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The Impact of 'One Belt, One Road' and its Effects on GDP Growth in China

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Abstract

After the global financial crisis in 2008, the world economy started to slowdown. Due to decelerated growth rates in China, and with the endeavour to increase control over global trade, the Chinese President, Xi Jinping, launched the initiative 'One Belt, One Road', in September 2013. The initiative aims to encourage and stimulate economic growth in China, as well as enhance integration between countries connected to the new initiative. This research aimed to study the impact of 'One Belt, One Road' and its effects on GRP growth in Chinese provinces affected by the initiative. The calculated forecasts in this study indicate on decreased GRP growth in coming years. In order to prove that 'One Belt, One Road' and its infrastructure projects will have an impact on GRP, regressions analyses, including several variables that have an effect on GRP, were conducted. According to the results of this study, extended railways, highways as well as other factors connected to infrastructure projects prove that 'One Belt, One Road' will have positive effects on GRP growth in the selected provinces.

Key Words

'One Belt, One Road', China, Chinese Economy, GDP, GRP, Economic Growth

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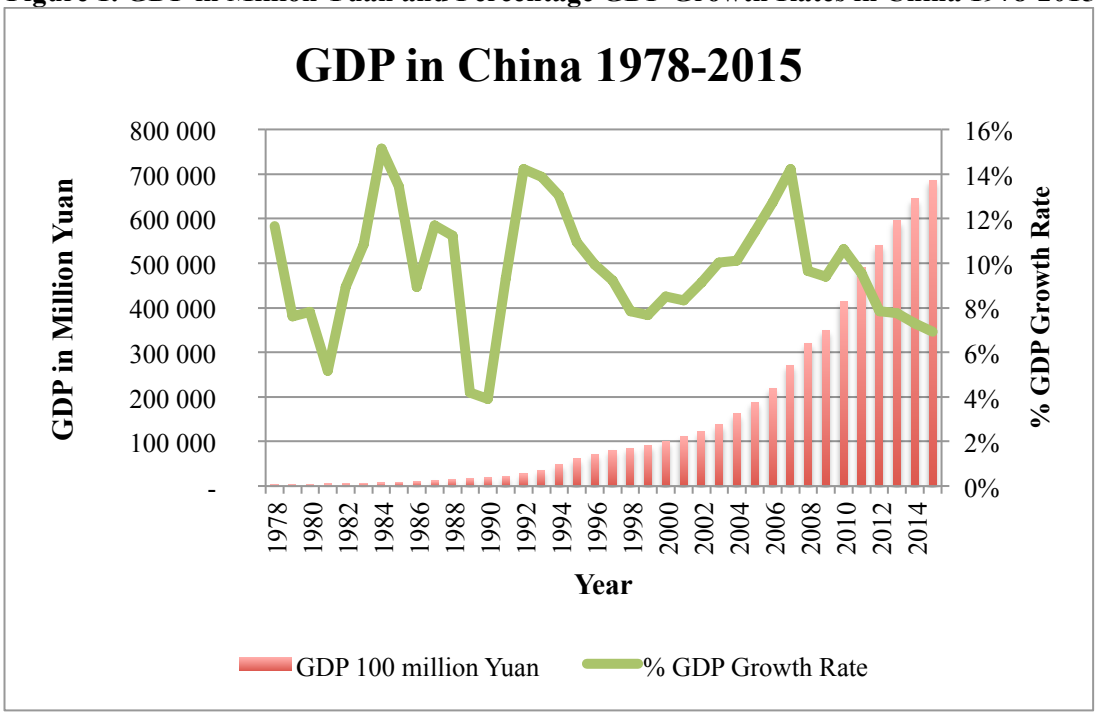
1. Introduction

In recent decades, the concept of globalization has increased its significance in the world economy and globalization as a phenomenon is crucial for increased trade all over the world (Harrison, van Hoek, Skipworth 2014; Huwart & Verdier, 2013). According to Huwart and Verdier (2013) the concept of globalization is a composition of international trade, migration and globalized finance. The authors state that financial globalization is an important concept to analyse in order to find the reasons behind the economic crises in 2008 (Huwart & Verdier, 2013). The world economy is still recovering from the financial and economic crisis in 2008 (Du, 2016), after which as well China has witnessed slower growth rates (Minghao, 2016). The last decades' economic development has increased China's economy, and the country has become the second largest economy in the world (Lam, Rodlauer & Schipke, 2017; Development Research Center of the State Council, The World Bank, & Guo Wu Yuan Fa Zhan Yan Jiu Zhong Xin, 2013).

After decades of isolation, China started its opening-up process in 1978 (Development Research Center of the State Council et al., 2013). Before 1978, China was more or less insignificant on the global market, with high poverty rates and low efficiency within the domestic production (Maddison, 1998). The former president of China, Deng Xiaoping, was determined that China had to come out of the isolation bubble in order to grow and develop (Development Research Center of the State Council et al., 2013). The large amounts of reforms since the end of the 1970s have contributed to the country's rapid economic development (Lam et al., 2017; Wang & Yao, 2003). In order to attract foreign investments to China, Special Economic Zones (SEZ) were established, which as well contributed to economic development and increased international trade (Zeng, 2010). Figure 1 describes the development of China's Gross Domestic Product (GDP) from 1978 until 2015. Since the start of the opening-up process the Chinese economy has witnessed some distinct crises. The sharp drop in GDP growth in 1989-1990 can be explained by the political crisis that occurred around the incident on Tiananmen Square in 1989 (McMillan & Naughton, 1992). The decrease after the global crisis in 2008 can as well be studied in the figure.

Figure 1. GDP in Million Yuan and Percentage GDP Growth Rates in China 1978-2015



Data are presented in 2015 prices. Source: The World Bank, 2017a.

Decelerated growth rates and the ambition to reach global control are two reasons why Xi Jinping introduced the new strategy 'One Belt, One Road' (OBOR), in September 2013 (Du, 2016; Yu, 2016). The OBOR initiative is an ambitious project where China endeavours to reach global control, through two New Silk Roads, 'Silk Road Economic Belt' and '21st-Century Maritime Silk Road' (Yu, 2016). The initiative of OBOR aims to stimulate economic growth in China and increase the integration among countries in Asia as well as in Africa and Europe (National Development and Reform Commission, Ministry of Foreign Affairs, and Ministry of Commerce of the People's Republic of China, 2015). The size of the initiative is incredible and the entire project has been referred to as 'China's Marshall Plan' (Minghao, 2016). According to Yu (2016) economic and strategic as well as historical factors are motives behind the initiative. Decelerated growth rates and the decline of the domestic economy are also key drivers for OBOR and for new foreign policies (Yu, 2016). Due to lower domestic consumption, increased labour costs and an ageing population, which result in higher social costs, China is trapped in domestic economic slowdown (Minghao, 2016). In order to stimulate growth and further increase sustainable economic development the new initiative regarding the New Silk Roads is essential (Minghao, 2016).

1.1 Research Purpose

The opening-up process and the economic reforms, which have resulted in rapid economic development in China, have as well affected the global economy. The global economic slowdown after the financial crisis in 2008 has resulted in stagnation of economic growth in China, which president Xi Jinping wanted to change. With the aim of stimulate economic growth in China and increase the integration among countries in the region, OBOR will affect the majority of the Chinese provinces. However some of the Chinese provinces will be directly affected by the initiative, since the New Silk Roads will go through the provinces. Hence, the purpose of this research intended to study the impact of 'One Belt, One Road' and its effects on GDP growth in China, in particular Gross Regional Product (GRP) growth in Chinese provinces. GDP refers to the economic activity, including the total market price value of goods and services within a country during a specific time period (National Bureau of Statistics of China, 2017a). Continuously, GRP denotes GDP in a specific region or province (National Bureau of Statistics of China, 2017a). With the purpose in mind the study aimed to answer the following research questions:

1.2 Research questions

1. *How will the new initiative 'One Belt, One Road' impact GRP growth in Chinese provinces that are directly affected by the strategy?*
2. *Which factors will have significant effects on GRP in the selected Chinese provinces?*

In order to answer the research questions, this study aimed to forecast GRP growth within the provinces that are directly affected by either the Silk Road Economic Belt or 21st-Century Maritime Silk Road. Furthermore, the researcher conducted regression models to examine which factors that have effects on GRP in the specific provinces.

1.3 Delimitations

This research aimed to study the impact of 'One Belt, One Road' and its effects on GRP in selected Chinese provinces. Due to the size of OBOR, the researcher of this study made several delimitations. First, OBOR stretches from China through Central Asia to Africa and Europe, however, this study focused on OBOR's impact on China. Furthermore, nine Chinese provinces were selected for this study; hence 22 Chinese provinces were excluded from the study. The conducted forecasts in this study were

projected for the years 2016 to 2020. Further forecasts for years after 2020 might give misleading results, since the forecasts in this study were based on historical data from 2006 to 2015. Continuously, several factors and variables can contribute to an increased GRP. Since this research study the impact of OBOR and its effects on GRP, variables included in the regression models were selected due to their relationship to OBOR. However, some variables connected to OBOR were omitted due to lack of data. Hence, other factors that have effects on GRP are therefore omitted from this study.

2. Literature review and Theoretical Framework

2.1 One Belt, One Road

In 2013, Xi Jinping initiated 'One Belt, One Road'. The initiative is referred to as the New Silk Roads and consists of a land-based route as well as a maritime road, which both start off in China and ends in Venice, Italy (Fasslabend, 2015). President Xi Jinping visited Astana, Kazakhstan in September 2013, where he launched the initiative regarding the land-based road, called 'Silk Road Economic Belt' (Du, 2016; Xinhua, 2016a). The sea-based road '21st-Century Maritime Silk Road' was introduced in Indonesia during a visit in Jakarta, in October 2013 (Du, 2016; Xinhua, 2016a).

The New Silk Roads focus on six economic corridors that connect China with South and Central Asia as well as Africa and Europe (The Economist Intelligence Unit, 2016; National Development and Reform Commission, et al., 2015). The Silk Road Economic Belt will cover the *A New Eurasia Land Bridge, China-Mongolia-Russia Economic Corridor, China-Central Asia-West Asia Economic Corridor* and *China-Indochina Peninsula Economic Corridor.* 21st-Century Maritime Silk Road emphasizes the building of *China-Pakistan Economic Corridor* and *Bangladesh-China-India-Myanmar Economic Corridor* (The Economist Intelligence Unit, 2016; National Development and Reform Commission, et al., 2015). OBOR will have huge impacts on countries as well as the Chinese provinces, along the roads, and it is hard to tell which provinces that will be affected the most. According to National Development and Reform Commission, et al. (2015) the initiate roads will have a direct effect on nine Chinese provinces since the route will go through these provinces. The inland route will go through Shaanxi, Gansu, Ningxia Autonomous Region, Qinghai and Xinjiang Uygur Autonomous Region, and the maritime road will be connected with ports in Fujian, Guangdong, Guangxi Autonomous Region and Hainan.

Continuously, National Development and Reform Commission, et al. (2015) mention other provinces and cities that most likely will take advantage from the initiative and has the potential to develop and grow further. An example is Yunnan province, which has a strategic geographical location bordering Vietnam, Laos and Myanmar, hence, can be used as a gateway to connect China with these Southeast

Asian countries (Yu, 2016). Haggai (2016) discusses that 22 out of 31 provincial governments want to take a role in the initiative, however, connecting the initiative to all these provinces at one time might lead to damaging consequences. According to The Economist Intelligent Unit (2015) all 31 provinces will join the initiative, and in 2015, two-thirds of the provinces prioritized projects related to OBOR in their work plans. Provinces not yet directly connected to OBOR, might be affected through spill over effects from provinces where growth increases due to the initiative (Haggai, 2016). China wants to expand and develop its global influence and power as well as increase cooperation and integration with other countries in the region (Yu, 2016). Through policies that will affect the global economy and trade, China endeavours to increase its power (Yu, 2016). OBOR is an important player within these policies and will not only play a role within economic and trade development, infrastructure as well as cultural exchanges are supposed to increase (Yu, 2016). In order to explain the outlines of the new initiative the National Development and Reform Commission and the two ministries of the People's Republic of China; Ministry of Foreign Affairs and Ministry of Commerce published a Vision and Action Plan in March 2015 (Du, 2016; Xinhua, 2016a, National Development and Reform Commission et al., 2015).

Figure 2. Routes of Silk Road Economic Belt and 21st-Century Maritime Silk Road

Source: Xinhua, 2017a

2.1.1 Visions and Actions Plan

The Plan 'Visions and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road' (further on referred to as Visions and Actions Plan) was published by; the National Development and Reform Commission, the Ministry of Foreign Affairs, and the Ministry of Commerce of the People's Republic of China (National Development and Reform Commission et al., 2015). In order to get vital understanding of OBOR the Visions and Actions Plan is of high importance (Du, 2016). To integrate and work towards economic globalization, cultural exchanges, and encourage trade the Visions and Actions Plan includes the aims for the New Silk Roads (National Development and Reform Commission et al., 2015).

In order to promote the initiative and connect countries to several projects, different events, such as forums and seminar regarding the New Silk Roads have been held (National Development and Reform Commission et al., 2015). The latest forum, Belt and Road Forum, was held in Beijing, on May 14 and 15, 2017 (Xinhua, 2017a). Several countries participated during the event in which several projects were discussed (Xinhua, 2017b). One project is the expansion of the railway between China and Europe called 'China Railway Express', which has started to replace former cargo railway lines (Xinhua, 2017a). The connection between China and London increases the possibilities to lower transportation costs as well as connect several countries (BBC, 2017). The expansion of this railway network will as well contribute to increased exchange of technology, resources and movements of global investments (Xinhua, 2017a).

2.2 Major Goals

OBOR consists of five major goals (1) Policy Coordination, (2) Facilities Connectivity, (3) Unimpeded Trade, (4) Financial Integration, and (5) People-to-People Bonds (National Development and Reform Commission, et al., 2015). The aim of the initiative is to encourage and strengthen connections between Asia, Africa and Europe, including shared seas and oceans. In order to strengthen connections, development of railways, highways, waterways as well as airport connections have to be enhanced (National Development and Reform Commission, et al., 2015). Under the goal of Facilities Connectivity, energy infrastructures, including gas pipelines are supposed to be further developed. The development of energy infrastructure will be enhanced in China as well as between Xinjiang province and countries in Central Asia

(Clarke, 2016). Further on the aim is to develop and improve partnerships and networks between countries that are located along either the Silk Road Economic Belt or the 21st-Century Maritime Silk Road. The importance of establishing sustainable and balanced development within the affected countries lies as well under the purpose of the initiative. Several projects connected to the initiative will help to improve different development strategies along the roads.

The Asian Infrastructure Investment Bank (AIIB) was established in order to support the implementation and constructions related to OBOR in China as well as other Asian countries (Haggai, 2016; Yu, 2016; National Development and Reform Commission, et al., 2015). In addition to AIIB the Silk Road Fund started to operate in 2015, from which infrastructure projects along the roads can get financial support (Gan & Mao, 2016; Pop, 2016). Cultural exchanges are of high significance due to the importance of integration as well as lower tensions among people and ethnic groups in different countries and regions (National Development and Reform Commission et al., 2015). The Silk Road Economic Belt and the 21st-Century Maritime Silk Road have ambitious aims and goals, which include huge potentials and opportunities, however, there are as well challenges and risks associated with the initiative.

2.3 Prospects and Opportunities related to OBOR

Integration with neighbouring countries is an advantage of the establishment of the new initiative. As discussed by Clarke (2016) the economic corridor between Xinjiang, (China) and Central Asia, through Kazakhstan will increase Xinjiang's position due to border trade with neighbouring countries. The enhancement of infrastructure project will also result in strengthening the region's position (Clarke, 2016). Loans from AIIB could improve and develop infrastructure projects in other Asian countries, which could enhance trade patterns in the region (Gan & Mao, 2016). The advantages with the New Silk Roads can be connected to China's medium and long-term goals, which includes economic growth, stability within the country as well as enhanced relations with neighbouring countries (Pop, 2016). The establishment of free trade areas in connection with the enhancement and enlargement of infrastructure across the countries will most likely increase trade between countries, thus maintain economic relations as well as increase cultural exchanges and deepen trust on a political level (National Development and Reform Commission et al., 2015). As discussed by Minghao (2016) Chinese leaders believe that integration

between countries connected to OBOR might relief the tensions and instability in Central Asia.

2.4 Consequences and Challenges related to OBOR

Xi Jinping promotes OBOR as a great initiative, however there are still risks and difficulties connected to the project. A substantial amount of countries will benefit from the initiative; however, China will benefit the most (Rudolf, 2015). One potential risk related to the maritime route is the conflicts between China and its neighbouring countries regarding territories in the Pacific and Indian Ocean, and that these regions will stay out of the initiative (Haggai, 2016; Rudolf, 2015). Member states of Association of Southeast Asian Nations (ASEAN)[1] are worried that China are trying to control areas in the region, which make these countries hesitate when it comes to joining the initiative (Haggai, 2016). Another risk discussed by Rudolf (2015) is the conflicts in the Middle East, and the fear that ISIS takes control over regions in Central Asia, since countries and areas in this region will play a significant role for further establishment and success of OBOR.

As mentioned, China will benefit from the strategy, however, it is important that Chinese leaders explain to stakeholders and other countries that they will gain advantages as well (Yu, 2016). Due to avoidance of unilateralism and increase responsibility and ownership, Yu (2016) discusses the importance of giving other actors and countries full insight into the project. The risk associated with this is that other players might renounce their participation in the entire initiative (Yu, 2016).

2.5 Expected outcomes of OBOR

OBOR is still in its initial stage; several projects are in their planning phase, which makes it is hard to say if all infrastructure projects will be accomplished. Hence, the expected outcomes from the initiative are related to the prospects and consequences. As stated in the Visions and Actions Plan (2015) the Chinese government has promoted the enhanced relations and communication between countries connected to the initiative. The expected outcomes can as well be linked to better infrastructure, economic growth and improved cultural exchanges over borders (National Development and Reform Commission et al., 2015). As specified in Xinhua (2016b)

[1] ASEAN member states Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam (ASEAN, 2017).

4.4 billion people will be affected by the initiative if it works out as planned. One reason behind OBOR was to stimulate the domestic economy and enhance export opportunities, however, an expected outcome is the further entry of services, technologies and knowledge from Western countries (Leung, 2016).

The Chinese government has in recent decade established reforms and policies in order to improve the position of the RMB[2] on the global financial market (Nabar & Tovar, 2017). According to Nabar and Tovar (2017) the internationalization of the currency takes time, however, the use of RMB in international trade will help to increase its role in financial and monetary systems worldwide. As discussed by Cheng (2016) and Du (2016) the New Silk Roads will encourage the use of RMB on the global market, which can be a step towards the internationalization of the currency. Reforms and policies connected to the internationalization of RMB will as well support and encourage sustainable growth within the country (Nabar & Tovar, 2017).

According to the Visions and Actions Plan (2015) OBOR shows respect and trust to countries along the roads. Hence, enhanced knowledge sharing between and across countries along the roads can be a result of increased trust and respect connected to the initiative. Continuously, the Visions and Actions Plan stresses the importance of countries' endeavour towards the common goals of the initiative. The initiative has huge potentials, and as long as the affected countries contribute to the shared goals the expected outcomes are bright (National Development and Reform Commission et al., 2015).

2.6 Regions Affected by OBOR

OBOR had a plan to integrate 65 countries in Asia, Africa, and Europe, which would impact 4.4 billion people within these continents (Xinhua, 2016b). In December 2016, more than 100 countries and international organizations were connected to the initiative (Xinhua, 2016b). A large share of the people affected by OBOR lives in China that has the largest population in the world, with 1.37 billion people living in 31 regions, which include 22 provinces, five autonomous regions and four municipalities (The World Bank, 2017b; Girardin & Kholodilin, 2011). The country's population live to the larger extent in the Eastern part of the country, hence, Eastern regions tend to have the highest GDP growth rates in the country (Kanbur & Zhang,

[2] RMB, Renminbi, is the Chinese currency; the currency can as well be denoted as Yuan (Nabar & Tovar, 2017).

1999). The New Silk Roads will have a direct effect on nine regions, including six provinces and three autonomous regions in China (Fasslabend, 2015; National Development and Reform Commission et al., 2015). The Silk Road Economic Belt will start in Xi'an in Shaanxi province and stretch over to Gansu province (city of Lanzhou), Ningxia Autonomous Region, Qinghai and then reach Urumqi and Khorgas in Xinjiang Uygur Autonomous Region (Fasslabend, 2015; National Development and Reform Commission, et al., 2015). The 21st-Century Maritime Silk Road will affect Fujian province with start in the city of Quanzhou, and reach the southern provinces Guangdong (port of Guangzhou), Guangxi Autonomous Region (port of Beihai), and last Hainan (port of Haikou) (Fasslabend, 2015; National Development and Reform Commission, et al., 2015). The five provinces affected by Silk Road Economic Belt are inland provinces in China, thus these provinces have in general witnessed lower economic development and growth rates than coastal provinces (Kanbur & Zhang, 1999; Fleisher & Chen, 1997). Between 1992 and 2006, the provinces of Shaanxi, Gansu, Ningxia, Qinghai and Xinjiang had average GDP growth rates of 10.2 per cent, 9.4 per cent, 9.9 per cent, 8.5 per cent and 10.4 per cent (Girardin & Kholodilin, 2011). While coastal provinces have experienced more rapid economic growth (Girardin & Kholodilin, 2011; Zeng, 2010). Coastal provinces, which include the remaining four provinces, experienced annual average growth rates of approximately 13 per cent, between 1992-2006 (Girardin & Kholodilin, 2011). With the new initiative of the Silk Road Economic Belt, the Western provinces will be affected, which most likely will increase the economic development within the Western regions (Ferdinand, 2016; Minghao, 2016).

Figure 3. Provinces affected by OBOR

1. Shaanxi
2. Gansu
3. Ningxia
4. Qinghai
5. Xinjiang
6. Fujian
7. Guangdong
8. Guangxi
9. Hainan

Note: Own Illustration

2.6.1 Inland Provinces

Shaanxi

Shaanxi has a long history; Xi'an is today the province capital and also the former capital of China (UNESCO, 2017a). The ancient Silk Road had its start in Xi'an, which had an important position for economic and cultural affairs for centuries (Hall & Zhang, 1988). The city's history can trace back to 200 years BC, and the importance of the city can to some extents be explained by the proximity to two big rivers and its location in the middle of China (UNESCO, 2017a). Ever since the commercial era of the ancient Silk Road, Shaanxi has been a significant province for commerce and later also industrial sectors (Hall & Zhang, 1988). Since the proclamation of the People's Republic of China, infrastructure development in Shaanxi has improved, and Xi'an Cargo Railway Station is today one of the most important cargo hubs in the country (Zhao & Zheng, 2004). However, the allocation of infrastructure network within the province is uneven and infrastructure network in Shaanxi is behind Eastern regions of the country (National Bureau of Statistics of China, 2017a; Zhao & Zheng, 2004). The province has a strategic location, connecting the Eastern and Western regions. The region is rich in natural resources, which as well gives the province potential to increase and play a great role in coming decades (Zhao & Zheng, 2004).

Gansu

The rapid development of the Eastern regions has increased the inequality within the country, and Gansu is a province far behind the developed coastal areas (Fang & Gary, 2004). Lanzhou is today the provincial capital of Gansu and had an important position along the ancient Silk Road (Tong & Shi, 2015; Maddison, 1998). The city will play a major role in the Silk Road Economic Belt, and has the potential to promote economic development in the province (Fasslabend, 2015; Fang & Gary, 2004). The former Silk Road went through Gansu province, the *Gansu Corridor* stretched from Shaanxi to Xinjiang, hence, connected the former capital Xi'an with the Gobi desert. Due to heavy commerce between several countries, different religions were spread along the path, which have contributed to the large number of ethnic groups in the province (UNESCO, 2017b). The province has struggled with political instability, due to the discord between the Han Chinese and ethnic groups in the region (Xie, Ward, Fang and Qiao, 2007).

According to Xie, et al. (2007) Gansu province is located in an area where the water supply is scarce and climate is dry, the physical environment have an impact on the slow economic development as well as the relatively low population. Since the province faces several environmental challenges a large focus has been on the tourism industry, in order to protect the environment as well as increase the economic development (Fang & Gary, 2004). The tourism industry will also help to reduce the large number of unemployed people, since it is a labour intensive sector (Park, Yaduma, Lockwood, & Williams, 2016).

Ningxia Autonomous Region

Ningxia Autonomous Region is the second smallest region in China; however, the province is ranked one of the richest in per capita coal reserve in the country (Hu, 2004). Coal has been exported to Europe as well as North America, hence has played an important role for trade development in the province (Hu, 2004). The ancient Silk Road went through the province and the province capital Yinchuan has today a significant role in connecting railway lines in the Northern part of the country (Hu, 2004). According to Hu (2004) the economic inequality within the province constrains further development in the province, which have led to one of the lowest GDP in the country. Except the advantages of resources, the province gains advantages from the ethnic groups living in the province (Hu, 2004). The province is

home to the majority of the Huis population, which receives support from Huis in other provinces in the country (Hu, 2004).

Qinghai

In Qinghai province some large rivers have their source, two of them are Yangtze River and Yellow River, which are rivers running through a large part of the country. The amounts of natural resources are large in Qinghai, and include some special rare resources (Li & Liu, 2004). However, the infrastructure development and the peripheral location of the province result in low efficiency rates. A better infrastructure network could have seized the potential of the richness of resources, which together could have contributed to a flourish economic development (Li & Liu, 2004). According to Li and Liu (2004) infrastructure development is crucial for growth in the Western parts of China, which have led to large investments in projects related to transportation development. According to National Bureau of Statistics of China (2017a) rapid expansions of railways and highways has been remarkable the last fifteen years.

Xinjiang Uygur Autonomous Region

Like Gansu province, Xinjiang Uygur Autonomous Region has a large population of ethnic minorities, 49 different nationalities live only in the city of Urumqi (Dong & Zhang, 2011). In recent years unrests between different ethnic groups in the region have caused several deaths, which have resulted in strict control from the central government (Petersson, 2017). Xinjiang Uygur Autonomous Region is the largest region and the most Western located region in China. The region is rich in natural resources, such as natural gas, oil and minerals (Chau, 2004). However, the drilling and refinery of these resources affect the local environment in the province. Other environmental problems are the scarce water supplies and the desertification (Chau, 2004). According to Chau (2004) in order to lower the environmental impact and coal emissions in Eastern cities, such as Shanghai, natural gas is shipped through pipelines to cities in the Yangtze River Delta. The historical significance of Urumqi gives the city and province important prospects for future development (Dong & Zhang, 2011).

Table 1. Basic Facts, Inland Provinces

	Inland				
2015	Shaanxi	Gansu	Ningxia	Qinghai	Xinjiang
Population	37 930 000	26 000 000	6 680 000	5 880 000	23 600 000
Urban Population (%)	53.92	43.19	55.24	50.34	47.23
Area (sq. km)	205 600	454 400	51 800	721 200	1 650 000
GRP (Million Yuan)	1 802 186	679 032	291 177	241 705	932 480
Length of Railways in Operation (km)	4 549	3 847	1 300	2 300	5 867
Total Length of Highways (km)	170 069	140 052	33 200	75 600	178 263
Total Length of Inland Waterways (km)	1100	900	600	100	n.a.
Unemployment Rate in Urban Areas (%)	3.4	2.1	4.0	3.2	2.9
Labour Productivity in Terms of Value Added (Yuan/person-year)	373 123	303 816	266 856	318 902	284 034
Export (1000 USD)	14 788 759	5 811 811	2 963 107	1 641 967	17 496 082

Data are presented in 2010 prices. Sources: National Bureau of Statistics of China, 2017a; China Statistical Yearbook, 2016; Maddison, 1998

2.6.2 Coastal Provinces

The coastal provinces that are affected by the 21st-Century Maritime Silk Road, have not experienced the inland ancient Silk Road, however, the history of human settlement and commerce can be traced back some millennia (Tang, Zhao, Yin, Zhao, 2012).

Fujian

Fujian is a relatively small coastal province, but due to the SEZ in Xiamen, the province has experienced rapid growth after the opening-up process in the late 1970s (Tang, et al., 2012; Maddison, 1998). The geographical position of Xiamen as well as the progress of trade is behind the sustainable development in the city (Tang, et al., 2012). The Maritime Silk Road is supposed to start in Quanzhou north of Xiamen. In recent years, Quanzhou has witnessed economic development, which has resulted in the highest employment among Chinese cities (Li, Wang, Cheong, 2016). The port of Quanzhou had a historical significance; however, the port and the city have potential to develop to new heights with the New Silk Road (Li, et al., 2016).

Guangdong

Guangdong is a rich province in the southern part of China. The proximity to Hong Kong and Macau as well as the early establishment of the SEZs in Shantou, Shenzhen and Zhuhai had significant impacts on the development of the province (Zeng, 2010). The early industrialization has resulted in a strong economy in Guangzhou, which today is an international city with potentials to develop even further (LeGates, 2014; Development Research Center of the State Council et al., 2013). The strategic location of the city, in the Pearl River Delta has naturally provided the city with a great port, which have given advantages to the city. The Pearl River Delta and its connecting waterways have contributed to the rapid development of the entire province (Zhang & Kloosterman, 2014).

Guangxi Autonomous Region

Guangxi Autonomous Region is located in the Southern part of China with borders to the rich province of Guangdong as well as to Vietnam. Due to increased trade with Vietnam the economic development has increased heavily in past decades (Huang & Shen 2004). The richness of resources, such as minerals and water energy, as well as the proximity to Vietnam, gives the province several advantages (Huang & Shen 2004). Infrastructure investment has been focused on since 1992, when the government decided to make the province a gateway and sea passage of the southwest region of the country (Huang & Shen, 2004). However, the province has faced slower development than other coastal provinces in the country (Huang & Shen, 2004). The province faces a surplus in work population, which is a problem for future growth and development. Guilin in the Northern part of the province is one of the most tourist attractive cities in the entire country (Bolongaro & Li, 2017). The port of Beihai had an important position as early as in the 1870s and was one of the coastal cities that the Chinese government opened up for foreign investments in 1984 (Zeng, 2010; Huang & Shen, 2004). According to Fasslabend (2015) Beihai is the last port on the Maritime Silk Road in Mainland China.

Hainan

In 1988, Hainan became the fifth SEZ in China, compared to the other SEZ; the entire province of Hainan became an economic zone (Zeng, 2010). Hainan is a small island,

however, it became the largest SEZ in the end of 1980s (Zeng, 2010). The landscape of Hainan is beautiful and environmental emissions are low, which have contributed to a large tourism industry on the island (Jiang & Shen, 2010). The ports of Haikou and Sanya have given the island significance and advantages for the future development of the New Silk Roads (National Development and Reform Commission et al., 2015).

Table 2. Basic Facts, Coastal Provinces

	Coastal			
2015	Fujian	Guangdong	Guangxi	Hainan
Population	38 390 000	108 490 000	47 960 000	9 110 000
Urban Population (%)	62.60	68.71	47.06	55.12
Area (sq. km)	121 400	177 900	236 700	33 900
GRP (Million Yuan)	2 597 982	7 281 255	1 680 312	370 276
Length of Railways in Operation (km)	3 200	4 035	5 117	1 033
Total Length of Highways (km)	104 585	216 023	117 993	26 860
Total Length of Inland Waterways (km)	3 200	12 200	5 700	300
Unemployment Rate in Urban Areas (%)	3.7	2.5	2.9	3.4
Labour Productivity in Terms of Value Added (Yuan/person-year)	259 016	394 640	299 354	358 958
Export (1000 USD)	112 680 109	643 172 084	27 933 976	3 743 036

Data are presented in 2010 prices. Sources: National Bureau of Statistics of China, 2017a; China Statistical Yearbook, 2016; Maddison, 1998

2.7 Economic Development in China

International trade has always played an important role for economic growth and development. International trade from China can be traced back to the ancient Silk Road with goods transported from the former capital of the Han dynasty, Xi'an in China (UNESCO, 2017a), through Central Asia, all the way to Europe (Du, 2016). For numerous centuries the ancient Silk Road was important for the commerce of mainly silk from China to other countries on the continent (Yu 2016). Over the years, international trade have played different roles, and in recent years, increased trade have been crucial for development of economies all over the world (Harrison et al., 2014). Between the 16th and beginning of 19th Century, China was the world's largest economy and accounted for approximately one third of the world's GDP

(Development Research Center of the State Council et al., 2013). In 1820, China accounted for 32.4 per cent of the world GDP; Europe was close behind and accounted for 26.6 per cent of the world GDP (Development Research Center of the State Council et al., 2013; Maddison, 1998). After Mao Zedong came to power in 1949 China started to become a socialist economy closed from the rest of the world (Maddison, 1998). According to Naughton (1996) China was one of the world's poorest countries in the 1950s, and continued to have high poverty rates until 1980s.

2.7.1 Opening-up Process and Economic Reforms

For nearly two decades China was a planned economy, totally controlled by the government (Maddison, 1998). After Deng Xiaoping came to power in 1978, the opening-up process started. A major part of the process was the reformation of the economy that gradually transformed from a planned economy towards a market-based economy (Qian, 1999). The first sector to be reformed was the agricultural sector; the reform resulted in less control over the farmers, which gave the farmers more responsibility (Qian, 1999). The enlarged responsibility that came with the reform gave the peasants higher income, and increased productivity led to expanding markets in rural areas (McMillan & Naughton, 1992). The reform within the agricultural sector resulted as well in a rapid growth within the industry (Lin, 1992). Deng Xiaoping was eager to further reform China and open up the country to the rest of the world. The gradual process was an important way to actually reform the country (McMillan & Naughton, 1992). As stated by McMillan and Naughton (1992) the government led step-by-step processes of reforms were significant for the success. The step-by-step processes could easier detect errors, which could be corrected for, thus eliminate costs (McMillan & Naughton, 1992). Other reasons behind the successful reformation were the lack of actual timetables, as well as the transformation of both state-owned firms and state monopoly towards a market-oriented system. According to McMillan and Naughton (1992) the permanent removal of state-owned monopolies was a process that can be connected to strong economic growth. As discussed by Naughton (1996) a key to the growth success in China is the broad-based growth, which refers to growth that is spread among several sectors and includes people from different income groups (Ianchovichina, Lundstrom, Garrido, 2009; Imbs & Wacziarg, 2003, Naughton, 1996). The move towards a market economy required well-functioned institutions, which became part of the

transformation in the late 1970s (Qian, 1999; McMillan & Naughton, 1992). According to Fang & Gary (2004) there are three factors that are more important to the rapid development in China (1) the increased number of non-government owned sectors and enterprises, (2) the increased openness to other countries and the increase of international trade, (3) the increased human capital accumulation.

2.7.2 Special Economic Zones

When Deng Xiaoping and the Chinese government decided to start the opening-up process towards the world, two provinces in southern part of China were the first to receive foreign investments (Qian, 1999). In 1980, four Special Economic Zones were established in Fujian and Guangdong (Zeng, 2010). These SEZs allowed foreign enterprises to make business with China and Chinese companies. Foreign enterprises were offered lower taxes and special treatment if they established their businesses within the zone (Lardy & Branstetter, 2008). The special environment within these zones were not only preferable for foreign companies, the local government in these areas had more power over the economic development than other regions (Qian, 1999). The decentralization within the zones was also significant; the SEZs were allowed to have private owned enterprises and became successively market economies, several years prior other Chinese regions (Qian, 1999).

The SEZs were strategically located on the coastline; three zones were established in Guangdong province (Shantou, Shenzhen and Zhuhai) and one in Fujian (Xiamen). The SEZs in Shenzhen and Zhuhai were located on the border between Mainland China and Hong Kong respectively Macau, while the SEZs in Shantou and Xiamen faced the coast of Taiwan (Lardy & Branstetter, 2008). The establishment of the SEZs were successful and attracted large amount of Foreign Direct Investment (FDI) (Qian, 1999). In 1984, the central government decided to further open up the country and coastal areas, which resulted in an establishment of 14 Economic and Technological Development Zones (ETDZ) (Zeng, 2010).

Due to the opening-up process in the late 1970s, which allowed foreign investment and international trade, the SEZs had huge impacts on the Chinese economy (Zeng, 2010). The establishment of new institutions and policies helped the zones gradually transform to market economies. The SEZs contributed heavily to the national GDP growth and the share of GDP growth in these regions was much larger than in other parts of China (Zeng, 2010). The year after the establishment of the first

four SEZs, Shenzhen accounted for 50.6 per cent of the total FDI in China (Zeng, 2010). In total, the four zones accounted for 59.8 per cent of the country's total share (Zeng, 2010). New reforms and policies, together with the large variety of production in the newly established zones, resulted in extremely rapid growth. Between 1980 and 1984, China as a country had an average annual GDP growth rate of more than 10 per cent, however, the growth rate within the SEZs were even larger, Table 3 (Zeng, 2010).

Table 3. Annual GDP Growth Rate Between 1980-1984

SEZ	Annual Growth Rate % Between 1980-1984
Shenzhen	58
Zhuhai	32
Xiamen	13
Shantou	9

Source: Zeng, 2010

Special characteristics for a SEZ include that the zone contains of a limited area and that the zone had specific management organizations (Zeng, 2010). According to Maddison (1998) Mainland Chinese enterprises did benefit from the SEZs since a large amount of companies invested capital in the special areas. According to Zeng (2010) advantages of a SEZ can be direct as well as indirect. Direct benefits refer to growth within export and FDI, received revenues to the government, and increased employment rate, while the indirect advantages are related to diversification and expansion in trade as well as the possibility of transfer and exchange technology (Zeng, 2010; Wong, 1987). The rapid development of roads and railways as well as the large energy supply were essential for the infrastructure network within the zones in China (Wong, 1987).

2.7.3 Chinese Economy in Recent Years

The reforms and the SEZs have been crucial for the rapid economic growth in China (De Grauwe & Zhang, 2016). The growth have influenced the global economy as well as played a significant role for the integration among economies in Eastern Asia (De Grauwe & Zhang, 2016). As discussed by De Grauwe and Zhang (2016) the reforms and the opening-up process have transformed China, which has become the world's leading trading nation. Trade between China and other countries have increased heavily since China joined the 'World Trade Organization' (WTO) in 2001 (Lam et

al., 2017; Development Research Center of the State Council et al., 2013). As stated by Lam et al. (2017) the accession to WTO was vital in order to develop further competition as well as reform enterprises. Furthermore, external factors that could increase and promote growth within several sectors are trade agreements and treaties regarding investments (Lam et al., 2017). International trade affect the entire world and is crucial for economic growth and further development within and among countries (World Economic Forum, 2015). In order to continue the successful growth and development of trade all over the world, it is significant to understand global trade dynamics and how these are changing (World Economic Forum, 2015).

During the last three decades, GDP growth rates in China has been on average approximately 10 per cent per year, which made China the second largest economy in the world in 2010 (Lam et al., 2017; Development Research Center of the State Council et al., 2013). In recent years, the GDP growth rates have decreased, and in 2015, the country experienced a growth rate of 6.9 per cent (IMF, 2016; UNCTAD, 2016). According to data from International Monetary Fund (IMF) (2016) and UNCTAD (2016) China's GDP growth rate was estimated to 6.7 per cent over the year, and forecasted to continue to decrease even further in 2017 (IMF, 2016; UNCTAD, 2016). Even though the GDP growth rate is forecasted to decrease in coming years, urban unemployment rates seem to be reduced, since more than 13 million urban jobs were created in 2016 (Reuters, 2017). Continuously, according to the Chinese government, 11 million jobs will be created in urban areas in 2017 (Reuters, 2017).

According to UNCTAD (2016) some reasons behind the decelerated growth in China are related to lower demand from external actors and countries, reduction in overcapacity as well as realignment towards trade of services. As discussed by Development Research Center of the State Council et al. (2013) despite the decreasing amount of unskilled labour in China, demand of quality and skills among workers in several sectors are desirable. With lower amount of unskilled labour, wages increase as well as prices of labour intensive products. Hence, the former advantages of low wages and cheap products can decrease export rates of commodities from China (Development Research Center of the State Council et al., 2013).

The reforms that have been implemented in China since the late 1970s have lifted the country out of high poverty rates and the country has now entered a middle-

income level (Lam et al., 2017). However, China is again in a stage where reforms and transformation is crucial for increased growth rates within the country as well as for reducing the risk of getting trapped in the middle-income level (Lam et al., 2017). The development of Chinese economy will as well have significant effects on the global economy, in particular Asian countries. According to historical data, a decrease in Chinese GDP growth with one percentage point will have a negative effect on other Asian countries with approximately 0.3 per cent (Furceri, Jalles, Zdzienicka, 2017; Lam et al., 2017). The rapid growth in China has increased the import of consumer goods, which have resulted in a positive impact on countries that export labour-intensive goods (IMF, 2016). The transition where China is changing focus towards consumer goods will in the long run have a positive impact on the global economy and also ensure a more sustainable growth in China (IMF, 2016). According to a report by IMF (2016) the global economy has to continue to be open to new trade initiatives as well as to further integration among regions and countries.

According to several researchers and scholars, China had to do something in order to stimulate the domestic economy (Lam et al., 2017; Du, 2016; Minghao, 2016). The last three decades of reforms, opening-up process towards the rest of the world, and high growth rates made the country accustomed to a flourish economy (Du, 2016). In the beginning of the opening-up process China competed with its cheap labour costs and export of labour-intensive products. However, in recent years the labour costs in China have increased, which have caused high competition from neighbouring countries as well as other developing countries (Du, 2016). The challenge of implementing and changing frameworks regarding policies and economic reforms are important for further development. Growth stagnation and economic instability are common events a country might face if the implementation of new reforms fail or delay (Lam et al., 2017). The importance of changes and development among specific interest groups in China, was emphasized by Xi Jinping:

"China's reforms have entered a crucial stage and the deep water area. Reforms will be resolutely carried out with forceful determination, daring to take on chronic problems and deep-seated vested interests and imbalances." (Lam et al., 2017, p. 13)

According to a study by Haggai (2016) investment in infrastructure projects is significant for sustainable and maintained economic growth and development. The infrastructure development within China will most likely encourage growth in the less developed regions, as well as lower economic and social inequalities (Haggai, 2016).

As proved by Aschauer (1990) increased infrastructure investment has a positive impact on economic performance, which includes labour productivity as well as quality of life. Even though infrastructure projects have a positive impact on economic outcomes, inefficiency in huge projects can lead to low returns (Haggai, 2016).

Businesses and entrepreneurs in China as well as in other Asian countries are expected to benefit from OBOR. The employment rate is supposed to increase as the initiative develops further, which will improve welfare and economic situations, such as increased economic growth (Haggai, 2016). The initiative is supposed to promote integration among regions and markets, which can be encourage by a well-developed infrastructure (Haggai, 2016; Yu, 2016). According to Haggai (2016) the initiative might lead to increased trade, which could increase China's role as a leading trading partner. In order to achieve sustained growth in the long run it is important to work towards broad-based growth (Ianchovichina et al., 2009). As discussed by Naughton (1996) growth has to be sustainable in order to corroborate a strategy regarding economic policies.

3. Methodology

3.1 Scope of the Study

Based upon the literature review, this thesis aimed to study GRP growth in several Chinese provinces. Due to the decreasing growth rates in China and with the ambitions to extend control over global trade, China launched the initiatives regarding the New Silk Roads. The opportunities for growth connected to OBOR are therefore the motives of this study. In order to study GRP growth and percentage GRP growth rates in the selected provinces, forecasts as well as regression analyses have been conducted.

This research is based on statistical data regarding the initiative of the New Silk Roads. It was three and a half years ago president Xi Jinping released the idea of the New Silk Roads. Since 2013 several articles and studies have been published regarding this new phenomenon. As mentioned the Silk Road Economic Belt and the 21st-Century Maritime Silk Road will affect the majority of the Chinese provinces, however, this study has focused on nine provinces in which the New Silk Roads will go through. The nine provinces include five inland provinces; Shaanxi, Gansu, Ningxia Autonomous Region, Qinghai and Xinjiang Uygur Autonomous Region, and four coastal provinces; Fujian, Guangdong, Guangxi Autonomous Region and Hainan. Due to time limitation the author of this study has decided to focus only on these nine provinces. With start in Xi'an, Shaanxi, the inland route stretches towards Kazakhstan and will affect the five Western provinces. The five inland provinces have a great potential to develop with the new initiative, which make them relevant to include in this study. The four coastal provinces were selected since ports in these regions will be developed in line with OBOR. Another reason for selecting these provinces was due to their relations to the Special Economic Zones. Provinces that will be affected through spill over effects or provinces that might be connected to one of the corridors in the long run are excluded from this study. Haggai (2016) and The Economist Intelligence Unit (2015) discuss that approximately 20 provinces will participate in the initiative; however, the initiate Silk Road Economic Belt and 21st-Century Maritime Silk Road will go through the nine selected provinces.

The growth rates in the selected provinces will most likely increase since infrastructure will be improved and more jobs will be created. The initiative is in its

initial stage; hence it is not clear how much the initiative will affect each single province. Even though there are thorough amounts of research regarding the new initiative, no research has calculated forecasts of the GRP growth and studied the variables that can have effects on GRP. In this study forecast models over the nine provinces have been conducted. Six regression models have been created, in order to estimate the effect of different variables on GRP.

3.2 Research Paradigms

There are two main paradigms or frameworks a research often follows, it is either *Positivism* or *Interpretivism*, which are based on realism respectively idealism (Collis & Hussey, 2014). This research is derived from the concept of Positivism, which has its roots in natural science. According to Collis and Hussey (2014) positivism is based on reality and aims to discover different theories by using empirical data and research. Studies associated with positivism are usually based on quantitative data, where a statistical analysis is conducted (Collis & Hussey, 2014). This research is based on quantitative data over GRP in the selected Chinese provinces, which have been retrieved in order to conduct statistical analyses.

3.3 Validity and Reliability

Within positivism studies, the data used are specific and reliable, which give accurate outcomes and results of a study. In order to measure quality of the research, the concepts of *Validity* and *Reliability* are commonly used within this type of studies (Collis & Hussey, 2014). As discussed by Collis and Hussey (2014) the idea of Validity refers to whether the outcomes of a research reflect the accuracy of the specific study. A study with low validity might therefore give an incorrect reflection of the research (Collis & Hussey, 2014). However, in this study the researcher has gained knowledge about the background of the initiative as well as accessed large amount of statistical data, which gives the study a high validity. The notion of Reliability raises the importance of credibility of the outcomes in a study. A study with high reliability should be able to repeat with the same outcomes (Collis & Hussey, 2014). With the high amount of empirical data, the reliability tends to be high. Given same data and models, a study will most likely come up with the same results again. Since this study aimed to conduct statistical analyses with data collected from statistical databases, the reliability of the study is high.

3.4 Triangulation

The method of triangulation is based on the mix of different methods, such as different theories, observations and several sources (Denscombe, 2016; Collis & Hussey, 2014). According to Denscombe (2016) a research can better be understood if more than one perspective is considered, hence, the method of triangulation is therefore commonly used in research projects. Triangulation can help the researcher to get a complete overview of a study, which might increase the credibility of the final conclusions (Denscombe, 2016). This study has used different statistical methods in order to come up with conclusions as trustworthy as possible. The statistical data have been analysed together with theories and facts based on previous research to come up with the most valid conclusions.

3.5 Statistical Methods

To conduct the forecasts and the regression analyses Microsoft Excel and IBM SPSS Statistics have been used. In order to calculate the forecast of GRP growth and growth rates in the different provinces linear regressions have been conducted. Excel was used to calculate the forecasts and conduct graphs for GRP in each province. In order to add more value and strengthen the results regarding GRP growth among the Chinese provinces, multiple regression analyses were completed as well. In order to run multiple regression analyses and conduct statistical tests, the author of this study used SPSS.

3.5.1 Forecast Model

When studying data over a period of time, a *Time Series Analysis* can be conducted (Nieuwenhuis, 2009). With a Time Series Analysis, historical data can be used to forecast future outcomes (Jacobs & Chase, 2014). The outcome, *Y*, in this case the GRP, will be studied over time. When doing a time series analysis forecast, different models can be used, the method used is depending on the forecast horizon; whether the prediction is for a short-term, medium-term or long-term (Jacobs & Chase, 2014). This research has conducted linear regression analysis, a method suitable when forecasting for long-term periods (Jacobs & Chase, 2014). One limit when using the linear regression method is that the predicted values are sequenced on a line (Jacobs & Chase, 2014). A linear regression can also be conducted in order to forecast an outcome related to other occasions (Collis & Hussey, 2014; Nieuwenhuis, 2009).

The forecast models in this study include data for the nine provinces. Forecasts for every province have been conducted, and are compiled in two different graphs. Figure 4 shows the results over the inland provinces, while Figure 5 describes the outcomes in the coastal provinces. The latest available data is from 2015; hence, the model of the forecast in these analyses has used data for ten years, 2006-2015, in order to calculate the GRP growth as well as GRP percentage growth rates for 2016-2020. Tables over the calculated GRP and GRP growth rates are presented in Appendix 1, Table 8 and Table 9. Equation (2) is derived from the linear regression, Equation (1), and used for forecasting GRP for 2016-2020. From the retrieved data over GRP in the specific provinces, the researcher has calculated a from Equation (1), which denotes the *Intercept*, as well as b from Equation (1), the *GRP growth rate*. Variable t from Equation (1) denotes the specific *time period* forecasted for. In order to calculate the forecast for a specific year, the GRP growth rate has been multiplied with the time period. Due to differences in historical data, intercepts and GRP growth rates differ between the selected provinces. From Equation (3) percentage GRP growth rates were calculated, which as well can be studied in Figure 4 and Figure 5.

(1) $$Y = a + bt$$

(2) $$GRP = Intercept + GRP\ growth\ rate\ x\ time\ period$$

(3) $$\%\ GRP\ Growth\ Rate = \frac{GRP_t - GRP_{t-1}}{GRP_{t-1}}$$

3.5.2 Regression Model

A multiple regression model has a dependent variable and several independent variables that explain the relationship between the dependent and independent variables (Cortinhas & Black, 2012). In order to measure and analyse the relationship between the selected variables in a model, empirical data can be retrieved from statistical databases (Nieuwenhuis, 2009). The interpretation of a variable or a coefficient can differ depending on the other variables and the relationship between all variables in a model (Wooldridge, 2008).

This study includes one simple regression model and five multiple regression models, which have been created in order to increase the validity of the research. The regression analyses include data for the nine selected provinces over 20 years, 1996-

2015. The validity will increase since the regression analyses explain which factors and variables that might have an impact on growth. The dependent variable, in this case GRP in the selected provinces, as well as the independent variables have been interpreted and analysed in order to study how GRP will relate to the changes due to OBOR. In order to control for omitted variable bias, the independent variables act as control variables in the regression models. The regression models used for studying impacts and effects of several independent variables on GRP have been derived from Equation (4). Equation (5) describes the full model, Table 5, Column 4, including the dependent variable, *GRP*, and the six independent variables. Each model in Table 5 and Table 6 has a *Constant Coefficient*, which is denoted by β_0 in Equation (4) and Equation (5). The variable ε denotes the *residual* or *error term* in each model.

(4) $$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots \beta_k X_k + \varepsilon$$

(5) $$GRP = \beta_0 + \beta_1 Railway + \beta_2 Highway + \beta_3 Unemployment\ Rate\ \% + \beta_4 LabourProductivity + \beta_5 Export + \beta_6 Coastal\ Region + \varepsilon$$

3.5.3 Statistical Tests

The value of R^2 explains how much of the dependent variable that is explained by the independent variables or the control variables (Wooldridge, 2008). Wooldridge (2008) mentions that R^2 is a relatively bad measure, since it always increases when adding more variables to the model. However, the R^2 for all models have been included in the tables.

In multiple regression models or OLS models, five assumptions, also called the Gauss-Markov Theorem should hold in order to show that the model is unbiased (Wooldridge, 2008). In order to check if the models in this study are unbiased, several tests have been conducted. Spearman's test has been conducted in order to check for multicollinearity. The test checks if all independent variables are significant, since they might be insignificant in the regression. Spearman's correlation test measures as well the correlation between all variables in a model (Collis & Hussey, 2014). If a study omits testing for multicollinearity an insignificant variable might be excluded, even though the variable is significant and has an effect on other variables (Collis & Hussey, 2014).

Test for homoscedasticity have been conducted to check whether the variance in the residual is constant (Wooldridge, 2008). If this fails there is heteroscedasticity in the model, which means that important variables might be omitted from the regression model (Wooldridge, 2008). Breusch-Pagan and White's test have been conducted in order to test for homoscedasticity. If the F-statistics is significant the null hypothesis of homoscedasticity can be rejected and heteroscedasticity is present in the model (Wooldridge, 2008). The Durbin-Watson test assess if there is autocorrelation in the model. If the value of Durbin-Watson is close to 0, there is most likely positive autocorrelation in the model (Wooldridge, 2008).

3.6 Data Collection

In order to answer the research questions of this study, secondary data has been collected. Articles and publications have been retrieved from various databases, such as *Web of Science, GUNDA, Emerald Insight and Science Direct.* The statistical data over the Chinese provinces are collected from *China Statistical Yearbook* and *National Bureau of Statistics of China,* two databases with statistical data over Chinese population, economy, and environment etc. Data regarding growth rates in SEZs are retrieved from the *World Bank Publications*.

GDP growth can be explained by numerous of variables. According to a study by Fleisher, Li and Zhao (2010) infrastructure, educated workers and FDI affect growth in China through Total Factor Productivity (TFP). Wang and Yao (2003) discuss as well education and human capital as sources for growth in China. Projects related to OBOR will expand infrastructure networks, which most likely will lower unemployment rates and have a positive impact on export. Since this research aimed to study the impact of OBOR and its effect on GRP in Chinese provinces, the author of this study believes that relevant variables to include in the regression analyses are related to infrastructure, employment, productivity and export. Hence, the independent variables in this study are associated with infrastructure development, which includes length of railways, highways in each province. Furthermore, independent variables included in the models are unemployment rates, labour productivity, export and a dummy variable whether or not a province has a coastline. Other variables that have an impact on GRP could as well have been included in the regression models, however, due to time limitations and size of this study, the author decided to focus on these specific factors.

The dependent variable in the study is *GRP*, which is presented in Million Yuan. According to data from The World Bank (2017a) one million Yuan was equal to approximately to 160 000 USD, in 2015 prices. The six independent variables are included in one or more of the regression models. *Railway* and *Highway* are presented in length of kilometres. The variable *Unemployment Rate %*, indicate on percentage rate of unemployed people in urban areas. *Labour Productivity* measures value-added overall labour productivity, annually in Yuan per person (measured as average total value added output per employee every year, National Bureau of Statistics of China, 2017b, OECD, 2017). The *Export* variable is denoted as 1000 US Dollars. *Coastal Region* is coded as a dummy variable, and refers to whether a province is located on the East coast or in inland areas. Data over GRP, Labour Productivity and Export in each specific province are presented in 2010 prices (China Statistical Yearbook, 2016). The variables that were selected and finally included are in some way related to OBOR. *Railway* and *Highway* are directly related to infrastructure and infrastructure projects. *Unemployment rate* and *Labour Productivity* indicate on how the labour force contribute to GRP, since expansion of infrastructure require large amount of workers the two variables were included in the models. Since unimpeded trade is one of the major goals of OBOR *Export* has a strong connection to the initiative, hence is an important variable to include in the models. The dummy variable *Coastal Region* was included due to the interest of differences between inland and coastal regions.

As mentioned, several factors contribute to a country's GDP. Hence, in order to come up with the best models several independent variables have been elaborated with. Some variables have been included and later excluded from the final models due to insignificant coefficients and misleading results. Since some major Chinese rivers run through various of the selected provinces and infrastructure projects are highly related to OBOR, the variable *Inland Waterways* was tested for as an independent variable. However, due to misleading results and missing values for some provinces the variable was excluded from all models. Other infrastructure variables such as telecommunication and Internet connections were as well considered to include in the models, however, several years of data were missed out for these variables.

As infrastructure projects are closely related to OBOR, the variable *Railway* is included in all models. *Highway* could as well been included in all models, however, due to environmental aspects the researcher decided to focus on *Railway*. The *Coastal*

Region variable estimated a large effect on GRP, why the researcher decided to conduct two additional models, one for inland provinces and another for coastal provinces. The different models were conducted in order to estimate differences on specific variables between inland and coastal regions. Correlation matrixes and Summary statistics for the models separating inland and coastal regions are presented in Appendix 2, Table 10 and Table 11, and Appendix 3, Table 12 and Table 13. Continuously, Table 4 present summary statistics for the full model including all nine provinces over 20 years.

Table 4. Summary Statistics, Full Model

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
GRP (Million Yuan)	180	720 538.7	1 208 672	18 417	7 281 255
Railway (km)	180	2 114.444	1 174.835	200	5 900
Highway (km)	180	73 857.22	53 457.36	8 700	216 000
Unemployment Rate in Urban Areas (%)	180	3.51	0.83573	1.7	7.4
Labour Productivity (Yuan/person-year)	180	79 153.02	118 611.7	6 771	456 397
Export (1000 USD)	180	42 100 000	118 000 000	86 860	646 087 011
Coastal Region	180	.4444444	.4982901	0	1

4. Empirical Analysis and Results

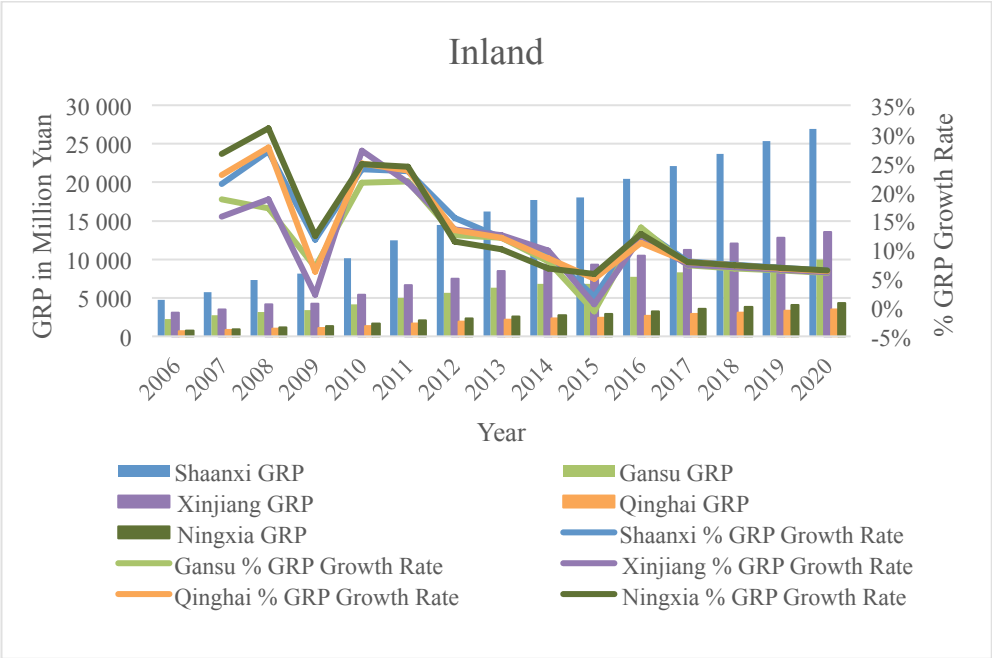
4.1 Forecast models

In order to answer the first research question, linear forecast regressions have been conducted. Data over GRP in the nine provinces are presented in Figure 4 and Figure 5; tables over the forecasted GRP and GRP percentage growth rates are attached in Appendix 1. From the data retrieved, an intercept and a slope has been calculated in order to forecast GRP and GRP growth rates for 2016-2020.

4.1.1 Inland Provinces

Figure 4 shows the result of the forecasted GRP growth in the inland provinces. Data were retrieved for the years 2006-2015, in order to calculate forecasts for the next five years, 2016-2020. The growth rates in the five provinces follows more or less the same path. Three of the regions had annual growth rates of over 20 per cent in 2008; however, in 2009 there were a significant drop of the annual growth rate in all five provinces. The growth rates are recovering again in 2010, and all provinces witnessed GRP growth rates of more than 20 per cent. According to the data retrieved from the National Bureau of Statistics of China (2017a) GRP in 2015 did not increase as much as prior years, which indicate on growth rates of less than 10 per cent for all five regions. Further on, the calculated forecasts for all provinces state that the annual GRP is increasing in all provinces, however, the growth rates are declining. The percentage growth rates for 2016 indicate on a sharp increase compared to 2015. Shaanxi and Xinjiang experienced lower rates in 2015 than other years, while Gansu had a negative growth rate in 2015. There might be specific reasons for these rates; however, the author decided to not examine this further. According to the calculations all five provinces have growth rates over 10 per cent in 2016. However, the growth rates are diminishing in a slow pace, and all provinces follow the same path for the next five years. According to the results, the annual growth rates for 2020 are approximately 6 per cent for all five provinces.

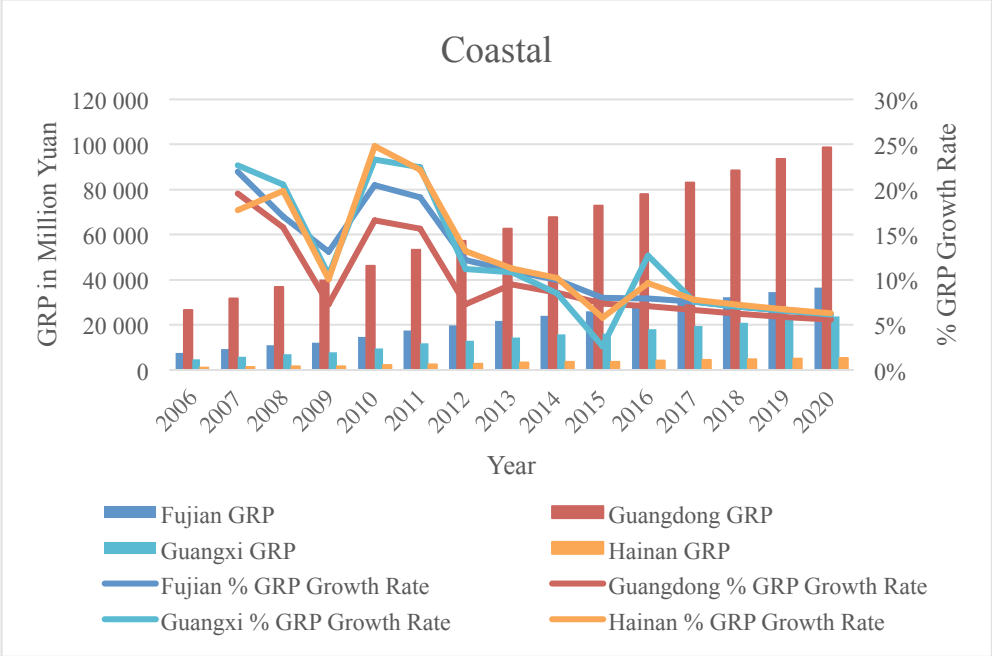
Figure 4. GRP in Million Yuan and Percentage GRP Growth Rates, Inland Provinces 2006-2020



4.1.2 Coastal Provinces

Figure 5 presents the forecasted GRP growth and GRP percentage growth rates for the coastal provinces connected to OBOR. The growth rates in all four regions have a sharp decrease in 2009; however, all provinces are recovering again in 2010. After 2010, the annual GRP percentage growth rates are decreasing. The drop between 2010 and 2012 is significant, but after 2012 the diminishing growth rates keep a slower pace for all four provinces. Hainan had the lowest growth rate of the four provinces in 2007, however between 2010 and 2015, the annual growth rate for Hainan has been the largest of the four coastal provinces. Hainan continues to have the largest percentage growth rates between 2016 and 2020. The calculated percentage growth rate in 2016 for Guangxi is forecasted to 12.70 per cent, which is relatively larger then in the other provinces. However, for coming years the growth rates in Guangxi are decelerating. For the forecasted years, 2016-2020, the graph shows an annual growth rate of approximately 6 per cent for all four coastal provinces. GRP in Million Yuan for all four provinces are continuing to increase further.

Figure 5. GRP in Million Yuan and Percentage GRP Growth Rates, Coastal Provinces 2006-2020



4.1.3 Inland vs. Coastal Provinces

The GRP and the annual percentage GRP growth rates in inland and coastal provinces follow the same path. The two graphs indicate that there are drops in the annual growth rates after the financial crisis in 2008. Some of the provinces in coastal regions as well as in inland regions faced higher annual growth rates after the financial crisis than in 2008. The nine provinces indicate on similar forecasted annual growth rates for the coming five years, 2016-2020. Three inland provinces, Shaanxi, Qinghai and Ningxia indicate on the highest forecasted growth rates for 2020. However, the amount of actual GRP in coastal provinces is significantly larger than in inland provinces.

4.2 Regression Models and Spearman's Correlation Matrix

Following, the results of the regression models as well as correlation matrix are presented. Table 5 presents four models, which include data for all provinces. In order to come up with the optimal regression model several regressions with different independent variables were conducted. The optimal model Column (4) includes six variables, *Railway, Highway, Unemployment Rate, Labour Productivity, Export* and *Coastal Region.* When adding variables to the regression model, some coefficient gave distorted results and insignificant coefficients. Several tests and models were

conducted in order to come up with the optimal model, which includes six statistical significant coefficients.

Table 5. Regression Analyses, All Provinces.
Dependent Variable GRP in Million Yuan

Variables	**Coefficients**			
	(1)	(2)	(3)	(4)
Railway (km)	408.503***	–419.178***	264.966***	130.763***
	(70.773)	(77.822)	(71.701)	(25.581)
Highway (km)		23.523***		2.139**
		(1.710)		(0.669)
Unemployment Rate in Urban Areas (%)			–322 231.465**	82 078.560***
			(9 704 193)	(21 776.499)
Labour Productivity (Yuan/person-year)			2.572**	1.344***
			(0.737)	(0.151)
Export (1000 USD)				0.008***
				(0.000)
Coastal Region				254 285.375***
				(36 567.223)
Constant	–143 217.961	–130 485.001	1 087 767.540**	–571 968.438***
	(171 080.078)	(119 284.031)	(396 688.2)	(95 406.708)
Observations	180	180	180	180
R-Squared	0.158	0.593	0.287	0.971
Breusch-Pagan	0.001	0.000	0.000	0.000
White's Test	0.004	0.000	0.000	0.000
Durbin-Watson	0.229	0.331	0.291	0.611

Standard Errors in Parentheses. *** = p<0.001 ** = p<0.01 * = p<0.05

The regression analyses conducted give different results when controlling for different variables. In Table 5, Column (1) *Railway* is the only independent variable. The coefficient estimates that one kilometre extra railway will increase GRP with 408.503 million Yuan. The variable is highly statistically significant on a 1 per cent significance level. When adding a second infrastructure variable to the model, Table 5, Column (2) the results change. The *Highway* variable can be seen as a control variable, which in this case explains that the control variable has a larger effect on the dependent variable than the independent variable. According to the correlation matrix, Table 6, there is a higher positive correlation between *Highway* and *GRP* than

between *Railway* and *GRP*, which might explain some of the result in Column (2). Since highways are much more extensive than railways in each province, it makes sense that *Highway* has a higher correlation with *GRP* than *Railway*. When the two variables are included in the regression analysis, R^2 is higher than in the model with only *Railway* as a variable. As Wooldridge (2008) explains when adding more variables to a model R^2 increases.

The third regression model, Column (3) includes the variables *Railway*, *Unemployment Rate* and *Labour Productivity*. The three variables are all statistically significant on a 5 per cent significance level. *Railway* and *Labour Productivity* have a positive effect on *GRP*, while *Unemployment Rate* has a negative effect on the dependent variable. One extra kilometre of railway will increase GRP with 264.966 million Yuan. If value-added to Labour Productivity increases with one Yuan, GRP increases with 2.572 million Yuan. If unemployment rates increases with 1 per cent GRP will be reduced with 322 231.465 million Yuan. This model was conducted in order to prove that with only these three variables in the regression, *GRP* increase when *Labour Productivity* increases and the *Railway* network expands, and lower *Unemployment rate* has a positive effect on *GRP*.

In Table 5, Column (4) additional variables have been included in the regression analysis. The fourth regression model includes six variables; which all are statistically significant. This model can be interpreted as the optimal model for this study, since all variables as statistically significant. In the fourth regression analysis, the added variables can be referred to as control variables. The control variables control for the effect of the *Railway* coefficient, which indicates on a positive effect on GRP, an expansion of one kilometre railway will increase GRP with 130.763 million Yuan. However, the effect of Railway on GRP is lower than in Column (1). An interpretation of the lower value is related to the other independent variables or the control variables, thus these variables take some of the *Railway* effect on *GRP*. As discussed for Column (2), *Highway* has a larger effect on *GRP,* however, when the other variables are included, as in Column (4), *Railway* has a larger effect than *Highway*. The dummy variable for *Coastal Region* gives a positive, statistically significant result on GRP, which indicate on higher GRP in coastal regions. According to the results in Column (4), if a region is located on the East coast, GRP is 254 285.375 million Yuan larger than in an inland province. Unemployment Rate has as well a positive effect on GRP, which is not the case for Column (3), however, this

might be misleading, since the correlation matrix, Table 6, indicate on a negative relationship between *Unemployment Rate* and *GRP*.

Table 6. Spearman's Correlation Matrix, Full Model

Variable		GRP (Million Yuan)	Railway (km)	Highway (km)	Unemployment Rate (%)	Labour Productivity	Export	Coastal Region
GRP (Million Yuan)	Correlation Coefficient	1	0.620**	0.874**	–0.389**	0.715**	0.948**	0.422**
	Sig. (2-tailed)	-	0	0	0	0	0	0
Railway (km)	Correlation Coefficient	0.620**	1	0.806**	–0.165*	0.438**	0.463**	–0.163*
	Sig. (2-tailed)	0	-	0	0.027	0	0	0.029
Highway (km)	Correlation Coefficient	0.874**	0.806**	1	–0.369**	0.643**	0.766**	0.122
	Sig. (2-tailed)	0	0	-	0	0	0	0.104
Unemployment Rate (%)	Correlation Coefficient	–0.389**	–0.165*	–0.369**	1	–0.234**	–0.376**	–0.310**
	Sig. (2-tailed)	0	0.027	0	-	0.002	0	0
Labour Productivity (Yuan/person-year)	Correlation Coefficient	0.715**	0.438**	0.643**	–0.234**	1	0.609**	0.087
	Sig. (2-tailed)	0	0	0	0.002	-	0	0.244
Export (1000 USD)	Correlation Coefficient	0.948**	0.463**	0.766**	–0.376**	0.609**	1	0.545**
	Sig. (2-tailed)	0	0	0	0	0	-	0
Coastal Region	Correlation Coefficient	0.422**	–0.163*	0.122	–0.310**	0.087	0.545**	1
	Sig. (2-tailed)	0	0.029	0.104	0	0.244	0	-

180 observations for all correlations

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

The correlation matrix, Table 6, describes the correlation between all variables included in the regression analyses. According to Table 6 all variables have a relatively strong relationship with *GRP*. All variables except the variable explaining *Unemployment Rate* are positively correlated with *GRP*. Which makes sense, since better infrastructure and increased export will have a positive effect on *GRP*. On the other side, if the *Unemployment Rate* increases, there might be a drop in the *GRP* growth.

Table 7. Regression Analyses, Inland and Coastal Regions.
Dependent Variable GRP in Million Yuan

Variables	**Coefficients**	
	Inland	Coastal
	(1)	(2)
Railway (km)	98.623**	97.103*
	(34.639)	(44.586)
Highway (km)	3.213***	4.486**
	(0.801)	(1.604)
Unemployment Rate in Urban Areas (%)	4 509 168.925	16 717 434.98**
	(2 311 047.868)	(4 682 960.417)
Labour Productivity (Yuan/person-year)	1.195***	1.752***
	(0.196)	(0.251)
Export (1000 USD)	–0.003	0.008***
	(0.006)	(0.000)
Constant	–384 556.801**	–700 703.580***
	(116 440.632)	(165 728.065)
Observations	100	80
R-Squared	0.789	0.982
Breusch-Pagan	0.000	0.009
White's Test	0.000	0.000
Durbin-Watson	0.500	0.839

Standard Errors in Parentheses. *** = p<0.001 ** = p<0.01 * = p<0.05

In these regression analyses five variables are included for each region. Column (1) includes data over inland provinces, while Column (2) excludes data for inland provinces and focus exclusively on coastal provinces. When separating the full model into two models, the number of observations changes. The inland model includes data for five provinces over 20 years. The coastal model consist of only four provinces over 20 years, which gives that model less observations. Summary Statistics can be studied in Appendix 3, Table 12 and Table 13. Hence, due to the focus on either inland or coastal regions the dummy variable for *Coastal Region* is omitted from the two models. The coefficients in Column (1) and Column (2) indicate on similar results. The coefficients have not the same values, however, the effects are the same. There are two differences between the models; first, the coefficient *Unemployment Rate* assumes to have a positive effect on GRP in both inland and coastal provinces, however, the coefficient is only statistically significant in the model for coastal

provinces. Second, the *Export* coefficient for inland provinces is negative and statistically insignificant, while it is positive and statistically significant on a 1 per cent level for coastal provinces.

In order to test for multicollinearity, heteroscedasticity and autocorrelation several test were conducted. In the models for both inland and coastal areas, Table 5, the Breusch-Pagan and White's test indicate that there are heteroscedasticity in all four models. The Durbin-Watson tests for the models in Table 5, Column (1)-(4) predict positive autocorrelation for all regressions. In the regression analyses conducted for the inland and coastal regions separately, Table 7, Column (1) and Coumn (2), heteroscedasticity are present, since Breusch-Pagan and White's test for homoscedasticity fails. Due to the low value of Durbin-Watson, positive autocorrelation are detected in these two models as well.

5. Discussion

This research aimed to study the impact of the New Silk Roads and their effects on GRP in Chinese provinces. In order to answer the two research questions, forecasts as well as regression analyses were conducted. According to the results from the forecast models the GRP growth rates in the nine provinces are declining and will continue to decrease the next five years. To prove that the new initiative will have positive impact on the provinces regression models were conducted, and the models prove that several factors have a positive effect on GRP in the selected provinces.

5.1 Provinces

The forecasted growth rates follow more or less the same path in all nine provinces. The results from the regression analyses will have similar effects on all selected provinces. However, due to differences between the inland and coastal regions as well as special characteristics for each province short analyses for each province have been conducted.

5.1.1 Inland regions

Shaanxi

Shaanxi has witnessed drastic decrease in GRP growth the last years. The sharp drop in 2015 gives an increased growth rate with 13.51 per cent in 2016. Continuously, growth rates will decline the next five years, however, according to the empirical results the annual growth rate is still close to 6.5 per cent in 2020. As Xi'an is the initial hub for the Silk Road Economic Belt the city and Shaanxi are significant for the development of the initiative. Infrastructure development in the province will have an impact on Unemployment Rate, which together will have large positive effects on GRP. The large amount of tourists in the city of Xi'an, due to the historical site of the Terracotta Army, requires well-developed infrastructure as well as the tourism industry contributes to a higher GRP in the province.

Gansu

The forecasted rates in Gansu give similar results as the rates in Shaanxi. According to the retrieved data, Gansu witnessed a negative growth rate in 2015. These results give a sharp increase in forecasted GRP and forecasted growth rates in 2016, with a

growth rate of nearly 14 per cent. As one of the goals with OBOR relates to the people-to-people bonds the integration of ethnic groups are of high importance, due to disparities between Han Chinese and ethnic minorities. A suggestion for the provincial government is to work towards a more integrated society where all groups work together. Hence, a more integrated society can help to reach the goal of people-to-people bonds, as well as it might increase labour productivity, which according to the results have a positive impact on GRP in the region. As infrastructure network develops the tourism sector can improve, which has been discussed as an important sector for economic development in the province.

Ningxia Autonomous Region

Ningxia is rich in natural resources, if these were utilized in the right way the province could increase economic development, thus reduce inequality within the province. Expanded infrastructure network will increase GRP, however it will most likely also help to allocate natural resources, hence have a positive impact on the economic development. Reduced inequality will most likely increase GRP, this variable is not calculated for in the regression, but lower inequality might result in increased living standards for the most vulnerable people in the society. As mentioned, the Huis population receive support from Huis in other regions, which might be a reason for the inequality witnessed in the province. Better allocation of the received support might as well help to reduce inequality within the province. The growth rates in the province have been fluctuating the last decade, with rates over 25 per cent, however, the growth rate for coming years indicate on a decrease. A stagnated growth rate might as well contribute to more equal living standards in the entire province.

Qinghai

Qinghai has the advantage of being the source of some major rivers, hence, without too much effort inland waterways could be developed, thus have a positive impact on GRP. The variable *Inland Waterways* is not included in the regression analyses, however expansions of railways and highways have positive impacts on GRP, thus, development of inland waterways will most likely have similar outcomes. As discussed in the literature review, the infrastructure development is crucial for the economic development in the province. The length of waterways in the region has been the same the last twenty years, while the length of the highways have been

extended more than four times since late 1990s. Development of the inland waterways will most likely have a positive impact on employment rates, as well as on the environment, since shipping is a more environmentally friendly transportation mode than trucks. Lower carbon emissions can be connected to the OBOR goal of facilities connectivity; hence focus on transportation modes with lower emissions might help to achieve the goals of OBOR.

Xinjiang Uygur Autonomous Region

Xinjiang faces environmental challenges, due to drilling and refinery of natural gas and oil. OBOR promotes transportation and development of pipelines, which can be crucial for lowering environmental emissions in the province. As the most Western province in China, Xinjiang will play an important role as the last region on the Silk Road Economic Belt in China. Development of infrastructure as well as people-to-people bonds on the border to Kazakhstan will be significant for the entire project. The local government in Xinjiang has the potential to strengthen ties between China and countries in Central Asia, thus hopefully increase integration within the province as well. Increased integration within the province can result in less unrest and potentially increase GRP.

5.1.2 Coastal Regions

Fujian

Fujian was one of the first provinces to establish a SEZ in the beginning of the 1980s. By then Xiamen was the city of interest, but due to the start of the 21st-Century Maritime Silk Road is focus now on Quanzhou. Extensions of railways as well as highways in the entire province are crucial, however priority should lie within infrastructure connections to the port. Better infrastructure is needed due to the increased operation of the port in Quanzhou. The enhanced import and export connected to the province can relate to one of the goals of OBOR, unimpeded trade. Unimpeded trade will stimulate both growth and reduce the number of unemployed people. According to the results from the regression analyses, export will have a positive impact on GRP in the coastal provinces. The SEZ in Xiamen had an advantage of attracting foreign companies, which resulted in increased employment rates as well as increased trade in the region. Despite the lack of a SEZ in Quanzhou, the extended infrastructure due to OBOR as well as being the starting port on the

Maritime Silk Road will contribute to continuously economic development and increased GRP in the province.

Guangdong

The rich province of Guangdong has a relatively well-developed infrastructure network. However, according to the regression analyses railways and highways will have a positive impact on GRP, whereupon further infrastructure development is preferable. The rapid development of Shenzhen and Guangzhou has contributed to the high GRP in the province. The OBOR goal of financial integration can most likely be of focus in the province due to the proximity to Hong Kong and Macau. The advantage of easy access to a financial centre like Hong Kong might as well be an advantage for the internationalization of RMB. Export is a variable that might have a larger positive effect in Guangdong than other coastal provinces, due to the early establishment of three SEZs, as well as the rapid industry development in Guangzhou and Shenzhen. When exporting services and commodities, it will be preferable to do it in the domestic currency, in order to facilitate the internationalization of RMB.

Guangxi Autonomous Region

Guangxi has an advantage of the proximity to Vietnam, which can lead to increased export, thus increased GRP and GRP growth rates. As discussed in the literature review, the province has faced a surplus of work force, which can be seen in a relatively high unemployment rate compared to other coastal provinces. New projects related to the Maritime Silk Road could help reduce the surplus of workers. The surplus of workers might as well explain the positive effect of unemployment rate in Table 5, Column (4) and Table 7, Column (2). The unemployment rate is high even though the GRP increase, which can give a distorted result of the unemployment effect in GRP. The city of Guilin is not directly related to OBOR, however, the city receives large amounts of tourists every year, and since the tourism industry is labour intensive it can employ large amount of workers. Hence, the surplus of workers can be reduced, and the employed people can contribute to an increased GRP in the region. The length of railways in the province is already relatively extended compared to other provinces; however, extended railways will have a positive impact on GRP. Infrastructure development on the border to Vietnam might be of focus, better infrastructure in that area can increase trade between the two countries.

Hainan

Hainan is the smallest of all Chinese provinces; in 1988 the entire island became the fifth SEZ in China. According to the calculated forecasts, Hainan will have the highest growth rate of the coastal provinces and among the top three of all the selected provinces. Actual GRP is still among the lowest, which makes sense since the island is much smaller and less populated than other provinces. As mentioned, Hainan has possibilities to increase GRP due to the tourism industry. Infrastructure development, such as railway expansion and port development can increase the accessibility for tourists from Mainland China as well as from neighbouring countries. Expansion of infrastructure will not only increase opportunities for tourists, it will as well increase the capacity for trade related to OBOR, hence have a positive impact on GRP.

5.2 Economic Development and Special Economic Zones

The results from the regression models, presented in Table 7, over inland provinces and coastal provinces give almost the same result. The similar results in the regressions and the forecasted GRP growth rates indicate that there are similarities within China, even though there have been huge gaps between inland and coastal areas in the last decades. The gaps in GRP between the areas can be studied in Figure 4 and Figure 5, in which the columns represent the GRP in each province. Studying the *Coastal Region* variable in isolation, Table 5, Column (4), GRP is 254 285.375 million Yuan higher in coastal areas compared to inland areas. However, the effects of the different coefficients in Table 7 have similar impacts on GRP. The lower R^2 in the column for inland provinces, Table 7, Column (1) indicates that other independent variables explain GRP in these regions. Hence, the model for inland provinces might miss some key variables that explain GRP.

According to the regression analysis, Table 5, Column (4) export has a positive impact on GRP. Export has overall a positive impact on GRP, but in Table 7 the Export coefficient has only a positive effect on coastal provinces. The SEZs and the proximity to ASEAN countries might be a reason for the positive impact of export in coastal regions and negative, insignificant result in inland regions. Hence, it could be assumed that export is not as important for inland regions as for coastal regions. Countries neighbouring inland provinces in China are still less developed than countries close to China's coastal provinces. Less developed countries tend to import

less than developed countries, which might explain the lower export rates in inland provinces than in coastal provinces. However, with the increased connections to countries in Central Asia, such as Kazakhstan, inland provinces have potential to increase export, hence, increase the impact and significance for export in inland provinces, as well as increase actual GRP in these regions. However, the inland provinces are still far behind the GRP level in coastal regions.

Growth rates are decreasing, not only in China, but also in developed countries and regions all over the world. China's annual GDP growth rate for 2016 was estimated to 6.7 per cent, which indicates on a lower growth rate than in the provinces forecasted for, Appendix 1, Table 8 and Table 9. The results from the forecasts indicate on higher growth rates in 2016 in inland provinces than in coastal provinces. Over the five years calculated for, the growth rates are smoothing and the growth rates are similar for the nine provinces in 2020. If OBOR proceeds as planned, growth rates will most likely be higher than expected, however, the rates are much lower than the growth rates experienced in the SEZs in the beginning of the 1980s.

The environment within the Special Economic Zones was in the beginning of 1980s new and special, which attracted numerous foreign enterprises. Enterprises were offered lower taxes and invested large amount of money in these zones, which can explain the rapid development within the zones. The incredible annual growth rate of 58 per cent in Shenzhen was concentrated to that specific city, which gives a distorted picture of the growth rate in the entire province. The forecasted growth rates in this study are average growth rates in a province, which gives a lower rate than if it is concentrated to a specific city. However, the provinces can still learn from the rapid development of the SEZs. In order to stimulate growth in the nine selected provinces, local government might take a closer look at the success factors of the SEZs. As mentioned in the literature review, three factors were heavily important for the rapid development in China; (1) the increased number of non-government owned sectors and enterprises, (2) the increased openness to other countries and the increase of international trade, (3) the increased human capital accumulation. These factors could be considered when promoting development and growth in the Western and less developed regions in the country.

The shift of going from a planned economy towards a market economy required well-functioned institutions and substantial work with the development of policies. One of the major goals related to OBOR is policy coordination, which can be

related to the policy changes made in connection to the establishment of the SEZs. Due to the ambitious project of OBOR the goal of policy coordination is important in order to decrease the risk of political crises. Hence, well-developed policies and well-functioned institutions in the provinces related to OBOR are of importance. Since, more or less all provinces will be affected by the initiative in the long run, provincial governments should have close cooperation with Xi Jinping and the government. Policy coordination in relation to OBOR will most likely have an indirect effect on GRP growth, since provincial government might employ people in order to inquiry how to improve policies in connection to the new Silk Roads. Hence, increased amounts of employed people will reduced unemployment rates and have positive effects on GRP.

By the time of the establishment of the SEZs, China had very limited connections to the outside world. The contrasts of going from total isolation to heavy focus on FDI and export resulted in significant increase in growth rates. Infrastructure development within the zones was crucial for the attraction of foreign enterprises. Expansion of the infrastructure network can be in line with the development of infrastructure related to OBOR. The regression analyses indicate that both railways and highways are of importance for future growth and development of GRP in the specific provinces. As mentioned, FDI were behind the rapid economic development in the SEZ, however it was also of importance that foreign enterprises had good connections with Chinese companies. Hence, the OBOR goal related to people-to-people might be connected to the importance of good connections and integration in the SEZs. When infrastructure network develops in accordance to OBOR, it might be of interest to include foreign enterprises in some projects.

China has still relatively cheap labour, however, quality and skills of the labour are still behind other more developed countries. Hence, infrastructure projects might learn and benefit from foreign companies working within infrastructure development sectors. More skilled labour can be connected to the variable of Labour Productivity in the regressions. Thus, if foreign companies can support and increase the quality of labour, the productivity might increase and therefore increase GRP. The unskilled workforce might continue with labour intensive production and increase the amount of products that can be exported. Thus, the possibilities of fulfil the goal concerning unimpeded trade increase.

After the agriculture reform and the establishment of the SEZs, farmers as well as local governments in the SEZs experienced increased responsibilities and power. The agriculture sector experienced rapid economic development after the reformation of the sector, which as well was the case for the SEZs. The experienced development in the SEZs as well as in the agriculture sector can be related to the expected purpose of OBOR. Hence, the Chinese government might increase responsibility and power of provincial governments in order to affect and stimulate the development.

5.3 Sustainable Growth

Even though railways and highways have positive effects on GRP it is important that the process and development of the new initiative take time and not expand too fast. As discussed in the literature review, the gradually transformation of the Chinese economy in the late 1970s was crucial for the success. The importance of implementing infrastructure projects step-by-step might therefore have key roles when expanding railways and highways in the provinces connected to OBOR.

According to the discussion regarding broad-based growth the researcher has included infrastructure as well as productivity and export variables to show that several sectors impact GRP. The correlation matrix, Table 6, concludes that the variables included in the regression analyses contribute to GRP. More or less everything in the society can contribute to an increased GRP; however, projects that are spread over numerous sectors will be good for growth and development. If one sector in a region faces difficulties one year, another sector can contribute to an increased GRP that year. Due to the broad-based growth discussion, one interesting variable to look at could have been ethnic groups, and how the diversity of people impact GRP. As discussed in the literature review, some inland provinces face problems with disputes between ethnic groups, hence, focus on people-to-people bonds and increased integration among the different groups might have a positive effect on GRP.

As discussed in the literature review, when growth in China decreases by one percentage point, other countries can expect a decline in their GDP growth with up to 0.3 per cent. Since OBOR aims to increase trade, with the goal of unimpeded trade, it is not only Chinese provinces that will take advantage of the increased trade. Over 100 countries, regions, and organizations are already connected to the initiative,

which all might benefit from the initiative. Since China has huge impacts on other countries, the potential success of OBOR will have positive effects on other countries and organizations. As seen in the regression analyses, infrastructure projects and export have positive impacts on GRP growth; hence, OBOR will benefit economies in the region. This study covers mainly nine selected provinces, however, the results can most likely be applied to other Chinese provinces and countries along to roads.

As discussed for some of the provinces, tourism can have a positive impact on GRP; this can be applied to other provinces as well. Hence, infrastructure development in connection to OBOR will of course increase GRP as it is, but also ease access and opportunities for tourists travelling in China. As discussed, the tourism industry is a labour intensive sector, which can employ large amount of people as well as contribute to an increased GDP.

The coefficient of Unemployment Rate has a negative relationship, with all other variables in this study, Table 6; however, the coefficient in the optimal model Table 5, Column (4) gives a positive effect on GRP. This gives a distorted result since unemployment should have a negative effect on GRP. In Column (3) the coefficient over Unemployment Rate indicate on a negative effect on GRP, hence when all variables are included in the model the unemployment coefficient gives misleading results. In Table 7, Column (1) the coefficient for Unemployment Rate is statistically insignificant, while it is significant in Column (2). This might indicate on larger impacts of unemployment rates in inland regions than on GRP in coastal regions. The higher GRP in coastal regions, and the historical reasons that GRP has increased even though unemployment rates have increased, might explain the distorted coefficient.

According to the Chinese government, several million jobs were created in urban areas last year, and more jobs will be created this year. Some of the created jobs in urban areas might be connected to OBOR, however, it seems like jobs would have been added even without OBOR. Since the correlation matrix, Table 6, indicates on a negative relationship between GRP and unemployment rates, new jobs in urban areas will increase GRP. Hence, newly created jobs connected to OBOR as well as other jobs created by the government, will increase GRP and GRP growth rates in China.

The amount of factors that will contribute to increased GRP growth will always change and not contribute equally over time. According to the results from the regression analyses, when adding variables to the model, the results change. Adding more money to projects related to OBOR will enhance the results of the projects, as

long as money is used in the right way. Projects can receive funding from either AIIB or the Silk Road Fund to build up or improve infrastructure projects. As the New Silk Roads develop and GRP increases in the provinces, other projects related to OBOR might be of interest. Since environmental emissions have been a burden for China due to industries and heavy traffic in major cities, projects related to the reduction of environmental emissions might be of interest to local governments. Heavy traffic and emissions are usually problems in big cities; however, it might be problems for other areas as well due to the increased amount of export as well as expansion of highways. A suggestion is therefore to focus on projects that will prioritize reduction of environmental pollutions. If China as a leading nation within OBOR focuses on reducing emissions, other countries might follow, which would be great progress for the world's environment. In addition, due to environmental aspects and opportunities to reduce emissions, there are reasons to focus on expanding railways rather than highways.

A business as usual model will most likely continue to indicate on a stagnated growth rate in China. As discussed by Xi Jinping, China had to do something in order to stimulate economic growth. As Figure 4 and Figure 5 indicate, growth rates will continue to decrease, which could lead to that China goes even deeper in the middle-income trap. The increasing ageing population will increase social costs; hence public projects, related to OBOR can increase tax revenues and might help solving some of the problems related to the middle-income trap. Thus, infrastructure projects and trade will be of great significance for economic development in China, with potential spill over effects to neighbouring countries and regions.

Holding everything as it is will most likely increase GDP in China, since GDP usually increases in a country or region every year. The rate of GDP growth is different and can decrease even though actual GDP increases. According to the forecasts, GRP growth rates are decreasing. Hence, it is of high importance that the infrastructure projects related to OBOR help to stimulate growth in China. The estimated Export coefficient in Table 5, Column (4) has a low impact on GRP. Since export from China will continue whether or not OBOR will develop, export will continue to have a low effect. Hence, in a business as usual model, without expansion of infrastructure due to OBOR, export might be one of few factors contributing to an increased GRP. The importance of infrastructure expansions as well as development of other factors that can increase GRP is therefore significant for further development.

As discussed earlier, when estimating the effect of the Coastal Region dummy variable, provinces located on the East coast have higher GRP than other provinces. This might as well indicate on the business as usual model and that without any other variables, the gap as well as inequality between inland and coastal provinces will increase even further.

5.4 Major Goals of OBOR

As mentioned in the literature review OBOR consists of five major goals, (1) Policy Coordination, (2) Facilities Connectivity, (3) Unimpeded Trade, (4) Financial Integration, and (5) People-to-People Bonds. As discussed due to the empirical results of this study, the goals of OBOR have the potential to be fulfilled. Policy Coordination can be achieved through the strengthening of policies and great communication between governments at provincial level and national level. The suggested focus on railways in order to lower environmental emissions fulfils the goal of Facilities Connectivity. Furthermore, Unimpeded Trade is connected to the substantial focus on export and trade. As export increase, the internationalization of the currency can increase; hence achieve the goal of Financial Integration. With increased trade as well as better policy coordination the goal of People-to-People Bonds can succeed. There are as well other factors within each of the goals; however, this study can prove that some aspects of each goal can be fulfilled.

As well as there are other factors that can contribute to achieve the goals of OBOR; aspects excluded from this study can affect GRP in the selected provinces. According to the empirical results, railways will have a significant effect on GRP in the Chinese provinces. The fact that a province is located on the East coast has as well significant impact on GRP. Highways, lower unemployment rates, labour productivity, and export will as well contribute to increased GRP in the provinces. As well as these variables will have effects on GRP; OBOR will have effects on these factors. Since OBOR is in it initial stage, it is difficult to predict future outcomes. Hence, it can be assumed that OBOR together with the factors that have an impact on GRP will stimulate growth and push the development even further. Thus, the initiative will stimulate growth and overall have a positive impact on GRP growth in Chinese provinces.

6. Conclusions

In 1978, China started its opening-up process towards the rest of the world. The country has witnessed incredible GDP growth rates during the last decades and in 2010, China became the second largest economy in the world. However, after the global financial crisis in 2008, the Chinese economy has experienced diminishing growth rates. Due to decelerated growth rates and with the pursuit to increase control over the world economy, President Xi Jinping launched the initiative regarding the New Silk Roads in September 2013. The initiative 'One Belt, One Road' aims to stimulate the domestic as well as the global economy, and increase connections between countries along the roads. The majority of the Chinese provinces will be affected by the initiative in someway, however, the Silk Road Economic Belt and 21st-Century Maritime Silk Road have direct effects on nine provinces.

This research aimed to study the impact of OBOR and its effects on GRP growth in Chinese provinces. Hence, this study has analysed growth rates in China and factors that have an impact on GRP. The study has as well answered the following research questions:

1. *How will the new initiative 'One Belt, One Road' impact GRP growth in Chinese provinces that are directly affected by the strategy?*
2. *Which factors will have significant effects on GRP in the selected Chinese provinces?*

According to the empirical results of this study, projects related to OBOR will have positive impacts on GRP, thus affect the GRP growth and GRP growth rates in Chinese provinces. The conducted forecasts indicate on decelerated GRP growth rates for the coming years, 2016 to 2020, however the forecasts are calculated from historical data, without knowledge of OBOR. In order to prove that OBOR will have a positive effect on GRP, regressions analyses were conducted. Several factors have an impact on GRP; however, this study focused on six variables related to OBOR and infrastructure projects.

According to the coefficients from the regression analyses, expansion of railway will have a large impact on GRP in the selected provinces. GRP is also highly affected by the coefficient for Coastal Region; hence if a province is located on the East coast, the province will witness higher GRP. Highway, Labour Productivity and

Export have as well positive impact on GRP, hence not as significant as Railway and Coastal Region. Unemployment Rate is negatively correlated with all other variables; however, the coefficient in the optimal model gives a positive effect on GRP, which might be explained by higher GRP in coastal regions than in inland regions. Due to the empirical results of this study, China should focus on expanding the railway network since it has a higher impact on GRP than highway constructions, as well as it has a better impact on the environment. OBOR is still in its initial face, which makes it difficult to give an exact clue about the future development of this great initiative.

6.1 Limitations

There are some limitations of this research; since the initiative of OBOR is relatively new the research related to this topic is limited. The data used in this study was retrieved from National Bureau of Statistics of China, which seems to be a valid source for the provinces. Other databases, such as OECD and The World Bank, lacked statistics over the specific provinces; hence National Bureau of Statistics of China was used. However, the analyses are based on the data with the knowledge of potential bias in the data. As mentioned, some statistics were missed out for some years, which could have increased the amount of variables, hence improve the study and strengthen the knowledge about aspects that have an effect on GRP.

6.2 Future Research

During this study, the researcher has gained knowledge about economic development in China as well as potentials for future growth in the country. Several fields of study have been encountered, which could be of interest for future research. In order to continue and deepen this research it would be of interest to study and compare the effects of OBOR in provinces directly affected by the initiative and provinces indirectly affected. Hence, keep the dataset that has been used for these regressions, and add data for provinces indirectly related to OBOR. It could be of interest to study how much the *Coastal Region* coefficient differs between inland provinces connected to OBOR and inland provinces outside OBOR, as well as the differences between coastal regions directly or indirectly affected by the initiative. It could as well be of interest to add further variables to the regression models, such as *Inland Waterways* and *Ethnic Groups* since these factors play relatively large roles in inland provinces.

7. References

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Appendix 1

Table 8. GRP in Million Yuan and Percentage GRP Growth Rates, Inland Provinces, 2006-2020

	Inland									
	Shaanxi		Gansu		Ningxia		Qinghai		Xinjiang	
Year	GRP	% GRP Growth Rate	GRP	% GRP Growth Rate	GRP	% GRP Growth Rate	GRP	% GRP Growth Rate	GRP	% GRP Growth Rate
2006	4 743.61		2 277.35		725.90		648.50		3 045.26	
2007	5 757.29	21.37	2 703.98	18.73	919.11	26.62	797.35	22.95	3 523.16	15.69
2008	7 314.58	27.05	3 166.82	17.12	1 203.92	30.99	1 018.62	27.75	4 183.21	18.73
2009	8 169.80	11.69	3 387.56	6.97	1 353.31	12.41	1 081.27	6.15	4 277.05	2.24
2010	10 123.48	23.91	4 120.75	21.64	1 689.65	24.85	1 350.43	24.89	5 437.47	27.13
2011	12 512.30	23.60	5 020.37	21.83	2 102.21	24.42	1 670.44	23.70	6 610.05	21.56
2012	14 453.68	15.52	5 650.20	12.55	2 341.29	11.37	1 893.54	13.36	7 505.31	13.54
2013	16 205.45	12.12	6 330.69	12.04	2 577.57	10.09	2 122.06	12.07	8 443.84	12.50
2014	17 689.94	9.16	6 836.82	7.99	2 752.10	6.77	2 303.32	8.54	9 273.46	9.83
2015	18 021.86	1.88	6 790.32	- 0.68	2 911.77	5.80	2 417.05	4.94	9 324.80	0.55
Forecasts										
2016	20 456.79	13.51	7 730.27	13.84	3 282.63	12.74	2 688.02	11.21	10 459.98	12.17
2017	22 085.44	7.96	8 294.23	7.30	3 541.72	7.89	2 898.52	7.83	11 241.36	7.47
2018	23 714.09	7.37	8 858.19	6.80	3 800.80	7.32	3 109.02	7.26	12 022.75	6.95
2019	25 342.74	6.87	9 422.15	6.37	4 059.88	6.82	3 319.52	6.77	12 804.13	6.50
2020	26 971.39	6.43	9 986.11	5.99	4 318.96	6.38	3 530.02	6.34	13 585.52	6.10

Table 9. GRP in Million Yuan and Percentage GRP Growth Rates, Coastal Provinces, 2006-2020

	Coastal							
	Fujian		Guangdong		Guangxi		Hainan	
Year	GRP	% GRP Growth Rate	GRP	% GRP Growth Rate	GRP	% GRP Growth Rate	GRP	% GRP Growth Rate
2006	7 583.85		26 587.76		4 746.16		1 056.67	
2007	9 248.53	21.95	31 777.01	19.52	5 823.41	22.70	1 254.17	17.69
2008	10 823.01	17.02	36 796.71	15.80	7 021.00	20.57	1 503.06	19.85
2009	12 236.53	13.06	39 482.56	7.30	7 759.16	10.51	1 654.21	10.06
2010	14 737.12	20.44	46 013.06	16.54	9 569.85	23.34	2 064.50	24.80
2011	17 560.18	19.16	53 210.28	15.64	11 720.87	22.48	2 522.66	22.19
2012	19 701.78	12.20	57 067.92	7.25	13 035.10	11.21	2 855.54	13.20
2013	21 868.49	11.00	62 474.79	9.47	14 449.90	10.85	3 177.56	11.28
2014	24 055.76	10.00	67 809.85	8.54	15 672.89	8.46	3 500.72	10.17
2015	25 979.82	8.00	72 812.55	7.38	16 083.12	2.62	3 702.76	5.77
Forecasts								
2016	28 034.86	7.91	77 956.47	7.07	18 124.89	12.70	4 059.90	9.65
2017	30 154.01	7.56	83 147.97	6.66	19 495.21	7.56	4 374.41	7.75
2018	32 273.17	7.03	88 339.46	6.24	20 865.53	7.03	4 688.92	7.19
2019	34 392.32	6.57	93 530.96	5.88	22 235.84	6.57	5 003.43	6.71
2020	36 511.48	6.17	98 722.45	5.55	23 606.16	6.16	5 317.94	6.29

Appendix 2

Table 10. Spearman's Correlation Matrix, Inland Provinces

Variable		GRP (Million Yuan)	Railway (km)	Highway (km)	Unemployment Rate (%)	Labour Productivity	Export
GRP (Million Yuan)	Correlation Coefficient	1	0.855**	0.890**	–0.392**	0.761**	0.939**
	Sig. (2-tailed)	-	0	0	0	0	0
Railway (km)	Correlation Coefficient	0.855**	1	0.915**	–0.492**	0.470**	0.785**
	Sig. (2-tailed)	0	-	0	0	0	0
Highway (km)	Correlation Coefficient	0.890**	0.915**	1	–0.502**	0.664**	0.807**
	Sig. (2-tailed)	0	0	-	0	0	0
Unemployment Rate in Urban Areas (%)	Correlation Coefficient	–0.392**	–0.492**	–0.502**	1	–0.276**	–0.257**
	Sig. (2-tailed)	0	0	0	-	0.005	0.01
Labour Productivity (Yuan/person-year)	Correlation Coefficient	0.761**	0.470**	0.664**	–0.276**	1	0.703**
	Sig. (2-tailed)	0	0	0	0.005	-	0
Export (1000 USD)	Correlation Coefficient	0.939**	0.785**	0.807**	–0.257**	0.703**	1
	Sig. (2-tailed)	0	0	0	0.01	0	-

100 observations for all correlations

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 11. Spearman's Correlation Matrix, Coastal Provinces

Variable		GRP (Million Yuan)	Railway (km)	Highway (km)	Unemployment Rate (%)	Labour Productivity	Export
GRP (Million Yuan)	Correlation Coefficient	1	0.702**	0.953**	–0.224*	0.740**	0.956**
	Sig. (2-tailed)	-	0	0	0.046	0	0
Railway (km)	Correlation Coefficient	0.702**	1	0.806**	0.043	0.518**	0.534**
	Sig. (2-tailed)	0	-	0	0.703	0	0
Highway (km)	Correlation Coefficient	0.953**	0.806**	1	–0.203	0.625**	0.879**
	Sig. (2-tailed)	0	0	-	0.071	0	0
Unemployment Rate in Urban Areas (%)	Correlation Coefficient	–0.224*	0.043	–0.203	1	–0.193	–0.309**
	Sig. (2-tailed)	0.046	0.703	0.071	-	0.086	0.005
Labour Productivity (Yuan/person-year)	Correlation Coefficient	0.740**	0.518**	0.625**	–0.193	1	0.621**
	Sig. (2-tailed)	0	0	0	0.086	-	0
Export (1000 USD)	Correlation Coefficient	0.956**	0.534**	0.879**	–0.309**	0.621**	1
	Sig. (2-tailed)	0	0	0	0.005	0	-

80 observations for all correlations

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix 3

Table 12. Summary Statistics, Inland Provinces

Variable	Obs.	Mean	Std. Dev.	Min	Max
GRP (Million Yuan)	100	312042.9	376978	18417	1802186
Railway (km)	100	2290	1165.454	700	5900
Highway (km)	100	68957	52652.43	8700	178300
Unemployment Rate in Urban Areas (%)	100	3.757	0.87977	2.1	7.4
Labour Productivity (Yuan/person-year)	100	74845.8	110634.1	6771	393860
Export (1000 USD)	100	3372920	5243206	86860	23500000

Table 13. Summary Statistics, Coastal Provinces

Variable	Obs.	Mean	Std. Dev.	Min	Max
GRP (Million Yuan)	80	1231158	1629959	38968	7281255
Railway (km)	80	1895	1156.479	200	5100
Highway (km)	80	79982.5	54152.64	14900	216000
Unemployment Rate in Urban Areas (%)	80	3.20125	0.66246	1.7	4.3
Labour Productivity (Yuan/person-year)	80	84537.04	128396.9	7374	456397
Export (1000 USD)	80	90600000	166000000	658490	6.46000000