRNA vaccine delivery. The mRNA vaccines developed and produced by AIM Vaccine achieve near 100% capping efficiency, 99% purity, 95% encapsulation efficiency for lipid nanoparticles, a nanoparticle dispersion coefficient of less than 0.1, and high consistency across different batches and products. Based on the company's R&D project experience and stability data, mRNA vaccines can be stored long-term at -20°C and 2-8°C, with stability lasting over 2 years.

1) Shingles (Herpes Zoster) Vaccine

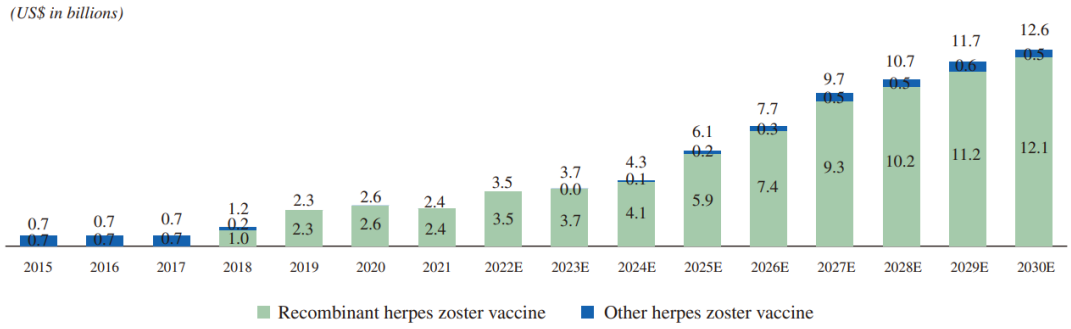
Market Potential:

Global Market: In the U.S., vaccination rates among those aged 60+ have risen rapidly, from 15% in 2010 to 40% in 2022. GSK's Shingrix, launched in 2017, has shown a 97% efficacy rate in individuals aged 50 and above, significantly higher than Merck's Zostavax (50%+ efficacy in those aged 60+). What's more, GSK's Shingrix is reimbursed by U.S. commercial insurance, driving adoption.

The global herpes zoster vaccine market is projected to grow significantly, with the recombinant herpes zoster vaccine segment expected to expand at a compound annual growth rate (CAGR) of 26.8% from 2021 to 2025E, and 15.5% from 2025E to 2030E, reaching an estimated market size of US$12.1 billion by 2030E.

EXHIBIT 32: Global Herpes Zoster Vaccine Market, 2015-2030E

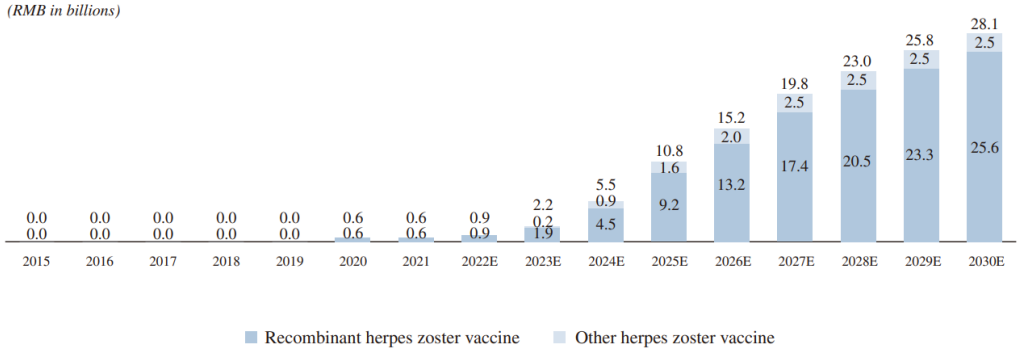
Period	Recombinant Herpes Zoster Vaccine	CAGR
2015-2021	N/A	21.2%
2021-2025E	25.6%	26.8%
2025E-2030E	15.5%	15.5%



Source: Beijing Luzhu GLOBAL OFFERING, Frost & Sullivan Analysis, Fosun International Securities

EXHIBIT 33: Herpes Zoster Vaccine Market in China, 2015-2030E

Period	Recombinant Herpes Zoster Vaccine	CAGR
2015-2021	N/A	N/A
2021-2025E	96.0%(1)	103.8%(2)
2025E-2030E	22.6%	21.1%



Source: Beijing Luzhu GLOBAL OFFERING, Frost & Sullivan Analysis, Fosun International Securities

China Market: Over 1.5 million cases occur annually in individuals aged 50+, with 10%-35% experiencing severe complications. There is no specific treatment, and the disease is increasingly affecting younger populations. By 2030, the vaccination rate among those aged 40+ (6-7 billion people, with 5 billion aged 50+) is projected to reach 11%, compared to HPV vaccines targeting 200-300 million women aged 9-45.

Moat & Competitive Landscape:

Shingles is caused by the reactivation of the varicella-zoster virus (VZV) in nerve ganglia, requiring cell-mediated immunity for effective prevention. Traditional live attenuated vaccines have limited efficacy, while recombinant vaccines often require adjuvants, leading to

stronger adverse reactions such as fever. There are three types of herpes zoster vaccines, namely live attenuated vaccines, recombinant vaccines and messenger RNA (mRNA) vaccines

EXHIBIT 34: Three types of herpes zoster vaccines

Category	Introduction	Advantages	Disadvantages
Live attenuated herpes zoster vaccine	Conventional vaccines using intact pathogens (bacteria or viruses) as antigens	• Lower production costs • Fewer side effects	• Risk of residual virulence • Not applicable for people with weakened immune systems
Recombinant herpes zoster vaccine	A vaccine produced through recombinant DNA technology. This involves inserting the DNA encoding an antigen (such as a bacterial surface protein) that stimulates an immune response into bacterial or mammalian cells, expressing the antigen in these cells and then purifying it from them.	• Induces a human immune response while avoiding other components of the pathogen causing adverse effects on human body • Safe for people with weak immune systems	• Adjuvants are needed to help stimulate the body's immune system response and booster shots are needed to achieve continuous protection
mRNA herpes zoster vaccine	The latest vaccine technology. mRNA vaccines work by introducing a piece of mRNA that corresponds to a viral protein, usually a small piece of a protein found on the virus's outer membrane. Using this mRNA blueprint, cells produce the viral protein.	• Can be quickly designed and scaled up, and the manufacturing is sequence-independent, which makes it highly adaptable to different pathogens. The cost is lower than other platforms • Effective in avoiding the risk of virus leakage and infection	• Technology is relatively new and needs more studies to validate the immunogenicity and efficacy

Source: Beijing Luzhu GLOBAL OFFERING, Frost & Sullivan Analysis, Fosun International Securities

AIM Vaccine's mRNA shingles vaccine leverages its mRNA platform technology, which enhances T-cell-mediated immune responses and prevents viral reactivation, offering superior efficacy and safety compared to existing vaccines.

EXHIBIT 35: Details of Shingrix® (GSK), Zostavax® (Merck) and Gan Wei (BCHT Biotechnology)

	GlaxoSmithKline	Merck & Co.	BCHT Biotechnology
Product name	Shingrix®	Zostavax®	Gan Wei (感維)
Indications	Herpes zoster and PHN	Herpes zoster	Herpes zoster
Type of technology	Recombinant	Live attenuated	Live attenuated
Targeted age/gender group	Immunocompetent male and female adults aged 50 years and older and immunodeficient male and female adults aged ≥19 years old	Males and females aged 50 years and older	Males and females aged 40 years and older
Effectiveness reducing herpes zoster	50-59 years old: 96.6% 60-69 years old: 97.4% 70+ years old: 91.3%	50-59 years old: 70% 60-69 years old: 64% 70-79 years old: 41% ≥80 years old: 18%	≥40 years old: 57.6% 40-49 years old: 37.4% 50-59 years old: 62.7% 60-69 years old: 64.4% ≥70 years old: 18.6%
Effectiveness reducing postherpetic neuralgia	≥50 years old: 91.2% ≥70 years old: 88.8%	≥60-69 years old: 65.7% ≥70 years old: 66.8%	≥45 years old: 62.8% ≥65 years old: 62.9%
Long-term vaccine effectiveness against herpes zoster	50 years and older: 81.6% (the first 6-10 years following vaccination)	50-59 years old: 60% (the first 3 years following vaccination); 60-69 years: 49% (the first 5 years following vaccination); 70-79 years: 46% (the first 5 years following vaccination); 80 years and older: 44% (the first 5 years following vaccination)	N/A
Date of approval	United States: October 20, 2017 Europe: March 28, 2018 China: May 22, 2019[1]	United States: February 24, 2006 Europe: May 19, 2006	China: January 29, 2023 (expected commencement of sales in June 2023)
Price	RMB1,600/dose in China[2] approximately US$120/dose overseas	Approximately US$135/dose	RMB1,369/dose
Vaccine administration procedure	Two doses, second dose administered 2-6 months after first dose	One dose	One dose

Notes:

(1) GlaxoSmithKline plc did not conduct clinical trials for Shingrix® in Mainland China but used overseas data to support the conditional approval for Shingrix® in China. After receiving conditional approval, GlaxoSmithKline plc had initiated a follow-up clinical trial for Shingrix® in Mainland China in 2021, which is expected to be completed in 2023.

(2) For a new foreign vaccine to enter the Chinese market, clinical trials in China are required, which would result in additional expenses for GSK. In addition, Shingrix® is the first herpes zoster vaccine commercialized in China, which requires market education and establishment of the sales team to promote the new vaccine, and this would incur additional expenses as well. Therefore, based on the large initial investment, it is reasonable that the selling price of Shingrix® is higher in China. In the foreseeable future, it is expected that more herpes zoster vaccines will be commercialized and enter the market in China. In order to compete for more market share, it is reasonable that the price of Shingrix® will experience a decreasing trend. For overseas market, it is the similar situation for Shingrix® to lower the price in the future since more herpes zoster vaccines are expected to enter the global market.

Source: CDC, FDA, literature search, Frost & Sullivan Analysis

Source: Beijing Luzhu GLOBAL OFFERING, Frost & Sullivan Analysis, Fosun International Securities

Zhifei Biological: Acts as GSK's exclusive distributor in China, offering Shingrix with 100% efficacy. Net profit margins are around 20%, with procurement volumes expected to reach RMB 3-6 billion.

BCHT Biotechnology: Offers a cheaper alternative at RMB 1,369 per dose, with fewer adverse reactions, though its influenza vaccine sales have been weak.

Walvax: Paused its live attenuated vaccine development, with other candidates in Phase 3 trials (expected launch in 2025-2026).

AIM Vaccine's Position:

The shingles vaccine demonstrates better data than GSK's Shingrix, leveraging the mRNA platform's ability to enhance T-cell-mediated immunity and control intracellular viral infections. No patent issues, enabling potential production in Europe and the U.S., though distribution channels in these regions are not yet mature.

2) RSV mRNA vaccine

RSV (Respiratory Syncytial Virus) is a significant public health burden, causing over 33 million cases of acute lower respiratory infections (ALRTI) annually in children under 5 years old, with approximately 10% requiring hospitalization and 2%-5% of hospitalized children dying globally. The number of severe RSV infections in children under 5 globally is expected to reach 37.07 million by 2032, with 2.9 million cases in China. The high incidence, hospitalization, and mortality rates place immense pressure on healthcare systems worldwide. The burden of RSV-related diseases has become more pronounced after the COVID-19 pandemic.

Vulnerable Populations: Young children and adults over 60 are at higher risk of severe RSV infections. In children, untreated RSV infections, even if initially mild, can lead to chronic respiratory conditions such as wheezing and asthma, affecting long-term growth and development. In the elderly, RSV can exacerbate chronic conditions like chronic obstructive pulmonary disease (COPD) and chronic heart failure, leading to hospitalizations, severe complications, and even death.

Current Treatment and Prevention Strategies:

- ✧ Traditional Treatments: Broad-spectrum antivirals and supportive care have been the mainstay of treatment.
- ✧ Neonatal Immunization Strategies:
  - ✓ Passive Immunization: Administering monoclonal antibodies to newborns.
  - ✓ Maternal Vaccination: Pfizer's vaccine is approved for pregnant women to protect infants.
  - ✓ Direct Vaccination for Newborns: Currently, no RSV vaccine is approved for infants, highlighting an urgent unmet need.

However, there are also some regulatory and safety concerns: On December 10 2024, the FDA issued a briefing document pausing Moderna's two RSV mRNA vaccines (mRNA-1345 and mRNA-1365) for infants and young children, citing safety concerns. An advisory committee meeting (Adcomm) was held on December 12 to discuss the safety profile of these vaccines.

RSV vaccines, despite a stellar debut in 2023—achieving $1.55 billion in sales for GSK and $890 million for Pfizer—faced mounting challenges in 2024, casting doubt over their long-term potential. Three significant events have clouded the outlook for 2025 and beyond:

- ✧ Regulatory Delays: In June 2024, the CDC's ACIP postponed voting on RSV vaccination recommendations for high-risk adults aged 50–59. Disease forecaster Airfinity estimates that updated recommendations could shrink the U.S. RSV vaccine market by 64% by 2030, with the elderly segment contracting from $4.7 billion to $1.7 billion.
- ✧ Safety Concerns in Pediatric Use: In December 2024, the FDA convened a vaccine advisory panel to address safety concerns about Moderna's experimental RSV vaccines (mRNA-1345 and mRNA-1365). Data revealed not only a lack of efficacy in preventing RSV among infants but also an increased risk of severe symptoms when infected with RSV or other respiratory viruses.
- ✧ Labeling Revisions: On January 7, 2025, the FDA required Pfizer and GSK to update the labels of their approved RSV vaccines to include warnings about the risk of Guillain-Barré syndrome (GBS). Moderna's mRESVIA, launched in 2024, was not implicated in this update.

The global RSV vaccine and therapeutic antibody market is competitive, with GSK, Pfizer, and Moderna leading the way in vaccines, and AstraZeneca and Sanofi dominating the therapeutic antibody space. GSK's vaccine has shown strong initial sales and market penetration, particularly in the elderly population, while Pfizer's vaccine is gaining traction among pregnant women due to its superior safety profile. In China, domestic players like Advaccine and AIM Vaccine are advancing through clinical trials, but GSK and Sanofi are well-positioned to capture significant market share through partnerships and priority review status. The market potential is substantial, particularly among the elderly and pregnant women, with significant revenue opportunities in both domestic and international markets.

Market Potential:

Global Market: RSV causes over 33 million acute lower respiratory infections annually in children under 5, with 10% requiring hospitalization and 2%-5% resulting in death. In the elderly, RSV exacerbates chronic conditions like COPD and heart failure. GSK's vaccine is priced at USD 200 per dose (CDC) and USD 280 (private), while Pfizer's is slightly higher. GSK projects peak sales of USD 3 billion, with a conservative estimate. The global RSV drug market (including therapeutics and vaccines) is projected to grow to USD 12.8 billion by 2032, with vaccines accounting for more than half of the market.

China Market: In China, RSV causes over 3 million cases in children under 5 and more than 1 million cases in the elderly, with 15% of elderly patients requiring hospitalization. The incidence of RSV-related lower respiratory infections in children under 5 is approximately 4%, resulting in 620,000 to 950,000 hospitalizations annually. From 2009 to 2019, 16.8% of severe respiratory infections in China were caused by RSV (second only to influenza), with 620,000-950,000 hospitalizations annually in children under 5. The market is expected to grow to USD 1.5 billion by 2032, with vaccines accounting for over half. The RSV drug market in China is expected to grow to USD 1.5 billion by 2032, driven by the high disease burden and increasing awareness of vaccination.

- ✧ Elderly Population (60+): Assuming a price of RMB 1,500 per dose (compared to RMB 4,000 for the 9-valent HPV vaccine and RMB 3,200 for the shingles vaccine), the market size could reach RMB 10-20 billion.
- ✧ Pregnant Women: A smaller market, estimated at several billion RMB.

Moat: Technology

R&D Challenges: RSV was discovered in 1957, but it took over 60 years to develop a vaccine. Early attempts, such as Pfizer's inactivated vaccine in the 1960s, caused severe pneumonia in 80% of vaccinated children, with two fatalities. Later vaccines also struggled with efficacy and safety.

Key Breakthrough: The membrane proteins and G proteins of the herpes zoster virus (shingles) exhibit poor antigenicity and are prone to mutation, making them less effective targets for vaccine development. In 2013, U.S. researchers identified the pre-fusion F protein as a stable and highly antigenic target, leading to the development of effective vaccines.

Competitive Landscape:

Vaccines: Major players include GSK, Pfizer, and Moderna. 2023 marked the breakthrough year for RSV vaccines, with GSK and Pfizer's vaccines approved in March 2023, and Moderna's vaccine approved in 2024. In Q3 2023, 1.4 million people in the U.S. received GSK's vaccine, representing a 1.6% penetration rate among the 83 million people aged 60+. GSK holds a 60% share in the retail market. In Q3 2023 (its first commercial quarter), GSK generated USD 700 million in revenue, with two-thirds attributed to channel stocking. The peak sales estimated by GSK is USD 3 billion. Pfizer reported USD 375 million in revenue in Q3 2023.

GSK vs. Pfizer:

- ✧ Efficacy: GSK's vaccine shows slightly higher efficacy (non-head-to-head comparison). Initial labeling recommends a single dose, but efficacy declines significantly in the second season, suggesting a potential need for revaccination every two years.
- ✧ Safety: GSK's vaccine has higher adverse reactions, likely due to its adjuvant, limiting its use to the elderly. Pfizer's vaccine, without an adjuvant, is safer and approved for pregnant women to protect infants.
- ✧ Pricing: GSK's vaccine is priced at approximately USD 200 per dose for the CDC and USD 280 for private markets. Pfizer's vaccine is slightly more expensive than GSK's.
- ✧ Patent Dispute: GSK claims Pfizer infringed on its AS01 adjuvant and pre-fusion F protein antigen design, though the impact is expected to be minimal.
- ✧ Indication Expansion: GSK has submitted an application to expand its indication to individuals aged 50-60.

Therapeutic Antibodies: AstraZeneca and Sanofi have developed long-acting monoclonal antibodies for passive immunization.

- ✧ AstraZeneca: Developed a short-acting monoclonal antibody with limited efficacy, providing protection for only one month.
- ✧ AstraZeneca and Sanofi Collaboration: Developed a more effective long-acting monoclonal antibody, offering better efficacy and durability.
- ✧ Pricing: The antibody is priced at approximately USD 400 per dose for the CDC and USD 500 for private markets.
- ✧ Sales: Sanofi reported EUR 137 million in revenue in Q3 2023, with USD 100 million from the U.S. market.

Competition in China:

Advaccine: Currently in Phase 2 clinical trials (as of 2023), using the G protein. While Phase 2 data appears promising, future performance remains uncertain.

GSK: Expected to enter clinical trials in China in 2023, with a planned launch in 2025-2026. Commercialization will be handled by Zhifei Biological.

Sanofi: Granted priority review status for its monoclonal antibody in China.

AIM Vaccine's Position:

The company's mRNA platform offers a rapid response capability, enabling quick adaptation to emerging infectious diseases and unmet medical needs. **AIM Vaccine is prioritizing the development of its RSV mRNA vaccine for adults first, with safety data showing superior performance compared to Moderna's candidate**. **This strategic focus on adult safety positions AIM Vaccine favorably in the competitive landscape.** Moderna's clinical trials for infant RSV vaccines were paused by the FDA due to safety concerns, highlighting the challenges in this segment.

3.3.3 Other Pipeline Products

There are some more products which also demonstrate AIM Vaccine's commitment to innovation and its ability to address unmet medical needs, making them valuable additions to the company's portfolio and attractive investment opportunities.

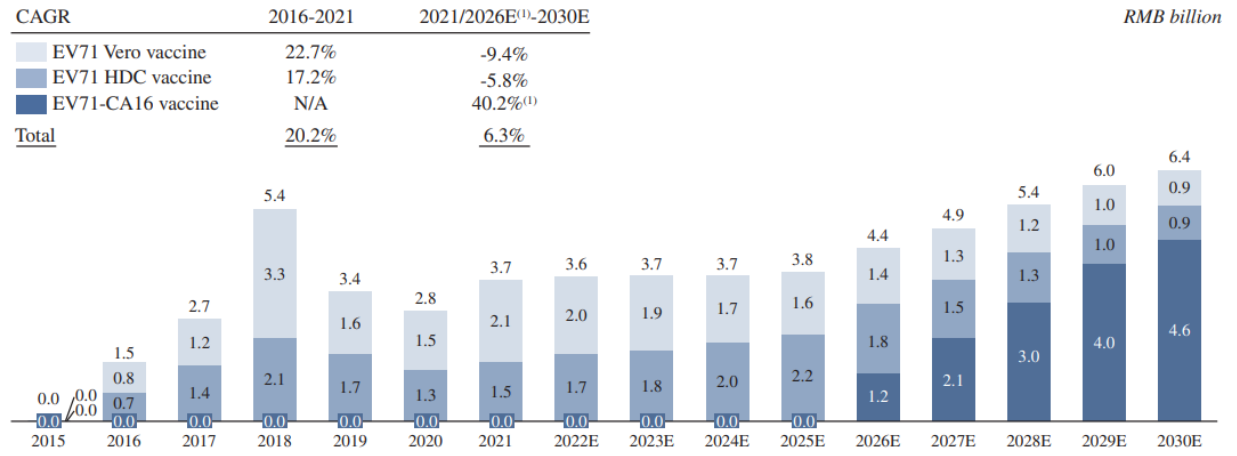
1) Hand, Foot, and Mouth Disease (HFMD): EV71-CA16 Bivalent Vaccine

A groundbreaking product with significant market potential, particularly in China, where HFMD is a major public health concern. The dual-target approach and first-mover advantage make this a high-value asset.

Product Overview: The EV71-CA16 bivalent vaccine is the world's first vaccine designed to provide immunization against both EV71 and CA16 viral strains, which are the major pathogens of HFMD. This dual-target approach addresses a significant unmet medical need, as there is currently no approved vaccine against CA16.

Market Potential: HFMD is a Class C infectious disease in China, with over 1 million infections annually and occasional fatalities. The bivalent vaccine is expected to gradually replace the existing monovalent EV71 vaccines, which have a market size of approximately 15 million doses annually. The CAGR of EV71-CA16 bivalent vaccine from 2026 to 2030 is expected to be as high as 40.2%.

EXHIBIT 36: Market size of HFMD vaccine market in the PRC, by sales revenue, 2015-2030E



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

Competitive Advantage: As one of only two companies (along with Sinovac) currently in clinical trials for a bivalent HFMD vaccine, AIM Vaccine is well-positioned to capture a significant share of this emerging market.

Revenue Potential: Assuming a 40%-50% replacement rate in the first two years, the bivalent vaccine could capture 6-8 million doses annually, priced at around RMB 500 per dose, generating RMB 3-4 billion in revenue. Over time, the bivalent vaccine is expected to fully replace the monovalent market, with a potential market size of RMB 6-8 billion.

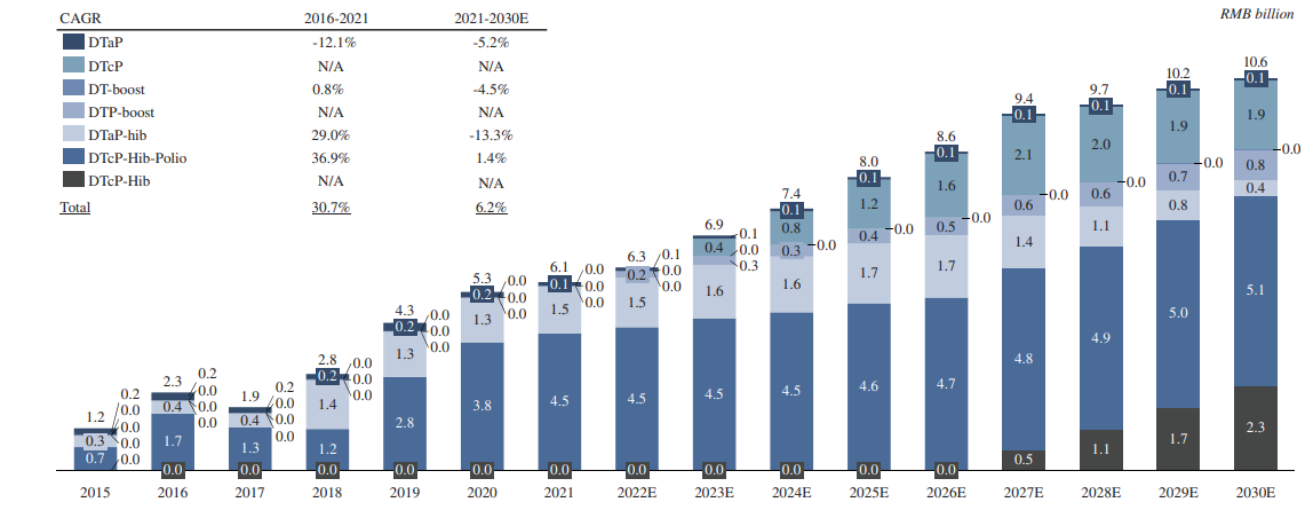
2) DTP Combination Vaccines: DTcP, DTaP, and DTP-Hib

Positioned to capitalize on the growing demand for combination vaccines, which improve vaccination efficiency and compliance. The DTP-Hib vaccine, in particular, addresses a high-demand segment.

Product Overview: The DTP combination vaccines include DTaP (Diphtheria, Tetanus, and acellular Pertussis), DTcP (Diphtheria, Tetanus, and cellular Pertussis), and DTP-Hib (Diphtheria, Tetanus, Pertussis, and Haemophilus influenzae type b). These vaccines are designed to reduce the number of injections required for immunization, improving vaccination efficiency and compliance.

Market Potential: According to industry consultant CIC, the domestic market for combination vaccines was RMB 6.3 billion in 2022 and is expected to grow to RMB 10.6 billion by 2030.

EXHIBIT 37: Market size of DTP-based vaccine market in the PRC, by sales revenue, 2015-2030E



Source: AIM Vaccine GLOBAL OFFERING, CIC Report, Fosun International Securities

Competitive Advantage: With its advanced combination vaccine technology platform, AIM Vaccine is expected to capture a significant share of this growing market. The DTP-Hib vaccine, in particular, addresses a high-demand segment, as Hib infections are a leading cause of bacterial meningitis in children. The company's ability to develop and manufacture combination vaccines with high safety and efficacy standards positions it as a strong competitor in this space.

3) Quadrivalent MDCK Influenza Vaccine

A technologically advanced product with strong market potential, driven by seasonal demand and increasing awareness of influenza vaccination.

Product Overview: The quadrivalent influenza vaccine is produced using MDCK cells, a modern cell culture technology that offers advantages over traditional egg-based production methods, including faster production and reduced risk of allergic reactions.

Market Potential: Influenza vaccines are in high demand globally, with seasonal vaccination campaigns driving consistent sales. In China, the influenza vaccine market is growing due to increasing awareness of vaccination and government support for immunization programs.

Revenue Potential: The quadrivalent vaccine, which covers four influenza strains, is expected to capture a significant share of the market, particularly among high-risk populations such as the elderly and children. The company's production capacity and technological expertise will enable rapid scaling and market penetration.

Competitive Advantage: The use of MDCK cell technology differentiates AIM Vaccine's product from traditional egg-based vaccines, offering higher safety and efficacy.

4) Adsorbed Tetanus Vaccine

A critical component of routine immunization programs, with steady demand and strong market positioning.

Product Overview: The adsorbed tetanus vaccine is designed to provide long-lasting immunity against tetanus, a potentially fatal disease caused by the bacterium *Clostridium tetani.*

Market Potential: Tetanus vaccination is a critical component of routine immunization programs worldwide. In China, the demand for tetanus vaccines is driven by both routine childhood immunization and adult booster doses.

Revenue Potential: With its high safety and efficacy profile, the adsorbed tetanus vaccine is expected to capture a significant share of the domestic market. The vaccine's competitive pricing and strong distribution network will further enhance its market position.

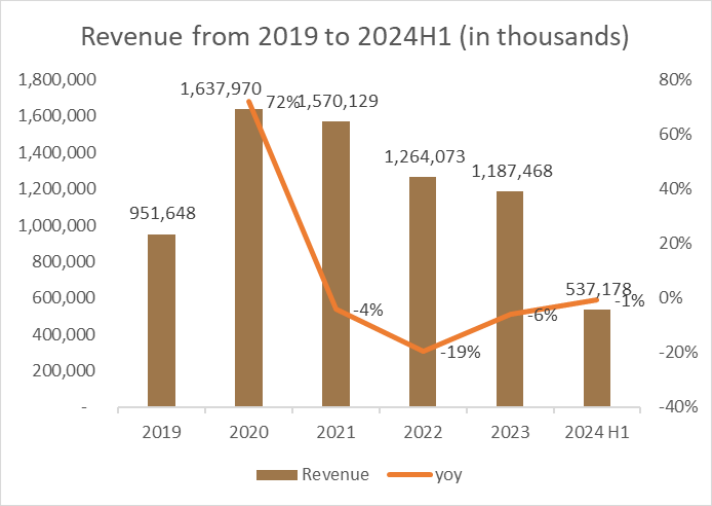
Competitive Advantage: AIM Vaccine's expertise in bacterial vaccine production and its established distribution channels provide a strong foundation for the successful launch and commercialization of this product.

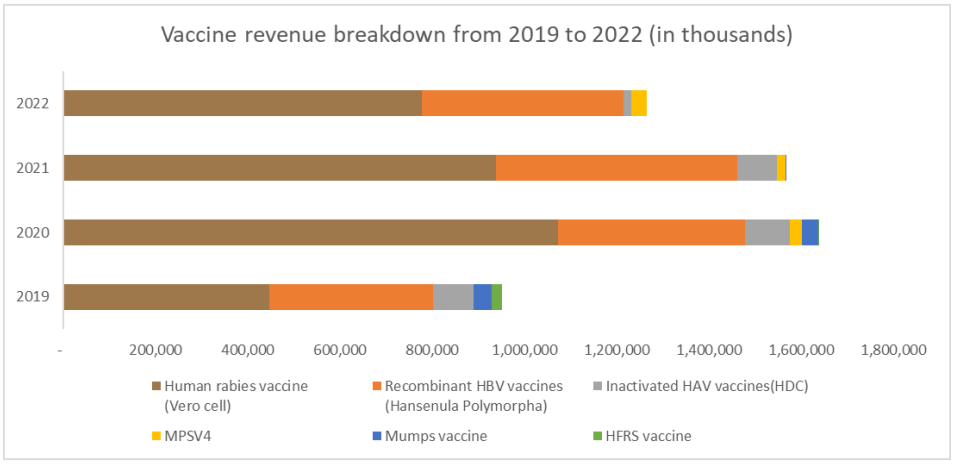
4. Financial Analysis

4.1 Revenue Trends and Breakdown

AIM Vaccine achieved operating revenue of approximately RMB537.2 million in the first half of 2024, a slight decrease of 0.6% compared to the same period in 2023. In the past five years, the revenue was mainly driven by human rabies vaccines and HBV vaccines.

EXHIBIT 38: Historical Revenue and Breakdown (by Business Segment) of AIM Vaccine





	Six months ended June 30,	
	2024 *RMB'000*	2023 *RMB'000*
Revenue from sales of vaccine products		
Revenue from sales of Class I vaccine	**54,100**	33,942
Revenue from sales of Class II vaccine	**483,078**	506,528
Total	**537,178**	540,470

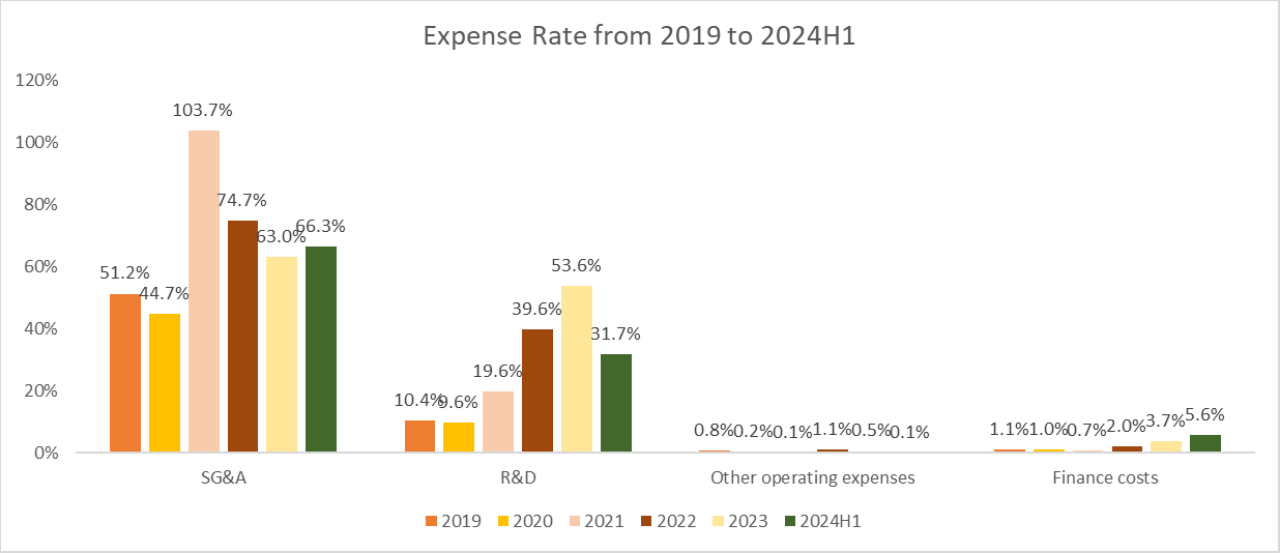
Source: AIM Vaccine Financial Reports, Fosun International Securities

4.2 Profit Margins and Cash Flow

In the first half of 2024, the company reported a loss of RMB145.3 million, a decrease of 43.6% compared to the loss of RMB257.4 million in the first half of 2023. Cost of Sales increased by 38.1% to RMB148.9 million, primarily due to a decline in production volume and increased manufacturing expenses. Gross Profit decreased by 10.3% to RMB388.3 million, with a gross margin of 72.3%, down from 80.1% in 2023. R&D Costs decreased by 57.3% to RMB170.1 million, mainly due to a reduction in overseas clinical trial costs.

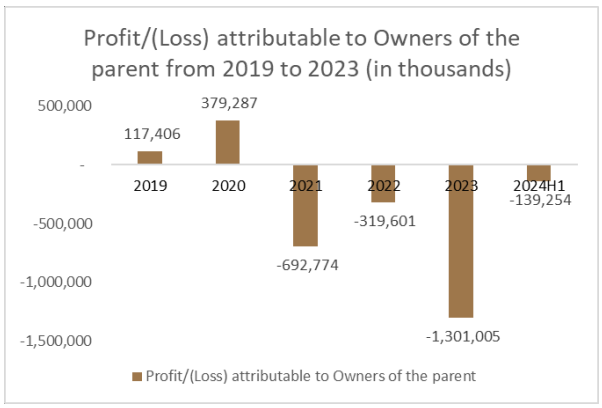
In the past five years, the SG&A expense rate is above 50% and the R&D expense rate increased from 10.4% to 53.6% due to the cost from clinical trials. The company reported a net profit attributable to the owners of the parent of 117.4 million and 3.79.3 million in 2019 and 2020 respectively, and reported loss attributable to the owners of the parent of -692.8 million, -319.6 million and -1301.0 million in 2021, 2022 and 2023 respectively.

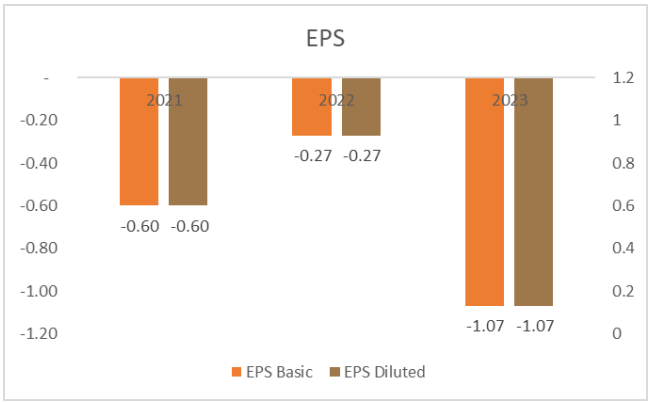
EXHIBIT 39: Historical Expense Rate of AIM Vaccine



Source: AIM Vaccine Financial Reports, Fosun International Securities

EXHIBIT 40: Historical Profitability of AIM Vaccine





Source: AIM Vaccine Financial Reports, Fosun International Securities

5. Profit Forecast and Valuation

5.1 Revenue & Gross Margin

Our analysis (EXHIBIT 41) presents a detailed revenue projection breakdown for AIM Vaccine, highlighting the expected performance of its various vaccine products from 2025 to 2029. The projections indicate robust growth across multiple segments. The Rabies vaccine is anticipated to be the highest revenue generator, with a significant increase from RMB 730 million in 2025 to RMB 2,344 million in 2029. Pneumococcal vaccines are also expected to show strong growth, rising from RMB 53 million in 2025 to RMB 2,639 million RIIB in 2029. The HBV vaccines segment is projected to grow steadily, reaching RMB 785 million RIIB by 2029. Additionally, the Meningococcus and mRNA vaccines segments are expected to contribute notably to the revenue stream. Overall, these projections underscore AIM Vaccine's potential for substantial revenue growth, driven by its diversified and expanding product portfolio.

EXHIBIT 41: Risk-adjusted Revenue projection breakdown for the products of AIM Vaccine

In thousands of RMB, except percentages	2025E	2026E	2027E	2028E	2029E
HBV vaccines					
Revenue	525,053	602,318	676,542	737,719	784,814
Rabies vaccine (Vero Cell, serum-free and human diploid cell, mRNA)					
Revenue	729,901	1,634,116	1,960,469	1,997,821	2,343,866
Pneumococcal vaccines (PCV13 , PPSV23, and PCV20 vaccines)					
Revenue	52,912	1,325,056	2,441,509	2,428,444	2,638,676
Meningococcus (MPSV4 and MCV4)					
Revenue		83,764	265,517	458,332	758,619
mRNA (Zoster vaccine, RSV)					
Revenue				140,291	311,757
Bivalent EV71-CA16 hand-foot-mouth vaccine					
Revenue				290,878	407,229
Others(Hepatitis A, Tetravalent Polysaccharide Influenza, Influenza, etc.)	153,743	161,430	169,501	194,926	224,165

Source: Fosun International Securities

The key assumptions are as follows:

5.1.1 Marketed Products

The total revenue for existing products is expected to remain at a level of approximately RMB 1.2 to 1.3 billion. The growth potential for existing products lies primarily in the Hepatitis B (HBV) vaccine. The World Health Organization (WHO) has set a goal to eliminate Hepatitis B as a public health threat by 2030, which involves expanding HBV vaccination to the entire population. In line with this, various provinces in China have issued guidelines to implement this plan, and the company is actively collaborating with local Centers for Disease Control and Prevention (CDCs) to conduct screening and catch-up vaccination programs. As a result, the revenue from the Class II HBV vaccine targeting adults is expected to grow, with an anticipated growth rate of 10% to 20% starting from 2025.

Hepatitis B Vaccines (HBV):

(1) Class I Hepatitis B Vaccine:

Expected Annual Sales Volume: 8-10 million doses.

Unit price: RMB 7-9 per dose.

Projected Annual Revenue: Approximately RMB 70 million.

(2) Class II Hepatitis B Vaccine:

Expected Annual Sales Volume: Approximately 6 million doses.
Unit Price: RMB 85-90 per dose.
Projected Annual Revenue: RMB 500-550 million.

The focus of Rabies Vaccine (Vero Cell) Strategy will be on maintaining market share and stabilizing income until serum-free rabies vaccine and human diploid cell rabies vaccine are launched. With enhanced market promotion and adaptive sales strategies, it is anticipated that there will be a modest growth rate of 5% to 10% for other products (Hepatitis A and Quadrivalent Meningococcal Polysaccharide Vaccine (MPSV4)). The company's inactivated HAV vaccine (HDC) is one of the only two inactivated HAV vaccines in the current market, and its MPSV4 covers A, C, Y, and W135 serogroups, which can be administered to individuals over the age of two. The company also aims to enhance its market presence through continuous improvement in production efficiency and quality, ensuring it remains competitive in the rapidly evolving vaccine market.

Rabies Vaccine (Vero Cell):
Expected Annual Sales Volume: Approximately 2 to 3.5 million doses.
Unit Price: More than RMB 300 per dose.
Projected Annual Revenue: RMB 700-750 million.

Inactivated Hepatitis A Vaccine (HAV) and Quadrivalent Meningococcal Polysaccharide Vaccine (MPSV4):
Combined Annual Revenue: Approximately RMB 150 million.

Price reductions may occur due to intense competition, particularly among Class I vaccines, which are funded by the national budget and do not rely on medical insurance. The overall gross margin for existing products is relatively stable (typically ranges between 78%-80%), but subject to fluctuations due to Class I vaccines, particularly the Hepatitis B vaccine, which has a gross margin of 50%-60%. In years when Class I vaccines account for a higher proportion of sales, the overall gross margin may be affected. For Class II vaccines, the gross margin is generally above 90%. Currently, Class I vaccines account for less than 10% of total revenue, and this proportion is expected to decrease further with the launch of new products. The company's gross margin is supported by its high-margin Class II vaccines, such as the recombinant HBV vaccine and freeze-dried human rabies vaccine, which have maintained stable quality and market leadership.

5.1.2 Pipeline Products

AIM Vaccine's sales and marketing strategy is centralized and market-oriented, enabling efficient cost management and cross-selling opportunities. The company's new product pipeline, including the serum-free rabies vaccine, 13-valent pneumonia vaccine, quadrivalent meningococcal conjugate vaccine, bivalent Hand, Foot, and Mouth Disease (HFMD) vaccine, and mRNA vaccines (RSV and shingles), is expected to drive significant revenue growth over the next decade. With high gross margins ranging from 85% to 95%, these products will not only enhance the company's market position but also contribute substantially to its profitability. The company's established sales channels and production capacity will play a crucial role in the rapid scaling and market penetration of these new products. The serum-free rabies vaccine and the 13-valent pneumonia vaccine are expected to be approved by the end of 2025, while the 23-valent polysaccharide pneumonia vaccine is expected to be approved in 2026. The quadrivalent meningococcal vaccine is expected to launch between late 2026 and 2027.

Serum-Free Rabies Vaccine:
- ✧ **Expected Launch:** 2026.
- ✧ **Competitive Advantage:** The serum-free rabies vaccine is the safest among all rabies vaccines.

- ✧ **Unit Price:** The company plans to price it at around RMB 1,700 per dose, positioning it as a high-end product, which is 3-5 times the price of existing rabies vaccines.
- ✧ **Market Penetration:** Given the company's well-established sales channels for rabies vaccines, the serum-free rabies vaccine is expected to scale up quickly. Among AIM Vaccine's marketed Rabies Vaccine (Vero Cell), which has an annual shipment volume of approximately 2 to 3.5 million doses, even if only 1 to 1.5 million doses are converted into sales of the next-generation serum-free rabies vaccine through its established channels, it could generate RMB 1.7 to 2.55 billion in annual revenue for the company. This would be more than three times the revenue from the current Vero cell rabies vaccine.
- ✧ **Gross Margin:** Approximately 90%-95%.

Human Diploid Rabies Vaccine:

- ✧ **Expected Launch:** Approved in 2026, with sales starting in 2027.
- ✧ **Competitive Advantage:** The company has a significant production capacity advantage over competitors, allowing it to reduce the price to below RMB 1,000 per dose, positioning it as a mid-range rabies vaccine.
- ✧ **Sales Volume:** Assuming sales of over 1.5 million doses, revenue could reach RMB 1 to 1.5 billion.
- ✧ **Market Penetration:** The company aims to increase its market share to over 50%, making it the market leader.
- ✧ **Gross Margin:** Approximately 90%.

13-Valent Pneumonia Vaccine (PCV13) and 20-Valent Pneumonia Vaccine (PCV20):

- ✧ **Expected Launch:** Approved in 2025, with sales starting by the end of 2025 or early 2026.
- ✧ **Market Potential:** In China, the current market size is 14 million doses. With 4 to 5 competitors, the company expects to capture 20% of the market, or around 2.8 million doses, at a price of approximately RMB 700 per dose, generating RMB 1.7 to 2 billion in revenue.
- ✧ **Growth Potential:** The penetration rate for children in China is currently 30%-40%, compared to 80% in the U.S., indicating significant growth potential. Additionally, the company plans to expand into overseas markets.
- ✧ **Long-Term Sales:** Within 3 to 5 years, the company expects to sell 4 to 5 million doses annually, generating over RMB 3 billion in revenue.
- ✧ **Gross Margin:** Approximately 90%.

Quadrivalent Meningococcal Conjugate Vaccine (MCV4):

- ✧ **Expected Launch:** Approved in 2026, with sales starting in 2027.
- ✧ **Market Potential:** Currently, CanSino sells RMB 600-700 million worth of this vaccine annually. The quadrivalent conjugate vaccine is expected to replace the current bivalent conjugate and quadrivalent polysaccharide vaccines, with a potential penetration rate of 45%-50% in the newborn market.
- ✧ **Market Size:** With 8.5 million newborns and a 50% penetration rate, the market could reach 15 million doses (4-dose vaccination regimen per individual), priced at around RMB 500 per dose, resulting in a market size of RMB 7 to 8 billion.
- ✧ **Sales Target:** Even with 4 to 5 competitors, the company aims to capture 20% of the market, generating RMB 1.5 to 2 billion in revenue. This will require market education and a gradual replacement process, taking 2 to 3 years to reach full potential. In the first two years, the company hopes to achieve RMB 1 billion in sales.
- ✧ **Gross Margin:** Approximately 90%.

Bivalent Hand, Foot, and Mouth Disease (HFMD) Vaccine:

- ✧ **Expected Launch:** 2028, with the first full sales year in 2029.
- ✧ **Market Potential:** The current market size for monovalent HFMD vaccines is around 15 million doses. The bivalent vaccine is expected to gradually replace the monovalent market, with a 40%-50% replacement rate in two years, resulting in a market size of 6 to 8 million doses.

- ✧ **Pricing:** The bivalent vaccine will be priced at around RMB 500 per dose, 2-3 times the price of the monovalent vaccine.
- ✧ **Competition:** As one of only two companies (along with Sinovac) currently in clinical trials for a bivalent HFMD vaccine, AIM Vaccine is well-positioned to capture a significant share of this emerging market.
- ✧ **Revenue:** With a 50% market share, the company could generate RMB 1.5 to 2 billion in revenue. Over time, the bivalent vaccine is expected to fully replace the monovalent market, with a potential market size of RMB 6 to 8 billion. As new competitors enter the market, the company's market share may stabilize at 20%-30%, with annual sales of RMB 1.5 to 2 billion.
- ✧ **Gross Margin:** Approximately 85%-90%.

mRNA Vaccines (Herpes zoster and RSV vaccines):

- ✧ **Expected Launch:** The shingles vaccine is expected to be approved in 2028 and launch in 2029, while RSV is expected to launch by the end of 2028.
- ✧ **Global Market:** Both RSV and shingles vaccines are blockbuster products internationally. The global herpes zoster vaccine market is projected to grow significantly, with the recombinant herpes zoster vaccine segment expected to expand at a compound annual growth rate (CAGR) of 26.8% from 2021 to 2025E, and 15.5% from 2025E to 2030E, reaching an estimated market size of US$12.1 billion by 2030E. GSK and Pfizer's RSV vaccines generated USD 2.4 billion in revenue within six months of their launch in 2023.
- ✧ **China Market:** Currently, most shingles vaccines in China are imported. A non-mRNA shingles vaccine launched in 2023 generated RMB 800 million in revenue within six months. RSV vaccines have not yet been approved in China.
- ✧ **Revenue Potential:** Even with annual sales of 1 million doses for each product, priced at around RMB 1,500 per dose, each product could generate over RMB 1 billion in revenue.
- ✧ **Gross Margin:** Approximately 95%.

5.2 Profit and Cash Flow

Profit Margins & Break-even Point:

The internal target is to achieve break-even by 2025. Recently, R&D expenses have decreased as some overseas Phase III trials have been discontinued. The company is confident in achieving break-even by 2026.

- ✧ **R&D Expenses:** Expected to be between RMB 200-300 million in 2025, around RMB 300 million in 2026, and increase to RMB 300-500 million in 2027 and beyond.
- ✧ **Sales Expenses:** Approximately 40% of revenue. After the launch of blockbuster products, the overall sales expense ratio is expected to stabilize at 35%-40%+.
- ✧ **Administrative Expenses:** Relatively fixed, ranging between RMB 230-250 million annually.
- ✧ **Income Tax Rate:** 15%, due to the company's subsidiaries being recognized as High and New Technology Enterprises, which qualify for preferential tax rates.

Cash Flow:

- ✧ **Investment Plan:** Major capital expenditures (capex) have already been completed. The remaining investments are primarily for RSV, influenza, and the bivalent hand, foot, and mouth disease (HFMD) vaccine, with a total investment of RMB 570 million for the bivalent HFMD vaccine and less than RMB 700 million for RSV. These investments are expected to be completed within 2-3 years.

EXHIBIT 42: Projected financial statements for AIM

Income Statement

In thousands of RMB, except percentages	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Revenue	951,648	1,637,970	1,570,129	1,264,073	1,187,468	1,246,841	1,461,608	3,806,684	5,513,538
yoy		72%	-4%	-19%	-6%	5%	17%	160%	45%
Cost of sales	-218,803	-283,882	-275,429	-236,414	-286,452	-274,305	-321,554	-761,337	-882,166
gross profit	732,845	1,354,088	1,294,700	1,027,659	901,016	972,536	1,140,055	3,045,347	4,631,372
Gross profit margin	77.0%	82.7%	82.5%	81.3%	75.9%	78%	78%	80%	84%
Other income and gains	26,163	40,714	53,622	49,637	51,658	42,211	49,481	128,872	186,656
%revenue	3%	2%	3%	4%	4%	3%	3%	3%	3%
SG&A	-487,190	-731,946	-1,628,093	-943,923	-748,287	-728,737	-849,259	-1,772,674	-2,455,415
yoy		50%	122%	-42%	-21%	-3%	17%	109%	39%
%revenue		45%	104%	75%	63%	58%	58%	47%	45%
Research and developmentcosts	-98,886	-157,761	-307,353	-500,310	-636,401	-498,737	-300,000	-430,000	-473,000
yoy		60%	95%	63%	27%	-22%	-40%	43%	10%
%revenue	10%	10%	20%	40%	54%	40%	21%	11%	9%
Impairment losses	2,103	-826	-7,981	-27,215	-1,598,945	0	0	0	0
Other expenses	-7,493	-2,642	-895	-14,320	-5,854	-	-	-	-
Finance costs	-10,781	-15,741	-10,703	-25,693	-43,832	-41,727	-31,657	-23,784	-13,377
	3%	1%	2%	4%	8%				
Profit/(loss) before tax	156,761	485,886	-606,703	-434,165	-2,270,645	-254,453	8,620	947,762	1,876,236
Income tax expense	-36,947	-85,472	-69,170	203,535	320,404	-	-1,293	-142,164	-281,435
effective tax rate	24%	18%	-11%	47%	14%	0%	15%	15%	15%
Profit/(loss) for the year/period	119,814	400,414	-675,873	-230,630	-1,950,241	-254,453	7,327	805,597	1,594,800
Profit/(Loss) attributable to									
Owners of the parent	117,406	379,287	-692,774	-319,601	-1,301,005	-241,730	6,960	765,317	1,515,060
Non-controlling interests	2,408	21,127	16,901	88,971	-649,236	-12,723	366	40,280	79,740
	119,814	400,414	-675,873	-230,630	-1,950,241	-254,453	7,327	805,597	1,594,800
Profit/loss per share attributable to the parent company:									
Basic			-0.60	-0.27	-1.07	-0.21	0.01	0.66	1.31
Diluted			-0.60	-0.27	-1.07	-0.21	0.01	0.66	1.31

Balance Sheet In thousands of RMB, except percentages	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
Current assets									
Inventories	228,816	252,713	367,397	504,738	509,860	355,622	149,765	271,161	314,196
Trade and bills receivables	444,838	869,864	1,063,653	1,052,594	1,005,069	967,137	620,683	495,390	868,571
Prepaid income tax				8,714	-	-	-	-	-
Prepayments, other receivables and other assets	101,739	112,072	148,572	173,666	157,641	99,747	116,929	304,535	441,083
Financial assets at fair valuethrough profit or loss	50,000		100,000			-	-	-	-
Due from related parties	146,556	76,573	10,000		31,713	31,713	31,713	31,713	31,713
Restricted cash	55,720	24,406	22,320	11,173	42,238	42,238	42,238	42,238	42,238
Time deposits				162,643	153,272	153,272	153,272	153,272	153,272
Cash and cash equivalents	318,639	1,102,830	646,742	635,175	583,143	515,854	979,660	1,335,631	1,820,164
Total current assets	1,346,308	2,438,458	2,358,684	2,548,703	2,482,936	2,165,583	2,094,259	2,633,940	3,671,238
Non-current assets									
Property, plant and equipment	683,139	1,318,874	2,655,133	3,290,829	3,293,917	3,285,378	3,288,229	3,391,963	3,577,234
Right-of-use assets	184,519	208,562	215,467	197,263	227,612	227,612	227,612	227,612	227,612
Goodwill	234,572	234,572	482,897	482,897	271,453	271,453	271,453	271,453	271,453
Other intangible assets	390,757	356,856	2,192,693	2,238,496	805,415	852,653	915,078	1,162,771	1,540,921
Prepayments for equipment	95,180	107,795	149,565	114,448	82,697	82,697	82,697	82,697	82,697
Deferred tax assets		1,464			95,327	95,327	95,327	95,327	95,327
Other non-current assets	16,247	21,372	17,914	3,150	2,638	2,638	2,638	2,638	2,638
Total non-current assets	1,604,414	2,249,495	5,713,669	6,327,083	4,779,059	4,817,758	4,883,034	5,234,461	5,797,882
Total assets	2,950,722	4,687,953	8,072,353	8,875,786	7,261,995	6,983,342	6,977,293	7,868,401	9,469,119
Current liabilities									
Trade payables	42,925	37,972	51,762	73,583	60,358	64,005	77,085	187,727	217,520
Other payables and accruals	722,051	829,356	1,003,384	1,072,982	1,236,537	1,236,537	1,236,537	1,236,537	1,236,537
Contract liabilities	30,839	14,658	41,074	57,197	56,934	56,934	56,934	56,934	56,934
Interest-bearing bank borrowings	256,190	173,725	407,364	1,010,693	1,205,696	1,205,696	1,205,696	1,205,696	1,205,696
Lease liabilities	7,351	14,627	16,904	19,342	20,544	20,544	20,544	20,544	20,544
Tax payable	15,739	51,124	40,893	7,872	2,894	2,894	2,894	2,894	2,894
Deferred government grants	3,196	3,796	4,571	4,818	6,106	6,106	6,106	6,106	6,106
Due to related parties	109,691	151				-	-	-	-
Provisions	2,987	5,560	4,090	3,310	12,830	12,830	12,830	12,830	12,830
Total current liabilities	1,190,969	1,130,969	1,570,042	2,249,797	2,601,899	2,605,546	2,618,626	2,729,268	2,759,061
Non-current liabilities									
Interest-bearing bank borrowings	27,440		184,334	339,442	556,944	529,097	502,642	477,510	453,634
Lease liabilities	23,462	46,685	41,829	29,190	12,425	12,425	12,425	12,425	12,425
Deferred tax liabilities	41,189	37,010	491,828	269,011	41,163	41,163	41,163	41,163	41,163
Deferred government grants	49,538	51,664	85,030	127,439	159,987	159,987	159,987	159,987	159,987
Total non-current liabilities	141,629	135,359	803,021	765,082	770,519	742,672	716,217	691,085	667,209
Total liabilities	1,332,598	1,266,328	2,373,063	3,014,879	3,372,418	3,348,218	3,334,843	3,420,353	3,426,271
EQUITY									
Equity attributable tothe parent company									
Share capita	850,734	1,110,000	1,200,000	1,211,063	1,211,063	1,211,063	1,211,063	1,211,063	1,211,063
Reserves	688,593	2,311,625	3,692,595	3,749,178	2,431,691	2,189,961	2,196,921	2,962,239	4,477,299
				4,960,241	3,642,754	3,401,024	3,407,984	4,173,302	5,688,362
Non-controlling interests	78,797		806,695	900,666	246,823	234,100	234,467	274,747	354,487
Total equity	1,618,124	3,421,625	**5,699,290**	**5,860,907**	**3,889,577**	**3,635,124**	**3,642,451**	**4,448,048**	**6,042,848**

CONSOLIDATED STATEMENTS OF CASH FLOWS

In thousands of RMB, except percentages	2019	2020	2021	2022	2023	2024E	2025E	2026E	2027E
CASH FLOWS FROM OPERATINGACTIVITIES									
Profit/(loss) before tax	156,761	485,886	(606,703)	(434,165)	(2,270,645)	(254,453)	8,620	947,762	1,876,236
Adjustments for									
Equity-settled share-based compensationexpense	7,775	23,476	952,128	225,762	(14,201)	0	0	0	0
Depreciation of property, plant and equipment	63,437	72,506	87,430	104,657	111,636	83,349	84,846	86,600	90,406
Finance costs	10,781	15,741	10,703	25,693	43,832	41,727	31,657	23,784	13,377
Interest income	(3,667)	(10,736)	(10,777)	(10,694)	(10,707)	0	0	0	0
Gain on disposal of wealth investment products		(1,312)	(1,673)	(3,074)					
Amortisation of deferred government grants	(2,104)	(3,399)	(4,934)	(4,661)	(5,278)	0	0	0	0
Amortisation of other intangible assets	33,832	33,896	33,790	34,782	35,264	52,509	54,504	56,842	62,933
Provision for inventories	5,531	6,588	21,671	24,653	10,518	0	0	0	0
Loss on disposal of items of property, plant and equipment	5,009	2,010	208	691	218	0	0	0	0
(Reversal of)/Provision for impairment of trade and bills receivables	(2,216)	176	7,984	27,215	4,177	0	0	0	0
Loss on disposal of items of intangible assets					17	0	0	0	0
Gain on disposal of items of right-of-use assets					6,915	0	0	0	0
Provision for/(Reversal of) impairment of prepayments, other receivables and other assets	113	650	(3)		3	0	0	0	0
Impairment of property, plant and equipment		3,555			61,091	0	0	0	0
Exchange losses/(gains), net	1,929	(6,123)	(2,032)	7,995	(662)	0	0	0	0
Depreciation of right-of-use assets	12,171	21,940	23,071	27,002	27,797	0	0	0	0
Impairment of goodwill					211,444	0	0	0	0
Impairment of other intangible assets					1,512,230	0	0	0	0
	289,352	644,854	510,863	25,856	(276,351)	(76,868)	179,626	1,114,987	2,042,952
Change in working capital	161,977	(460,640)	(324,338)	(156,329)	14,483	253,711	548,209	(73,068)	(522,971)
Increase in inventories	(56,407)	(30,485)	(136,355)	(161,994)	(15,640)	154,238	205,857	(121,396)	(43,035)
Decrease/(increase) in trade and bills receivables	191,965	(425,202)	(201,773)	(16,156)	43,348	95,826	329,273	(62,313)	(509,729)
Increase/(decrease) in trade payables	26,419	(4,953)	13,790	21,821	(13,225)	3,647	13,080	110,642	29,794
Other assets	295,155	438,493	171,791	33,649	(64,506)	0	0	0	0
Income tax paid	(57,480)	(55,332)	(90,028)	(59,570)	(923)	0	(1,293)	(142,164)	(281,435)
Net cash flows generated from/(used in) operating activities	327,012	250,331	93,398	(110,317)	(165,499)	176,843	726,542	899,755	1,238,546
CASH FLOWS FROM INVESTING ACTIVITIES									
Interest received	3,667	10,736	10,777	8,051	11,958	10,317	19,593	26,713	36,403
Gain on disposal of wealth investmentproducts		1,312	1,673	3,074		0	0	0	0
(Increase)/decrease in financial assets at fair	(50,000)	50,000	4,229	100,000		0	0	0	0
Purchase of items of property, plant and equipment	(314,781)	(666,683)	(1,125,381)	(779,008)	(158,919)	(74,810)	(87,697)	(190,334)	(275,677)
Acquisition of a subsidiary			(250,377)			0	0	0	0
Purchase of right-of-use assets	(30,866)	(296)	(16,122)	(300)	(62,591)	0	0	0	0
Purchase of other intangible assets	(483)	(36)	(225)	(77,332)	(80,135)	(99,747)	(116,929)	(304,535)	(441,083)
Receipt of government grants for property, plant and equipment	44,853	6,125	38,035	47,317	39,114	0			
Increase in restricted cash		(8,818)	(137)	(139)	(31,167)	0	0	0	0
Increase in time deposits				(160,000)		0	0	0	0
Proceeds from disposal of other intangible assets		41			8,120	0	0	0	0
Proceeds from disposal of property, plant and equipment	7,414	2,702	23	187	1,662	0	0	0	0
Net cash flows used in investing activities	(340,196)	(604,917)	(1,337,505)	(858,150)	(271,958)	(164,241)	(185,032)	(468,156)	(680,357)
CASH FLOWS FROM FINANCINGACTIVITIES									
New bank loans	293,602	270,500	537,825	1,282,014	1,458,059	0	0	0	0
Repayment of bank loans	(178,284)	(380,518)	(244,500)	(434,158)	(1,027,465)	(27,847)	(26,455)	(25,132)	(23,875)
Interest paid	(10,922)	(15,628)	(10,295)	(24,592)	(43,201)	(52,044)	(51,250)	(50,496)	(49,780)
Capital contribution from shareholders	268,000	1,374,437				0	0	0	0
Contribution from non-controlling interests	24,500			15,000					
Proceeds from issue of shares		519,771	553,475	162,015		0	0	0	0
Share issue expenses		(2,068)				0	0	0	0
Payment of listing expenses			(31,948)	(1,209)		0	0	0	0
Principal portion of lease payment	(6,740)	(15,188)	(16,538)	(18,699)	(20,325)	0	0	0	0
Dividends paid	(86,000)					0	0	0	0
Acquisition of non-controlling interests	(434,603)	(512,529)			(5,000)	0	0	0	0
Return of prepaid proceeds from an investor		(100,000)				0	0	0	0
Net cash flows (used in)/generated from financing activities	(130,447)	1,138,777	788,019	980,371	362,068	(79,891)	(77,705)	(75,628)	(73,655)
Net (decrease)/increase in cash and cash equivalent	(143,631)	784,191	(456,088)	11,904	(75,389)	(67,289)	463,805	355,971	484,534
Cash and cash equivalents at beginning of year/period	462,270	318,639	1,102,830	646,742	656,267	583,143	515,854	979,660	1,335,631
Effect of foreign exchange rate changes, net				(2,379)	2,265	0	0	0	0
Cash and cash equivalents at the end of year/period	318,639	1,102,830	646,742	656,267	583,143	515,854	979,660	1,335,631	1,820,164

Source: AIM Vaccine Financial Reports, Fosun International Securities

5.3 Valuation

We have employed the Discounted Cash Flow (DCF) valuation method, projecting the following financial metrics for 2032:

- ✧ **Risk-adjusted Revenue:** RMB 9,949.338 million.
- ✧ **Net Profit:** RMB 4,146.269 million.
- ✧ **Net Profit Attributable to Parent Company:** RMB 3,938.955 million.
- ✧ **Free Cash Flow:** RMB 2,789.438 million.

Using a discount rate of 15% and a perpetual growth rate of 2%, we estimate the company's valuation for the next 12 months (January 2026) to be RMB 12.58 billion. This valuation is approximately 1.26 times the company's projected risk-adjusted peak sales in 2032, and is approximately 3.19 times the company's Net Profit Attributable to Parent Company in 2032.

2026 P/S ratio Comparison:

Global Peers: AIM Vaccine's 2026 P/S ratio (2.1) is lower than Merck (3.5), Pfizer (2.4), and Sanofi (2.5), suggesting that global vaccine giants are priced at a premium, likely due to their established market presence, diversified portfolios, and stronger revenue streams.

Chinese Peers: For 2026E, its implied PS ratio (2.1) is lower than several peers such as Walvax and Kangtai, which have PS ratios of 4.6 and 3.8. The relatively lower PS suggests either higher revenue growth potential is already priced in for peers, or AIM Vaccine has lower expected growth or profitability compared to its counterparts. Companies like Zhifi consistently show lower PS ratios across the years (1.4 in 2024, 1.7 in 2026), indicating either lower growth expectations or market undervaluation.

In summary, AIM Vaccine has a lower valuation than some Chinese competitors (e.g., Walvax, Kangtai) and global giants. This indicates room for improvement in profitability and market share. AIM Vaccine's 2026 P/S ratio of 2.1 reflects moderate growth expectations. AIM Vaccine's negative net income (-1,301.0 million RMB) may be a factor in its relatively lower P/S ratio compared to global peers. Investors might be cautious about its ability to translate revenue into profits.

Exhibit 43：The valuation comparison of vaccine companies worldwide

Name	Market value (million)	Revenue in 2023 (miilion)	Net income in 2023 (million)	P/S- FY25F	P/S- FY26F
AIM Vaccine	6,165.1	1,187.5	(1,301.0)	4.8	2.1
Chongqing Zhifei	59,509.6	52,917.8	8,069.9	1.4	1.7
Walvax	18,408.5	4,113.8	419.4	5.1	4.6
Kangtai	16,854.4	3,477.4	861.3	4.4	3.8
GSK	69,286	37,725	6,130	1.7	1.6
Merck	247,702	60,115	365	3.7	3.5
Pfizer	149,042	58,496	2,119	2.4	2.4
Sanofi	128,182	45,011	5,840	2.6	2.5

Source: Bloomberg，Fosun International Securities, data as of 17 Jan 2025.

Note: Market value, revenue and net income were presented in RMB for companies in China, and in USD for overseas companies.

6. Risk Factors

1) Intense Competition & Market Share Loss

AIM Vaccine operates in a highly competitive market, particularly for its core products, the hepatitis B vaccine and freeze-dried human rabies vaccine (Vero). These products face significant competition from established players, limiting the company's exclusivity and market dominance.

2) R&D and Product Launch Risks

The development of vaccines involves intricate biotechnological processes and strict regulatory oversight. Challenges such as technical hurdles, clinical trial setbacks, or delays could undermine the company's R&D outcomes, potentially impacting product launch schedules and reducing competitiveness in the market.

3) Challenges in Promoting New Products

Market acceptance of new products may be lower than anticipated due to factors like intense competition or ineffective sales strategies. Such obstacles could delay market penetration and hinder revenue growth, limiting the company's ability to achieve its business objectives.

4) Technology Development Risks

Despite entering the mRNA space in 2021 through the acquisition of a 50.15% stake in Livan Bio, AIM Vaccine has faced setbacks as the post-COVID-19 mRNA market cooled. This shift resulted in significant financial losses, including write-downs of intangible assets and goodwill associated with Livan Bio.

5) Vaccine Quality Concerns

The vaccine industry is inherently prone to quality-related risks stemming from production, storage, or transportation issues. Problems such as contamination, reduced efficacy, or adverse reactions could trigger regulatory scrutiny, product recalls, or loss of consumer trust. These risks could lead to increased costs, diminished revenue, reputational damage, and potential legal liabilities, significantly affecting operations and financial performance.

6) Geopolitical Risks

Geopolitical tensions could disrupt AIM Vaccine's international expansion, destabilize its supply chains, or strain cross-border collaborations. Such risks may adversely impact the company's operations, growth prospects, and valuation.

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