

## **Main Points**

- **National policy is one of the key elements for electing stock**
- **5G is an important industry that will significantly improve our life style and technology**
- **Technical leading enterprise, sustainable innovation, independent R&D for Optical Fiber Preform, and break international monopoly, occupying the market with low cost advantage**
- **Income and profits have grown rapidly, and gross profit margins and net profit margins have steadily increased in recent years.**

## **National Policies**

**National policies support the development of optical communications and power grids.**

In the report of the 19<sup>th</sup> National Congress of the CPC, Chinese President Xi Jinping pointed out that "China's economy has changed from the stage of rapid growth to the stage of high-quality development", "To build a modern economic system, we must put the focus of economic development on the real economy, take improving the quality of the supply system as the main direction of attack, and remarkably enhance China's quality advantage in economy. " "We will strengthen the construction of infrastructure networks for water conservancy, railways, highways, water transport, aviation, pipelines, power grids, information and logistics."

1、 The development of information industry, big data industry, cloud computing and Internet of things is based on the development of optical communication.

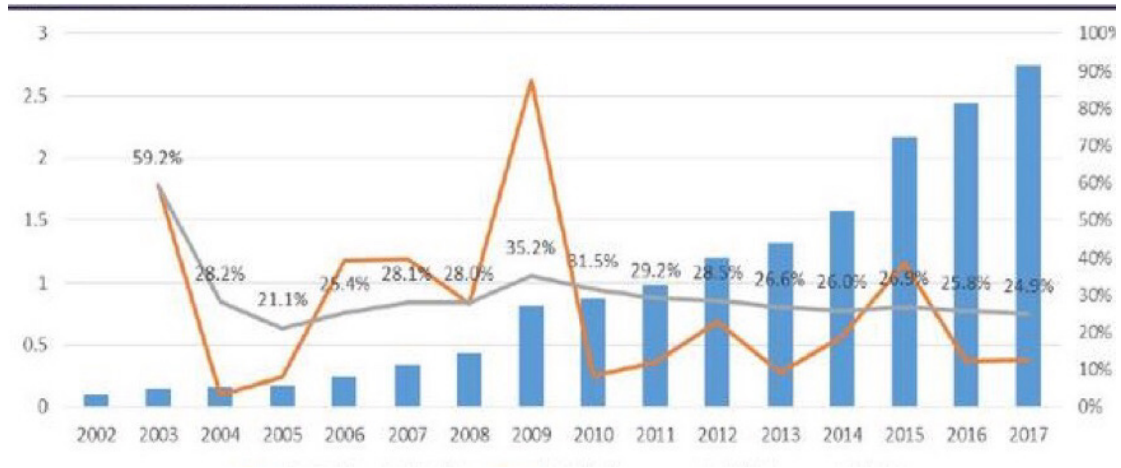
The Guidelines for the Development of the Information Industry, jointly formulated by the MIIT and the National Development and Reform Commission, point out that by 2020 the information industry ecological system with international competitiveness, safety and controllability will be established, and its position in the global value chain will be further enhanced. The MIIT compiled the "Large Data Industry Development Plan (2016-2020)" and pointed out that by 2020, advanced technology, prosperous application, strong guarantee of the basic formation of the large data industry system. Big data related products and services business income exceeded 1 trillion yuan, the annual composite growth rate maintained about 30%, speed up the construction of a data power, to achieve a strong manufacturing power and network power to provide strong industrial support.

The "Three-year Action Plan for the Development of Cloud Computing (2017-2019)" compiled by the Ministry of Industry and Information Technology points out that by 2019, the scale of China's cloud computing industry will reach 430 billion yuan, breaking through a number of core key technologies, cloud computing service capacity has reached the international advanced level, and the driving effect on the development of the new generation of information industry will be significantly enhanced.

At present, 5G's biggest investment opportunity is in infrastructure construction. 5G's industrial chain consists of upstream base station upgrade (including base station radio frequency, baseband chips, etc.), midstream network construction, downstream product application and terminal product application scenario. Device raw materials, base station antenna, small base station, communication network equipment, fiber optic cable, optical module, system integration and service providers, operators and other details are part of 5G's industrial chain. The telecommunications sector is a typical infrastructure first. For example, 4G, the wave of hardware construction, such as "broadband China" in the past few years has spawned a very large optical telecommunications market (optical fiber cables, optical modules, optical devices) market. Therefore, in the development of 5G, fiber optic cables, optical modules and optical devices have made great progress.

2、 Demand for fiber optic cables will further increase.

The demand of China's optical communication industry is stable, and the average compound growth rate is very stable, showing a compound growth rate of about 25% since 2002. Behind this is the fast and steady growth of the whole network traffic. The proportion of demand from operators has been maintained at about 85% for a long time. As shown the table below, with the development of the industry in recent years, the proportion shows a slowly rising trend year by year.



Source : China's annual optical communications check 2017 edition

### 3、 Smart grid drives high-speed development of power cables

With the development of urbanization in China, the establishment of smart grid in China is also gradually starting. As a new industry, smart grid, with the characteristics of no-man intelligent and efficient operation, will be the future trend of power grid development, the industry will usher in new opportunities. As the most important supporting industry in the power grid construction, the wire and cable industry also ushered in a broader market prospect and unprecedented new opportunities.

### 4、 The overall development of wire and cable industry is fast.

During the Twelfth Five-Year Plan period, the overall economy of the cable industry achieved sustained and steady growth. The consumption of copper conductors for cables increased from about 4.8 million tons in 2010 to about 6.6 million tons in 2015, and the consumption of aluminum conductors for electric wire and cables was about 2 million tons. By the end of the 12th Five-Year Plan, the annual output of the five main types of electric wire and cables in China was mainly 1.5 million tons of various overhead conductors (including insulated overhead cables); about 15,000 kilometers of high-voltage and ultra-high-voltage cables (66KV and above); about 480,000 kilometers of medium-voltage power cables (converted into single-core calculations); and about 200 million kilometers of various optical cables. Various winding wires are about 1 million 600 thousand tons.

5、 From 2018-2021, the annual composite growth rate of the global seabed power cable will reach 5.12%.

The increase in electricity demand is the main reason for the steady growth of the market. According to the International Energy Agency, demand for electricity will increase by 40% in the next few years. Enhanced demand for environmental protection will promote the demand for renewable energy and electricity, thus promoting the rapid development of the wind power market. With its advantages, offshore wind power will be more and more popular with developers, thus further stimulating the demand for undersea power cables.

## **Business Model**

As shown on the company's website, HENG TONG GROUP is a national innovation enterprise that specializes in diversified areas covering fiber optic network and electric power network, as well as network construction and operation, financial service, capital investment, industrial Internet, and cultural and tourism estate. It is the largest system integrator and network service provider in China's fiber optic cable industry. In the core technology of light bar and marine equipment, the company broke the monopoly of overseas manufacturers and actively seized the high ground in the information field. The core business is optical communication networks and power transmission, with revenues accounting for 40% and 30% respectively.

## **Goals**

### **1. Diversity**

On the basis of expanding and strengthening the optical communication industry, the company continues to transform into a system integration and operation service platform. It actively seeks the high-end transformation and upgrading of the smart grid industry. The same time, it lays out 5G/6G future communication technology and chip industry, and continues to improve International level.

### **2. Internationalization**

HENG TONG establishes industrial bases in Europe, South America, South Africa, South Asia, and Southeast Asia with marketing technological service branches in over 30 countries and regions around the world. They also supply products in over 120 countries and regions. It is the largest system integrator and network service provider in fiber optic network and electric power network in China, ranking in the top 500 enterprises of China, top 100 private enterprises of China, and top 3 brands of the global optical fiber communication.

## Market Comparison

### Business Composition

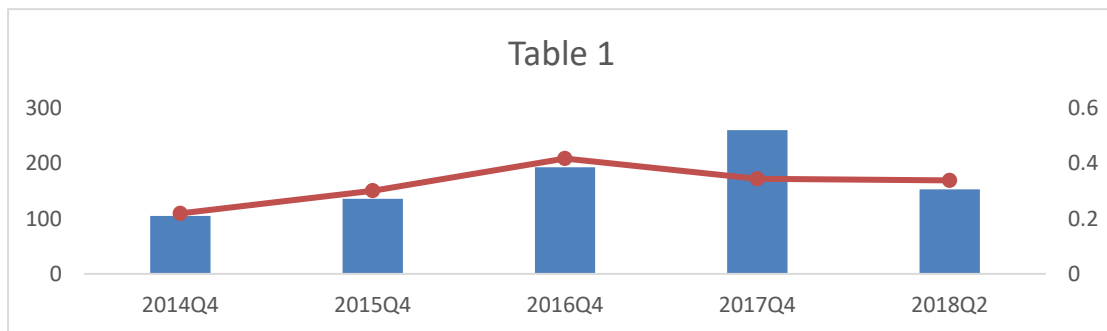
It can be seen from the table, Changfei is mainly focused on the fiber optic cable industry while Zhongtian Technology and HENGTONG focus more on optical network, power and submarine cable.

### Business comparison in the same industry

	Changfei	HENGTONG	Zhongtian
Optical communication	optical fiber, cable, rod fiber	optical fiber, cable, rod fiber	optical fiber, cable, rod fiber、ODN、Radio frequency cable、OPGW etc.
Power		Power transmission cable	Power transmission cable, A complete set of solutions for supporting devices and power systems
Submarine		Submarine optical cable, marine communication transmission	Submarine optical cable、marine device, system construction service
New energy		New energy vehicle related wire control products	Distributed photovoltaic power station, photovoltaic backplane material and lithium battery
Others	feeder cable	Industrial Intelligent Control, Quantum Secret Communications, Smart Community Services, Big Data Services, Commodity Trading, Copper Conductors	Commodity trade, copper products, etc.

# Financial Analysis

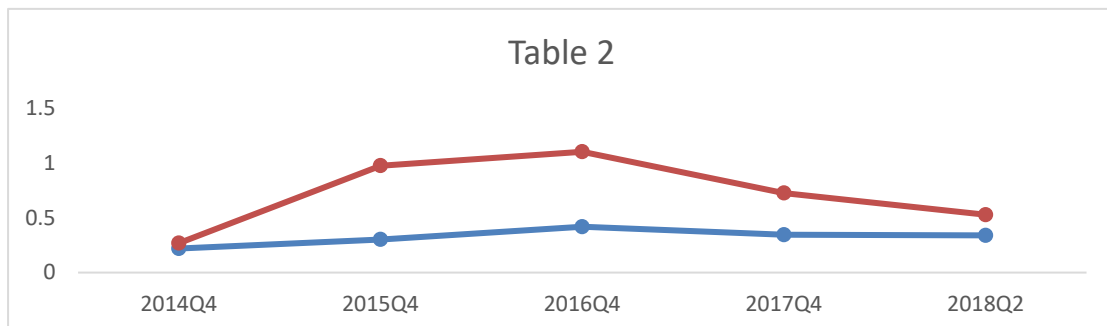
## Growth Ability Analysis



Total revenue and revenue increased year-on-year

Source: eastmoney.com

As shown in Table 1, the turnover of enterprise has been growing continuously, mainly due to the capacity enhancement of Optical Fiber Preform, steady growing power business, and rapid ascending submarine business. But the rate of increase for turnover has been declining since Q3 2017, this was caused by the vacuum period between the construction of 4G and 5G. Now with the growing 5G business, the rate of increase for turnover will rise again.



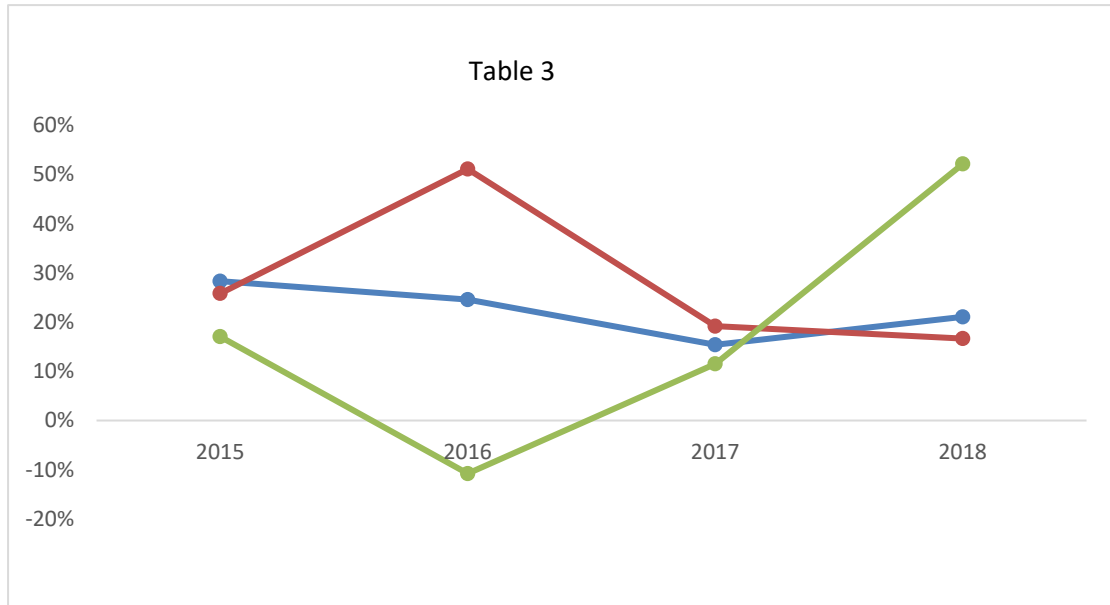
revenue and deduct non-net profit increased year-on-year

Source: eastmoney.com

As shown in Table 2, the increase rate of net margin is higher than that of turnover, this was caused by the operation increase of optical fiber perform, the capacity growth of optical cable, and the improvement of automation and lean manufacture. The gross profit of optical fiber perform is about 70% with very high margin. Therefore, the production of optical fiber perform made great contribution to the increase of the

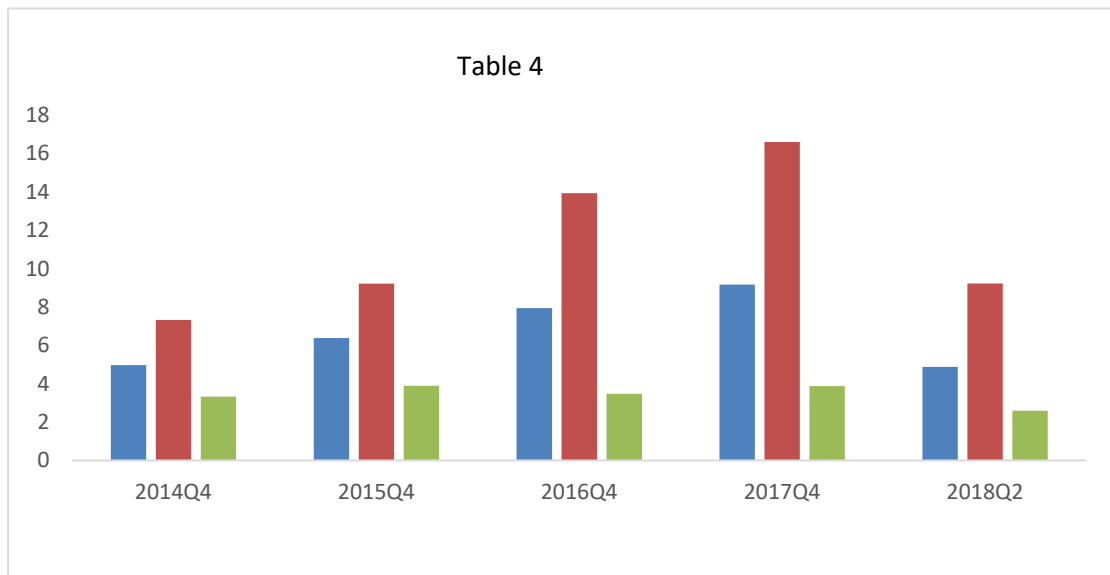
gross profit. Meanwhile, the gross profit of submarine cable and smart community are 30% and 64%, and positively affected the gross profit.

### Cost Analysis



ales costs ,managing costs and financial costs increased year-on-year

Source: eastmoney.com



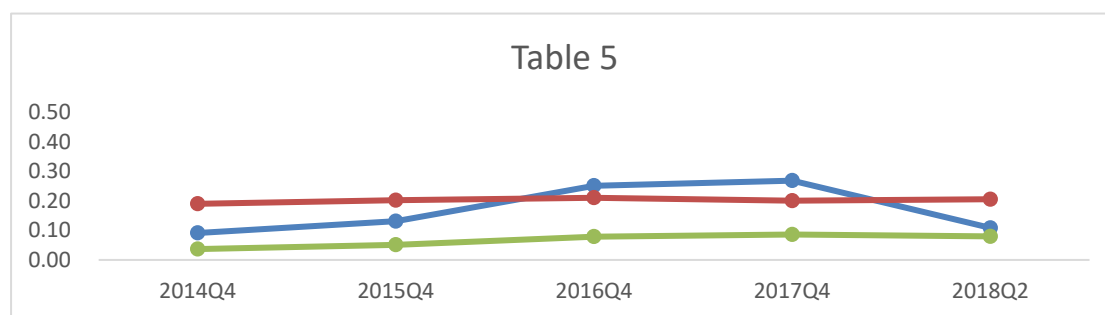
The increase of sales costs ,managing costs and financial costs

Source: eastmoney.com



The declining annual growth of managing cost suggesting an improvement in management. The increase rate of sales cost is also gradually reducing, only increasing by 6% during the first half of 2018. This was caused by the distribution of overseas sales and increased employee salary and travelling costs. But with the stabilization of the oversea sales, this cost will be steadily reduced. The interest costs has been increasing since 2016, this was caused by the increasing debt. Even the company's notes payable and long term loan decreased by 1.5 billion yuan, but with the extension of new projects, the short term borrowing increased by 3 billion yuan. Meanwhile, the rate of interest increased too driving the overall finance cost to increase about 50%

### Profitability Analysis



ROE, gross profit rate, net profit rate increased year-on-year

Source: eastmoney.com

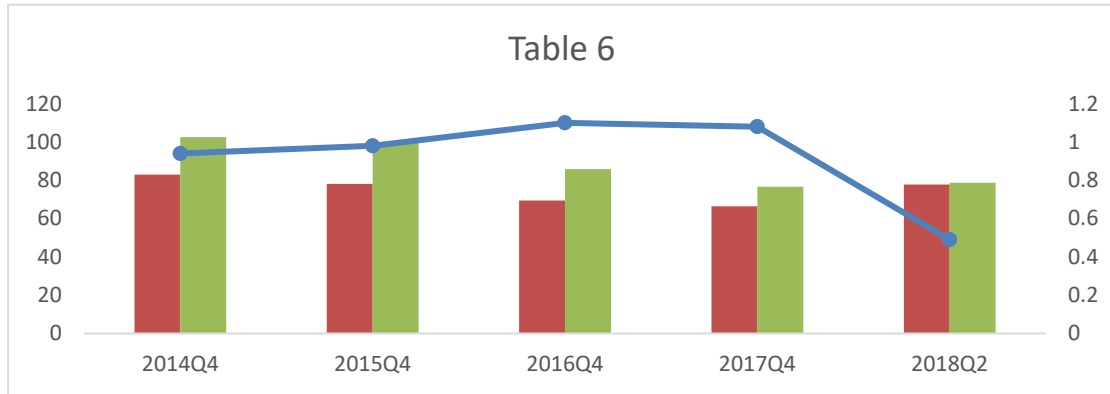
As shown in Table 5, the gross profit is normally around 20-21%, the net profit rate and return on equity are also increasing suggesting the company is making a profit.

The profit for optical cable is growing every year. This is driven by the innovation of Hengtong for the optical fiber perform deposition and ultralow loss technology. We predict with the growing 5G business, Hengtong will take over more market share with advanced technology, and contribute more profit with continuous improving technology.

The submarine cable started operation since 2009. Since 2018, Hengtong received a big order for this business, and will achieve profit from 2018. Furthermore, due to the

high gross profit of submarine cable with the expanding market, it is also very optimistic for Hengtong to achieve performance growth.

### Operation Capacity Analysis

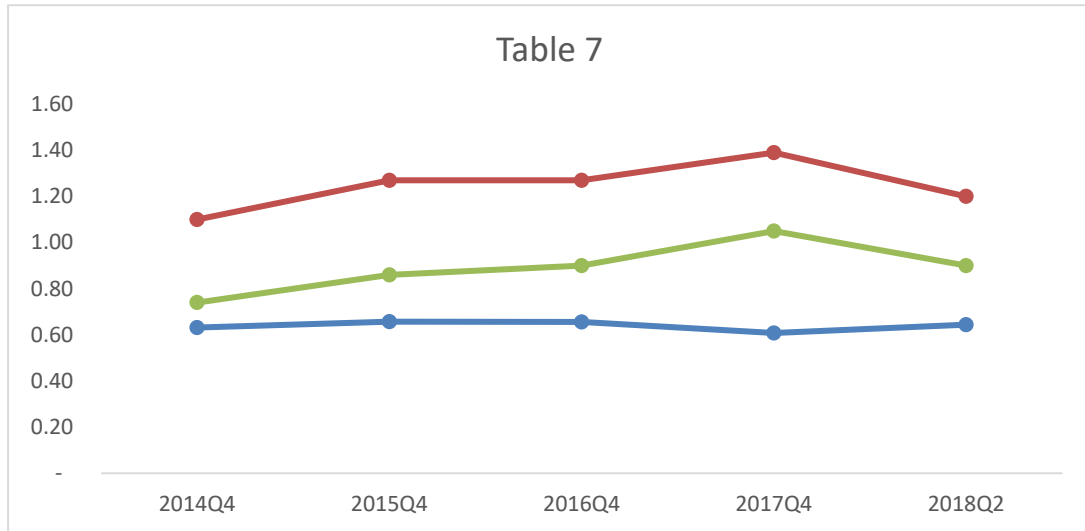


Accounts receivable turnover days, inventory turnover days, asset turnover rate

Source: eastmoney.com

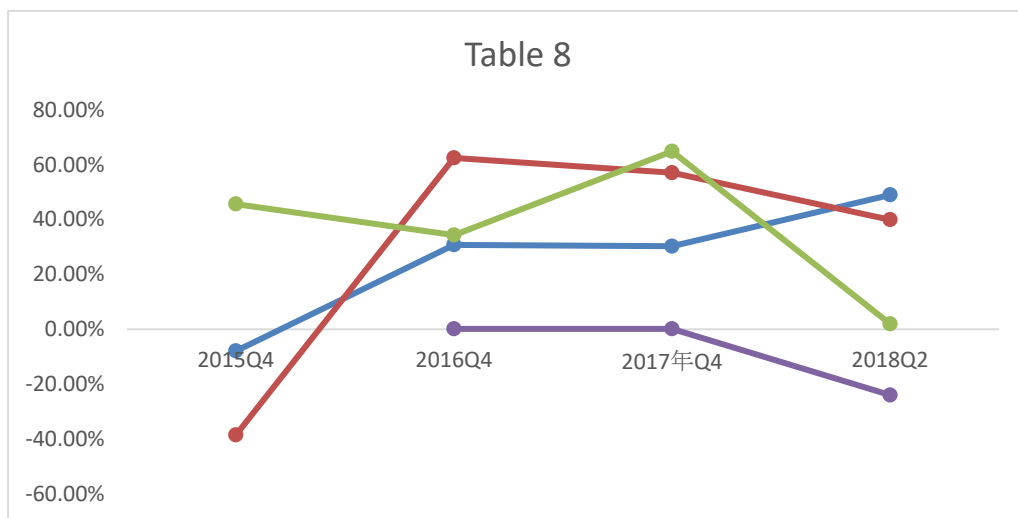
As can be seen from Table 6, the receivables turnover days are increased, this was caused by the increase in sales. However, since the three major operators usually settle accounts in the fourth quarter, we predict that this cash flow will be generated after the fourth quarter. The increase in inventory turnover days is due to the fact that the company won the bid for new projects in 2018, resulting in an increase in inventory. According to the characteristics of the optic cable industry, many operators' provincial branches require manufacturers to send goods to their respective areas for backup, and the income is settled and confirmed when the goods are picked up. These inventory can be converted into income at any time, which is one of the turnover growth points of Hengtong in the fourth quarter and in the future.

## Debt Paying Ability Analysis



Asset-liability ratio, current ratio, quick ratio increased year-on-year

Source: eastmoney.com

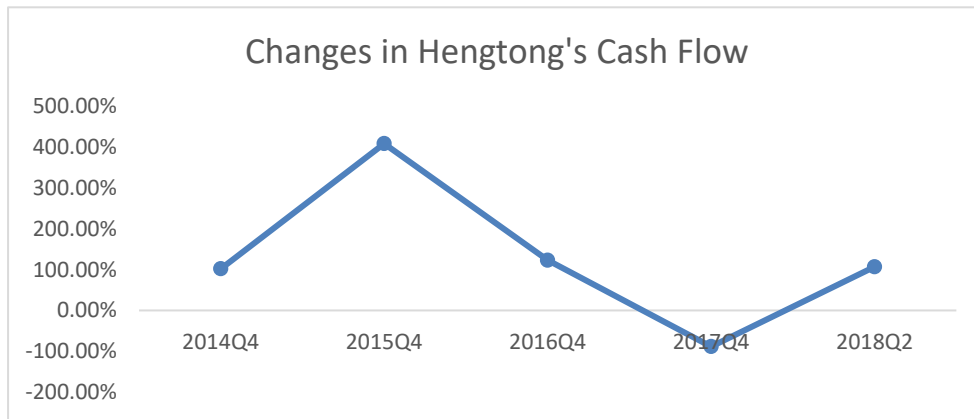


Notes payable, long-term borrowings, bonds payable increased year-on-year

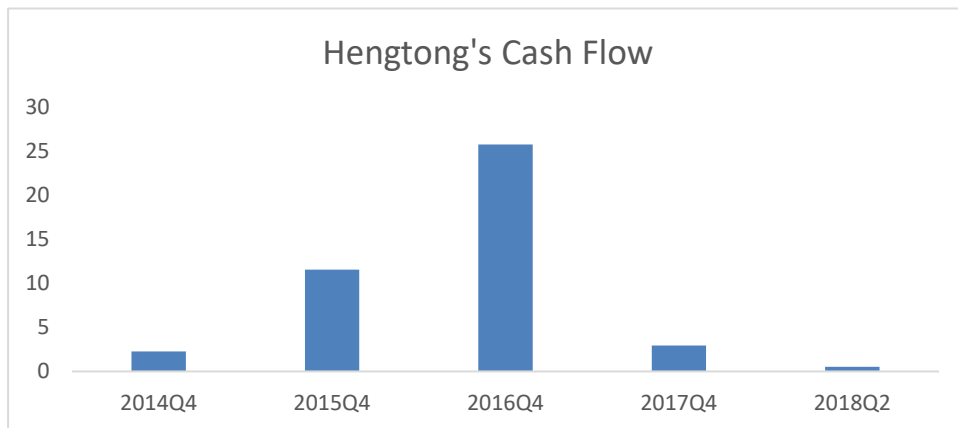
Source: eastmoney.com

As shown in Table 7 and 8, the liquidity ratio and quick ratio synchronous change, the asset-liability ratio is stable but high, round about 60%, this indicated the debt paying ability is not satisfying. With the long term bonds in year 2017, the asset-liability ratio had slightly reduced. But the finance risk is still very high.

## Cash Flow Analysis



Source: eastmoney.com



Source: eastmoney.com

At the end of 2017, Hengtong received a communication engineering order, prepaid 2 billion to order a communication intelligent processor to Kaile; after receiving the goods, Hengtong will deliver it to the customer for installation, and will immediately receive the cash. It is estimated that this project will earn a profit of 400 million yuan, and the full amount will be refunded in 2018, so the cash flow will start to increase from 2018.

# Valuation

Revenue and Expense Projections:	Units:	Historical			Projected									
		FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY28
<b>Net Sales by Segment:</b>														
Optical fiber	¥ 100M	55.17	81.39	91.98	124.17	167.63	226.31	282.88	339.46	390.38	429.41	472.36	500.70	525.73
Power	¥ 100M	77.74	74.53	95.79	105.37	115.91	127.50	138.97	150.09	160.60	170.23	178.74	185.89	193.33
Copper conductor	¥ 100M	0.00	30.09	48.94	83.83	89.22	62.18	65.29	66.94	66.60	67.27	67.94	68.62	69.30
Other	¥ 100M	2.74	6.99	22.79	45.58	68.37	82.04	98.45	108.30	119.13	131.04	144.14	158.56	174.42
<b>Total Consolidated Sales:</b>	¥ 100M	<b>135.65</b>	<b>193.00</b>	<b>259.50</b>	<b>328.96</b>	<b>411.13</b>	<b>498.02</b>	<b>585.59</b>	<b>663.78</b>	<b>736.70</b>	<b>797.95</b>	<b>863.18</b>	<b>913.77</b>	<b>962.78</b>
Annual Growth Rate:	%		42.3%	34.5%	26.8%	25.0%	21.1%	17.6%	13.4%	11.0%	8.3%	8.2%	5.2%	5.4%
<b>Growth Rate by segment:</b>														
Optical fiber	%				35.0%	35.0%	35.0%	25.0%	20.0%	15.0%	10.0%	10.0%	6.0%	5.0%
Power	%				10.0%	10.0%	10.0%	9.0%	8.0%	7.0%	6.0%	5.0%	4.0%	4.0%
Copper conductor	%				10.0%	10.0%	5.0%	5.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Other	%				100.0%	80.0%	20.0%	20.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
<b>Gross profit by Segment:</b>														
Optical fiber	¥ 100M	18.93	28.08	36.72	52.2	77.1	108.6	113.2	118.8	117.1	107.4	94.5	75.1	52.6
Power	¥ 100M	26.40	37.55	10.94	12.6	13.9	15.3	16.7	18.0	19.3	20.4	21.4	22.3	23.2
Copper conductor	¥ 100M	-	0.39	0.52	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8
Other	¥ 100M	0.49	2.74	3.60	11.1	16.6	19.9	23.9	26.3	28.9	31.8	35.0	38.5	42.4
<b>Total Consolidated Gross profit:</b>	¥ 100M	<b>45.82</b>	<b>68.76</b>	<b>51.78</b>	<b>76.46</b>	<b>108.28</b>	<b>144.54</b>	<b>154.46</b>	<b>163.85</b>	<b>166.06</b>	<b>160.35</b>	<b>151.68</b>	<b>136.68</b>	<b>118.91</b>
Annual Growth Rate:	%		50.2%	(29.7%)	37.7%	42.6%	33.5%	6.2%	6.2%	2.3%	(3.4%)	(5.3%)	(9.2%)	(23.0%)
<b>Gross Margin by Segment:</b>														
Optical fiber	%	34.3%	34.5%	39.9%	42.0%	46.0%	48.0%	40.0%	35.0%	30.0%	25.0%	20.0%	15.0%	10.0%
Power	%	34.0%	50.4%	11.4%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%	12.0%
Copper conductor	%	-	1.3%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%	1.1%
Other	%	17.9%	39.2%	15.0%	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%	24.3%

**Optical fiber:** According to the previous telecommunication industry construction cycle, 5G infrastructure construction will have accelerate growth in the near future, and the optical fiber business will maintain a high growth rate of 35% in the next three years, until the end of the 5G cycle will enter a relatively low speed of 5%.

**Electricity:** Although electricity is the main business, the current technical composition is low, and the strategy of charging close to the smart grid and new energy can maintain 10% growth, and the profit rate will be stable at 12%, the industry average level.

**Copper conductor:** For new business, the growth is fast, but the gross profit margin is only 1%. We believe that the company will not continue to expand its investment, and will fall back quickly after the recent 10% growth.

**Others:** The diversified operation of the company has a substantial increase in revenue, but its profit margin will continue to decline. The profit of the diversified products operated with optical fiber will be attributed to the optical fiber business unit. The real diversified business growth and profit margin will be very limited.

**Overall:** The Company's main business has grown more than 10 times in the past 10 years, and its main business will grow 3.7 times in the next 10 years.

**Risk:** The Company's main business is seriously affected by the industry cycle. If there is no new high-profit business, the gross profit will continue to decline.

It is good to know the company is now in the early phase of 5G infrastructure construction.

Discount Rate Calculations - Assumptions:	
Risk-Free Rate:	3.62%
Equity Risk Premium:	4.50%
Pre-Tax Cost of Debt:	4.91%
Cost of Preferred Stock:	-

Comparable Companies - Unlevered Beta Calculation:										
Name	Ticker	Levered Beta	Debt	% Debt	Preferred Stock	% Preferred	Equity Value	% Equity	Tax Rate	Unlevered Beta
亨通光电	600487	1.48	171.7	30.8%	-	-	385.6	69.2%	25.0%	1.11
烽火通信	600498	1.17	188.0	41.2%	-	-	267.9	58.8%	25.0%	0.77
中天科技	600522	1.31	90.4	28.3%	-	-	229.3	71.7%	25.0%	1.01
长飞光纤	601869	-	36.8	11.8%	-	-	274.2	88.2%	25.0%	-

<b>Median:</b>		<b>1.31</b>	<b>131.05</b>	<b>0.30</b>	<b>-</b>	<b>-</b>	<b>271.08</b>	<b>0.69</b>	<b>0.25</b>	<b>1.01</b>
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亨通光电	STLD	1.48								
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亨通光电 - Levered Beta & WACC Calculation:										
	Ticker	Unlevered Beta	Debt	% Debt	Preferred Stock	% Preferred	Equity Value	% Equity	Tax Rate	Levered Beta
Current Capital Structure:	600487	1.01	171.7	30.8%	-	-	385.6	69.2%	25.0%	1.35
"Optimal" Capital Structure:	0	1.01	164.6	29.5%	-	-	385.6	69.2%	25.0%	1.33

Cost of Equity Based on Comparables, Current Capital Structure:	9.69%
Cost of Equity Based on Comparables, "Optimal" Capital Structure:	9.63%
Cost of Equity Based on Historical Beta:	10.28%

WACC = Cost of Equity \* % Equity + Cost of Debt \* (1 - Tax Rate) \* % Debt + Cost of Preferred Stock \* % Preferred Stock

WACC, Current Capital Structure:	7.84%
WACC, "Optimal" Capital Structure:	7.75%
WACC, Current Capital Structure and Historical Cost of Equity:	8.25%

Average WACC Produced by All Methods:	7.94%
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By comparing the comparable listed companies, we determined that the company's ideal equity debt structure in the future is not much different from the current equity debt structure, but the company's beta is significantly higher than the market average. We expect the company's beta to be closer to the market average in the future. The company's weighted average cost of capital is between 7.75% and 8.25%. On average, we take 7.94% as the required rate of return for the company's long-term cash flow discount.

亨通光电 - FCF Projections:	Units:	Historical				Projected								
		FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY28
Revenue:	¥ 100M	135.7	193.0	259.5	329.0	411.1	498.0	585.6	663.8	736.7	798.0	863.2	913.8	962.8
Revenue Growth Rate:	%	-	42.3%	34.5%	26.6%	25.0%	22.2%	17.6%	13.4%	11.0%	8.3%	8.2%	5.2%	5.4%
Unlevered Free Cash Flow:	¥	(7.84)	(11.89)	(40.31)	28.29	40.06	53.48	57.15	60.63	61.44	59.33	56.12	50.57	43.99
Growth Rate:	%	-	-	-	-	42.6%	33.5%	6.2%	6.2%	1.3%	(3.4%)	(5.4%)	(13.0%)	
Discount Period:	#				1	2	3	4	5	6	7	8	9	10
Discount Rate (WACC):	%				7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%
Cumulative Discount Factor:	#				0.93	0.86	0.80	0.74	0.68	0.63	0.59	0.54	0.50	0.47
PV of Unlevered FCF:	¥ 100M				26.2	34.4	42.5	42.1	41.4	38.8	34.7	30.4	25.4	20.5

**Terminal Value – Perpetuity Growth Method:**

Expected Long-Term GDP Growth:	3.5%
Baseline Terminal FCF Growth Rate:	3.0%
Baseline Terminal Value:	916.39

(+) PV of Terminal Value:	426.64
(+) Sum of PV of Free Cash Flows:	336.50
<b>Implied Enterprise Value:</b>	<b>763.13</b>

*% of Implied EV from Terminal Value:* 0.56

(+) Cash & Cash-Equivalents:	33.89
(+) Equity Investments:	0.00
(+) Other Non-Core Assets, Net:	0.00
(+) Net Operating Losses:	10.14
(-) Total Debt:	(171.66)
(-) Preferred Stock:	0.00
(-) Noncontrolling Interests:	0.00
(-) Unfunded Pension Obligations:	0.00
(-) Capital Leases:	0.00
(-) Restructuring & Other Liabilities:	0.00
<b>Implied Equity Value:</b>	<b>635.50</b>

Diluted Shares Outstanding: 19.04

<b>Implied Share Price from DCF:</b>	<b>33.38</b>
<b>Premium / (Discount) to Current:</b>	<b>0.65</b>

The discounted value of the company's future cash flow is 76.313 billion yuan, except for the debt of listed companies, the owner's equity is 63.55 billion yuan, and equivalent to the company's share price should be 33.38 yuan.