

# Business Research and Investment Value of Asymchem

Yuqian Li \*

Department of business, Sichuan Normal University, ChengDu, China

\*Corresponding author. 2020020579@stu.cdut.edu.cn

**Abstract.** With the COVID-19 background in the world, the higher level of the aging population and higher pressure in daily life. Whether it is COVID-19 drugs or other diseases that are easy to get in the elderly, and some other diseases have a higher incidence rate, so the demand for the drug was higher than before, and the business of CDMO company is to produce the API to the company which produces the finished drug. So, the whole industry has obtained a significant improvement. I use the SWOT analytical method to research whether the Asymchem company is a company with good operating and financial performance. And obtain the research report from the Research reports of securities companies and industry white papers. As the result, the operating and financial performance of Asymchem are both great, and there is a continuing trend showing the CDMO industry and Asymchem would get great development in the future.

**Keywords:** COVID-19; Asymchem; SWOT.

## 1. Introduction

As mentioned in the Abstract, the COVID-19 background in the world, the higher level of the aging population, and higher pressure in daily life [1-2]. Whether it is COVID-19 drugs or other diseases that are easy to get in the elderly, some other diseases have a higher incidence rate, the company in this industry could have a better chance to develop.

In the article, I research whether the operating and financial performance are great in the past 3 years (2019-2021) through the SWOT business model, which analyze the company from two perspective and four aspects. The two perspectives are the internal and the external of the company and the four aspects are the strength, weaknesses, opportunities, and threats of the company, And the article is divided into 5 parts, which are the significance of corporate finance and the strength, weakness, opportunity, threat of the company. As a result, I get the conclusion that the company has an advantage in research and development, customer service, and corporate social responsibility.

## 2. Firm description

Asymchem is a world-leading, technology-driven CDMO one-stop integrated service provider. Accelerate the clinical research and commercial application of innovative drugs by providing domestic and foreign pharmaceutical companies and biotechnology companies with one-stop CMC services for the entire life cycle of drugs [3-6], and efficient and high-quality R&D and production services. According to Frost & Sullivan's statistics by revenue in 2020, the company is the fifth largest CDMO company in the world for innovative pharmaceutical raw materials, It is the largest commercial-stage chemical drug CDMO company in China, accounting for about 22% of the market share. The company has become an indispensable part of the global industrial chain of innovative drugs by virtue of its profound industry insight, mature R&D and production capacity, and good customer reputation accumulated in the industry for more than 20 years. The main business of the company is the Small molecule CDMO business and there are 5 new businesses which are the Chemical macromolecules business segment, preparations, biosynthesis technology, clinical research services, and biomacromolecules CDMO [7-9].

The share price of Asymchem has increased from 45 yuan per share in 2019 to 380 yuan per share in 2021, raising 744%  $[(380-45)/45*100\%]$ . And the revenue has grown from 2,459,985,533.80 in 2019 to 4,638,834,177.53 in 2021, about 88.57% in 3years, which is the main factor to prove the performance of Asymchem is very good. The profit of Asymchem is also a high level, the gross profit

margin kept a trend of 44%-46% in these three years, which demonstrates that cost management is well down and kept.

The company also has High liquidity and efficiency, the current ratio increased from 3.25 in 2019 to 4.68 in 2021 and the quick ratio has increased from 2.36 to 4.04, so the liquidity is great for the company and continued to improve. The financial gearing is quite of the company, being 16.8% which is lower than 27.83% in Porton. This shows that liability finance is relatively low in Asymchem, and the pressure to pay the interest is also low.

The company has high industry experience in the management team and a high and diversified talent pool. There is 149 personnel experienced in overseas multinational companies and 3,381 analysts of R&D department, accounting for 47.45%, which is more than Porton, which just has 1200 people. In 2017, the proportion of R&D personnel to the company's employees surpassed that of WuXi AppTec's subsidiary Hequan Pharmaceutical, ranking among the best among peer companies. Moreover, the proportion of employees with a bachelor's degree or above in the company also surpassed that of Hequan Pharmaceutical in 2018, ahead of other competitors. The high-quality personnel composition has laid a solid foundation for Asymchem's future development and paved the way for the company's technological innovation.

Next, to analyze the investment value of the company, we conducted a SWOT business model analysis to judge the investment value.

### **3. SWOT Analysis**

#### **3.1 Strength**

##### **3.1.1 Company development time and market share and customer relationship**

Asymchem has developed for more than 20 years but Porton just developed 17 years, Asymchem is the Fifth Innovative drug API (active pharmaceutical ingredient) CDMO company and the market share is 1.5% compared to the first one is 2.9% and just 0.34% of the total market. It is the largest commercial-stage chemical drug CDMO company in China, accounting for about 22% of the market share. Since the company was established, the company has been adhering to the customer-centered service concept. It is not only a customer outsourcing service provider but also a customer-trusted partner. Of the world's top 20 pharmaceutical companies by 2020 sales, they have established partnerships with 15 and served eight consecutive companies for more than 10 years. And because the company focuses on the demand of the customer and obtains long-term coordination, which can bring a more stable source of income.

##### **3.1.2 The company has invested hugely in R&D**

Since the company was established, the company has been focusing on independent research and development innovation, and the company has maintained a high investment in research and development. In 2021Q1-Q3, the company's R&D expenditure was 257 million-yuan, accounting for 8.8% of its revenue. According to data from Frost & Sullivan, Asymchem is one of the companies with the highest proportion of CDMO R&D investment in the world. Compared with comparable companies, the company's R&D investment accounts for an industry-leading ratio, which has established the company's leading technology platform and technical barriers. And the company has a number of patented technologies. The company has new patents every year, and the cumulative number of patent applications is growing steadily. As of July 29, 2021, Asymchem's cumulative number of patents in China has reached 407. At the same time, the company has published a total of 27 papers in international industry-leading journals in the field of natural sciences such as Nature, Science, and Journal of the American Chemical Society. Additionally, in 2017, the proportion of R&D personnel to the company's employees surpassed that of WuXi AppTec's subsidiary Hequan Pharmaceutical, ranking among the best among peer companies (Fig 1-2).

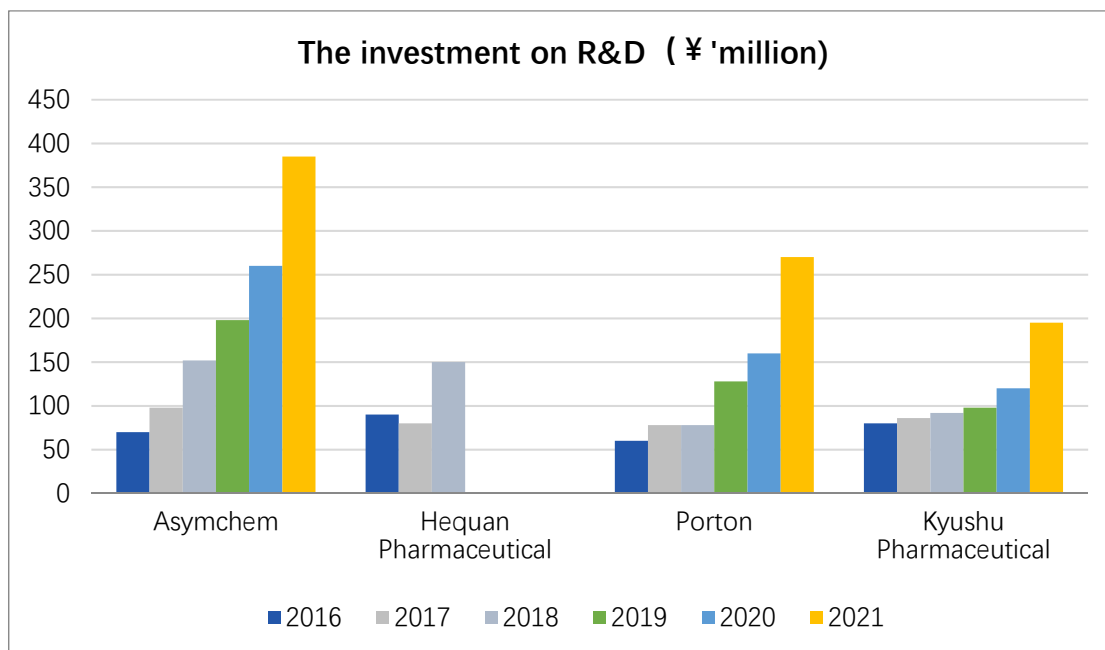


Fig 1. The investment in R&D

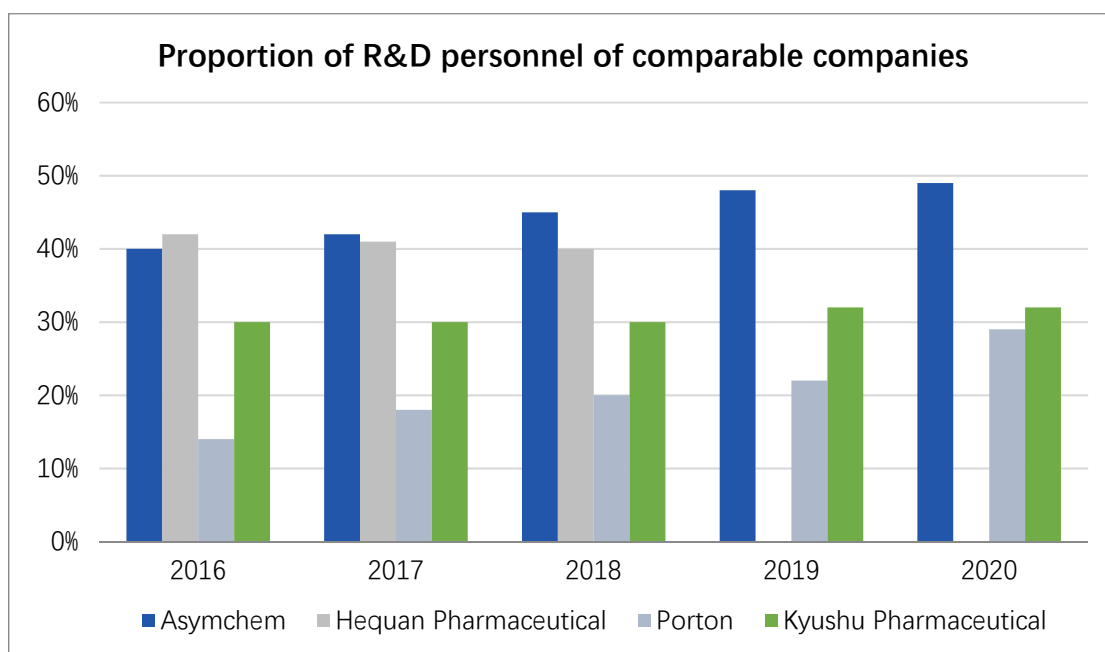


Fig 2. Proportion of R&D personnel of comparable companies  
Data source: Wind and annual report

Moreover, the company has made a continuous investment in continuous reaction technology, and it is one of the few enterprises in the world to extend continuous reaction technology in the mass manufacturing industry. Taking pen antibiotics as an example, 4-AA (4-acetoxyazetidinone) is an important starting material for the synthesis of penem antibiotics. To synthesize penem antibiotics key intermediate EP (meropenem intermediate) a traditional batch reaction requires 15 steps of the batch reaction, compared with that, Asymchem has developed a brand new EP synthesis route - starting from 4-AA, only three steps are needed to synthesize penem antibiotics. The key intermediate EP has become the shortest synthetic route in the world so far. Through the combination of development modules and automatic control, the large-scale production from 4-AA to EP is realized, and the "end-to-end" full continuous green production is truly realized.

In addition, Asymchem has made big progress in Biozyme catalysis. the company has been providing biosynthesis solutions since 2015. Currently, it has applied for and obtained 53 biotechnology-related patents in many countries, including patents related to enzyme evolution, enzyme immobilization, and enzyme-catalyzed synthesis processes. The company has established an enzyme library since its listing. The types included have increased from 250 to more than 1,600 now, and the services provided include a series of services such as enzyme screening, evolution, and production. As the showing of the progress, The technology independently developed by Asymchem has been successfully applied in the commercial production of statins, glitazones, penems, and other important drugs. Taking a statin drug as an example, the company produces engineered enzymes with independent intellectual property rights through genetic engineering and biotransformation technology for the production of such compounds. By optimizing the production process, the production cost has been greatly reduced, and the technicians have reduced the production cost of this statin by 40% and the cost of this gliptin by 60%-70%. which can help the company to have bigger revenue and profit, which can make the operating and financial performance better.

### **3.1.3 A strategic acquisitions**

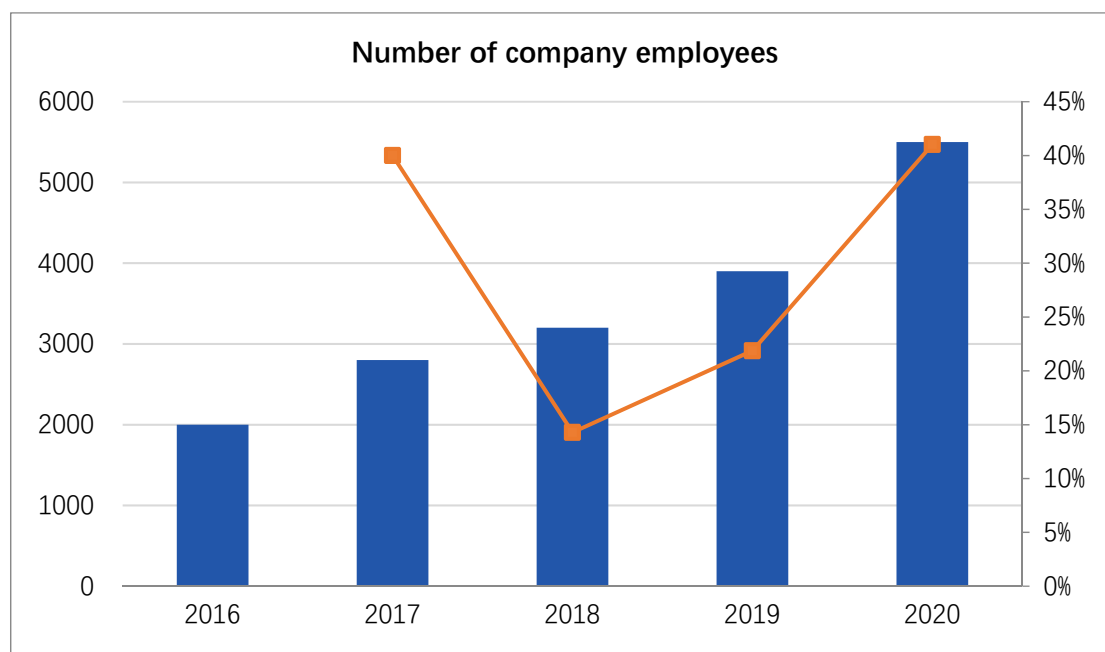
In addition to their own research of this technology, In August 2020, the company invested and became a major shareholder in Snapdragon Chemistry, founded by two leaders in continuous flow technology, Tim Jamison (Professor at MIT) and Aaron Beeler (Professor at Boston University Department of Chemistry), He has made many breakthrough contributions in the basic research of continuous reaction, automatic control, and equipment design, etc., and has been widely concerned and recognized worldwide. Through cooperation with Snapdragon, we will further absorb the process development ideas, advanced concepts, and automation technology of continuous reaction.

### **3.1.4 Great corporate social responsibility**

On the other side, the company also has a good corporate responsibility, in 2021, Asymchem fully shows its great response in the process of the rural revitalization project in China. And this can help the company has a better reputation and then the company can get contract easier and attract more investment it would be easier to borrow a loan from the bank, which could give enough financial support to the company and help Asymchem expand its business and gain more market share.

### **3.1.5 The good management team and more talented employees**

The founding team, led by Dr. HAO HONG, has the long-term pharmaceutical industry experience and extensive expertise. The core management team has an average of 20 years of industry experience, and most team members work together for more than 10 years. And the company has High industry experience in the management team and a high and diversified talent pool. There is 149 personnel experienced in overseas multinational companies and 3,381 analysts of R&D department, accounting for 47.45%, which is more than Porton, which just has 1200 people. Moreover, the proportion of employees with a bachelor's degree or above in the company also surpassed that of Hequan Pharmaceutical in 2018, ahead of other competitors. The high-quality personnel composition has laid a solid foundation for Asymchem's future development and paved the way for the company's technological innovation (Fig 3).



**Fig 3.** Number of company employees  
 Data source: Wind and annual report

### 3.1.6 Team of experts and consultants

In addition, the company has a team of top experts and consultants at home and abroad and has established the "Asymchem Board of Scientific Advisory Committee (BSA)" and "Asymchem Board of Development Strategy Expert Committee (BDSA)", among which there are many Nobel Prize winners in chemistry and famous research institutes. Professors, senior executives of multinational pharmaceutical companies, authoritative experts, scholars, and industry leaders in related fields of the domestic and foreign pharmaceutical industry. BSA aims to provide world-class technical guidance for the company's development, participate in the review, appraisal, and acceptance of the company's R&D projects, put forward suggestions on research, development, promotion, and application of advanced technologies, organize and guide relevant technical personnel to carry out technical research, and further promote the company. Towards the pinnacle of the world's most cutting-edge pharmaceutical technology. BDSA aims to develop around the company's domestic market, give full play to the industry advantages of experts and scholars, form intellectual synergy, and improve the professional and scientific level of the company's strategic decision-making.

### 3.1.7 Good motivation scheme

The company has a good motivation scheme, Asymchem has established a long-term and effective incentive mechanism in continuous development. Talent is the key to the company's development. Since 2016, the company has launched an equity incentive plan almost every year, which has continuously expanded the coverage, mobilized the enthusiasm of the management and all employees of the company, and established a long-term incentive mechanism to attract talent, and the stability of the core team played a very important role. Because the company has implemented Long-term equity incentives for years and the culture of the company is people-oriented, so the company can attract a large number of talents. And these skilled employees can promote the research and development of Asymchem and motivate the engineers and experts to develop new drugs because there are sufficient economic benefits for them.

### 3.1.8 Cover the currency risk well

The company has covered the currency risk well, With the continuous growth of the company's overseas business income, to effectively avoid foreign exchange market risks, prevent the adverse impact of exchange rate fluctuations on the company, and reasonably reduce financial expenses, the

company, and its subsidiaries moderately carry out foreign exchange derivatives trading business for capital preservation, which is conducive to strengthening the company's foreign exchange risk management and control capabilities. The foreign exchange derivatives transactions carried out by the company include foreign exchange forwards, structured forwards, structured swaps, and other related businesses. The foreign exchange derivatives transactions carried out by the company are aimed at locking in costs, and avoiding and preventing risks such as exchange rates and interest rates. The foreign exchange derivatives trading products carried out by the company are all simple foreign exchange derivatives closely related to its own main business, and the foreign exchange derivative products and the basic business are matched with each other in terms of variety, scale, direction, duration, in order to comply with the company's prudent and stable risks management principles. Actually, this strategy is very successful, the Exchange gains and losses have decreased by 83.02% from 2020 to 2021, which saves a huge cost for the company, and Asymchem can make a higher profit and reduce the currency risk.

## 3.2 Weakness

### 3.2.1 Capacity over expanded

The Capacity has expanded higher but there might do not have enough contracts to bring enough revenue to the company. The company has established Tianjin, Shanghai, and Suzhou as R&D centers, covering Liaoning Fuxin, Jilin Dunhua, Jiangsu Taixing, Shanghai Fengxian, and other regions as a strategic framework for small molecule R&D and production bases and biomacromolecules bases. As of the reporting period at the end of 2021, the volume of the company's traditional batch reactors was about 5,300m<sup>3</sup>. At the same time, with the launch of continuous reaction workshops and equipment, the company's continuous production capacity increased by nearly 400% year-on-year, which further accelerated the release of production capacity and improved production efficiency. In terms of emerging production capacity, the chemical macromolecule project is expected to complete the construction of a research and development center of about 12,000 m<sup>2</sup> and a GMP production plant of about 9,500 m<sup>2</sup> by the end of 2022; the main construction of the synthetic biotechnology research and development center, production workshop and supporting auxiliary projects is planned to be completed in the fourth quarter of 2022. In terms of biological drugs, it has established an antibody and ADC drug R&D and production center in Shanghai Jinshan, and established a plasmid and mRNA business R&D and pilot test base in Suzhou. In the first half of 2022, the company's capital expenditure reached 10.17 billion.

### 3.2.2 COVID-19 influence

In fact, the expansion of the capacity is mainly because of the Covid-19 drug orders(paxlovid) from Pfizer and two others. However, global demand for Pfizer's Covid-19 oral drug Paxlovid unexpectedly declined due to complex eligibility requirements, fewer Covid-19 tests, the perception that Omicron virus is not serious, and potential drug interactions. In 2021, the company has take 3 big orders, however, the reality is that as of the first half of April in2022, Pfizer had delivered 1.5 million courses of Paxlovid to the U.S., and more than 500,000 courses of Paxlovid are still available in pharmacies across the country. In addition to the US, Paxlovid's usage in Japan, South Korea, and the UK has not been as good as expected, with usage accounting for less than a third of deliveries. So the expansion of the capacity is not so rational because the demand of the paxlovid has not achieved the expected.

### 3.2.3 Business model simple

The business model is relatively simple, according to the company's performance forecast, in 2021, the company is expected to achieve an operating income of 4.505-4.662 billion yuan, a year-on-year increase of 43%-48%. According to the company's latest statistics, the company's revenue mainly comes from small molecule clinical stage CDMO and small molecule commercial stage CDMO business. In 2021H1, the revenue of the two will account for 47.10% and 44.74%, respectively, and emerging business revenue will account for 8.18%. About the business Asymchem, Small molecule

CDMO is the core business of Asymchem, and it is also an advantageous business. In the commercialization stage in China, the market share of chemical drug CDMOs has reached 22%, ranking first. Compared with small-molecule CDMO, the macro-molecule CDMO market has more room for growth and a faster growth rate, but Asymchem's investment in the macro-molecule CDMO field has just started, and the emerging service revenue in 2021 will be 398 million yuan, a year-on-year increase 67.43%, accounting for only 8.57% of total revenue. And because the structure of macromolecular biopharmaceuticals is relatively complex and has poor stability. It is more difficult to produce, prepare and store, and it is difficult to break through the bottleneck of production capacity. The technical barriers are significantly higher than those of small molecules, and the degree of reliance on integrated CXO is also higher.

### **3.3 Opportunity**

#### **3.3.1 Industry development**

According to Frost & Sullivan's report, the global CDMO market will be worth \$55.4 billion in 2020, and the compound annual growth rate of the global CDMO market will reach 11.93% from 2016 to 2020. , the global CDMO market will reach 106.8 billion US dollars in 2025, and the future market space is huge. So the market will continue to increase and which means there will be more demand for innovative drug and the number of companies will also increase, as the top five company of the industry, the company have a better reputation and capability than Porton and other companies, which means Asymchem can gain more revenue and have a better development.

#### **3.3.2 Gene therapy**

According to the YiKai capital company (2022), in recent years, many companies began to Deploy gene therapy such as Pardon and WuXi app tec, and this is a chance for Asymchem to enter this new market and the revenue would also increase because of the new business. However, there would be costlier to buy a fixed asset and hire some technical experts which could also produce many salary costs. In conclusion, although this is a chance, which is also a potential expenditure.

### **3.4 Threat**

#### **3.4.1 Competitors and new entrants**

The original competitors because of the high growth rate of this industry, and because the threshold of the CDMO industry is relatively high, building a comprehensive technology platform is the only way to engage in the gene therapy CDMO business. (Tebon securities 2022) The construction of a technology platform has obvious industry barriers, which not only require long-term investment in technology research and development and the construction of a talent team but also require the accumulation of technical know-how and process experience through a large number of project practices. With the trend of accelerated development of the CDMO industry in China, the construction of a technology platform is of decisive significance for seizing market opportunities and sustainable development of the company. The current market conditions, Asymchem's main competitors have Porton, Lonza, Catalent, HeYuan biological, and Pharmaron, because their main target markets are in the United States, the more intense competition between each other, and the main business is based on small molecule CDMO and gene therapy, so the competition between each other will be more. Which could result in the current customers of the company choosing other companies and terminating the coordination with the company, but Asymchem has coordinated with its customer for more than 10 years, so this is not a very big problem for the company.

#### **3.4.2 Environment problem**

The environmental problem should be highly focused in this industry, the CDMO industry to produce the innovative drugs needed to deal with several environmental problems like Sewage treatment(Tianjin Environmental Protection Bureau, 2019), waste gas treatment( Ministry of Ecology

and Environment, State Administration for Market Regulation, 2019 ) , Hazardous waste incineration pollution ( Ministry of Ecology and Environment of the People's Republic of China, 2020 ) and Boiler air pollution treatment(Ministry of Environmental Protection of the People's Republic of China, 2014), if the company cannot deal with this problem well, the reputation of the company would be affected, and which would result in the company cannot receive enough orders. But in the annual report of the company, the company deals with the environmental threat well, so there will not be any problem with reputation. And the company can continue to get orders and gain revenue.

#### 4. Conclusion

After my research, Asymchem is a very good company with good operating and financial performance, and the company is valuable to invest in because the investors can gain more returns in the future due to the high potential and market share in the industry.

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