International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 7, 2020
ISSN: 1475-7192

INVESTMENT AND FINANCING ANALYSIS OF AUTOMOTIVE INDUSTRY OF CHINA

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Abstract---*With rapidly growth in economy, the China's society is changing. Automobile became necessary consumption of the society. Automotive industry of China which has been expected as pillar industry in 2010 has experienced the impacts of changing of general environment and rapid growth, especially in 2002 and 2003; the annual growth rates were 37.1% and 35.1%. The industry is expected to maintain stable and high growth in the following couple years for the percentage in ownerships of cars in China is relative low. Currently, huge capitals crowd into the automotive industry of China and the China's automobile industry is facing opportunities and challengers, the industry in China need adjust itself to adapt the changing of general environment and to achieve new development in the booming economy. As a consequence, there is necessary to study investment and financing issues which have become two critical issues for the industry.*

Keywords: *automotive industry, capital crowd, production capabilities, joint venture enterprises*

I. Introduction

The proportion of literacy in total population is about 90.9% (Partington, 1985). Contemporaneously, the growth rate of GDP in USA was 4.4% with GDP of $11.75 trillion and it's per capital GDP was $40,100 in 2004. The data of Canada were 2.4%, $1.023 trillion and $ $31,500 in terms of GDP growth rate, GDP, and per capital GDP respectively. Meanwhile, the scenario in India is that the growth in GDP was 6.25 with GDP of $3.319 trillion and per capital GDP was $3,100 in 2004. With the rapid economic growth, society in China is changing. According Xinhua news, 19% of China's population can be considered middle-class in 2004 and it will rise to 40% in 2020. The significant growth of proportion in the middle class sector shows that there is a strong prevalence in total consumptions especially in certain large cities. Meanwhile, the purchasing behavior of middle class changes dramatically compared to the past----they are getting used to purchase houses and cars with mortgages and this has significant impacts on the society at large, for example, the Chinese consumer patterns has been changed.

Consolidation in car production is evident. Six global groups, namely, GM, Ford, Toyota, Citroen-Peugeot, Volkswagen, and Daimler-Chrysler, control more than 80% of world car production. As one component of global automotive industry, Chinese automotive industry is affected by the global automotive industry coherent with what was mentioned at the beginning of this paper that the global economic and social changes diversify the industrial environment in China. The differences are with regards to high growth and small sales (Morellec & Schürhoff, 2011). According to the China Association of Automobile Manufactures (CAAM), the approximately average growth rate of automotive sales was 24.2% (15.8% in 2000, 17.4% in 2001, 37.1% in 2002, 35.2% in 2003, and 15.5% in 2004, with sales 2.0178 million units, 2.3691

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million units, 3.2481 million, 4.3906 million units, and 5.0711 million units respectively). The total sales of vehicles in China were 5.0711 million units with output 5.0705 million units in 2004. The growth rates were 14.11% and 15.5% on the total output and total sales. The total sales income was more than 121.5 billion US dollar and accounted approximately 7.4% of GDP. Xinhua Agency argued in its publication on 25th, April, 2005, the automotive industry in China is facing several problems such as oversupply. However, in the same month, Ford announced that it would establish a new engine factory with production capability of 350,000 unit engines and GM announced it will invest another 3000 million US dollar to enlarge its production capability and hope its total output capability to be doubled----1.3 million units (Ming, Ximei, Yulong, & Lilin, 2014). On the one hand, the state of market is oversupplied in China's automotive industry. In the other hand, the giants as well as domestic manufactures are continuing to invest by financing from financial institutions and other resources to enlarge production capabilities (Fama, 1978; De Silva et al., 2018a; De Silva et al., 2018b; Nikhashemi et al., 2013).

II. Literature Review

The demand and supply shocks also are two key factors that might have impact on macro economy (Froot, Scharfstein, & Stein, 1993; Dewi et al., 2019; Pambreni et al., 2019; Tarofder et al., 2017). The relationship between investment analysis and the framework of demand and supply shocks will be evident on the impact that the macro economy scenario seems like to help or hurt the industries. Governments broadly have two types of macroeconomic tools, one that affects the demand for goods and services and other impacts on the supply in terms of goods and service which the economy can offer. Increases in tax rate immediately reduce the income of customers which can happen when spending and the result of consumption decrease (Pruitt & Gitman, 1991).

A common way to look at the impacts of government fiscal policy on economy is to look at the government's budget deficit or surplus. The effect of a large deficit is to increase the demand for goods thereby stimulating the economy (Han, Zhang, Yu, & Wang, 2016). Even though the five forces model has defects, it still can give investors overview knowledge of rivalry in an industry and the knowledge eventually helps investor to make investment decisions (Lindley, Verbrugge, McNulty, & Gup, 1992;

Doa et al., 2019; Maghfuriyah et al., 2019; Nguyen et al., 2019). When investors do their analysis of an industry and narrowly focus on particular segments of such industries, investors might bear the risk of missing important elements (Mayers, 1998). Even though the five forces model has defects, it still can give investors overview knowledge of rivalry in an industry and the knowledge eventually helps investor to make investment decisions.

III. Research Methodology

The changes in China's economy and society that has taken place in the last ten years has affected all industries in China. Automotive industry develops rapidly and financial institutions have been well developed (Nawaz, Azam, & Bhatti, 2019; Pathiratne et al., 2018; Rachmawati et al., 2019; Seneviratne et al., 2019; Sudari et al., 2019; Tarofder et al., 2019). As one of important functions of financial institutions, financial institutions such as commercial banks, funds, and insurance companies channel surplus of capital to the deficit units as well as Chinese automotive industry. Under the state that more capital are invested to the automotive industry in China even though the oversupply of automobiles, not only automotive manufactures but also financial institutions and other capital resources should carefully analyze the state and well understand of the environment of automotive industry before they make investment decisions on the automotive industry of China (Nawaz, Afzal, & Shehzadi, 2013). It is decided that descriptive study will be used because I wish to cover contextual conditions and interpret the impacts of various circumstances on China's automotive industry. It is hoped that this study can

assist in the understanding of the characteristics of investment and financing of automotive industry in China. It also can help to formulate systematically the aspects that surround the automotive industry in China. Furthermore, descriptive study can help make certain decisions, for example, those pertaining to investments relative to the environments in China. However, people from different cultures may have different understanding on the components of descriptive study. (Agrawal & Mandelker, 1987).

In order to answer the research question, it is necessary to conduct a study that extends over broad factors which may have impacts on automotive industry in China. Factors are selected with levels of priorities and details. Although the traditional approach for industry analysis has pitfalls, it does provide a generally conceptual framework. Construct validity is established by conducting investment analysis for the automotive industry of China. It refers to systematic analysis factors which have impacts on the industry and the procedures are described as industry analysis approach (Czarnitzki & Hottenrott, 2011; Nikhashemi et al., 2017; Tarofder et al., 2019; Ulfah et al., 2019; Tarofder et al., 2016; Udriyah et al., 2019). Under the principle----existence other than the identified ones and data are from official channel. In terms of external validity, it can be said that different people has different interpretations about the factors that affect the automotive industry in China, as well as different criteria on risk bearing, this offers a poor basis for generalizing. Finally, reliability is strengthened due to the entire scientific analysis as followed. Setting up joint venture firms and enlarging the import are the general characteristics (Hussain et al., 2012).

The overall development patterns were introduction of overseas technologies, establishment joint-stock enterprises, adopting the modernized mass production method, importing the parts to assemble (Hussain, Musa, & Omran, 2018). The manufacturing level of products and the technological level experienced enhancement. The distribution realm accorded to government's plans and market demand namely "the two-track system". The development of automotive industry sped up. At the beginning of 1991, the government adjusted the structure of automobile industry in China. The policy was that the new capital must be invested to the three big automobile groups. In 1994, the authority declared to take the development of the passenger vehicles as a key point. The capital primarily went to the passenger vehicle extension project of three-big of China. In 1997, Shanghai GM launched its first product in China (Gordon, 1963). In 1998, Guangzhou Honda put its first product into China. The concentration degree of production continued to enhance. The top 7 enterprises ranked 99.14% sales of passenger vehicles in China. The total quantity enhanced to a new level, the passenger vehicle annual output increases from 81,055 in 1991 to 620,000 in 2000, the capacity reached to 1.6 million units per year. Many types of marketing systems and approaches appeared, such as automobile transaction market, automobile exclusive agency and Sale-Sparepart-Service-Survey center. The automobile industry changed dramatically in the marketing aspect. Competitive awareness, benefit goals, innovation motive and brand consciousness gradually developed in the whole industry.

The products of joint venture enterprises controlled the majority market share. National automobile brand such Chery Auto, Brilliance-Auto acted as the new strength of national automobile industry in China. The overall developing approach is to combine the approach of independent development and the approach of cooperation development. The development sped up greatly. Distribution forms are even more multiplex; the expenditure behavior of consumers has changed tremendously. The market is opening further, large quantities of transnational automobile companies rush into vehicle market in China. The competition among rivals is intense. The quantity of individual purchasing is rapidly growing (Wang, 2003). The intervention of the state is reduced. The policy of automotive industry is loosed. In truth, the government encourages private capital to enter the industry. Thus, the autonomy of enterprise increased. Price wars are common. After the entry of WTO, the domestic automobile enterprises universal enhance the critical sense, strengthen competition dynamics in the market and promote the rivalry from the price war to the brand war. SAIC launched 10 kinds of products such as Polo, Passat

in the past 3 years. The overseas automobile merchants jumped into the brands war. For instance, General Motors introduced all the product of Opel which is the subsidiary of GM to China market. Toyota established its first factory to produce vehicles by joint venture with FAW in 2002 after 15 years later of the entry of Volkswagen (Ding, Guariglia, & Knight, 2013).

Currently, there are 102 companies involved in automobile assembly and 355 auto brands in China's market. Apart from the historical players (First Automobile Works Group – FAW, Shanghai Automotive Industry Corporation – SAIC, Chang'An Auto, Beijing Automotive Industry Corporation and, Dongfeng Motor Corporation), China's automotive industry is also characterized by the existence of many new entrants such as Brilliance Auto, Chery Automobile, and Geely Automobile (Hussain, Musa, & Omran, 2019). Moreover, there are a few companies diversified into automotive industry by acquiring small regional car or truck manufacturers in recent years (Nawaz & Hassan, 2016). Obviously, the development of these new entrants appears very risky because they have no real experience and lack capabilities such as engineering resources and more importantly a sufficient supplier network in the automotive industry (Chambers, 1971).

In 2003, SAIC entered the Fortune Global 500 Companies with revenue of 11.7 billion US dollar. Buick Regal, Buick GL8, Excelled, and Sail Santana, Passat, Polo, and Gol. The other subsidies are Investment Corporation and Volvo Bus Corporation), and SAIC Motor Corporation Limited which was listed in Shanghai Stock Market on November, 29, 2004. The total sales volume of SAIC in 2003 was around 782,000 units, in which 597,000 units were passenger cars. The total assets of SAIC in 2003 were around 9.1 billion US dollar with 64,343 employees. The company's other operations include car leasing, auto parts wholesale and retail, and financing. SAIC took 48.92% stake of SSANG YONG Motor Company – a manufacture in Korea on October 28, 2004. Now, SAIC is negotiating to take a 70% stake of MG Rover (Haugen, 1971). The products of joint venture enterprises controlled the majority market share. National automobile brand such Chery Auto, Brilliance-Auto acted as the new strength of national automobile industry in China. The overall developing approach is to combine the approach of independent development and the approach of cooperation development. The development sped up greatly. Distribution forms are even more multiplex; the expenditure behavior of consumers has changed tremendously. The market is opening further, large quantities of transnational automobile companies rush into vehicle market in China (Rauh, 2006).

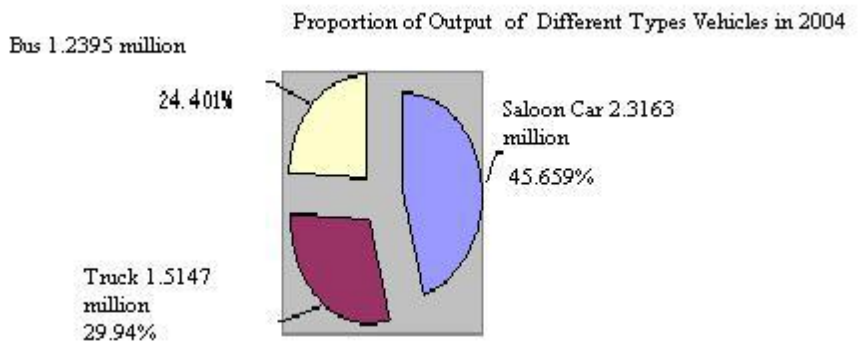

Figure 1: Proportion of Output

Analysis of Industry

General Business Environment Analysis

Currently, the business environment for the development of automotive industry in China is approaching perfection. The rapid advance of economy, the growth of people's incomes, and the advancement in consumptions make consumption capacity of houses and automobiles increase. Synchronously, the government issued a series policies to improve the

consumption environment of automobiles and encourage citizens to purchase cars. The entries of giants in automotive industry bring advantage technologies and managements to the Chinese automotive industry and supply various types of cars to Chinese market. These factors will accelerate the advances of automotive industry in China. However, the appreciations of petroleum and steel will put negative effects in the business environments for the automotive industry of China.

The Policies grant for the removal of the approval system for the rights to sell cars which was a thing in the time of command economy. The implications of the policies are summarized as follows:

First, retention of the 50 percent maximum for foreign investment comes as no great surprise. This cap was not required to be reduced under China's WTO commitments and is an effective way for China to retain a significant stake in the sector and to assist the larger domestic manufacturers. Second, consolidation of the sector is likely to be given a boost through mergers and acquisitions, especially among small to medium sized domestic automakers (Hussain, Mosa, & Omran, 2017). Third, high barriers for the entry of non-auto companies to enter the industry means that incumbents from both the foreign and local scene will be helped by reducing over-investment in the sector which could result in overcapacity and reduced margins. Fourth, several measures will further incentives local component production and sourcing, although the main automakers are already active in local component sourcing for local production and for export (Hussain, Mosa, & Omran, 2018).

Economy Segment Analysis

The Chinese economy underwent an extraordinary year because of the macroeconomic control in 2004. The government conducted solid work in developing and implementing the scientific concept of development strategy. Significant results were achieved in strengthening and improving macroeconomic regulation. Unstable and unhealthy factors in the economic performance were put under control. The national economy kept stable and rapid development. The gross domestic product (GDP) of China in 2004 was 13,651.5 billion RMB, up by 9.5 percent over the previous year. The total value-added of the industrial sector was 6,281.5 billion RMB, up by 11.5 percent over the previous year. Of this total, the value-added of the primary industry was 2,074.4 billion RMB, up by 6.3 percent; the value-added of the secondary industry was 7,238.7 billion RMB, up by 11.1 percent; and the value-added of the tertiary industry was 4,338.4 billion RMB, up by 8.3 percent. The value-added of industrial enterprises above designated size was up by 16.7 percent, slightly lower than that of the previous year. Among the industrial enterprises above designated size, the value-added of state-owned and state-controlled enterprises rose by 14.2 percent. The growth of heavy industry was 18.2 percent while that of the light industry was 14.7 percent. Analyzed by product, the production of coal and power generation was up by 15.0 percent and 14.9 percent respectively, the production of pig iron, crude steel and rolled steel was up 24.1 percent, 23.2 percent and 23.5 percent respectively.

Automotive industry has high pertinence with other industries and has strong positive effect on domestic economy. For the status of backbone in domestic economy, automotive industry may develop faster than the average of whole industry in a particular period. However, the development of automotive industry needs support from others. The automotive industry is constrained by the domestic economy, technology and throughput of related industries. The disposable income and purchasing power of residents are also taken into consideration. From the above analysis, the gap of tempos between automotive industry and other industries will be not be large. Even so, obvious gap exists in a particular period, the gap cannot last long. All in all, automotive industry cannot break away from industries to develop independently. The relationship between automotive industry and GDP of China is illustrated in the as followed:

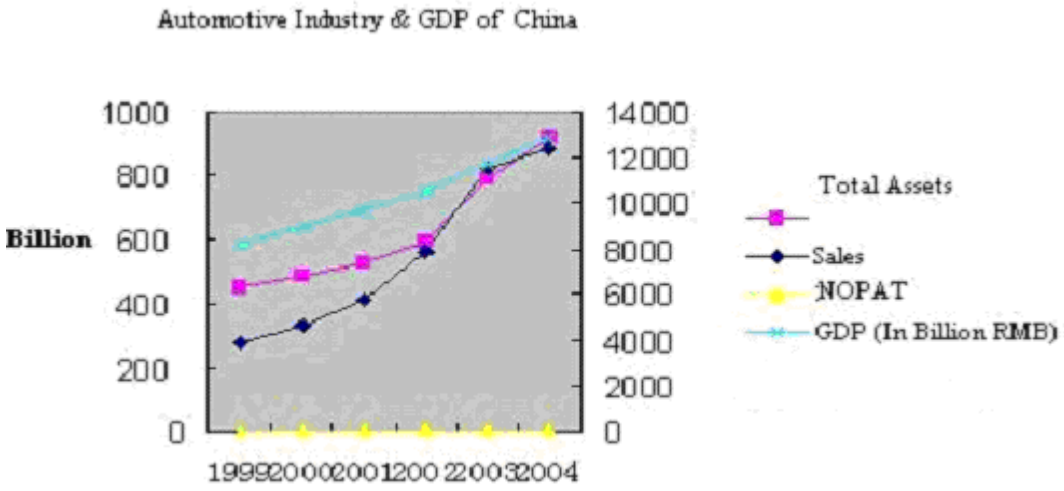

Figure 2: GDP of Automotive Industry

Technology Segment Analysis

There are many possible advances in technology that could influence the future of the automotive industry of China:

- Hybrid cars and more advanced combustion engines (eg. gas turbines) will improve fuel efficiency. Toyota intends to transfer a hybrid models to China and it will be produced by its partner—FAW. Ford also intends to transfer a model to Chang'An Auto.

-Radio technology will permit on-board collision warnings in advance.

-The smart car and driverless car by adopt advanced automation could make driving easier and safer.

- Cars may be able to use low carbon fuels such as hydrogen, fuel cells, and electricity instead of the internal combustion engine.

In view of the petroleum crisis and environmental concerns, carbon fuels, among other technology advance, might have the highest priority in research and application. Today, many countries put their efforts on research of hydrogen, fuel cells, and electricity for alternatives and have received some harvests in these researches.

A hydrogen car is an automobile which uses hydrogen (usually obtained from decomposition of methane, and sometimes from water using electrolysis) as its primary source of power. One of the benefits of using pure hydrogen as a power source is that it uses oxygen from the air to produce only water vapor as exhaust, moving the source of atmospheric pollution from many cars back to a single power plant, where it can be more easily dealt with. Another advantage of using hydrogen is renewable in a realistic time scale. The largest apparent advantages are that it could be produced and consumed continuously as well as cleanly using solar and nuclear power for electrolysis. Some hydrogen cars currently exist, but a significant amount of research has to be undertaken to make the technology viable. The common internal combustion engine can be converted to run on the gaseous hydrogen. However, the most efficient use of hydrogen involves the use of fuel cells and electric motors instead of a traditional engine. The industry is expected to maintain stable and high growth in the following couple years for the percentage in ownerships of cars in China is relative low. Currently, huge capitals crowd into the automotive industry of China and the China's automobile industry is facing opportunities and challengers, the industry in China need adjust itself to adapt the changing of general environment and to achieve new development in the booming economy. As a consequence, there is necessary to study investment and financing issues which have become two critical issues for the industry.

Hydrogen would react with oxygen inside the fuel cells, which would produce electricity to power the motors. Some Chinese companies launched researches about hydrogen fuel cells several years and have achieved fruition. Dalian Sunrise Power Co., Ltd 55 participated in drafting out the standards of hydrogen fuel cells which is organized by IEEC. Shanghai Shen-Li High Tech Co.,LTD 56 has totally hold 155 patens including 11 patens recognized by U.S.. These patents and fruits have applied in some automotive products, such as city bus. Nowadays, the competition of fuel cells researches is furious between domestic and foreign participants. This situation could lead rapid advances in alternative energy for automobiles. Eventually, these advances of fuel cells will lead leaps in technologies of automotive industry of China and also will reduce consumptions of petroleum in China, in turn, accelerate popularizations of vehicles in China.

SWOT Analysis of Automotive Industry of China

Strength

First, China has a huge domestic market as China is the highest populated nation in the world. The fact that it is at the initial stage when the use of automobile increases fast in the modernization process, this basic pattern is the enormous carrot to all automobile producers. Second, the labor cost is low. China has the advantage of being obviously cost effective in labor; the staff's salary adds the welfare and gains per hour probably in 1-2 dollars, basically equivalent to 1/10-1/20 of the labor cost of the developed country. Considering the workforce's quality factor, its synthesized competitive ability advantage should be greater.

Weakness

First, the automotive industry lacks economic scale in China. The socialist market economy system has not been totally set up yet, and is essentially not perfect. In addition, the investment of Chinese automobile industry is limited by administration's membership over a long time, have caused Chinese automobile industrial organization to set up the cooperation in government's structure foundation, oligarch's market, the main characteristic of market behavior is " weak competitive ability ". At present, there are nearly more than 100 manufacturers in China, exceeds the total of the automobile number of the enterprise in the United States, Japan and Europe. But only 5 automakers exceeded 100,000 units in annual production. Since extensive production capacity have not formed, production cost of the Chinese automobile remains high, this directly caused the price of the Chinese automobile products too high.

Secondly, development ability lags behind and the engineering level is low. Chinese automobile enterprises lack the expertise in developing breakthrough design. One of the reasons is Chinese automobile enterprise invested relatively less in product development and research, this makes Chinese automobile enterprises lack the economic base of products development; another reason is lacking senior technicians who are professional in research and development. This makes technological progress of the products slow, and the more daunting factor would be that the progress of upgrade in the engineering level of Chinese automobile industry is, the domestic automakers simply use the way was called "exchange market for technology ". It seems now that the domestic market of China could not exchange technology with foreign automakers, to foster it with a competitive edge. This proves that the automotive industry still has no absolutely independent development ability at present.

Opportunities

The automotive industry of China faces the following opportunities in its future developments:

First, the advances in technology development are beneficial to China which can race to control the technology initiatives of a new generation of automobile. With microelectronics, new material and new energy technology play an important role. Automobile products have greater chances of technological innovation during the transformation from mechanic-related technology to high and new technology integration. Meanwhile, foreign companies of traditional automobile industry have misgivings about submerged cost, and may delay the release of their new generation of products, which gains opportunities of development for China. Second, the variety of consumer demand is beneficial to China to grab the supply scarcity in the market. Differed from industrial age, the market demand in the new economic age demonstrates individualization and variety. The mode of automobile production shows a tendency to a quick, flexible production with "great variety and small quantity, and repeated mass production has become out-of-date. Consumers pay more attention to individualized brands and their value rather than to the products only.

Facts have proved that current foreign technology is partly inconsistent with domestic market demand while China has opportunities to enter the market in accordance with national consumption level. For example, for agricultural vehicles, mini cars, some economic cars that are obsolete and eliminated abroad, China has mass production capacity and rich experience in technology, which are definite advantages on cost.

Threats

The threats that the Chinese automobile brand faces are as follows: from watching vertically, it is the whole industry chain that lacks the synthesized competitive ability. From looking horizontally, it lacks flexible macroscopically coordination ability, enterprise's administrator's strategic management quality and enterprise's mechanism of the government thus fail to acquire the ability to improve. The challenge is shown as the pressures of 6 respects mainly:

(1) New international brand automaker and market enter;

(2) How to possess new product with modern techniques, high quality, according with international regulation and trans-corporation's innovative research and development ability of demand;

(3)How to form the advantage of the product cost and abundant experience of logistics, financial field;

(4) How to set up capital advantage brought low cost advantage and intact industry chain;

IV. Conclusions

China's automotive industry is entering a period of consolidation and rationalization. The automotive industry's status as a 'Pillar Industry' has been emphasized. The ultimate goal of producing passenger cars which are designed and manufactured entirely in China is still among the Chinese government's top priorities. Since 2000 to 2004, the growth of automotive industry of China in every year is more than 10%, the automotive industry of China is in the consolidation stage. The coefficient of growth is in the interval of low-moderate risk. The coefficient of fluctuation is in the interval of low risk by adopting risk analysis using the history outputs. These two indicators say that the growth of automotive industry is optimistic, and the fluctuation is low.

Meanwhile, the high growth of automobile consumption has brought such a series of issues concerning energy, environment and traffic to Chinese economic society's development. The situation and challenges that the automotive industry of China will potentially face in the future are still daunting. The situation and challenge also offer investors opportunities of investment on new automotive technologies. These opportunities could be the alternative approaches for investors who want to enter the automotive industry of China.

V. Limitations and Suggestions for Future Research

The findings from this research have met its objectives of providing a better understanding on the automotive industry of China and characteristics of investment and financing of the China's automotive industry. However, this study did not examine in great detail the individual automotive groups in China which are characterized by complicated ownerships, very different performance among business divisions, and multi-goals of operations. For instance, SAIC has at least 4 international copartners and several subsidiaries with different performances in 2004. Future researchers are therefore, recommended to explore into the individual automotive manufacturers.

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