Chongqing Zhifei Biological Products Co., Ltd.

2023

Full Year Business Performance

Chongqing Zhifei Biological Products Co., Ltd.

Board of Directors

April 2024

Important Notes

The main content and data of this report are from the 2023 annual report of Chongqing Zhifei Biological Products Co., Ltd. In case of any discrepancy between interpretations of the text, the Chinese version shall prevail.

I.Overview of Principal Business

(I)Company profile

Zhifei is an international, full-industry chain high-tech bio-pharmaceutical enterprise integrating R&D, production, sales, distribution, import and export of vaccines and biological products.Since its inception in 2002, the Company has always adhered to its business principle of "prioritizing social benefits over corporate profits" and implemented the development model featuring "technology and market" drivers. Committed to serving the public, the Company has persisted in innovative research and development, constantly improved the "prevention and treatment of disease" business layout, and carried out high-quality marketing campaigns.

In 2023, there was no material change in the principal business of the Company. Beijing Zhifei Lvzhu Biopharmaceutical Co., Ltd. ("Zhifei Lvzhu") and Anhui Zhifei Longcom Biopharmaceutical Co., Ltd. ("Zhifei Longcom") renewed their efforts to introduce new products against bacteria, viruses and tuberculosis. The parent company of Zhifei, as the main promoter, dedicated to diversifying vaccine products and providing more convenient and considerate services. Taking Zhifei Airport as the import and export channel, the Company also provides warehousing, customs clearance record, and batch release services for imported vaccines. In addition, the Company incubates and cultivates promising biotechnology and products through the Zhirui investment platform by equity investment

(II) Major products and indication

As of the disclosure date of this report, a total of thirteen products had been launched, of which one product got conditional approval. The Company offers a diverse range of products, including vaccine products for preventing infectious diseases such as influenza, cervical cancer, pneumonia, rotavirus, herpes zoster and drugs for the diagnosis, prevention and treatment of Tuberculosis, to the public including groups of infants, teenagers and adults. It effectively provides product support for the prevention and control of infectious diseases, and provides the nation with diversified options for disease protection. Details are as follows:

No.	Common Name	Trade Name	Function and Use / Indication
1	Group $ACYW_{135}$ Meningococcal Polysaccharide Vaccine	Menwayc	Used to prevent the meningococcal meningitis caused by $ACYW_{135}$ meningococcal polysaccharide.
2	Meningococcal Group A and C Conjugate Vaccine	Mening A Con	Used to prevent infectious diseases caused by meningococcal Group A and C, such as cerebrospinal meningitis and pneumonia.
3	Haemophilus Influenzae Type b Conjugate Vaccine	Xifeibei	Used to prevent invasive infections caused by Haemophilus influenzae Type b (including meningitis, pneumonia, septicemia, cellulitis, arthritis, epiglottitis, etc.).
4	Group A and Group C Meningococcal Polysaccharide Vaccine	Mengnake	prevent epidemic cerebrospinal meningitis caused by Neisseria meningitidis group A and C
5	Recombinant Novel Coronavirus Vaccine (CHO Cell)	Zifivax™	Used to prevent diseases caused by Covid-19.
6	Recombinant Mycobacterium Tuberculosis Fusion Protein (EC)	Ekear	Used to diagnose mycobacterium tuberculosis infection, and the results of the subcutaneous test are not affected by the BCG vaccine and can be used for clinical diagnosis of tuberculosis.
7	Mycobacterium Vaccae for Injection	Vaccae	Used to prevent tuberculosis in the latent groups of infected people with mycobacterium tuberculosis; also used as a drug combination for the adjuvant tuberculosis chemotherapy.
8	Pneumovax 23 - Pneumococcal Vaccine, Polyvalent	Pneumovax	Used to prevent pneumococcal disease caused by 23 serotypes contained in this product (serotypes 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, and 33F).
9	Human Papillomavirus Quadrivalent (types 6, 11, 16, 18) Recombinant Vaccine	Gardasil	Used to prevent the following diseases caused by high-risk HPV16/18: cervical cancer, grade 2 and grade 3 cervical intraepithelial neoplasis (CIN2/3) and adenocarcinoma in situ, and grade 1 cervical intraepithelial neoplasis (CIN1).
10	Human Papillomavirus 9-valent Vaccine, Recombinant	Gardasil 9	Used to prevent the following diseases caused by HPV type contained in this product: cervical cancer caused by type HPV16, 18, 31, 33, 45, 52 and 58; precancerous lesions caused by HPV6, 11, 16, 18, 31, 33, 45, 52 and 58: cervical intraepithelial neoplasis (CIN2/3), cervical adenocarcinoma in situ (AIS), and cervical intraepithelial neoplasis (CIN1); persistent infections caused by type HPV6, 11, 16, 18, 31, 33, 45, 52 and 58.

11	Reassortant Rotavirus Vaccine, Live, Oral, Pentavalent (Vero Cell)	Rotateq	Used to prevent the rotavirus gastroenteritis in infants caused by serum-type G1, G2, G3, G4 and G9.
12	Pneumovax 23 - Pneumococcal Vaccine, Polyvalent	Pneumovax	Used to prevent the pneumococcal disease in the form of the capsulate bacteris contained in this vaccine.
13	Hepatitis A Vaccine (Human Diploid Cell), Inactivated	VAQTA	Used to prevent diseases caused by the hepatitis A virus.
14	Recombinant Zoster Vaccine (CHO cell)	Shingrix	Used to prevent herpes zoster.

(Ⅲ) Main business model

In implementing the development model featuring "technology & market" drivers, the Company has formed a virtuous cycle where R&D and marketing promote each other to fast-track the entire process from R&D to the realization of market value. The Company has constantly optimized its product mix for "prevention and treatment of disease" based on the needs of the people, increased investment in R&D, ramped up quality control, and improved its services to better protect public health. This has also injected strong impetus into corporate growth.

The Company adheres to its innovation strategy of "putting independent R&D at the core, conducting cooperative R&D as a backup, engaging in investment and incubation as a supplement." Besides holding onto independent R&D, the Company also collaborates with leading research institutes, universities, and other organizations and sets its sights on investment and incubation of cutting-edge technologies, accelerating the transformation of innovative technology into social benefits and commercial value.

The Company implements the "production determined by sales" model, which is, the production department organizes production according to the marketing department's sales plan, and formulates a production schedule based on sales while also maintaining an appropriate inventory level. The Company strictly complies with the requirements of the Drug Administration Law of the People's Republic of China (hereinafter referred to as the "Drug Administration Law"),

the Vaccine Administration Law of the People's Republic of China (hereinafter referred to as the "Vaccine Administration Law"), and the Regulations on the Administration of Vaccine Production and Circulation, among other pertinent laws and regulations. The Company ensures that its production and inspection strictly conforms to the approved production process and quality control standards, and that its entire production process complies with the good manufacturing practice (GMP) requirements. The quality management department of the Company conducts strict supervision, inspection, and control over product quality. A complete production quality management system is in place to ensure that the entire production process meets ongoing compliance requirements.

The Company's professional marketing team organizes academic meetings and promotional events, carries out activities to popularize vaccination knowledge, and employs a direct sales model to bring the Company's vaccines and medicines to end users. The Company's products are produced and sold in strict compliance with the Drug Administration Law, the Vaccine Administration Law, and other relevant laws and regulations. Purchase contracts are signed based on the customer's needs. The products are mainly delivered to the designated locations through the Company's self-built storage and logistics system to complete the process of sales and settlement. Of such products, vaccines may be marketed and sold in their area of circulation only after they have been produced/imported and issued with batch release certificates by the state. Governments of provinces, autonomous regions, and municipalities can organize purchases of vaccine products via public resource trading platform at the provincial level. The Company distributes vaccine products to the disease prevention and control agencies or points of vaccination units designated by the disease prevention and control agency in accordance with procurement contracts.

II.Analysis of Principal Business

(I) Key accounting data and financial indicators

During the reporting period, key financial indicators are shown below:

Unit：RMB

	2023	2022	Increase/decrease of the current year compared to the previous year	2021
Operating income (RMB)	52,917,767,029.20	38,264,011,331.74	38.30%	30,652,415,906.61
Net profit attributable to shareholders of the Company (RMB)	8,069,868,204.15	7,538,999,697.34	7.04%	10,208,548,452.56
Net profit attributable to shareholders of the Company after deducting non-recurring gains and losses (RMB)	7,915,455,262.71	7,509,900,188.61	5.40%	10,184,137,871.79
Net cash flows from operating activities (RMB)	8,996,369,981.13	1,989,033,105.26	352.30%	8,507,591,817.35
Basic earnings per share (RMB/share)	3.3624	3.1412	7.04%	4.2536
Diluted earnings per share (RMB/share)	3.3624	3.1412	7.04%	4.2536
Weighted average return on equity	29.09%	36.13%	-7.04%	78.01%
	As at the end of 2023	**As at the end of 2022**	**Increase/decrease of the current year compared to the previous year**	**As at the end of 2021**
Total assets (RMB)	50,232,190,314.35	38,003,733,941.95	32.18%	30,047,323,465.36
Net assets attributable to shareholders of the Company (RMB)	31,506,080,813.32	24,236,212,609.17	30.00%	17,657,212,911.83

(II) Key financial indicators by quarter

Unit：RMB

	First quarter	Second Quarter	Third Quarter	Fourth Quarter
Operating income (RMB)	11,172,773,125.45	13,272,540,213.40	14,826,403,506.36	13,646,050,183.99
Net profit attributable to shareholders of the Company (RMB)	2,032,024,553.16	2,227,902,845.93	2,270,395,867.74	1,539,544,937.32
Net profit attributable to	2,030,833,447.92	2,180,133,488.04	2,169,261,531.54	1,535,226,795.21

shareholders of the Company after deducting non-recurring gains and losses (RMB)				
Net cash flows from operating activities (RMB)	-1,040,028,831.23	3,217,077,142.78	408,785,189.45	6,410,536,480.13

(III) Breakdown of recurring profit or loss items and amounts

Unit：RMB

Item	Amount in 2023	Amount in 2022	Amount in 2021
Profit or loss on disposal of non-current assets (including the write-off portion of the provision for asset impairment)	41,240,241.87	-86,111.55	-1,643,198.23
Government subsidies included in current profit or loss (excluding those closely related to the Company's normal business operations, which are granted continuously in fixed amounts or quantities in accordance with certain standards and in compliance with national policies)	171,523,371.37	71,589,204.49	101,045,331.47
Profit or loss from changes in the fair value of financial assets and liabilities held for trading, and investment income from the disposal of financial assets and liabilities for trading and available-for-sale financial assets, except for effective hedging activities related to the Company's normal business operations			-5,625,856.85
Profit or loss on debt restructuring			-852,169.20
Other non-operating income and expenses other than those mentioned above	-31,017,609.39	-40,279,514.52	-66,383,696.92
Other profit or loss items that meet the definition of non-recurring profit or loss	1,839,074.16	2,997,843.19	2,025,026.70
Less: Amount affected by income tax	29,172,136.57	5,121,912.88	4,154,856.20
Total	154,412,941.44	29,099,508.73	24,410,580.77

III.MANAGEMENT DISCUSSION AND ANALYSIS

(Ⅰ) Overview

In the face of an unusually complex international environment and the challenging tasks of advancing reform and development and ensuring stability at home, the Central Committee of Party brought together the Chinese people of all ethnic groups and led them in withstanding external

pressures and overcoming internal difficulties with dedicated efforts. The main goals and tasks for economic and social development were accomplished, and solid advances were made in building a modern socialist country in all respects. In 2023, under the leadership of the Board of Directors, the Company worked in unity and with tenacity towards the mission of "Safeguarding human health, by preventing the unseen & treating the ailing," opening a new chapter of development.

During the reporting period, the Company recorded RMB52.918 billion in operating income, representing a 38.30% year-on-year (YoY) increase. Net profit attributable to shareholders of the Company reached RMB8.07 billion, a 7.04% YoY increase. Net profit attributable to shareholders of the Company after deducting non-recurring gains and losses amounted to RMB7.915 billion, up 5.40% YoY. In the wake of people's growing health awareness and vaccination voluntariness, the total addressable market for vaccines is continuously expanding in China, fueling further growth for businesses. In 2023, the Company achieved good operating results by focusing on its core business.

During the reporting period, the main driving factors for the business performance of the Company include:

1. Focusing on R&D to expedite product innovation

Always attentive to the spreading trends of domestic and overseas infectious diseases, the Company keeps abreast of the latest developments of frontier technology and persistently expedites product innovation through matrix-based layouts and platform-based technological breakthroughs to fully meet people's health needs with quality products. Ultimately, it aims to create social benefits and fulfill the mission of protecting human health. In 2023, the Company's R&D investment reached RMB1.345 billion, accounting for about 130.81% of revenue from independently developed products, representing a 20.82% YoY increase. The number of R&D employees grew to 927, a 14.87% YoY increase. Thanks to the continuous increase in R&D investment and the growing research team, the Company is stoked with abundant energies in consolidating and promoting R&D innovation.

During the reporting period, the Company made positive progress in the research and development of a number of independently developed products, and the advantages of the platform

layout began to show through. Specifically, the Company independently developed a 23-valent pneumococcal polysaccharide vaccine, which was approved for market release, and the clinical application for a 26-valent pneumococcal conjugate vaccine was accepted. The pneumonia vaccine matrix provides a comprehensive range of protection options for people of all ages and health status. The recombinant serogroup B meningococcal vaccine entered phase I trials. Meanwhile, great headway was made in the R&D of a quadrivalent meningococcal conjugate vaccine and pentavalent meningococcal vaccine in the meningococcal vaccine matrix. The DTaP vaccine entered phase III clinical trials, laying a solid foundation for the breakthrough in the multipartite vaccine matrix. A synergistic matrix of independently developed products, backed by strong marketing capabilities, is instrumental in realizing social benefits and business value.

The Company adheres to the development principle of "source globalization, targeted pairing, networked R&D, and localized production for all vaccine or medicine candidate." Setting its sights on the global frontiers of science and technology and infectious diseases that burden people, the Company persistently optimizes the allocation of resources for project development, strengthens local commercialization capabilities, and boosts technological innovation to achieve greater benefits. The Company efficiently promotes research pipelines.As of the end of the reporting period, the Company held a sum of 34 independent development programs in pipeline, among which 17 were under clinical trials or application for registration. Further information is given as below：

Projects entering the registration Process

No.	Drug Name	Registration Class	Major Functions	Registration Stage	Progress
1	Four-valent Influenza Virus-split Vaccine	Prophylactic biologic products class 15	After vaccination, it can stimulate the body to produce anti-influenza virus immunity and is used to prevent influenza caused by the strain of virus.	Registration	Drug registration review and approval
2	Lyophilized Rabies Vaccine for Human Use (MRC-5 Cell)	Prophylactic biologic products class 9	After vaccination, it can stimulate the body to produce anti-rabies virus immunity and is used to prevent rabies.	Clinical trial	Clinical trial completed

No.	Drug Name	Registration Class	Major Functions	Registration Stage	Progress
3	Influenza Virus-split Vaccine	Prophylactic biologic products class 15	After vaccination, it can stimulate the body to produce anti-influenza virus immunity and is used to prevent influenza caused by the strain of virus.	Clinical trial	Clinical trial completed
4	15-Valent Pneumococcal Conjugate Vaccine	Prophylactic biologic products class 7	Used to prevent infectious diseases caused by streptococcus pneumoniae.	Clinical trial	Phase III clinical trial in progress
5	Lyophilized Rabies Vaccine for Human Use (Vero Cell)	Prophylactic biologic products class 15	After vaccination, it can stimulate the body to produce anti-rabies virus immunity and is used to prevent rabies.	Clinical trial	Phase III clinical trial in progress
6	S. flexneri and S. sonnei Bivalent Shigella Conjugate Vaccine	Prophylactic biologic products class 1	Used to prevent infectious diseases caused by Shigella.	Clinical trial	Phase III clinical trial in progress
7	$ACYW_{135}$ Meningococcal Conjugate Vaccine	Prophylactic biologic products class 7	Used to prevent infectious diseases caused by meningococcus.	Clinical trial	Phase III clinical trial in progress
8	DPT vaccine (component)	Prophylactic biologic products class 4	Used to prevent diseases caused by pertussis, diphtheria and clostridium tetani.	Clinical trial	Phase III clinical trial in progress
9	Intestinal Virus Type 71 Inactivated Vaccine	Prophylactic biologic products class 1	Used to prevent diseases caused by EV71 infection.	Clinical trial	Phase II clinical trial in progress
10	Lyophilized Recombinant Tuberculosis Vaccine (AEC/BC02)	Prophylactic biologic products class 1	Used to prevent tuberculosis in the latent groups of infected people with mycobacterium tuberculosis	Clinical trial	Phase II clinical trial in progress
11	Quadrivalent Recombinant Norovirus Vaccine (Pichia Pastoris)	Prophylactic biologic products class 1	After vaccination, it stimulates the body to produce anti-norovirus immunity, which is used to prevent acute gastroenteritis caused by norovirus infection.	Clinical trial	Phase II clinical trial in progress

No.	Drug Name	Registration Class	Major Functions	Registration Stage	Progress
12	BCG-PPD	Therapeutic biologic products class 15	Used for clinical ancillary diagnosis of tuberculosis, epidemiological survey of tuberculosis and monitoring of body immune response after BCG vaccination. In combination with an in vivo diagnostic reagent (Recombinant Mycobacterium Tuberculosis Fusion Protein (EC)) for identification purposes, it can be used to	Clinical trial	Phase II clinical trial in progress
13	BCG	Prophylactic biologic products class 15	After vaccination, it enables the body to generate cellular immune responses. Used to prevent tuberculosis.	Clinical trial	Phase I clinical trial in progress
14	Inactivated Rotavirus Vaccine	Prophylactic biologic products class 1	Used to prevent diarrhea caused by rotavirus.	Clinical trial	Phase I clinical trial in progress
15	Recombinant Group B Meningococcal Vaccine	Prophylactic biologic products class 2.6	Used to prevent infectious diseases caused by meningococcus.	Clinical trial	Phase I clinical trial in preparation
16	Therapeutic BCG Vaccine	Prophylactic biologic products class 3.4	Used to treat bladder carcinoma in situ and prevent recurrence, and to prevent recurrence after transurethral resection of bladder papilloma in stage Ta or T1. This product is not intended for papilloma beyond T1 stage.	Clinical trial	Phase I clinical trial in preparation
17	26-Valent Pneumococcal Conjugate Vaccine	Prophylactic biologic products class 1.4	Used to prevent infectious diseases caused by streptococcus pneumoniae.	Clinical Application	Clinical Application

Preclinical Project

No.	Product Name	Progress and Changes in	Expected Progress (2024-2025)

No.	Product Name	Progress and Changes in	Expected Progress (2024-2025)	
1	Recombinant Hepatitis B Vaccine	Preclinical study	Preclinical study	Preclinical study
2	Bivalent HFMD Vaccine	Preclinical study	Preclinical study	Clinical Application
3	Bivalent Recombinant Rotavirus Vaccine	Preclinical study	Preclinical study	Preclinical study
4	Inactivated Japanese Encephalitis Vaccine	Preclinical study	Preclinical study	Clinical Application
5	Recombinant Zoster Vaccine (CHO cell)	Preclinical study	Preclinical study	Clinical Application
6	Inactivated Varicella-zoster Virus Vaccine	Preclinical study	Preclinical study	Clinical Application
7	Respiratory Syncytial Virus (RSV)	Preclinical study	Preclinical study	Clinical Application
8	Recombinant MERS Virus Vaccine	Preclinical study	Preclinical study	Preclinical study
9	DPT-based Combination Vaccine	Preclinical study	Preclinical study	Clinical Application
10	Pentavalent Meningococcal Conjugate	Preclinical study	Preclinical study	Clinical Application
11	Quadrivalent Influenza Virus-split Vaccine (ZFA02 adjuvant)	Preclinical study	Clinical Approval	Clinical Trial
12	Mpox Vaccine	Preclinical study	Preclinical study	Clinical Approval
13	Lyophilized Rabies Vaccine for Human Use (ZFB-3 Cell)	Preclinical study	Preclinical study	Clinical Approval
14	EBV Vaccine	Preclinical study	Preclinical study	Preclinical study

Note: The above disclosed projects under development do not include Covid-19 vaccine candidates.

2. Improving marketing through considerate operations

In exploiting market potentials, the Company features its refined and precise management of markets. The Company also focuses on introducing new talents and refines talent cultivation and assessment mechanisms. The Company improves the capabilities of integrating and flexibly dealing with information on end-users and market trends, which contributes to distinctive attainments in marketing and the Company's further high-quality development.

During the reporting period, the marketing team actively launched nationwide promotional activities capitalizing on the advantages of the network, scale, and professionalism. Continued, in-depth promotion meant that the Company's outstanding services and its impressive products gained wide recognition. Despite pressure and challenges, the Company continued to strengthen its product marketing, consolidate collaborative relations with partners, and excel in the work of manufacturing and supplying vaccines, offering quality products and multi-faceted services to the

public. The Company continued to improve its teams of marketing talent. As of the end of the reporting period, sales staff reached 3,990, a 18.79% YoY increase, ensuring that the Company's market-oriented services are rendered to end-users in a timely and targeted manner.

During the reporting period, the Company's marketing capabilities and overall capabilities were recognized by more partners worldwide. The Company and MSD once again joined forces, reaching a deal to purchase MSD’s products in excess of RMB100 billion over the next four years, paving the way for the continued supply of high-quality products such as HPV vaccine and pentavalent rotavirus vaccine. The Company forged cooperation with GSK in October 2023 and will act as the agent in the Chinese mainland to promote and sell a recombinant herpes zoster vaccine. Both parties also reached preliminary intention on future cooperation for promotion of Respiratory Syncytial Virus (RSV) vaccines in the Chinese mainland.

During the reporting period, the Company paid close attention to the national undertakings of tuberculosis (TB) prevention and treatment. Practical actions were taken in response to the slogan of "Yes! We can end TB!" (which was the theme of World TB Day 2023), thus contributing to the building of national non-TB community and the goal of the termination of global TB prevalence. The Company's independently developed products Vaccae and EC were included in the Guidelines for Preventive Treatment of Tuberculosis in China, with positive results achieved in the promotion and sales across much of China. EC was included in the Catalog of Medicines Covered by Medical Insurance across the Country, enabling more people to benefit from the product. The vulnerable groups can be more easily screened for Mycobacterium tuberculosis infection, and the Company will demonstrate the synergy of its anti-tuberculosis product matrix.

During the reporting period, the Company's vaccines were made available for sale only after they had obtained a national batch release and approval certificate in strict compliance with applicable laws and regulations. The details of batch releases of Company's vaccines during the reporting period are presented as below:

(1)Proprietary product

Manufacturer	Product Name	Number of Released and Approved Products in 2023 (Dose)	Number of Released and Approved Products in 2022 (Dose)	Growth Rate (%)
Zhifei Lvzhu	$ACYW_{135}$ polysaccharide vaccine	8,011,717	4,215,743	90.04
	AC conjugate vaccine	1,314,222	6,856,777	-80.83
	Hib vaccine	2,778,358	1,583,216	75.49
	AC polysaccharide vaccine	449,165	1,073,622	-58.16

(2)Products acting as agent

Manufacturer	Product Name	Number of Released and Approved Products in the First Half of 2023 (Dose)	Number of Released and Approved Products in the First Half of 2022 (Dose)	Growth Rate (%)
MSD	Tetravalent HPV vaccine	10,343,360	14,028,431	-26.27
	9-valent HPV vaccine	36,550,755	15,477,232	136.16
	Pentavalent rotavirus vaccine	7,174,088	8,826,330	-18.72
	23-valent pneumonia vaccine	1,628,465	1,021,823	59.37
	Inactivated hepatitis A vaccine	311,370	613,082	-49.21

3. Quality first and compliance management

Since its listing, the Company has always adhered to the principle of "keeping compliance in mind and putting responsibility into action" and continued to build a first-class quality management system based on science and compliance while advancing with the times. In strict compliance with the Vaccine Administration Law, the Drug Administration Law, the Provisions for the Lot Release of Biological Products, and other applicable laws and regulations, the Company adheres to the business principle of "prioritizing social benefits over corporate profits" in its production and operating activities. During the reporting period, the Company faithfully implemented the measures in the new phase and fully exploited its strengths as a vaccine R&D enterprise to ensure the production, storage, and supply of vaccines and other salable products. The Company thereby answered people's pressing needs for vaccination.

The Company has developed a sound governance framework and institutional system to ensure that its business activities center around its core business, while fully protecting the legitimate rights and interests of stakeholders such as shareholders, customers, and employees. The Company attaches great importance to compliance operations and sets up a compliance management framework consisting of decision-making, management, and executive levels. The Company has

formed a compliance management system covering prevention, monitoring, and punishment. At the same time, the Company actively responds to the latest national and industry compliance policies, constantly updates and improves its compliance policies, increases the frequency of compliance training, strengthens compliance monitoring, and improves its risk prevention capabilities. Upholding the principle of "quality first," the Company sticks to compliant operations, stays true to its original aspirations, and maintains its outstanding reputation, building a corporate brand of integrity and responsibility.

4. Sharing development opportunities in international cooperation

The Company continues to practice development and product launch strategies at an international level, actively develops global partnerships, and promotes international cooperation at a deep level. Science respects no borders. The Company and its partners collaborate to deal with individuals' health concerns and improve the living conditions of humans. It does its best to satisfy people's requirements for disease prevention, provide quality products driven by technological innovation, and promote vaccine acceptance and coverage through marketing. It brings in and also exports quality products so the vaccines can benefit more people at home and abroad.

During the reporting period, in order to improve the accessibility and affordability of vaccines, the Company actively carried out the international registration and certification of its own products as well as clinical cooperation. It also focused on strengthening communication and cooperation with international organizations such as the World Health Organization (WHO), the Global Alliance for Vaccines and Immunization (Gavi), and the United Nations Children's Fund (UNICEF) to accelerate the implementation of its internationalization strategy and deep integration with the global bio-industry chain. Going forward, Zhifei will continue to advance its internationalization strategy, align with international R&D, production, and quality standards, enable quality products to benefit people around the world, and contribute more efforts to the cause of global public health as a Chinese company.

IV.Analysis of Principal Business

(I) Composition of Operating Income

1. Overview of Operating Income

Unit: RMB

	2023		2022		Year-on-year increase or decrease
	Amount	As a percentage of operating income	Amount	As a percentage of operating income	
Total operating income	52,917,767,029.20	100%	38,264,011,331.74	100%	38.30%
By industry					
Biological	52,913,689,901.52	99.99%	38,260,160,010.26	99.99%	38.30%
Others	4,077,127.68	0.01%	3,851,321.48	0.01%	5.86%
By category					
Proprietary	1,028,348,396.39	1.94%	3,285,457,349.98	8.59%	-68.70%
Agent products	51,885,341,505.13	98.05%	34,974,702,660.28	91.40%	48.35%
Others	4,077,127.68	0.01%	3,851,321.48	0.01%	5.86%
By region					
Northeast China	1,661,214,282.71	3.14%	1,437,448,947.12	3.76%	15.57%
North China	6,987,107,438.05	13.20%	4,045,316,306.18	10.57%	72.72%
Northwest China	3,070,591,384.87	5.80%	1,636,550,452.09	4.28%	87.63%
Central China	6,482,361,969.47	12.25%	5,592,099,013.52	14.61%	15.92%
East China	18,477,587,753.85	34.92%	12,986,971,292.06	33.94%	42.28%
Southwest China	7,230,228,274.01	13.66%	5,038,751,258.30	13.17%	43.49%
South China	8,999,448,196.12	17.01%	7,527,337,215.94	19.67%	19.56%
Export	9,227,730.12	0.02%	-463,153.47	0.00%	2,092.37%

2. Industries, products, regions, and sales models that account for more than 10% of the Company's operating income or profit

Unit：RMB

	Operating income	Operating cost	Gross margin	Year-on-year increase or decrease in operating income	Year-on-year increase or decrease in operating cost	Year-on-year increase or decrease in gross margin
By industry						
Biological products	52,913,689,901.52	38,672,138,918.97	26.91%	38.30%	52.29%	-19.98%

By category						
Proprietary products	1,028,348,396.39	109,249,603.17	89.38%	-68.70%	-75.40%	3.35%
Agent products	51,885,341,505.13	38,562,889,315.80	25.68%	48.35%	54.56%	-10.40%
By region						
Northeast China	1,661,214,282.71	1,239,510,647.04	25.39%	15.57%	25.28%	-18.54%
North China	6,987,107,438.05	5,122,457,521.08	26.69%	72.80%	90.68%	-20.47%
Northwest China	3,070,591,384.87	2,279,345,828.71	25.77%	87.63%	108.80%	-22.61%
Central China	6,480,720,189.19	4,627,923,857.54	28.59%	15.89%	30.30%	-21.63%
East China	18,477,122,399.51	13,678,466,159.72	25.97%	42.28%	55.19%	-22.00%
Southwest China	7,230,092,940.68	5,235,189,389.91	27.59%	43.49%	60.76%	-32.31%
South China	8,997,613,536.39	6,484,983,544.26	27.93%	19.55%	29.80%	-16.92%
Export	9,227,730.12	4,261,970.71	53.81%	2,092.37%	44.98%	-

3.The Company's Income from physical sales

By industry	Item	Unit	2023	2022	Year-on-year Increase
Biological products	Sales volume	dose	27,490,638	158,556,423	-82.66%
	Production volume	dose	32,105,303	107,133,135	-70.03%
	Inventory	dose	42,095,964	39,916,823	5.46%

During the reporting period, the Company saw a significant decline in sales and production volumes YoY as a result of the changed market environment of COVID-19 vaccines due to objective factors. However, the Company maintained a strong growth for businesses other than COVID-19 vaccines. The Company made steady progress in terms of production and sales of its independently developed products, as well as smoothly advanced the purchase, promotion and sales of agency products, demonstrating a significant increase from a year earlier.

4.Composition of operating costs

Unit：RMB

By category	Item	2023		2022		Year-on-year increase or decrease
		Amount	As a percentage of operating costs	Amount	As a percentage of operating costs	
Proprietary	Where, direct	53,038,687.42	0.13%	172,924,206.61	0.69%	-69.33%

	Direct labor	34,266,677.02	0.09%	68,565,756.18	0.27%	-50.02%
	Manufacturing	-4,351,839.82	-0.01%	166,047,031.95	0.65%	-102.62%
	Shipping costs	26,266,349.21	0.07%	36,538,641.07	0.14%	-28.11%
	Subtotal	109,219,873.83	0.28%	444,075,635.81	1.75%	-75.41%
Agent biological products	Where, procurement costs	38,435,073,574.22	99.38%	24,845,001,806.83	97.83%	54.70%
	Shipping costs	127,845,470.92	0.33%	104,702,397.00	0.41%	22.10%
	Subtotal	38,562,919,045.14	99.71%	24,949,704,203.83	98.24%	54.56%
Others	Others	2,122,854.51	0.01%	1,719,920.92	0.01%	23.43%
Total		38,674,261,773.48	100.00%	25,395,499,760.56	100.00%	52.29%

(II)Expenses

Unit：RMB

	2023	2022	Year-on-year increase or decrease	Description of significant changes
Selling expenses	2,772,628,484.47	2,235,236,669.22	24.04%	Mainly as a result of strengthening the sales team and increasing marketing efforts in 2023
Overhead expenses	393,026,825.85	374,126,245.27	5.05%	
Financial expenses	47,218,242.80	13,798,317.84	242.20%	Mainly as a result of the increase in interest expenses and the cost for letters of credit in 2023
R&D expenses	968,471,553.03	854,161,335.34	13.38%	Mainly as a result of the increase in investment into R&D projects in 2023

(III) Investments in R&D

1.The Company's R&D personnel

	2023	2022	Change ratio
Number of R&D personnel	927	807	14.87%
Number of R&D personnel as a percentage of total staff	14.16%	14.07%	0.09%
Educational background of R&D personnel			
PhD	17	11	54.55%
Master	510	446	14.35%

Bachelor and below	400	350	14.29%
Age composition of R&D personnel			
Under 30 years old	647	578	11.94%
Between 30 and 40 years old	234	190	21.58%
Over 40 years old	46	39	17.95%

2.The Company's amount of R&D investment and the percentage of R&D investment over operating income in the past three years

	2023	2022	2021
Amount of R&D investment (RMB)	1,345,164,387.14	1,113,371,642.56	813,971,655.07
Percentage of R&D investment over	2.54%	2.91%	2.66%
Amount of capitalization of R&D	130.81%	33.89%	8.39%
Percentage of capitalization of R&D expenditures over R&D investment	376,692,834.11	259,210,307.22	261,346,111.73
Percentage of capitalization of R&D	28.00%	23.28%	32.11%
Amount of R&D investment (RMB)	4.67%	3.44%	2.56%

(IV)Cash flow

Unit：RMB

Item	2023	2022	Year-on-year increase or decrease	Description of significant changes
Subtotal cash inflow from operating activities	48,064,340,214.75	31,370,285,593.40	53.22%	Mainly due to the increase in sales and collected sales proceeds in 2023
Subtotal cash outflow from operating activities	39,067,970,233.62	29,381,252,488.14	32.97%	Mainly as a result of the increase in cash paid for the purchase of agency products in 2023
Net cash flows from operating activities	8,996,369,981.13	1,989,033,105.26	352.30%	Mainly due to the increase in sales and collected sales proceeds in 2023
Subtotal cash inflow from investing activities	168,073,400.86	646,784.96	25,885.98%	Mainly as a result of an increase in cash received for the disposal of non-current assets in 2023
Subtotal cash outflow from investing activities	1,144,672,122.45	1,498,601,683.66	-23.62%	Mainly as a result of a decrease in payments for long-term assets in 2023
Net cash flows from investing activities	-976,598,721.59	-1,497,954,898.70	34.80%	Mainly as a result of a decrease in payments for long-term assets in 2023
Subtotal cash inflow from financing activities	6,347,985,763.87	5,516,548,948.79	15.07%	Mainly as a result of an increase in short-term borrowings received in

				2023
Subtotal cash outflow from financing activities	10,641,852,590.69	7,689,196,338.38	38.40%	Mainly as a result of an increase in the repayment of short-term borrowings in 2023
Net cash flows from financing activities	-4,293,866,826.82	-2,172,647,389.59	-97.63%	Mainly as a result of an increase in the repayment of short-term borrowings in 2023
Net increase in cash and cash equivalents	3,723,601,383.57	-1,664,011,893.96	323.77%	Mainly due to the increase in sales and collected sales proceeds in 2023

(V) Analysis of assets and liabilities

Unit：RMB

	End of 2023		Early 2022		Percentage increase/ decrease	Description of significant changes
	Amount	As a percentage of total assets	Amount	As a percentage of total assets		
Monetary funds	6,340,512,228.61	12.62%	2,622,063,766.18	6.90%	5.72%	Mainly due to the increase in sales and collected sales proceeds in 2023
Accounts receivable	27,058,579,283.73	53.87%	20,613,901,100.57	54.24%	-0.37%	
Inventory	8,986,023,821.17	17.89%	8,020,470,692.08	21.10%	-3.21%	Mainly due to the increase in total assets in 2023
Investment properties	265,973.36	0.00%	10,148,312.97	0.03%	-0.03%	
Fixed assets	3,796,404,998.74	7.56%	2,818,504,522.48	7.42%	0.14%	
Construction in progress	1,287,248,697.25	2.56%	1,835,672,164.88	4.83%	-2.27%	
Right-of-use assets	37,058,260.96	0.07%	39,495,224.75	0.10%	-0.03%	
Short-term borrowings	2,635,483,275.35	5.25%	1,784,915,900.00	4.70%	0.55%	
Contractual Liabilities	11,306,389.47	0.02%		0.00%	0.10%	
Long-term borrowings	328,080,291.01	0.65%	210,642,031.86	0.55%	0.10%	
Lease liabilities	25,307,401.72	0.05%	27,764,877.22	0.07%	-0.02%	

V.Analysis of Core Competitiveness

As a major global vaccine R&D and supplier, the Company is committed to enriching the means of prevention and control of infectious diseases. Relying on scientific and technological innovation, the Company develops its unique core competitiveness by improving market networks, controlling production quality, growing talent teams, and reinforcing its governance structure. This is mainly reflected in the following areas.

(I)Fostering new productive forces driven by innovation

1. Continuously enhancing independent innovation capabilities

Catering to the country's demand for self-reliance and strength in science and technology, the Company continuously improves its self-development capabilities and sticks to the path of independent innovation while actively carrying out technical cooperation. By incubating and employing cutting-edge technologies, it has continuously enhanced its innovation capabilities through organic and external means. The Company has built three research bases, namely, Zhifei Lvzhu in Beijing, Zhifei Longcom in Anhui, and Chongqing Zhirui Biopharmaceutical Industry Park, plus an innovative product incubator. Based on these platforms, the Company constantly strengthens its comprehensive R&D strength and makes its product R&D more forward-looking and pertinent. Relying on Zhifei Lvzhu and Zhifei Longcom, the Company makes steady progress in product R&D, especially in the field of disease prevention. On the back of ZhiRui Biopharmaceutical Industrial Park, the Company designs and creates biological technology and products to better protect human health. With a focus on the cutting edge of vaccine technology, the Innovative Product Incubator in Beijing carries out original technological innovation and tackles major technical problems to underpin technical support for more innovative products.

(1) Strengthening technological innovation with a focus on the cutting edge

The Company has nine technology R&D platforms covering various development routes of vaccines. A complete R&D platform strengthens the core capabilities of independent R&D and

greases the wheels of the coordinated construction of R&D matrices, ensuring that all R&D programs progress with effectiveness.

R&D Platforms		
Polysaccharide and Polysaccharide Conjugate Technology Platform	Genetic Recombination Technology Platform	Inactivated Technology Platform
Multipathogen and Multivalent Technology Platform	mRNA Technolog y Platform	Novel Adjuvant Technology Platform
Human Diploid Cell Line Technology Platform	Adenovirus Vector Technology Platform	Outer Membrane Vesicle (OMV) Technology Platform

On the basis of the nine technology R&D platforms, the Company has formed a clear structure and layout of its eight product matrices.

Matrices	Programs under development
Meningococcal Vaccine Matrix	Group $ACYW_{135}$meningococcal conjugate vaccine, recombinant group B meningococcal vaccine (colon bacillus), and pentavalent meningococcal conjugate vaccine.
Pneumococcal Vaccine Matrix	15-valent pneumococcal conjugate vaccine, polyvalent and 26-Valent Pneumococcal Conjugate Vaccine.
Enterovirus Vaccine Matrix	S. flexneri and S. sonnei Bivalent Shigella conjugate vaccine against dysentery, inactivated enterovirus type 71 vaccine, quadrivalent recombinant norovirus vaccine (pichia pastoris), bivalent HFMD vaccine, inactivated rotavirus vaccine, and bivalent recombinant rotavirus vaccine (pichia pastoris).
Tuberculosis Product Matrix	Lyophilized recombinant tuberculosis vaccine (AEC/BC02), BCG vaccine for intradermal injection, and purified protein derivative of BCG (BCG-PPD).
Multipathogen Vaccine Matrix	DPT vaccine (component) and DPT-based combination vaccine.
Emerging Infectious Disease Vaccine Matrix	Recombinant MERS virus vaccine and COVID-19 vaccines.
Adult Vaccine Matrix	Influenza virus-split vaccine, quadrivalent influenza virus-split vaccine, lyophilized rabies vaccine for human use (MRC-5 cell), lyophilized rabies vaccine for human use (Vero cell), recombinant zoster vaccine (CHO cell), respiratory syncytial virus (RSV) vaccine, and Lyophilized Rabies Vaccine for Human Use (ZFB-3 Cell).
Upgraded Vaccine Matrix	Inactivated Japanese encephalitis vaccine and inactivated varicella-zoster virus vaccine.

Matrices	Programs under development
Note: The aforesaid matrices do not include all the programs under development, and details of R&D situation are shown in the relevant contents on R&D programs in this report.	

(2) Expediting innovation-driven product development

The Company adheres to the development principle of "source globalization, targeted pairing, networked R&D, and localized production for all programs." Setting its sights on the global frontiers of science and technology and infectious diseases that burden people, the Company persistently optimizes the allocation of resources for project development, strengthens local commercialization capabilities, and boosts technological innovation to achieve greater benefits. As of the end of the reporting period, the Company held a total of 31 independent development programs in the pipeline (not including novel COVID-19 projects), among which 17 were under clinical trials or application for registration. Details of R&D situation are shown in the relevant contents on R&D programs in this report.

2. Expanding the areas of cooperation

(1) Promoting complementary strengths through exchanges and cooperation

Keeping a close watch on the trends of infectious diseases, the Company is actively building platforms for cooperation and exchanges between industries, universities, and research institutes to open up channels for the integration of theoretical research and technological innovation in the field of biotechnology and advance its exchanges and collaboration with research institutes. Its research department has successively published 72 academic papers on *The Lancet*, the *New England Journal of Medicine*, and other medical journals since 2019, doing its part in the advancement in medicine. The Company collaborates with over 20 research institutes such as the Institute of Microbiology, Chinese Academy of Sciences (IMCAS) and the National Clinical Research Center for Infectious Diseases to carry out joint clinical research and academic cooperation on innovative vaccines, TB prevention and treatment, and other programs.

The Company constantly improves its innovation ability in open cooperation, gathering momentum for high-quality growth. It cooperates with all parties to overcome the challenges that threaten human life and health. In July 2023, the Company and PT BioFarma Indonesia signed a

memorandum of understanding on cooperation for new tuberculosis vaccine products developed by Zhifei Longcom on the international market, marking the official launch of cooperation in the field of tuberculosis prevention and control. In November 2023, the Company, Sun Yat-sen University, and the Sun Yat-sen University Cancer Center inked a cooperation agreement on the R&D of Epstein-Barr virus (EBV) vaccines and commercialization of research outcomes, involving a number of EBV candidates. In January 2024 , Zhifei Lvzhu and Shanghai-based Delonix Bioworks Ltd. ("Delonix Bioworks") agreed to fully leverage their upstream and downstream advantages in vaccine development based on the new vaccine development platform of the Zhifei Lvzhu Innovation Incubator and the synthetic biological vaccine technology platform of Delonix Bioworks.

(2) Investing in incubation programs

The Company incubates and cultivates promising biotechnology and products used for disease prevention and treatment through the ZhiRui Investment platform by equity investment to expand the coverage of its health business. Catering for the needs of the people, Zhirui Investment brings together industry experts and top-tier research teams to achieve R&D and industrialization of cutting-edge biotechnology, with a focus on such fields as tumors, metabolic diseases, cardiovascular diseases, autoimmune diseases, and neurodegenerative diseases, ZhiRui Investment continues. Over the years, ZhiRui Investment has invested in many subsidiaries and built various research and production platforms for monoclonal antibodies, the cellular therapy, and diabetes-targeted biopharmaceuticals, as well as a national center for translational medicine.

In November 2023, the Company signed an equity purchase intent agreement on the acquisition of Chongqing Chenan Biopharmaceutical Co., Ltd. ("Chenan Bio"), with the intention of injecting it into the listed company. Chenan Bio is a biopharmaceutical enterprise that relies on the recombinant protein technology platform financed by Zhirui Investment, focusing on the fields of diabetes, obesity, and other metabolic diseases. The enterprise has developed a well structured pipeline layout of GLP-1 similar drugs and insulin analog. After this deal is successfully completed,

the Company will deepen its penetration in therapeutic biopharmaceuticals through self-developed technologies and product mix, strengthening its overall competitiveness as a result.

3. A sound intellectual property protection system

Protecting intellectual property rights means protecting innovation. The Company highly values patent management and endeavors to accelerate the process of patent application and registration. As of the end of the reporting period, the Company had obtained a total of 50 patents (including overseas patents).

(II) Improving the quality and efficiency and continuously optimizing market service networks

The Company implements its development model featuring "technology & market" drivers, and forms a virtuous cycle where R&D and marketing promote each other to fast-track the entire process from R&D to the realization of market value. The Company always has regard to clients' requirements while keeping track of market demands and changes. It continues to improve marketing management to increase the overall efficiency of marketing efforts.

The Company has set up provincial-level marketing networks to cover 31 provincial-level regions, over 2,600 administrative districts and counties, and over 30,000 primary-level health centers through hierarchical management. The extensive marketing networks make the professional and considerate services of marketing staff accessible to more regions. As such, more people will benefit from the Company's quality vaccines.

After many years of ameliorating the systems of marketing and services, the Company has built an industry leading market team. As of the end of the reporting period, the Company had a large marketing team of 3,990 members. Through systematic training and professional guidance, the professional competence and service awareness of the marketing personnel continue to improve. The Company has established a complete client service system, maintains convenient channels for communication, and makes timely responses to clients' inquiries and proposals. At the same time, the Company offers professional medical support and actively carries out diversified marketing

efforts touting the effectiveness of its products to prevent infectious diseases, with a view to creating greater social value.

(III)Exercising strict quality control

The Company adheres to the core values of "Quality First" and persistently pursues quality products and professional services by improving quality management throughout the lifespan of products. The Company has built a sound quality management system specifying quality-related highlights and responsibilities across different phases such as product R&D, material inspection, manufacturing, procurement, transport, storage, sales, and listing management. In all phases, the standardized and strict management procedures are put in place to ensure traceability of all recorded operations. This also guarantees its quality management system is sound, stable, and endurable.

The Company is capable of mass production, standardized quality control, and commercial development. The Company possesses industry-leading capacity of industrialization in China, and strives for improved productivity and quality control under international standards. Zhifei Lvzhu and Zhifei Longcom, two major research and production centers of the Company, are equipped with modern factories and devices used for vaccine production, as well as the specialized production staff with a strong sense of responsibility. Meanwhile, the Company seals lasting and stable relationships with reliable suppliers at home and aboard to guarantee the manufacturing and supply of products. Since the first batch of lot releases was approved in 2008, the independently developed products of the Company have all been successfully verified.

(IV) Bringing together talents to drive high-quality growth

The Company's core management has the comprehensive ability to perform its duties, rich management and industry experience, and deep insights into disease prevention and control. The management staff remain stable, professional, and efficient. Fully leveraging their expertise in various professional fields, they formulate growth strategies in a timely and targeted manner based on the Company's status quo, industry development trends, and market needs, leading the Company to continuous breakthroughs.

The Company always adheres to the business principle of "prioritizing social benefits over corporate profits." Over the past two decades, the Company has cultivated unique corporate culture, in which "Six Firsts, Six Seconds" is considered as its corporate values. The Company's corporate culture plays a pivotal role in attracting, pooling, and retaining talents with shared values. The Company's sustainable development entails adequate staffing under the direction of multi-faceted incentive policies, the sound benefit sharing mechanism, and the stable talent cultivation strategy. As of the end of the reporting period, there were 6545 employees, an increase of 810 (14.12%) over 2023. To acknowledge the contributions made by devoted employees, the Company makes an active attempt to offer employees with shares. Since the Company went public,it has carried out three employee stock ownership plans to share the fruits of corporate development with employees. This effectively enhances employees' motivation and ensures the future development of Company.

VI. Industrial Situation and Trends

(I)With long-term policy support in place, focusing on quality improvement and meeting regulatory requirements

The year 2023 was the first year to fully act on the guiding principles of the 20th CPC National Congress. Solid steps were taken in the building of a modern socialist country in all respects, China's economy continued to recover, and solid strides were made in pursuing high-quality development. In September 2023, General Secretary Xi Jinping for the first time proposed the "new quality productive forces," charting a new course for China's endeavors to promote scientific and technological innovation, develop strategic emerging industries, and advance industrial development. The biopharmaceutical industry is a strategic emerging industry that has a vital bearing on the national economy and people's well being, economic development, and national security, and is highly strategic, propulsive, and growth-oriented. In the year, China rolled out a draft of policies intended to promote and regulate the development of the biopharmaceutical industry, providing a policy boon for the R&D and production of vaccines, especially innovative vaccines, and the high-quality growth of the industry.

The strategy to build a healthy China was advanced in depth, and solid steps were taken to regulate the development of the biopharmaceutical industry. The report to the 20th CPC National Congress underscored the importance to advance the building of a healthy China, reform the medical and healthcare systems and promote coordinated development and regulation of medical insurance, medical services, and pharmaceuticals. Giving priority to prevention, it highlighted strengthening health management for major chronic diseases and enhancing the capacity for disease prevention and treatment as well as health management. In March 2023, the General Office of the CPC Central Committee and the General Office of the State Council issued the Guidelines on Further Improving the Medical and Health Service System, which proposed to improve the capacity of public health services, and improve monitoring and early warning systems as well as improve capabilities for the early detection of major outbreaks. In December 2023, the General Office of the State Council issued the Guidelines on Promoting the High-Quality Development of Disease Prevention and Control, which proposed to integrate the promotion of high-quality development into local economic and social development plans, and urged relevant departments to perform their duties in disease prevention, control, and protection in accordance with law, and promote the high-quality development of the disease control industry and the realization of the strategic goals of a healthy China.

Technological innovation leads to the transformation and upgrading of the industry and the stable, high-quality development of the biopharmaceutical industry. In March 2023, the Center for Drug Evaluation (CDE), NMPA issued the Working Procedures for Priority Review and Approval of Drug Marketing Authorization (Interim), which proposed to speed up the examination and evaluation of innovative drugs, innovative drugs for children and innovative drugs for rare diseases to be included in the breakthrough treatment drug procedure in order to meet the medication needs of the patients concerned. In May 2023, 14 government departments including the National Health Commission issued the Notice on the Key Points for Correcting Unhealthy Practices in the Field of Pharmaceutical Purchase and Sales and Medical Services in 2023 in an effort to improve the industry governance system to provide a strong guarantee for the high-quality development of the

health industry and the building of a healthy China. In August 2023, the executive meeting of the State Council deliberated and adopted the Plan of Action for the High-Quality Development of the Pharmaceutical Industry (2023–2025), which proposed to focus on improving the resilience and modernization of the pharmaceutical industry and medical equipment industry, enhance high-end drugs, supply capabilities for key technologies and raw materials, and strengthen the areas of weakness in high-end medical equipment. Pharmaceutical R&D and innovation is no easy feat, requiring a long time, huge investment, and full chain support. It is necessary to encourage and guide leading pharmaceutical enterprises and increase industrial concentration and market competitiveness. In December 2023, the Central Work and Economic Conference clarified the need to lead the modernization of the industrial system with scientific and technological innovation, emphasizing the importance of biomanufacturing as a strategic emerging industry. In February 2024, China's National Healthcare Security Administration (NHSA) published the released and draft version of the Notice on Establishing a Mechanism for the Initial Pricing of Newly Marketed Chemical Drugs to Encourage High-Quality Innovation. Based on the opinions sought from the relevant industry associations, the document makes it clear that drug prices should be determined by the market, and stresses the importance to give full play to the role of the government, improve the overall efficiency of new drug networks, support high-quality innovative drugs to realize "returns consistent with high investment and high risk," encourage pharmaceutical enterprises to innovate, and streamline high-quality and innovative drugs. During China's two sessions in 2024, the government work report highlighted the need to foster new growth engines such as biomanufacturing, in an endeavor to modernize the industrial system and develop new quality productive forces at a faster pace. The Company has closely followed the guidance of policy and dedicated itself to consolidating and strengthening its core competitiveness in biotechnology.

(II)The total addressable market is expanding and people's vaccination awareness and accessibility are increasing

The biopharmaceutical industry is at the forefront of science and technology and international economic competition. It not only represents a country's research strengths in the field of life

sciences, but is also an important engine for promoting economic and social development. As the most efficient and cost-effective means of preventing and controlling infectious diseases, vaccines play an important role in preventing infection, re-transmission after infection, and severe illness and death. The global bio-pharmaceutical market is booming, driven by the interplay between the demand for disease prevention and biotechnological innovation, which has led to an upgrading of the vaccine industry. According to Frost & Sullivan, the global vaccine market will reach about USD83.1 billion by 2025 and about USD131 billion by 2030. Technological innovation brings about industry changes, biotechnology continues to upgrade iteratively, and new technology path vaccines represented by nucleic acid vaccines continue to emerge. Multiplexing, polyvalent, innovative vaccines have further stimulated market demand and commercial potential, bringing a wider range of vaccines to humans, as well as safer and more effective disease response strategies. In recent years, the pharmaceutical industry has been frequently involved in mergers and acquisitions with the aim of exploring new areas of industry, integrating advantageous resources, and enhancing enterprise value. The search for quality resources for integration has become an important path for the development and growth of biopharmaceutical enterprises.

China's huge population provides a vast space for the development of the vaccine industry, and the Chinese market has tremendous demand for health products. With the continuous development of China's economy and society, structural changes such as urbanization, population aging, and the expansion of middle-income groups have stimulated greater health needs. According to Frost & Sullivan data, the size of China's vaccine market will exceed RMB340 billion by 2030, growing at a CAGR of 15.95% during the 2020–2030 period. This equates to faster growth than the global size and promising development trend. People are more concerned about health and more acceptable to vaccine products, which is conducive to the popularization of vaccines and the development and application of innovative technologies. In the past, vaccination was mainly targeted at preventing infantile diseases in contrast with lower coverage of vaccines for adults. Now that HPV vaccines and herpes zoster vaccines are more known to the public, it is generally acknowledged that vaccination helps prevent diseases. The per capita expense in China's vaccine market is much lower

than that in developed countries. Higher levels of personal consumption and R&D innovation will certainly lead to a burgeoning vaccine industry, and the enormous potentials of the vaccine market will be further tapped into in the future. In addition, China's biopharmaceutical industry is thriving and now has strong technical strengths, a deep talent pool, and a complete innovation industry chain. As domestic vaccine companies progress in R&D, more homegrown innovative vaccines will be approved in batches. The vaccine shifts from univalent to polyvalent and from unipathogen to multipathogen can better meet the public's needs for vaccines, expand the populations applicable to vaccines, and help exploit the growth potential of the market. Finally, China's vaccine regulatory system continues to align with international standards, and domestic enterprises actively implement strategies to export their products overseas. According to data from Frost & Sullivan reports, vaccine exports from China increased at a compound rate of about 50.7% during the 2020–2022 period. China's vaccine regulatory system was evaluated twice by WHO in 2011 and 2014. On August 23, 2022, WHO announced that China passed the National Vaccine Regulatory System assessment to ensure controlled quality of vaccines produced, imported, or circulated in China. They are safe and effective, and this has strengthened the global foundation for China's vaccine exports.

VIII. Development Strategies and Plans for the Company

(Ⅰ) Future development strategies of the Company

The biopharmaceutical industry is a strategic industry that has a bearing on the national economy, people's wellbeing, and national security, and is an important foundation for the realization of a healthy China. In recent years, the global biopharmaceutical industry has accelerated its transformation, while China's biopharmaceutical industry has flourished, with significantly enhanced innovation abilities. Oriented toward global frontiers of science and technology, toward major national needs, and toward the life and health of the people, the industry has accelerated the development of core technologies and continuously improved the innovation system and innovation ecosystem. The national economy has shifted to the stage of high-quality

development, requiring the biopharmaceutical industry to improve the quality, increase the efficiency, and accelerate fostering new growth drivers to provide key support for the creation of a new development pattern.

Zhifei has always adhered to the mission of "Safeguarding human health, by preventing the unseen & treating the ailing," implemented the development model featuring "technology&market" drivers, dived deep in the field of biopharmaceuticals, and continuously strengthened its core competitiveness and resistance to risk. As China is working to foster the new growth driver of biomanufacturing, the Company will seize the development opportunities, strengthen its advantages, and shore up weaknesses to stay ahead of the competition and make greater contribution to the accelerated development of new quality productive forces.

1. Consolidating its competitive advantage through "technology & market" drivers

Since its inception, the Company has focused on consolidating its core business in the biopharmaceutical industry and developed core competitiveness featuring "leading innovation and R&D abilities, professional market support." It has emerged as one of the leading biopharmaceutical enterprises in China. In order to further consolidate its competitive advantage and strengthen its position as a market leader, the Company will continue to improve governance to underpin the foundation for development, uphold the development model featuring "technology&market" drivers, improve independent R&D capabilities, and enhance marketing strengths to achieve healthy and sustainable development.

2. Expanding business presence through coordinated development of "prevention and treatment"

The coordinated development of "prevention and treatment" is the foundation of the Company to "safeguard human health." In terms of the layout of therapeutic biopharmaceuticals, the Company and the controller Mr. Jiang Rensheng jointly invested in the establishment of Chongqing Zhirui Investment Co., Ltd. in 2014, which has successfully incubated a number of innovative technology companies. It has built R&D and production platforms covering the treatment of autoimmune diseases, metabolic diseases, tumors, cardiovascular diseases and other biological

drugs. The investment company will continue to pool the internal and external resources of the Group and help the listed company acquire advanced R&D technologies, innovation patents, and high-quality products through investment, mergers and acquisitions, and other methods, so as to expand the Company's business presences and enhance its overall competitiveness.

3. Practicing the internationalization strategy at a deep level to be a world-class enterprise

As the demand of the global biopharmaceutical market shows a rapid growth trend, the Company practices its internationalization strategy at a deep level to "bring in" overseas quality resources while having its own incubated products "go global." The Company will strengthen technical exchanges and cooperation, deepen interaction and mutual trust with all parties, continuously build growth momentum, develop more innovative products to meet global health needs, and make high-quality products accessible to more people.

(Ⅱ) Operating objectives for 2024

The year 2024 is critical for achieving the goals set in China's 14th Five-Year Plan. China's development environment this year will continue to feature both strategic opportunities and challenges, with favorable conditions outweighing unfavorable ones. The underlying trend toward economic recovery and long-term growth remains unchanged. Faced with the complex and changing macro environment and increasingly fierce market competition, the Company will comprehensively implement the guiding principles of the 20th CPC National Congress and the Second Plenary Session of the 20th CPC Central Committee, grasp favorable opportunities, and make good use of favorable conditions. It will continue to enhance its capabilities for scientific and technological innovation, bolster self-driven development, and contribute to economic development and scientific and technological breakthroughs.

1. Enhancing the ability to innovate, with a focus on the core business

China's bioeconomy is in a critical period of transition and upgrading, and China is working to transform itself from a major pharmaceutical country to a pharmaceutical powerhouse. As a biopharmaceutical high-tech enterprise, the Company adheres to its innovation strategy of "putting

independent R&D at the core, conducting cooperative R&D as a backup, engaging in investment and incubation as a supplement." Strengthening talent training, optimizing platform support and creating a variety of advantages effectively improve the Company's ability to innovate and enhance innovation efficiency. At the same time, the Company relies on the Beijing Innovative Products Incubator to carry out the underlying technology innovation, using innovative technology to continuously improve the Company's R&D capabilities. In 2024, the quadrivalent influenza virus-split vaccine, which has been reported for production, and the lyophilized rabies vaccine for human use (MRC-5 cell), which has completed its clinical trials, are expected to enter the registration and declaration stage. Several preclinical programs with competitive potential are expected to formally enter the clinical trial stage. Progress will continue at speed in R&D pipeline activity.

2. Underpinning the foundation of development through modern corporate governance

Modern corporate governance is the cornerstone of the healthy development of enterprises. The Company has a relatively complete governance structure and management system, laying solid groundwork for its stable operations and long-term development. On this basis, the Company continuously strengthens the construction of corporate culture that emphasizes "standard, integrity, and quality," making it the guideline for the Company's practical actions. In 2024, the Company will continue to strengthen standard operations and introduce advanced modes of management while further improving its quality and investment value. It will vigorously promote the construction of the ESG system to achieve sustainable development.

3. Striving for breakthroughs in the improvement of quality and efficiency

The Company's competitive advantages embody capturing industry trends, discovering market needs, and responding proactively in a timely manner. The Company will rely on its existing platform to continuously consolidate its core competitiveness of "leading innovation and R&D abilities, professional market support." In 2024, the Company will continue to give full reign to its brand, channel, and service advantages to disseminate the value of the HPV vaccine, so that more women can benefit from HPV vaccination as early as possible. In the first year of being a sales

agent of GSK's recombinant herpes zoster vaccine, the Company will work hard to achieve its year-round goals for promotion, laying a solid foundation for long-term cooperation between both parties. Meanwhile, the Company will actively carry out academic communications and public outreach programs to promote its independently developed products, especially the TB-targeted products. In addition, the Company will actively work toward the acquisition of Chenan Bio, integrating high-quality pharmaceutical enterprises incubated by the Group, so as to expand its product line and business into the therapeutic pharmaceutical field. In the new stage of development, the Company will by no means be complacent. It will continue to promote the quality and efficiency of its own development while integrating its vision for enterprise growth into the overall development of the country.

4. Enhancing team building and motivating talents

Talents form the core driving force of corporate growth. Only by attracting more aspiring talents with shared ambition can the Company keep on thriving. In the wake of the Company's soaring staffing level in recent years, it is imperative that the Company should improve the mechanisms of talent cultivation, incentives, and corporate cultural undertakings to fulfill the work of staff management. In 2024, the Company will adhere to the core recruitment values of "maintaining fairness in talent selection" and continue to practice the recruitment policy featuring open-mindedness, fairness, and diversification, so as to expand channels for the introduction of high-caliber talent and increase efforts for the building of teams. The Company will continuously refine the promotion and incentive systems for talents to create ample space for their growth. In cultivating a new generation of talents, the Company strives to build a team of high-caliber talents with solid expertise and vast experience in the pharmaceutical and biological fields.

IX.Risks and Countermeasures

(I) Policy risk

As one of China's emerging strategic industries, the biopharmaceutical industry receives great attention from government departments at all levels, and the bio-vaccine industry in particular is a

strictly regulated industry.Zhifei strictly implemented various systems in accordance with the Vaccine Administration Law and gradually improved its management, with the aim of enhancing its operation efficiency. However, with the rapid development of the economic society and increasingly stringent regulations, the subsequent policies may bring different changes in and have an impact on the production, sales and circulation of the Company. The Company pays close attention to the changes in policies and make timely adjustments to its business strategies to comply with the applicable regulations and regulatory

(II) Nonperforming debts

With the increase in sales volumes and the expansion of business operations, sales of agency products and independently developed products continues to grow and the Company's accounts receivable are also growing steadily. The Company attaches great importance to risk control in advance of vaccine sales, follow-up on contract performance during the event, and effective communication after the event, and takes measures such as payment collection assessment and standard agreements to reduce the risk of bad debts.

(III) Talent management risk

As of the end of the reporting period, the Company has a total of 6545 employees. The constantly growing talent team is the solid foundation for the Company’s business implementation in R&D, production and operation. However, the increasing scale of employment poses certain management risks. The Company strongly advocates the talent selection principle of “prioritizing integrity over capability”, and integrated corporate culture into employee induction training and daily management to ensure team’s stability and code of conduct. At the same time, the company adopts a rich and diverse incentive mechanism to rejuvenate the vitality of the team.

(IV) Risks of public opinion response

With the facilitation of vaccination and the improvement of national awareness of disease prevention, the scope and quantity of vaccination products are steadily increasing, and there is a possibility of adverse reaction risks and thus triggers public opinion risks. Once a public opinion

incident occurs, it will have a great impact on the vaccination work and the development of the vaccine industry. With a strong sense of responsibility, the Company keeps a close eye on public opinion related to it and puts in place mechanisms for responding to and managing such opinion, so as to build a good brand image and sustain its growth.

(V)Risk of hesitation to vaccination

Despite vaccination is the most economic and effective way to prevent infectious diseases, the unwillingness or refusal of vaccination ("hesitation to vaccination") may reverse the progress of vaccination against preventable diseases, and may cause a downturn in sales in the vaccine industry for a certain period of time, thereby affecting the Company's performance. For a long time, the Company has consistently and continuously adhered to standardized operation, continued to invest in the academic promotion of vaccine value, actively participated in the popularization of vaccine knowledge and the cultivation of vaccination notification and demand, and promoted the public's rational awareness of vaccination.