



China's refined oil market changes under the economic transformation and the impact on Northeast Asia

Petrochina Planning and Engineering Institute
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Content Outline

**一、 China's economic development review and the
“Twelfth Five-Year Plan”**

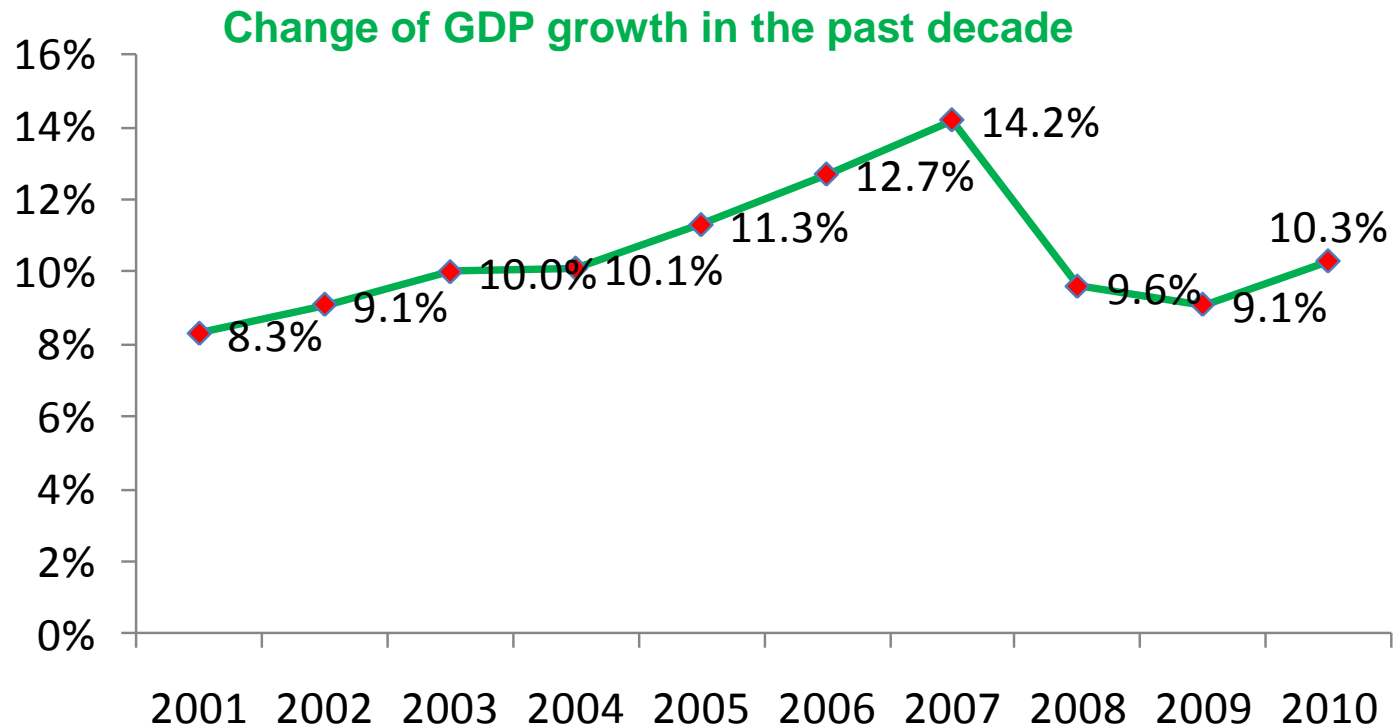
**二、 Characteristics of China's refined oil market during the
"Eleventh Five-Year" period**

**三、 The outlook of China's refined oil market under the
economic transformation during the “Twelfth Five-Year” period**

**四、 The influence of China's refined oil market changes on
Northeast Asia**

1) Chinese economy kept rapidly growing in the past decade, at an average annual growth rate of 10.5%

- ◆ Chinese economy keeps double-digit growing for a long time, with slightly slowing down in 2008 and 2009 as a result of global financial crisis.
- ◆ During the “Twelfth Five-Year Plan”(2011 ~ 2015), Chinese government will put adjusting economic structure and transferring the developing mode in an important position , and the average annual growth rate target of GDP is 7%.

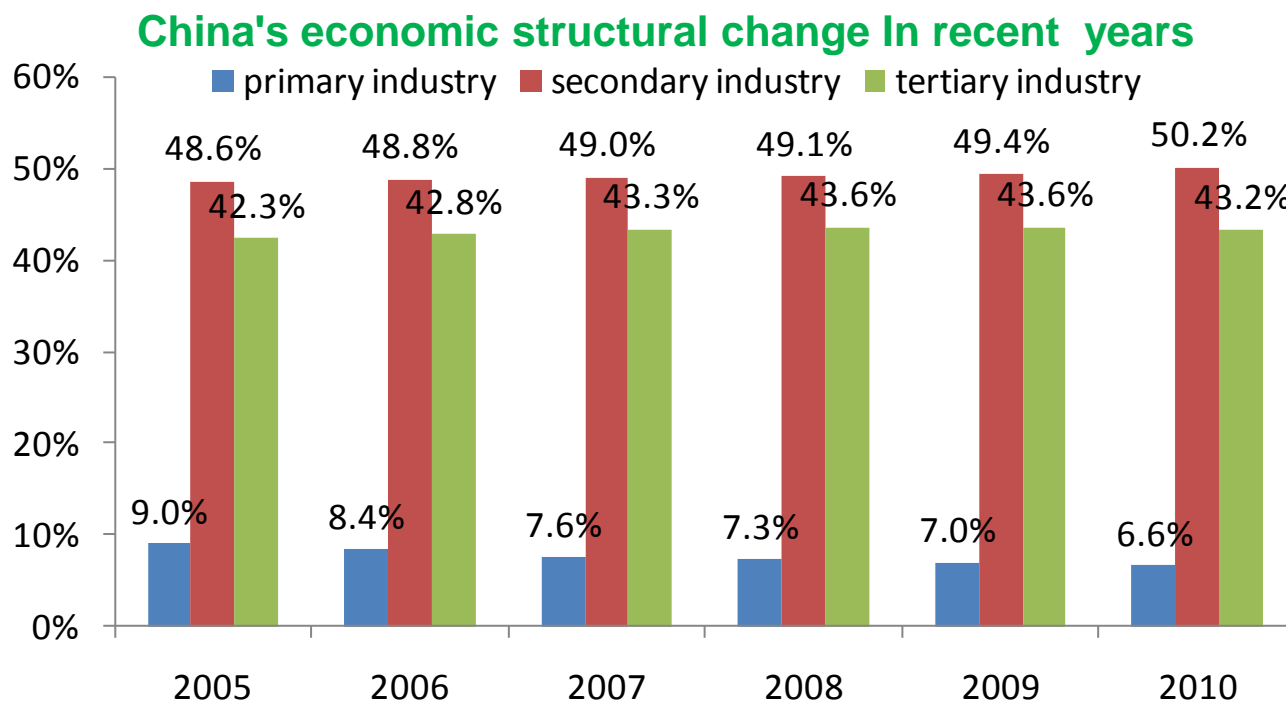




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2) Proportion of primary industry declined continuously, but secondary and tertiary industries increased overall

- ◆ The advance of urbanization, expanding of industrial production, and the rapid development of tourism industry promoted the proportion of the primary industry decrease by 0.5 % annually, and the proportion of second and tertiary industries rose steadily.
- ◆ The proportion of secondary and tertiary industry will continue to rise in the “Twelfth Five-Year” period, it's expected that the increase of secondary industry proportion will slowdown as the Chinese government has set a target that unit of GDP energy consumption decreased by 16%.



2011/10/25



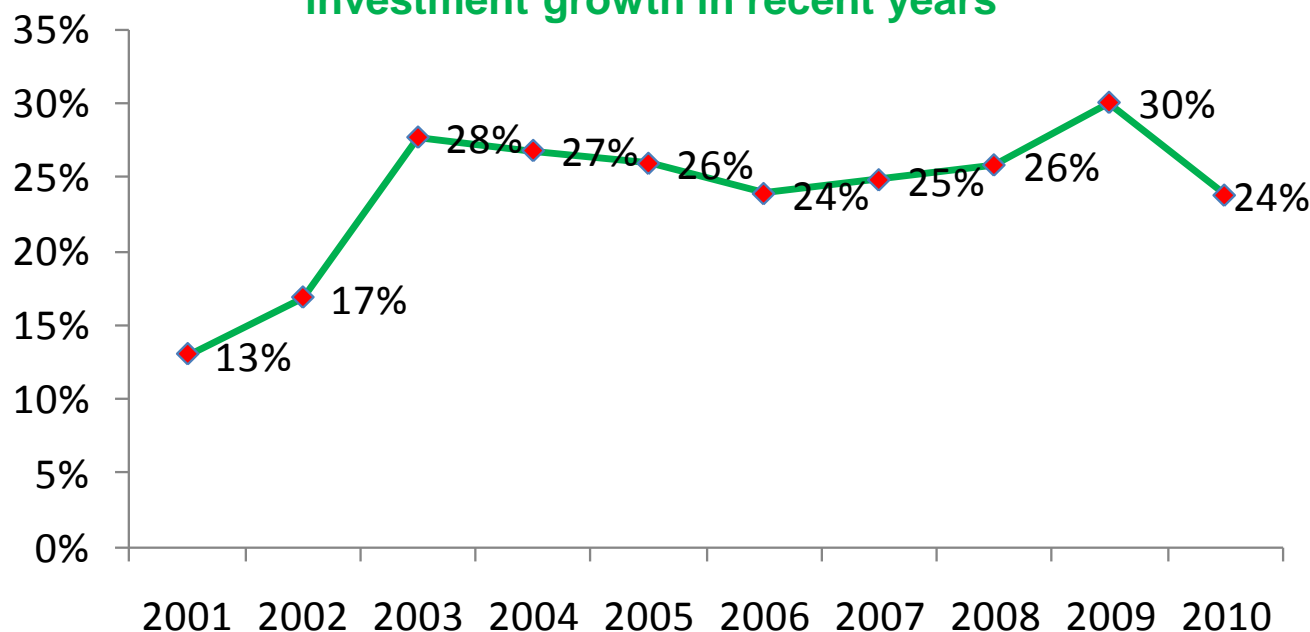
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3) The growth of fixed asset investment was high for a long period ,which hit a record high in 2009.

◆ China's fixed asset investment increased by 26% in average annually during the "Eleventh Five-Year " period. 4 trillion investment programs helped to speed up the growth of investment which reached a record high of 30% in 2009.

◆ The average growth rate of China's fixed asset investment during the "Twelfth Five-Year " period is expected to reach about 20%, 6 percentage points lower than the past five years. The driving effect of investment to GDP will decrease.

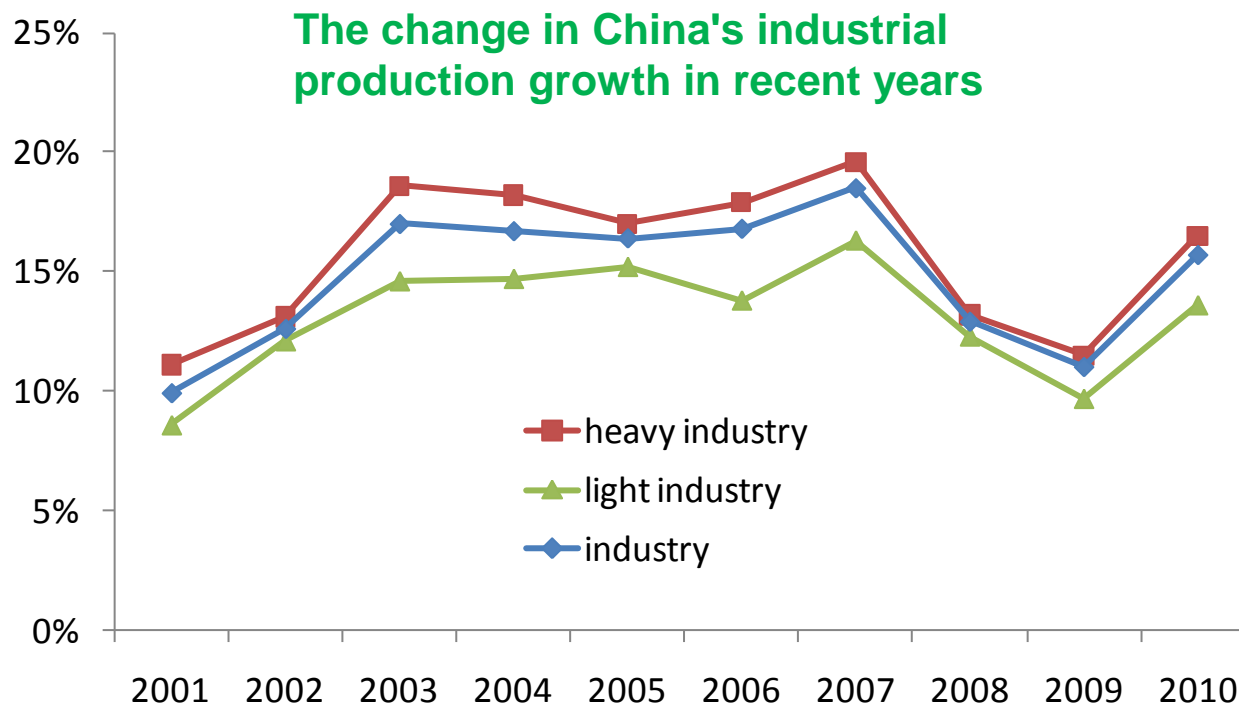
The change of China's fixed asset investment growth in recent years



2011/10/25

4) China will continue to be at the stage of the middle late industrialization for a long time

- ◆ The investment-led economic growth model has driven China's industrial production at a high level. The industrial added value increased by 15% in average annually during the "Eleventh Five-Year" period, the heavy industry growth rate was 3 percentage points higher than the light one.
- ◆ The process of industrialization of China will be continuing in the next five years. But to improve the quality of industrialization will be considered more important than to increase the proportion of industrial production for which the growth will be slowing down.





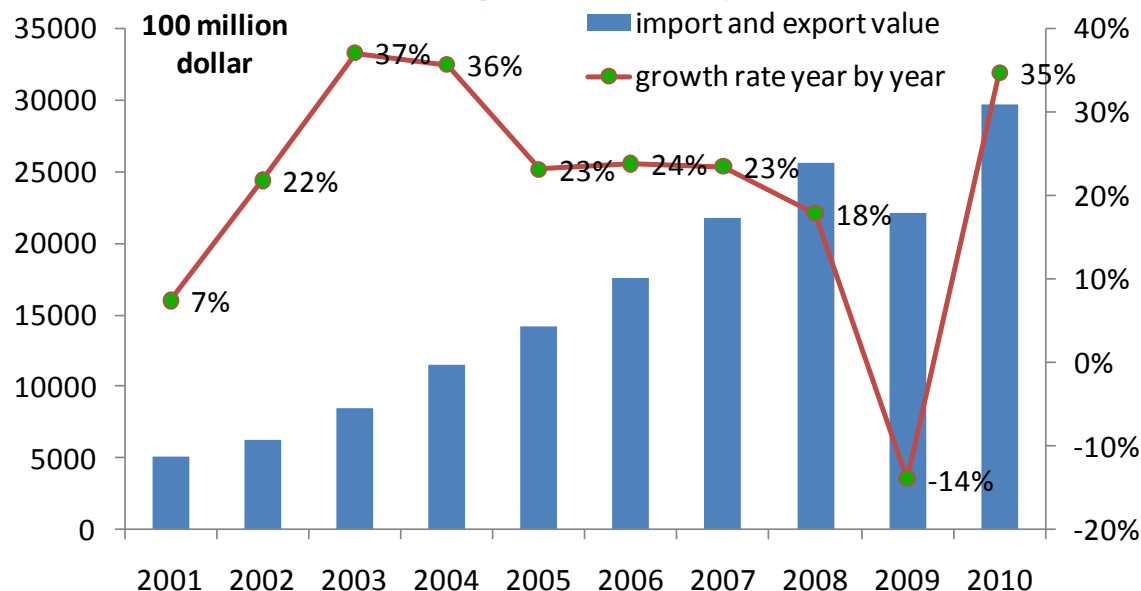
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5) Import and export trade developed in a high speed. It will keep a stable growth in the future

◆ Chinese imports and exports trade had an average annual growth of 17% in the “Eleventh Five-Year ” period. But the average annual growth rate was only 10% during 2009 to 2010 which didn’t reach the rate of 20% before “financial crisis”.

◆ The steady recovery of world economy has created a favorable external environment for China's foreign trade growth. It's expected that China's foreign trade will remain steady growth. The export and import will grow in an average rate of 14.6% and 16.5% separately in the “ Twelfth Five-Year ” period.

China's foreign trade
change in recent years



2011/10/25

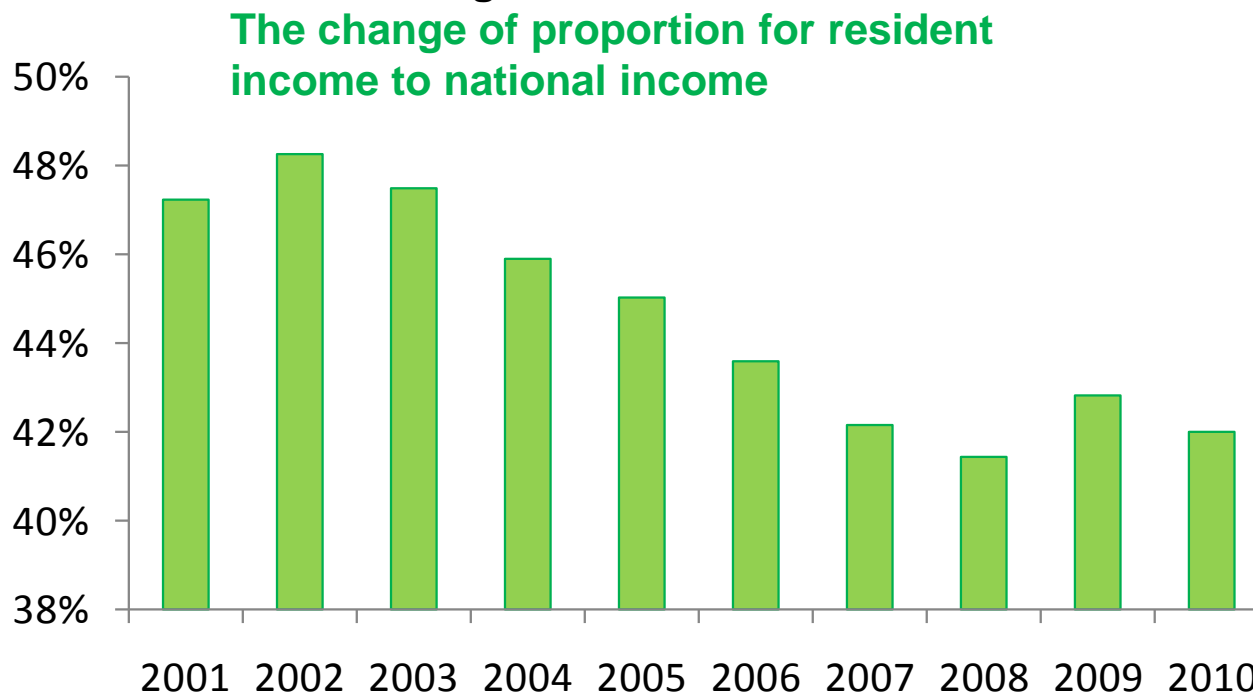


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6) Social spending maintained a rapid growth ,but the proportion of residents income in national income continued to decline

◆ According to expenditure approach GDP calculating , the average annual growth of final consumption was 2.4 percentage points lower than economic growth in China from 2006 to 2009. The proportion of residents income in national income declined 5 percentage points in the past decade.

◆ It's planned that the residents income growth will be above 7% in average annually in the "Twelfth Five-Year Plan", higher than the GDP growth. So domestic consumption will become a major factor for China's economic growth .



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summary

- 1) Chinese economy kept “maintaining growth” as the main tone, with an annual double-digit growth during the “eleventh five-year” period. However, in the “Twelfth Five-Year Plan”, it will have a scientific development as the main topic, accelerate the economic developing mode transferring as the principle line, and the average GDP growth target is 7% annually. The proportion of primary industry will keep declining, the secondary and tertiary industry will increase steadily.
- 2) During the “Eleventh Five-Year” period, the growth of fixed asset investment was high, social spending increased rapidly, but the proportion of residents income was going down gradually. The export and import trade was in a rapid growth. In the “Twelfth Five-Year plan”, investment growth will slow down sharply, residents income growth will exceed GDP growth, and export and import trade will have a steady and rapid growth, trade surplus will be reducing.
- 3) China’s unit GDP energy consumption declined by 19.1% in the “Eleventh Five-Year” period. It’s planned to decline by 16% in the “Twelfth Five-Year Plan”, and the expansion of overcapacity, high energy consumption industry will be suppressed.

2011/10/25

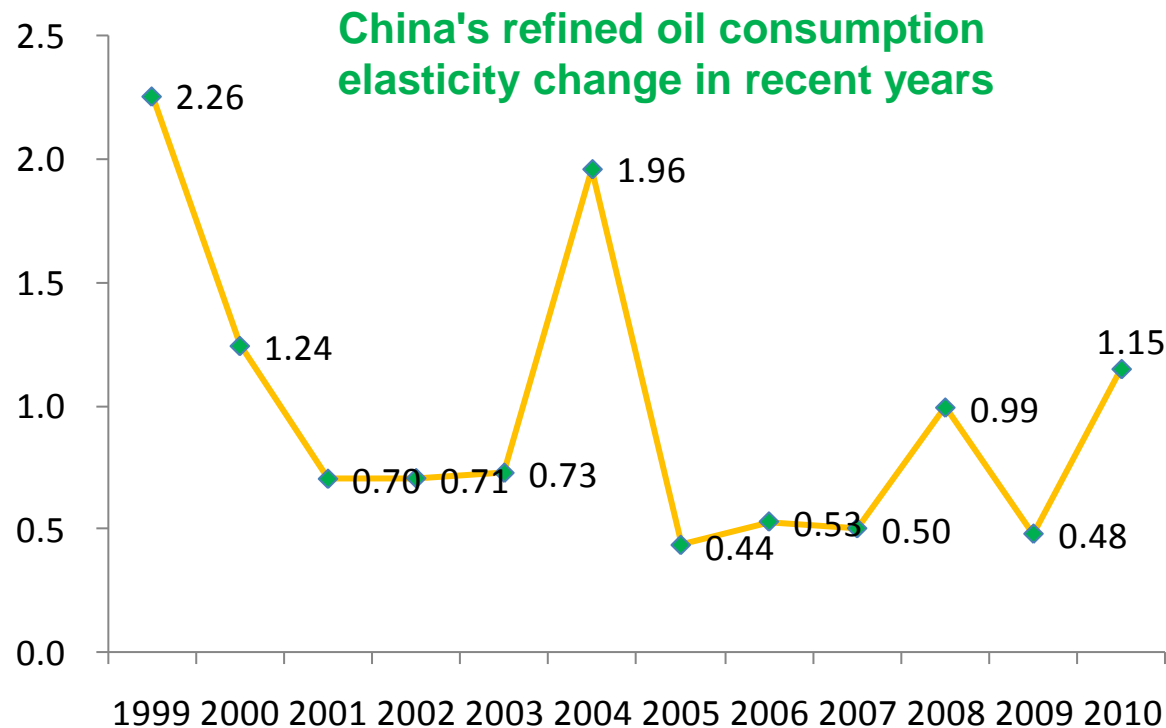


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1) The stimulating effect of China's GDP growth on oil consumption weakened gradually in recent years

- ◆ The elasticity coefficient dropped generally in recent years, from average 0.9 during “Tenth Five-Year” period to average 0.7 during the “Eleventh Five-Year” period.
- ◆ But the consumption of refined oil reached 246 million tons in 2010, and increased by 12% than in 2009, higher than last decade's average growth rate of 8%. The refined oil consumption elasticity was 1.15, the highest level during the “Eleventh Five-Year” period.



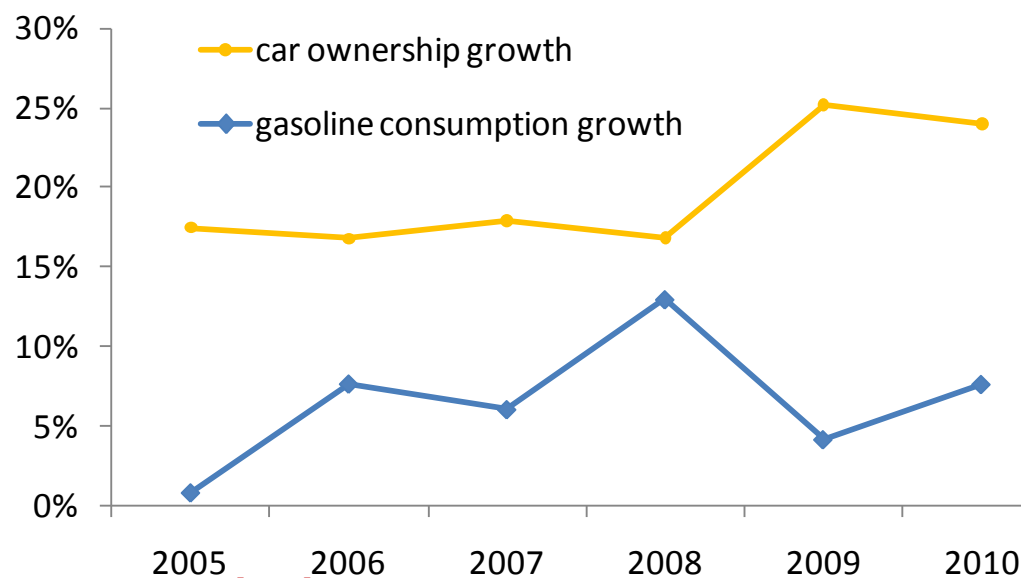


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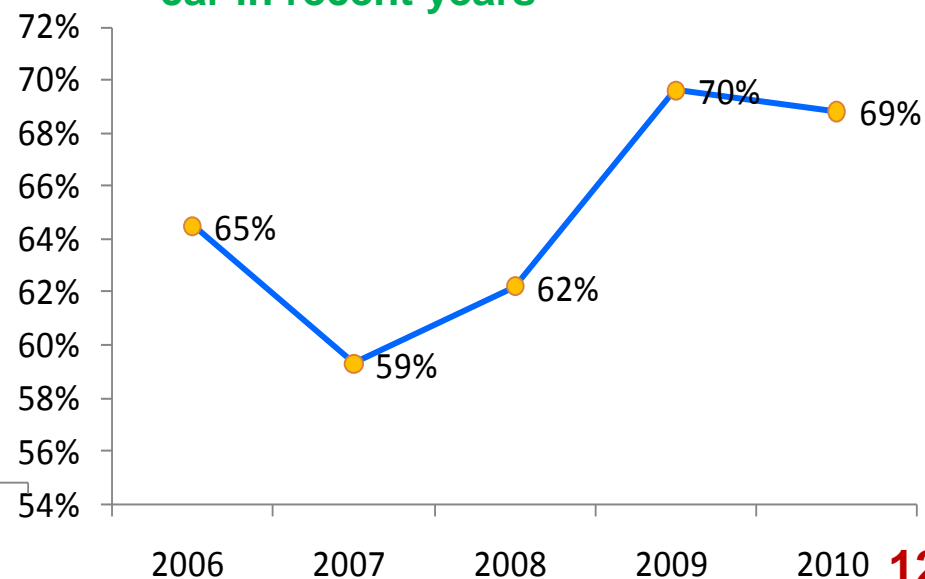
2) Gasoline consumption grew stably in long-term period, and the average annual growth rate is 7% to 8%

- ◆ The car ownership in China increased by average above 20 % annually in the “Eleventh Five-Year ” period. Among which Chinese government introduced a series of preferential policies such as tax concessions for under 1.6-liter vehicles helped the car ownership grow to 25% and 24% in 2009 and 2010 separately.
- ◆ The sales of medium and small emission passenger car accounted for nearly 70% during 2009 and 2010, more than 10 percentage points higher than in 2008. The growth of gasoline consumption went down as a result of declining fuel consumption in every car.

The trends of car sales and gasoline consumption in recent years



The sales proportion of medium and small emission passenger car in recent years



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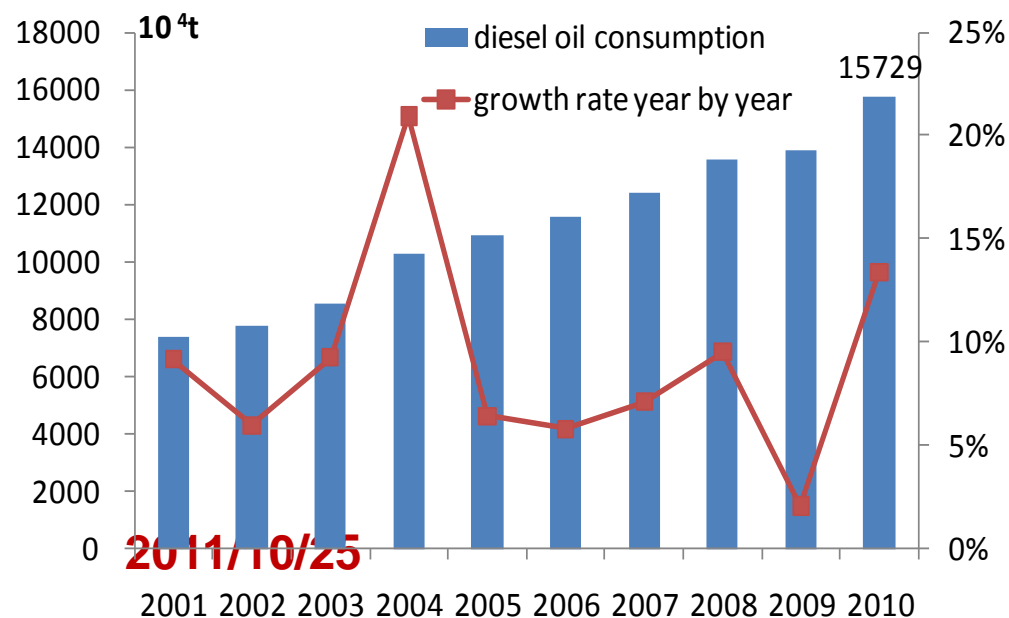


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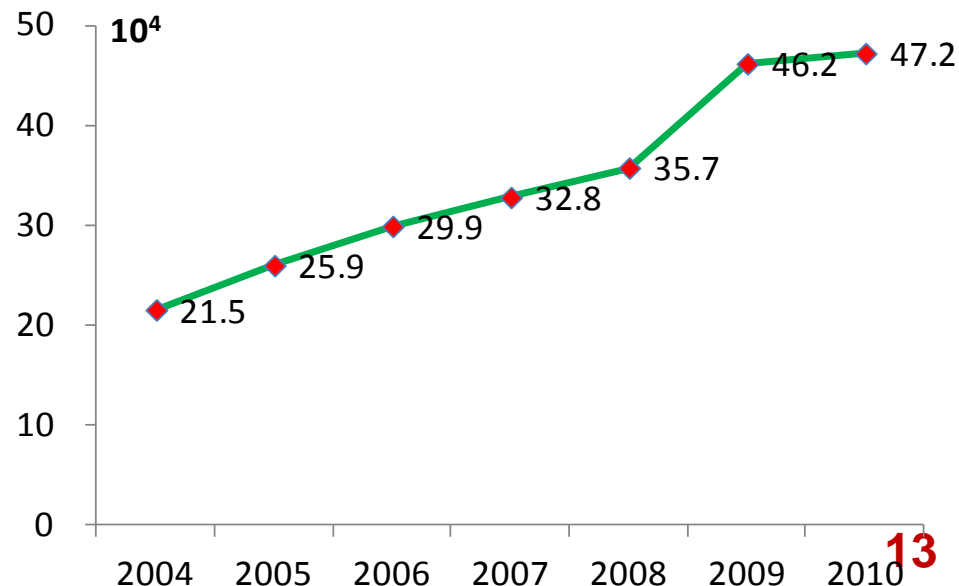
3) The overall growth rate of diesel oil consumption was declining, but there is a large increase in 2010

- ◆ Thanks to slowing growth in the proportion of secondary industry and the “energy saving” policy, the diesel oil consumption increased by 8% in average annually in China during the “Eleventh Five-Year” period, 2 percentage points lower than last five years .
- ◆ China's fixed asset investment drove the quantity of construction projects to stay in high level in 2010, pulling the diesel oil consumption to grow by 13.4% .

Diesel oil consumption trend in recent years



The number of construction projects' change in recent years



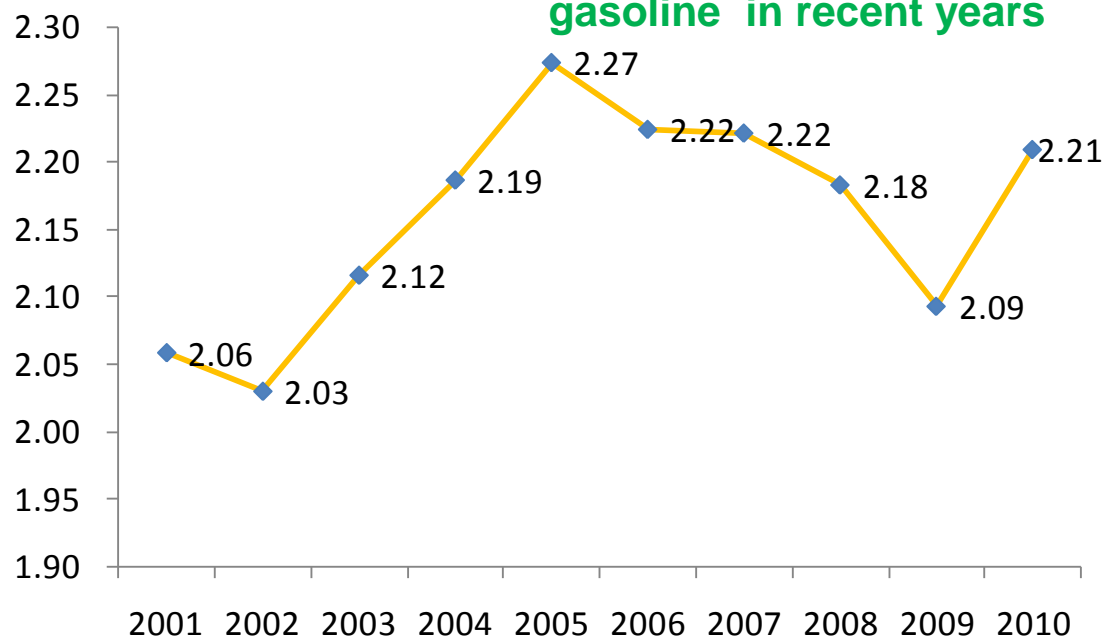


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4)The consumption ratio of diesel-gasoline was declining during the past 5 years overall

- ◆ Passenger cars began to enter Chinese families in large quantities ,and heavy industrialization tended to be stable .China's consumption ratio of diesel-gasoline presented a declining trend overall.
- ◆ Taking into account of the future economic structure optimization and the booming automotive industry ,we consider that the consumption ratio of diesel-gasoline will remain the declining trend.

Consumption ratio change of diesel-gasoline in recent years

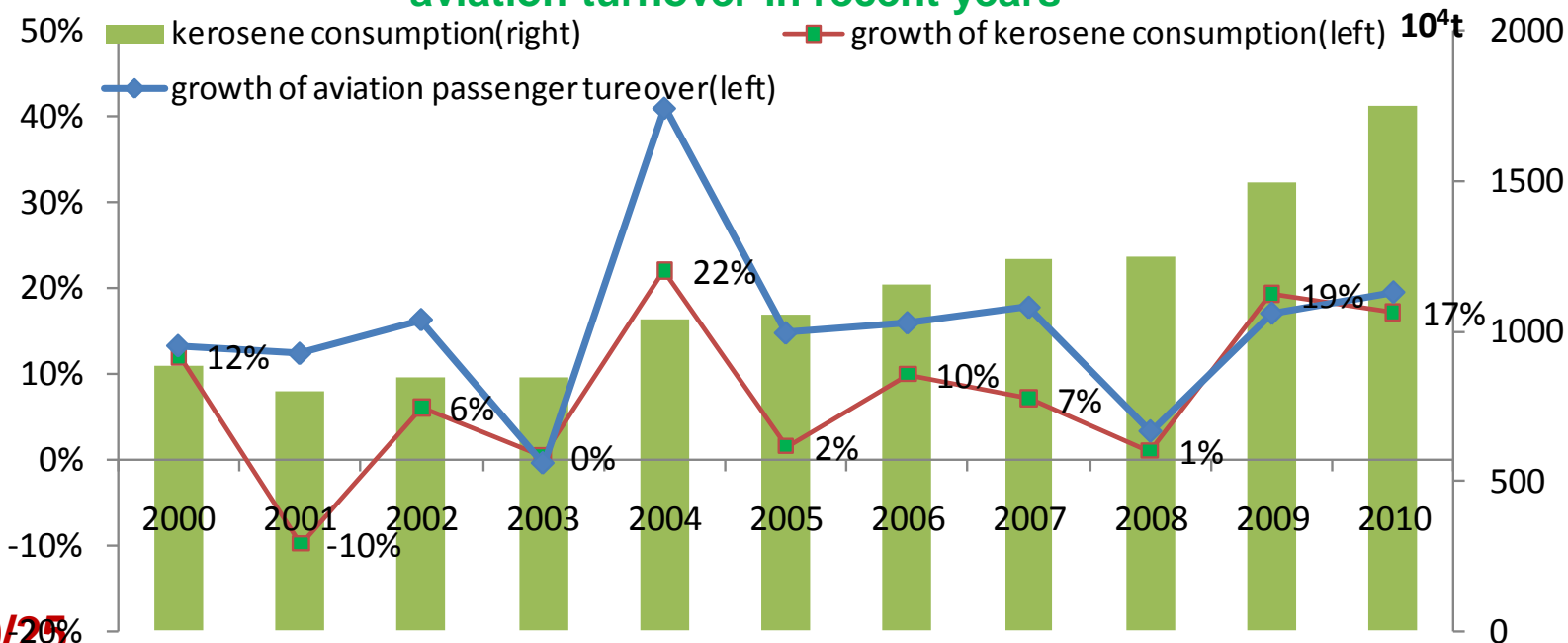


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5) Increasing income and the development of tourism and logistics drove a rapid growth in consumption of kerosene

◆ China's tourism industry developed rapidly during the “Eleventh Five-Year” period. The proportion of tertiary industry rose, pulling air transportation to continue prosperity. The consumption of kerosene increased by 11% in average annually, and became the fastest growing species in the three categories of refined oil.

Changes of kerosene consumption and aviation turnover in recent years



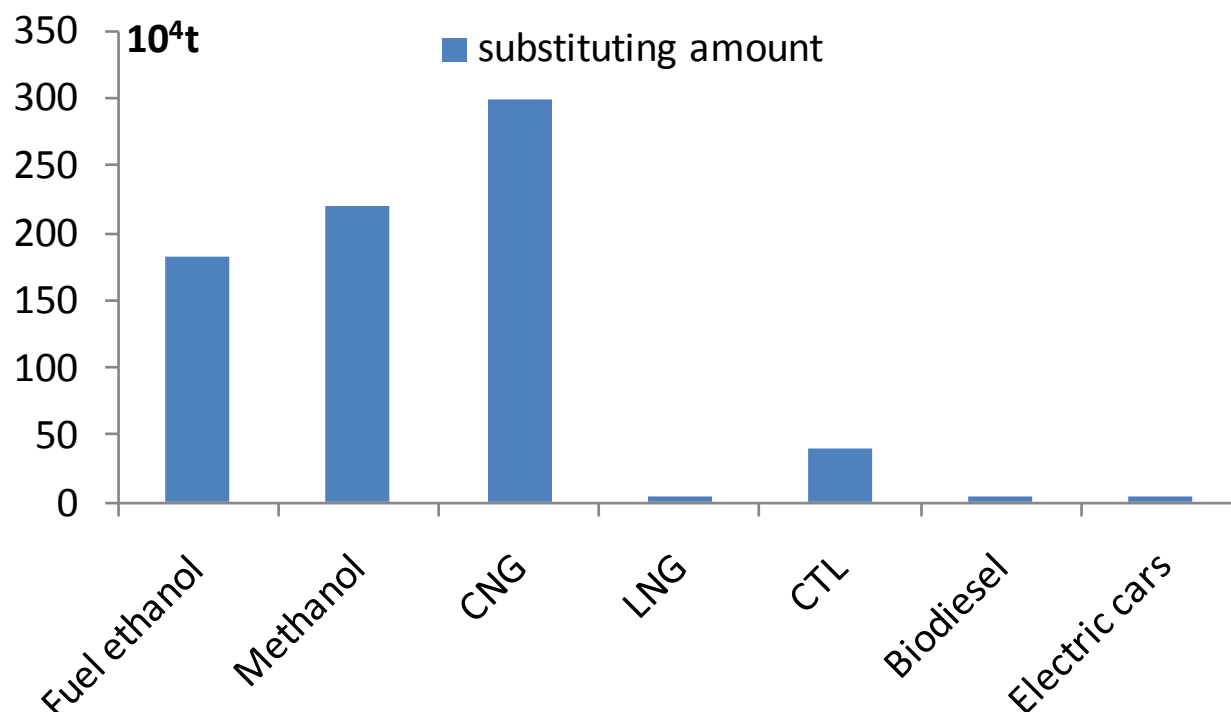


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6) Alternative fuel began to impact on China's refined oil market in recent years

◆ Estimated preliminarily, the alternative fuels such as fuel ethanol, methanol and so on will replace the motor gasoline and diesel oil for 3% of the total consumption of gasoline and diesel.

The substituting amount of China's major alternative fuel for gasoline and diesel oil



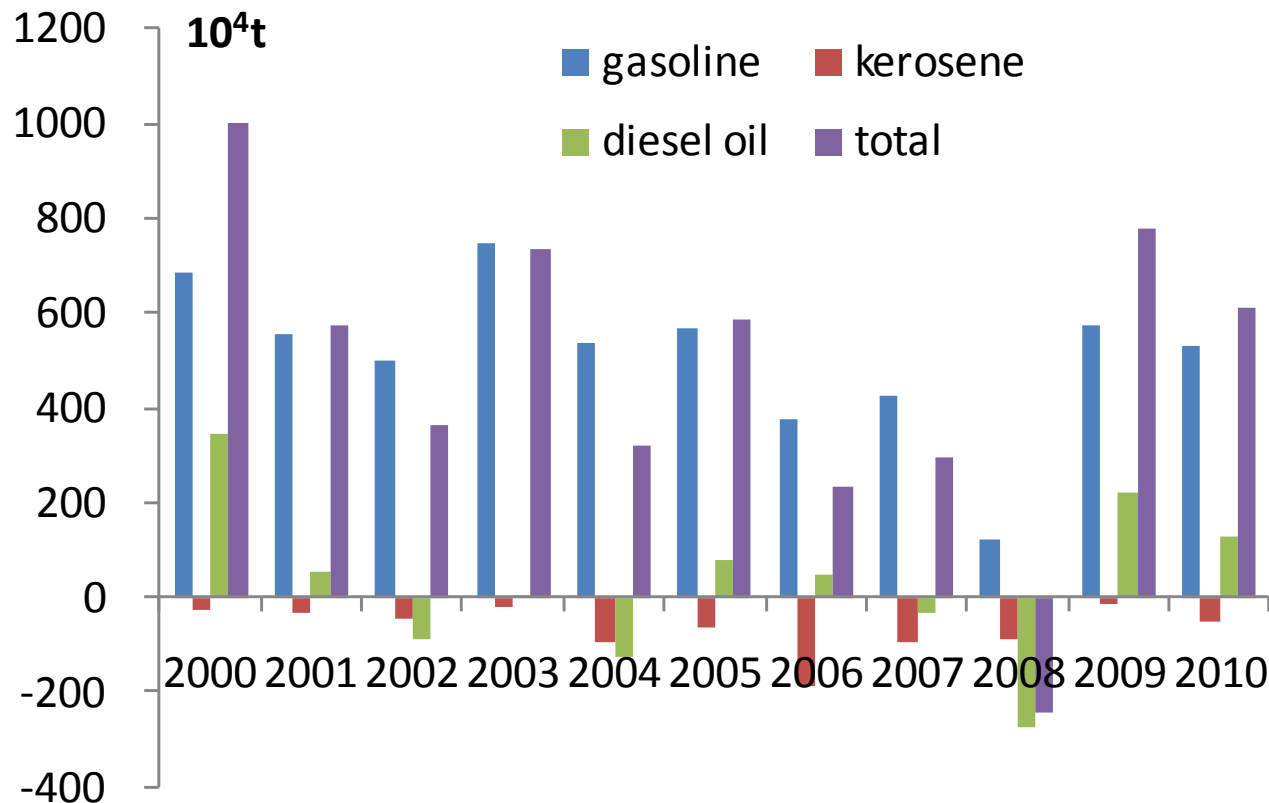
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7) The supply and demand for China's refined oil resource kept basic balance in recent years.

◆ Since 2000, oil resources has been slightly higher than consumption amount which kept the supply and demand in basic balance, except a short-term supply gap in 2008.

Chinese sub-species changes in oil supply and demand balance in recent years



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Summary for the characteristics of China's refined oil market during the "Eleventh Five-Year" period

- 1) The stimulating effect of China's GDP growth on oil consumption weakened gradually ,and elasticity coefficient dropped generally, from 0.9 during “Tenth Five-Year” period to 0.7 during the "Eleventh Five-Year" period.**
- 2) China’s auto market came into high-speed growth stage, but the rising proportion of small cars reduced the average vehicle fuel consumption level, pulling gasoline consumption to grow at an average rate of 7% to 8% annually in general.**
- 3) The proportion of secondary industry increased slowly and “energy conservation” policies restrained the excessive growth of diesel oil consumption during the "Eleventh Five-Year" period.The average annual growth of diesel oil consumption is 8%, 2 percentage points lower than the last five years .**
- 4) Affecting by the optimization of economic structure and continued strong automotive industry, China's diesel-gasoline consumption ratio was generally slowing down in the last five years.**
- 5) Clean new energy sources started to produce alternative effects on China's conventional gasoline and diesel oil consumption.**

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1) China's economic growth will remain steady during the “Twelfth Five-Year” period, but the growth rate will dropped slightly

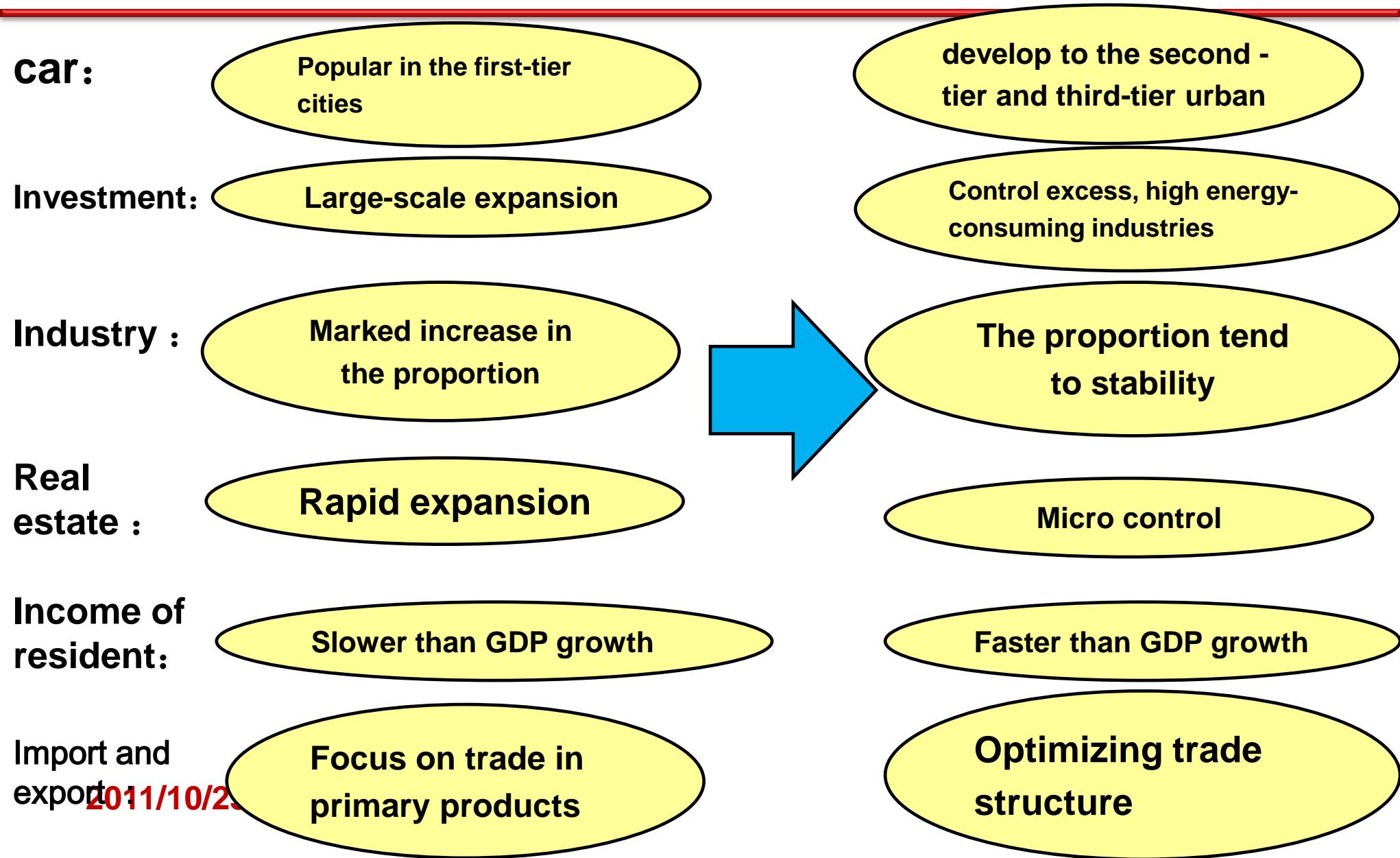
◆ Chinese government points out in the “Twelfth Five-Year Plan” that, China's economy will keep stable and rapid development, economic restructuring will have a significant progress, and residents income growth will surpass GDP growth.

The main economic goal in the “Twelfth Five-Year Plan”

Index	Actual value in "Eleventh Five-Year"	Goal in “Twelfth Five-Year Plan”
GDP growth	Average annual growth of 11%	Average annual growth of 7%
Investment growth	Average annual growth of 26%	Average annual growth of 20%
Import and export trade growth	Average annual growth of 17%	Average annual growth of 15%~16%
Urbanization	Increase of 6.6 percentage points	Increase 4 percentage points
Energy consumption per unit of GDP	Declined by 19.1%	Declined by 16%



2) Factors affecting China's product oil consumption will change in the process of economic restructuring



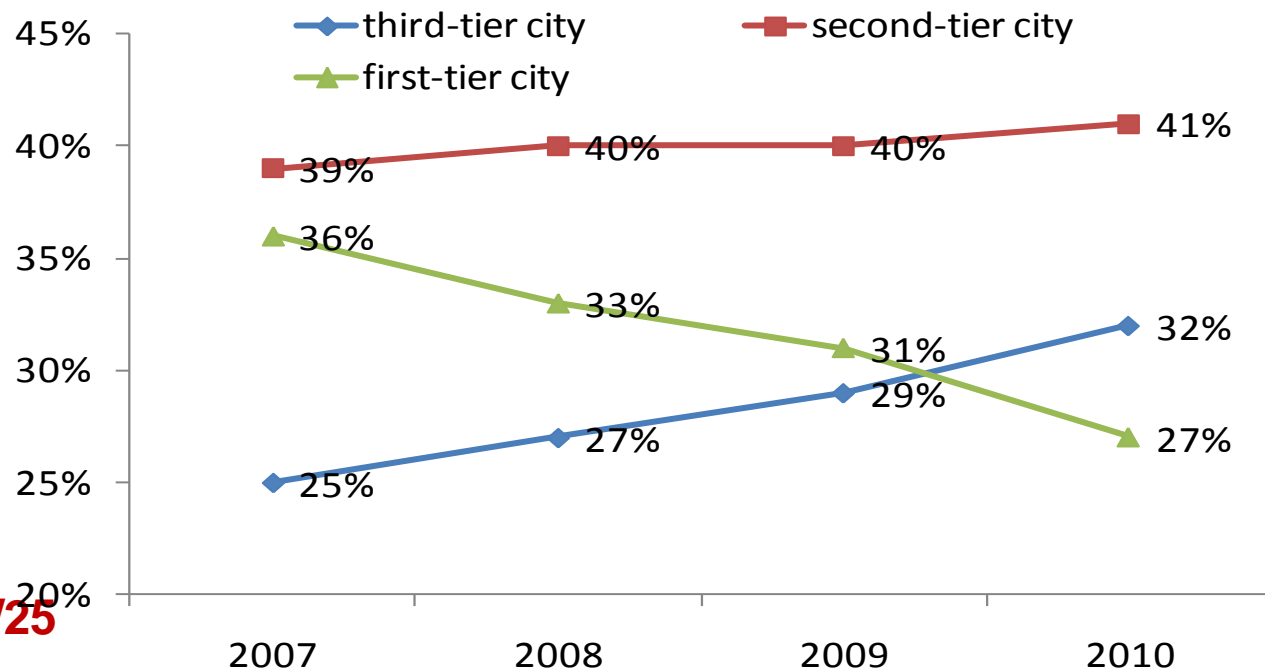


3) Passenger car market in China will still in the stage of popularity during the “Twelfth Five-Year” period.

◆ Reference to the development experience in Japan and South Korea , and combined with China’s urbanization rate, income inequality and other factors , the preliminary estimates is that the car ownership of passenger vehicles in China will reach 130 to 140 million by 2015, 90 to 100 per thousand persons, still in the stage of popularity in China (car ownership of passenger vehicles from 20 to 150 per thousand persons) .

◆ In the next five years, the automotive market will be gradually booming in the second and third tier cities. However, as the car travel radius will decline gradually, the actual fuel consumption level per car will decrease.

The auto market sales share change of second and third-tier cities in recent years





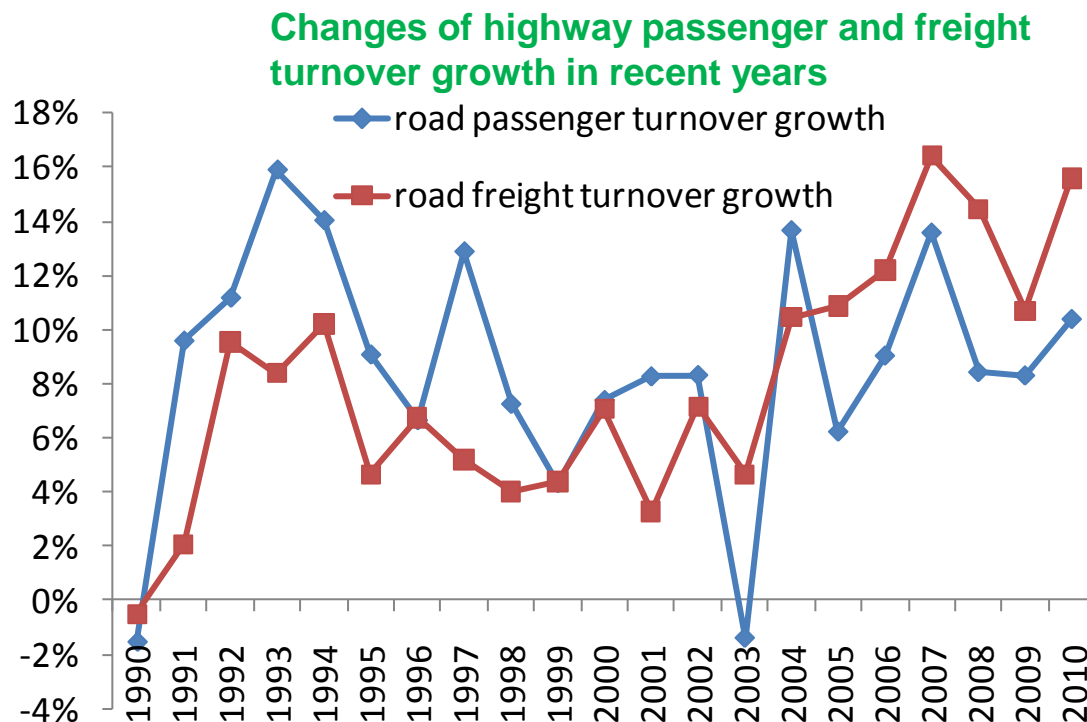
◆ **China's gasoline demand is expected to grow by 7% annually in the "Twelfth Five-Year " period**

- **With the enhancement of national energy policies control and implementation of fuel tax, it's estimated that passenger car sales will account for 78% of gasoline vehicles, and ownership will account for about 70% in 2015.**
- **Chinese government began implementing the "passenger car fuel consumption limits" (the third stage standard) in 2011. After the implementation of the new standard, the fuel consumption of passenger car will decline to 7L, 20% lower than the second phase of the standard implemented in 2008.**
- **Considering the factors of change in unit consumption, ownership and so on, it's expected that China's gasoline demand will grow by 7% annually in average in the "Twelfth Five-Year " period, and reach nearly 100 million tons in 2015.**



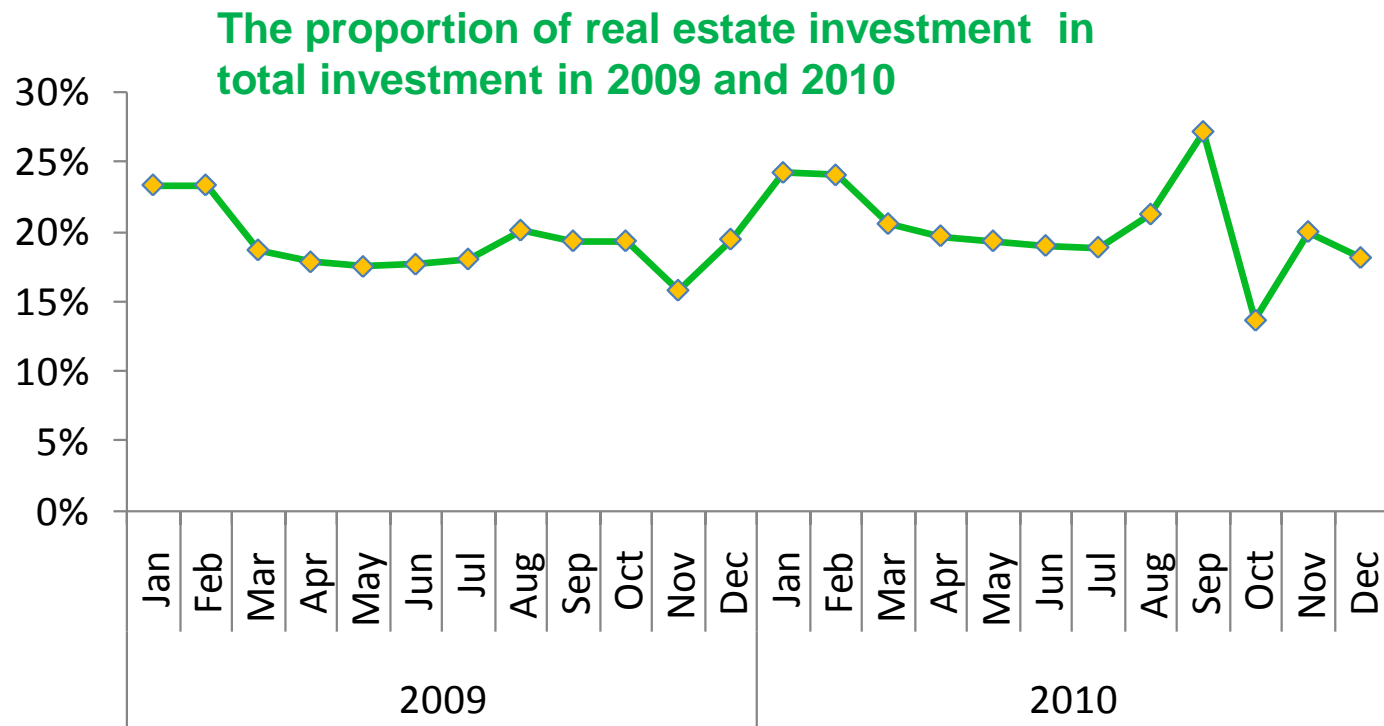
4) Optimization of investment structure and the slowdown in industrial growth will reduce the increasing diesel oil demand for highway logistics

- ◆ During the “Twelfth Five-Year” period, China’s investment structure will be optimized to effectively cut the blind expansion and duplication of similar projects. The increasing of proportion of industry in GDP will slow. The road freight industry is expected to remain moderate growth of 10% annually in average.
- ◆ It is expected that the demand growth for diesel oil in highway logistics will be 2 to 3 percentage points lower than in the past five years.



5) The real estate industry will develop steadily in the next five years, and the construction of affordable housing will become the important content

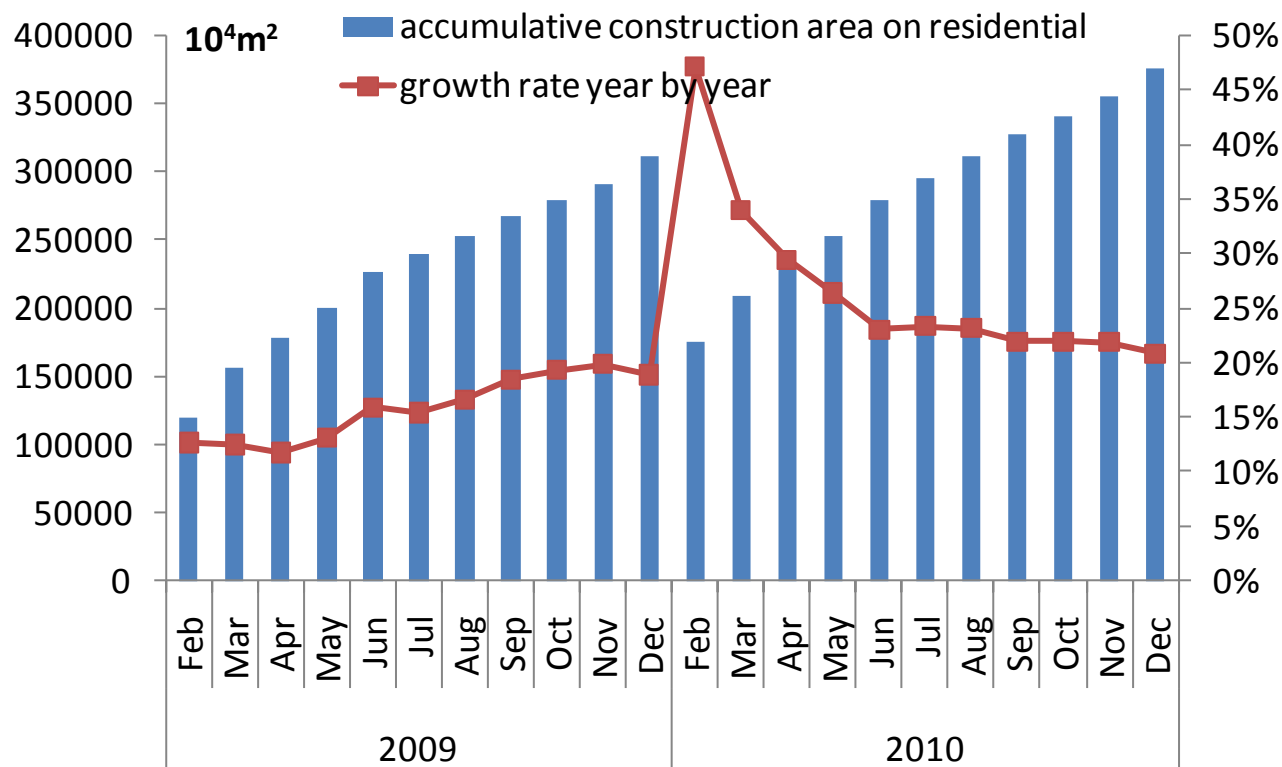
- ◆ Chinese government issued a series of real estate control policies to stabilize price and prevent the overheating of real estate investment in 2010 and 2011. The real estate investment proportion of total investment is tend to be stable.





- ◆ The Chinese government identified the construction goal of 36 million units of affordable housing during the “Twelfth Five-Year” period. The housing coverage will be up to 20% ,and it will support the real estate development and oil demand growth normally.

The accumulative construction area on residential of each month in 2010





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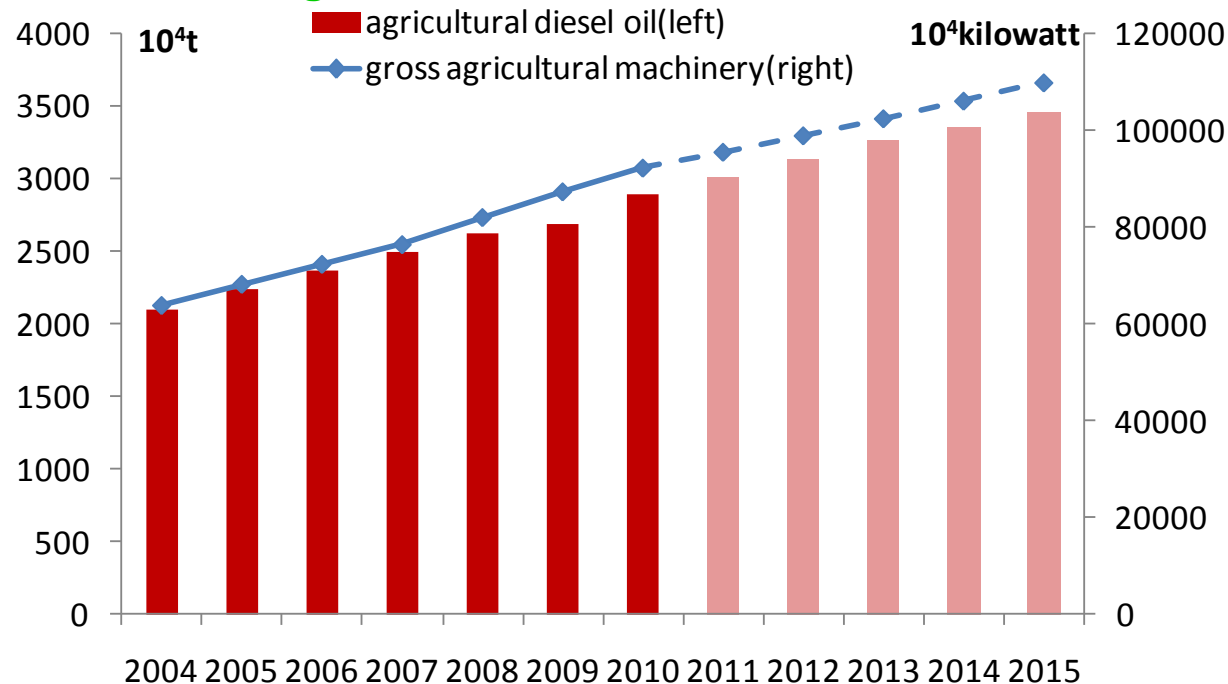
6) Farmers' income increasing and agricultural mechanization popularity will boost the growth of agricultural diesel oil demand slightly

- ◆ **The Chinese government has put forward that the average annual net income of rural resident will grow by above 7% yearly, higher than the government's target of GDP growth , and it will boost farmers' enthusiasm for farming.**
- ◆ **In recent years ,the Chinese government continued to subsidize the purchase of agricultural machinery, and the total agriculture machinery power grew by 6% average yearly. The level of agriculture mechanization reached to 52% in 2010 ,16 percentage points higher than in 2005.**
- ◆ **The average urbanization rate will increase 0.8 percentage points annually in average in the next 5 to 10 years. The population of farming labor will decline further, and it will increase the demand for agricultural machinery operation.**

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- ◆ It is expected by China's agricultural research sector that China's gross agricultural machinery will reach to 1 billion kilowatts in 2015, and the level of agricultural mechanization will up to 60% or more. It's estimated that the diesel oil demand of agriculture will continue to maintain an average annual 3% to 5% growth in the next five years.

The forecast of agriculture diesel oil demand from 2011 to 2015



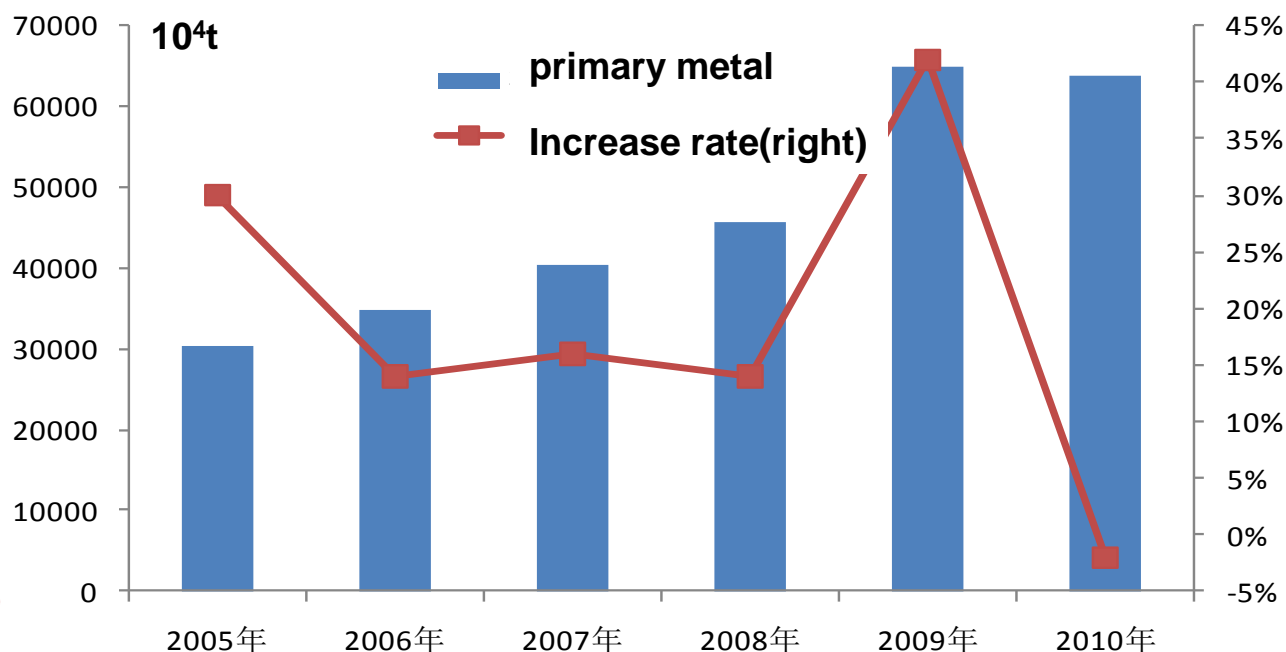


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7) Prosperous import-export trade will support the water transportation oil demand to grow, but the increased range will become narrowed

- ◆ China's import-export trade will grow by 15%~16% average yearly.
- ◆ But influenced by domestic economy structural adjustment and the RMB appreciation, China's import and export structure will continue to adjust in the future. For example, the primary metallic material imported quantity reduced 3% compared to the same period in 2010.
- ◆ It's estimated that the diesel oil demand of water transportation industry will grow by 2% in average yearly during the "Twelfth Five-Year" period, slightly lower than previous 5 years growth level.

import amount change of metallic material



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8) The demand of diesel oil will increase by 5% in average yearly

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In general, China will still be in the stage of middle late industry for the next five years, and the proportion of heavy industry in GDP will be steady with slight growth. The diesel oil demand in road, rail, water transport, construction, industry and other key industries will still grow steadily, but the growth rate will narrow because of the economic restructuring. The diesel oil demand of agriculture which occupies nearly 20% share will increased steadily as well. However, the diesel oil demand in fishing, generating electricity and others will declined. It is expected that the average growth rate will reach to around 5% yearly, the demand will be above 200 million tons in 2015.



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9) Kerosene demand will grow by 8% in average annually during the “Twelfth Five-Year” period

- ◆ **Along with the implementation of China's opening up policy's and improvement of people 's living standards, China's tourism demand will grow rapidly . The turnaround acceleration of international airline of commercial aviation will be higher than the domestic airline.**
- ◆ **It is estimated that China's passenger transportation turnaround of aviation will grow by 10%~13% in average annually ,and the kerosene demand maintains growth of average 8% every year, reach about 25 million tons in 2015.**



10) The replacement of new energy to refined oil will be higher apparently, the ratio will reach to 8% in 2015.

The Chinese government will positively put forward the new energy development. The popularization of alternative energy sources for gasoline and diesel oil such as natural gas, alcohol ether fuel , and CTL will be accelerated. It's estimated that China's new energy will account for 8% of the conventional gasoline and diesel oil in 2015 , 5 percentage points higher than in 2010, and make contributions to saving the world fossil energy and environmental protection.



◆ According to the target in 《China's new energy industry developing planning》, the prospects of main alternative energy by 2015 are as follows:

variety	Affecting factor	Substituted amount
CNG	The natural gas pipe network's gradual consummation will drive the CNG automobile to develop fast.	10 million tons
alcohol ether fuel	ethyl alcohol fuel productivity increases to 5 million tons. Develop the industrial production demonstration of biological diesel oil.	6 million tons
CTL	Speed up to complete the CTL demonstrative project construction agreed by government.	8 million tons
electric automobile	The Infrastructure construction such as battery charging station will impel the Chinese electric automobile industry to develop fast. The operation scales will reach 100 thousand in 2015.	0.7 million tons



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11) The refining ability and refined oil output will keep steady increase during the “Twelfth Five-Year” period in China

- ◆ According to “The Planning for Adjustment and Reviving of the Petrochemical Industry” , China’s oil refinery capacity will reach to 6 hundred million per year in 2015, 1 hundred million more than in 2010.
- ◆ Domestic gasoline output will keep increasing during the “Twelfth Five-Year” period , with about an average annual growth of 5%, which is 2 points of percentage lower than demand increasing rate. The output of diesel oil will keep increasing with an average annual increasing rate of about 6%, 1 point of percentage higher than demand increasing rate. The kerosene production will increase by 8%, basically equal to demand increasing rate.



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12) Refined oil supply and demand will keep basic balance in the coming 5 years

- ◆ **Refined oil market will keep essential balance in total amount during the “Twelfth Five-Year” period . The surplus and deficiency between oil types can be adjusted moderately by production devices. The change of demand will be satisfied by production in China.**
- ◆ **China will still adjust the surplus and deficiency in domestic through import and export commerce, and make contributions to the stability of in northeast Asia while ensure the supply of domestic market.**

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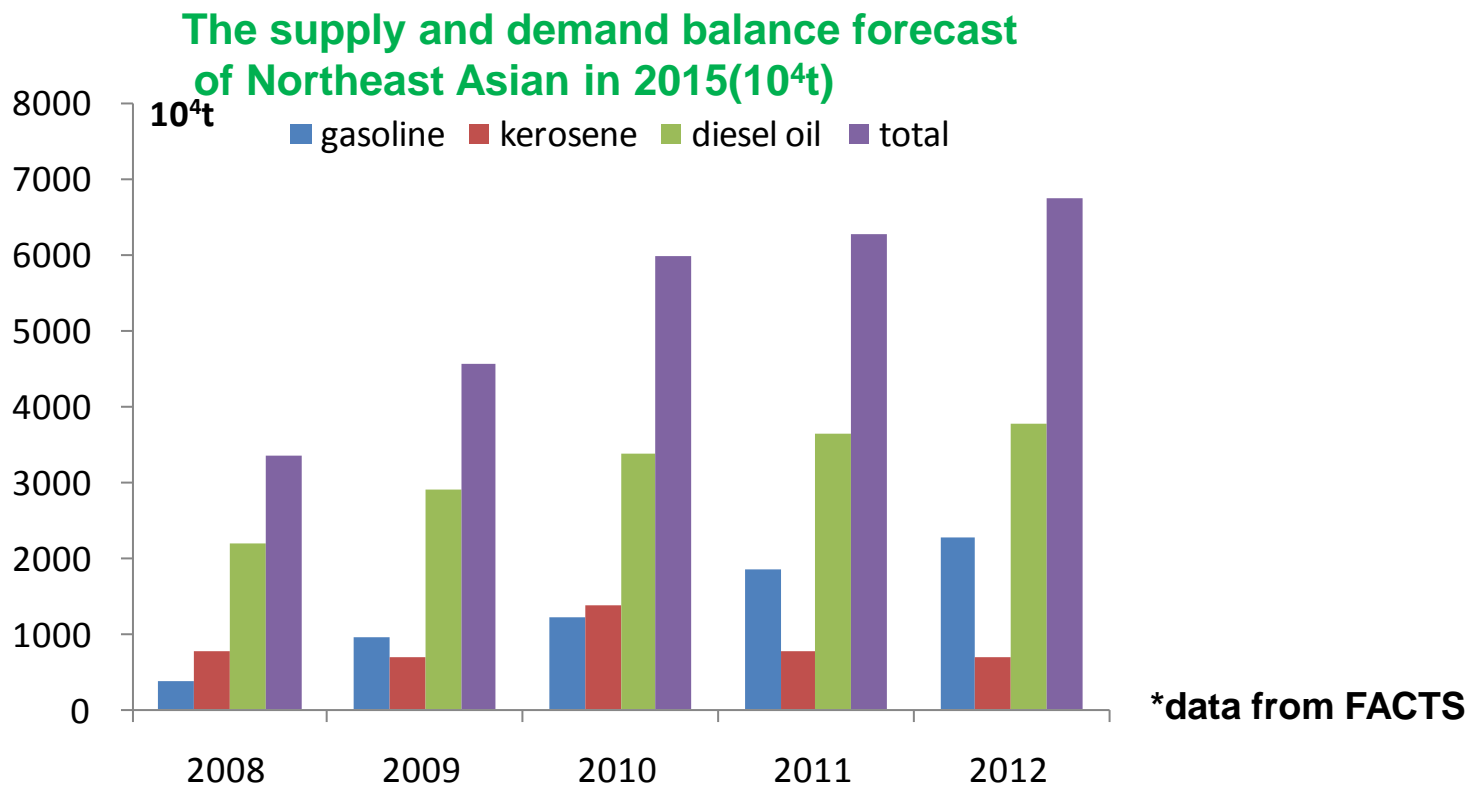
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1) China's refined oil resource will not impact market on Northeast Asia in the coming five years.

- ◆ The refined oil resource surplus in Northeast Asia will be accelerating between 2011 to 2015. The excess will reach to 67.5 million tons. During the “Twelfth Five-Year” period, China's oil trade will aim to guarantee stable supply in domestic, and focus on adjusting and balancing differences between oil types and regions.





2) China's "energy conserving and emission reducing" policy will help to reduce the energy consuming in Northeast Asia

- ◆ **The unit GDP energy consumption of China fell by 19.1% during the "Eleventh Five-Year " period . Chinese government has formulated the target that the unit GDP energy consumption should continue to decreased 16% during the "Twelfth Five-Year " period, and decomposed the target year by year.**
- ◆ **China's refined oil consumption accounted for about 60% of Northeast Asia. So the saving of China's refined oil consumption will make contributions to reduce energy consumption in Northeast Asia.**



3) China's upgrading fuel standard will increase the threshold of oil imports in next 5 years

- ◆ China's gasoline and diesel oil product standards are improved gradually. The promotion power of IV fuel standard will be stronger after 2011.
- ◆ China will improve the quality of importing products gradually and expand importing types continuously.

Fuel standard between 2010~2015 (Asian Pacific area)





4) The cut of import tariffs on refined oil by China government will be benefic for refined oil import during the resource-constrained period

- ◆ **Chinese government adjusted down the import tariffs of gasoline, kerosene, diesel oil and fuel oil to 1%, 0%, 0% and 1% separately on Jul 1st, lower 4, 9, 6 and 5 percentage points than before.**
- ◆ **The refined oil resource of small local refinery was the important supplement for the domestic market for a long time . The tariff cut will reduce the cost of imported oil from Northeast Asia and enhance the competitive advantage of imported oil to local refineries' resources. It's benefic for China to expand refined oil import during the resource-constrained period, but it won't lead to big fluctuation to the oil market in Northeast Asia.**

Thank you!

