Analysis of Demand for China's Commercial Health Insurance from the Perspective of Loss Aversion

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Abstract. China's health insurance industry has been developing continuously since its emergence in the 1980s, but at this stage, China's social security system is still at a relatively low level of development, and people's expenses incurred in a variety of medical needs cannot be given by the current social security system, while commercial health insurance has made a good supplement to this, ensuring people's practical interests, and is also its biggest competitive advantage. This paper lays out an overview of its market size, product structure and security degree, followed by effective suggestions of improvement in relation to the behavioral economical concept of loss aversion. The irrational misunderstanding of health insurance and the resulting problems of lack of insurance, insufficient coverage, excess insurance and double insurance have been puzzling the sustainable and healthy development of health insurance, which is also a hot issue of general concern at home and abroad. According to analysis of possible improvement measures about the effect of loss aversion on citizens, optimizing claims and modifying health service models in a desirable way will mitigate the loss aversion effects when purchasing commercial health insurance.

Keywords: Commercial health insurance, loss aversion, risk aversion, public health.

1. Introduction

Health is an important symbol and implication of national prosperity. The quality of healthcare services has significantly increased, and China's health industry has made new remarkable advancements. The major health indicators of Chinese citizens are generally better than those of middle and high-income countries on average. However, China's population growth has drastically lowered over the past few years and is expected to have negative growth after 2030, when a quarter of its enormous population will have already reached the age of retirement.

In order to tackle this potential threat to the overall wellbeing of the citizens, the Chinese government launched the blueprint for the "Healthy China 2030" strategy in 2016, where an important sector of it discusses the need to promote commercial health insurance and establish effective complementary links between basic medical insurance, major illness insurance and more with charitable assistance.

Between 2011 and 2020, China's health insurance premium income surged fast, growing from 69 billion to 817 billion yuan at a compound annual growth rate of more than 30%. Owning to the continuously aging population due to low fertility rate, the current social and consumer platforms' availability of a wide range of information for insurance underwriting, risk management, sales, and the continuously growing capital market investment in related industries, there appears to be general agreement that China's commercial health insurance sector still has a lot of space to grow in the near future. The current need to expand the insured population is hindered by many effecting factors, the paper would focus on the analysis of citizen's behavior in relation to the loss aversion effect, and investigate potential methods on expanding coverage through mitigating the mentioned effect. With an expanded insured population and the support of optimized service model and products, China can be one step closer in achieving its goals for "Healthy China 2030", working towards further prosperity.

2. Literature Review

The loss aversion effect was first identified by Tversky and Kahneman, describing how people make decisions under risky situations - the investment with lesser risk will be chosen by a risk-averse person when given the option between two investments with the same projected return [1]. In order to have a clear and thorough understanding of citizen's behaviors in the purchase of commercial health insurance, it is essential to distinguish the differences and correlations between the incentivizing and disincentivizing bias incorporated. In this case, the idea of risk aversion needs to be specifically discussed in comparison with the main subject of loss aversion. Frederica Klaus's study on risk aversion's impact provided a detailed explanation and uncovered the mechanisms behind the two biases: loss aversion is a pattern of behavior when people are both risk averse and risk seeking at the same time, whereas risk aversion is the overall tendency toward safety and the possibility for loss. (Risking potential benefit to prevent current loss) [2].

Mark J. Browne tests the personal health insurance market to determine whether there is adverse selection. There is evidence to support the adverse selection in the personal insurance market, since low-risk individuals purchase less insurance in the individual market than in the group market [3]. Using individual-level data and the employer level, Kosali tested the possible impact of the reform in the past decade in the market for health insurance offered by employers and discover that the reform has reduced the average employer coverage of workers in small companies by less than two percentage points. Low-spending persons' coverage through their employers has drastically declined in small businesses, whereas high-spending individuals' coverage has marginally grown in some parameters [4].

Different countries may employ various methods to stimulate the health insurance market. The United States known for its decently developed insurance sector would be the main country compared to in this paper to provide a better perspective in China's international position of its status in the insurance industry. Wang Ming in 2015 shared the valuable investigation results and insights on international commercial health insurance companies, which clearly presented the stages of where different countries are at for their developments [5]. It is also notable that the United States is almost the only country that largely depends on private insurance industry to provide interim healthcare for its citizens. According to Alan, the basic assumption is that Competitive pressure between private insurance firms will lead to more successful outcomes [6]. Different countries have different goals and aims to achieve through the improvement of health insurance markets as well, in this study identified that China's current aim would be to pursue the strategy of "Healthy China 2030", which holistic overviews and essential details are provided [7]. CDRF's reports on China's commercial health insurance further provided detailed data and analysis regarding a full aspect of the industry [8].

The citizen's psychology and the nudges and biases brought by loss aversion is vital to be investigated in applicable examples in real life. Dafny and Leemore found that after experiencing a positive profit shock, employers are reluctant to replace insurance companies, which provides an opportunity for in-service insurance companies to negotiate greater price increases in the absence of competition [9]. Mohammed et al. on measuring the degree of loss aversion and applying observable features also contribute to the establishment of a large amount of the concepts mentioned in this paper [10]. The detailed diagnoses of the concepts made it feasible to link with insurance penetration and the relevant solutions from the approach of loss aversion

3. Situation and Growth of China's Commercial Health Insurance

3.1. Market Size

In recent years, commercial health insurance has grown rapidly. As a supplement to China's medical insurance system, health insurance has experienced 10 years of rapid growth, and its market share has continued to increase, ranking first among the major insurance types.

According to Figure 1, by 2020, commercial health insurance premiums had reached 817.3-billion-yuan, accounting for 18% of China's total annual premium income from 7% in 2013. The proportion of health insurance premium income in life insurance has climbed from 12.2% in 2014 to 25.4% in 2021, with only a decline in 2017. Data from the state banking and insurance regulatory bureau show that, health insurance accounted for 844.7 billion yuan of the original insurance premium income in all regions of the country in 2021, accounting for 18.81% of the total premium income. Till October 2022, the annual premium of health insurance in the original insurance premiums in all regions of the country was 769.9-billion-yuan, accounting for 18.77% of the total premium income. Due to the shrinkage of offline agents and the comprehensive reform of automobile insurance, life insurance and property insurance growth rates are anticipated to slow down further, while the proportion of health insurance premiums is expected to increase further.

However, compared with the developed economies in the world, the overall penetration rate of China's insurance market is insufficient. In 2020, China's insurance market penetration rate is 4.5%. The insurance market penetration rate of developed economies in Europe and America, represented by the United States, is as high as 12%. In Asia, Japan's insurance market penetration rate is 8%. Therefore, China's overall insurance industry has great development potential.

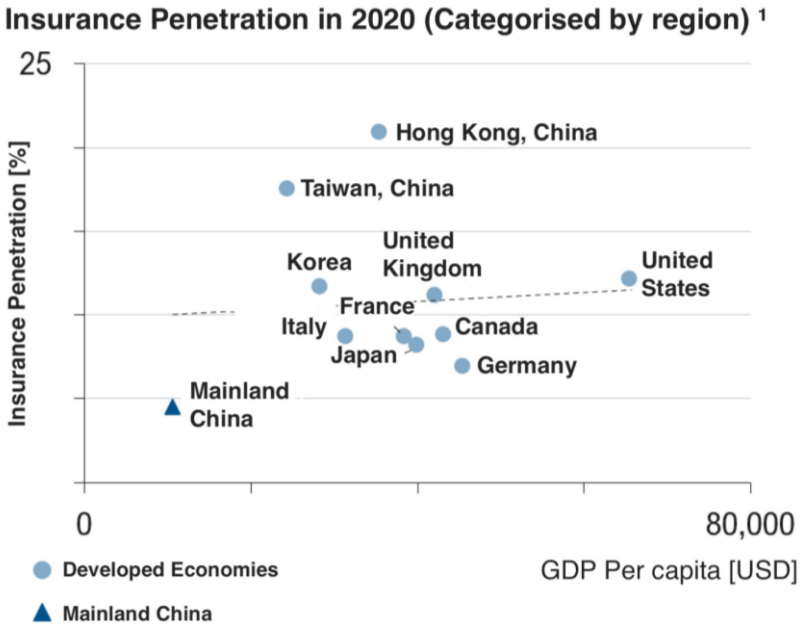


Figure 1. Insurance penetration in 2020 (Categorized by region)

3.2. Product Structure

The security function in China divides commercial health insurance into four groups, each of which has the following features:

3.2.1. Medical insurance

Medical insurance refers to products which compensate the economic loss of the insured, including hospitalization expense compensation medical insurance, accidental medical expense insurance and so on. Among them, the cost of outpatient and emergency medical insurance is generally small and frequent, domestic insurance companies rarely provide such products to individuals, and generally this product is only sold to groups.

3.2.2. Sickness insurance

The commercial insurance created by insurance firms to shield individuals against illnesses is referred to as disease insurance. When the insured suffers from diseases specified in the insurance contract, the insurance company will pay the insured a certain sum of the insurance amount agreed in the insurance contract.

Disease insurance has two product forms, namely major disease insurance and cancer prevention insurance. Major disease insurance is the mainstream disease insurance at present. The serious diseases in the serious disease insurance are colloquially called serious diseases. As shown in Figure 2, from the highest 48 kinds of insurance in 2011 to 128 kinds in recent years, they have developed rapidly.

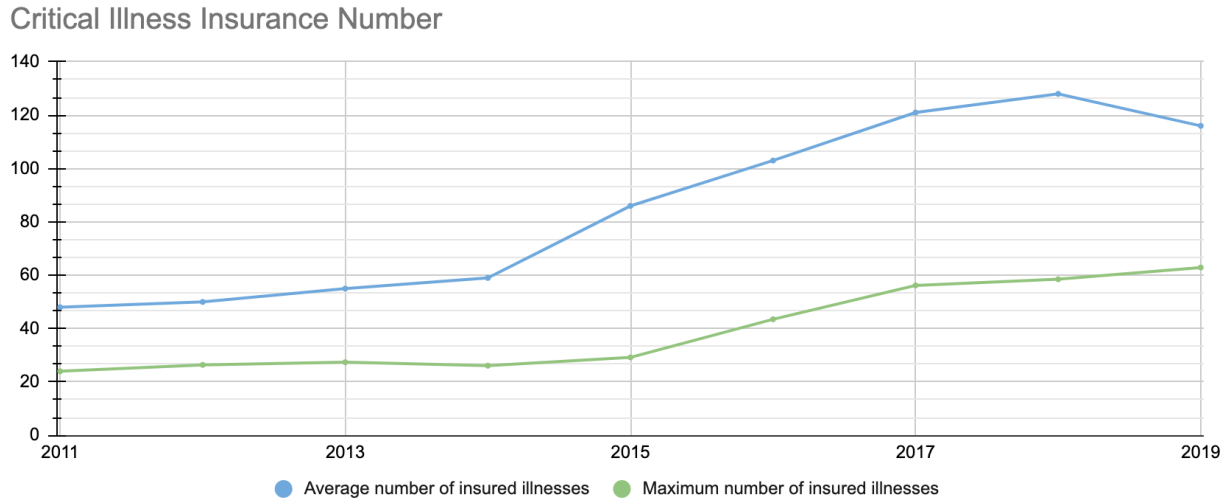


Figure 2. Critical illness insurance (2011-2019)

Source: Fudan University "Chinese Disease Insurance Knowledge Map"

3.2.3. Disability insurance

Disability insurance is a category of health insurance in which insurance companies pay a lump payment, on an annual, monthly, or periodic basis, for lost income resulting from disability. In general, this length of time of the loss of income can be either long or short, and disability insurance can ensure the basic needs of the insured by paying premiums to the insured.

Serious disease insurance covers more and more diseases. In Figure 3, according to the severity of the disease, all kinds of diseases are classified as serious, mild and moderate diseases. In addition, among the serious diseases, the diseases with high incidence are selected as special diseases.

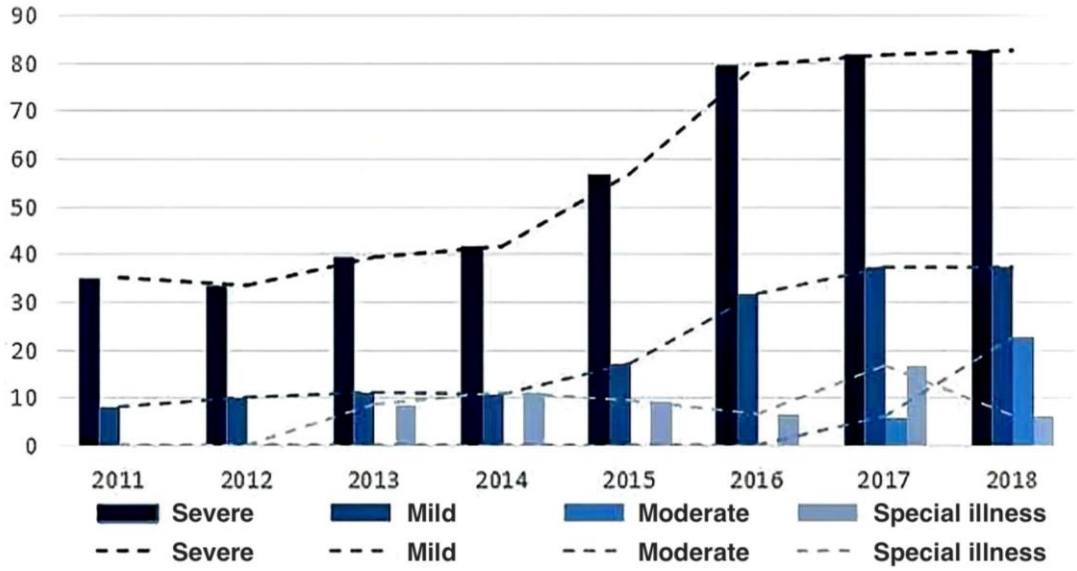


Figure 3. Average number of severe, mild, moderate and special diseases from 2011-2018

Source: Aixuan Technology "Research Report on Major Illness Insurance Products in China's Insurance Industry - 2019"

3.2.4. Care insurance

Nursing insurance, which guarantees that the insured needs long-term care because of old age, disease, disability, etc. The insurance company provides insurance for nursing costs, which is very practical. The way to pay the nursing expenses to the insured is: monthly, annual and one-time. The specific amount is related to the amount of insurance purchased. The principle is that the more someone buy, the more the insurance company gives. At present, there are two forms of nursing insurance products in China. The first is the national policy pilot nursing insurance. The main participants are those who have medical insurance for employees. The second is commercial nursing insurance, with a small number of products.

3.3. Degree of Insurance

Despite the rapid growth, commercial health insurance payments account for only about 5% of China's direct medical spending and are concentrated on serious diseases. Commercial health insurance has not yet formed a sufficient supplement to medical insurance, failed to fully reduce the medical burden of residents, and there is a lot of room for improvement in the compensation expenditure of commercial health insurance (Shown in Figure 4).

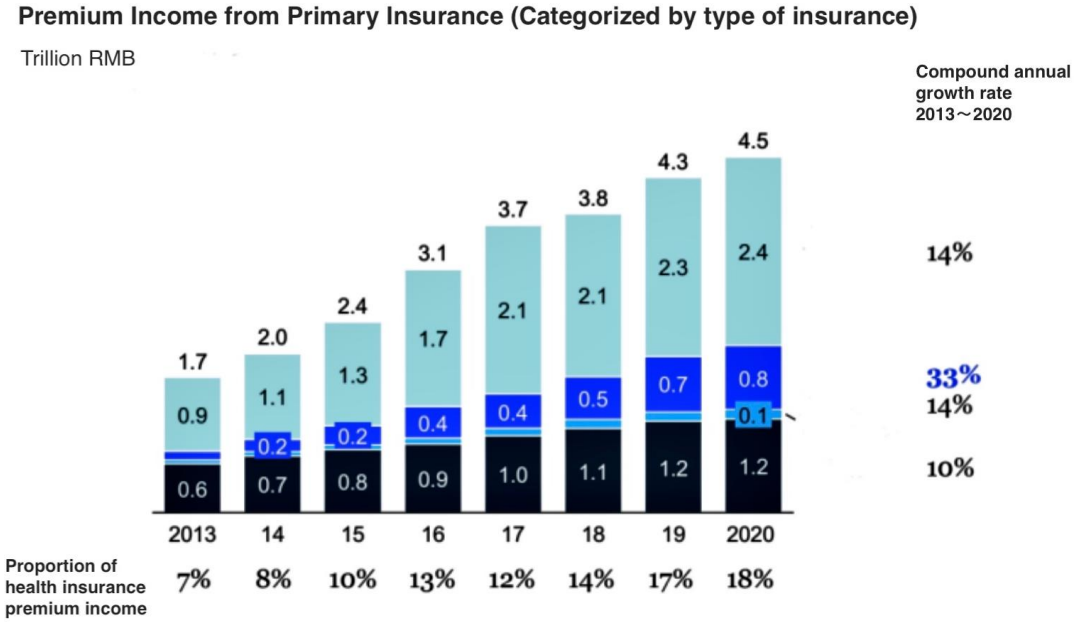


Figure 4. Premium income from primary insurance (Categorized by types)

4. Improvement Measures Based on Loss Aversion

While risk aversion is the main psychological factor driving the investment in health insurances, loss aversion is the reason why people fear giving up current assets in exchange for future safety. Possible improvements can be adapted from a three-fold procedure - fixing supply side issue relevant to expansion; resolving demand side issue relevant to diversity; optimizing system for further incentives. In this section, the problems would be deconstructed and explain in order to be investigated from the root problem in the approach of the loss averse psychology of citizens.

4.1. Expansion of Insured Population

First, China's commercial health system's largest supply-side challenge is the country's low insurance density and penetration - which is the level of insurance premiums that each resident of a certain area pays. Despite a rising trend from 2009 to 2016, the rate of growth is still very moderate when considering that in Germany and the United States, commercial health insurance premium per

capita were around 3,000 and 17,000 RMB, compared to China, which was only around 300, 0.54% of GDP.

The expansion of insured population is the first step in keeping the success in the commercial health insurance industry. The "Healthy China 2030" strategy values quantitative coverage, it is a foundation for the qualitative adaptations of the models to be made. The current demand for commercial health insurance in China is still far lower than the prospective demand. According to a study from the Chinese Development Research Foundation, only around 26 percent of respondents have actually acquired health insurance, compared to a potential market demand of up to 41 percent. While how to raise the willingness would be discussed in 4.2, it is crucial to consider motivating individuals with purchase tendencies to actually make the deal. The hesitation in actually making the purchase can be explained through the typical characteristic of a loss averse individual - the purchase means an immediate loss to their current asset - although individuals realize the potential benefit they might receive in the future from the purchase, the fear of risk of not getting return and the pain from losing the current asset exceeds the benefits they perceive.

Current progression and effort from the government can be seen. The "National Health Plan for the 14th Five-Year Plan", which was published in May 2022 by the State Council's main office, states unequivocally that the government will expand the provision of commercial health insurance, promote the growth of commercial health insurance, including encouraging product innovation of enterprises, pay more attention to the benefits of commercial health insurance, assist commercial insurance companies in improving the innovative security content, and improve the level of security and service capabilities. It clarifies the development direction of health insurance and ushers in a policy opportunity dividend period for health insurance. However, this is not enough, in order to tackle this issue, the overall risk response capability of the commercial healthy system needs to be improved, to be able to reassure the citizens and prevent hesitation of purchase.

4.2. Diversification of Commercial Health Insurance Products

The lack of a wide range of commercial health insurance products on the market is another significant weakness of China's commercial health insurance sector. Products for specific diseases insurance and hospitalization insurance dominate the market, while the availability of care insurance and disability income insurance is appallingly inadequate.

In Figure 5, what is also notable is that despite the huge market occupation (around 36%) of hospitalization insurance, a large sum of the characteristics of the products are very similar to basic health insurance products. This similarity largely discourages loss averse further from involving in the commercial health insurance. Loss aversion individuals are sensitive about giving up their current asset, with the fear of unworthy return. The only way for these individuals to overcome the overwhelming fear of losing is to fully acknowledge them the benefits of the product - to ensure individuals that the benefit of return would be larger than their current asset, in order to balance out the significance of loss in the first place. With this assumption, the solution to the demand side problem would undoubtedly be designed, enhanced, enriched, and diversified, and the product will meet the citizens' demand as close as possible. In other words, if the system is able to provide what individuals value the most, what they believe is the most beneficial and needed - their fear of loss can be eased, motivating them in the expenditure of commercial health insurance.

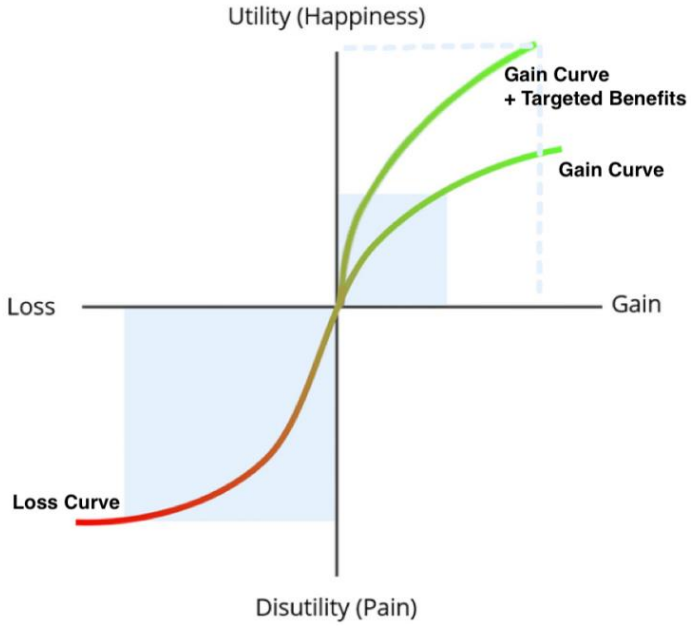


Figure 5. Diagram of loss aversion's effect on insurance purchase

Applying the mechanism explained above back to the similarity of the commercial health and the basic health insurance products: if individuals notice that there is a cheaper alternative to the plan, they will be purchasing they will choose to stick with the basic plan for the minimal loss. Given this as an example, it can be concluded that the design of current main insurance products hugely influences the design of commercial health insurance.

Current progressions can be seen in the market. Under the catalysis of market opportunities, all kinds of enterprises have been entering the commercial health insurance market, with a multi-dimensional positive layout. For example, innovative products with wider coverage and longer guarantee time, such as special disease insurance, family insurance and long-term medical insurance, have been launched, with an expanded service scope from traditional agents to diversified sales methods such as Internet platforms, insurance intermediaries. With the help of the big data and AI, companies are strengthening their core insurance technologies and capabilities, and continuously upgraded chronic disease management, drug distribution, health monitoring and other medical and health management services. These progressions, however, are not targeted to demographic needs, and are only in their emerging stages. More refinements and structuring of the models are required to take the industry into its next stage.

To sum up, the security provided and exclusive benefits presented by the products are still very limited - the original gain curve on a loss aversion diagram was not yet enough to cover loss curve as shown in the diagram above, but with the added targeted benefits that appeals to individuals more, the blue highlighted area which represents the utility would largely increase and be comparable or even higher than the disutility brought by losing their current assets.

4.3. Suggestion - Optimize Claims and Health Service Models

China's commercial health insurance market is still in its early stages. despite significant growth. As previously said, China's commercial health insurance system has obstacles from an ineffective supply, poor demand fulfillment, and an outmoded regulatory framework, which are insufficient to achieve the ultimate goal of reducing the loss aversion effect. Therefore, the optimization of claims and service models are required.

According to the poll results from the China Development Research Foundation, "the lack of appropriate health management and health services" was highlighted by nearly 25% of respondents as the biggest issue facing the sector at present. Since health management services have a significant influence on commercial health insurance purchase decisions, it is recommended that the government focus its efforts in this area to address the main source of citizen dissatisfaction. It is also to be noted

that with limited budget, the demand in urban areas for these merit health services in insurance plans are higher than those in rural. This isn't suggesting the neglect of the quality of insurance products in rural areas, since to achieve the goal of "Healthy China 2030", all citizens should be equally taken into consideration. What this is implicating is that different demographics of the country have different demands of specified needs to be included in the insurance products and plans, therefore more research and development needs to be done before the refinements and modifications of the models.

5. Conclusion

With the changes in external policies, economic and technological development, population structure and the COVID-19 epidemic, people's demand for health security is constantly rising. Commercial health insurance's advancement helps to improve the multi-level medical security system and meets the internal requirements of the national strategy of a healthy China. As far as the current situation is concerned, China's commercial health insurance needs new ideas and policies to promote its healthy development. This paper primarily analyzes the state of the health insurance industry in China at the moment in terms of the market size, product structure and the guarantee degree, followed with some detailed improvement measures based on the analysis of civil behavior related to the loss aversion effect.

Insurance companies must actively explore the market and turn potential opportunities into real power as soon as possible. On the contrary, it is advisable to continue trying and gradually explore the health insurance business model suitable for the Chinese market, and constantly improve their own operation and management level by expanding the scale of the insured population. These actions will improve the overall risk response capacity, enriching commercial health insurance products, and optimizing the model of claim settlement and health service to reduce the loss aversion effect. In this way, the health insurance market is likely to play a greater role in the whole national health insurance system, and in turn promote the government and development of commercial health insurance.

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