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Enormous Benefits of Express Rail Link Conducive to the Long-term Development of Hong Kong

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When the Guangzhou-Shenzhen-Hong Kong Express Rail Link ("XRL") begins to run in the third quarter of 2018, it will connect with the 25,000-km National high-speed Railway Network. The Hong Kong SAR government has released the implementation of co-location of customs, immigration and quarantine ("CIQ") facilities ("co-location arrangements") in Kowloon West Station, which makes preparation for the operation of XRL in one year and marks the countdown of the High-speed Rail era in Hong Kong. For Hong Kong, the operation of Express Rail not only means another option of travel for the public. More importantly, it is a strategic project with comprehensive benefits of economy, society, culture and geographical advantages, which is worthy of in-depth analysis and interpretation.

I. Enormous direct economic benefits

It should be noted that the construction of an Express Rail linked to the Mainland is a result of the proactivity of the Hong Kong SAR government. The Hong Kong section of the Express Rail originated from the concept of "Regional Express" proposed by the SAR Government in the late 90s of last century. It was mainly used to link the Kowloon urban area and the boundary. The Hong Kong Transport and Housing Bureau issued the 'Railway Development Strategy 2000' in May 2000, proposing six new rail corridors, which included a Regional Express Line (REL) between the Boundary and Hung Hom. In 2001, the Hong Kong SAR government began to discuss with the Shenzhen government as well as the Ministry of Railways (China) the possibility of constructing a regional express rail with magnetic levitation technology. In January 2002, interested parties reached a consensus on the design and coordination of the regional express rail. The central government subsequently set up a project for it and formally named it The Guangzhou-Shenzhen-Hong Kong Express Rail Link. Following two years of in-depth discussion and repeated comparison and the State Council's approval of the first "Mid-long Term Railway Network Plan" in early 2004 proposing the construction of the four vertical and four horizontal passenger lines of over 12,000 km including Hong Kong, parties concerned finally decided to adopt a more mature high-speed wheel rail scheme for the XRL. The first section of the high-speed rail link from Guangzhou (South) to Shenzhen (North) began construction in December 2005 and was officially opened at the end of 2011. The second section from Shenzhen (North) to Futian also ran smoothly in 2015.

The Hong Kong section is the third section of XRL. Due to a variety of local resistance, it didn't get funding from the Legislative Council to begin construction till January 2010. Its construction time was four years and one month later than the first section, while the launch will be seven years later. However, the Hong Kong section is going to begin operation in the near future, and enormous benefits will gradually emerge. We first look at the direct economic benefits of high-speed rail.

First is the time saving for passengers. According to the Transport and Housing Bureau, generally speaking, in estimating the direct economic benefits of a transport infrastructure, we

refer to the cost savings due to time savings of passengers, the cost savings in the operation of other public transport modes and the cost savings due to accident reduction. In the case of XRL, the majority (more than 95%) of the direct economic benefits come from the cost savings due to passenger time savings. According to the estimation of the Bureau's transportation model, the Hong Kong section can save each passenger 1.16 hours per trip, which translates into 39 million hours per year for all passengers. The benefits due to passenger time savings assuming 50 years of operation would be about $90 billion (Hong Kong dollar, the same below. The discount rate is 4%). Adding induced/additional patronage brought by the high-speed rail services, (making reference to global experience from France, Spain and Sweden, induced/additional patronage due to the commissioning of high speed rail could reach as much as 20% or even 30% of the overall patronage. At the end of 2016, residents in the four big cities along XRL reached 41.58 million, while total population of The Guangdong-Hong Kong-Macau Greater Bay Area is close to 67 million. The patronage is estimated to grow exponentially) expected time saving by passenger could increase to $108 billion, exceeding the construction cost of the Hong Kong section of $86.42 billion.

Second is the operating income and surplus value of XRL. According to the initial estimate of Transport and Housing Bureau, the operating revenue includes fare revenue and non-fare revenue. The former is based on the patronage forecast and the assumed revenue sharing, the later includes railway-related commercial activities such as advertising, kiosks, rental income of telecommunication facilities, etc. If the Hong Kong section were to operate in 2015, the operating profit would have been $1.12 billion in 2016 and increase to $2.06 billion and $3.61 billion by 2021 and 2031 respectively. Although the actual operation time is three years later than expected, the estimate remains valid. If the Hong Kong section runs smoothly in next year's autumn, under the assumption of 50-year operation, the discounted operating benefits is roughly $123 billion. In addition, at the expiration of 50-year operation, the government estimates the remaining value of the Hong Kong section at $31 billion. Adding the discounted operating benefits, values of the high-speed rail total $152 billion.

Meanwhile, though the updated Economic Internal Rate of Return ("EIRR") of the Hong Kong section was reduced from 6% to 4%, it remained higher than the social discount rate of 4% (if EIRR is higher than 4%, the project is regarded as feasible) and also higher than the overall economic internal rate of return of 2% of the seven new local railway projects proposed by the government in the 'Railway Development Strategy 2014'. In other words, the project can continue to operate and is unlikely to suffer operating losses or require cash subsidies.

Summing up the two items mentioned above, direct economic benefits of the Hong Kong section of XRL can reach $260 billion, three times the cost of construction. However, it should be borne in mind that using the EIRR to estimate the benefits of the XRL project presents only part of the picture and is in fact conservative, since the other direct economic benefits such as the cost savings in the operation of other public transport modes, the cost savings due to accident reduction and the time saving of induced/additional patronage have not been taken into account.

II. Even greater indirect economic benefits

The XRL also generates considerable indirect economic benefits. Convenient transportation strengthens the position of Hong Kong as the Southern Gateway to the Mainland and deepens the co-operation between Hong Kong and the Mainland, especially by serving the Guangdong-Hong Kong-Macau Greater Bay Area and One Belt One Road construction. This helps enhance the overall competitiveness of Hong Kong, consolidating the status of Hong Kong as a multifunctional international center. Indirect economic benefits can be observed from the following three aspects.

From the first aspect, the Express Rail connects Hong Kong and Shenzhen, opening a new era of urban integration. It only takes 14 minutes from central Kowloon West to the center of Shenzhen Futian by Express Rail, which is more convenient than taking the subway in the same city. This saves much time on transportation between these two places and is conducive to economic and urban integration. As is well known, Hong Kong and Shenzhen have experienced two stages of cooperation in processing trade and modern service since China's reform and opening up. Earlier this year, the launch of the "Hong Kong Shenzhen innovation and Technology Park" is a new breakthrough of the cooperation between the two cities, marking a new stage of cooperation in technology innovation. With the establishment of world-class platforms of technology, financial innovation and logistics, Hong Kong and Shenzhen will continue to be the main driving force of the Guangdong-Hong Kong-Macau Greater Bay Area, which will become another top international region similar to "New York + San Francisco".

From the second aspect, Express Rail will shape Hong Kong and the Pearl River Delta into a one-hour economic circle, creating a Greater Bay Area with high agglomeration effect and comprehensive competitive advantages. After the operation of the Hong Kong section, it will take merely 48 minutes from West Kowloon to Guangzhou (South) and only 0.5-1.5 hours to Dongguan, Huizhou, Foshan, Zhongshan, Zhaoqing and other Pearl River Delta Cities, which greatly facilitates trade and personnel exchanges in the area. According to the patronage forecast by the Transport and Housing Bureau, daily two-way patronage between West Kowloon and Shenzhen/Humen/ Guangzhou accounts for 84.5% of total patronage of the Hong Kong section. This means the value of time savings of passengers will be concentrated in the Greater Bay Area, which helps promote smooth exchanges in trade, capital, and information, paving a development path of openness, innovation, high-end industry, modern service, and quality life for Greater Bay Area. Planning for the Guangdong-Hong Kong-Macau Greater Bay Area is under way now. As the Greater Bay Area leads the nation in the opening and development, keeps pace with other world-class Bay Areas in economic activities scale, has high degree of marketization and the advantage of "one country, two systems" as well as competitive production factors and industrial clusters, it is believed that Express Rail can turn these advantages into impetus for development, helping the Greater Bay Area better allocate domestic and overseas resources, and accelerating its move towards a world-class Bay area.

From the third aspect, Express Rail promotes trade cooperation and personnel exchanges between Hong Kong and the broader region beyond the Pearl River Delta. Express Rail will form an advantageous four-hour economic circle, covering Guangdong province and major cities of Pan-pearl River Delta such as Xiamen, Nanchang, Nanning, Changsha, etc. Pan-pearl River Delta is a huge consumer market with a total population of more than 200 million. Meanwhile, it takes only 8-9 hours from Hong Kong to Shanghai and Beijing by Express Rail, conducive to economic and trade cooperation between Hong Kong and the Yangtze River Delta as well as the Beijing-Tianjin-Hebei area. In addition, China and its neighboring countries are constructing cross-border railways, such as the China-Laos Railway, Chinese-Thai Railway and the Railway from Beijing to Moscow, etc. In the future, Hong Kong can connect to overseas high-speed rail via Mainland's express rail network, facilitating Chinese enterprises' investment in countries along "One Belt One Road" and strengthening Hong Kong's status as a super-connector as well as a primary offshore service center.

This shows that after the operation of the Hong Kong section of XRL, Hong Kong's tourism, trade, logistics, retail sales, and financial and professional services will greatly benefit, thereby contributing to the long-term economic development of Hong Kong. Take tourism as an example, the connection of Express Rail is conducive to developing a "point to point" tourism mode, bringing more Mainland tourists to Hong Kong, which will help reverse the current decline in Mainland

tourists. According to travel agencies, half of the Mainland tour groups to Hong Kong by land will be converted to Express Rail after the operation of XRL, and the retail, catering and hotel industries in Hong Kong are expected to return to growth. At the same time, local residents (there were 81 million visits to the Mainland last year) and 15 million overseas tourists can also travel to hundreds of Mainland cities along the rail line starting from Hong Kong. Take trade as another example. With the implementation of the Greater Bay Area planning, by 2025, the economy of the Greater Bay Area is expected to reach US$2.5 trillion and exceed the Tokyo Bay Area, becoming the world's largest Bay Area. At that time, total trade volume in the area will reach US$3 trillion or above, significantly increasing various business support services.

III. "Co-location arrangements" is the best choice

In addition to considerable economic benefits, Express Rail will also create huge social benefits on top of considerable economic benefits. Details of social benefits are listed as follows:

Firstly, it creates a large number of job opportunities for Hong Kong. According to the Transport and Housing Bureau, on average about 5,500 employment opportunities were provided during the construction period of the XRL project. When the XRL comes into operation, it will provide 10,000 employment opportunities related to railway operation, maintenance, station management, catering, retails, boundary control, etc. If there are 10% additional Mainland tourists during the five years after operation, at least 15 thousand employment opportunities will be created. As the Express Rail could drive other economic activities and increase employment, it is expected more than 30 thousand jobs can be created for Hong Kong, benefiting laborers of different industries, education and skills.

Secondly, it brings considerable environmental benefits for Hong Kong. Compared with other cross-border vehicles, Express Rail is one of the most energy-efficient and environment-friendly transportations. At present, Mainland's high-speed train with speed of 350km per hour is the most energy-efficient land transport, consuming only one-sixth as much energy as cars and one-fifth as much as aircrafts. According to the Transport and Housing Bureau, it is expected 4700 tons of carbon dioxide emissions can be reduced annually after the operation of Hong Kong section. Meanwhile, there was no waste discharge during the journeys, and dust, soot, other emissions and noise pollution are nearly eliminated, protecting the ecological environment.

Thirdly, it helps balance urban development. Core business districts have always been too concentrated in Hong Kong, causing serious traffic congestion, noise pollution and air pollution. The terminus of the Hong Kong section is located in West Kowloon, which can greatly strengthen the development of public facilities in the district, including 6 hectares of public space and green Pedestrian Street, and reduce the pressure of the core business districts. In addition, the railway station sits near West Kowloon Cultural District and can bring synergies. More passengers enthusiastic about art and culture will come to enjoy the shows by Express Rail, which would be helpful to the development and growth of Hong Kong's culture and innovation industry.

It is worth noting that the economic and social benefits of Express Rail mentioned above depend mainly on the "co-location arrangements". Failing to adopt the "co-location arrangements", the efficiency of the Express Rail will be greatly reduced, and the comprehensive economic benefits mentioned above will be difficult to achieve. In fact, currently the high speed train stations in the Mainland do not have any established clearance facilities. Adopting separate-location model or other models are not realistic and at that time abandoning the Express Rail could be the likely result, which will result in billions of dollars in losses. Obviously, "co-location arrangements" is a key complement rather than an alternative option for Hong Kong Express Rail to realize its benefits.

主要經濟指標(Key Economic Indicators)

一. 本地生產總值 GDP	2015	2016	2016/Q1	2017/Q2
總量(億元) GDP($100 Million)	22,464	23,586	6,285	6,270
升幅(%) Change(%)	2.4	1.9	4.3	3.8
二. 對外貿易 External Trade			**2017/6**	**2017/1-6**
外貿總值(億元) Total trade($100 Million)				
港產品出口 Domestic exports	469	429	37	208
轉口 Re-exports	35,584	35,454	3,257	17,760
總出口 Total exports	36,053	35,882	3,294	17,969
進口 Total imports	40,464	40,084	3,777	20,253
貿易差額 Trade balance	-4,411	-4,201	-483	-2,285
年增長率(%) YOY Growth(%)				
港產品出口 Domestic exports	-15.2	-8.5	2.4	3.2
轉口 Re-exports	-1.6	-0.4	11.2	8.8
總出口 Total exports	-1.8	-0.5	11.1	8.8
進口 Imports	-4.1	-0.9	10.4	9.4
三. 消費物價 Consumer Price			**2017/6**	**2017/1-6**
綜合消費物價升幅(%) Change in Composite CPI(%)	3.0	2.4	1.9	1.3
四. 樓宇買賣 Sale & Purchase of Building Units			**2017/7**	**2017/1-7**
合約宗數(宗) No. of agreements	76,159	73,004	5,461	48,323
年升幅(%) Change(%)	-6.5	-4.1	2.0	51.4
五. 勞動就業 Employment			**2017/3-2017/5**	**2017/4-2017/6**
失業人數(萬人) Unemployed(ten thousands)	12.9	13.3	12.6	12.5
失業率(%) Unemployment rate(%)	3.3	3.4	3.2	3.1
就業不足率(%) Underemployment rate(%)	1.4	1.4	1.2	1.2
六. 零售市場 Retail Market			**2017/6**	**2017/1-6**
零售額升幅(%) Change in value of total sales(%)	-3.7	-8.1	0.1	0.6
零售量升幅(%) Change in volume of total sales(%)	-0.3	-7.1	0.4	-0.8
七. 訪港遊客 Visitors				
總人數(萬人次) arrivals (ten thousands)	5,931	5,665	420.3	2780.9
年升幅(%) Change(%)	-2.5	-4.5	-1.9	2.4
八. 金融市場 Financial Market			**2017/5**	**2017/6**
港幣匯價(US$100=HK$) H.K. Dollar Exchange Rate (US$100 = HK$)	775.1	775.6	778.9	780.7
貨幣供應量升幅(%) change in Money Supply(%)				
M1	15.4	12.3	12.0	10.0
M2	5.5	7.7	12.8	12.9
M3	5.5	7.7	12.9	13.0
存款升幅(%) Change in deposits(%)				
總存款 Total deposits	6.7	9.1	12.1	12.1
港元存款 In HK$	10.7	9.4	15.9	16.4
外幣存款 In foreign currency	3.1	8.8	8.4	7.8
放款升幅(%) in loans & advances(%)				
總放款 Total loans & advances	3.5	6.5	13.8	14.9
當地放款 use in HK	3.5	7.4	12.0	13.8
海外放款 use outside HK	3.6	4.5	18.0	17.5
貿易有關放款 Trade financing	-16.3	0.2	8.2	3.0
最優惠貸款利率(%) Best lending rate (%)	5.0000	5.0000	5.0000	5.0000
恒生指數 Hang Seng index	21,914	22,000	25,661	25,765