

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**



**Diploma Thesis**

**Economic analysis of a selected company**

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## DIPLOMA THESIS ASSIGNMENT

Bc. Yuxin He

Economics and Management

Thesis title

**Economic Analysis of A Selected Company**

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### Objectives of thesis

The diploma thesis focuses on the economic analysis of Chongqing Changan Automobile Company Limited. in the years 2013 to 2017. The objective of this diploma thesis is to evaluate its overall economic situation, including its financial status, competitiveness in the industry, opportunities and threats, etc. And according to the results of the analysis, submit proposals and measures for its stabilization and improvement based on selected economic assessment methods.

### Methodology

Economic analysis is divided into internal financial analysis and external environment analysis in this diploma thesis. Internal financial analysis mainly focus on the financial status of the selected company. Financial ratios and other financial analysis methods are used to evaluate its productivity, liquidity, operating abilities. External environment include polity, culture, technology, etc. PEST analysis are used to explain its macro environment and Porter analysis are used to evaluate the competitiveness in the whole industry. In the end, the diploma thesis will combine internal financial analysis and external environment together, then comprehensively discuss about its economic situation with the help of SWOT analysis.

## **The proposed extent of the thesis**

60 – 80 pages

## **Keywords**

business, financial analysis, profitability, liquidity, activity, economic analysis, swot, PEST,

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## **Recommended information sources**

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### **Declaration**

I declare that I have worked on my diploma thesis titled "Economic analysis of a selected company" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 28.03.2019

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I would like to thank Ing. Jiří Mach, Ph.D. for his advice and support during my work on this thesis.

# Economic analysis of a selected company

## Abstract

This diploma thesis selects Chongqing Changan Automobile Company Limited to do economic analysis. China Changan Automobile Co., Ltd. is one of the largest automobile groups in China. Its main business is the R&D, manufacture and sale of automotive and automotive engines. This thesis is divided into the theoretical part and the practical part. The theoretical section explains the basic concepts, methods, and procedures used. The practice section uses these methods and procedures to analyze the data from financial statement of China Changan Automobile Co., Ltd in 2012-2017.

The results of the economic analysis show that Changan's asset structure and debt structure remain relatively stable. Liquidity has been growing steadily. But the growth of sales and total asset have stagnated. In addition, although 23.9% of the total number of employees are engaged in research and development, the overall education level of employees is low. Therefore, their ability can't support their R&D work.

The Chinese auto market is highly competitive and Chinese people's awareness of environmental protection has gradually increased. Therefore, the company should adapt to the needs of the market and customers to develop and produce more new energy vehicles.

**Keywords:** business, financial analysis, profitability, liquidity, activity, economic analysis, swot, PEST, financial statements

# Ekonomická analýza vybrané společnosti

## Abstrakt

Tato diplomová práce pojednává o ekonomické analýze společnosti China Changan Automobile Co., Ltd. Čínská korporace Changan Automobile Group Co., Ltd. je jednou z největších automobilových skupin v Číně. Její hlavní činností je výzkum a vývoj, výroba a prodej automobilů a automobilových motorů. Práce je rozdělena na teoretickou a praktickou část. Teoretická část vysvětluje základní pojmy, metody a použité postupy. Praktická část používá tyto metody a postupy k analýze dat z finančních výkazů uvedené společnosti v letech 2012-2017.

Výsledky ekonomické analýzy ukazují, že struktura aktiv a dluhová struktura společnosti Changan zůstávají relativně stabilní. Likvidita neustále roste. Růst tržeb a celkových aktiv však stagnoval. Ačkoliv 23,9% z celkového počtu zaměstnanců je zapojeno do výzkumu a vývoje, je celková úroveň vzdělání zaměstnanců nízká. Jejich schopnosti proto nemusí být dostatečné pro jejich práci v oblasti výzkumu a vývoje.

Čínský automobilový trh je vysoce konkurenční a postupně se zvyšuje povědomí čínského obyvatelstva o ochraně životního prostředí. Společnost by se proto měla přizpůsobit potřebám trhu a zákazníkům vyvíjet a nabízet více vozidel na bázi nových energetických zdrojů.

**Klíčová slova:** obchod, finanční analýza, ziskovost, likvidita, aktivita, ekonomická analýza, SWOT, PEST, finanční výkazy.



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## List of Abbreviations

Chongqing Changan Automobile Company Limited-----Changan  
Chongqing BYD COMPANY LIMIT-----BYD

# 1 Introduction

Modern companies are a system in the system of the national economy. Their inputs and production are inseparable from the huge system of the national economy. Companies' most basic and primary purpose is to get profit. To achieve this primary purpose, they must be able to effectively manage their assets and be competitive in market. However, in the times of rapid development and intense competition, it is not an easy task. Under this condition, economic analysis is needed by managers and investors to gain a clear picture of company's economic situation and therefore help them make better judgement and decisions.

Economic analysis is composed of internal financial analysis and external environment analysis. Internal financial analysis mainly focus on the financial status of the selected company. Financial ratios and other financial analysis methods are used to evaluate its productivity, liquidity, activity, leverage. External environment refers to external factors that not fully controlled by the companies, including policies, culture, technology, etc. In this part, PEST analysis are used to explain its macro environment and Porter analysis are used to evaluate the competitiveness in the whole industry. In the end, the diploma thesis will combine internal financial analysis and external environment together, then comprehensively discuss about its economic situation with the help of SWOT analysis.

Chongqing Changan Automobile Company Limited is a leading automotive company in China. This diploma thesis will evaluate the overall economic situation of Chongqing Changan Automobile Company Limited and make some suggestions for its future development according to the results of the analysis.

## **2 Objective of work**

Chongqing Changan Automobile Company Limited is a leading automotive company in China. It has a total of 12 production bases at home and abroad, 32 complete vehicle and engine factories, with an annual production and sales of more than 3.06 million vehicles (2016). It has a total of about 90,000 employees and ranks among the four major Chinese automobile camps.

The objective of this diploma thesis is to evaluate the overall economic situation of Changan Automobile Company Limited between 2012 to 2017, including its financial status, competitiveness in the industry, opportunities and threats, etc. And according to the results of the analysis, make some suggestions for its future development.

The first part of the diploma thesis is theoretical part. In this part, basic explanation and definition of economic analysis and its elements based on professional literature will be given, such as concept, functions, methods, users and so on. The second part is practical part, which provide calculation, discussion, analysis based on statistics. Also, analytical methods like SWOT, PEST, Porter will be used for processing and concluding.

### **3 Literature Review**

#### **3.1 Company**

#### **3.2 Concept of company**

As this diploma thesis deals with the economic analysis of a selected company, it is appropriate to first define the concept of a company itself.

Companies' most basic and primary purpose is to get profit. To achieve purpose, company engages in economic activities such as the production, circulation of goods and service in order to meet the needs of the society.(Zhao Yousheng, 2004, p1)

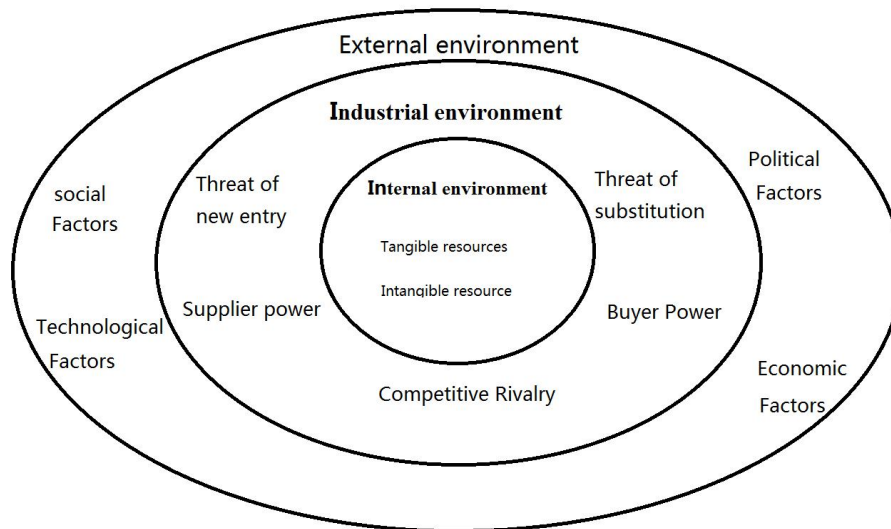
Modern companies are a system in the system of the national economy. Their inputs and production are inseparable from the huge system of the national economy. The production factors it needs are invested by various departments of the national economy, and the products it produces need to be exported to other departments. It can be seen that the national economic system is the external environment of the enterprise system and is an uncontrollable factor of the companies. The internal conditions of the companies are factors that the company itself can control. When the external environment of the company changes, the company can adapt to this change by changing internal conditions to ensure that the established business objectives are achieved.(Zhao Yousheng, 2004, p3)

##### **3.2.1 Environment of company**

The environment of the company is composed of the external environment and the internal environment.

Figure 1 is the environmental structure diagram of the enterprise. It uses three circles to divide the company environment into three parts, of which the inner circle represents the internal environment of the company ; the middle circle represents the industrial environment, whose relationship with the company is relatively direct; the outer circle represents the macro environment, whose impact on company is more indirect. The macro environment and industrial environment in the figure together constitute the external environment of the company. (Li Chengwen, 2018, p48 )

Figure 1 Company environment structure



Source: Li Chengwen. *Corporate strategic management*[M]. Chengdu: Tsinghua University Press, 2018: p49

The macro environment is mainly composed of political and legal, economic, cultural and technological factors.

The industrial environment generally refers to the five types of competitiveness proposed by Michael Porter, namely the potential new entrants to the industry, the threat of alternative products or services, the ability of buyers to bargain, the ability of suppliers to bargain, and the existing competitors' competition. The internal environment of a company includes factors such as the resources, capabilities, and organizational structure of the company. (Li Chengwen, 2018, p48 )

### 3.2.2 External environment of company

The external environment of the company refers to external factors that can affect the success or failure of the business, but not fully controlled by the companies. The purpose of analyzing the external business environment of a company is to find out the market opportunities that the external environment can provide for the company, and the multiple threats that the external environment poses to the development of the company.

External environmental factors have different effects on different companies. First of all, for a specific company, it always exists in an industrial environment, which directly affects the production and operation activities of the company. Therefore, the first type of



external environmental is the industrial environment, which is the environment with which companies are directly connected , also known as the micro-external environment of companies. The second type of external environmental is which put indirectly or potentially effect on the companies, which are also called macro-external environment of the companies. Generally speaking, the factors of the macro external environment include politics, law, society, culture, and economy. (Li Chengwen, 2018, p48-49)

### **3.2.3 Internal environment of company**

The internal environment of a company refers to the various resources owned and controlled by the company and the organizational system on which these resources and capabilities are applied. A specific internal environment of a company will affect the company's role in the competition. Therefore, the internal environment of the company determines what the company can do.

The purpose of the internal environment analysis of the company is to grasp the current situation of the enterprise and to clarify the advantages and disadvantages of the company. At present, the methods of internal environmental analysis of companies can be summarized into two categories: one is to conduct longitudinal analysis, that is, to analyze the historical evolution of all aspects of the company, to find out where the company has been strengthened and in what aspects it has been weakened. On the basis of historical analysis, it predicts the development trend of all aspects of the company. The other is to compare the situation of the company with the average level of the industry. The company can find the advantages and disadvantages relative to the average level of the industry.

Resources are the basic conditions for the survival and growth of companies, the foundation for building a competitive and development strategy, and the source of products and services provided by companies. Analysis of the internal resources of a company is of great significance for making full use of the existing resources and potential of the enterprise and for striving to achieve rapid development of the enterprise. In general, company resources refer to the various combinations of factors that companies have or control in the process of providing products or services to society that can achieve their strategic goals. (Li Chengwen, 2018, p50- p51 )

### **3.3 Economic analysis**

#### **3.3.1 Concept of economic analysis**

An company's own economic analysis can be explained as monitoring a particular economic entity, phenomenon or process, decomposing it into individual elements, and scrutinizing and evaluating it in detail to determine how to improve it. This process may include other activities such as synthesis, specific mathematical statistical methods, assessment methods, etc. Economic analysis in this concept can be focused on an enterprise of any scale, on a plant, or on individual in-house departments. It does not have to deal only with the financial activity of these units, but it can also switch to a technical analysis in which it will use non-economic indicators. An essential part of the analysis is the assessment of the current state of the company. Thus the economic analysis can be all the activities and results of the entire business, or only its particular parts, activities or processes. (Synek, 2007, p7)

Economic analysis is the analysis of economic activities and their effects in a certain period of time based on economic theories and basic data. In this process, various indicators and models are used.

Economic analysis is essential to solving managerial decision-making problems, since it is very important to recognize, measure and evaluate the economic reality.

#### **3.3.2 Purposes of economic analysis**

Economic analysis plays an important role in improving the economic efficiency of enterprises and enhancing their financial status. It gives a clear picture of the company's true state to the managers and people who are not directly employed by the company but are interested in the financial situation.

#### **3.3.3 Users of economic analysis**

Before the start of each analysis, it is necessary to determine to whom and for what purpose the analysis will serve. Because different entities may want to find out different facts about the same organization depending on what purpose the information will be used for. The users of the company's economic analysis are not only managers and related companies, but also its shareholders, investors; banks; suppliers, tax services etc.

Typical users of the economic analysis are:

Management--- The managers usually use the information provided by the economic analysis to control the fulfillment of the goals and to decide on the further development of the company. Information is important for strategic and operational management. The evaluation focuses on complex or partial aspects of the business.

Statutory bodies--- They focus on information about the various aspects of the business, as they want to be aware of its situation.

Shareholders ---They are interested in financial accounting information, which is mainly stated in the financial statements, because they provide the company with capital.

Employees and trade unions --- They are generally interested in information about the operation and prosperity of the business and its future development.

The Finance Authority---It is interested in financial accounting information based on the organization's financial statements, especially for the purposes of controlling tax compliance.

Statistics authorities--- They require information reflecting the company's core rating, which is further used for national statistical purposes and tracking different trends.

Banks---Since they provide loans to company. Therefore, they are interested both in economic and non-economic data on company. Differently detailed business appraisal procedures are developed for these purposes.

Investment companies---They may be interested in a comprehensive valuation of an company, either because they already have it in their portfolio, or because they are considering buying its shares, bonds or bills of exchange.

Creditors---for whom the information derived from an economic analysis is crucial when deciding whether or not to provide credit to the enterprise at what level and under what conditions. (Veber et al., 2000, pp. 370-371)

### **3.4 Financial analysis**

### **3.5 Concept of financial analysis**

Financial statement analysis refers to the analysis and evaluation of a company's financial status, operating results and cash flow status to achieve a specific purpose related to the actual or potential interest of the company. (Wu Xiaojiang, 2018, p2)

### **3.6 Sources of financial analysis**

Financial statement analysis is to obtain and analyze information from the financial statement to understand the characteristics of the company's activities, to evaluate its performance, and to find out its problems.

There are three main sources of information for financial analysis, which are balance sheet, income statement and cash flow. The statements' data is based on the accounting method and accounting standards used by the organization.

The balance sheet shows the status of the assets in the company (assets) on one side and the sources of its coverage (liabilities) on the other by a certain date in monetary terms. It is based on the principle of equilibrium, which means that the assets must equal the sum of equity and debt. The balance sheet is stated at a certain point in time, usually on the last day of the accounting period.

The income statement summarizes the operating result of the company. It is an overview of the costs, revenues and profit or loss of the company. It gives us an overview of the financial, operating , the profit before tax and the net profit or loss of the business. The data obtained from this report is an important basis for assessing corporate profitability.

The cash flow statement is an overview of cash (income) and its use (expense) compiled on a certain date. In practice, different accounting methods are used, but it is always necessary to realize that there is a difference between costs and expenses and between revenue and earnings. This statement can be made either by the direct or indirect way. (Pauline Weetman, 2006, p59)

### **3.7 Users of financial analysis**

Usually, users of financial analysis are corporate stakeholders. The main users of financial analysis can be divided into internal analysis users and external analysis users. Among them, the internal analysis users includes existing large shareholders, company executives, financial department employees, etc.; external analysis users include small and medium shareholders, creditors, potential stock or bond investors, ordinary employees of enterprises, government functions, social intermediaries, Competitors, suppliers, customers, etc.

Different users have different interests concerning company , and their objectives of financial analysis are different. Therefore, their focus and perspective of company financial information will also differ. Financial analysis can help analysts deepen their understanding of the company and reduce the uncertainty in the evaluation process, thus improving the level of decision-making. (Wu Xiaojiang, 2018, p2-3)

### **3.8 Content of financial analysis**

#### **1. Solvency analysis**

Solvency refers to the ability of a company to repay the principal and interest of the debt. The solvency analysis includes short-term solvency analysis and long-term solvency analysis. The short-term solvency analysis focuses on the liquidity of companies, which means the ability to meet short-term cash needs; long-term solvency refers to the ability of companies to use their own assets or external financing to repay long-term debt. Solvency analysis are closely related with the company credit assessment and financial risk analysis. (Wu Xiaojiang, 2018)

#### **2.Operational capability analysis**

Operational capacity refers to the efficiency of the use of company capital, usually measured by the turnovers of various assets. The asset management level and operational capability of an enterprise will ultimately affect the safety and profitability of the business. Therefore, operational capability is a place of great concern to users such as corporate creditors, equity investors and managers.

Besides,through the operational capabilities of the company, it is possible to predict the development strategy of the company in the future.

#### **3.Profitability analysis**

Profitability refers to the ability of companies to generate revenue for capital providers. The indicators that reflect the profitability of the company's business mainly include gross profit margin, net profit margin, etc. Profitability analysis is closely related to company stock valuation. (Wu Xiaojiang, 2018, p8-9)

#### **4.Development capability analysis**

Development capability refers to the potential ability of enterprises to further expand their business scale and enhance market competitiveness. Development capability analysis is closely related to company development strategy analysis, financial forecasting and stock valuation. (Wu Xiaojiang, 2018, p8-9)

## **5. Comprehensive financial analysis**

Comprehensive financial analysis refers to the systematic, comprehensive and in-depth analysis of the financial status, operating results, cash flow, etc. of the various financial indicators as a whole, so as to make an overall evaluation and judgment on the management level and economic benefits of the enterprise. (Wu Xiaojiang, 2018, p8-9)

### **3.8.1 Methods of financial analysis**

The financial statement analysis includes horizontal analysis and vertical analysis.

The percentage analysis of increases and decreases in related items in comparative financial statements is called horizontal analysis. (Warren, Reeve, Duchac, 2013, p.698)

This method is also known as "Trend Analysis". The horizontal one is called because the items of the financial statements are compared by the line between years. In horizontal analysis, there are many ways to compare. Firstly we can compare changes in absolute terms. Or we can calculate the changes between current period and previous year, and therefore compare their percentage changes over the years.

Vertical analysis— The percentage analysis of the relationship of each component in a financial statement to a total within the statement is called vertical analysis. Although vertical analysis is applied to a single statement, it may be applied on the same statement over time. Showing how the percentages of each item have changed over time. Vertical analysis aims to research the structure of assets, liabilities, revenues, and costs of the enterprise. For example, the analysis of balance sheet assets reflects the share of fixed assets, intangible assets, inventories, receivables, and other assets in total assets of the company (vertical balance sheet analysis). After determining the percentage of each item in the total, the analyst has the opportunity to compare the company with other companies according to these indicators. In terms of liabilities, we can make a structural analysis of self and external sources and term structure (long-term and short-term liabilities). As for profit and loss analysis, vertical analysis is used to determine the structure of costs and revenues, as well as to determine net profit or sales revenue and cost of sales.(Warren, Reeve, Duchac, 2013, p.698)

### **3.8.2 Financial ratios**

The financial ratio is the relative size of two selected values taken from the company's financial statements. Often used for accounting, there are many standard ratios

used to assess the overall financial position of a company. Financial analysts use financial ratios to compare the strengths and weaknesses of each company. If the company's stock is traded on the financial market, the market price of the stock is used at certain financial ratios (Groppelli, Angelico, 2000, p. 433)

The financial ratio quantifies many aspects of the business and is an integral part of financial statement analysis. Financial ratios are classified according to the financial aspects of the business.

## 4 Methodology

### 4.1 Financial analysis

#### 4.1.1 Profitability ratios

Management of a business means that careful use of resources for the benefit of the owners. Ratios in this category indicate how the company operates in terms of sales (revenue) from the use of assets, and reflect the efficiency of controlling costs and generating profits based on the sales.

Gross margin	$=\text{gross profit/ sales}$	1
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The purpose of margins is to determine the value of incremental sales, and to guide pricing and promotion decision. The higher the gross profit margin, the stronger the profitability of the company and the stronger the ability to control costs.

Operating margin	$=\text{operating profit/ sales}$	2
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Operating margins are important because they measure efficiency. The higher the operating margin, the more profitable a company's core business is.

Profit margin	$=\text{net profit/ sales}$	3
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The profit margin is used mostly for internal comparison. A low profit margin indicates a low margin of safety: higher risk that a decline in sales will erase profits and result in a net loss, or a negative margin.

Return on equity	$=\text{net profit/ equity}$	4
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ROE is especially used to compare the performance of companies in the same industry. ROE measures the ability of management to generate revenue from its available assets. It is generally considered that 15-20% of ROE is good.

Return on assets	$=\text{net profit/average total assets}$	5
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This number tells you what the company can do with what it has, i.e. how many dollars of earnings they derive from each dollar of assets they control. It's a useful number for comparing competing companies in the same industry. Return on assets gives an



indication of the capital intensity of the company, which will depend on the industry; companies that require large initial investments will generally have lower return on assets. ROAs over 5% are generally considered good. (Pauline Weetman, 2006, p.337)

#### 4.1.2 Liquidity

Managing existing assets and ensuring adequate but not excessive liquidity levels are a fundamental feature of a company's survival, especially in times of economic hardship.

Working capital	=current assets-current liability	6
-----------------	-----------------------------------	---

Working capital can be used to measure the short-term solvency of a company or business. The greater the amount, the more adequate the company or business is prepared for the payment obligation and the better the short-term solvency. When there is a negative working capital, that is, when a company's current assets are less than current liabilities, the operation of the company may be interrupted at any time due to the failure of turnover.

Current ratio	=current assets / current liability	7
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The current ratio indicates the extent to which short-term assets can be used to pay short-term liabilities. Generally speaking, a current ratio of 2:1 is considered to be a reasonable level.

Acid-test ratio	=liquid assets / current liability	8
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The acid test ratio is a liquidity ratio that measures the ability of a company to use its near-cash or fast assets to immediately eliminate or refund its current liabilities. It is the ratio of fast available or current assets to current liabilities.

Both the current ratio and the acid test ratio are used to indicate the liquidity. The former has a benchmark value of 2 and the latter has a value of 1.

Cash ratio	=cash / current liability	9
------------	---------------------------	---

The cash ratio reflects the company's ability to pay current debt without relying on inventory sales and receivables.

The cash ratio best reflects the ability of an enterprise to directly repay current liabilities. The cash ratio is generally considered to be better than 20%. However, if this ratio is too high, it means that the company's current liabilities are not properly used, and

the cash assets are low in profitability. If the amount of such assets is too high, the opportunity cost of the enterprise will increase. (Pauline Weetman, 2006, p.341)

#### 4.1.3 Activity ratios

Receivables conversion period	$=\text{receivables} / \text{sales} * 365$	10
Inventory conversion period	$=\text{inventory} / \text{COGS} * 365$	11
Payables conversion period	$=\text{payables} / \text{COGS} * 365$	12
Cash Conversion Cycle	$=\text{Receivables conversion period} + \text{Inventory conversion period} - \text{Payables conversion period}$	13

Receivable conversion period is the time between the sale of the final product on credit and cash receipts for the accounts payable.

Inventory conversion period reports us about the average time to convert our total inventory into sales. It is relationship between total days in year and inventory turnover ratio. In other words, it measures the length of time on average between the acquisition and sale of merchandise.

The cash conversion cycle is a metric that expresses the time (measured in days) it takes for a company to convert its investments in inventory and other resources into cash flows from sales. The cash conversion cycle is one of several quantitative measures that helps evaluate the efficiency of a company's operations and management. A trend of decreasing or steady cash conversion cycle values over multiple periods is a good sign.

#### 4.1.4 leverage ratio

The leverage ratio is an indicator shows the degree of financial risk in the balance sheet and income statement. Financial risk is obligated to repay the loan and pay interest.

Debt ratio	=total liabilities / total assets	14
------------	-----------------------------------	----

Debt Ratio is a financial ratio that indicates the percentage of a company's assets that are provided via debt. It is the ratio of total debt (long-term liabilities) and total assets.

Long-term Debt to equity	=long-term debt / equity	15
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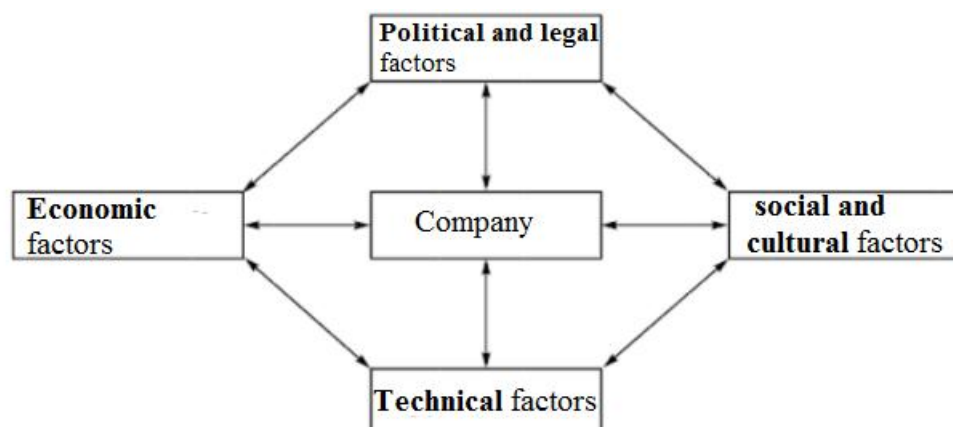
The Long-term Debt to equity ratio (D/E) is a financial ratio indicating the relative proportion of shareholders' equity and debt used to finance a company's assets.

It is an indicator that reflects the state of a company's Long-term debt. It does not increase the short-term debt repayment pressure of the company, but it is a structural problem of capital, which will bring additional risks to the company during the economic recession.( Peterson Pamela, 1999. p. 92.)

## 4.2 PEST

The macro environment is mainly composed of political, economic, social, and technological factors. Therefore, macro environmental analysis can be done through PEST analysis. These environmental factors often act indirectly or directly on the enterprise, and these environmental factors affect each other, as shown in Figure 2.

Figure 2 Macro environment analysis



Source:Li Chengwen. *Corporate strategic management*. Chengdu: Southwestern University of Finance and Economics Press. 2018: p69

Political and legal factors have important impact on the of a company: on the one hand, it can be encouraging and supportive (this is the opportunity available to the enterprise), on the other hand, it may set limitations and restrictions (this is threats that companies should try to avoid).

Economic factors are the most basic and important factors in macro environmental factors, affecting supply and demand. Economic factors include social-economic structure, development status, macroeconomic policies and other factors. The most important economic indicators to measure these factors are gross national product, economic growth rate, exchange rate, interest rate and inflation rate.

The analysis of social and cultural factors mainly includes population factors and cultural factors. The influence of population factors includes: the population size restricts the market size of individual or household consumer products; the age structure determines the market size of products targeting a certain age group. Cultural factors strongly influence people's purchasing decisions and business practices. Different countries have different cultural traditions, communities, customs and moral concepts, which will affect companies' operating performance.

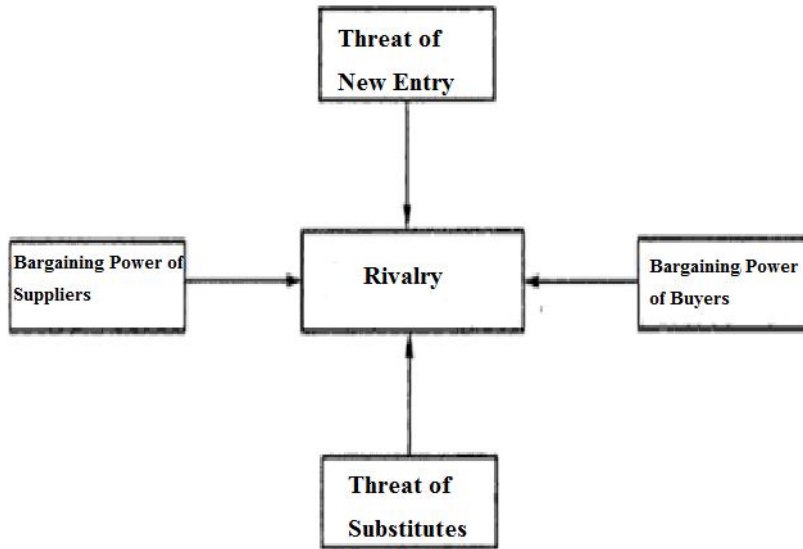
Technical factors is not only the inventions that have revolutionized the times, but also the emergence, development trends and application prospects of new technologies, new processes, and new materials related to company production. Today, technological factors may bring favorable development opportunities to companies, and may also bring threats to survival for some enterprises. (Li Chengwen, 2018, p68-69)

### **4.3 PORTER**

Porter analysis is also know as “five force analysis”, which is a model proposed by Harvard University professor ME Porter in 1980. This model combines industrial economics and business management to analyze the pattern of industrial competitiveness.

Five forces represent existing competitors, potential competitors, substitute products, consumers and suppliers, which are used to evaluate the relative competitive advantage of the company in the market. (Wu Fanrui, 2005, p98-p99)

Figure 3 Porter analysis



Source: Wu Fanrui, *Enterprise diagnostic basis*. Beijing: Tsinghua University Press. 2004: p98

### **1. Bargaining Power of Suppliers**

The supplier's strength depends mainly on what input factors they provide to the buyer. When the input factors provided by the supplier constitutes a larger proportion of the buyer's product, or is very important to the buyer's product production process, or seriously affect the quality of the buyer's product, the supplier's potential bargaining power for the buyer is greatly enhanced.

### **2. Bargaining Power of Buyers**

Buyers influence the profitability of existing companies in the industry by lowering prices and demanding higher quality of product or service .

### **3. Threat of New Entry**

New entrants will bring new production capacity and new resources to the industry. They will hope to win a place in the market that has been divided by existing companies, which may result in competing with existing enterprises in raw materials and market share. Eventually, the profitability of existing companies in the industry will be reduced, and in serious cases, the survival of these enterprises may be jeopardized.

#### **4.Threat of Substitutes**

Two companies in the same industry or in different industries may have mutually competing behaviors due to the products they produce as substitutes. This competition from alternatives will affect in various forms.

#### **5.Rivalry**

The competitive strategy of company is to make its own company gain advantages over competitors. Therefore, In the process of implementation, conflicts and confrontation will inevitably occur. These conflicts and confrontations constitute competition among existing enterprises. Competition among existing companies is often reflected in price, advertising, product introduction, after-sales service, etc. (Wu Fanrui, 2005, p98-p99)

### **4.4 SWOT**

The SWOT analysis is to help companies determine the actions to be taken in the future by summarizing the external environment and internal resource. It is often used for company strategic management, providing a basis for strategic planning by analyzing the strengths and weaknesses of internal factors and external factors and threats. SWOT was first proposed by the professor of management at the University of San Francisco in the early 2000s.

The quality of business operations is closely related to many internal and external factors in addition to management itself. SWOT analysis can help companies to understand a variety of internal and external factors. Therefore, it can be used as an effective tool for strategic planning of companies

The SO strategy is for companies to leverage their internal strengths and external opportunities. The company will strengthen the internal advantages of the organization in two ways to capture external opportunities: first, to find the best combination of resources to gain competitive advantage; second, to provide resources to strengthen and expand existing competitive advantages.

The goal of the WO strategy is to compensate for internal disadvantages by effectively utilizing external opportunities. It is often the case that companies face good external opportunities, but some internal disadvantages prevent them from taking advantage of these external opportunities. At this time, the company will weigh in the following two ways: First, strengthen investment, turn disadvantages into advantages to open up opportunities; Second, give up opportunities to opponents.

The ST strategy is to take advantage of the company's strengths and then avoid or mitigate the effects of external threats. At this time, companies should rebuild their organizational resources to gain competitive advantage, turn threats into opportunities, or organize defensive strategies to capture promising opportunities in other portfolios.

The WT strategy is a defensive strategy to overcome internal weaknesses and avoid external threats. Market competition is erratic, so that companies are bound to have certain strategic problems in this combination. If the company is at stake, then an aggressive strategy is the only option. If the current strategy does not work, then you should abandon this combination and focus on more promising opportunities in other portfolios. (Li Chengwen, 2018, p45-47)

Table 1 SWOT strategies

		Internal factors	
		Strengthens	Weakness
External factors	Opportunities	SO strategy	WO strategy
	Threats	ST strategy	WT strategy

*Source:Li Chengwen. Corporate strategic management. Chengdu: Southwestern University of Finance and Economics Press. 2018: p46*

## 5 Results

### 5.1 Company profile

#### 5.1.1 Basic information

Chongqing Changan Automobile Company Limited is one of the most largest automobile companies in China. It was established on December 26, 2005. China Changan now owns 4 listed companies including Changan Automobile, Jiangling Motors, Dongan Power and Jinan Qingqi. In 2012, China Changan sold 1.22 million self-owned brand cars, ranking first in China's auto industry and 14th in global auto companies. It has ranked the first independent brand in China for seven consecutive years.

Company name in Chinese: 重庆长安汽车股份有限公司

Company abbreviation in Chinese: 长安汽车

Company name in English :Chongqing Changan Automobile Company Limited

Stock abbreviation: Changan Automobile

Stock Code: 000625、 200625

Listed on: Shenzhen Stock Exchange

Legal representative: Xu LiuPing

Registered address: No. 260, East Jianxin Road Jiangbei District, Chongqing

Post code of the registered address: 400023

Office address: No. 260, East Jianxin Road, Jiangbei District, Chongqing

Post code of the office address: 400023

Website: <http://www.changan.com.cn>

E-mail: address [cazqc@changan.com.cn](mailto:cazqc@changan.com.cn)

Type: State-owned Industry Automotive

Founded: 1862

Headquarters: Chongqing, China

#### 5.1.2 Main Business of the company

The company's main business is the R&D, manufacturing and sale of cars (including sedan and commercial vehicles), the R&D and production of automobile engine products. Besides, the company actively develops new business such as e-business with the advantage of its OEM position. With the continuous growth of China's auto industry for



many years, Changan has become the first camp in China's auto industry and ranked among the top 500 industrial enterprises for many years.

After years of development, Changan's products cover low & middle class, wide range and various series such as sedans, mini cars, buses, trucks, SUV, MPV, including the traditional fuel and new energy models, and the engine platforms from 1.0L to 2.0L. The company owns many famous brands such as Changan passenger car, Changan Oushang, Changan Ford, Changan Mazda, Changan SUZUKI, Changan PSA, Changan Bus and so on. Up to now, the Company has successfully launched a series of classic brands such as Raeton CC, Eado series, Alsvin series, CS series SUV, CX70, Oushang and Honor; a series of famous JV products such as new Focus, new Mondeo, Kuga, Edge, CX-5, Axela, Vitara, Alivio and so on. At the same time, Changan have launched new energy vehicles such as Eado EV, New Benben EV, Eulove EV, Benben miniEV and CS15 EV.

### 5.1.3 Shareholders and Controllers

According to table 2, circulated shares accounted for the vast majority of the total number of shares, with 4,662,867,208, accounting for 97.09% of the total number of shares. Among them, Domestic listed CNY shares and Domestic listed foreign shares accounted for 79.31% and 18.78% respectively. 2.91% of non-tradable shares are almost all State-owned legal person shares.

Table 2 The main shareholders of Changan Automobile. shares on 31.12.2017

	Quantity	Ratio (%)
Non-circulated shares	139,781,303	2.91%
1、 State-owned legal person shares	139,762,403	2.91%
2、 Senior management personnel shares	18,900	0.00%
Circulated shares	4,662,867,208	97.09%
1、 Domestic listed CNY shares	3,760,881,066	78.31%
2、 Domestic listed foreign shares	901,986,142	18.78%
Total shares	4,802,648,511	100.00%

Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

According to table 3. among the top 10 shareholders or shareholders who are holding more than 5% of the shareholders, the holders with the most shares are China Changan Automobile Co., Ltd., whose nature is State-owned legal person shares Is held 1,963,357,619 shares, accounting for 40.88%. The remaining shareholders held less than 5% of the shares, the largest shareholder of which is China securities finance Co, Ltd, which holds 4.21% of the shares and increased its holdings of 62,621,894 shares in 2017. In the top 10 shareholders, foreign shareholders accounted for half.

Table 3 The number of shareholders of the company and the stock on 31.12.2017

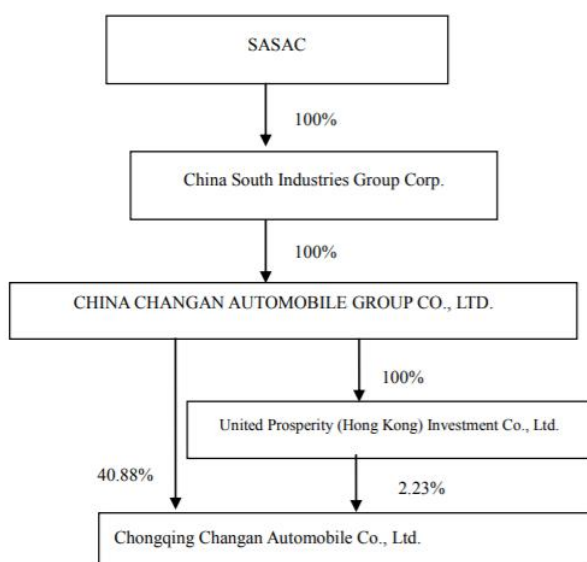
Holding more than 5% of the shareholders, or top 10 shareholders situation				
Name of shareholders	Nature of Shareholder	Percentage of total shares (%)	Shares held at the year-end	increases and decreases during 2017
China Changan Automobile Co., Ltd.	State-owned legal person shares	40.88	1,963,357,619	
China securities finance Co, Ltd	domestic general legal person shares	4.21	202,044,821	62,621,894
United Prosperity Investment Co., Limited	foreign legal person shares	2.23	107,267,728	62,072,628
GIC PRIVATE LIMITED	foreign legal person shares	1.68	80,893,572	12,497
Central Huijin Investment Ltd.	domestic general legal person shares	1.15	55,393,100	
VALUE PARTNERS HIGH-DIVIDEND STOCKS FUNDS	foreign legal person shares	0.81	38,911,038	
Anbang AM-China Merchants BankAnbang Asset -Win - win No. 3 AM Product	fund, finance products, etc.	0.67	32,070,942	
Anbang AM-China Minsheng BankAnbang Asset -Refined Mix No. 5 AM Produc	fund, finance products, etc.	0.65	31,082,094	31,082,094
Monetary Authority of Singapore	foreign legal person shares	0.54	25,908,297	-2,290,683
HERMES INVESTMENT FUNDS PLC	foreign legal person shares	0.47	22,434,113	22,434,113

Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

According to figure 4, China south industries Group Corp holds 100% shares of China Changan Automobile Co., Ltd.. At the same time, China south industries Group Corp is fully controlled by SASAC, which is the abbreviation of State-owned Assets Supervision and Administration Commission.

China Changan Automobile Co., Ltd. established United propriety (Hong Kong) Investment Co, Ltd, whose shares are wholly owned by it. As mentioned before, 40.88% of China Changan Automobile Group co. LTD is held by Chongqing Changan Automobile Company Limited as a State-owned legal person.

Figure 4 Relationship among the Company and its controlling shareholders



Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

#### 5.1.4 Main Customers and principal suppliers

According to table 4 and table 5, sales amount of top 5 customers of the Changan is 6,326,200,820.88 CNY, accounting for 7.9% of total sales, of which 4.43% were related parties. The proportion of the top 5 customers in total sales was 2.08%, 1.95%, 1.40%, 1.25%, and 1.22%, of which 3 were related parties.

Table 4 Main Customers

Total sales amount to top 5 customers (CNY)	6,326,200,820.88
Proportion of sales to top 5 customers in the annual sales (%)	7.90%
Sales amount of the related party in the top 5 customers (CNY)	3,540,677,817.43
Proportion of sales amount of the related party in the top 5 customers (%)	4.43%

Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

Table 5 Top 5 customers

Serial No.	Sales value	proportion in total sales (%)	Whether it is a related party
1	1,667,512,922.01	2.08%	N
2	1,561,916,357.55	1.95%	Y
3	1,118,010,081.44	1.40%	N
4	1,003,042,141.84	1.25%	Y
5	975,719,318.04	1.22%	Y
total	6,326,200,820.88	7.90%	

Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

According to table 6 and table 7, the total purchase amount to top 5 suppliers in CNY is 7,980,895,006.58 ,accounting for 11.50% in the annual sales, of which 8.65 were related parties. The proportion of the top 5 suppliers in total purchase was 2.85% ,2.77%, 2.43%, 1.95%, 1.50%, of which 4 were related parties.

Table 6 Principal suppliers

Total purchase amount to top 5 suppliers (CNY)	7,980,895,006.58
Proportion of Purchases to top 5 suppliers in the annual sales(%)	11.50%
Purchase amount of the related party in the top 5 suppliers(RMB )	6,001,233,462.54
Proportion of Purchase amount of the related party in the top 5 suppliers(%)	8.65%

Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

Table 7 Top 5 suppliers

Serial No.	Purchase value	proportion in total purchase (%)	Whether it is a related party
1	1,979,661,544.04	2.85%	N
2	1,920,824,540.34	2.77%	Y
3	1,685,162,025.13	2.43%	Y
4	1,351,597,111.16	1.95%	Y
5	1,043,649,785.91	1.50%	Y
total	7,980,895,006.58	11.50%	

Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

### 5.1.5 Development strategy of the Company

Changan takes innovation as the driving force, and renders "efficiency" into the core competitiveness of the company. In 2025, the sales volume of the cars will reach 6 million and Changan will achieve the goal of world-class car enterprise.

The business objective of the board of directors of the company in 2018 is to produce and sell more than 3.1 million vehicles.

In order to achieve the strategic goal of the company, the investment of fixed assets is expected to focus mainly on product structure adjustment, R & D capacity, infrastructure, technological transformation of safety and environmental protection, technical transformation projects, overseas research and development projects, new energy and intelligent projects. The company needs to study and formulate various channels of fund raising plan and fund use plan, so as to improve the efficiency of the use of funds and reduce the cost of funds.

## **5.2 Fundamental analysis**

### **5.2.1 Horizontal analysis**

Horizontal analysis compares the results from the annual financial reports. It can be also called analysis by line. When analyzing long-term data (more than 2), it is very useful.

In horizontal analysis, there are many ways to compare. Firstly we can compare changes in absolute terms. Or we can calculate the changes between current period and previous year, and therefore compare their percentage changes over the years.

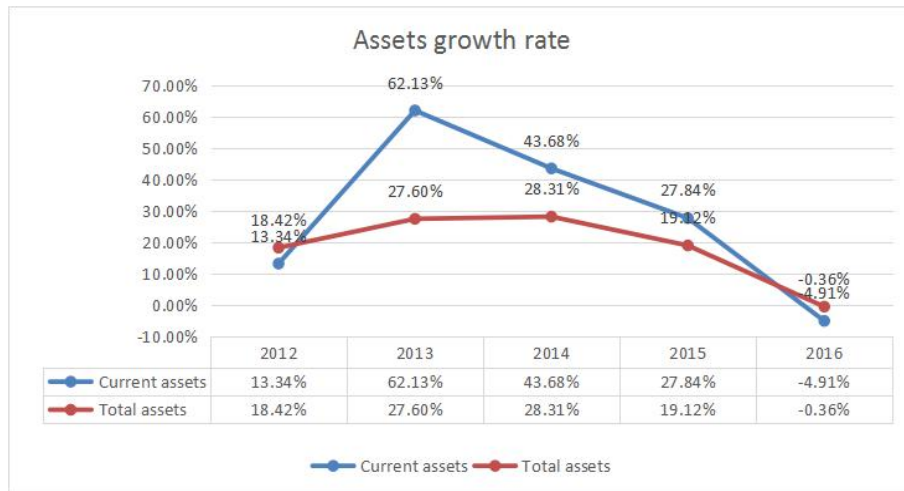
For calculation the relative change of the two specified periods (yearly basis) t and t-1 is this formula can be used: Percentage change = (indicator t- indicator (t-1)) \* 100/indicator(t-1).

#### **Horizontal analysis of Balance Sheet**

According to the graph 1, the growth rate of current assets reached a peak of 62.13% in 2013, and has been decreasing for the next three years. The growth rate in 2016 is negative, indicating that the current assets in 2017 decreased slightly compared to 2016.

The change in the growth rate of total assets was relatively stable. The growth rate in 2013 was about twice that of 2012. The growth rate in 2014 was 28.31%, which was basically the same as in 2013, and then began to decline in the next two years. The 2016 growth rate was negative, indicating that total assets in 2017 were slightly lower than in 2016.

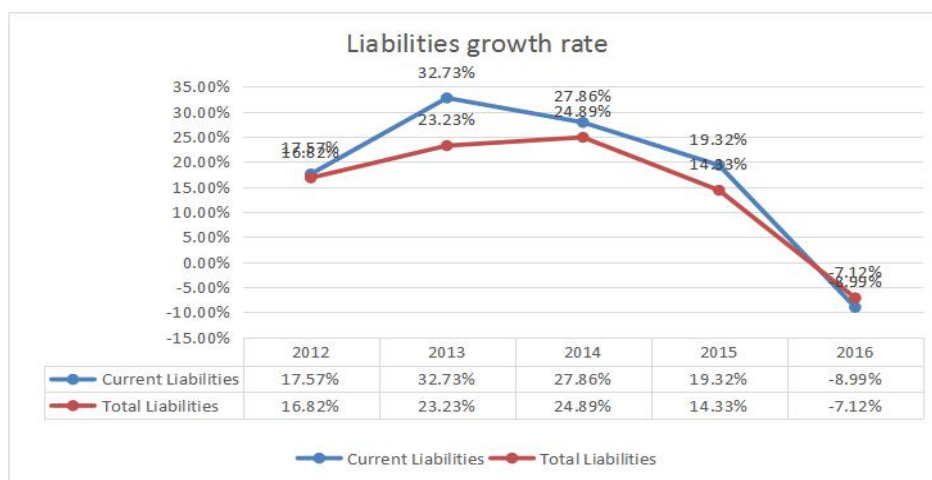
Graph 1 Growth rates of Current assets and Total assets of Chongqing Changan Automobile Company Limited (2012-2016)



Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

According to the graph 2, the trends of the growth rate of total liabilities and total current liabilities are basically the same. Except for the increase in 2013, the overall trend is downward. The highest point in 2013 was 23.23% and 32.73% respectively. Except for 2016, the growth rate of total liabilities is higher than current liabilities. In 2016, the growth rates of total liabilities and total current liabilities were negative, -7.12% and -8.99%, respectively, which were about -21% and 28% lower than the previous year.

Graph 2 Growth rates of Current liabilities and Total liabilities of Chongqing Changan Automobile Company Limited (2012-2016)



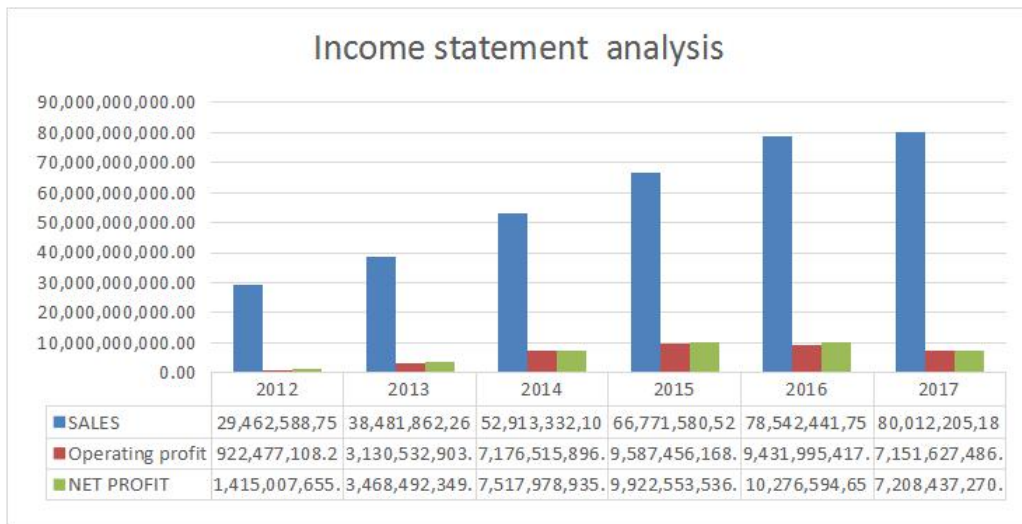
Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report



### Horizontal analysis of Income Statement

According to the graph 3, during the period of 2012-2017, the company's sales, operating profit, net profit generally showed an upward trend, and reached the highest point in 2016. The data are respectively, 78544241757.19, 14054835848.61 and 10276594658.84, which, compared with 2012, increased by about 2.67 times, 10.22 times and 7.26 times respectively . It can also be seen that the ratio of operating profit and net profit to sales has increased in these years. Compared with 2016, the data decreased slightly in 2017.

Graph 3 Income statement analysis of Chongqing Changan Automobile Company Limited in 2012-2017 (In CNY)



Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

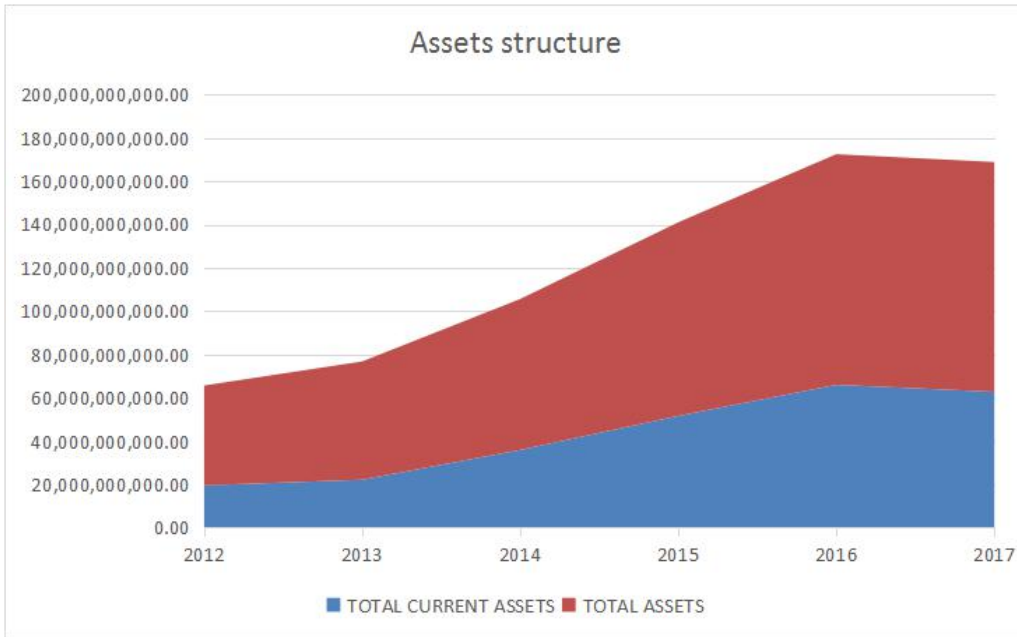
### 5.2.2 Vertical analysis

The percentage analysis of the relationship of each component in a financial statement to total is called vertical analysis.

#### Vertical analysis of Balance Sheet

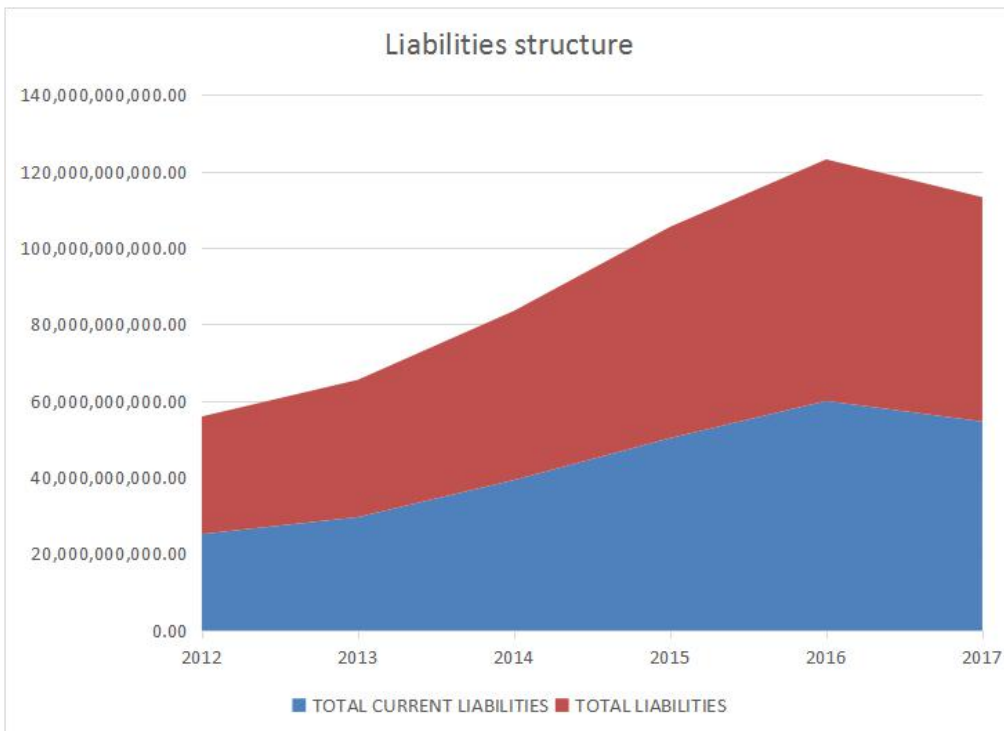
According to the graph 4 and graph 5, the ratio of current assets to total assets and the ratio of current liabilities to total liabilities remained almost unchanged between 2012 and 2017. Current assets, total assets, current liabilities, and total liabilities also showed the same changing trend as sales, which grew rapidly in 2013-2016, peaked in 2016, and declined slightly in 2017.

Graph 4 Assets structure of Chongqing Changan Automobile Company Limited in 2012-2017 (in CNY)



Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

Graph 5 Liability structure of Chongqing Changan Automobile Company Limited in 2012-2017 (in CNY)

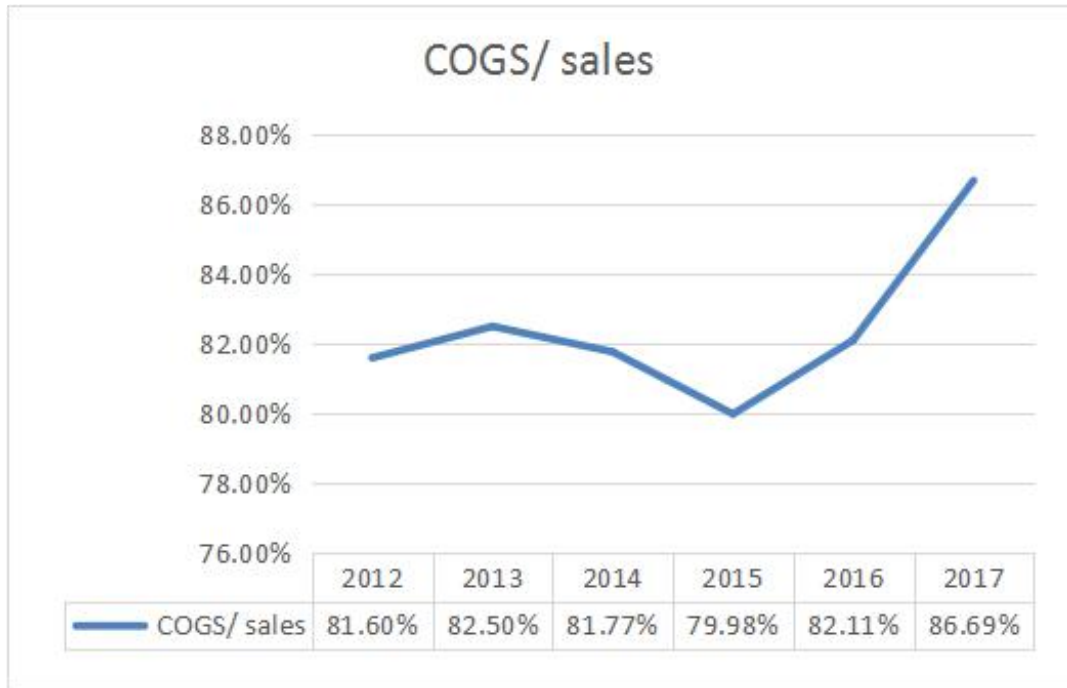


Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

### Vertical analysis of Income Statement

According to the graph 6, in the five years of 2012-2016, the proportion of COGS in sales is relatively stable, floating around 80%, the highest is 82.5% in 2013, and the lowest is 79.98% in 2015. In 2017, the proportion rose sharply to 86.79%.

Graph 6 COGS/SALES of Chongqing Changan Automobile Company Limited (2012-2017)



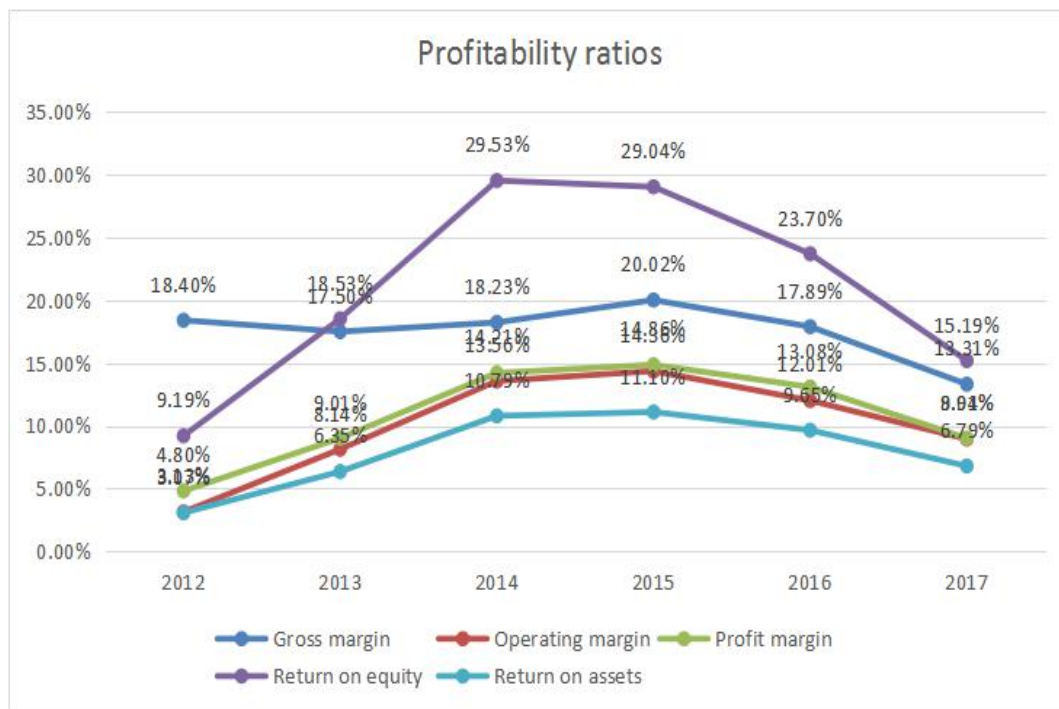
Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

### 5.2.3 Profitability analysis

According to the graph 7, the gross margin was relatively stable during the five years of 2012-2016, floating around 18%. The highest is 20.02% in 2015 and the lowest is 17.50% in 2013. But in 2017 it fell sharply to 13.31%. Operating margin increased significantly after 2012, from 3.13% in 2012 to 13.56% in 2014, and stabilized at around 13% in the next three years and fell to 8.94% in 2017. Profit margin showed the same trend, starting with a rapid increase from 4.18% in 2012 to 14.21% in 2014, and after three years of stability, it fell to 9.01% in 2017. The changes of the three sets of data are caused by changes in the proportion of COGS to sales.

As for ROE and ROA, 2015 is the highest point of all ratios, ROE is 29.04%, and ROA is 11.10%, both are 2 times higher than those of 2012. After 2015, all the ratios began to decline, especially in 2017.

Graph 7 Profitability ratios of Chongqing Changan Automobile Company Limited Income Statement (2012-2017)



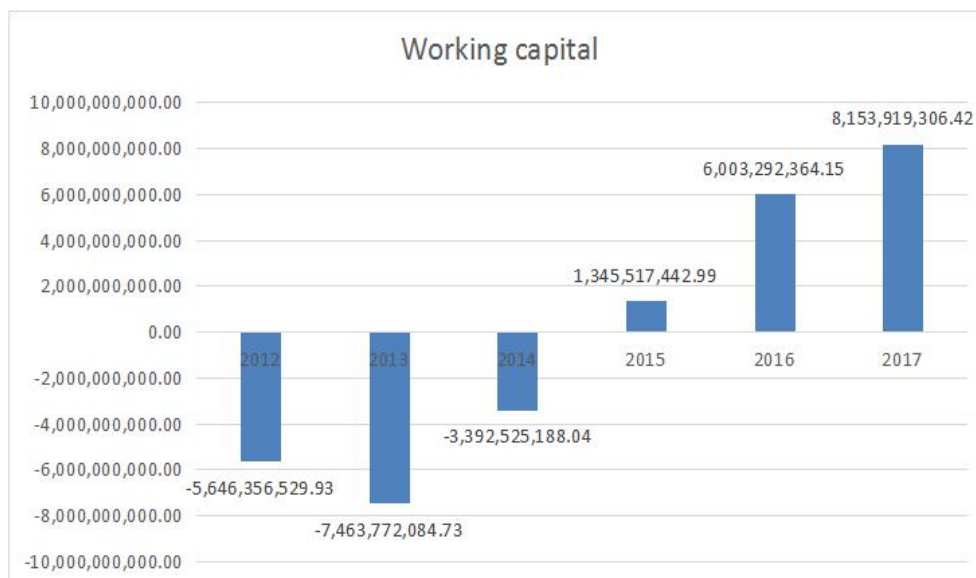
Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

## 5.2.4 Liquidity analysis

Working capital is a measure of a company's liquidity, operational efficiency and its short-term financial health. If a company has substantial working capital, then it should have the potential to invest and grow. If a company's current assets do not exceed its current liabilities, then it may have trouble growing or paying back creditors, or even go bankrupt.

According to the graph 8, in the three years of 2012, 2013 and 2014, the working capital of Changan Group was negative. The smallest in 2013 was -7463772084.73CNY. Starting in 2015, working capital began to grow positively and continuously, reaching 2017, reaching 8153919306.42 CNY.

Graph 8 Net working capital of Chongqing Changan Automobile Company Limited.in 2012-2017 (in CNY)



Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

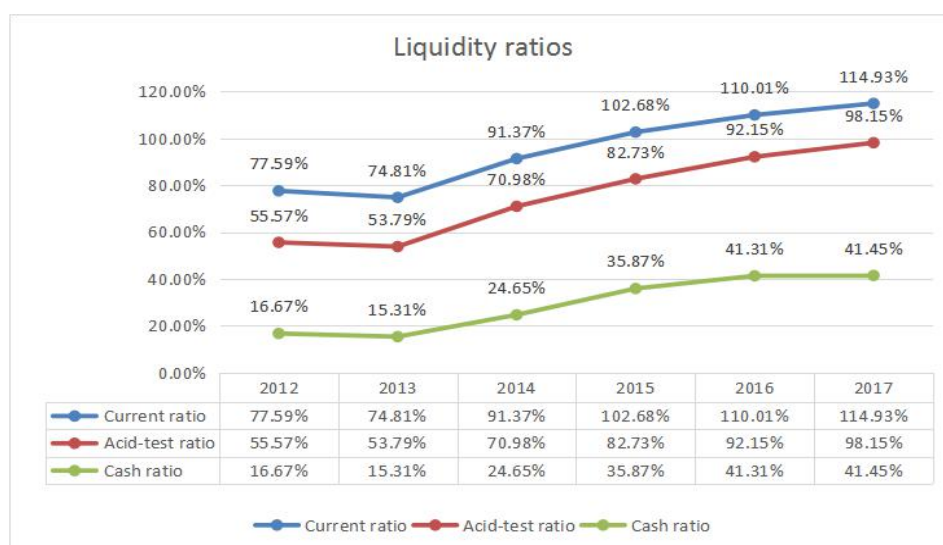
According to the graph 9, all Liquidity ratios showed an upward trend after 2013 and reached a peak in 2017. Cash ratio, Acid-test ratio, and current ratio were 41.45%, 98.15%, and 114.93% in 2017, respectively.

The current ratio can show a company's market liquidity and the ability to meet creditor requirements. The current ratio varies from industry to industry, and the general number is between 1.5 and 3 for healthy businesses. Although Chang'an's current ratio is rising, it is still less than 1.5.

The cash ratio that greater than 20% is generally considered good. In 2014 this ratio of Chang'an exceeded 20% and then reached 41.45% in 2017. It should be noted that a high cash ratio means that the liquid assets are not properly used, and the profitability of the cash assets is low. If the amount of such assets is too high, the opportunity cost of the enterprise will increase.

In general, the acid test ratio should be 1:1 or higher. The acid test ratio of Chang'an Company is approximately equal to 1 in 2017.

Graph 9 Liquidity ratios of Chongqing Changan Automobile Company Limited (2012-2017)



Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

### 5.2.5 Activity analysis

According to the Table 8, the receivables conversion period remained relatively stable during the five-year period of 2012-2016, fluctuating between 5-7, the lowest in 2015, at 5.64, the highest in 2017, at 7.68. The inventory conversion period has been decreasing, from 73.23 in 2012 to 33.88 in 2016. The amount of decrease is more than half. Payable conversion period 2012 and 2013 changes dramatically, with 2012 being the lowest at 115.13, and 2013 being the highest at 120.73 days. Then it fluctuates around 118 in 2014-2016.

The Cash Conversion Cycle is always negative and keeps getting smaller. A negative Cash Conversion Cycle indicates that the sales cycle of the product is very short, and the average payment period of the company's own payables is very long. This shows that the company has strong bargaining power in the upstream and downstream industry chain.

Table 8 Activity ratios of Chongqing Changan Automobile Company Limited (2012-2017)

Activity ratios					
	2012	2013	2014	2015	2016
Receivables turnover	51.55	52.59	64.75	56.24	47.52
Inventory turnover	4.98	5.62	5.89	6.92	10.77
Payables turnover	3.17	3.02	3.09	3.06	3.09
Receivables conversion period(days)	7.08	6.94	5.64	6.49	7.68
Inventory conversion period(days)	73.23	65.00	62.01	52.74	33.88
Payable conversion period(days)	115.13	120.73	118.16	119.10	118.25
Cash Conversion Cycle(days)	-34.82	-48.79	-50.51	-59.88	-76.69

Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

### 5.2.6 leverage analysis

If the debt ratio is below 0.5, most of the company's assets are financed through equity. If the ratio is greater than 0.5, most of the company's assets are financed through debt. Companies with high debt/asset ratios have high leverage. The higher the ratio, the greater the risk associated with the company's operations.

According to the table 9, the Debt ratio has been declining, from 66.63% in 2012 to 55.28% in 2017, which means that operational risks are declining. The long-term debt to equity were 6.45% and 6.78% in 2012 and 2013 respectively. In the following four years, it almost stayed at 0.

Table 9 Leverage ratios of Chongqing Changan Automobile Company Limited (2012-2017)

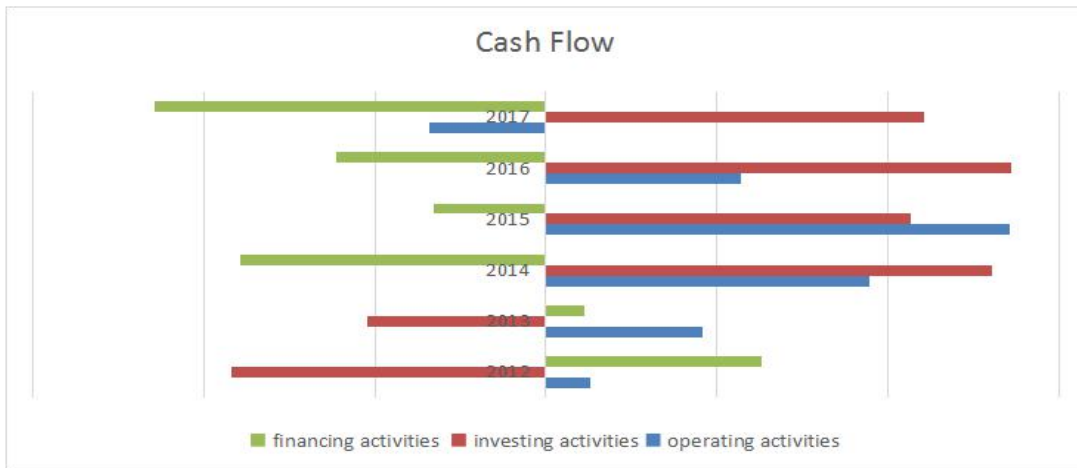
Leverage ratios						
	2012	2013	2014	2015	2016	2017
Debt ratio	66.63%	65.72%	63.47%	61.78%	59.30%	55.28%
Long-term debt to equity	6.45%	6.78%	0.00%	0.00%	0.05%	0.01%

Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

### 5.2.7 Cash flow analysis

According to the graph 10, investing activity was a cash outflow in the first two years, but in the next four years it was a cash inflow. Contrary to it, the financing activity is a cash flow in the first two years, but the cash outflow in the next four years. As for operating, in addition to 2017, it is always a cash inflow.

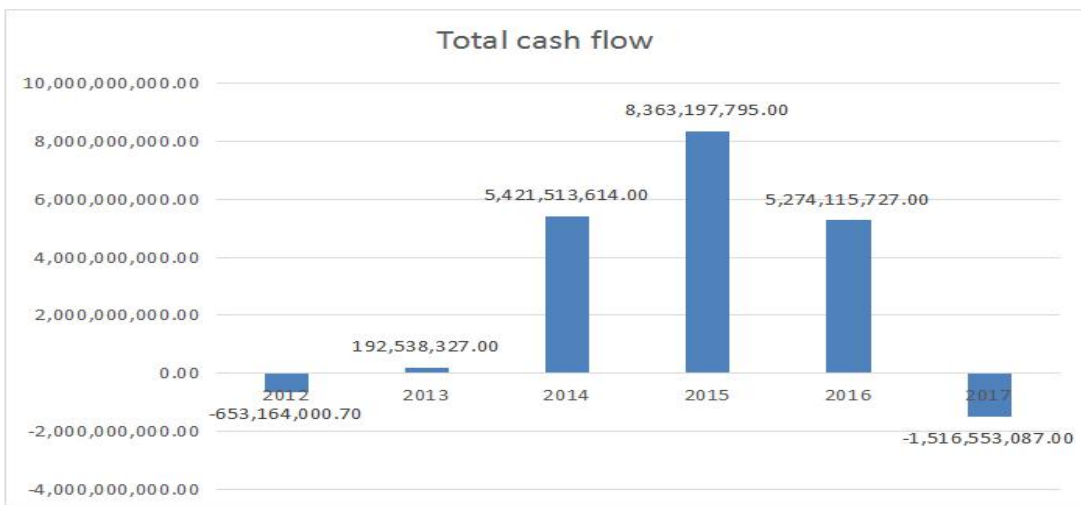
Graph 10 Cash flow of Chongqing Changan Automobile Company Limited (2012-2017)



Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report

According to graph 11, net cash flow in 2012 and 2013 were negative. It has been rising from 2012 to 2015 and reached a peak at 836,319,779. Since 2015, net cash flow has started to decline and is again negative in 2017, the lowest in six years, at -151655308.

Graph 11 Net Cash flow of Chongqing Changan Automobile Company Limited (2012-2017)



Source: own calculations. Data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report



### **5.3 External environment overview**

On the whole, the current world automobile industry has entered the stage of market maturity based on newer demand. However, in the markets of newly industrialized countries, especially in Asia, except for Japan, the Eastern European market and the South American are still in the stage of market expansion. According to OICA, the total global sales of automobiles in 2015 reached 89.67 million, of which passenger car sales reached 66.31 million. According to geographical statistics, Europe and America accounted for about 49% (44% for passenger cars), Asia (excluding mainland China) accounted for about 21% (22% for passenger cars), and China accounted for about 27% (32% for passenger cars). Although developed countries in Europe and the United States still maintain a large proportion of total automobile demand for a long time, developing countries such as China are more prosperous in demand for passenger vehicles, and the growth rate of market demand is significantly higher than that of developed countries.

In terms of automobile production, the total global automobile production in 2015 reached 90.78 million, of which passenger car reached 68.53 million. Global automotive production is concentrated in Europe, North America and Asia Pacific. China, the United States, Japan, Germany, and South Korea are among the top five countries in terms of automobile production in recent years. In terms of year-on-year growth, the United States, China, Japan, and 2011-2015 achieved 39%, 33%, and 10% respectively. Germany and South Korea each had a decline of about 2%.

China's automobile industry has experienced explosive growth after joining the World Trade Organization, and its position in the world's auto industry has gradually increased. In 2009, it became the world's number one automobile production and sales country. In 2016, China's automobile production and sales volume was 28 million units, ranking the first in the world for the eighth consecutive year. The economic indicators of the industry showed a significant increase, and the scale of sales of automobile manufacturing industry accounted for more than 10% of GDP.

With the expansion of the domestic automobile market and the intensification of competition, the organizational structure of the automobile industry has been optimized, and the concentration of the automobile industry has continued to increase. In 2016, the sales volume of the top ten automobile manufacturers in the country was 24,759,900, accounting for 88.34% of the total number of automobiles in the country.

As for brand structure, the market share of Chinese brands has increased. The sales volume exceeded 10 million vehicles for the first time in 2016, reaching 10,538,600 units. There is an increase of 20.50% over the same period of last year.(The International Organization of Motor Vehicles, 2017, )

## **5.4 PEST**

### **5.4.1 Political factors**

#### **“The Measures for the management of access to motor vehicle production enterprises and its product”**

It has been reviewed and approved at the 5th Ministerial Meeting of the Ministry of Industry and Information Technology on October 24, 2018. It is hereby promulgated and will be implemented on June 1, 2019.

The “Measures” were optimized the entry process in many factors. First, the materials needed to be submitted for the entry application are reduced, which makes the entry of automotive industry easier. The second is to implement filing management. Enterprises that have submitted application materials before will not be required to submit them again.

It simplifies the production companies and its products that were originally classified into nineteen categories. At present, there are only six categories of passenger cars, trucks, buses, special vehicles, motorcycles and trailers. After obtaining access to a certain category, companies can produce products within this category without re-applying.

On the one hand, this policy has alleviated the burden on car companies to apply for products. On the other hand, it also reduces the difficulty of entering the entire industry to a certain extent. It may exacerbate competition within the industry.

#### **“The measures for Automobile Brand Sales Management ”**

On July 1, 2017, The newly promulgated “the measures for Automobile Brand Sales Management” entered the formal implementation stage. According to the new “Measures”, sales of automobiles are no longer limited to 4S stores.

It broke the traditional 4S shop sales model. Large auto supermarkets, car hypermarkets, car e-commerce and new retail platforms for cars came into being. However, from the current situation, the impact of the “Measures” on the composition of 4S stores is minimal. When the service and technical support have not yet formed a scale, the 4S shop system has more room for development and will not be affected by the impact in a short

period of time. The main way for consumers to buy cars in third- and fourth-tier cities is still 4S stores.

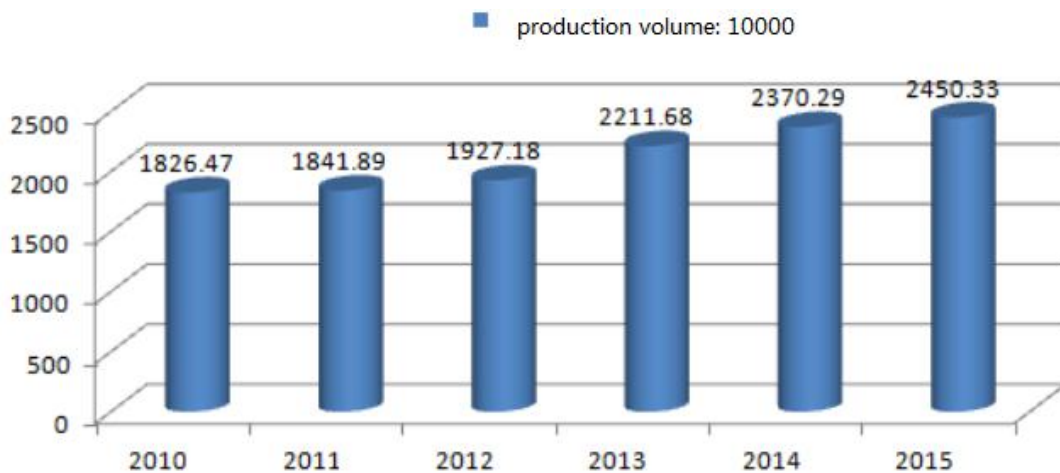
Except for selling mode, "Measures" can also effectively promote the healthy development of the automobile market, maintaining a fair and equitable market order, and protect the interests of consumers.

Article 10 of the new measures clearly stipulates that dealers may not increase the price or charge additional fees in addition to the price; Article 14 requires suppliers and distributors not to limit the provision of auto parts, supplies, finance, insurance and other products to consumers. Merchants and after-sales service provider. When dealers sell cars, they must not force consumers to purchase insurance or force them to provide services such as registration of vehicles. (China Industry Information Network, 2016)

#### 5.4.2 Economic factors

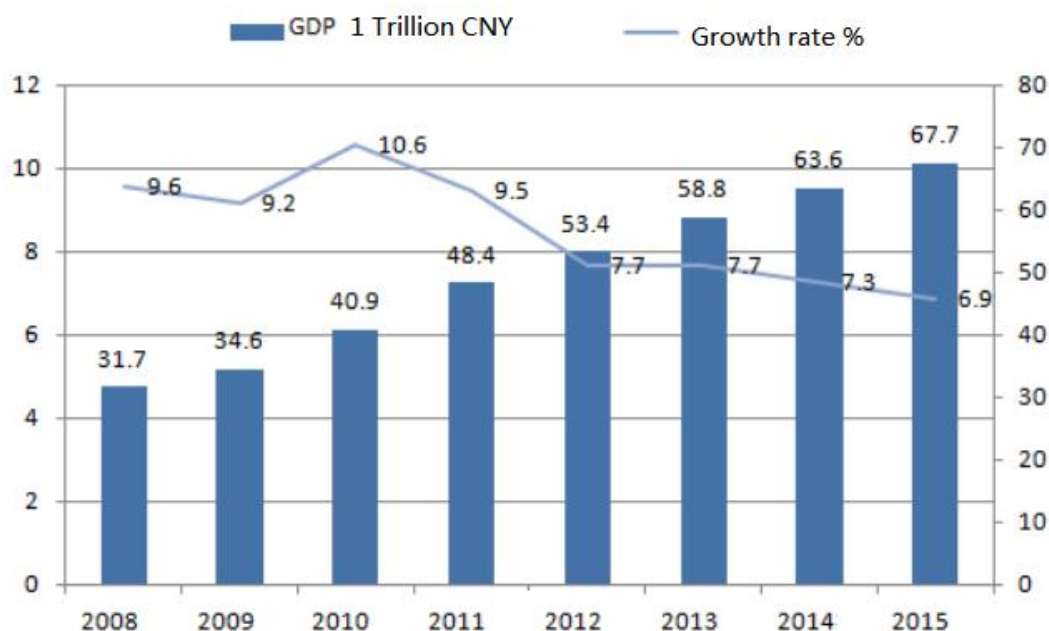
The state of national economic development has a major impact on the development of the automotive industry. According to the graph 12 and graph 13, while China's GDP is growing, the growth rate is declining. China's automobile production and GDP show the same trend.

Graph 12 Automobile production of China (2010-2015)



Source: China Industry Information Network, <https://www.chyxx.com/>, 2016

Graph 13 GDP and its growth rate of China (2008-2015)



Source: Statistical Communique of the National Economic and Social Development of the People's Republic of China, 2018

Per capita disposable income also affects car production and sales. When people have more money after they have enough food and clothing, they will consider buying a car or updating their cars. According to the data, the per capita disposable income of China has grown steadily. In 2017, the per capita disposable income of the national population was 25,984 CNY, a nominal increase of 8.9% over the previous year, and the actual increase was 7.3%. Among them, the per capita disposable income of urban residents was 36,396 CNY, an increase of 8.3%, and the actual increase was 6.5%; the per capita disposable income of rural residents was 13,432 CNY, with a nominal increase of 8.6% and a real increase of 7.3%. The median per capita disposable income of the national residents was 22,408 CNY, a nominal increase of 7.2%, which was 93% of the average. The median per capita disposable income of rural residents was 11,969 CNY, which was 89.1% of the average. (Statistical Communique of the National Economic and Social Development of the People's Republic of China, 2018 )

In addition, the impact of changes in demographic structure on the Chinese automotive consumer market cannot be underestimated.

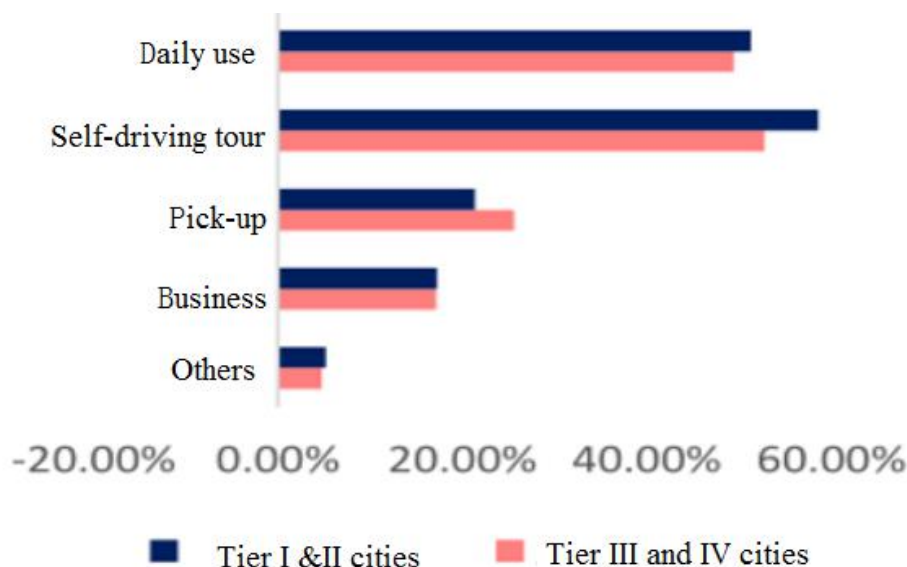
The first is that the size of the population determines the future of the passenger vehicle market. The population size is the basis of passenger vehicle consumption. After 2009, China has become the world's largest automobile consumer, but in terms of the

proportion of ownership in 2016, there is still a big gap between the number of cars and the proportion of the population. In addition, the second child policy has lifted the number of births and can also indirectly boost the demand for cars. In the 1990s and 2000s, the number of new births fell sharply. However, after the implementation of the comprehensive two-child policy in 2016, the number of births rebounded, boosting the demand for automobile consumption.

### 5.4.3 Social factors

According to the graph 14, the reasons why people need a car, the first reason is Self-driving tour, which accounts for more than 50%. The next ones are Daily use, Pick-up, Business use and others. The boom in self-driving tour has driven the development of the car sales market.

Graph 14 Survey on reasons why people need a car



Source: China Industry Information Network, <https://www.chyxx.com/>, 2016

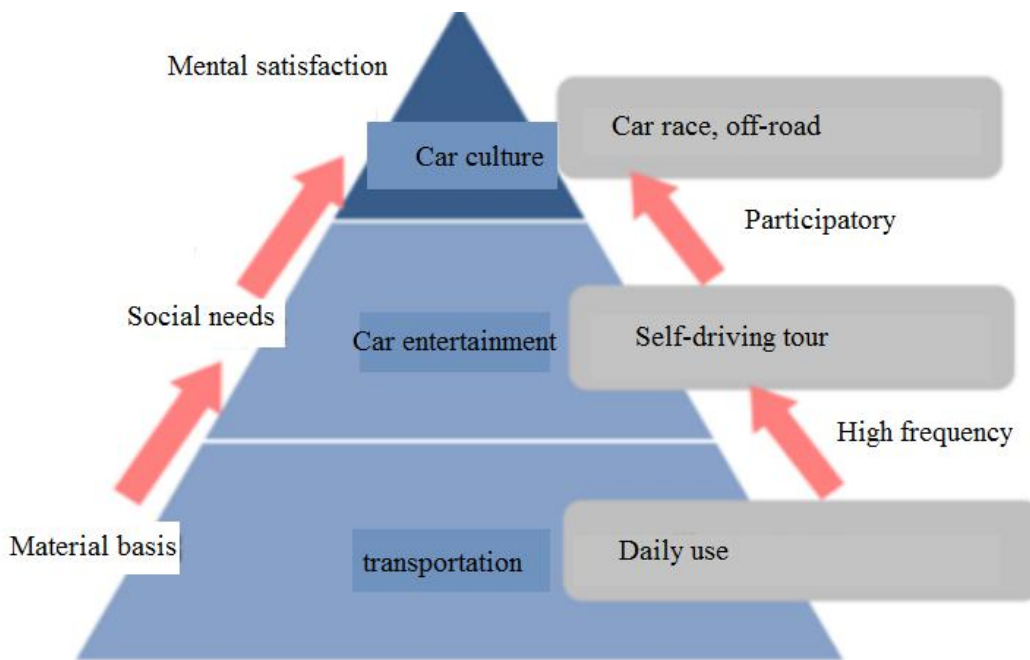
Depending on the geographic radius and travel time, the surrounding tour is usually defined as a domestic short-distance tour with a journey of approximately 1-3 days on the day of departure.

In recent years, the surrounding travel market has risen rapidly, and the market has exceeded one trillion CNY. In 2016, China's online self-driving travel market reached 6.548 billion CNY, a year-on-year increase of 47.79%. Among the 3.9 trillion CNY of domestic tourism revenue, the size of the surrounding tourism market is expected to exceed one trillion CNY.

According to figure 5, with the development of the economy and the popularity of automobiles, the use of cars in people's lives has gradually shifted from tools to entertainment and social needs. The experience of developed countries shows that when the per capita income exceeds 3,000 US dollars, the demand for leisure and holiday will be universally generated, and the tourism products will be transformed from sightseeing to leisure. In 2015, the per capita disposable income of urban residents reached 2,1966 CNY, with a median of 19,281 CNY ). McKinsey predicts that by 2022, the mass affluent class with incomes of \$16,000-34,000 will account for 54% of urban households nationwide and become a major consumer group.

At present, the developed areas in the east are the main markets for the surrounding tourism. The central and western regions are rich in high-quality tourism resources and have great market potential.

Figure 5 The pyramid of the demand of cars



Source: China Industry Information Network, <https://www.chyxx.com/>, 2016

#### 5.4.4 Technological factors

In the field of intelligent technology, Changan speeds up the transformation from traditional vehicles into intelligent vehicles and has mastered 60 kinds of intelligent technology in three fields of intelligent interconnection, intelligent interaction and intelligent driving. Changan has established six major system platforms and five core

technologies, and gradually realized the single intelligence to full automatic driving in four stages

As the leader of China's automobile brand industry, Changan actively embraced the Internet and join hands with Baidu, Alibaba, Wei Lai and other trans boundary enterprises to work together in the field of intelligent network and new energy vehicles; Changan works together with the industrial elites of China FAW, Dongfeng Automobile and other enterprises, and makes progress in the field of technological innovation and the value chain operation of the automobile industry, the construction of the ecological circle. Changan must vigorously promote the integration of industry and finance, build Changan financing platform, and launch 100 -billion industrial funds to boost the growth of main business. Changan will intensify the future research on car sharing, travel service and the new automobile industry ecology; "Changan travel" platform is completed. The travel business of time sharing, long and short rent and trial ride is synchronized in the four cities.

Changan automobile rely on its own global coordination and China's leading R & D force to enhance the brand competitiveness, and accelerate the promotion of new energy and intelligence strategy with a more open mind. The Internet, the big data, the artificial intelligence and the real economy should be deeply integrated to promote the new round of industrial change and leapfrog development of China brands.

## **5.5 Porter analysis**

### **5.5.1 Bargaining Power of Suppliers**

The bargaining power of suppliers in the automotive industry is mainly manifested in the requirement to increase the price of supplies or to reduce the quality of supplies. At present, Changan' sales in 2017 has exceeded 2 million , ranking fourth in the national car sales, which shows a high market share. This makes the world-class suppliers who are optimistic about the Chinese market compete for supplying. Under this circumstance, the bargaining power of suppliers is relatively weak, and Changan has certain dominance in bargaining power.

### **5.5.2 Bargaining Power of Buyers**

The buyer's bargaining power is mainly manifested by asking for price cuts, improving product quality or providing more services.

At present, the supply of automobiles in China is oversupply, and there are many models, brands and types available to consumers. The buyers have many choices and the conversion cost of customers is not high. Therefore, the automobile industry faces great competitive pressures. In 2017, the per capita disposable income of urban residents in China was 36,396 CNY, and the prices of Chinese auto products were mainly concentrated in the range of 50,000-1,500,000 CNY. This makes the buyer more critical of the price, quality and service of the car. At the same time, due to the popularity of media such as the Internet, consumers can compare and match the cost performance through the network. Overall, car consumers are now more bargaining power.

### **5.5.3 Threat of New Entry**

Whether potential entrants will actually enter the industry depends on industry barriers. The higher the industry barrier, the more difficult it is to enter, and the less pressure on the company.

As mentioned in the political part earlier, China's newly promulgated policies have simplified the entry and approval process for car companies, which has reduced the difficulty of entry to some extent. But overall, the industry barriers in the automobile industry are still high, and entry is still quite difficult.

The automobile industry has a high capital intensity, and half of the vehicle projects' funds are more than 10 billion CNY. The fixed cost investment of land, factory, labor, production line equipment, etc. is relatively large. Besides, the development of new models requires hundreds of millions or even ten hundreds of millions CNT invested. Therefore, in addition to the registered capital, the car companies are very dependent on external financing.

Market saturation limits the entry of competitors. With the rapid development of China, China's automobile production and sales have grown rapidly. In 2017, China's automobile production was 290,153,300 units, and the sales volume was 2,788,900. Overall, the current Chinese auto market is highly competitive.

There is high technical barriers in the automotive industry. First, at present, most of the vehicle projects in China are dominated by multinational companies. Multinational corporations have formed high technical barriers to new entrants in design, manufacturing experience and product development capabilities. Second, some government mandatory technical regulations are too high for new entrants.



Speed of product replacement is high. According to the current international data, the model replacement period is 6-7 years, and often a small change will be introduced in the 3-4 years after the new car is launched. And a car from concept design to production cycle costs often more than 40 months. With the gradual shortening of the replacement cycle of mainstream auto companies, the market, technology and capital barriers faced by potential entrants are even more severe.

#### **5.5.4 Threat of Substitutes**

At present, cars are still the most important means of transportation, and they will not be replaced in the short term. However, it should be noted that with the deterioration of traffic conditions in large cities and the improvement of people's awareness of environmental protection, more and more urban residents choose public transportation or bicycle travel. The government also encourages people to drive less.

#### **5.5.5 Rivalry**

The greater the number of companies in the industry, the greater the internal competition. Chinese automobile companies can be divided into three groups: independent brands, joint venture brands and imported brands. According to the statistics in 2017, China's automobile production was 290,150,400 units, with sales of 2,887,900 units, an increase of 3.19% and 3.03% year-on-year. Among them, the passenger vehicle output was 24.408 million, and the sales volume was 24.718 million, an increase of 1.58% and 1.40% year-on-year. The growth rate slowed down sharply, which means the market competition is becoming more intense. In 2017, the top ten automobile companies accounted for 88.52% of China's annual car sales. Changan Automobile ranked fourth. In the passenger vehicle, the top ten automobile companies accounted for 57.08% of China's passenger vehicle sales. Changan Automobile ranked 7th. (China Industry Information Network, 2016)

##### **5.5.5.1 Basic introduction of BYD**

In order to better discuss the economic situation of Changan. This paper selects another Chinese automobile company BYD. The results of analysis of BYD will be compared with Changan. BYD Co., Ltd. is a Chinese private company listed in Hong Kong.

It is one of the main competitors of Changan. It is headquartered in Shenzhen, Guangdong, and is mainly engaged in automobile business.

Company name in Chinese: 比亚迪股份有限公司

Company name in English :Chongqing BYD COMPANY LIMIT

Company abbreviation in English: BYD

Stock abbreviation: Changan Automobile

Stock Code:002594、 01211

Listed on: Shenzhen Stock Exchange, SEHK

Legal representative: Wang Chuanfu

Registered address: No. 1, East YananRoad, Dapeng District, Shenzhen

Office address: No. 3009,BYD Road, Pingshan District, Shenzhen

Post code of the office address: 518118

Website:<http://www.byd.com>.

E-mail: address [cazqc@changan.com.cn](mailto:cazqc@changan.com.cn)

According to the table 10, Changan's total current assets, total assets, and total liabilities were 61.12%, 59.59%, and 49.65% of those of BYD, respectively. Changan's accounts receivable are only 3.48% of BYD's, and long-term debt are even only 0.10% of BYD.

Table 10 Balance sheet Comparison of two companies in 2017

Balance sheet	Changan	BYD	Changan/BYD(%)
Cash	22,631,536,496.53	9,902,690,000.00	228.54%
Accounts receivables	1,806,807,193.04	51,880,681,000.00	3.48%
Inventories	4,666,183,421.80	19,872,804,000.00	23.48%
Other current assets	33,652,092,265.88	21,028,217,000.00	160.03%
<b>TOTAL CURRENT ASSETS</b>	<b>62,756,619,377.25</b>	<b>102,684,392,000.00</b>	<b>61.12%</b>
<b>TOTAL NON-CURRENT ASSETS</b>	<b>43,368,495,245.44</b>	<b>75,415,038,000.00</b>	<b>57.51%</b>
<b>TOTAL ASSETS</b>	<b>106,125,114,622.69</b>	<b>178,099,430,000.00</b>	<b>59.59%</b>
Accounts payables	21,902,826,194.15	23,319,529,000.00	93.92%
Other current liabilities	32,699,873,876.68	81,677,407,000.00	40.04%
<b>TOTAL CURRENT LIABILITIES</b>	<b>54,602,700,070.83</b>	<b>104,996,936,000.00</b>	<b>52.00%</b>
Long-term debt	6,575,973.33	6,369,237,000.00	0.10%
Other non-current liabilities	4,052,659,320.07	6,775,770,000.00	59.81%
<b>Total NON-LIABILITIES</b>	<b>4,059,235,293.40</b>	<b>13,145,007,000.00</b>	<b>30.88%</b>
<b>TOTAL LIABILITIES</b>	<b>58,661,935,364.23</b>	<b>118,141,943,000.00</b>	<b>49.65%</b>
Equity	47,463,179,258.46	59,957,487,000.00	79.16%

Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2017 Annual Report and Chongqing BYD COMPANY LIMIT 2017 Annual Report

According to the table 11, Changan's sales in 2017 were 75.54% of that of BYD's. And the gross profit is nearly half of BYD. Net profit is 146.60% of net profit of BYD.

Table 11 Income statement Comparison of two companies in 2017

Income statement in 2017	Changan	BYD	Changan/BYD (%)
SALES	80,012,205,182.37	105,914,702,000.00	75.54%
Gross profit	10,649,172,441.52	20,139,220,000.00	52.88%
Operating profit	7,151,627,486.37	54,105,510,000.00	13.22%
EBT	7,180,889,557.21	56,206,410,000.00	12.78%
NET PROFIT	7,208,437,270.06	4,916,936,000.00	146.60%

Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2017 Annual Report and Chongqing BYD COMPANY LIMIT 2017 Annual Report

#### 5.5.5.2 Growth rate Comparison

According to table 12, overall, Changan grew lower than BYD in 2012-2016. Its average growth rates of current assets, total assets, current Liabilities, total Liabilities, and Net profit were all smaller than BYD. The average growth rate of total assets was 18.62%, and BYD was 24.17%. The average growth rate of total liabilities was 14.43%, and BYD was 36.87%. The average growth rate of net profit was 53.51%, and BYD was 129.66%. But Changan's average growth rate of sales was higher than BYD.

Table 12 Average growth rate indicators of Changan and BYD (2012-2016)

	Changan	BYD	Changan/BYD(%)
Current assets	28.42%	36.32%	78.24%
Total assets	18.62%	24.17%	77.04%
Current Liabilities	17.70%	24.08%	73.50%
Total Liabilities	14.43%	36.87%	39.13%
Sales	22.76%	18.42%	123.59%
Net profit	53.51%	129.66%	41.27%

Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

### 5.5.5.3 Profitability Comparison

According to the table 13, nearly all the profitability indicators of Changan are higher than that of BYD. For example, Changan's gross margin is 109.84% of BYD's, and profit margin is almost 4 times as that of BYD. ROA and ROE of Changan are also 277.40% and 403.17% as those of BYD respectively.

Table 13 Average Profitability indicators of Changan and BYD (2012-2017)

	Changan	BYD	Changan/BYD (%)
Gross margin	17.56%	15.99%	109.84%
Operating margin	10.02%	10.06%	99.65%
Profit margin	10.83%	2.90%	372.95%
Return on equity	20.86%	7.52%	277.40%
Return on assets	7.96%	1.97%	403.17%

*Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report*

### 5.5.5.4 Liquidity Comparison

According to table 14, the current ratio of Changan is 117.68% of BYD, while the Cash ratio is 288.36% of BYD. Changan's liquidity performance is better than BYD. However, it should be noted that an excessively high Cash Ratio may result in low cash utilization efficiency

Table 14 Average liquidity indicators of Changan and BYD (2012-2017)

	Changan	BYD	Changan/BYD (%)
Current ratio	95.23%	80.93%	117.68%
Cash ratio	29.21%	10.13%	288.36%

*Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report*

#### 5.5.5.5 Activity Comparison

According to the table 15, the average inventory conversion period of BYD is 25 days longer than that of Changan. And the payable conversion period of BYD is 22 days shorter than that of Changan.

The biggest difference is in receivables turnover, which Changan is 54.53 while BYD is only 3.91.

There are 3 reasons for the big difference. First of all, we can see from their balance sheet that BYD has a huge accounts receivable compared with Changan. Changan's accounts receivable are only 3.48% of BYD's. According to the third quarterly report of BYD in 2018, BYD's accounts receivable ranks 10th among all A-share listed companies. Among all private enterprises, BYD ranks first, and the second company is still far less than half of BYD. Secondly, huge accounts receivable accounted for a large amount of working capital of BYD, which also worsened the company's cash flow, and it had to meet the funding gap by borrowing money. Changan's long-term debt in 2017 was even only 0.10% of BYD's. Thirdly, BYD's bad debt provision ratio is too low.

Table 15 Average activity indicators of Changan and BYD (2012-2016)

	Changan	BYD
Receivables turnover	54.53	3.91
Inventory turnover	6.84	4.47
Payables turnover	3.09	3.84
Receivables conversion period	6.77	112.00
Inventory conversion period	57.37	82.78
Payables conversion period	118.27	96.10
Cash Conversion Cycle	-54.14	98.68

Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

#### 5.5.5.6 Leverage Comparison

According to the table 16, the debt ratio of Changan was almost the same as that of BYD. However, the Long-term debt to equity of Changan is one tenth of BYD's. The reason is that huge accounts receivable accounted for a large amount of working capital of BYD, which also worsened the company's cash flow. BYD had to meet the funding gap by borrowing money.

Table 16 Average leverage indicators of Changan and BYD (2012-2016)

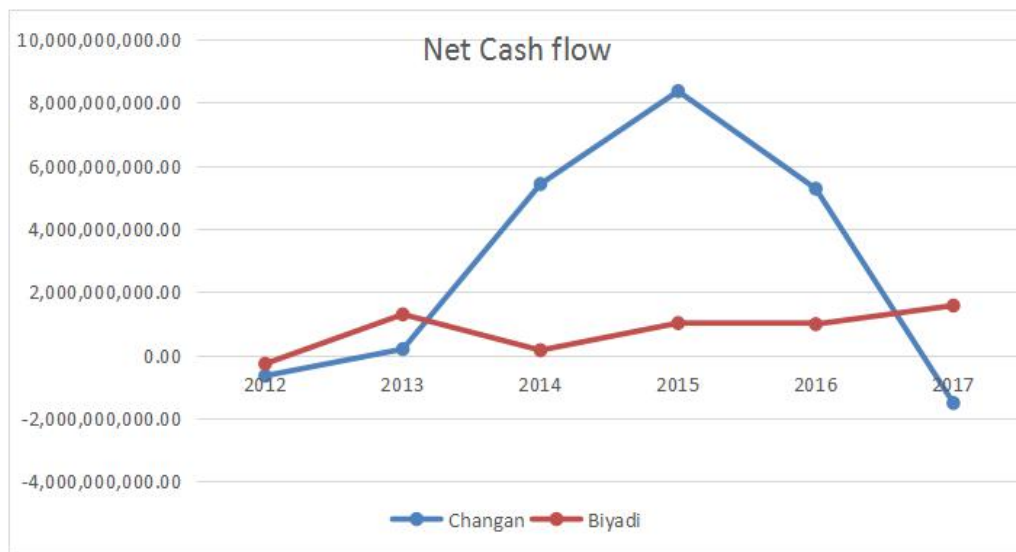
	Changan	BYD	Changan/BYD(%)
Debt ratio	62.03%	61.07%	101.56%
Long-term debt to equity	2.21%	17.73%	12.50%

Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

#### 5.5.5.7 Cash flow Comparison

According to graph 15, in 2012, the net cash flows of the two companies were not much different, but from 2013, Changan's net cash flow began to rise rapidly. By 2015, the net cash flow gap between the two companies reached the maximum. After that, Changan began to drop dramatically, and it was lower than BYD in 2017. Overall, Changan's net cash flow has fluctuated significantly, and BYD has remained relatively stable.

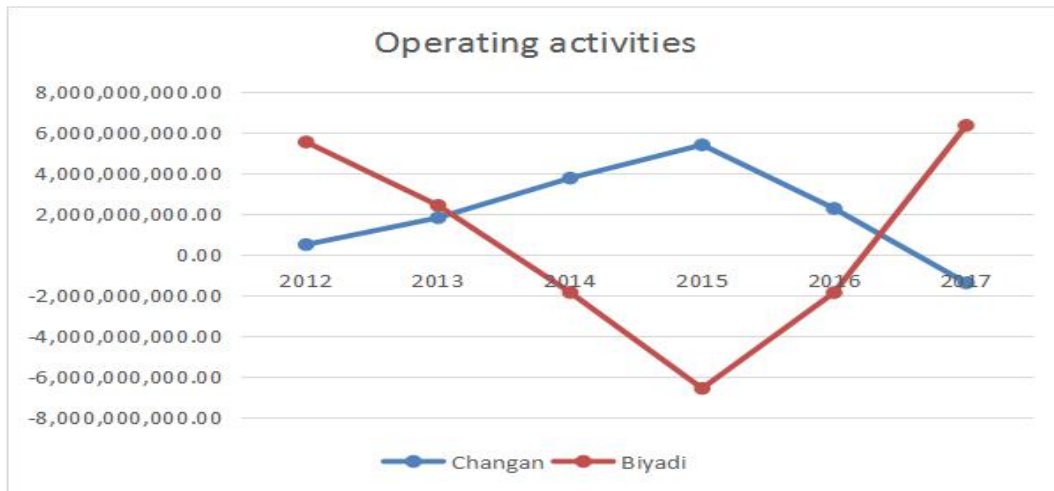
Graph 15 Net cash flow Comparison of Changan and BYD (2012-2017)



Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

According to graph 16, which describes the net cash flow generated through operating activities, the two companies have completely different trends of change. Changan rose in 2012-2015 and then fell. BYD was decreasing in 2012-2015, and after reaching its lowest point in 2015, it began to rise. In 2015, there is the biggest difference between the two companies. In 2017, BYD's net cash flow from operations was higher than Changan.

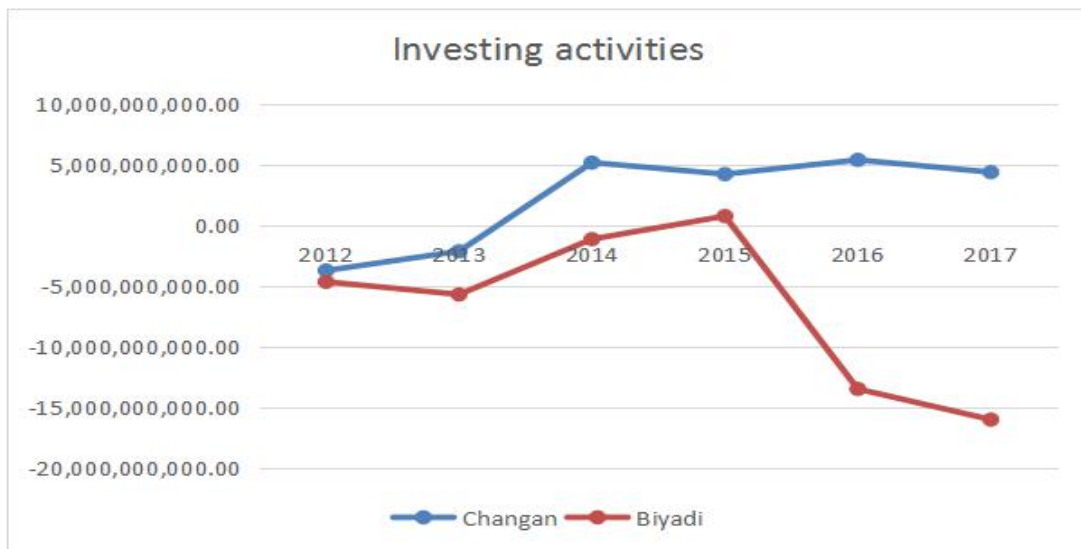
Graph 16 Net cash flow generated through operating activities of Changan and BYD (2012-2017)



Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

According to graph 17, which describe the net cash flow generated through investment activities, the two companies did not differ much in 2012 and then both of them gradually increased. Changan has stabilized after 2015, and BYD has suddenly fallen.

Graph 17 Net cash flow generated through investing activities of Changan and BYD (2012-2017)

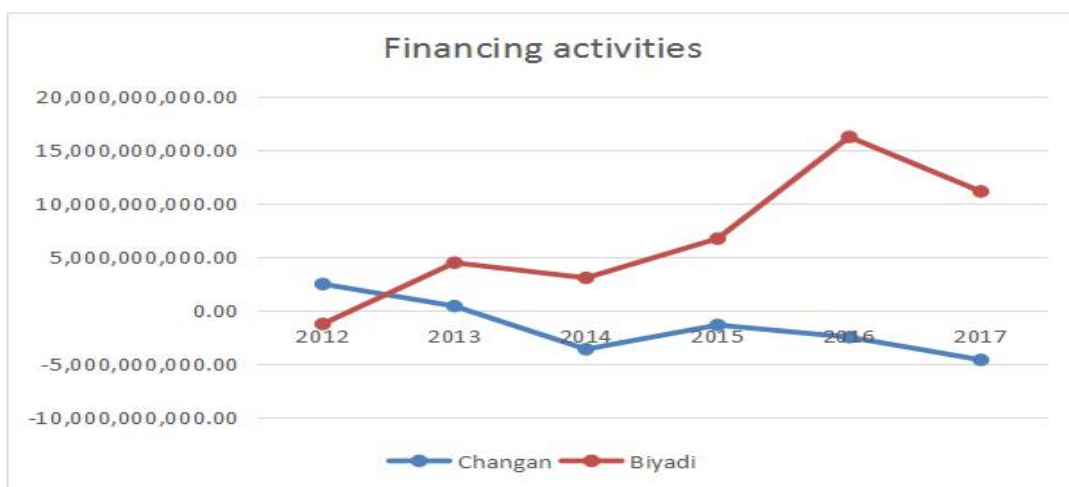


Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

According to graph 18, which describe the net cash flow generated through financing activities, the two companies did not differ much in 2012. In 2016, BYD has been rising, and reached its highest point, while Changan has slowly declined.



Graph 18 Net cash flow generated through financing activities of Changan and BYD (2012-2017)



Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

#### 5.5.5.8 Human resources comparison

According to table 17, the total number of employees in Changan and the number of employees engaged in research and development are much less than BYD. However, in proportion, Changan has about 23.90% of the total number of employees engaged in research and development, while BYD only 13.68%.

Table 17 Comparison of two companies of human resources in 2017

	Changan	BYD
R&D staff	9354	27488
Total staff	39138	200936
Proportion	23.90%	13.68%

Source: Own calculations, data from Chongqing Changan Automobile Company Limited 2012-2017 Annual Report and Chongqing BYD COMPANY LIMIT 2012-2017 Annual Report

#### 5.5.5.9 Comprehensive Comparison

According to the comparison between Changan and BYD, the following conclusions can be drawn.

Changan's total assets and total liabilities in 2017 were only 60% of BYD's. However, the proportion of accounts receivable in assets and the proportion of long-term debts in liabilities of BYD are much higher than those of Changan. Changan's sales were 75.54% of BYD's, but its gross profit and net profit were higher than BYD.

Overall, Changan's growth rate in 2012-2016 was lower than BYD. But Changan's average sales growth rate is higher than BYD.

Changan's profitability is much higher than BYD's. Changan's liquidity performance is also better than BYD, but it should be noted that excessive cash ratios may lead to inefficient cash utilization.

Regarding activity ratios, BYD's inventory conversion period is longer than Changan, and the payable conversion period is shorter than Changan. The biggest difference is the accounts receivable turnover rate.

In terms of Leverage, Changan's debt ratio is almost the same as BYD. However, Changan's long-term debt-to-equity ratio is one-tenth of BYD's. The reason is that the large amount of accounts receivable accounted for BYD's working capital, which worsened the company's cash flow. BYD had to borrow money to make up for the funding gap.

Overall, Changan's net cash flow fluctuated significantly and BYD remained relatively stable. In 2017, Changan's net cash flow was lower than BYD.

In terms of human resources, the total number of employees and the number of employees engaged in research and development in Changan is much lower than that of BYD. However, the proportion of Changan R&D personnel is higher than BYD.

## **5.6 SWOT**

### **5.6.1 Strength**

#### **Liquidity and solvency**

In terms of liquidity, indicators have been steadily increasing. The cash ratio reached 41.45% in 2017, and the Debt ratio has been declining. The company gradually converted through debt financing to equity financing, and the operational risk is decreasing.

Working capital is negative in 2012-2014, and companies may face capital turnover problems during these three years. However, It has been steadily increasing since 2013. In 2017, it reached its highest level, indicating that the company's solvency is steadily

increasing. Besides, the asset structure and liability structure have remained relatively stable.

### **Investing activities**

Investment activities were transformed from cash outflows in 2012 and 2013 to cash inflows, indicating that the company's investment capacity is increasing.

### **Cash flow**

In terms of cash flow, operating activities are always cash inflows except for 2017. At the same time, net cash flow has declined since 2015 and is again negative in 2017.

### **Human resources**

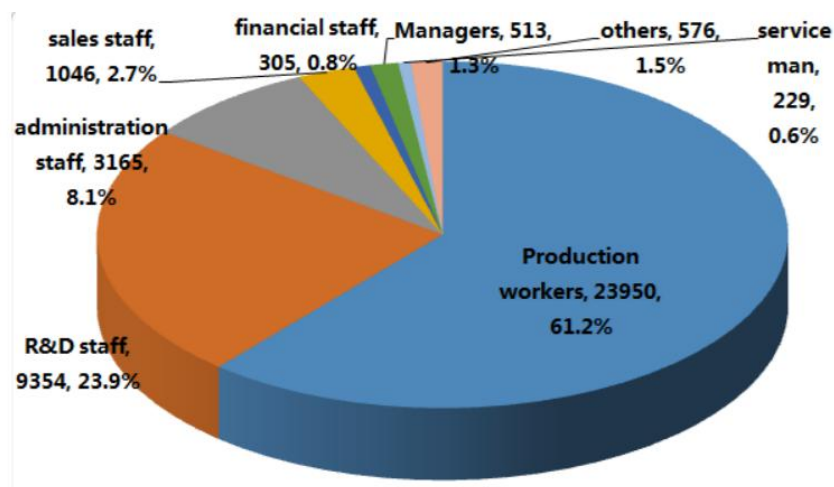
According to graph 19, the proportion of production workers in all employees is the highest, with 23,950 people, accounting for 61.2%. Followed by R & D personnel, there are 9354 people, accounting for 23.9%. Administration staff account for 3.1%, sales staff account for 2.7%, others account for 1.5%, manager account for 1.3%, financial staff account for 0.8%, service man account for 0.6%.

According to graph 20, in the terms of education level of employees, the secondary technical school, senior high school account for the highest proportion, which is 39.9%. college education account for 19.6%. In addition, 6.6% of employees are less educated than high school.

Besides, There are 11,187 employees with bachelor degree, accounting for 28.6% of the total. Employees with master degree account for 4.9% and PHD accounted for 0.4%.

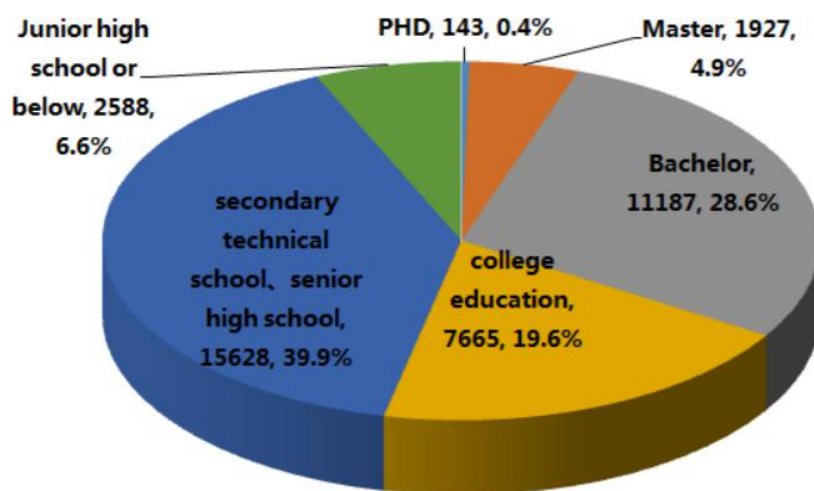
From the data, we can see that the company has a large number of production workers, which means that the labor force in the production line is sufficient. R&D personnel account for 23.9%, which allows the company to gain an advantage in technology development.

Graph 19 Professional structure of employees in Chongqing Changan Automobile Company Limited on 31.12.2017



Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

Graph 20 Education level structure of employees in Chongqing Changan Automobile Company Limited on 31.12.2017



Source: Chongqing Changan Automobile Company Limited 2017 Annual Report

## 5.6.2 Weakness

### Growth of assets

Growth rates of total assets and current assets growth rates as well as total liabilities and current liabilities have been declining since reaching their peak in 2013, and even become negative in 2016, which means that asset growth has fallen into stagnation or even shrinking.

### **Sales and profit**

Sales and net profit began to decline slightly in 2017 after the growth in 2012-2015, which means that the company's sales growth has encountered bottlenecks. At the same time, the proportion of COGS in sales is also increasing year by year after 2015, making the net profit even thinner. Profitability ratios are decreasing except ROA. It shows that the company's operating capacity is declining. But due to the shrinking asset scale, the ROA has remained relatively stable.

### **Cash utilization efficiency**

Liquidity and cash conversion cycles have been increasing. The cash conversion cycle and the cash ratio are too high, indicating that cash and its equivalents are not being used effectively to gain profit.

### **Human resources**

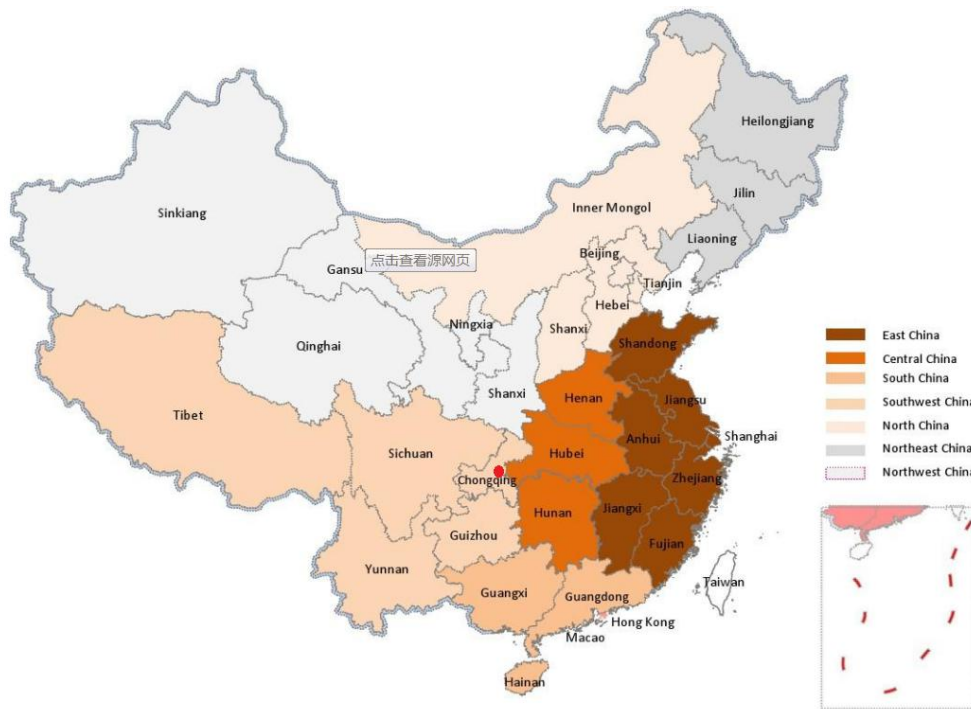
According to graph 16 and graph17, it can be known that the education level of employees is generally low. Although 23.9% of people are engaged in research and development, which is good for the company to gain advantages in technology. Their academic qualifications may not be sufficient to support them in their R&D work.

### **5.6.3 Opportunity**

Although the current automobile industry has entered the mature stage of the market, in the markets of newly industrialized countries, especially in Asia, except for Japan, it is still in the stage of market expansion. Developed countries in Europe and the United States still account for a large proportion of total automobile demand for a long time, but the demand for passenger vehicles in China is more vigorous, and the growth rate of market demand is significantly higher than that of developed countries.

In China, the total number of cars in tier I and tier II cities has gradually become saturated. The government has also issued policies to restrict residents from purchasing cars for environmental protection and transportation considerations. However, tier III and tier IV cities still have great market potential, especially in the less-developed western region. Changan's headquarter is located in Chongqing. We can see from the figure 6 that Chongqing is located in southwestern China. Chongqing is one of the four municipalities directly under the Central Government and one of the largest cities in western China. Changan has a good location advantage.

Figure 6 Map of China



Source: <https://www.mianfeiwendang.com/doc/f4e684c20cf2d7445e638e90>

At the same time, with the development of China's economy, China's per capita disposable income has continued to increase. People's pursuit of quality of life is also getting higher and higher. Many Chinese people like self-driving tour nowadays. At present, it has become the first reason why Chinese consumers buy a car. Changan can seize this opportunity to launch more family cars suitable for self-driving travel.

#### 5.6.4 Threat

At present, the Chinese people's awareness of environmental protection has gradually increased, and more and more attention has been paid to the issue of air pollution. Car exhaust is a major source of air pollution. The government and many non-profit organizations have taken various measures to reduce the use of private cars by residents, especially in big cities. At the same time, traffic congestion is also a major reason why people are no longer willing to drive.

In addition, the current Chinese auto market is highly competitive. As a domestic brand, Changan is less competitive in new energy, technology and high-end products than joint venture brands and imported brands. The growth rate of China's auto sales in 2017 has slowed sharply, which means that the market competition is becoming increasingly

fierce. In 2017, the top ten auto companies accounted for 88.52% of the annual sales of Chinese cars. Changan Automobile ranked fourth.

Table 18 SWOT analysis

<p style="text-align: center;"><b>Strength</b></p> <ol style="list-style-type: none"> <li>1. Liquidity and solvency have been steadily increasing</li> <li>2. Investment activities bring in cash.</li> <li>3. Net cash flow is almost positive.</li> <li>4. It has adequate human resources.</li> <li>5. It has a strong R&amp;D department</li> </ol>	<p style="text-align: center;"><b>Weakness</b></p> <ol style="list-style-type: none"> <li>1. Asset growth is stagnating</li> <li>2. Sales growth has encountered bottlenecks.</li> <li>3. Cash utilization efficiency is low.</li> <li>4. Education level of employees is generally low.</li> </ol>
<p style="text-align: center;"><b>Opportunity</b></p> <ol style="list-style-type: none"> <li>1. It has a location advantage</li> <li>2. China's per capita disposable income has continued to increase</li> </ol>	<p style="text-align: center;"><b>Threat</b></p> <ol style="list-style-type: none"> <li>1. People's awareness of environmental protection has gradually increased.</li> <li>2. Chinese auto market is highly competitive.</li> </ol>

*Source: Own analysis*

## 6 Discussion

Through the above results, we can know that Changan's profit in 2017 has already declined. According to the semi-annual report released by Changan in July 2018, the cumulative sales volume of Changan in the first six months of 2018 down 15.5% year-on-year.

The decline in Changan's net profit has a lot to do with its over-reliance on joint ventures. In 2016, Changan Automobile has not been surpassed by Jili. Its net profit of its own brand is less than one quarter of the net profit of Jili.

Although the profitability of the company's independent passenger vehicles has improved, the investment income from the joint ventures has fallen sharply, resulting in a significant decline in the company's semi-annual results. It is understood that Changan's operating results are closely related to investment income, while Changan Automobile's investment income mainly comes from joint ventures and joint ventures of long-term equity investments, including 11 affiliates such as Changan Ford Motor Co., Ltd. and Changan Mazda.

Mei Songlin(interview,2018), vice president of J.D.Power, believes that Changan's own brand is relatively large in the past few years. On this basis, Changan will focus more on how to maintain its leading position in the market, such as increasing product competitiveness and accelerating. Product update speed. However, the change in the competitive landscape has made Changan realize that it has been unable to guarantee its leading position in accordance with past practices. Technological innovation and the launch of new brands need to be more 'radical' and 'fast'. ”

Zhu Ronghua(interview, 2018), president of Changan Automobile, said that judging from the sales performance of Changan in the past two years, its continuous sales slump is not due to the coming winter of the car market, but related to its own adjustment and upgrade. According to his judgement, the next three years will be a crucial period for the survival of independent brands including Changan. Changan will face multiple transformations: one is to transform from operating products to business services; the other is to transform from traditional products to new energy and intelligence, so Changan will need to adopt some innovative models in the future, so as to ensure the strategy while at the same time To ensure the good performance of the current listed company operations.



According to the data, in the top ten car sales in 2017, in the first 11 months of 2018, sales fell year-on-year, of which Changan complete the annual sales target Basically hopeless. According to the analysis of China Automobile Industry Association, China's auto market experience negative growth for the first time due to multiple factors (China Automobile Industry Association, 2019)

The reasons for negative growth of car market are complicated. Dongyang(Whether the rapid growth of China's auto market is gone forever, 2018) regards that economy is weak, the income of middle and low-income people is decreasing, and the demand of 3-4 cities is weakening. These are the main reasons for the decline of growth in car sales. The increase in China's auto market depends on the tier III , tier IV cities and rural markets.

Zhang Baolin(interview, 2019), chairman of Changan Automobile, believes that with the changes and influences of the external environment, China's auto industry is facing more intense market competition and reshaping the pattern of China's auto industry, and the upward resistance of Chinese automakers' brands will further increase. However, the industry has also brought new strategic opportunities for the development of Chinese auto companies.

In recent years, intelligent and new energy have become the consensus of industry development. With the development of artificial intelligence, car networking, autopilot and other technologies, the future car will evolve from a traditional travel tool to a mobile smart platform for life work. The definition and role of the car will also undergo tremendous changes.

At the same time, the integration of online and offline, different industries in business competition is getting stronger and stronger, business boundaries are becoming more and more blurred, resulting in the innovation of business models, building a new format for the automobile industry and promoting the automobile. The integration of resources between upstream and downstream industrial chains, car companies and industry and cross-border partners provides more possibilities for car companies to become bigger and stronger.

## 7 Conclusion

From the above analysis we can draw the following conclusions.

Changan's asset structure and debt structure have remained relatively stable. Liquidity has been steadily increasing. The company gradually converted through debt financing to equity financing, and the operational risk is decreasing. At the same time, the ability of investment activities to bring in cash is increasing.

However, asset growth has fallen into stagnation and is even shrinking. The company's market expansion and sales have encountered bottlenecks. Overall, operating ability is declining. The cash conversion cycle and cash ratio are too high. Cash and its equivalents are not being used effectively. Net cash flow has declined since 2015 and is again negative in 2017. The education level of employees is generally low. Although 23.9% of people are engaged in research and development, their academic qualifications may not be sufficient to support them in their R&D work.

The Chinese auto market is highly competitive, and the growth rate of China's auto sales in 2017 has slowed sharply. As a domestic brand, Changan is less competitive in new energy, technology and high-end products than joint venture brands and imported brands. Changan's overall competitiveness is currently at the end of the first echelon.

At present, the Chinese people's awareness of environmental protection has gradually increased, and more and more attention has been paid to the issue of air pollution. Car exhaust is a major source of air pollution. The government and many non-profit organizations have taken various measures to reduce the use of private cars by residents.

In this regard, the recommendations given in this paper are as follows.

Improve the company's cash investment capabilities so that they can be fully utilized.

Recruit more highly educated employees and improve the overall education level of employees. With the gradual improvement of people's awareness of environmental protection, new energy vehicles are the trend of the times. To gain an advantage from Changan, Changan must improve its research and development capabilities.

At the same time, produce more vehicles which are suitable for family travel to meet the needs of consumers.

At present, the automobile market in the tier III and tier IV cities still has great potential. Changan has a good location advantage and should make full use of this to provide market share in the western region.

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## 9 Appendix

Balance Sheet of Changan (in CNY)

	2012	2013	2014	2015	2016	2017
Cash	4,199,763,915.82	4,535,825,972.55	9,693,083,497.78	18,035,109,674.21	24,782,504,552.44	22,631,536,496.53
Accounts receivables	438,384,320.58	704,638,231.00	758,876,190.82	875,479,556.55	1,498,837,041.54	1,806,807,193.04
Inventories	4,911,029,980.66	4,735,051,726.57	6,572,186,481.51	8,129,075,131.92	7,304,106,822.61	4,666,183,421.80
Other current assets	10,002,803,959.21	12,185,553,936.35	18,905,824,914.17	24,584,543,737.82	32,412,126,802.26	33,652,092,265.88
<b>TOTAL CURRENT ASSETS</b>	<b>19,551,982,176.27</b>	<b>22,161,069,866.47</b>	<b>35,929,971,084.28</b>	<b>51,624,208,100.50</b>	<b>65,997,575,218.85</b>	<b>62,756,619,377.25</b>
Total NON-CURRENT ASSETS	26,565,622,616.00	32,451,037,880.55	33,757,381,806.54	37,789,780,569.16	40,512,898,515.08	43,368,495,245.44
<b>TOTAL ASSETS</b>	<b>46,117,604,792.27</b>	<b>54,612,107,747.02</b>	<b>69,687,352,890.82</b>	<b>89,413,988,669.66</b>	<b>106,510,473,733.93</b>	<b>106,125,114,622.69</b>
Accounts payables	7,201,763,448.59	7,963,798,219.72	13,038,793,688.31	14,973,826,566.55	19,880,580,102.39	21,902,826,194.15
Other current liabilities	17,996,575,257.61	21,661,043,731.48	26,283,702,584.01	35,304,864,090.96	40,113,702,752.31	32,699,873,876.68
<b>TOTAL CURRENT LIABILITIES</b>	<b>25,198,338,706.20</b>	<b>29,624,841,951.20</b>	<b>39,322,496,272.32</b>	<b>50,278,690,657.51</b>	<b>59,994,282,854.70</b>	<b>54,602,700,070.83</b>
Long-term debt	992,000,000.00	1,270,000,000.00	0.00	0.00	19,980,912.00	6,575,973.33
Other non-current liabilities	4,536,338,362.90	4,998,554,863.39	4,909,444,921.28	4,961,675,288.72	3,143,050,417.17	4,052,659,320.07
<b>Total NON-LIABILITIES</b>	<b>5,528,338,362.90</b>	<b>6,268,554,863.39</b>	<b>4,909,444,921.28</b>	<b>4,961,675,288.72</b>	<b>3,163,031,329.17</b>	<b>4,059,235,293.40</b>
<b>TOTAL LIABILITIES</b>	<b>30,726,677,069.10</b>	<b>35,893,396,814.59</b>	<b>44,231,941,193.60</b>	<b>55,240,365,946.23</b>	<b>63,157,314,183.87</b>	<b>58,661,935,364.23</b>
Equity	15,390,927,723.17	18,718,710,932.43	25,455,411,697.22	34,173,622,723.43	43,353,159,550.06	47,463,179,258.46

Balance Sheet of BYD (in CNY)

	2012	2013	2014	2015	2016	2017
Cash	4,199,763,915.82	4,535,825,972.55	9,693,083,497.78	18,035,109,674.21	24,782,504,552.44	22,631,536,496.53
Accounts receivables	438,384,320.58	704,638,231.00	758,876,190.82	875,479,556.55	1,498,837,041.54	1,806,807,193.04
Inventories	4,911,029,980.66	4,735,051,726.57	6,572,186,481.51	8,129,075,131.92	7,304,106,822.61	4,666,183,421.80
Other current assets	10,002,803,959.21	12,185,553,936.35	18,905,824,914.17	24,584,543,737.82	32,412,126,802.26	33,652,092,265.88
TOTAL CURRENT ASSETS	19,551,982,176.27	22,161,069,866.47	35,929,971,084.28	51,624,208,100.50	65,997,575,218.85	62,756,619,377.25
Total NON-CURRENT ASSETS	26,565,622,616.00	32,451,037,880.55	33,757,381,806.54	37,789,780,569.16	40,512,898,515.08	43,368,495,245.44
TOTAL ASSETS	46,117,604,792.27	54,612,107,747.02	69,687,352,890.82	89,413,988,669.66	106,510,473,733.93	106,125,114,622.69
Accounts payables	7,201,763,448.59	7,963,798,219.72	13,038,793,688.31	14,973,826,566.55	19,880,580,102.39	21,902,826,194.15
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Total NON-LIABILITIES	5,528,338,362.90	6,268,554,863.39	4,909,444,921.28	4,961,675,288.72	3,163,031,329.17	4,059,235,293.40
TOTAL LIABILITIES	30,726,677,069.10	35,893,396,814.59	44,231,941,193.60	55,240,365,946.23	63,157,314,183.87	58,661,935,364.23
Equity	15,390,927,723.17	18,718,710,932.43	25,455,411,697.22	34,173,622,723.43	43,353,159,550.06	47,463,179,258.46

Cash flow of Changan (in CNY)						
	2012	2013	2014	2015	2016	2017
operating activities	511,885,673.38	1,832,646,224.37	3,779,921,774.57	5,414,890,769.50	2,286,551,305.20	-1,369,576,776.83
investing activities	-3,679,725,564.98	-2,092,071,934.54	5,219,580,798.24	4,267,762,371.55	5,437,209,876.59	4,427,994,628.07
financing activities	2,514,675,890.89	451,964,037.15	-3,577,988,959.21	-1,319,455,346.16	-2,449,645,454.75	-4,574,970,938.61
Total cash flow	-653,164,000.70	192,538,327.00	5,421,513,614.00	8,363,197,795.00	5,274,115,727.00	-1,516,553,087.00

Cash flow of BYD (in CNY)						
	2012	2013	2014	2015	2016	2017
operating activities	5,555,331,000.00	2,436,169,000.00	-1,838,664,000.00	-6,556,192,000.00	-1,845,571,000.00	6,367,887,000.00
investing activities	-4,609,622,000.00	-5,651,392,000.00	-1,090,880,000.00	807,217,000.00	-13,442,642,000.00	-15,964,084,000.00
financing activities	-1,217,034,000.00	4,507,758,000.00	3,086,206,000.00	6,764,988,000.00	16,270,217,000.00	11,167,824,000.00
Total cash flow	-271,325,000.00	1,292,535,000.00	156,662,000.00	1,016,013,000.00	982,004,000.00	1,571,627,000.00