# A Study on the Effect of Deleveraging on the Efficiency of Company Fund Utilization: Taking Poly Real Estate Company as an Example

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**Abstract: In 2015, the Central Leading Group of Finance and Economics first proposed the concept of "supply side structural reform". "Supply side structural reform" has gradually become well-known to scholars, and relevant scholars have generated numerous discussions on the discussion of "supply side structural reform", such as the significance of relevant policy implementation. With the continuous promotion of supply side structural reform, the business scale of real estate companies has begun to shrink, no longer adopting the traditional expansion model, continuously reducing debt intensity, adhering to the national policy of deleveraging, and continuously reducing inventory and improving the efficiency of fund utilization. With the continuous progress of the "deleveraging" process, discussions among scholars on the relationship between the leverage level of real estate companies and the efficiency of fund utilization are also deepening. By conducting empirical research on Poly Real Estate Company and analyzing and elaborating on the relationship between the company's leverage level and fund utilization efficiency, it is concluded that the company's leverage level is negatively correlated with fund utilization efficiency. Thus, if the company's leverage level is low, the fund utilization efficiency is high, a high level of leverage in a company results in low efficiency in the use of funds.**

**Keyword: Real Estate Company; Supply Side Structural Reform; Fund Utilization Efficiency; Leverage Ratio**

## 1. Introduction

In November 2015, leaders first proposed the concept of "supply side structural reform" (hereinafter referred to as reform) at the 11th meeting of the National Financial Leadership Group. Reducing leverage, as an important part of reform, has attracted many scholars to conduct research on this topic. According to statistics released by the National Finance and Development Laboratory of the Chinese Academy of Social Sciences, by 2020, the overall leverage ratio of the real economy had slowly increased and gradually stabilized, with a cumulative decrease of 2.9% compared to the previous year. The effect of "deleveraging" was minimal. Against the backdrop of continuous pressure on China's economic development, real estate companies are facing problems such as excessive inventory and high liabilities, which in turn have led to risks such as inventory backlog and inefficient use of funds. Therefore, reducing leverage is the key to successful reform.

While the decline in leverage levels is gradually receiving attention, attention should also be paid to another important factor closely related to the decline in leverage levels - the efficiency of company fund utilization. In the operation of real estate companies, reducing leverage can reduce asset liability ratio, debt financing amount, and the number of non-performing projects. At the same time, it can improve production efficiency, increase the company's net working capital, and improve the efficiency of fund utilization.

Therefore, based on the micro data of real estate companies from 2015 to 2021, the author conducted empirical research and analyzed the relationship between the behavior of "deleveraging" and the efficiency of fund utilization. In existing literature, although there are many studies related to the debt level of Chinese listed companies, most of them focus on analyzing the reasons for the high debt level of Chinese listed companies [1] discussing whether China should "deleverage"[2], or studying mergers and acquisitions related to leverage level [3]. However, there is relatively little research on the relationship between the leverage level of real estate companies and the efficiency of fund utilization. Therefore, the author referred to the relevant data of real estate companies from 2015 to 2021 to study the relationship between the leverage level of real estate companies and the efficiency of fund utilization, analyze and draw conclusions.

## 2. Literature Review

Many experts have conducted research on the level of leverage and the efficiency of company fund utilization. Firstly, Fang Xingming et al. [4] pointed out that national economic policies affect the debt situation and leverage level of companies. The country has adopted macroeconomic policies to stimulate the economic market and expand the scale of bank credit, causing a large amount of credit funds to enter the market, leading to severe debt problems for the company. At the same time, the government has launched a series of preferential policies for the real economy to accelerate the recovery and development of the real economy, reducing the financing costs of companies and alleviating the difficulty of financing. However, relevant policies have also exacerbated the company's debt problem, causing a large influx of funds into the company and affecting its leverage level. Wang Yingqiao [5] estimated the efficiency of fund utilization in state-owned companies based on panel data, and found that the efficiency of fund utilization in state-owned companies is low. The reason is that as the country increases its support for state-owned companies, a large amount of funds flow into them, leading to the accumulation of reserves and overcapacity of state-owned companies. The inefficient use of funds is not conducive to the normal operation of state-owned companies. Secondly, He Zongyue [6] believes that the higher the proportion of direct financing, the greater its ability to drive economic growth, and the greater its role in improving the efficiency of a company's fund utilization. According to China's financing conditions, obtaining financing from the capital market is an important channel for companies to directly raise funds, but its capital market development is still very imperfect. The support system and supporting facilities in the capital market are outdated, and funding is insufficient, which limits the amount of direct financing, leading companies to prefer indirect financing during the financing process. The high proportion of indirect financing is not conducive to improving the efficiency of the company's fund utilization. Finally, scholars such as Qiao Xiaole [7] found that "deleveraging" reduces borrowing funds by limiting the scale of company debt financing, thereby reducing the proportion of debt in company assets and improving the efficiency of company fund utilization. The high leverage ratio of a company is actually due to the high asset liability ratio. The fundamental mechanism of the impact of debt funds on the efficiency of fund utilization is the tax shield effect [8]. According to the tax shield effect theory proposed by scholars, companies using debt financing have an interest tax offsetting effect and can reduce financial costs. The tax laws of various countries generally require companies to pay interest before tax when conducting debt financing; When conducting equity financing, dividends are paid after tax. Based on the above differences, it can be seen that the company is more inclined towards debt financing, resulting in a high proportion of debt funds to total assets, high leverage ratio, and insufficient utilization of funds. The promotion of the "deleveraging" process limits the scale of debt financing and improves the efficiency of company fund utilization.

In summary, for the severe debt problems faced by the company, "deleveraging" has reduced the scale of the company's debt financing; At the same time, the company can reduce the use of indirect financing methods and choose more direct financing methods to improve capital efficiency.

## 3. Analysis of the Impact of Deleveraging Behavior on the Efficiency of Fund Utilization in Real Estate Companies

### 3.1 Real Estate Companies' Deleveraging Methods

One is to increase the share of equity financing. Equity financing refers to adding new capital to a company, where existing shareholders allow new shareholders to inject funds and become a part of the company's funds. The capital obtained by the company through equity financing does not require payment of principal and interest, which reduces the pressure on the company to borrow and raise funds. In recent years, real estate companies have replaced debt financing by increasing the proportion of equity financing, thereby reducing debt levels, adjusting leverage ratios, and achieving the goal of reducing leverage ratios.

The second is to lower the bond issuance interest rate. Real estate companies are promoting deleveraging measures to reduce their asset liability ratio.

The asset liability ratio is the ratio of tangible assets to liabilities. Generally speaking, if the debt decreases, the ratio will decrease. The lower the ratio value, the lower the company's leverage level, thereby achieving the goal of reducing the proportion of real estate borrowing funds.

### 3.2 The Relationship between Deleveraging and Fund Utilization Efficiency of Real Estate Companies

At present, the main way to reduce the proportion of borrowed funds by real estate companies is to actively adjust the leverage ratio to reduce the asset liability ratio. Real estate companies adjust their capital structure by reducing their asset liability ratio, increasing assets, and reducing liabilities to achieve the goal of reducing leverage, absorbing more high-quality social capital. According to the company's operating conditions, if the asset liability ratio is too high, it means that liabilities account for a large proportion of the company's assets, and it also indicates that the company's related assets are all in bank deposits and other related assets. The company has not fully utilized assets, thereby reducing asset performance.

The decrease in asset liability ratio will also affect capital structure, leading to further reduction in leverage (excess reserves+retained earnings)/total assets) and an increase in company capital (capital liabilities/total assets). Equity funds have two main sources: liabilities and retained earnings. As the company's liabilities gradually decrease, its retained earnings will gradually increase. The increase in retained earnings of the company means the continuous growth of the company's profitability, the acceleration of the company's capital turnover speed, and therefore the efficiency of the company's capital utilization will be correspondingly improved.

When a company obtains funds through borrowing, the borrowed funds will generate certain interest. If the company reduces its debt, it can use the saved interest expenses for internal development, thereby reducing costs and expenses, and improving its own business scale and level. As shown in Figure 1:

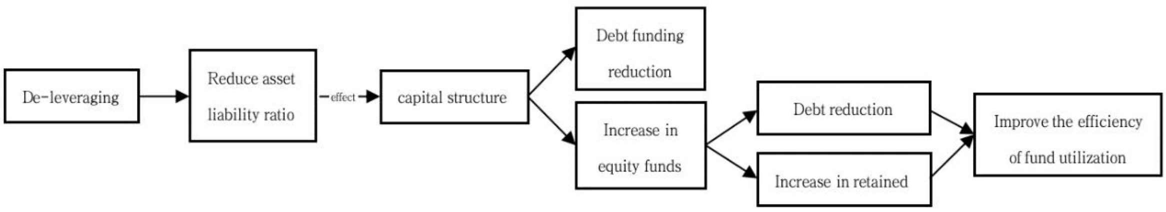


**Figure 1. Relationship Between Deleveraging and Fund Utilization Efficiency of Real Estate Companies**

## 4. Introduction to Poly Real Estate and Analysis of Its Fund Utilization Efficiency

### 4.1 Company Introduction

Poly Real Estate (Group) Co., Ltd. (hereinafter referred to as "Poly Real Estate") is a large state-owned real estate company controlled by China Poly Group, headquartered in Guangzhou. On July 31, 2006, the company's stock was listed on the Shanghai Stock Exchange, becoming the first real estate company in China to restart the IPO market after the split share reform. Poly Real Estate is the main real estate platform company under the large state-owned enterprise Poly Group, with subsidiaries in major first and second tier cities across the country. Its main business scope includes real estate development, property management services, and housing leasing. In May 2021, ranked 172th on the Forbes Global Companies 2000 list. In July 2021, it ranked 44th on the 2021 Fortune 500 list in China.

### 4.2 Analysis of the Efficiency of Poly Real Estate's Fund Utilization

The utilization efficiency of Poly Real Estate funds is shown in Table 1: from 2015 to 2021, it gradually decreased year by year and then increased, reaching the lowest value of 0.603 in 2017 and the highest value of 1 in 2020. Research has shown that the DEA effective value is 1 [9], thus reaching the DEA effective value in 2020. The efficiency value of Poly Real Estate's fund utilization has been decreasing year by year since 2015, and gradually rebounded after 2017, gradually approaching the DEA effective value. In 2017 and 2018, they just reached the industry average of 0.70 [10], which is far from the effective value. In 2019, there was a slight rebound, reaching the DEA effective value in 2020, but it began to show a downward trend again in 2021. From the average overall fund utilization efficiency, the fund utilization efficiency value is around 0.81, indicating that Poly Real Estate still has significant growth and improvement space for the overall efficiency of the company's internal industry under existing investment conditions. Although there has been some improvement in 2020, the overall effective value has not been reached.

### 4.3 Comparison of Fund Utilization Efficiency between Poly Real Estate and Listed Companies of Major Chinese Real Estate Companies

According to Table 1, it is found that the average efficiency of Poly Real Estate's fund utilization is higher than the industry average and at the upstream level. Although the efficiency of fund utilization has decreased to a certain extent, overall performance is good. Although the efficiency of fund utilization is not as high as that of real estate companies such as Vanke Corporation Limited (hereinafter referred to as Vanke Group) and Huaxia Happiness Foundation Co., Ltd. (hereinafter referred to as Huaxia Happiness), But the effectiveness of its fund utilization is much better than that of several real estate companies such as Sunshine City Group Co., Ltd. (hereinafter referred to as Sunshine City) and New City Holdings Group Co., Ltd. (hereinafter referred to as New City Holdings).

**Table 1. Fund Utilization Efficiency of Major Domestic Real Estate Listed Companies from 2015 to 2021**

| time | Vanke Group | Poly | RRED | CFLD | Gemdale | Seazen |
|---|---|---|---|---|---|---|
| 2015 | 100.0% | 93.4% | 72.0% | 100.0% | 65.0% | 91.0% |
| 2016 | 100.0% | 82.2% | 92.0% | 100.0% | 75.0% | 100.0% |
| 2017 | 100.0% | 60.3% | 92.0% | 87.0% | 80.0% | 100.0% |
| 2018 | 100.0% | 68.4% | 96.0% | 100.0% | 84.0% | 100.0% |
| 2019 | 96.0% | 78.7% | 95.0% | 100.0% | 95.0% | 100.0% |
| 2020 | 100.0% | 100.0% | 87.0% | 100.0% | 80.4% | 100.0% |
| 2021 | 100.0% | 85.9% | 90.0% | 62.6% | 60.7% | 93.3% |

## 5. Analysis of the Impact of Deleveraging on the Efficiency of Poly Real Estate's Fund Utilization

### 5.1 Poly Real Estate's Deleveraging Effect

As shown in Table 2, Poly Real Estate began "deleveraging" in 2015, and by 2021, the effect of "deleveraging" was significant: the leverage ratio had been showing a downward trend, with a significant decline from 2016 to 2017, while maintaining a stable decline in other years. The leverage ratio slightly increased in 2020 and 2021, but it did not affect its overall downward trend.

### 5.2 The Impact of Poly Real Estate's Deleveraging on its Fund Utilization Efficiency

Theoretical research has shown that companies' deleveraging behavior can improve the efficiency of fund utilization, and there is a negative correlation between leverage ratio and fund utilization efficiency. The higher the company's leverage ratio, the lower the efficiency of fund utilization; The lower the company's leverage ratio, the higher the efficiency of fund utilization. However, the decrease in the leverage ratio of Poly Real Estate has not been accompanied by an increase in the efficiency of fund utilization. As shown in Table 2.

**Table 2. Poly Real Estate's Leverage Ratio and Fund Utilization Efficiency from 2015 to 2021**

| time | Leverage ratio | Fund utilization efficiency |
|---|---|---|
| 2015 | 75.90% | 93.40% |
| 2016 | 74.70% | 82.20% |
| 2017 | 71.20% | 60.30% |
| 2018 | 70.90% | 68.40% |
| 2019 | 70.70% | 78.70% |
| 2020 | 78.90% | 100.0% |
| 2021 | 78.30% | 85.90% |

### 5.3 Comparison of Leverage Ratio and Fund Utilization Efficiency with Other Real Estate Companies

According to Table 3, it is found that the efficiency of fund utilization of Poly Real Estate does not increase with the decrease of leverage ratio, but Vanke Group's leverage ratio has been steadily decreasing, and its fund utilization efficiency has always been at the DEA effective value, indicating that Vanke Group conforms to the industry law of negative correlation between leverage ratio and fund utilization efficiency. Compared with Rongsheng Development, although the leverage ratio of Poly Real Estate is also slowly decreasing, the overall leverage level of Rongsheng Development is relatively high. Its own leverage base is too large, and the improvement of fund utilization efficiency is slow. However, its leverage ratio is negatively correlated with the overall efficiency of fund utilization, which is also in line with industry laws. Compared with Jindi Group, Poly Real Estate's leverage ratio has been decreasing year by year, and its fund utilization efficiency has been improving year by year. Jindi Group is in line with industry laws. Overall, only Poly Real Estate did not comply with industry regulations.

**Table 3. Relationship between Leverage Ratio and Fund Utilization Efficiency of Five Real Estate Listed Companies from 2015 to 2021**

| time | Fund utilization efficiency | | | | | Leverage ratio | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Vanke | RRED | CFLD | Gemdale | Seazen | Vanke | RRED | CFLD | Gemdale | Seazen |
| 2015 | 100.0% | 84.4% | 72.9% | 88.6% | 100.0% | 84.8% | 65.2% | 65.8% | 91.5% | 89.5% |
| 2016 | 100.0% | 84.6% | 92.4% | 83.7% | 100.0% | 84.8% | 75.6% | 65.4% | 100.0% | 86.1% |
| 2017 | 100.0% | 84.0% | 92.6% | 84.7% | 87.8% | 81.1% | 80.8% | 62.1% | 100.0% | 85.8% |
| 2018 | 100.0% | 83.5% | 96.1% | 84.4% | 100.0% | 80.6% | 84.4% | 60.1% | 100.0% | 84.6% |
| 2019 | 96.1% | 82.0% | 95.6% | 82.5% | 100.0% | 80.9% | 94.5% | 60.1% | 100.0% | 84.6% |
| 2020 | 100.0% | 81.3% | 87.0% | 84.5% | 100.0% | 81.2% | 80.4% | 63.5% | 100.0% | 84.7% |
| 2021 | 100.0% | 79.7% | 90.0% | 82.1% | 62.6% | 94.6% | 60.7% | 76.2% | 93.3% | 81.8% |

### 5.4 Analysis of Factors Affecting the Efficiency of Fund Utilization through Deleveraging

Measure the efficiency of fund utilization using input and output indicators. [11]

(1) The investment indicators include debt funds, equity funds, and internal funds [12]. Debt funds are an indicator of a company's investment, which is the ratio of capital liabilities to total assets. A high debt fund indicates that the company has a lower proportion of debt to assets and a lower level of debt; Low debt funds indicate that the company has a high proportion of debt to assets and a high level of debt.

From Table 4, it can be seen that Poly Real Estate's debt funds increased year by year from 2015 to 2016, began to decline after 2016, and began to increase again in 2020 and 2021. Compared with Vanke Group, Poly Real Estate's debt funds have always been higher than Vanke Group's debt funds. Poly Real Estate's debt funds are on a growth trend, while Vanke Group's debt funds are generally showing a downward trend. Thus, it can be concluded that the leverage level of Poly Real Estate is higher than that of Vanke, indicating that Poly Real Estate has no significant effect on "deleveraging" compared to Vanke Group, and the implementation of Poly Real Estate's "deleveraging" behavior is not sufficient.

investment, which is the ratio of (paid in capital+capital reserve) to total assets. Low equity funds indicate that the company has a large amount of assets and a large total asset scale; The high equity funds of the company indicate that the company has fewer assets and a smaller total asset size.

**Table 4. Debt Funds of Vanke Group and Poly Real Estate from 2015 to 2021**

| Time | Vanke | Poly |
|---|---|---|
| 2015 | 3.10% | 4.30% |
| 2016 | 2.30% | 5.70% |
| 2017 | 1.60% | 3.90% |
| 2018 | 1.20% | 3.20% |
| 2019 | 1.30% | 2.90% |
| 2020 | 1.70% | 3.00% |
| 2021 | 1.10% | 3.20% |

Equity funds are an indicator of a company's From Table 5, it can be seen that Poly Real Estate's equity funds increased slightly from 2015 to 2016, decreasing from 2016 to 2.10% in 2021. Vanke Group has been showing a downward trend since 2015. Compared to Vanke Group, Poly Real Estate's equity funds have always been higher than Vanke Group's equity funds. According to the equity fund formula, the ratio of the growth rate of Poly Real Estate's paid in capital and capital reserve to the total asset growth rate is greater than the ratio of Vanke Group's paid in capital and capital reserve to the total asset growth rate. Therefore, Poly Real Estate's equity fund is higher than Vanke Group's equity fund. The asset scale of Poly Real Estate is not as large as that of Vanke Group.

**Table 5. Equity Funds of Vanke Group and Poly Real Estate from 2015 to 2021**

| Time | Vanke | Poly |
|---|---|---|
| 2015 | 3.10% | 4.30% |
| 2016 | 2.30% | 5.70% |
| 2017 | 1.60% | 3.90% |
| 2018 | 1.20% | 3.20% |
| 2019 | 1.30% | 2.90% |
| 2020 | 1.60% | 2.42% |
| 2021 | 1.60% | 2.10% |

Internal funds are an indicator of a company's investment, which is the ratio of surplus reserves+undistributed profits to total assets. The high internal funds indicate that the company has more retained earnings and distributes less dividends, which is not conducive to attracting investment from other companies. The company did not invest funds in expanding its scale and improving its production capacity, nor did it improve production efficiency or increase profits. The low internal funds of the company indicate that the retained earnings of the company are relatively low, and the funds can be fully utilized to expand the business scale and obtain more profits.

As can be seen from table 6, the internal funds of Poly Real estate are generally declining. Although Vanke Group improved slightly in 2020, its internal capital has been lower than that of Poly Real Estate.

According to the analysis of the internal fund calculation formula, the ratio of the growth rate of the surplus reserve and undistributed profits of Poly Real estate to the growth rate of total assets is greater than that of the surplus reserve and undistributed profits of Poly Real estate to the growth rate of total assets, so the internal fund of Poly real estate is always higher than that of Vanke Group, indicating that the utilization of the funds of Poly Real estate is not as full as that of Vanke Group.

**Table 6. Internal Funds of Vanke Group and Poly Real estate from 2015 to 2021**

| Time | Vanke | Poly |
|---|---|---|
| 2015 | 13.10% | 13.30% |
| 2016 | 11.20% | 13.30% |
| 2017 | 9.70% | 10.60% |
| 2018 | 9.10% | 10.40% |
| 2019 | 9.60% | 10.60% |
| 2020 | 10.0% | 10.40% |
| 2021 | 10.0% | 10.50% |

(2) Output indicators include return on equity and operating scale [13]. Return on equity is an indicator of a company's output, which is the ratio of net profit to capital gains. A high return on equity indicates that a company has a higher net profit and higher returns from investment; The low return on equity indicates that the company has fewer net profits and lower returns from investment.

From Table 7, it can be seen that the return on equity of Poly Real Estate has been in a declining state from 2015 to 2017, with a slight rebound starting in 2018 and a decline starting in 2021.

**Table 7. Return on Net Assets of Vanke Group and Poly Real Estate from 2015 to 2021**

| Time | Vanke | Poly |
|---|---|---|
| 2015 | 19.00% | 17.30% |
| 2016 | 17.50% | 14.40% |
| 2017 | 19.90% | 12.40% |
| 2018 | 20.90% | 14.00% |
| 2019 | 20.30% | 16.30% |
| 2020 | 20.10% | 17.10% |
| 2021 | 20.00% | 14.40% |

From the table, it can be clearly seen that Poly

 

Real Estate's return on net assets has always been lower than Vanke. According to the calculation and analysis of the return on net assets, the ratio of Poly Real Estate's net profit growth to capital income growth is lower than that of Vanke Group's net profit growth to capital income growth, resulting in a lower return on net assets than Vanke Group. The return on equity of Poly Real Estate is lower than that of Vanke Group, indicating that the profitability level of Poly Real Estate is lower than that of Vanke Group, and the scale of Poly Real Estate's revenue is also smaller than that of Vanke Group.

Business scale is an indicator of a company's output, which focuses on comparing the size of a company's assets and is the ratio of total assets to capital gains. The larger the business scale, the higher the total assets of the company, and the higher the return on investment; A small business scale indicates that the total assets of the company are relatively small, and the return on investment is also lower.

From Table 8, it can be seen that Poly Real Estate's operating scale has always been lower than Vanke Group. According to the calculation and analysis of the business scale formula, the ratio of the total asset growth rate and capital income growth rate of Poly Real Estate is lower than that of Vanke Group, resulting in a lower business scale of Poly Real Estate compared to Vanke Group.

**Table 8. Business Scale of Vanke Group and Poly Real Estate from 2015 to 2021**

| Time | Vanke | Poly |
|---|---|---|
| 2015 | 415.70% | 408.40% |
| 2016 | 396.20% | 413.70% |
| 2017 | 440.10% | 424.20% |
| 2018 | 453.80% | 448.70% |
| 2019 | 450.10% | 439.30% |
| 2020 | 534.30% | 469.30% |
| 2021 | 493.60% | 462.20% |

Based on the above analysis, it can be concluded that although Poly Real Estate's leverage ratio is in a declining state, its fund utilization efficiency is not continuously improving. Compared with Poly Real Estate, Vanke Group's leverage ratio has been declining, and its fund utilization efficiency is around the stable DEA effective value, indicating that deleveraging has a significant impact on fund utilization rate. According to the above data, Poly Real Estate's investment indicators: debt funds, internal funds, and equity funds have always been higher than Vanke Land, but Poly Real Estate's output indicators are lower than Vanke Land. This indicates that compared to Vanke Group, Poly Real Estate has a higher investment but lower output, so the efficiency of fund utilization has not improved. As the leverage ratio decreases, it has not improved its own fund utilization efficiency.

## 6. Conclusion and Suggestions

### 6.1 Conclusion

Based on the statistical data of Poly Real Estate from 2015 to 2021, the analysis shows that there is no negative correlation between leverage ratio and fund utilization efficiency. Research has found that Poly Real Estate implemented a "deleveraging" policy from 2015 to 2021, with a decreasing leverage ratio year by year. However, it is estimated that the efficiency of fund utilization has been at a relatively low level from 2015 to 2021. Although there has been a slight increase in the efficiency of fund utilization, the overall trend is decreasing, indicating that Poly Real Estate's funds do not comply with the industry law of reducing leverage and improving fund utilization efficiency. At the same time, it was found that although Poly Real Estate's leverage ratio is decreasing, the overall leverage level is still high.

### 6.2 Suggestions

Firstly, comply with current market laws and accelerate the process of deleveraging. On the one hand, Poly Real Estate should gradually adjust its debt structure to address issues such as debt fund redundancy; On the other hand, it is necessary to reduce leverage ratio, solve the problem of inefficient use of funds, transform a single debt financing model, and determine a more suitable capital structure according to the changes in the use cycle of funds. Therefore, Poly Real Estate should actively respond to national policies and promote the implementation of "deleveraging" behavior.

Secondly, improve one's own profitability and promote the efficiency of fund utilization. Poly Real Estate needs to have sufficient funds and a high level of profitability in order to improve its own fund utilization efficiency in order to utilize its funds to a certain level. Therefore, it is recommended that Poly Real Estate improve its profitability, enhance its operational capabilities, and thereby improve the efficiency of internal fund utilization.

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