# Analysis on ZNJS

Pan Deng, Luo Tao, Zhang Wenchao

# Four Principles in Investment

- I. Safety is measured not by specific lien(留置权) or other contractual rights, but by the ability of the issuer **to meet all of its obligations.**
- II. This ability should be measured **under conditions of depression** rather than prosperity(繁荣).

# Four Principles in Investment

- III. Deficient safety **cannot** be compensated for by an abnormally high coupon rate.
- IV. The selection of all bonds for investment should be subject to **rules of exclusion** and to specific quantitative tests corresponding to those prescribed by statute(法规) to govern investments of saving banks.

# Positive aspects

杜邦分析比较

| 排名 | 代码 | 简称 | ROE(%) | | | | 净利率(%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3年平均 | 11A | 12A | 13A | 3年平均 | 11A | 12A | 13A |
| 28 | 000961 | 中南建设 | 16.24 | 17.16 | 15.94 | 15.63 | 7.37 | 7.58 | 7.92 | 6.60 |
| 行业平均 | | | 12.58 | 13.06 | 12.34 | 12.33 | 10.13 | 0.94 | 15.38 | 14.08 |
| 行业中值 | | | 8.43 | 9.65 | 8.15 | 8.97 | 11.51 | 12.97 | 11.27 | 10.59 |
| 1 | 000863 | 三湘股份 | 27.74 | 25.27 | 31.86 | 26.10 | 22.00 | 25.76 | 22.96 | 17.29 |
| 2 | 000537 | 广宇发展 | 26.38 | 31.57 | 23.98 | 23.59 | 19.62 | 18.87 | 15.73 | 24.26 |
| 3 | 002146 | 荣盛发展 | 25.89 | 24.97 | 26.19 | 26.52 | 15.75 | 16.13 | 15.95 | 15.16 |
| 4 | 600067 | 冠城大通 | 25.16 | 25.01 | 23.22 | 27.24 | 12.45 | 8.54 | 13.28 | 15.53 |
| 5 | 000540 | 中天城投 | 24.89 | 24.37 | 18.53 | 31.79 | 14.12 | 15.77 | 12.34 | 14.27 |

ROE = Net Profit / Equity

This quantity can reflect the earning power of a company, so as a investor we always expect it to be higher.

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Since ZNJS outperform the industrial average in this table, we can conclude that this company has a relatively good earning power in this industry.

# Problems

成长性比较

| 排名 | 代码 | 简称 | 基本每股收益增长率(%) | | | | | | 营业收入增长率(%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3年复合 | 13A | TTM | 14E | 15E | 16E | 3年复合 | 13A | TTM | 14E | 15E | 16E |
| 33 | 000961 | 中南建设 | 20.15 | 17.17 | 2.22 | 24.15 | 26.78 | 10.18 | 23.55 | 40.60 | 9.41 | 18.73 | 22.75 | 29.42 |
| 行业平均 | | | 25.53 | 14.42 | -0.63 | 31.76 | 26.01 | 20.97 | 22.93 | 27.59 | 1.28 | 23.00 | 26.27 | 21.57 |
| 行业中值 | | | 25.94 | 8.55 | -0.34 | 29.74 | 25.97 | 18.65 | 21.71 | 20.74 | 1.10 | 23.97 | 23.76 | 20.53 |
| 1 | 600094 | 大名城 | 78.06 | 35.19 | -4.11 | 118.94 | 87.38 | 37.60 | 69.88 | 75.36 | 0.06 | 85.38 | 93.95 | 36.35 |
| 2 | 600175 | 美都控股 | 70.26 | 66.03 | -61.80 | 193.15 | 48.10 | 13.69 | 1.42 | 73.26 | 0.82 | -3.82 | 17.68 | -7.83 |
| 3 | 000718 | 苏宁环球 | 57.80 | -43.55 | -52.61 | 170.48 | 35.27 | 7.39 | -- | 52.53 | -19.65 | 24.18 | 27.62 | -- |
| 4 | 000732 | 泰禾集团 | 56.98 | 111.54 | 1.47 | 71.08 | 58.78 | 42.42 | 52.01 | 135.46 | -0.42 | 47.75 | 56.61 | 51.80 |
| 5 | 000671 | 阳光城 | 53.62 | 16.66 | 14.60 | 89.84 | 47.26 | 29.68 | 45.17 | 36.53 | 14.40 | 60.92 | 42.18 | 33.72 |

This table makes us have a better understanding on the future tendency of the development of the right company and the whole industry.

(14E = Expectation in 2014, 13A = Average in 2013)

# Growing ability

成长性比较

| 排名 | 代码 | 简称 | 基本每股收益增长率(%) | | | | | | 营业收入增长率(%) | | | | | |
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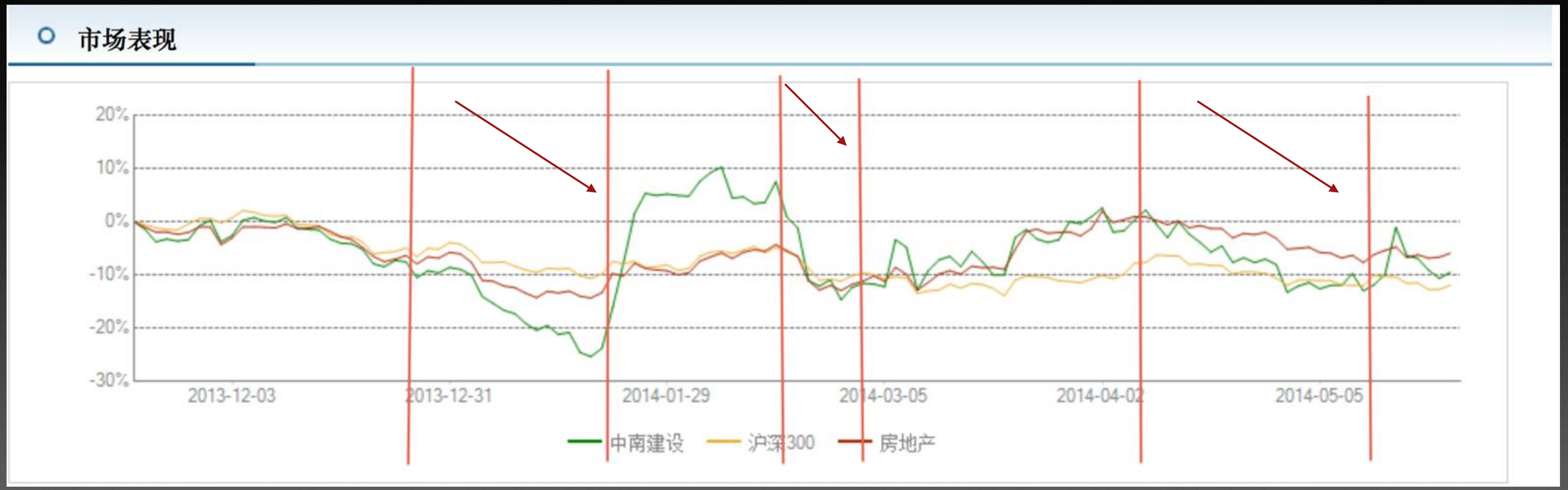
Not surprise, the company’s growing ability decreases sharply as the whole industry does.

# Industrial Intrinsic Property




As the above figure shows, we can conclude several problems.

# 2 Conclusions

- This company is highly dependent on the intrinsic properties of the real estate industry.
- This company perform worse if the real estate industry does it bad.

# The first Conclusion

- If it is in a situation of prosperity, we can simply exclude the second conclusion, and view this company as a representation for real estate.
- But the reality is the so called dilemma, one can earn more with higher risk, but if the outcome turns out bad, he could lose everything.

# Recall the Principles

- III. Deficient safety **cannot** be compensated for by an abnormally high coupon rate.
- This tells us that it's not worth it while to gambling for profit with your not guaranteed principals.
- Thus in today's dilemma situation, ZNJS or the real estate industry is not a wise investment choice.

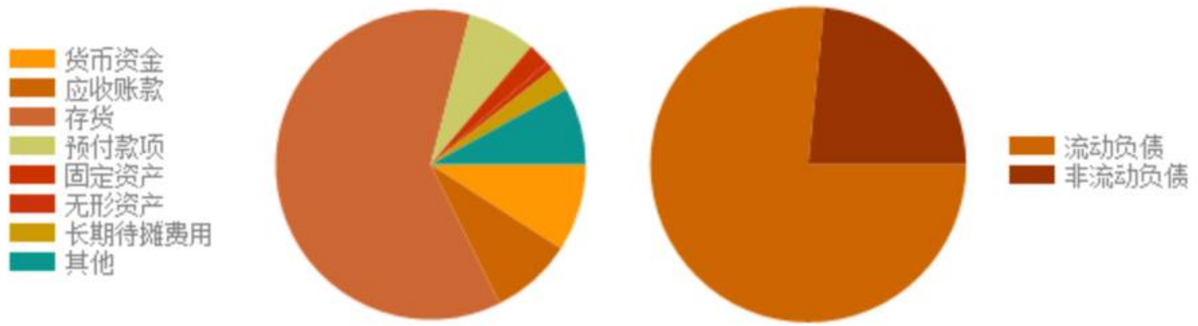
# The second conclusion

- II. This ability should be measured **under conditions of depression** rather than prosperity(繁荣).

- This company does worse in depression, thus not a good investment choice.

百分比报表

| 指标　2014-03-31 | 金额(元) | 占比 |
|---|---|---|
| 总资产 | 703亿 | 100% |
| 流动资产 | 650亿 | 92.46% |
| 货币资金 | 63.1亿 | 8.98% |
| 应收账款 | 59.2亿 | 8.42% |
| 存货 | 426亿 | 60.59% |
| 预付账款 | 49.4亿 | 7.04% |
| 非流动资产 | 53.0亿 | 7.54% |
| 固定资产 | 16.2亿 | 2.30% |
| 无形资产 | 5.92亿 | 0.84% |
| 长期待摊费用 | 17.7亿 | 2.52% |
| 金融资产 | 254万 | 0.00% |
| 总负债金额 | 595亿 | 100% |
| 流动负债 | 456亿 | 76.59% |
| 非流动负债 | 139亿 | 23.41% |




We should be careful about the ‘inventory’ section, over 60% inventory, which tells us that 2/3 of the properties are not been sold.Maybe this is good when the housing price growing constantly, but for now, this unsold properties can only be more risky like a bomb.

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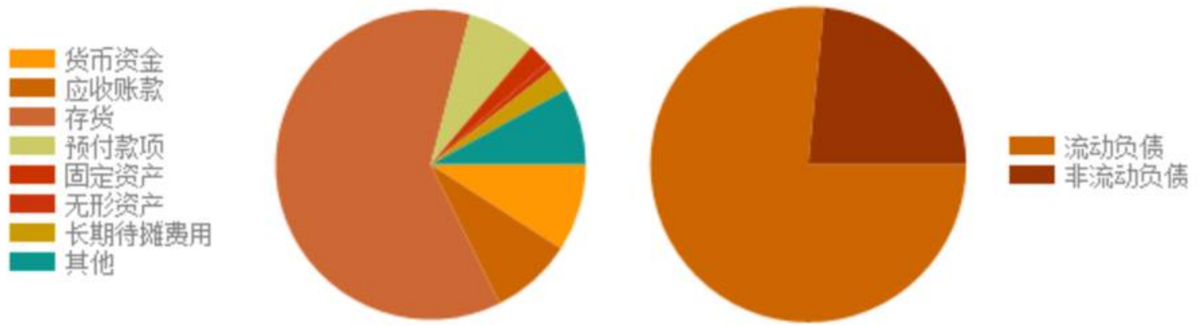


And moreover, here are 76.59% of Current Liabilities, added on the above large inventory, this company can easily be in debt and become bankruptcy in depression. It could have good performance in prosperity, but the high risk is not worth it while.

# Prediction

All of the analysis above can be used in the prediction. Since we have concluded that ZNJS's performance highly depends on real estate industry. Though the government says that there is no danger of collapse, but the whole market appears negative attitude. And compare with the 2008 financial crisis, there are too many similar symptoms in the market. I personally argue that the real estate might not collapse, but wouldn't continue its prosperity as in the last 10 years. It's hard to predict the tendency next two months, but the conclusion in the long term must be negative.

# Option Price on ZNJS

# European Call

By B-S formula, we have:

$$C(S,t) = SN(d_1) - Ee^{-r(T-t)}N(d_2)$$

where

$$d_1 = \frac{\ln S/E + (r + \frac{1}{2}\sigma^2)(T-t)}{\sigma\sqrt{T-t}}$$

$$d_2 = \frac{\ln S/E + (r - \frac{1}{2}\sigma^2)(T-t)}{\sigma\sqrt{T-t}}$$

Since S, E, T, t, and r are all known, the only unknown parameter is the volatility σ.
Then how to evaluate the volatility from the historical data?

Assume that the stock price follows the geometric Brownian motion, that is

that is

$$S_{i+1} = S_i \exp\{(\mu - \frac{1}{2}\sigma^2)(t_{i+1} - t_i) + \sigma\sqrt{t_{i+1} - t_i}Z_i\}$$

Then take the log of both side

$$\ln S_{i+1} - \ln S_i = (\mu - \frac{1}{2}\sigma^2)(t_{i+1} - t_i) + \sigma\sqrt{t_{i+1} - t_i}Z_i$$

and the above formula has the volatility of $\sigma^2\Delta t$ thus

$$\hat{\sigma}^2 = \frac{d^2}{\Delta t}$$

For simplicity, we claim there are 250 trading days per year. And the data we use is taken daily, so the quantity $\Delta t = 1/250$ presumed. To assure the consistency, we only use the open price of each day.

We get the variance $d^2 = 9.0877 \times 10^{-4}$, then $\hat{\sigma}^2 = 0.2272$, and then $\hat{\sigma} = 0.4766$. Then substitute it into the pricing formula we can get the answer.

Today's stock price $S = 6.96$ , take the interest rate of 10-year treasury bonds as the risk-free interest rate, $r = 4.1348\%$, if we want to sell call options expire in 3 months, with strike price 8 yuan, then the option price can be calculated:

$$d_1 = \frac{\ln S/E + (r + \frac{1}{2}\sigma^2)(T-t)}{\sigma\sqrt{T-t}} = \frac{\ln 6.96/8 + (0.0413 + \frac{1}{2}0.2272)3/12}{0.4766\sqrt{3/12}} = -0.4219$$

$$d_2 = \frac{\ln S/E + (r - \frac{1}{2}\sigma^2)(T-t)}{\sigma\sqrt{T-t}} = \frac{\ln 6.96/8 + (0.0413 - \frac{1}{2}0.2272)3/12}{0.4766\sqrt{3/12}} = -0.6602$$

$$C(S,t) = SN(d_1) - Ee^{-r(T-t)}N(d_2)$$

$$= 6.96N(-0.4219) - 8 \times e^{-0.0413 \times 3/12}N(-0.6602)$$

$$= 0.3268$$

Thank you