THIS CIRCULAR IS IMPORTANT AND REQUIRES YOUR IMMEDIATE ATTENTION

If you are in any doubt as to any aspect of this circular or as to the action to be taken, you should consult your stockbroker or other registered dealer in securities, bank manager, solicitor, professional accountant or other professional adviser.

If you have sold or transferred all your shares in Shanghai Industrial Holdings Limited, you should at once hand this circular and the accompanying form of proxy to the purchaser or transferee or to the bank, stockbroker or other agent through whom the sale or transfer was effected for transmission to the purchaser or transferee.

上海實業控股有限公司
SHANGHAI INDUSTRIAL HOLDINGS LIMITED

(Incorporated in Hong Kong with limited liability)

(Stock Code: 363)

DISCLOSEABLE AND CONNECTED TRANSACTION

ACQUISITION OF INDIRECT EQUITY INTEREST IN A COMPANY ENGAGED IN THE OPERATION OF HANGZHOU BAY BRIDGE AND NOTICE OF EXTRAORDINARY GENERAL MEETING

Independent financial adviser to
the Independent Board Committee and the Independent Shareholders

SOMERLEY CAPITAL LIMITED

A letter from the Board is set out on pages 5 to 17 of this circular, a letter from the Independent Board Committee is set out on pages 18 and 19 of this circular, and a letter from Somerley, the independent financial adviser, containing its advice and recommendation to the Independent Board Committee and the Independent Shareholders is set out on pages 20 to 35 of this circular.

A notice convening the EGM to be held at the Conference Room, 26th Floor, Harcourt House, 39 Gloucester Road, Wanchai, Hong Kong at 10:00 a.m. on Wednesday, 16 November 2016 is set out on pages N-1 to N-2 of this circular.

Whether or not you are able to attend the EGM, you are requested to complete and return the accompanying form of proxy in accordance with the instructions printed thereon as soon as possible and in any event not less than 48 hours before the time appointed for holding the EGM (or any adjournment thereof). Completion and return of the form of proxy will not preclude you from attending and voting in person at the EGM (or any adjournment thereof) if you so wish.

24 October 2016

CONTENTS

In this circular, the following expressions have the following meanings unless the context requires otherwise:

"Acquisition"	the proposed acquisition of the Sale Share and the Sale Loan by SI Infrastructure from SIIC pursuant to the Sale and Purchase Agreement
"Board"	the board of Directors
"Business Day(s)"	a day other than Saturday or Sunday, on which banks are open in Hong Kong and the PRC to general public for business
"Company"	Shanghai Industrial Holdings Limited, a company incorporated in Hong Kong with limited liability, the shares of which are listed on the Main Board of the Stock Exchange
"Completion"	completion of the Acquisition in accordance with the terms and conditions of the Sale and Purchase Agreement
"Consideration"	the consideration payable for the transfer of the Sale Share and the assignment of the Sale Loan
"Director(s)"	the director(s) of the Company
"EGM"	an extraordinary general meeting of the Company to be convened and held at the Conference Room, 26th Floor, Harcourt House, 39 Gloucester Road, Wanchai, Hong Kong at 10:00 a.m. on Wednesday, 16 November 2016 at which an ordinary resolution will be proposed to approve the Sale and Purchase Agreement and the transactions contemplated thereunder
"Group"	the Company and its subsidiaries
"Haitian Yizhou Tourism"	Ningbo Haitian Yizhou Tourism Service Co., Ltd.（寧波市海天一洲旅遊服務有限公司), a company established in the PRC with limited liability
"Hangzhou Bay Bridge"	Hangzhou Bay Bridge（杭州灣大橋), the ocean-crossing bridge operated by the Project Company which connects the municipalities of Jiaxing and Ningbo in Zhejiang province of the PRC
"HK$"	Hong Kong dollars, the lawful currency of Hong Kong

"Hong Kong"	the Hong Kong Special Administrative Region of the PRC
"Independent Board Committee"	an independent committee of the Board comprising all the independent non-executive Directors, namely, Prof. Woo Chia-Wei, Mr. Leung Pak To, Francis, Mr. Cheng Hoi Chuen, Vincent and Mr. Yuen Tin Fan, Francis
"Independent Financial Adviser" or "Somerley"	Somerley Capital Limited, a corporation licensed to carry out type 1 (dealing in securities) and type 6 (advising on corporate finance) regulated activities under the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong), the independent financial adviser appointed to advise the Independent Board Committee and the Independent Shareholders in relation to the Sale and Purchase Agreement and the Acquisition
"Independent Shareholders"	the Shareholders who are not prohibited under the Listing Rules from voting at the EGM to approve the Sale and Purchase Agreement and the Acquisition
"Independent Valuer"	DTZ Cushman & Wakefield Limited, an independent professional valuer commissioned by the Company for the purpose of issuing the Valuation Report
"Latest Practicable Date"	20 October 2016, being the latest practicable date prior to the printing of this circular for ascertaining certain information contained herein
"Listing Rules"	the Rules Governing the Listing of Securities on the Stock Exchange
"Long Stop Date"	31 March 2017, or such later date as the Company may elect to extend pursuant to the Sale and Purchase Agreement
"PRC"	the People's Republic of China (for the purposes of this circular, excluding Hong Kong, the Macau Special Administrative Region of the PRC and Taiwan)
"Operation Rights"	the operation rights till 30 April 2033 in the PRC of Hangzhou Bay Bridge held by the Project Company
"Project Company"	Ningbo Hangzhou Bay Bridge Development Co., Ltd. (寧波市杭州灣大橋發展有限公司*), a company established in the PRC with limited liability

"RMB"	Renminbi, the lawful currency of the PRC
"Sale and Purchase Agreement"	the conditional sale and purchase agreement dated 30 September 2016 entered into between SIIC and SI Infrastructure in relation to the Acquisition
"Sale Loan"	all outstanding shareholder's loans owing by SI Bridge to SIIC as at the date of Completion
"Sale Share"	one share in the share capital of the Target Company, representing the entire issued share capital of the Target Company as at the date of the Sale and Purchase Agreement
"SFO"	the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong)
"Shanghai Jiyun"	Shanghai Ji Yun Infrastructure Construction Co., Ltd. (上海蹟沄基礎建設有限公司*), a company established in the PRC with limited liability
"Share(s)"	ordinary share(s) in the share capital of the Company
"Shareholder(s)"	holder(s) of the Share(s)
"SI Bridge"	S.I. Infrastructure Bridge (Hong Kong) Limited, a company incorporated in Hong Kong with limited liability
"SI Infrastructure"	S.I. Infrastructure Holdings Limited (上實基建控股有限公司), a company incorporated in the British Virgin Islands with limited liability, and a wholly-owned subsidiary of the Company
"SIIC"	Shanghai Industrial Investment (Holdings) Company Limited, a company incorporated in Hong Kong with limited liability and the controlling Shareholder
"Stock Exchange"	The Stock Exchange of Hong Kong Limited
"Target Company"	Yield Express Limited (捷盈有限公司), a company incorporated in the British Virgin Islands with limited liability
"Target Group"	collectively, the Target Company, SI Bridge, Shanghai Jiyun and the Project Company

"Valuation Report"	the valuation report dated 30 September 2016 on the market value of the Operation Rights prepared by the Independent Valuer as at 30 June 2016
"%"	per cent.

* *The English name is an informal English translation of its official Chinese name.*

In this circular, the terms "associate", "connected person", "controlling shareholder" and "subsidiary" have the meanings given to such terms in the Listing Rules, unless the context otherwise requires.

上海實業控股有限公司
SHANGHAI INDUSTRIAL HOLDINGS LIMITED

(Incorporated in Hong Kong with limited liability)

(Stock Code: 363)

Directors:
Executive Directors:
Mr. Wang Wei *(Chairman)*
Mr. Zhou Jun *(Vice Chairman & Chief Executive Officer)*
Mr. Lu Shen *(Executive Deputy CEO)*
Mr. Xu Bo *(Deputy CEO)*

Independent Non-Executive Directors:
Prof. Woo Chia-Wei
Mr. Leung Pak To, Francis
Mr. Cheng Hoi Chuen, Vincent
Mr. Yuen Tin Fan, Francis

Registered office:
26th Floor, Harcourt House,
39 Gloucester Road,
Wanchai, Hong Kong

24 October 2016

To all Shareholders

Dear Sir or Madam,

DISCLOSEABLE AND CONNECTED TRANSACTION

ACQUISITION OF INDIRECT EQUITY INTEREST IN A COMPANY ENGAGED IN THE OPERATION OF HANGZHOU BAY BRIDGE AND NOTICE OF EXTRAORDINARY GENERAL MEETING

1. INTRODUCTION

Reference is made to the announcement of the Company dated 30 September 2016 in relation to the Acquisition.

On 30 September 2016, SIIC (as vendor) and SI Infrastructure (a wholly-owned subsidiary of the Company, as purchaser) entered into the Sale and Purchase Agreement in relation to the Acquisition pursuant to which it was conditionally agreed that SI Infrastructure shall acquire the Sale Share and the benefit of the Sale Loan from SIIC at the consideration of HK$1,803,000,000. Upon Completion, the Company will indirectly own approximately 23.0584% of the interest in Hangzhou Bay Bridge.

SIIC is the controlling Shareholder interested in approximately 58.82% of the number of Shares in issue as at Latest Practicable Date. Accordingly, SIIC is a connected person of the Company under the Listing Rules and the Acquisition constitutes a

connected transaction for the Company under Chapter 14A of the Listing Rules. As one or more of the applicable percentage ratios calculated pursuant to Rule 14.07 of the Listing Rules in respect of the Acquisition exceeds 5% and the Consideration is not less than HK$10,000,000, the Acquisition is subject to the reporting, announcement and independent shareholders' approval requirements under Chapter 14A of the Listing Rules.

In addition, as one or more of the applicable percentage ratios calculated pursuant to Rule 14.07 of the Listing Rules in respect of the Acquisition exceeds 5% but are less than 25%, the Acquisition also constitutes a discloseable transaction of the Company under the Listing Rules and is subject to the reporting and announcement requirements under Chapter 14 of the Listing Rules.

The purpose of this circular is to provide you with, among other matters:

(a) further information on the Sale and Purchase Agreement and the transactions contemplated thereunder;

(b) the letter from the Independent Board Committee setting out its recommendation to the Independent Shareholders in respect of the Sale and Purchase Agreement and the transactions contemplated thereunder;

(c) the letter from Somerley setting out its advice to the Independent Board Committee and the Independent Shareholders in respect of the Sale and Purchase Agreement and the transactions contemplated thereunder;

(d) the letter and valuation certificates received from DTZ Cushman & Wakefield Limited in connection with its opinion of market value of the Operation Rights;

(e) the traffic study report received from by WB Group Consulting (Shenzhen) Limited in connection with its opinion of the traffic forecasts for Hangzhou Bay Bridge; and

(f) the notice of the EGM at which an ordinary resolution will be proposed to approve the Sale and Purchase Agreement and the transactions contemplated thereunder.

2. THE SALE AND PURCHASE AGREEMENT

Date

30 September 2016

Parties

(a) SIIC as vendor

(b) S.I. Infrastructure, a wholly-owned subsidiary of the Company, as purchaser

Assets to be acquired

Pursuant to the Sale and Purchase Agreement, SI Infrastructure will acquire from SIIC:

(a) the Sale Share, representing the entire issued share capital of the Target Company held by SIIC as at the date of the Sale and Purchase Agreement; and

(b) the Sale Loan, representing all outstanding shareholder's loans owing by the SI Bridge to SIIC as at the date of Completion.

As at the date of the Sale and Purchase Agreement, the Target Company indirectly owns approximately 23.0584% of the equity interest of the Project Company. The Project Company is principally engaged in the investment, operation and management of Hangzhou Bay Bridge and its ancillary facilities. Upon Completion, the Company will indirectly own approximately 23.0584% of the interest in Hangzhou Bay Bridge. As at the date of the Sale and Purchase Agreement, the total amount of the Sale Loan is approximately HK$1,853,523,000.

Consideration

The Consideration payable for the Acquisition is HK$1,803,000,000, which shall be settled in cash by SI Infrastructure to SIIC upon Completion.

The Consideration shall be apportioned as follows:

(a) the consideration for the transfer of the Sale Share shall be HK$8; and

(b) the consideration for the assignment of the Sale Loan shall be the amount of the Consideration less the consideration for the transfer of the Sale Share set out in the subparagraph (a) above, being HK$1,802,999,992.

The Consideration was determined after arm's length negotiations between the parties having regard to (i) the market value of the Operation Rights of the Hangzhou Bay Bridge as at 30 June 2016 in the amount of RMB12,480,000,000 as valued by DTZ Cushman & Wakefield Limited, the Independent Valuer, based on the discounted cash flow approach, (ii) the total liability of the Project Company as at 30 June 2016 in the amount of approximately RMB5,594,994,000, and (iii) approximately 23.0584% of the equity interest of the Project Company indirectly held by the Target Company.

The Consideration will be funded by internal resources of the Group.

Conditions

Completion is conditional upon the following conditions being satisfied or waived (conditions (b) and (c) may be waived by the Company at any time in writing) on or before the Long Stop Date:

(a) the obtaining of the approval from the Independent Shareholders of the Sale and Purchase Agreement and the transactions contemplated thereunder in accordance with the relevant requirements of the Listing Rules;

(b) the obtaining by SI Infrastructure of the PRC legal opinion issued by a firm of PRC legal advisers confirming Shanghai Jiyun legally owns 23.0584% equity interest of the Project Company in accordance with the PRC laws and regulations;

(c) where applicable, the obtaining of such consents, approvals and authorisation of the relevant regulatory authorities and relevant third parties which are required for the execution and performance of the transactions contemplated under the Sale and Purchase Agreement; and

(d) SIIC and SI Infrastructure and/or their respective subsidiaries and/or associated companies having completed all necessary legal procedures for the transfer of the Sale Share and the assignment of the Sale Loan.

In the event that any of the abovementioned conditions are not fulfilled or waived by the Company on or before the Long Stop Date, the non-defaulting parties may elect to terminate the Sale and Purchase Agreement and all rights and obligations of the parties thereunder shall cease immediately upon termination save that the termination shall not affect or prejudice the then accrued rights and obligations of the parties.

Completion

Completion shall take place on the fifth Business Day following satisfaction or waiver of the conditions set out in the paragraph headed "2. The Sale and Purchase Agreement – Conditions" above, or on such other date as SIIC and SI Infrastructure may agree in writing.

Upon Completion, each of the Target Company and its subsidiaries will become wholly-owned subsidiaries of the Company and their financial results will be consolidated in the financial statements of the Group upon Completion. Each of the Project Company and its subsidiary will be accounted for as an associate of the Group.

Post-Completion undertaking from SI Infrastructure

SIIC and SI Infrastructure agrees that SIIC is, and shall be, entitled to all distributable profits declared, to be declared or to be paid to the Target Group for the financial year ended 31 December 2015 and the financial year ending 31 December 2016, regardless of whether Completion would take place by 31 December 2016 or not. If such

distributable profits are paid to the Target Group after the date of Completion, SI Infrastructure undertakes that it shall, or shall procure the Target Group to, so far as practicable, transfer such distributable profits to the Vendor within a reasonable time.

3. INFORMATION ON THE GROUP, SIIC, TARGET GROUP AND HANGZHOU BAY BRIDGE

Information on the Group, SIIC and Target Group

The Group is principally engaged in the business of infrastructure facilities, real estate and consumer products. SI Infrastructure is principally engaged in investment holding.

SIIC is principally engaged in financial investment, medicine, infrastructure, real estate and consumer products.

The Target Company is a company incorporated in the British Virgin Islands with limited liability. It is an investment holding company holding approximately 23.0584% of the equity interest of the Project Company through its wholly-owned subsidiaries, SI Bridge and Shanghai Jiyun. The remaining approximately 76.9416% of the equity interest of the Project Company are held by independent third parties.

Each of SI Bridge and Shanghai Jinyun is an investment holding company.

The Project Company was established in the PRC with limited liability on 17 October 2001 and is principally engaged in the investment, operation and management of Hangzhou Bay Bridge and its ancillary facilities. The registered capital of the Project Company is RMB4,935,000,000 and has been fully paid up. As at the Latest Practicable Date, Hangzhou Bay Bridge is the only major asset of the Project Company. Haitian Yizhou Tourism is the wholly-owned subsidiary of the Project Company. It was established in the PRC on 22 June 2015 with a registered capital of RMB8,000,000 and is principally engaged in the hotel, travel services and leasing of premises around the Hangzhou Bay Bridge area.

Information on the Hangzhou Bay Bridge

The Hangzhou Bay Bridge is one of the world's longest ocean-crossing bridge spanning across the Hangzhou Bay sea area in China, connecting Haiyan district, Jiaxing City in the north and Cixi district, and Ningbo City in the south of Zhejiang Province of the PRC. It is an important road network in the eastern coastal region of China connecting Shanghai and Ningbo. The Hangzhou Bay Bridge belongs to expressway grade which is approximately 35.673 kilometres long with dual six-lane expressway and a designed speed of 100 kilometres per hour. It has ancillary facilities including two service areas, one sea observation deck, one toll station and one monitoring station. The construction of Hangzhou Bay Bridge was commenced in November 2003 and completed in April 2008, and Hangzhou Bay Bridge was opened to traffic on 1 May 2008.

According to "The Instruction Request from State Planning Commission about the Approval of the Feasibility Study Report of the Hangzhou Bay Bridge Construction Work"（國家計委關於審批杭州灣跨海大橋工程可行性研究報告的請示）approved by the State Council and forwarded to State Development Planning Commission (the "**Instruction Request**"), (i) the Project Company was responsible for the financing, construction and operating of Hangzhou Bay Bridge; (ii) the operation period of Hangzhou Bay Bridge is 30 years inclusive of the construction period; and (iii) during the operation period, the Project Company is entitled to collect toll fees as investment return.

According to the "Regulations on the Administration of Toll Roads"（收費公路管理條例）(the "**Toll Road Regulations**"), (i) a toll road shall be examined and accepted in accordance with the relevant state regulations after construction completion; (ii) a toll road can only be opened to traffic after obtaining the qualification of acceptance; and (iii) the toll collection period of a toll road shall be approved by provincial government with the a maximum duration of 25 years from the date of opening to traffic.

As no approval has been obtained for the toll collection period of Hangzhou Bay Bridge in accordance with the Toll Road Regulations and no toll operation contract has been signed with relevant government department, the toll collection period has not been legally confirmed.

In this regard, the Company has obtained PRC legal advices as follows:

(a) taking into account (i) the Instruction Request; (ii) a written reply from Zhejiang Provincial Government dated 25 April 2008 indicating its agreement for the Project Company to collect toll fees for Hangzhou Bay Bridge beginning on 1 May 2008; and (iii) Hangzhou Bay Bridge has obtained the qualification of acceptance in accordance with the relevant PRC laws, the Project Company has the legal rights to operate Hangzhou Bay Bridge and collect toll fee arise therefrom;

(b) the PRC legal adviser is of the view that the toll operation period with expiry of 30 April 2033 complies with the requirements under the Instruction Request and the Toll Road Regulations, and therefore the PRC legal adviser considers the above toll operation period has proper legal backing; and

(c) Zhejiang Provincial Government has suspended the approval process for the toll collection period for all toll roads in Zhejiang Province since 2011. The PRC legal adviser opines that the Project Company would not encounter legal impediments in applying and obtaining the relevant approval for the toll collection period of Hangzhou Bay Bridge with expiry of 30 April 2033 shall Zhejiang Provincial Government resumed the approval process.

Based on the above legal advice, although no approval has been obtained for the toll collection period of Hangzhou Bay Bridge in accordance with the Toll Road Regulations and no toll operation contract has been signed with relevant government department, the Directors consider that there is no material impact on the validity of the Operating Rights and the toll collection rights and period of Hangzhou Bay Bridge

entitled by the Project Company under the relevant PRC laws and regulations. Accordingly, taking into account of the benefits of the Acquisition detailed in the section headed "4. Reasons for and benefits of the Acquisition" below, the Directors consider that the Acquisition is in the interests of the Group and the Shareholders as a whole.

Accordingly, the Operating Rights and the toll collection period of Hangzhou Bay Bridge shall expire on 30 April 2033. During the operation period, the Project Company shall collect toll fees as investment return and the profit shall be shared by equity interests holders of the Project Company in proportion to their respective equity interest in the Project Company. Upon expiry of the operation period, the Hangzhou Bay Bridge and the ancillary facilities shall be transferred back to the relevant governmental authority.

Financial information of the Target Group

The audited net loss before and after taxation and extraordinary items of the Target Company for the financial year ended 31 December 2014 were both approximately HK$15,000. For the financial year ended 31 December 2015, the audited net loss before and after taxation and extraordinary items of the Target Company were both approximately HK$50,000. Based on the audited accounts of the Target Company prepared in accordance with the Hong Kong Financial Reporting Standards, the audited net profit before and after taxation and extraordinary items of the Target Company for the six months ended 30 June 2016 were both nil, and the audited net liabilities of the Target Company as at 30 June 2016 was approximately HK$65,000.

The audited net profit before and after taxation and extraordinary items of SI Bridge for the financial year ended 31 December 2014 were both approximately HK$108,000. For the financial year ended 31 December 2015, the audited net loss before and after taxation and extraordinary items of SI Bridge were both approximately HK$79,000. Based on the audited accounts of SI Bridge prepared in accordance with the Hong Kong Financial Reporting Standards, the audited net profit before and after taxation and extraordinary items of SI Bridge for the six months ended 30 June 2016 were both approximately HK$55,544,000, and the audited net asset value of SI Bridge as at 30 June 2016 was approximately HK$55,687,000.

The audited net profit before and after taxation and extraordinary items of Shanghai Jiyun for the financial year ended 31 December 2014 were both approximately RMB9,695,000. For the financial year ended 31 December 2015, the audited net profit before and after taxation and extraordinary items of Shanghai Jiyun were both approximately RMB45,981,000. Based on the audited accounts of Shanghai Jiyun prepared in accordance with the general accepted accounting principles in the PRC, the audited net profit before and after taxation and extraordinary items of Shanghai Jiyun for the six months ended 30 June 2016 were both approximately RMB29,492,000, and the audited net asset value of Shanghai Jiyun as at 30 June 2016 was approximately RMB1,492,074,000.

The audited consolidated net profit before and after taxation and extraordinary items of the Project Company and its subsidiary for the financial year ended 31 December 2014 were approximately RMB52,945,000 and RMB65,891,000, respectively. For the financial year ended 31 December 2015, the audited consolidated net profit before and after taxation and extraordinary items of the Project Company and its subsidiary were approximately RMB339,412,000 and RMB249,342,000, respectively. Based on the audited accounts of the Project Company prepared in accordance with the general accepted accounting principles in the PRC, the audited consolidated net profit before and after taxation and extraordinary items of the Project Company and its subsidiary for the six months ended 30 June 2016 were approximately RMB209,426,700 and RMB156,962,000, respectively, and the audited consolidated net asset value of the Project Company and its subsidiary as at 30 June 2016 was approximately RMB5,208,451,000.

The original acquisition cost of the Sale Share to SIIC amounted to approximately RMB1,466,000,000.

4. REASONS FOR AND BENEFITS OF THE ACQUISITION

The Board considers that the Acquisition copes with the development strategy of the Group's toll roads business. The transaction will further enhance the infrastructure facilities portfolio of the Group, and will contribute further toll income to the Group's toll roads business, thus increasing the operating profit of the Group's infrastructure business segment. Hence, it would be appropriate for the Group to proceed with the Acquisition.

The Directors (including the independent non-executive Directors who have taken into the account the advice from the Independent Financial Adviser) consider that the Acquisition is fair and reasonable and on normal commercial terms and that the Acquisition is in the interests of the Group and the Shareholders as a whole.

5. LISTING RULES IMPLICATIONS

SIIC is the controlling Shareholder interested in approximately 58.82% of the number of Shares in issue as at the Latest Practicable Date. Accordingly, SIIC is a connected person of the Company under the Listing Rules and the Acquisition constitutes a connected transaction for the Company under Chapter 14A of the Listing Rules. As one or more of the applicable percentage ratios calculated pursuant to Rule 14.07 of the Listing Rules in respect of the Acquisition exceeds 5% and the Consideration is not less than HK$10,000,000, the Acquisition is subject to the reporting, announcement and independent shareholders' approval requirements under Chapter 14A of the Listing Rules.

In addition, as one or more of the applicable percentage ratios calculated pursuant to Rule 14.07 of the Listing Rules in respect of the Acquisition exceeds 5% but are less than 25%, the Acquisition also constitutes a discloseable transaction of the Company under the Listing Rules and is subject to the reporting and announcement requirements under Chapter 14 of the Listing Rules.

The Independent Board Committee has been established to advise the Independent Shareholders in respect of the Acquisition, and Somerley Capital Limited has been appointed as the Independent Financial Adviser by the Company to advise the Independent Board Committee and the Independent Shareholders in respect of the Sale and Purchase Agreement and the Acquisition.

6. PROFIT FORECAST REQUIREMENT UNDER THE LISTING RULES

The Independent Valuer was commissioned by the Company to conduct a valuation on the market value of the Operation Rights, which forms one of the basis for determining the Consideration for the Acquisition.

The Independent Valuer has adopted the discounted cash flow approach to assess the market value of the Operation Rights, as at 30 June 2016 as RMB12,480,000,000.

Accordingly, the Valuation Report on the market value of the Operation Rights prepared by the Independent Valuer constitutes a profit forecast under Rule 14.61 of the Listing Rules.

Assumptions of valuation

The principal assumptions, including commercial assumptions, upon which the Valuation Report was based are as follows:

- the conditions in which the business are being operated and which are material to revenue and costs of businesses will remain unchanged;
- no hidden or unexpected conditions of the business might adversely affect the market value;
- the management and operation costs in which the business is being operated will be in accordance with the capital expenditure projection provided by WB Group Consulting (Shenzhen) Limited (施偉拔諮詢(深圳)有限公司), an independent traffic consultant (the "**Traffic Consultant**").
- the financial and operational information provided by the Traffic Consultant which is realistic and accurate, the Independent Valuer relied to such information in arriving at its opinion of value;
- the current financial, economic, legal and political conditions which prevail in the PRC and in the neighbouring cities/countries and which are material to the revenues generated by the businesses will remain unchanged;
- the current taxation and legislation will remain unchanged;
- inflation and interest rates will remain unchanged from the rates prevailing at the date of valuation;

- the operation periods of Hangzhou Bay Bridge is due to expire on 30 April 2033;
- competent management, key personnel and technical staff will be maintained to support the ongoing operation;
- no major business disruptions through international crisis, industrial disputes, industrial accidents or severe weather conditions will be affected the existing business;
- the claims and litigation against the business will remain free;
- any statutory notice and requirements will not affect the operation of the business; and
- no unusual or onerous restrictions or encumbrance is subject to.

In respect of the Valuation Report, the Company has ascertained with the Independent Valuer for certain matters disclosed in the Valuation Report and is advised by the Independent Valuer as follows:–

(i). the "financial and business risks" of the Project Company disclosed on page I-2 of Appendix I to this circular refer to (i) the financial risk relating to the leverage (the higher the leverage, the higher the financial risk); and (ii) the risk inherent to the operations, such as sales risk which is related to the traffic flow and toll;

(ii). the "projected future results" disclosed on page I-2 of Appendix I to this circular refers to the following projected results set out in the Traffic Study Report provided by WB Group Consulting (Shenzhen) Limited, which the Independent Valuer made reference to in determining the traffic toll revenue of Hangzhou Bay Bridge:–

Revenue

	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E
Revenue (RMB'000,000)	1,287.73	1,352.39	1,428.18	1,510.69	1,676.51	1,740.30	1,764.30	1,830.29	1,900.29
Growth Rate	5.6%	5.0%	5.6%	5.8%	11.0% *(Note)*	3.8%	1.4%	3.7%	3.8%

	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Revenue (RMB'000,000)	1,961.18	2,027.17	2,098.35	2,030.29	2,078.17	2,139.17	2,188.84	2,240.43	2,278.15
Growth Rate	3.2%	3.4%	3.5%	-3.2%	2.4%	2.9%	2.3%	2.4%	1.7%

Note: According to the traffic study report prepared by the Traffic Consultant, Ningbo Section Phase 1 of a second Hangzhou-Ningbo expressway and North Link Phase 2 to the Hangzhou Bay Bridge will be opened in 2020, connecting the south and north ends of Hangzhou Bay Bridge respectively. It is expected the opening will greatly facilitate the travels from and to the Ningbo Port and induce high traffic to the Hangzhou Bay Bridge, resulting in an increase of revenue.

(iii). the yield rate of 10-year Central Government Bond of PRC is considered as indicative risk free rate with long life span of 10 years; the "yield rate of the 10-year Central Government Bond of the PRC of 2.86%" disclosed on page I-4 of Appendix I to this circular was extracted from Bloomberg Terminal™;

(iv). PRC market, a developing market, is volatile over the historical period, it is not considered that the historical premium over the period as a predicted premium. Therefore, United States, a well-developed market is considered as a benchmark to predict the market premium; the "market risk premium" disclosed on page I-4 of Appendix I to this circular represents the additional return required by an investor as compensation for investing in equities rather than a risk-free instrument;

(v). the "size premium" disclosed on page I-4 of Appendix I to this circular refers to the return in excess of capital asset pricing model for the companies of similar market capitalization as Hangzhou Bay Bridge. The larger the market capitalization of the company, the smaller the size premium is. A size premium of 1.0%, as extracted from Ibbotson SBBI Valuation Yearbook, was adopted in the valuation. As a result, the cost of equity was calculated as 9.87%;

(vi). the long-term (over 5-year) lending rate per People's Bank of China is the general long term lending rate for corporates; the "cost of debt" disclosed on page I-5 of Appendix I to this circular is made with reference to the Long-term (over 5-year) benchmark lending rate per People's Bank of China;

(vii). the following is a list of comparable companies chosen by the Independent Valuer in performing the discounted cash flow approach in the valuation. In choosing the comparable companies, the following criteria have been considered by the Independent Valuer:

- The companies are all listed companies in Hong Kong market;
- The companies mainly operate their businesses in the PRC; and
- The companies are in the same industry or engaged in similar business lines as the public thoroughfares business.

	Name of comparable companies	**Bloomberg Ticker**
1.	Jiangsu Expressway Company Ltd.	177 HK EQUITY
2.	Yuexiu Transport Infrastructure Ltd.	1052 HK EQUITY
3.	Anhui Expressway Co. Ltd.	995 HK EQUITY
4.	Shenzhen Expressway Company Limited	548 HK EQUITY
5.	Zhejiang Expressway Co., Ltd.	576 HK EQUITY

Confirmations

Deloitte Touche Tohmatsu, acting as the Company's auditor, has examined the calculations of the discounted future estimated cash flows on which the Valuation Report was based.

Deloitte Touche Tohmatsu has reported to the Directors in respect of the compilation, in accordance with the assumptions described above, of the discounted future estimated cash flows in connection with the valuation of the market value of the Operation Rights prepared by the Independent Valuer as set out in the Valuation Report. The Directors are solely responsible for the assumptions described above and the work performed by Deloitte Touche Tohmatsu did not include any assessment of the reasonableness or validity of the assumptions.

The Directors confirm that the valuation of the market value of the Operation Rights has been made after due and careful enquiry.

A report from Deloitte Touche Tohmatsu dated 30 September 2016 in compliance with Rule 14.62(2) of the Listing Rules and a letter from the Board in compliance with Rule 14.62(3) of the Listing Rules have been submitted to the Stock Exchange, the texts of which are included in Appendix III and Appendix IV to this circular, respectively.

7. EGM

The EGM will be held at the Conference Room of the Company, 26th Floor, Harcourt House, 39 Gloucester Road at 10:00 a.m. on Wednesday, 16 November 2016 at which an ordinary resolution will be proposed to approve the Sale and Purchase Agreement and the transactions contemplated thereunder.

A form of proxy for use at the EGM is enclosed. Whether or not you intend to attend the EGM, you are requested to complete the accompanying form of proxy in accordance with the instructions printed thereon and return the same to the Company's registered office at 26th Floor, Harcourt House, 39 Gloucester Road, Wanchai, Hong Kong as soon as possible and in any event not less than 48 hours before the time appointed for holding the EGM or any adjournment thereof (as the case may be). Completion and return of the form of proxy will not preclude you from attending and voting in person at the EGM or any adjournment thereof if you so wish.

The register of members of the Company will be closed from Tuesday, 15 November 2016, to Wednesday, 16 November 2016, both days inclusive, during which period no transfer of shares will be effected. As such, all transfers accompanied by the relevant share certificates must be lodged with the Company's share registrar, Tricor Secretaries Limited of 22nd Floor, Hopewell Centre, 183 Queen's Road East, Hong Kong by 4:30 p.m. on Monday, 14 November 2016 for the purpose of determining shareholders' eligibility to attend and vote at the EGM.

None of the Directors has a material interest in the Sale and Purchase Agreement and the transactions contemplated thereunder, nor is he required to abstain from voting in the relevant board resolutions approving the Sale and Purchase Agreement.

As SIIC, being the vendor of the Sale Share and the Sale Loan, has a material interest in the Sale and Purchase Agreement and the transactions contemplated thereunder, SIIC and its associates shall abstain from voting on the resolution to be proposed at the EGM to approve the Sale and Purchase Agreement and the transactions contemplated thereunder. As at the Latest Practicable Date, SIIC and its associates are interested in a total of 639,170,748 Shares, representing approximately 58.82% of the issued shares of the Company.

8. RECOMMENDATION

Your attention is drawn to:

(a) a letter from the Independent Board Committee, the text of which is set out on pages 18 and 19 of this circular;

(b) a letter from Somerley, the text of which is set out on pages 20 to 35 of this circular.

The Independent Shareholders are advised to read these letters before deciding as to how to vote on the ordinary resolution to be proposed at the EGM to approve the Sale and Purchase Agreement and the transactions contemplated thereunder.

The Independent Board Committee, having taken into account the opinion of Somerley, considers that (1) the Acquisition is in the ordinary and usual course of business of the Company and the terms of the Sale and Purchase Agreement are on normal commercial terms and are fair and reasonable so far as the Independent Shareholders are concerned; and (2) the Acquisition is in the interests of Company and the Shareholders as a whole. Accordingly, the Independent Board Committee recommends the Independent Shareholders to vote in favour of the ordinary resolution to be proposed at the EGM to approve the Sale and Purchase Agreement and the transactions contemplated thereunder.

9. ADDITIONAL INFORMATION

Your attention is drawn to the information set out in the appendices to this circular.

Yours faithfully,
For and on behalf of the Board
Shanghai Industrial Holdings Limited
WANG WEI
Chairman

上海實業控股有限公司
SHANGHAI INDUSTRIAL HOLDINGS LIMITED

(Incorporated in Hong Kong with limited liability)

(Stock Code: 363)

24 October 2016

To the Independent Shareholders

Dear Sir/Madam,

DISCLOSEABLE AND CONNECTED TRANSACTION

ACQUISITION OF INDIRECT EQUITY INTEREST IN A COMPANY ENGAGED IN THE OPERATION OF HANGZHOU BAY BRIDGE AND NOTICE OF EXTRAORDINARY GENERAL MEETING

We have been appointed as members of the Independent Board Committee to advise you in connection with the discloseable and connected transaction contemplated under the Sale and Purchase Agreement, details of which are set out in the "Letter from the Board" in the circular dated 24 October 2016 (the "**Circular**") of which this letter forms part. Defined terms used in this letter shall have the same meanings as given to them in the Circular unless otherwise requires.

Your attention is drawn to the "Letter from the Board" as set out on pages 5 to 17 of the Circular, and the "Letter from Somerley" which contains its advice to the Independent Board Committee and the Independent Shareholders in respect of the Sale and Purchase Agreement as set out on pages 20 to 35 of the Circular.

Having considered the terms of the Sale and Purchase Agreement and taken into account the advice of Somerley, we are of the opinion that (1) the Acquisition is in the ordinary and usual course of business of the Company and the terms of the Sale and Purchase Agreement are on normal commercial terms and are fair and reasonable so far as the Independent Shareholders are concerned; and (2) the Acquisition is in the interests of Company and the Shareholders as a whole. Accordingly, we recommend the Independent Shareholders to vote in favour of the ordinary resolution to be proposed at the EGM to approve the Sale and Purchase Agreement and the transactions contemplated thereunder, namely Ordinary Resolution set out in the notice of the EGM.

Yours faithfully,
For and on behalf of
the Independent Board Committee of
Shanghai Industrial Holdings Limited

Prof. Woo Chia-Wei	**Mr. Leung Pak To, Francis**	**Mr. Cheng Hoi Chuen, Vincent**	**Mr. Yuen Tin Fan, Francis**
Independent Non-Executive Director	*Independent Non-Executive Director*	*Independent Non-Executive Director*	*Independent Non-Executive Director*

The following is the letter of advice from Somerley Capital Limited, the Independent Financial Adviser, to the Independent Board Committee and the Independent Shareholders, which has been prepared for the purpose of inclusion in this circular.

SOMERLEY CAPITAL LIMITED
20th Floor
China Building
29 Queen's Road Central
Hong Kong

24 October 2016

To: the Independent Board Committee and the Independent Shareholders

Dear Sirs,

DISCLOSEABLE AND CONNECTED TRANSACTION ACQUISITION OF INDIRECT EQUITY INTEREST IN A COMPANY ENGAGED IN THE OPERATION OF HANGZHOU BAY BRIDGE

We refer to our appointment as independent financial adviser to advise the Independent Board Committee and the Independent Shareholders in connection with the Acquisition pursuant to the Sale and Purchase Agreement entered into between SI Infrastructure (as purchaser) and SIIC (as vendor). Details of the Acquisition are set out in the "Letter from the Board" contained in the circular of the Company to the Shareholders dated 24 October 2016 (the "**Circular**"), of which this letter forms part. Capitalised terms used in this letter shall have the same meanings as those defined in the Circular.

SIIC is the controlling Shareholder of the Company, interested in approximately 58.82% of the Shares in issue as at the Latest Practicable Date and hence is a connected person of the Company under the Listing Rules. Accordingly, the Acquisition constitutes a connected transaction for the Company pursuant to the Listing Rules. As one or more of the applicable percentage ratios (as defined under the Listing Rules) in respect of the Acquisition exceeds 5% but is less than 25% and the Consideration is not less than HK$10,000,000, the Acquisition constitutes a discloseable as well as a connected transaction for the Company under the Listing Rules, and is subject to the reporting, announcement and independent shareholders' approval requirements as stipulated under the Listing Rules. In this connection, the Company is seeking the Independent Shareholders' approval for the Sale and Purchase Agreement and the Acquisition at the EGM.

The Independent Board Committee, comprising all four independent non-executive Directors, namely Prof. Woo Chia-Wei, Mr. Leung Pak To, Francis, Mr. Cheng Hoi Chuen, Vincent and Mr. Yuen Tin Fan, Francis, has been established to consider and make recommendations to the Independent Shareholders on whether (1) the terms of the Sale and Purchase Agreement are on normal commercial terms and are fair and reasonable so far as the Independent Shareholders are concerned; and (2) the Acquisition is in the interests of the Company and the Shareholders as a whole. We, Somerley Capital Limited, have been appointed to advise the Independent Board Committee and the Independent Shareholders in this regard.

During the past two years, there were no engagements between the Company and Somerley Capital Limited. As at the Latest Practicable Date, there were no relationships or interests between (a) Somerley Capital Limited; (b) the Group; and (c) SIIC that could reasonably be regarded as a hindrance to our independence as defined under Rule 13.84 of the Listing Rules to act as the independent financial adviser to the Independent Board Committee and the Independent Shareholders in respect of the Acquisition pursuant to the Sale and Purchase Agreement as detailed in the Circular.

In formulating our opinion, we have reviewed, among other things, (i) the valuation report from the Independent Valuer in relation to the market value of the Operation Rights as at 30 June 2016 as set out in Appendix I to the Circular; (ii) the traffic study report from WB Group Consulting (Shenzhen) Limited ("**WBG**") dated 30 September 2016 as set out in Appendix II to the Circular; and (iii) the report from the Company's reporting accountants and the letter from the Board in relation to the discounted cash flow forecast as set out in Appendix III and Appendix IV to the Circular respectively. We have also reviewed the terms of the Sale and Purchase Agreement, the articles of association of the Project Company and the structure of the Target Group. We have relied on the information and facts supplied, and the opinions expressed, by the executive Directors and management of the Company and have assumed that the information and facts provided and opinions expressed to us are true, accurate and complete in all material aspects and will remain so up to the time of the EGM. We have also sought and received confirmation from the executive Directors that no material facts have been omitted from the information supplied and opinions expressed to us. We have relied on such information and consider that the information we have received is sufficient for us to reach our advice and recommendation as set out in this letter and to justify our reliance on such information. We have no reason to believe that any material information has been omitted or withheld or to doubt the truth or accuracy of the information provided. We have, however, not conducted any independent investigation into the business and affairs of the Group and SIIC, nor have we carried out any independent verification of the information supplied other than as summarised above.

PRINCIPAL FACTORS AND REASONS CONSIDERED

In considering whether (1) the terms of the Sale and Purchase Agreement are on normal commercial terms and are fair and reasonable so far as the Independent Shareholders are concerned; and (2) the Acquisition is in the interests of the Company and the Shareholders as a whole, we have taken into account the principal factors and reasons set out below:

1. Background to and benefits of the Acquisition

(a) Principal business and financial information of the Group

The Group is principally engaged in the business of infrastructure facilities (including investment in toll road projects and water-related business), real estate (including property development and investment and hotel operation) and consumer products (including manufacture and sale of cigarettes, packaging materials and printed products). Set out below is a summary of the segment revenue of the Group for the financial years ended 31 December 2014 and 2015 and the six months ended 30 June 2015 and 2016:

	Six months ended 30 June		Year ended 31 December	
	2016	2015	2015	2014
	HK$'million (Approx.)	*HK$'million (Approx.)*	*HK$'million (Approx.)*	*HK$'million (Approx.)*
Infrastructure facilities	2,387	2,017	4,349	3,681
Real estate	4,986	3,224	11,456	13,694
Consumer products	1,856	1,898	3,889	3,958
	9,229	7,139	19,694	21,333

Source: 2016 interim report and 2015 annual report of the Company

As set out in the table above, the Group's revenue from the infrastructure facilities segment increased in both 2015 and the first half of 2016. As set out in the Company's 2016 interim report and 2015 annual report, the Group achieved growth in traffic flow and revenue from its toll roads business. The Group currently owns three toll roads in Shanghai, namely Jing-Hu Expressway (Shanghai Section), Hu-Kun Expressway (Shanghai Section) and Hu-Yu Expressway (Shanghai Section). It is the Group's strategy to acquire suitable projects as and when opportunities arise to maintain revenue growth.

(b) Information on the Hangzhou Bay Bridge

The Hangzhou Bay Bridge is one of the world's longest ocean-crossing bridge, connecting Haiyan district, Jiaxing City in the north and Cixi district, and Ningbo City in the south of Zhejiang Province of the PRC. It is part of an important road network in the eastern coastal region of the PRC connecting Shanghai and Ningbo. It opened to traffic on 1 May 2008 with expressway grade and is approximately 35.673 kilometers long having dual six lanes. It has ancillary facilities including two service areas, one sea observation deck, one toll station and one monitoring station. As set out in the section headed "Information on the Group, SIIC, Target Group and Hangzhou Bay Bridge" in the "Letter from the Board" contained in the Circular, the Operation Rights and the toll collection period of the Hangzhou Bay Bridge shall expire on 30 April 2033. Accordingly, the Operation Rights will have approximately 16 years to run should Completion take place by the end of 2016. As set out in the aforesaid section in the "Letter from the Board" contained in the Circular, the toll collection period of the Hangzhou Bay Bridge has not been legally confirmed. However, the Company has obtained PRC legal advice that (i) the Project Company has the legal rights to operate the Hangzhou Bay Bridge and collect toll fee arise therefrom; (ii) the toll operation period with expiry of 30 April 2033 has proper legal backing; and (iii) the Project Company would not encounter legal impediments in applying and obtaining the relevant approval for the toll collection period of the Hangzhou Bay Bridge with expiry of 30 April 2033 shall Zhejiang Provincial Government resumed the approval process. Further details of the PRC legal advice are set out in the aforesaid section in the "Letter from the Board" contained in the Circular.

A map of the Hangzhou Bay Bridge is set out below.

Source: traffic study report from WBG dated 30 September 2016

The table below summarises the toll revenue and traffic volume of the Hangzhou Bay Bridge for the year ended 31 December 2015 and the six months ended 30 June 2016:

	For the year ended 31 December 2015	**For the six months ended 30 June 2016**
Average daily traffic volume (vehicles)	30,100	31,100
Annual toll revenue (RMB'million)	1,216.3	627.9

(c) Economic development of Zhejiang Province

The table below sets out the annual GDP growth rate of the PRC and Zhejiang Province from 2011 to 2015:

	2011 *(%)*	**2012** *(%)*	**2013** *(%)*	**2014** *(%)*	**2015** *(%)*
GDP growth rate – Zhejiang Province	9.0	8.0	8.2	7.6	8.0
GDP growth rate – the PRC	9.5	7.7	7.7	7.3	6.9

Source: websites of the National Bureau of Statistics of China and Zhejiang Provincial Bureau of Statistics

During this period from 2011 to 2015, the population of Zhejiang Province increased as follows:

Year	**Population (million)** *(Approx.)*	**Growth rate** *(%)* *(Approx.)*
2011	54.6	0.3
2012	54.8	0.3
2013	55.0	0.4
2014	55.1	0.2
2015	55.4	0.6

Source: website of Zhejiang Provincial Bureau of Statistics

On this basis, we consider the Hangzhou Bay Bridge is strategically situated in growing area of China. As the Hangzhou Bay Bridge opened in 2008, its traffic pattern and toll structure are well established.

(d) Benefits of the Acquisition

As discussed above, the Group has recorded growth in the toll roads segment in terms of overall traffic flow and revenue in both 2015 and first half of 2016. The executive Directors are of the view that it is beneficial for the Group to further develop its toll roads business. The Hangzhou Bay Bridge, spanning across the Hangzhou Bay in the eastern coastal region of the PRC, connects to key cities in Zhejiang Province. The executive Directors consider that operation of the Hangzhou Bay Bridge will benefit from a steady growth in both GDP and population in Zhejiang Province as shown above. As set out in the sub-section headed "Information on the Target Group" of this letter below, the Project Company (together with its subsidiary) has recorded an audited consolidated net profit in accordance with the general accepted accounting principles in the PRC of approximately RMB157.5 million for the six months ended 30 June 2016.

Upon Completion, the Company will indirectly hold an approximately 23.1% interest in the Hangzhou Bay Bridge. The Acquisition will allow the Group to enhance its infrastructure facilities portfolio, which is consistent with the Group's development strategy. In view of the above, we are of the view that the Acquisition is in line with its development strategy and will enhance the Group's toll roads segment.

2. Principal terms of the Sale and Purchase Agreement

Principal terms of the Sale and Purchase Agreement are summarised below. Further details are set out in the section headed "The Sale and Purchase Agreement" in the "Letter from the Board" contained in the Circular.

(A) Subject of the Acquisition

Pursuant to the Sale and Purchase Agreement, SIIC (as vendor) and SI Infrastructure (as purchaser) have conditionally agreed that SI Infrastructure will acquire from SIIC (a) the Sale Share, representing the entire issued share capital of the Target Company held by SIIC as at the date of the Sale and Purchase Agreement; and (b) the Sale Loan, representing all outstanding shareholder's loans owing by SI Bridge to SIIC as at the date of Completion, which amounted to approximately HK$1,854 million as at 30 June 2016. Details of the Target Group are set out in the sub-section headed "Information on the Target Group" below of this letter.

(B) Consideration and payment terms

The Consideration for the Acquisition is HK$1,803,000,000, comprising (a) the consideration for the transfer for the Sale Share of HK$8; and (b) the consideration for the assignment of the Sale Loan of HK$1,802,999,992. The total Consideration shall be settled in cash by SI Infrastructure payable to SIIC upon Completion.

As set out in the sub-section headed "Consideration" under the section headed "The Sale and Purchase Agreement" in the "Letter from the Board" contained in the Circular, the Consideration was determined after arm's length negotiations between the parties having regard to (i) the market value of the Operation Rights of the Hangzhou Bay Bridge as at 30 June 2016 in the amount of RMB12,480,000,000 as valued by the Independent Valuer; (ii) the total liability of the Project Company as at 30 June 2016 in the amount of approximately RMB5.6 billion; and (iii) the approximately 23.1% equity interest in the Project Company indirectly held by the Target Company.

(C) Conditions precedent to the Acquisition

Completion of the Acquisition shall take place on the fifth Business Day following satisfaction or waiver of the conditions as set out in the Sale and Purchase Agreement. Conditions precedent to the Acquisition include, among

other things, (i) the approval by the Independent Shareholders of the Sale and Purchase Agreement and the transactions contemplated thereunder; and (ii) the obtaining by SI Infrastructure of a PRC legal opinion issued by a firm of PRC legal advisers confirming Shanghai Jiyun legally owns 23.0584% equity interest of the Project Company in accordance with PRC laws and regulations. Further details of the conditions precedent to the Acquisition are set out in the sub-section headed "Conditions" under the section headed "The Sale and Purchase Agreement" in the "Letter from the Board" contained in the Circular. As at the Latest Practicable Date, certain of the conditions precedent to the Acquisition have been fulfilled.

(D) Long stop date and termination

The Long Stop Date is 31 March 2017 (or as extended pursuant to the Sale and Purchase Agreement). In the event that any of the conditions precedent to the Acquisition are not fulfilled (or waived by the Company) on or before the Long Stop Date, the non-defaulting parties may elect to terminate the Sale and Purchase Agreement and all rights and obligations of the parties thereunder shall cease immediately upon termination save that the termination shall not affect or prejudice the then accrued rights and obligations of the parties.

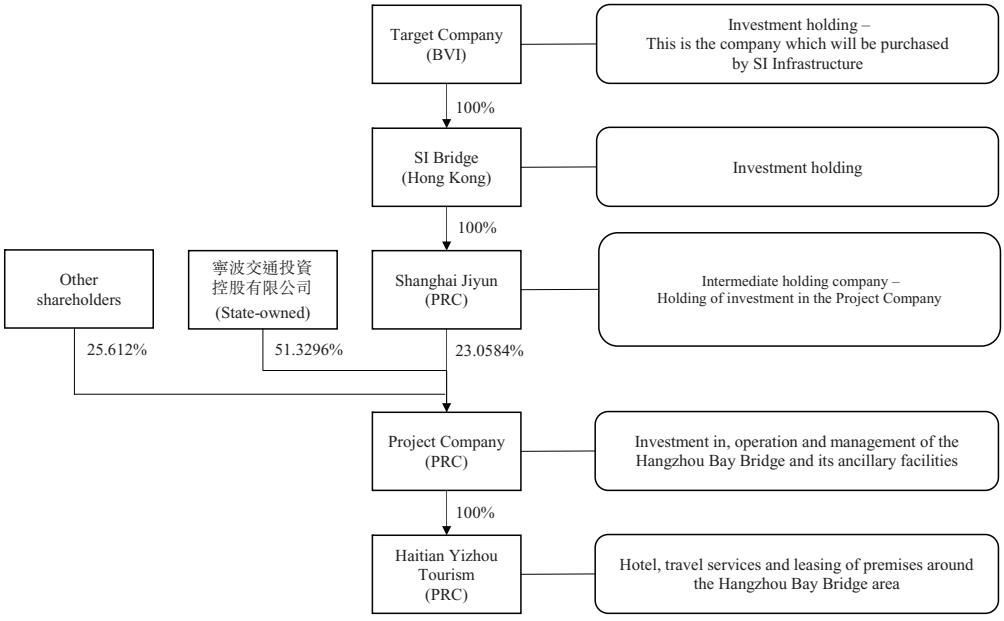
(E) Post-Completion undertaking from SI Infrastructure

Pursuant to the Sale and Purchase Agreement and as advised by the executive Directors, SIIC and SI Infrastructure agree that SIIC is, and shall be, entitled to all distributable profits declared, to be declared or to be paid as dividends to the Target Group for the financial year ended 31 December 2015 and the financial year ending 31 December 2016, regardless of whether Completion takes place by 31 December 2016 or not. If such distributable profits are paid to the Target Group after the date of Completion, SI Infrastructure undertakes that it shall, or shall procure that the Target Group shall, so far as practicable, transfer such distributable profits to SIIC within a reasonable time.

3. Information on the Target Group

(i) Shareholding structure of the Target Group

The following chart sets out the corporate structure of the Target Group as at the Latest Practicable Date:



(ii) Management of the Project Company

The Project Company is approximately 51% controlled by 寧波交通投資控股有限公司 (Ningbo Communications Investment Holdings Co., Ltd.), and is an associated company of the Target Company. Shanghai Jiyun will be entitled to appoint two out of the current twelve directors of the Project Company. We have reviewed the articles of association of the Project Company and understand from the Company that there is no shareholders' agreement entered into among the shareholders of the Project Company. As set out in the articles of association of the Project Company, the Project Company will, after making appropriation to the legal reserve and subject to compensation for prior years' losses, distribute not less than 80% of the profits for each financial year to its shareholders.

(iii) Principal activities

The Target Company is an investment holding company which holds, through its wholly-owned subsidiaries, SI Bridge and Shanghai Jiyun, approximately 23.1% of the equity interest of the Project Company. Each of SI Bridge and Shanghai Jiyun is an investment holding company with no other material assets or liabilities. The Project Company is principally engaged in the investment in and operation and management of the Hangzhou Bay Bridge and its ancillary

facilities. Haitian Yizhou Tourism is a wholly-owned subsidiary of the Project Company and is principally engaged in hotel, travel services and leasing of premises around the Hangzhou Bay Bridge area.

(iv) Financial information

Financial information of the Target Group is set out in the sub-section headed "Financial information of the Target Group" under the section headed "Information on the Group, SIIC, Target Group and Hangzhou Bay Bridge" of the "Letter from the Board" contained in the Circular. Set out below is a summary of the key financial data of the companies in the Target Group:

	Target Company *HK$'000 (Approx.)*	**SI Bridge** *HK$'000 (Approx.)*	**Shanghai Jiyun** *RMB'000 (Approx.)*	**Project Company and its subsidiary** *RMB'000 (Approx.)*
Net profit/(loss) attributable to the shareholders of the company				
– Year 2015	(50)	(79)	45,981	249,342
– First half of 2016	–	55,544	29,492	156,962
Net assets/(liabilities) as at 30 June 2016	(65)	55,687	1,492,074	5,208,451

Source: audited financial statements of the respective companies for the year ended 31 December 2015 and the six months ended 30 June 2016

As advised by the executive Directors, the Target Company, SI Bridge and Shanghai Jiyun have no other key operation other than holding the investment in the interests of the Project Company. The net profit of SI Bridge for the first half of 2016 was mainly derived from the dividend income from its subsidiary, Shanghai Jiyun which has income from investment in the Project Company for both 2015 and the first half of 2016.

As set out in the table above, the Project Company and its subsidiary recorded profits for both the year ended 31 December 2015 and the six months ended 30 June 2016. Revenue and operating costs mainly include toll revenue from and costs for operation of the Hangzhou Bay Bridge. As at 30 June 2016, the Project Company and its subsidiary recorded a consolidated net assets value of approximately RMB5.2 billion. As at 30 June 2016, major assets of the Project Company and its subsidiary comprised of fixed assets (mainly costs for the Hangzhou Bay Bridge) and intangible assets (mainly land use rights and sea use rights). The Project Company and its subsidiary recorded total liabilities of approximately RMB5.6 billion as at 30 June 2016, comprising mainly short term borrowings/current portion of long-term borrowings of approximately RMB759 million, non-current portion of long-term borrowings of approximately RMB3,439 million and bonds of approximately RMB996 million.

4. Valuation of the Operation Rights

The Consideration for the Acquisition has been determined after taking into account, among other things, the market value of the Operation Rights as at 30 June 2016 as appraised by the Independent Valuer. As set out in the Independent Valuer's valuation report contained in Appendix I to the Circular, the market value of 100% of the Operation Rights is RMB12,480,000,000. In compliance with the requirements under Rule 13.80(2)(b) Note 1(d) of the Listing Rules, we have discussed with the Independent Valuer its expertise and obtained the credentials of the person signing the valuation report, who has over 18 years' experience in the valuation of infrastructure projects in the PRC. We also reviewed the Independent Valuer's terms of engagement and discussed with the Independent Valuer its work performed as regards the valuation. Further details of the valuation including the details of the Operation Rights are set out in Appendix I to the Circular.

Valuation methodologies

We understand from the Independent Valuer that the valuation report with respect to the market value of the Operation Rights has been prepared in accordance with the Independent Valuer's standard practice. We have discussed with the Independent Valuer their valuation methodologies and understand that the income (or discounted cash flow) approach was adopted in the valuation of the Operation Rights. As advised by the Independent Valuer, the income approach is the most common approach in valuing the market value of operation rights similar to that of the Hangzhou Bay Bridge. It focuses on the economic benefits generated by the income producing capability of an enterprise, and discounts these benefits to present value using a discount rate appropriate for the risks associated with realising those benefits. We concur with the Valuer that the income approach is commonly used and is the appropriate method for establishing the market value of the Operation Rights.

Review of the valuation report

We have reviewed and discussed with the Independent Valuer the key bases and assumptions adopted for the valuation. A list of key information reviewed, major assumptions and considerations made by the Independent Valuer are set out in the valuation report including the financial projections of the Operation Rights based on assumptions that represent management's best estimate of the economic conditions and operations of the Hangzhou Bay Bridge. A report/letter in relation to the discounted cash flow forecast of the Operation Rights from the Company's reporting accountants and the Board are set out in Appendix III and IV to the Circular respectively.

(a) Cash flow forecast

We understand from the Independent Valuer that they have relied on, among other things, the financial projections in relation to the operation of the Hangzhou Bay Bridge provided by the management of the Company in the valuation of the market value of the Operation Rights. We have reviewed the schedules of projections used by the Independent Valuer and noted that they were consistent

with the financial projections prepared by the Company. We have discussed with the management of the Company regarding the key bases and assumptions adopted in the financial projections for the Operation Rights.

We understand from the Company's management that when preparing the financial projections for the Operation Rights, they have taken into account, among other things, the current and anticipated operating conditions of the Hangzhou Bay Bridge and have made reference, in particular, to the report (the "**Traffic Study Report**") in relation to traffic, revenue, operation and management cost forecast study of the Hangzhou Bay Bridge dated 30 September 2016 prepared by WBG, an independent traffic consultant engaged by the Group. Further details of the Traffic Study Report are set out in Appendix II to the Circular and the sub-section headed "Traffic Study Report" of this letter below.

As set out in Appendix III to the Circular, the Company's reporting accountants are of the opinion that the discounted future estimated cash flows, so far as the calculations are concerned, have been properly compiled, in all material respects, in accordance with the bases and assumptions determined by the Directors. We have discussed with the Company's reporting accountants their scope of work and work undertaken in relation to the cash flow forecast and were advised that no irregularities have been noted during their review.

(b) Discount rate

The discount rate (i.e. the weighted average cost of capital) ("**WACC**") used by the Independent Valuer comprises the weighted cost of equity and the after tax weighted cost of debt. The weight of debt was determined by the average of the weights of debt of the comparable companies and the weight of equity was calculated as 100% minus the weight of debt. The cost of equity is determined based on the Capital Asset Pricing Model ("**CAPM**"), a commonly used model adopted in discounted cash flow valuation. In computing the cost of equity, the cost of debt and the discount rate to be applied, the Independent Valuer has made reference to various factors including (i) the yield of 10-year Central Government Bonds of the PRC of 2.86% (being the risk-free rate adopted in the valuation); (ii) the "beta" which is a measure of the volatility, or systematic risk of selected comparable companies in comparison to the stock market; (iii) other risk adjustments being the market risk premium and the size premium; and (iv) the People's Bank of China long-term (over 5-year) lending rate as at valuation date (being the reference for determining the cost of debt adopted in the valuation). On this basis, the discount rate adopted by the Independent Valuer is 8% and the market value of the operation rights of the Hangzhou Bay Bridge till 30 April 2033 is approximately RMB12.48 billion. Based on the sensitivity analysis with discount rates ranging from 7% to 9% prepared by the Independent Valuer, the market value of the operation rights of the Hangzhou Bay Bridge till 30 April 2033 ranges from approximately RMB11.8 billion to RMB13.3 billion.

We have discussed with the Independent Valuer, obtained and reviewed underlying supporting documents, calculations and basis adopted by the Independent Valuer in deriving the discount rate. We also searched public information, where feasible, to verify the basis adopted by the Independent Valuer in its calculations (including (a) 10-year Central Government Bonds of the PRC sourced from Bloomberg; (b) the People's Bank of China long-term (over 5-year) lending rate sourced from the website of the People's Bank of China; and (c) public financial information (including value of debt and value of equity as sourced from the latest available published financial statements of the comparable companies as at the date of the valuation report) and trading information (including "beta" for the past five years up to the valuation date as sourced from Bloomberg) of the comparable companies adopted in the valuation (namely Yuexiu Transport Infrastructure Limited, Jiangsu Expressway Company Limited, Shenzhen Expressway Company Limited, Zhejiang Expressway Co., Ltd. and Anhui Expressway Company Limited)). We note that the basis adopted by the Independent Valuer is in line with the data obtained through our independent search. We understand from the Independent Valuer that in determining the risk-free rate to be adopted in its valuation, the yield rate of the 10-year Central Government Bonds of the PRC is considered appropriate as such yield rate for a 10-year duration is reasonably indicative of the theoretical "risk-free" rate of return of projects with long life span of 10 years or above. We concur in this regard. Further, we have obtained from the Independent Valuer extracts of the relevant references, including extracts from the Ibbotson SBBI Valuation Yearbook, which the Independent Valuer referred to when determining the market risk premium (7.85%) and size premium (1%) adopted in the valuation, and note that the percentages adopted in the valuation is consistent with the information provided. We further understand from the Independent Valuer that when determining the cost of debt of the Project Company, it has considered the Project Company's expected lending rate with reference to the People's Bank of China long-term (over 5-year) lending rate and we concur with the Independent Valuer that this provides a reasonable benchmark for long-term lending rate in the PRC.

As regards the selection of comparable companies for use in the CAPM and calculation of discount rate, we have discussed with the Independent Valuer and reviewed its basis for selection, which includes companies listed in Hong Kong mainly operate their businesses in the PRC and principally engaged in similar business lines as the public thoroughfares business. Data for the five comparable companies have been obtained by the Independent Valuer for their estimation of discount rate under the income approach. We checked the latest annual reports for the five comparable companies and noted that their principal business is consistent with the selection criteria used by the Independent Valuer. Accordingly, we consider that the Independent Valuer has adopted a reasonable basis in selecting the comparable companies used in the valuation.

Based on the above, we are of the view that the discount rate of 8% set out above is a reasonable figure for the purpose of the valuation.

5. Traffic Study Report

As set out in the Valuation Report, in arriving at the appraised value of the Operation Rights of the Hangzhou Bay Bridge as at 30 June 2016, the Independent Valuer relied to a considerable extent on the Traffic Study Report prepared by WBG. Further details of the Traffic Study Report are set out in Appendix II to the Circular. We have discussed with WBG its expertise and note from its credentials that its services include traffic and annual revenue forecasts, maintenance and operation cost analysis, engineering design review and construction supervision. WBG's clients include PRC government authorities and listed companies in Hong Kong, for whom WBG has provided traffic studies of a similar nature in past engagements.

We have reviewed and discussed with WBG its forecast methodologies, bases and assumptions underlying the forecast on traffic volume, toll revenue and operation and management expense of the Hangzhou Bay Bridge. We have also visited the Hangzhou Bay Bridge on 18 October 2016. We understand from WBG that in forecasting the traffic volume, toll revenue and operation and management expense of the Hangzhou Bay Bridge, WBG has, among other things, carried out the following key steps:

(a) collecting socio-economic and historical traffic data concerning the Hangzhou Bay Bridge, including population trend, GDP growth and car ownership data with respect to Zhejiang Province and key cities along and nearby the Hangzhou Bay Bridge;

(b) analysing data collected as mentioned above;

(c) building a traffic model to forecast the traffic volume and toll revenue; and

(d) forecasting the operation and management expense of the Hangzhou Bay Bridge with reference to, among other things, historical costs data and estimated trend of traffic volume.

We further understand that WBG has (a) analysed the existing travel patterns by obtaining historical traffic data of the Hangzhou Bay Bridge; (b) built a traffic model using a commonly used software which can replicate the existing traffic pattern of the Hangzhou Bay Bridge; (c) estimated the growth rate of traffic volume based on, among other things, GDP of the relevant area (such as Zhejiang Province and the areas along and surrounding the Hangzhou Bay Bridge); (d) assumed that the existing toll rate during the forecast period will remain unchanged; and (e) considered the potential competition to which the Hangzhou Bay Bridge will be subject to during the forecast period. As set out in the Traffic Study Report, WBG adopted the generalised cost approach in determining users' route choice behaviours, which are affected by travel time, trip length and costs. As mentioned above, WBG assumed a fixed toll rate over the forecast period. In order to assess the reasonableness of such assumption, we have discussed with WBG the factors it has considered in determining the use of a fixed toll rate over the forecast period from 2016 to 2033, including historical toll rate policies in Zhejiang Province and historical toll rate change of the Hangzhou Bay Bridge. We have discussed with WBG and reviewed relevant documents and understand that toll

rate concessions were implemented in May 2012 for a period of three years and restored to original toll rates in May 2015. Since then there had not been any change in toll rates for the Hangzhou Bay Bridge. On this basis and in view of the uncertainty of change in toll rate policy in future, we concur with WBG that the assumption of fixed tolls is reasonable. We further understand that WBG has also considered the impact of public holidays and seasonality in its toll revenue forecast.

We note from WBG that the assumptions underlying its forecast are commonly adopted for forecasting traffic volume, toll revenue and operation and management expense of a toll bridge/road, and that the forecast procedures performed as set out in the Traffic Study Report are commonly used in the industry. Based on our discussions with WBG, nothing has come to our attention to cause us to doubt the fairness and reasonableness of the methodologies and assumptions applied in the forecast. Accordingly, we are of the opinion that the Traffic Study Report provides a reasonable basis for the Valuation Report. Nevertheless, Independent Shareholders should note that the valuation of the Operation Rights could be affected by the possibility of upward or downward adjustments to toll rates of the Hangzhou Bay Bridge, or any change in traffic policy and road network in future.

6. Evaluation of the Consideration

As discussed in the sub-section headed "Principal terms of the Sale and Purchase Agreement" of this letter above, the Consideration was determined after arm's length negotiations between the parties having regard to (i) the market value of the Operation Rights of the Hangzhou Bay Bridge as at 30 June 2016 in the amount of RMB12,480,000,000 as valued by the Independent Valuer; (ii) the total liability of the Project Company as at 30 June 2016 in the amount of approximately RMB5.6 billion; and (iii) the approximately 23.1% equity interest in the Project Company indirectly held by the Target Company. In assessing the fairness of the consideration, we consider it is appropriate to refer to the independent valuation conducted by the Independent Valuer in respect of the market value of the Operation Rights. We consider that the methodologies adopted by the Independent Valuer for the market value of the Operation Rights are fair and reasonable. The Independent Valuer has also relied on, among other things, the Traffic Study Report prepared by WBG, which, from our point of view, provides a reasonable basis for the Valuation Report.

7. Financial effects on the Group

As at 30 June 2016, the Group had bank balances and cash of approximately HK$24.8 billion. The Consideration will be funded by internal resources of the Group, lowering its cash level upon Completion by approximately 7%. Upon Completion, each of the Target Company and its subsidiaries (including SI Bridge and Shanghai Jiyun) will become wholly-owned subsidiaries of the Company and their financial results will be consolidated in the financial statements of the Group upon Completion. The Company will indirectly hold approximately 23.1% equity interest in the Project Company and each of the Project Company and its subsidiary will be accounted for as an associate of the Group upon Completion. The executive Directors consider that the Group's income will benefit through share of results of associates as a result of its investment in the

Project Company. As set out in the sub-section headed "Principal terms of the Sale and Purchase Agreement" of this letter above, there is a post-Completion undertaking from SI Infrastructure that SIIC will be entitled to all distributable profits declared, to be declared or to be paid to the Target Group for the financial year ended 31 December 2015 and the financial year ending 31 December 2016, regardless of whether Completion takes place by 31 December 2016 or not.

DISCUSSION

The Target Company is holding indirectly approximately 23.1% equity interest in the Project Company which operates the Hangzhou Bay Bridge. The steady growth in both GDP and population in Zhejiang Province should benefit the operations of the Hangzhou Bay Bridge, being an important road network in the eastern coastal region connecting key cities in Zhejiang Province. The Acquisition is in line with the Group's development strategy.

The Consideration was determined based on various factors, including the valuation of the Operation Rights, and will be satisfied by cash from internal resources of the Group. Valuation of the Operation Rights is performed by the Independent Valuer, which has relied on the discounted cash flow forecast prepared by the Company's management and the Traffic Study Report prepared by WBG. We have discussed with WBG its work and are satisfied that its reports could provide a reasonable basis for valuation of the Operation Rights. The reporting accountants of the Company have also issued a report in connection with the discounted cash flow forecast on which the valuation is based on, which is set out in Appendix III to the Circular. A rate of 8% was used to discount the projected cash flows by the Independent Valuer. We have discussed this and other factors with the Independent Valuer and concur with their approach.

The Acquisition will increase the Group's toll roads segment and enhance its infrastructure facilities portfolio. The Group will benefit through share of results of associates from its investment in the Project Company after Completion. Further details of the benefits of the Acquisition are set out in the sub-section headed "Background to and benefits of the Acquisition" of this letter above. Taking into account the benefits of the Acquisition and the PRC legal advice regarding the toll collection period of the Hangzhou Bay Bridge as set out in the "Letter from the Board" contained in the Circular, although the toll collection period has not been legally confirmed, we are of the view that the Acquisition is in the interests of the Company and the Shareholders as a whole.

OPINION

Having taken into account the above principal factors and reasons including those summarised in the section headed "Discussion" above, we consider that (1) the Acquisition is in the ordinary and usual course of business of the Company and the terms of the Sale and Purchase Agreement are on normal commercial terms and are fair and reasonable so far as the Independent Shareholders are concerned; and (2) the Acquisition is in the interests of the Company and the Shareholders as a whole.

Accordingly, we advise the Independent Board Committee to recommend, and we ourselves recommend, the Independent Shareholders to vote in favour of the ordinary resolution to approve, inter alia, the Sale and Purchase Agreement to be proposed at the EGM.

Yours faithfully,
for and on behalf of
SOMERLEY CAPITAL LIMITED
Stephanie Chow
Director

Ms. Stephanie Chow is a licensed person registered with the Securities and Futures Commission and a responsible officer of Somerley Capital Limited, which is licensed under the SFO to carry out Type 1 (dealing in securities) and Type 6 (advising on corporate finance) regulated activities. She has over seven years' experience in the corporate finance industry.

The English translations of the Chinese names are included in this letter for identification purpose only and should not be regarded as their official English names. In the event of any inconsistency, the Chinese names shall prevail.

The following is the text of a letter and valuation certificate received from DTZ Cushman & Wakefield Limited in connection with its opinion of market value of the operation rights till 30 April 2033 of Hangzhou Bay Bridge as at 30 June 2016 prepared for the purpose of incorporation into this circular.

16th Floor
Jardine House
1 Connaught Place
Central
Hong Kong

30 September 2016

The Directors
Shanghai Industrial Holdings Limited
26/F, Harcourt House,
39 Gloucester Road,
Wanchai,
Hong Kong

Dear Sirs,

Re: Operation rights till 30 April 2033 of Hangzhou Bay Bridge, Ningbo, Zhejiang Province, the People's Republic of China

Instructions, Purpose & Valuation Date

In accordance with your instructions for us to value the market value of the operation rights till 30 April 2033 of Hangzhou Bay Bridge, Ningbo ("Hangzhou Bay Bridge") held by Ningbo Hangzhou Bay Bridge Development Co., Ltd.（寧波市杭州灣大橋發展有限公司）in the People's Republic of China (the "PRC"), we confirm that we have carried out inspection, made relevant enquiries and obtained such further information as we consider necessary for the purpose of providing Shanghai Industrial Holdings Limited (referred to as the "Company") with our opinion of the value of such operation rights as at 30 June 2016 (the "Valuation Date").

Basis of Valuation

The valuation of Hangzhou Bay Bridge held by the Ningbo Hangzhou Bay Bridge Development Co., Ltd. in the PRC is on a market value basis in accordance with the international valuation standards issued by the International Valuation Standard Committee which is defined as "the estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm's length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently and without compulsion".

Scope of Work and Limitations

In performing the valuation, we have relied to a considerable extent on the information provided by Ningbo Hangzhou Bay Bridge Development Co., Ltd. and Hangzhou Bay Bridge Traffic, Revenue, Operation and Management Cost Forecast Study (the "Traffic Study Report") prepared by WB Group Consulting (Shenzhen) Limited (施偉拔諮詢(深圳)有限公司) ("WB Group"), an independent traffic consultant. We have accepted advice given to us on such matters as planning approvals or statutory notices, easements, tenure, profit forecast, projection of traffic flow, toll revenue, administrative expenses, operation costs, maintenance expenses, site areas and other pertinent data concerning Ningbo Hangzhou Bay Bridge Development Co., Ltd. We have not independently verified any of the information, which has been provided to us. In analyzing that information, we have held discussions with management of Ningbo Hangzhou Bay Bridge Development Co., Ltd. We have had no reason to doubt the truth and accuracy of the information provided to us which are material to the valuation. We were also advised that no material facts have been omitted from the information supplied.

We have inspected the exterior of Hangzhou Bay Bridge. At the time of inspection, which was in operation, was found to be in reasonable condition and capable of performing efficiently the purpose for which it was designed and built. However, we would like to draw your attention that we have not undertaken any structural or detailed civil engineering surveys and are not therefore able to confirm that Hangzhou Bay Bridge is free from structural or other defects.

The valuation of an interest in a business (herein referred to the operation rights till 30 April 2033 of Hangzhou Bay Bridge) requires consideration of all pertinent factors affecting the operation of the business and its ability to generate future investment returns. The factors considered in the appraisal included but were not limited to, the following:

- the nature of the business and the history of Ningbo Hangzhou Bay Bridge Development Co., Ltd.;
- the financial conditions of Ningbo Hangzhou Bay Bridge Development Co., Ltd.;
- the economic outlook in general and the specific economic environment for the business;
- past and projected operating results;
- market-derived investment returns of similar lines of business; and
- the financial and business risk of Ningbo Hangzhou Bay Bridge Development Co., Ltd. including the continuity of income and the projected future results.

In valuing the interest, we have not ascertained the titles or the ownership of the interest but we have relied on the advice given by the Company's PRC legal advisor on the PRC law regarding Ningbo Hangzhou Bay Bridge Development Co., Ltd.'s interest. In the course of our valuation, we have assumed that the business is free of any encumbrances and debt liability.

Assumptions

The key assumptions adopted in arriving at our valuation are as follows:

- the conditions in which the business are being operated and which are material to revenue and costs of businesses will remain unchanged;
- no hidden or unexpected conditions of the business might adversely affect the market value;
- the management and operation costs in which the business is being operated will be in accordance with the capital expenditure projection provided by WB Group;
- the financial and operational information provided by WB Group which is realistic and accurate, we relied to such information in arriving at our opinion of value;
- the current financial, economic, legal and political conditions which prevail in the PRC and in the neighbouring cities/countries and which are material to the revenues generated by the businesses will remain unchanged;
- the current taxation and legislation will remain unchanged;
- inflation and interest rates will remain unchanged from the rates prevailing at the date of valuation;
- the operation periods of Hangzhou Bay Bridge is due to expire on 30 April 2033;
- competent management, key personnel and technical staff will be maintained to support the ongoing operation;
- no major business disruptions through international crisis, industrial disputes, industrial accidents or severe weather conditions will be affected the existing business;
- the claims and litigation against the business will remain free;
- any statutory notice and requirements will not affect the operation of the business;
- no unusual or onerous restrictions or encumbrance is subject to.

Approach to Valuation

Income Approach – Discounted Cash Flow ("DCF") Approach

We have adopted the DCF approach to assess the market value of the Hangzhou Bay Bridge. The DCF approach involves discounting future net cash flow of the Ningbo Hangzhou Bay Bridge Development Co., Ltd. to its present worth based on the Traffic Study Report prepared by WB Group in July 2016, other relevant documents and information provided by the Company.

The discount rate of approximately 8% per annum was determined as below:

We first obtained the weighted average cost of capital ("WACC") of Ningbo Hangzhou Bay Bridge Development Co., Ltd., which was calculated by the formula below:

WACC = We x Re + Wd x Rd x (1 – Tc)

In which
Re = Cost of equity;
Rd = Cost of debt;
We = Weight of equity value to enterprise value;
Wd = Weight of debt value to enterprise value; and
Tc = Corporate tax rate.

The cost of equity was calculated by using the following formula:

Re = Rf + β x Market Risk Premium + Other Risk Premium

In which
Re = Cost of equity;
Rf = Risk-free rate; and
β = Beta coefficient.

The yield rate of the 10-year Central Government Bond of the PRC of 2.86% was adopted as the risk-free rate in the valuation.

The market risk premium of the PRC of 7.85% was determined by the market risk premium of the United States and the country risk premium of the PRC.

The unlevered beta was calculated by removing the effects of the use of leverage on the capital structure of the comparable companies. The average of the unlevered betas of the comparable companies of 0.574 was then being relevered based on the specific corporate tax rate and the weight of debt applied to Ningbo Hangzhou Bay Bridge Development Co., Ltd. The beta coefficient was then calculated as 0.765.

The size premium of 1.00% was adopted. As a result, the cost of equity was calculated as 9.87%.

The cost of debt of 4.90% was determined by the expected lending rate of Ningbo Hangzhou Bay Bridge Development Co., Ltd. Since the interest paid on debts are tax-deductible, the cost of obtaining debt funds is less than the required rate of return of the suppliers of the debt capital. The after-tax cost of debt of 3.68% was calculated by multiplying one minus the corporate tax rate of the PRC of 25.00% by the cost of debt.

The weight of debt of 30.74% was determined by the average of the weights of debt of the comparable companies, assuming that the weight of debt of the Ningbo Hangzhou Bay Bridge Development Co., Ltd. moves towards that of the average of the comparable companies over time, and the weight of equity of 69.26% was calculated as one minus the weight of debt. As a result, the WACC of Ningbo Hangzhou Bay Bridge Development Co., Ltd. was 8% (rounded).

We have also prepared a sensitivity analysis with discount rates ranging from 7% to 9%. The sensitivity results are as follows:

Discount Rate	**Market value of the operation rights till 30 April 2033 of Hangzhou Bay Bridge held by Ningbo Hangzhou Bay Bridge Development Co., Ltd. as at 30 June 2016 (RMB)**
7%	13,250,000,000
8%	12,480,000,000
9%	11,790,000,000

Conclusion

In our opinion, on the basis of the information made available to us, the market value of the operation rights till 30 April 2033 of Ningbo Hangzhou Bay Bridge held by Ningbo Hangzhou Bay Bridge Development Co., Ltd. is reasonably stated at the amount of Renminbi Twelve Billion Four Hundred Eighty Million RMB12,480,000,000 as the valuation certificate attached.

This conclusion of value was based on generally accepted valuation procedures and practices that rely extensively on the use of numerous assumptions and the consideration of many uncertainties, not all of which can be easily quantified or ascertained. While we have exercised our professional judgment in arriving at the appraisal, you are urged to consider carefully the nature of such assumptions which are disclosed in this report and should exercise caution when interpreting this report.

Unless otherwise stated, all money amounts stated in our valuation is in Renminbi, the official currency of the PRC.

We attach herewith our valuation certificate.

Yours faithfully,
For and on behalf of
DTZ Cushman & Wakefield Limited

Philip C. Y. Tsang
Registered Business Valuer registered with
the Hong Kong Business Valuation Forum
MSc, MHKIS
Director, Valuation and Advisory Services

Note: Mr. Philip C Y Tsang is a Registered Business Valuer registered with the Hong Kong Business Valuation Forum who has over 18 years' experience in the valuation of infrastructure projects in the PRC.

VALUATION CERTIFICATE

Location of business	Description of business	Particulars of occupancy	Market value of the operation rights till 30 April 2033 of Hangzhou Bay Bridge held by Ningbo Hangzhou Bay Bridge Development Co., Ltd. as at 30 June 2016
Operation rights till 30 April 2033 of Hangzhou Bay Bridge, Ningbo, Zhejiang Province, the People's Republic of China	Ningbo Hangzhou Bay Bridge Development Co., Ltd. (寧波市杭州灣大橋發展有限公司) possesses the operation rights of Hangzhou Bay Bridge in Ningbo, Zhejiang Province. The construction period of the Hangzhou Bay Bridge was from November 2003 to May 2008. The bridge belongs to expressway grade which is approximately 35.673 kilometers long with dual six lanes. Hangzhou Bay Bridge carries G15 Shenyang-Haikou Expressway and G92 Hangzhou Bay Ring Expressway across Hangzhou Bay in the eastern coastal region of China. It connects the municipalities of Jiaxing and Ningbo in Zhejiang Province.	The business is currently operated as a toll bridge.	RMB12,480,000,000

Notes:

(1) According to State Development Planning Commission Document (國家發展計劃委員會檔) no. [2003]213 "The Instruction Request from State Planning Commission about the Approval of the Feasibility Study Report of the Hangzhou Bay Bridge Construction Work" (國家計委關於審批杭州灣跨海大橋工程可行性研究報告的請示), Ningbo Hangzhou Bay Bridge Development Co., Ltd. (寧波市杭州灣大橋發展有限公司) is in charge of the fund raising, construction and management of Hangzhou Bay Bridge. The term of operation rights of Hangzhou Bay Bridge is 30 years (including construction period). During the operation period, toll fee is collected as an investment return and is distributed to all parties proportionally. Upon the operation rights expiry, the Hangzhou Bay Bridge and relevant facilities will be transferred freely to the local Government.

(2) According to State Development Planning Commission Document (國家發展計劃委員會檔) no. [2003]318 "The Notice of the Instruction Request from State Planning Commission about the Approval of the Feasibility Study Report of the Hangzhou Bay Bridge Construction Work" (國家計委關於審批杭州灣跨海大橋工程可行性研究報告的請示的通知), Zhejiang Provincial Commission for Discipline Inspection (浙江省計委) should enforce management, ensure construction quality and strictly control the total investment during the construction period.

(3) According to the Traffic Study Report prepared by WB Group, extract of the annual traffic flow volume and toll revenue of Hangzhou Bay Bridge are as below:–

Year	Average daily traffic volume (in vehicle)	Annual toll revenue (in RMB million)
2017	33,399	1,352
2025	49,548	1,961
2033	59,554	2,278

(4) According to Business Licence No. 91330200732104147F dated 8 June 2016, Ningbo Hangzhou Bay Bridge Development Co., Ltd was established on 17 October 2001 with a registered capital of RMB4,935,000,000 for a valid operation period from 25 December 2003 to 15 October 2031.

(5) The opinion of the PRC legal adviser states that:–

(i) Ningbo Hangzhou Bay Bridge Development Co., Ltd.（寧波市杭州灣大橋發展有限公司）has obtained Business Licence and is legally established; and

(ii) According to "The Instruction Request from State Planning Commission about the Approval of the Feasibility Study Report of the Hangzhou Bay Bridge Construction Work"（國家計委關於審批杭州灣跨海大橋工程可行性研究報告的請示） which is approved by the State Council, forwarded by State Development Planning Commission No. [2003]318 (No. [2003]213), the operation rights of Hangzhou Bay Bridge is 30 years (including construction period). According to the "Regulations on the Administration of Toll Roads"（收費公路管理條例）, (toll road should apply for the acceptance according to relevant state regulations. Upon qualified, it can be opened to traffic. The operation period of operating highway should be approved by Provincial Government with the longest period of 25 years. As advised by Ningbo Hangzhou Bay Bridge Development Co., Ltd.（寧波市杭州灣大橋發展有限公司）, Hangzhou Bay Bridge has opened to traffic since 1 May 2008, however, no approval has been obtained for the period term of toll collection and no toll operation contract has been signed with relevant Government department. Hence, the period term of toll collection of Hangzhou Bay Bridge has not been approved by Zhejiang Provincial Government（浙江省政府）in accordance with the "Regulations on the Administration of Toll Roads"（收費公路管理條例）, the period term of toll collection has not been legally confirmed; Despite this, since Hangzhou Bay Bridge has legally received the acceptance of qualified, Ningbo Hangzhou Bay Bridge Development Co., Ltd.（寧波市杭州灣大橋發展有限公司）could obtain not more than 25 years operation rights of Hangzhou Bay Bridge from the date of approval of opening to traffic in accordance with the "Regulations on the Administration of Toll Roads"（收費公路管理條例）.

(6) In accordance with the legal opinion issued by the PRC legal advisers and the information provided by the Company, the status of title and grant of major approvals and licenses are as follows:

Toll Operation Contract	No
Study Report of Zhejiang Hangzhou Bay Bridge Traffic, Toll and Operation Management Fee Prediction	Yes
Business Licence	Yes

The following is the text of a letter, prepared for inclusion in this circular, received from WB Group Consulting (Shenzhen) Limited in connection with the traffic forecasts for the Hangzhou Bay Bridge.

HANGZHOU BAY BRIDGE
TRAFFIC, REVENUE, OPERATION AND MANAGEMENT COST FORECAST STUDY

Final Report

30 September 2016

WB Group Consulting (Shenzhen) Limited

1 OVERVIEW

1.1 Background

In May 2016, WB Group Consulting (Shenzhen) Limited (the "Consultant") was appointed by Shanghai Industrial Holdings Limited to conduct a forecast study of traffic volumes, revenues, and operating costs of the bridge across the Hangzhou Bay in Zhejiang Province (Hangzhou Bay Bridge). The forecasting period is from 2016 to 2033.

The Hangzhou Bay Bridge is a shortcut across the Hangzhou Bay on the coastal highway from Tongjiang(同江)to Sanya(三亞)among China's five north-south national backbones. It is intended to enhance the connections between Shanghai and deep water ports along the coastline of Zhejiang Province in support of the construction of Shanghai International Shipping Center. It links northwards the coastal developed areas such as Jiaxing(嘉興)and Huzhou(湖州)in Zhejiang Province, Shanghai, Jiangsu Province, and Shandong Province through Zhapu(乍浦)-Jiaxing(嘉興)-Suzhou(蘇州)and Tongjiang-Sanya expressways. In the south, it connects the coastal cities of Zhejiang Province such as Ningbo(寧波), Zhoushan(舟山), Taizhou(台州), Wenzhou(溫州)and extensive developed coastal areas in Southeast China. The bridge enables adjacent areas to benefit more from Shanghai's economic strength, accelerates the opening and development of Pudong Shanghai, and strengthens Shanghai's position as a leader in the Yangtze River Delta, and driving and promoting the fast, consistent economic growth of Zhejiang Province, Shanghai, and Jiangsu Province.

The total investment of the Hangzhou Bay Bridge was over RMB16.1 billion. The total strength of the bridge is 36km with an investment of 11.8 billion. The north and south approaches of the Hangzhou Bay Bridge are 15.5m and 311.5m in length respectively. The bridge is 35.673km in length, running from mileage K1380+000 to K1416+000. The road is a dual-six expressway with central median. The project construction started in November 2003 and was completed in June 2007. The bridge was opened on May 1, 2008. There is a service area at each end of the bridge. In the middle of the bridge, there is a tourist attraction platform called Haitianyizhou with integrated tourism, sightseeing, accommodation, and catering service. A toll station is built there. Figure 1-1 depicts the location of the bridge and table 1-1 shows its basic information.

Figure 1-1 Location of the Hangzhou Bay Bridge

Table 1-1 Basic information on Hangzhou Bay Bridge

	Item	Index
Key technical parameters	Highway classification	Expressway
	Total length	35.673km
	Number of lanes	2×3
	Date of construction	November 2003
	Date of operation	May 2008
	Designed speed	100km/hour
	Number of service areas	2
Major structural parameters	Number of bridge bearing platforms	1,272
	Number of bridge piers	1,428
	Cast-in-place box girders	157
	Concrete	2,450,000m^3
	Steel	820,000t
	50m precast concrete box girders	404
	70m precast concrete box girders	522
	Steel bridge deck pavement	62,467m^2
	Concrete bridge deck pavement	1,032,886m^2
	Road pavement	10,593m^2

1.2 Technical Approach

The ConsultantConsultant has completed the whole task by first carefully examining the characteristics of the project and then going through the stages of site reconnaissance, data collection, base year traffic analysis, traffic modeling, social and economic assessment, and analysis of traffic volume and revenues. The specific steps and details are as follows:

Step 1: Mobilization and data collection – The Consultant has first collected all data on the Hangzhou Bay Bridge, the economic and traffic development trends and future growth targets or forecasts for Zhejiang Province, Jiangsu Province, and Shanghai.

Step 2: Base year traffic analysis – Based on the data collected to assess the traffic condition of the corridor, and the annual average traffic volume of the project road is calculated by analyzing the difference between the historical data and the collected feature day flow. The value of time and the operating costs have also been estimated at this stage.

Step 3: Establishment of the road network for the traffic model – The purpose was to build a computer simulation model to present the current conditions of the transport corridor. The EMME/3 traffic model was used for building, calibrating and assessing the road network. The Consultant believes in the decisive influence of the road network over the years to come and therefore has also collected and reviewed information on roads and infrastructure to be built by the government. The road network assumptions and final road network determination are critical to the forecasts.

Step 4: Social and economic assessment – The social and economic forecasts of Zhejiang Province and adjacent cities are another important factor for the study. The Consultant has analyzed and assessed the latest data released by the government to find a relationship between historical traffic volume and social and economic statistics. The extensive coverage and details of the data will dictate the accuracy of the coefficients.

Step 5: Development of the traffic model – The work completed from Steps 1 to Step 4 has provided the basis for developing a traffic model. The remaining works were to establish and to calibrate typical trip distribution and trip assignment models in order to replicate existing traffic volumes and conditions. For future forecasting, the traffic demand estimations were rectified based on the findings in Step 5.

Step 6: Study of traffic volume and revenues – After the analysis of future year road network assumptions, social and economic factors, maintenance expenses, economic growth, inflation, and toll tables, detailed study of traffic volume and benefits can begin. The consensus reached in the preceding assumptions has been considered the primary assumptions for the model.

Step 7: Forecasts of operating costs – The forecasts of the operating expenses of the project expressway are divided into two parts, namely, forecasts of operating expenses and forecasts of administrative expenses. The Consultant has produced forecasts of the operating and administrative expenses based on the trends of administrative expenses reflected by the material provided by the operating company combined with the forecasts of traffic volumes after reviewing history maintenance expenditure.

1.3 The Forecasts Assumptions

The Consultant has obtained data on station-to-station traffic volume for two weeks from November 15-28, 2015 from Zhejiang Province expressway toll clearing system. These data have recorded information on all the vehicles using Zhejiang Province's expressway system, including the entry/exit time and flows at toll gates, vehicle type, toll type, toll rate, passenger or freight, and total weight. They have shown the latest traffic conditions during a typical week and helped us understand the traffic composition, origins and destinations of the vehicles, weekly changes, and the travel distance on the project expressway.

The advantages of obtaining traffic distribution on an expressway through station-to-station data from toll information are as follows:

- The information was recorded by electronic means, hence eliminated disruptions and inconvenience to the expressway users;

- The results were directly issued by the "Clearing Center" without mistakes possibly made through manual data entry and coding efforts. This will enhance the accuracy of the base traffic data used in subsequent analysis;

- The information represented 100% universe and 24 hour revenue records on the expressway system in Hunan Province. The discrepancies and problems likely to be incurred by the survey sampling method could be avoided.

This has eliminated the problems of sample deviation and repeated sampling caused by manual survey. In addition to Zhejiang station-to-station data, the Consultant has also collected the following data from Ningbo Hangzhou Bay Bridge Development Co., Ltd (the "Hangzhou Bay Bridge Company"), which are helpful in analyzing historical trend of the traffic volume and for future years traffic forecasting:

1) The road sections, number of lanes, number of entry/exit lanes at the toll station, and the connecting roads of each segment of the project expressway;

2) The monthly toll revenues of the project expressway from 2012 to May 2016;

3) The monthly section flow and percentage of toll free vehicles from 2013 to May 2016, by vehicle type and by direction of the project expressway;

4) The monthly section flow and percentage of exempt vehicles from 2012 to May 2016 by vehicle type of the project expressway.

Although no traditional OD survey has been conducted for this study due to time and other restrictions, we believe that the station-to-station data collected by the Consultant across the whole Zhejiang Province can accurately reflect the pattern and characteristics of travels on expressways in the province. In addition, the elasticity growth rate model was built on the basis of the evolution of historical traffic volumes of the project expressway and economic growth is a traditional means of traffic forecasting, and the forecasts of traffic and revenues obtained from the model are reliable.

1.4 Report Format

This report is the final draft of the results of the forecasts for the Hangzhou Bay Bridge. The first chapter provides the technical approach and reference of the study in addition to an introduction to the bridge. The second chapter discusses in detail the economic and traffic growth of the areas affected by the bridge. The third chapter deals with the key techniques of the transport forecast model. The fourth chapter presents the final forecasts of future year traffic volumes and toll revenues of the bridge. The fifth chapter summarizes historical operation and maintenance analysis and the sixth chapter forecasts of operation and administrative expenses. The seventh chapter provides a summary of this study.

2 EXISTING CONDITION OF THE PROJECT BRIDGE CORRIDOR AND TRAFFIC SURVEYS

2.1 Existing Development of the Bridge Corridor

2.1.1 Social and Economic Development in Zhejiang Province

Zhejiang is a southeastern coastal province of China located on the south wing of the Yangtze River Delta. It faces the East China Sea to the east and borders Fujian province to the south, Jiangxi and Anhui provinces to the west, and Shanghai municipality and Jiangsu province to the north. It is one of the most economically dynamic provinces of China. Since China initiated its reform and opening-up policy, Zhejiang has taken the opportunities to intensify reforms and open-door policy, securing the position as one of the most important provinces for China's economy with strengthened comprehensive strength.

Population

The number of permanent residents in Zhejiang Province was 55.39 million at the end of 2015, increased by 310,000 from a year ago. The male population was 28.37 million and the female population was 27.03 million, accounting for 51.2% and 48.8% of the total population respectively. In 2015, there were 581,000 new born with a birth rate of 10.52‰ and 304,000 deaths with a death rate of 5.50‰; the natural rate of increase was 5.02‰. Table 2-1 gives the detailed information.

Table 2-1 Zhejiang Province Annual population Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Population (in millions)	48.98	49.80	50.60	51.20	47.16	54.43	54.63	54.77	54.98	55.08	55.39

Source: Statistic Year Book of Zhejiang Province on National Economic and Social Development (2005-2015)

GDP

In 2015, Zhejiang Province's GDP reached RMB4,288.6 billion, for a yearly growth rate of 8%. The increase from the primary industry was RMB183.3 billion, and from the secondary industry was RMB 1,970.7 billion, and that from the tertiary industry was RMB2,134.7 billion, increased by 1.5%, 5.4%, and 11.3% respectively. The contribution from the tertiary industry to the GDP was 65.7%. The ratio of the three industries shifted from 4.4:47.7:47.9 to 4.3:45.9:49.8, the share of the tertiary industry increased by 1.9%. The annual GDP per capita was RMB77,644 (or US$12,466 at average exchange rate), rose 7.6% from previous year. The productivity per-capita was RMB115,000, with a yearly growth rate of 7.7%. For detailed information, see Table 2-2.

Table 2-2 Zhejiang Province Annual GDP Statistics

Year	GDP (in billions)	Growth rate	Primary industry	Secondary industry	Tertiary Industry	Per capita GDP (RMB)
2005	1,336.5	12.4%	87.3	714.7	534.5	27,552
2006	1,564.9	13.6%	92.3	843.8	628.8	31,684
2007	1,868.3	14.5%	102.5	1009.2	752.1	37,128
2008	2,148.7	10.1%	109.5	1158.0	881.1	42,214
2009	2,283.2	8.9%	116.2	1184.3	982.7	44,335
2010	2,722.7	11.8%	136.1	1,412.1	1,174.5	52,059
2011	3,200.0	9.0%	158.1	1,640.4	1,401.5	58,665
2012	3,460.6	8.0%	167.0	1,731.2	1,562.4	63,266
2013	3,756.8	8.2%	178.5	1,844.7	1,733.7	68,462
2014	4,015.4	7.6%	177.9	1,915.3	1,922.2	72,967
2015	4,288.6	8.0%	183.3	1,970.7	2,134.7	77,644

Source: Statistical Communique of Zhejiang Province on National Economic and Social Development (2005-2015)

Per Capita Income

In 2015, Zhejiang's disposable income per capita was RMB35,537, increased by 8.8% or 7.3% in real terms compared to previous year. The disposable income per capita of urban and rural residents was RMB43,714 and RMB21,125 respectively, grew by 8.2% and 9% or 6.7% and 7.5% in real terms from previous year. The median of disposable income per capita reached RMB31,499, increased by RMB2,919 or 10.2% compared with previous year. The median of disposable income per capita of urban and rural inhabitants was RMB40,161 and RMB20,665 respectively, grew by RMB3,757 and RMB2,205 or 10.3% and 11.9% compared to previous year. For details, see Table 2-3.

Table 2-3 Zhejiang ProvinceAnnual Personal Income Statistics

Year	Average Yearly Disposable Income per Capita of Urban Residents	Growth Rate	Average Yearly Disposable Income per Capita of Rural Residents	Growth Rate
2005	16,294	10.4%	6,660	6.4%
2006	18,265	10.9%	7335	9.3%
2007	20,574	8.4%	8,265	8.2%
2008	22,727	5.4%	9,258	6.2%
2009	24,611	9.7%	10,007	9.5%
2010	27,359	7.0%	11,303	8.6%
2011	30,971	7.5%	13,071	9.5%
2012	34,550	9.2%	14,552	8.8%
2013	37,851	7.1%	16,106	8.1%
2014	40,393	6.8%	19,373	8.3%
2015	43,714	6.7%	21,125	7.5%

Source: Zhejiang Province Personal Socio-economic Development Report (2005-2015)

Car Ownership

Car ownership has been increasing quickly in Zhejiang in recent years, especially for civil use car ownership. With a burgeoning economy and rising living standards, Zhejiang's civil use car ownership is expected to sustain fast growth. By the end of 2014, the province's civil use car ownership had reached 10,132,000. Table 2-4 gives the detailed information.

Table 2-4 Zhejiang Province Car Ownership Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Civil vehicle ownership (in millions)	2.02	2.47	3.027	3.50	4.266	5.416	6.580	7.749	9.033	10.132

Source: Zhejiang Statistical Yearbook (2008-2015)

2.1.2 Social and Economic Development in Cixi City

Cixi is located on the shore of the East China Sea to the south bank of the Hangzhou Bay. It is 60km away from Ningbo to the east, 148km from Shanghai to the north, and 138km from Hangzhou to the west. Lying at the center of the golden economic delta of the three cities of Shanghai, Hangzhou, and Ningbo in the surrounding areas of the Hangzhou Bay on the south wing of the Yangtze River Delta economic circle, it is favorably located with distinct transport advantages. Since the Hangzhou Bay Bridge started operation in 2008, Cixi has become a golden node city on the south wing of the Yangtze River Delta with a shorter driving distance from Shanghai.

Population

At the end of 2015, there were 420,702 households and 1,047,057 permanent residents respectively in Cixi, including 763,179 urban residents and 283,878 rural residents. The male-to-female sex ratio was 96.68:100. The population under 18 was 138,917 and that over 60 was 246,294. The sex ratio of births with local household registration was 102.87. At the end of 2015, the city's registered number of migrants was 955,600, including 451,600 males, 117,600 non-adult, and 12,000 migrants over 60. Table 2-5 gives the detailed information.

Table 2-5 Cixi City Population Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Population (in millions)	1.0154	1.0208	1.0272	1.0312	1.0352	1.0388	1.0415	1.0419	1.0436	1.0459	1.0471

Source: Cixi City Personal Socio-economic Development Report (2005-2015)

GDP

In 2015, Cixi's GDP reached RMB115.46 billion, for a yearly growth rate of 7.5% in terms of the comparable price, 0.6% higher than the national growth rate, and 0.5% lower than that of Zhejiang Province and Ningbo. The value added from the primary industry was RMB4.97 billion, increased by 1.2%; that from the secondary industry was RMB63.90 billion, increased by 6.5%; and that from the tertiary industry was RMB46.59 billion, grew by 9.9%. The ratio of the primary, secondary, and tertiary industries shifted to 4.3:55.4:40.3, contributing 0.1, 4.0, and 3.4 percentage points respectively to the economic growth. The per capita GDP of residents with a local household registration was RMB110,327 (US$17,714 at average exchange rate). Table 2-6 gives the detailed information.

Table 2-6 Cixi GDP Growth Statistics

Year	GDP (in RMB million)	Growth Rate	Primary Industry	Secondary Industry	Tertiary Industry	GDP Per capita (RMB)
2005	37,523	15.0%	2,084	23,006	12,433	37,047
2006	45,020	15.6%	2,279	27,978	14,763	44,219
2007	53,091	14.6%	2,495	32,942	17,654	51,847
2008	60,144	8.8%	2,815	37,373	19,956	58,437
2009	62,624	8.2%	3,139	37,214	22,271	60,610
2010	75,770	15.6%	3,861	45,820	26,089	73,064
2011	87,616	10.4%	4,346	52,753	30,517	84,232
2012	94,829	9.4%	4,654	55,334	34,841	91,033
2013	10,311	9.0%	4,930	59,356	38,823	98,882
2014	111,200	8.6%	4,848	63,332	42,976	106,392
2015	115,500	7.5%	4,970	63,902	46,585	110,327

Source: Cixi City Personal Socio-economic Development Report (2005-2015)

Per Capita Income

In 2015, Cixi's disposable income per capita was RMB41,108, for a growth of 8.7% compared with previous year. The disposable income per capita of urban and rural residents was RMB47,182 and RMB27,295 respectively, for a growth of 8.4% and 9.0% compared to previous year. The income gap between urban and rural residents was further narrowed. The ratio of disposable income of urban and rural residents was reduced by 0.01 point to 1.73:1 in 2015. Table 2-7 gives the detailed information.

Table 2-7 Cixi Per Capita Income Statistics

Year	Per capita disposable income of urban residents	Growth rate	Per capita net income of rural residents	Growth rate
2005	19,019	13.5%	8,445	15.2%
2006	21,623	13.7%	9,564	13.3%
2007	24,535	13.5%	11,126	16.3%
2008	26,385	7.5%	12,263	10.2%
2009	28,311	7.3%	13,538	10.4%
2010	30,896	9.1%	15,513	14.6%
2011	34,123	10.4%	18,260	17.7%
2012	37,711	10.5%	20,383	11.6%
2013	41,254	7.1%	22,702	9.1%
2014	43,526	9.0%	25,041	11.1%
2015	47,182	8.4%	27,295	9.0%

Source: Cixi City Personal Socio-economic Development Report (2005-2015)

Car Ownership

Car ownership has been increasing quickly in Cixi in recent years, especially for civil use vehicles. With a burgeoning economy and rising living standards, Cixi's civil use car ownership is expected to sustain fast growth. Table 2-8 gives the detailed information.

Table 2-8 Cixi Civil Use Car Ownership Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Civil vehicle ownership (in thousands)	52.8	65.7	79.6	92.2	107.4	139.6	168.3	197.4	225.5	252.6

Source: Cixi Statistical Yearbook (2007-2010), annual data from Cixi Statistics Bureau (2011-2015)

2.1.3 Social and Economic Development in Ningbo City

Ningbo is located on the south wing of the Yangtze River Delta along China's central coastline. With Zhoushan Islands forming a natural barrier to the east, the city borders the Hangzhou Bay to the north, and Shengzhou, Xinchang, and Shangyu of Shaoxing City to the west, and the Sanmen Bay in addition to Sanmen and Xiangshan of Taizhou City to the south. It comprises six districts of Haishu, Jiangdong, Jiangbei, Zhenhai, Beilun, and Yinzhou, two counties of Ninghai and Xiangshan, and three county-level cities of Cixi, Yuyao, and Fenghua.

Population

At the end of 2015, Ningbo had a population of 5.866 million with a local household registration, 2.321 million of which lived in urban areas. There were 48,612 births during the year, including 25,213 males with a sex ratio of 108:100. The birth rate was 8.31‰ and the natural growth rate was 1.84‰, which was 1.75‰ lower than previous year and had been below 5‰ for 18 consecutive years. The city's permanent population was estimated to be 7.825 million and the percentage of rural residents in the whole population (urbanization ratio) was 71.1% by the compiled sample data of the 1% sampling census 2015. Table 2-9 gives the detailed information.

Table 2-9 Ningbo City Population Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Population (in millions)	5.567	5.604	5.646	5.681	5.710	5.741	5.764	5.777	5.801	5.838	5.866

Source: Ningbo City Personal Socio-economic Development Report (2005-2015)

GDP

In 2015, Ningbo's GDP reached RMB801.15 billion, increased by 8.0%. The value added from the primary industry was RMB28.52 billion, increased by 1.8%; that from the secondary industry was RMB392.45 billion, grew by 4.8%; and that from the tertiary industry was RMB380.18 billion, with a growth of 12.5%. The ratio of the primary, secondary, and tertiary industries was 3.6:49.0:47.4. The GDP per capita of permanent residents reached RMB102,475 (US$16,453 at average exchange rate). Table 2-10 gives the detailed information.

Table 2-10 Ningbo GDP Growth Statistics

Year	GDP (in billions)	Growth Rate	Primary Industry	Secondary Industry	Tertiary Industry	Per Capita GDP (RMB)
2005	244.6	12.5%	12.88	135.4	96.4	38,733
2006	286.5	13.4%	13.95	157.6	114.9	51,285
2007	343.3	14.8%	15.36	188.9	139.1	61,032
2008	396.4	10.1%	16.74	219.7	160.0	69,997
2009	421.5	8.6%	18.38	224.8	178.3	73,998
2010	512.6	12.4%	21.843	284.8	205.9	68,162
2011	601.0	10.0%	25.576	333.5	241.9	77,983
2012	652.5	7.8%	27.0	351.7	273.8	85,475
2013	712.9	8.1%	27.6	374.2	311.1	93,176
2014	760.3	7.6%	27.5	393.6	339.2	98,972
2015	801.2	8.0%	28.5	392.5	380.2	102,475

Source: Ningbo City Personal Socio-economic Development Report (2005-2015)

Per Capita Income

In 2015, Ningbo's per capita disposable income was RMB41,373, with a growth of 8.7%. The per capita disposable income of urban and rural residents was RMB47,852 and RMB26,469 respectively, increased by 8.4% and 9.0% compared to previous year. The ratio of per capita income of urban and rural residents was reduced by 0.01 point from previous year to 1.81. In 2015, the per capita consumption expenditure of Ningbo residents was RMB26,056, with a growth of 7.1%. The per capita consumer spending was RMB29,645 and RMB17,800 respectively for urban and rural residents, grew by 6.3% and 9.7%. Table 2-11 gives the detailed information.

Table 2-11 Ningbo Income per Capita Statistics

Year	Per Capita Disposable income of Urban Residents	Growth Rate	Per Capita Net Income of Rural Residents	Growth Rate
2005	17,408	9.60%	11,758	4.20%
2006	19,674	13.00%	12,665	7.70%
2007	22,307	13.40%	10,051	13.60%
2008	25,304	13.40%	11,450	13.90%
2009	27,368	9.20%	12,641	10.40%
2010	30,166	10.20%	14,261	12.80%
2011	34,058	7.20%	16,518	9.60%
2012	37,902	11.30%	18,475	11.80%
2013	41,729	7.7%	20,534	8.8%
2014	44,155	9.2%	24,283	11.0%
2015	47,852	8.4%	26,469	9.0%

Source: Ningbo City Personal Socio-economic Development Report (2005-2015)

Car Ownership

Car ownership has been increasing quickly in Ningbo in recent years and is expected to sustain fast growth in the next few years with a burgeoning economy and rising living standards. By the end of 2013, Ningbo's civil use car ownership reached 1,420,600. Table 2-12 gives the detailed information.

Table 2-12 Ningbo Civil Use Car Ownership Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Civil Use Car Ownership (in thousands)	333.1	405.2	504.2	578.5	655.1	877.4	1,064.6	1,232.5	1,420.6

Source: Ningbo Statistical Yearbook (2006-2014)

2.1.4 Social and Economic Development in Jiaxing City

Located in northeastern Zhejiang at the heart of the Hangjiahu Plain in the Yangtze River Delta, Jiaxing is an important city in the Yangtze River Delta. It faces the East China Sea to the east, the Qiantang River to the south, the Tai Lake to the north, and the Tianmu Mountain to the west. The Great Canal runs across the city. The city lies on a critical section of the South Tai Lake corridor and is within 100km from Shanghai, Zhangzhou, Suzhou, and Huzhou. There are seven counties (county-level cities and districts), including Jiashan, Pinghu, Haiyan, Haining, Tongxiang, Xiucheng, and Xiuzhou. There are 3.49 million permanent residents and a total area of 3,915km^2, including 968km^2 of downtown areas.

Population

At the end of 2015, Jiaxing had 3,494,800 residents with a local household registration, increased by 13,400 from previous year. The city's permanent population in 2015 was estimated to be 4,585,000 according to the results of the national 1% sampling census and demographic data from competent agencies. For residents with a local household registration, the birth rate was 8.13‰ and the death rate was 7.24‰, leading to a natural growth rate of 0.89‰. In 2015, 23,000 people moved in the city and 11,000 moved out, so the mechanical growth rate was 3.46‰. Table 2-13 gives the detailed information.

Table 2-13 Jiaxing Population Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Population (in thousands)	3,343.3	3,355.5	3,368.1	3,380.7	3,396	3,416	3,430.5	3,445.2	3,459.3	3,481.4	3,494.8

Source: Jiaxing City Personal Socio-economic Development Report (2005-2015)

GDP

In 2015, Jiaxing's GDP reached RMB351.71 billion with an increase of 7.0% from previous year. The value added from the primary industry was RMB14,009 million, a 2.7% drop compared to previous year; that from the secondary industry was RMB185.0 billion, with a growth of 5.9%; and that from the tertiary industry was RMB152.7 billion, with a growth of 9.6%. The ratio of the three industries shifted to 4.0:52.6:43.4. The annual GDP per capita was RMB76,834 (or US$12,336 at average exchange rate) for permanent residents, increased by 6.7%. Table 2-14 gives the detailed information.

Table 2-14 Jiaxing's GDP growth Statistics

Year	GDP (in RMB billion)	Growth Rate	Primary industry	Secondary industry	Tertiary industry	GDP Per Capita (RMB)
2005	115.6	13.1%	8.154	68.1	39.3	34,588
2006	134.3	13.7%	8.647	80.6	45.0	40,100
2007	158.5	14.4%	10.022	94.7	53.8	38,354
2008	181.5	10.7%	10.552	108.5	62.4	43,129
2009	191.8	9.3%	10.701	111.2	69.9	44,896
2010	229.6	13.7%	12.630	134.2	82.8	67,410
2011	266.8	10.6%	14.609	153.6	98.6	59,057
2012	288.5	8.7%	15.000	162.1	111.4	63,580
2013	314.8	9.3%	15.600	172.7	126.5	69,164
2014	335.3	7.5%	14.500	181.1	139.6	73,462
2015	351.7	7.0%	14.000	185.0	152.7	76,834

Source: Jiaxing City Personal Socio-economic Development Report (2005-2015)

Per Capita Income

In 2015, Jiaxing's disposable income per capita of urban residents reached RMB45,499, with a growth of 8% compared to previous year or 6.9% in real terms. The disposable income per capita of urban residents reached RMB26,838, increased by 8.8% compared to previous year or 7.7% in real terms. The consumption expenditure per capita was RMB25,544 and RMB17,522 respectively for urban and rural residents, with a rise of 10.9% and 8.4% respectively. The Engel coefficients (food expenditure as a proportion of total household spending) for urban and rural households are 30.0% and 29.6% respectively. Table 2-15 gives the detailed information.

Table 2-15 Jiaxing Per Capita Income Statistics

Year	Disposable Income Per capita of Urban Residents	Growth Rate	Net Income Per Capita of Rural Residents	Growth Rate
2005	16,189	10.20%	8,007	14.00%
2006	17,828	10.10%	8,952	11.80%
2007	20,128	8.90%	10,163	9.50%
2008	22,481	6.20%	11,538	7.90%
2009	24,693	9.80%	12,685	9.90%
2010	27,487	7.00%	14,365	8.90%
2011	31,520	8.70%	16,707	10.20%
2012	35,696	10.80%	18,636	9.10%
2013	39,087	7.70%	20,556	8.50%
2014	42,143	6.90%	24,676	8.00%
2015	45,499	6.90%	26,838	7.70%

Source: Jiaxing City Personal Socio-economic Development Report (2005-2015)

Civil Use Car Ownership

Civil use car ownership has been increasing quickly in Jiaxing in recent years and is expected to sustain fast growth in the next few years. At the end of 2015, civil use car ownership in Jiaxing reached 791,900. Table 2-16 gives the detailed information.

Table 2-16 Jiaxing's Civil Use Car Ownership Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Civil Use Car Ownership	132,700	157,400	196,100	227,700	283,900	367,800	466,700	574,300	683,700	791,900

Source: Jiaxing Statistical Yearbook (2007-2015)

2.1.5 Social and Economic Development in Shanghai

As the largest city in China and one of the four municipalities directly under the central government, Shanghai is a national central city, an economic, scientific, industrial, financial, trade, exhibition, and shipping hub. It is located at the mouth of the Yangtze River along the central coastline, boasting of China's largest foreign trade port and the largest industrial base. It is separated from Kyushu Island by the sea and borders the Hangzhou Bay to the south and Jiangsu and Zhejiang to the west. Shanghai port ranks the world's No.1 in cargo throughput and container throughput. Shanghai is also an emerging tourism city with a profound background of modern urban culture and a wealth of historical sites. It hosted the World Expo 2010 successfully. Shanghai has grown into an international metropolis and is on the way to become an international financial center and shipping center in 2020.

Population

At the end of 2015, there were 24,152,700 permanent residents in Shanghai, including 14,336,200 with a local household registration and 9,816,500 with a non-local household registration. In 2015, there were 181,900 births for permanent residents with a birth rate of 7.52‰ and 122,800 deaths with a death rate of 5.07‰. The natural growth rate for permanent residents was 2.45‰. There were 103,800 births for residents with a local household registration and a birth rate of 7.25‰ and 115,000 deaths with a death rate of 8.03‰. The natural growth rate for residents with a local household registration was -0.78‰. Table 2-17 gives the detailed information.

Table 2-17 Shanghai's population Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
(in millions)	13.603	13.681	13.789	13.710	13.794	14.184	14.194	14.269	14.251	14.293	14.336

Source: Shanghai Municipality Personal Socio-economic Development Report (2005-2015)

GDP

In 2015, Shanghai's GDP reached RMB2,496.499 billion, with a growth of 6.9% compared with previous year. The value added from the primary industry was RMB10.978 billion, down 13.2%; that from the secondary industry was RMB794.069 billion, up 1.2%; and that from the tertiary industry was RMB1,691.452 billion, up 10.6%. The share of the tertiary industry in Shanghai's GDP rose by 3.0% to 67.8%. The GDP per capita of permanent residents reached RMB103,100. Table 2-18 gives the detailed information.

Table 2-18 Shanghai GDP Growth Statistics

Year	GDP (in 100 million)	Growth Rate	Primary Industry	Secondary Industry	Tertiary Industry
2005	9,144	11.1%	79.65	4,475.92	4,588.38
2006	10,297	12.7%	93.81	4,997.81	5,205.35
2007	12,001	13.3%	101.84	5,675.49	6,223.83
2008	13,698	9.7%	111.80	6,235.92	7,350.43
2009	14,901	8.2%	113.82	5,939.96	8,847.15
2010	16,872	9.9%	114.15	7,139.96	9,618.31
2011	19,196	8.2%	124.94	7,959.69	11,111.06
2012	20,101	7.5%	127.80	7,912.77	12,060.76
2013	21,602	7.7%	129.28	8,027.77	13,445.07
2014	23,561	7.0%	124.26	8,164.79	15,271.89
2015	24,965	6.9%	109.78	7,940.69	16,914.52

Source: Shanghai Municipality Personal Socio-economic Development Report (2005-2015)

Per Capita Income

In 2015, Shanghai's disposable income per capita was RMB49,867, with a growth of 8.5% compared with previous year or 6.0% in real terms. The disposable income per capita of urban and rural permanent residents was RMB52,962 and RMB23,205, increased by 8.4% and 9.5% or 5.9% and 6.9% respectively in real terms from previous year. The consumption expenditure per capita of Shanghai residents was RMB34,784, increased by 5.2% from previous year. The consumer expenditure per capita was RMB36,946 and RMB16,152 for urban and rural residents respectively, increased by 5.0% and 9.0% respectively. Table 2-19 gives the detailed information

Table 2-19 Shanghai Per Capita Income Statistics

Year	Per Capita Disposable Income of Urban Residents	Growth Rate	Per capita Net Income of Rural Residents	Growth Rate
2005	18,645	11.80%	8,342	10.70%
2006	20,668	10.80%	9,213	10.40%
2007	23,623	14.30%	10,222	11.00%
2008	26,675	12.90%	11,385	11.40%
2009	28,838	8.10%	12,324	8.20%
2010	31,838	10.40%	13,746	11.50%
2011	36,230	13.80%	15,644	13.80%
2012	40,188	7.90%	17,401	8.20%
2013	43,851	6.60%	19,208	7.90%
2014	47,710	5.90%	21,192	7.40%
2015	52,962	5.90%	23,205	6.90%

Source: Shanghai Municipality Personal Socio-economic Development Report (2005-2015)

Shanghai Car Ownership

Civil use car ownership has been increasing quickly in Shanghai in recent years and is expected to sustain fast growth in the next few years with a burgeoning economy. By the end of 2014, Shanghai's civil use car ownership reached 2,551,900. Table 2-20 gives the detailed information.

Table 2-20 Shanghai Civil Use Car Ownership Statistics

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Civil Use Car Ownership (in thousands)	951.5	1,070.4	1,197	1,323.1	1,473	1,702.5	1,949.6	2,128.6	2,351	2,551.9

Source: Shanghai Statistical Yearbook (2006-2015)

2.2 Historical Traffic Volumes and Revenues Analysis

2.2.1 Analysis of Historical Traffic Volumes of the Bridge

The Consultant has collected data on annual and monthly traffic volumes for each type of vehicle for the Hangzhou Bay Bridge from Ningbo Hangzhou Bay Bridge Development Co. Ltd. and found the following characteristics of traffic growth on the bridge through the analysis:

- The opening of the Jiashao Bridge to passenger vehicles since July 19, 2013 and to goods vehicles since November 28, 2013 as well as the opening of the Qianjiang Tunnel since April 16, 2014, have diverted some traffic from the Hangzhou Bay Bridge because the two corridors are somehow in parallel with the bridge. The traffic volume on the Hangzhou Bay Bridge dropped in 2013 and 2014 as a result. When the diversion impact of Jiashao Bridge and Qianjiang Tunnel has stabilized, the traffic volume on the Hangzhou Bay Bridge began to increase slowly and steadily;

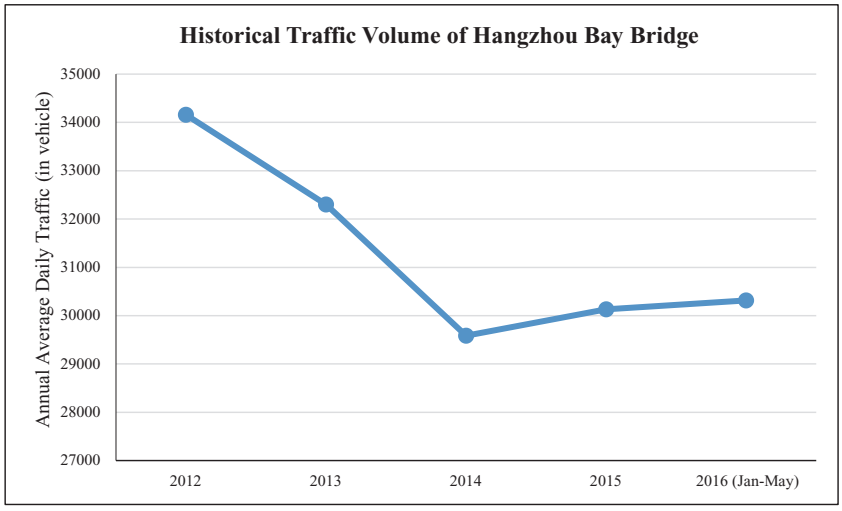
- It can be observed from the monthly traffic variation, March, Junes, and August happened to exhibit the peak of the year;

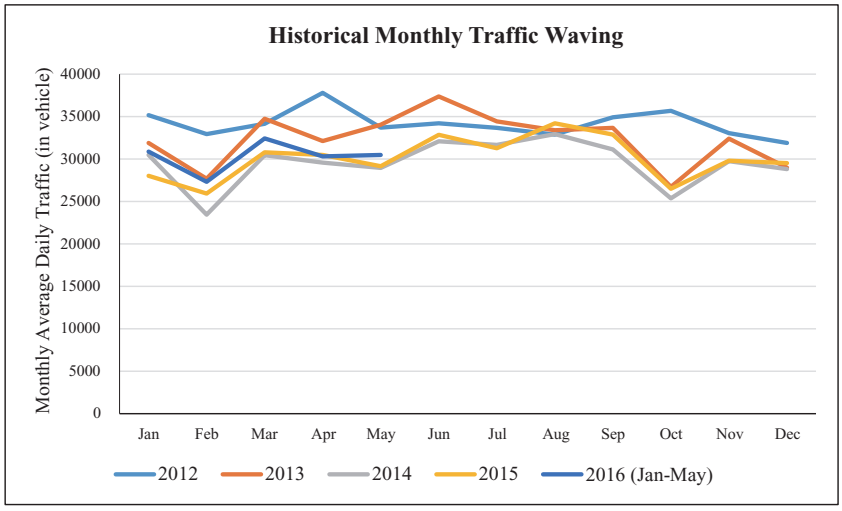
- There have been no significant changes in the proportion of each type of vehicle for the section in the project. Class 1 passenger vehicles has accounted for the largest share, followed by Class 1 goods vehicles and Class 5 goods vehicles;

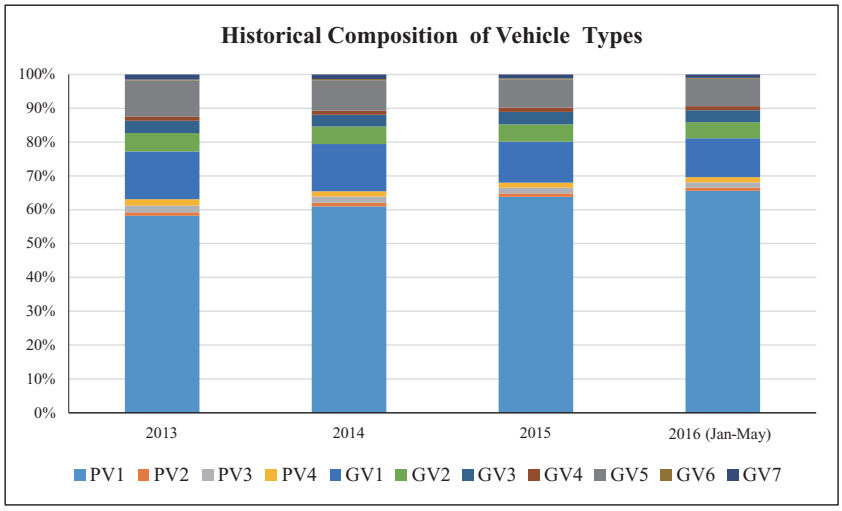
Figure 2-1 depicts traffic growth and percentage changes of different types of vehicles for the Hangzhou Bay Bridge over the past few years.

Historical traffic volumes

Figure 2-1 Historical Traffic Volumes





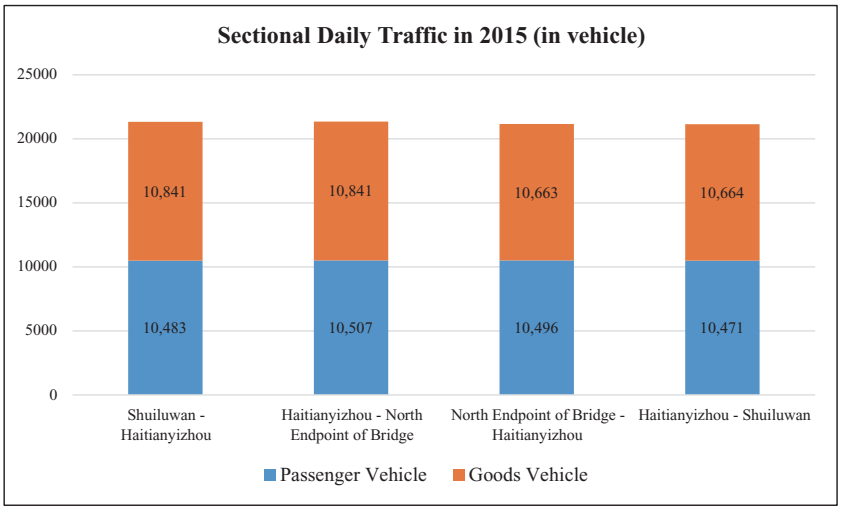


Source: The Consultant, 2016

Section-flow of Traffic Volumes

We have obtained the sectional weighted average daily traffic volume of the bridge in 2015 according to data collected by Ningbo Hangzhou Bay Bridge Development Co. Ltd, as shown in Figure 2-2. It can be seen from the figure that the section flows were evenly distributed and there was no significant difference between the percentage of passenger vehicles and that of goods vehicles on each section.

Figure 2-2 Sectional Daily Section-flow of Traffic Volume

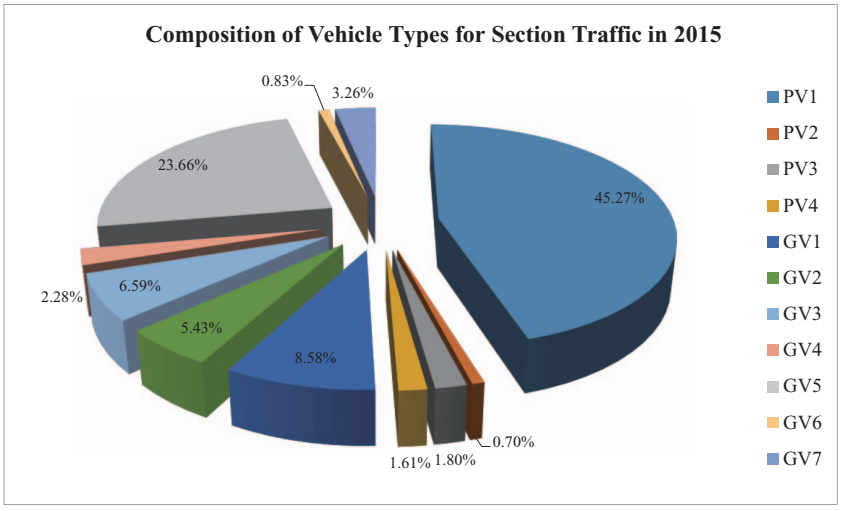


Source: The Consultant, 2016

Percentage of different types of vehicles for section-flow of traffic volumes

Figure 2-3 shows the weighted percentage of different types of vehicles of section flow on the Hangzhou Bay Bridge in 2015, through analysis of the data provided by Ningbo Hangzhou Bay Bridge Development Co. Ltd. Similar percentages have been identified for passenger and goods vehicles, 49.38% for passenger vehicles, with Class 1 passenger vehicles accounting for a dominant 45.27% of the total; 50.62% for goods vehicles, with Class 1 and Class 5 goods vehicles accounting for 8.58% and 23.66% respectively of the total.

Figure 2-3 Percentage Section-Flow of Traffic Volumes by Vehicle Type



Source: The Consultant, 2016

2.2.2 Revenue Data of Hangzhou Bay Bridge

As with the changes in traffic volumes, we have found the following characteristics of historical revenues:

- From May 2012 to May 20, 2015, a toll reduction by RMB5, RMB10, RMB15, and RMB20 was provided for vehicles depending on the type of the vehicle;

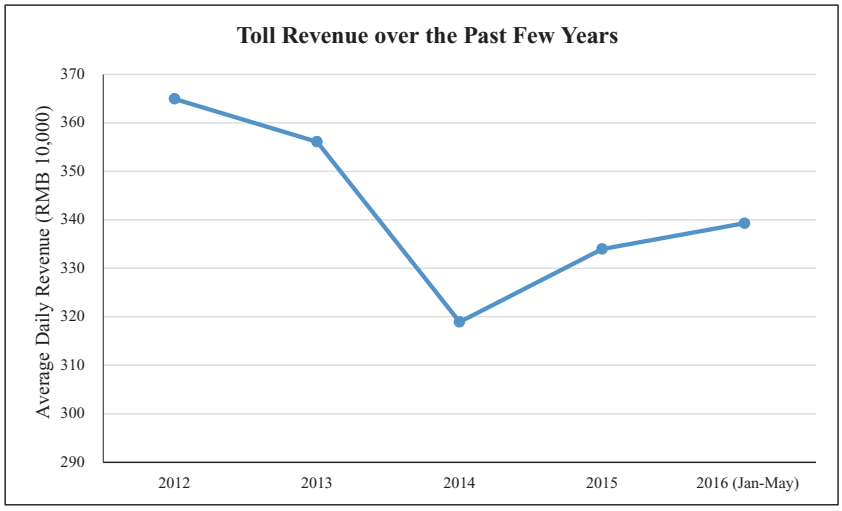
- The opening of the Jiashao Bridge to passenger vehicles since July 19, 2013 and to goods vehicles since November 28, 2013 as well as the opening of the Qianjiang Tunnel since April 16, 2014, have diverted some traffic from the Hangzhou Bay Bridge. The toll revenues of the Hangzhou Bay Bridge dropped in 2013 and 2014. When the diversion impact of the Jiashao Bridge and Qianjiang Tunnel has stabilized, the toll revenues of the Hangzhou Bay Bridge began to increase slowly and steadily;

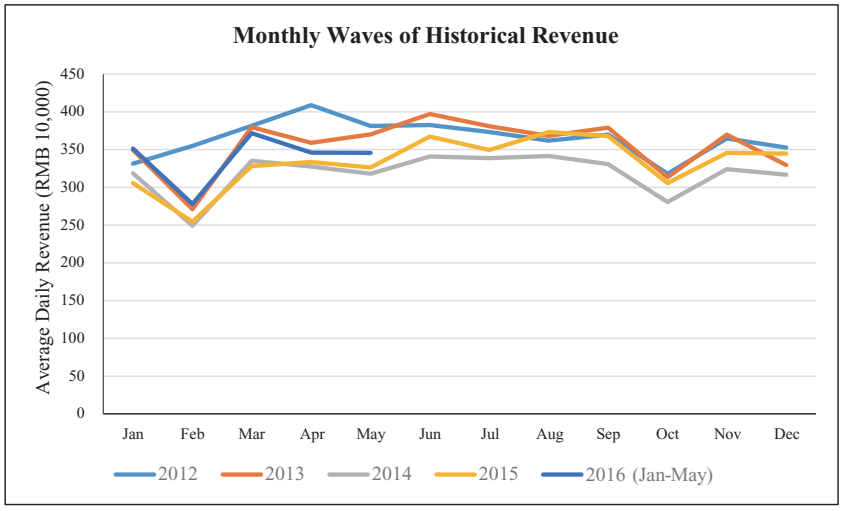
- Revenue received in June and September happened to exhibit the peaks of the year;

- From the monthly toll revenues of the Hangzhou Bay Bridge over the past few years, we can see that February and October were lowest throughout the year. It's due to the Spring Festival usually falls in February during the period people travel less and during the 7-day Spring Festival holiday and 7-day National Day holiday, Class 1 passenger vehicles are exempted from tolls.

The toll revenues of the Hangzhou Bay Bridge over the past few years and their monthly variation are shown in Figure 2-4.

Figure 2-4 Toll Revenues Statistics





Source: The Consultant, 2016

3 SOCIO-ECONOMIC-TRAFFIC MODEL

The mathematical models widely used in transportation forecasting are called four-step models. They are derived from urban transportation forecasting and application. The development of such mathematical models takes large amounts of statistical data and time, for example, six months to one year for a small or medium-sized city. The modeling process is generally as follows:

- Trip generation: The main goal of this stage is to estimate the total productions of every zone by population and trip rates, and the total attractions by the weight factors of employment post;

- Trip distribution: To build O-D matrices based on the distribution function received from resident trip survey or large-scale home interview survey;

- Mode split: Calculating modal splits using binary or multinomial logit model;

- Trip Assignment: Trip assignment using generalized cost.

The biggest advantage of this forecast model is that it accurately reflects the effect of land use and population changes on travel demands. However, it is restricted by limited model building time and a lack of planning information, especially in China.

To overcome the limitations and meet diverse demands, a simplified four-step model is widely used in inter-city traffic forecasts and studies. The primary difference is that the simplified model provides no process or function of mode split. It establishes a traffic pattern and volume by using a traffic survey which satisfies the scope of the study. A traffic survey generally covers traffic volume and origin and destination (OD) survey or station-to-station data.

In short, the simplified four-step model fulfills the tasks of trip generation and distribution by means of existing station-to-station survey, develops a single-mode trip matrix, and then assigns trips using a computer road network model. The trip generation and distribution obtained from OD surveys or station-to-station data is the information acquired indirectly, and therefore we need to validate the data. The verification of the computer assignment model is an important factor in ensuring accurate forecasts.

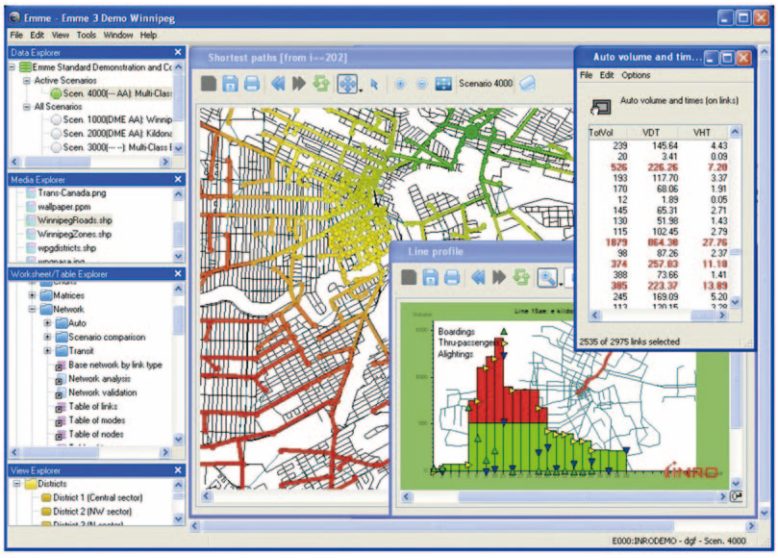
The Consultant has built a traffic forecast model for expressways in Shanghai and the neighboring Zhejiang for this project to analyze the travel demands for the project in future years. This chapter provides an introduction to the traffic model used in the study of this project and discussion on the results of model employed for this study.

3.1 Transportation Software-EMME/3

EMME/3 is used to simulate the current road network. As a piece of well-known software for planning urban and regional transport systems, it provides planners with a set of comprehensive and flexible tools for demand modeling, and network analysis and evaluation. It also provides comprehensive and flexible tools for simulating demands and analyzing and evaluating road networks. It is a product of INRO Consultants founded in 1976, formerly known as the transportation research center of University of Montreal. EMME/3 is now recognized as a piece of leading transportation planning software and adopted by over 600 organizations around the globe.

One of the major reasons that EMME/3 being so popular is that it allows users to create their own databases, thus supporting quantitative analysis and assessment of preset changes. The model data contains information about the transport infrastructure (such as the road network), economic activities, and socioeconomic features of the regions studied.

Figure 3-1 Interface of the model EMME/3



Once a data bank is built, the planner can work by inputting the instant visualized, interactive computing results of data, their assignment results, and other information extracted from the data bank.

Traffic modeling requires two aspects of a transport system: the supply and the demand. The supply means the road network available and the demand means establishing the model that determines travel needs, e.g., a trip OD matrix. The balancing process ensures that the level of demand remains consistent with that of supply and consequently predicts the traffic volume on the transport facilities.

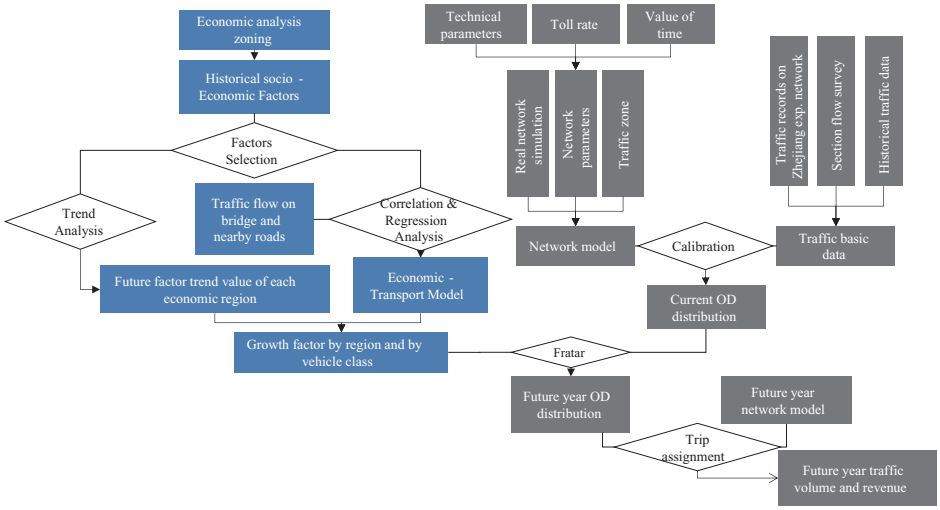
3.2 Technical Approach of the Model

In order to make accurate forecasts of future traffic volume and revenue growth of the Hangzhou Bay Bridge, the Consultant has built a complex socioeconomic-traffic model, which can be divided into two related sub-models:

- Economic analysis model: Used to determine the driving factors of traffic growth;

- Traffic forecast model: Used to calibrate and assign traffic volume, analyze diverted and induced traffic;

Figure 3-2 Technical approach of the model



Source: The Consultant, 2016

3.3 Economic Model Analysis

3.3.1 Traffic Analysis Zones

We have compared a large number of socioeconomic driving factors and built an integrated economic traffic model in this study. Therefore, the economic analysis will primarily cover these:

- The selection of transport-related socioeconomic indices;
- Correlation and regression analysis between economic indices and traffic growth;
- The analysis of the elasticity coefficient between economic indices and traffic generation growth;
- Future trend analysis of growth of economic indices.

In economic analysis, we should examine each traffic analysis zone (TAZ) and build a regression model of TAZ traffic generation and economic indices and apply the same to each TAZ. However, as 386 TAZs means tremendous amounts of data and analysis of difficulties, the Consultant has divided these TAZs into 19 economic analysis zone, analyzed the growth of economic indices in these 19 big zones and applied them to the corresponding TAZs. The Consultant has collected historical data on the traffic volume of the Hangzhou Bay Bridge and adjacent expressways and created a relationship model between the traffic generation and the economic indices of areas most closely linked with the Hangzhou Bay Bridge, i.e., an economic-traffic model. By substituting the forecast growth values of the economic indices of each TAZ into the economic-traffic model, we have obtained the growth in traffic per vehicle type for each TAZ in the coming years. The division of the traffic analysis zones is shown in Figure 3-3 and 3-1:

Figure 3-3 Division of Traffic Analysis Zones

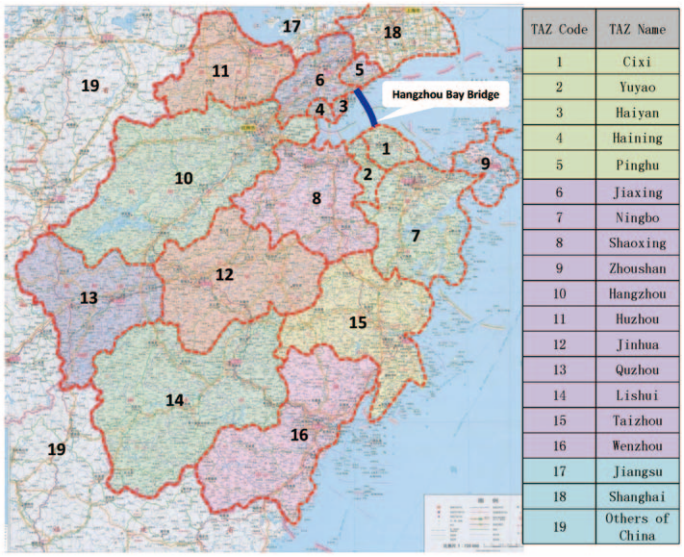


Table 3-1 Division of Traffic Analysis Zones

Zone No.	Zone name	Coverage
1	Cixi	Cixi downtown area and counties under its jurisdiction
2	Yuyao	Yuyao downtown area and counties under its jurisdiction
3	Haiyan	The county and towns under its jurisdiction
4	Haining	Haining downtown area and counties under its jurisdiction
5	Pinghu	Pinghu downtown area and counties under its jurisdiction
6	Jiaxing	Jiaxing downtown area and counties under its jurisdiction (excluding Haiyan county, Haining city, and Pinghu city)
7	Ningbo	Ningbo downtown area and counties under its jurisdiction (Excluding Cixi city and Yuyao city)
8	Shaoxing	Shaoxing downtown area and counties under its jurisdiction
9	Zhoushan	Zhoushan downtown area and counties under its jurisdiction
10	Hangzhou	Hangzhou downtown area and counties under its jurisdiction
11	Huzhou	Huzhou downtown area and counties under its jurisdiction
12	Jinhua	Jinhua downtown area and counties under its jurisdiction
13	Quzhou	Quzhou downtown area and counties under its jurisdiction
14	Lishui	Lishui downtown area and counties under its jurisdiction
15	Taizhou	Taizhou downtown area and counties under its jurisdiction
16	Wenzhou	Wenzhou downtown area and counties under its jurisdiction
17	Jiangsu	The whole province of Jiangsu
18	Shanghai	Shanghai downtown area and the districts under its jurisdiction
19	Others of China	Other provinces of China

Source: The Consultant, 2016

3.3.2 Correlation Analysis of Economic Indices

In analyzing the effects of the economic indices of each zone on a variety of vehicle types, we have conducted correlation analysis between historical passenger/goods traffic volumes of the area served by the expressway of the project and the historical values of economic indices in each zone, sorted the economic indices and selected (Note: when selecting the economic indices, we have also taken into account the level of difficulty in obtaining the indices for each zone):

- The index most related to passenger traffic growth: GDP;
- The index most related to goods traffic growth: GDP.

After determining the economic indices related to passenger/goods traffic growth, we have conducted an elasticity analysis of passenger/goods traffic needs and economic growth and obtained an economic-traffic growth model for passenger/goods vehicles.

$$Y_n=b\cdot(a\cdot X_1+c)$$

Where dependent variable Y_n – growth rate of traffic in each zone;

Independent variable X_1 – historical GDP growth rates in areas directly influenced by the project;

a, c – regression elasticity coefficient

b – time adjustment coefficient

Through linear regression analysis, we have determined the coefficients of the economic-traffic growth model, as given in Table 3-2:

Table 3-2 Coefficients of the Traffic Growth Model

Vehicle Type	a	X_1	c	b
Passenger Vehicle	1.006	GDP	0.003	0.60-0.90
Good Vehicle	0.975	GDP	-0.015	0.55-0.85

Source: The Consultant, 2016

3.3.3 Assumptions of Future Time Elasticity Coefficient

Domestic and international experience show that the time elasticity coefficient of economy and transport remains stable during a given period of time (3-5 years). When economy is underdeveloped, travel demands are high, the dependency of economy on transport is high, and the elasticity coefficient is large. When economy has developed to a certain level, the transport elasticity coefficient tends to fall, because the fast growth of high tech industries and the tertiary industry leads to a drop in traffic volume per unit output, thus reducing the dependency on transport, and resulted in smaller elasticity coefficient. This is reflected in the relief of transport intensity and tensions. The supply meets the demand and the traffic volume accommodates the growth of the national economy.

During the practical experience for over a decade in Mainland China, the Consultant has completed traffic volume forecasts for dozens of expressways in a number of provinces, including Zhejiang, Northeast China, Tianjin, Hebei, Jiangsu, Jiangxi, Guangdong, Sichuan, Shanghai, and Anhui. In particular, the Consultant has completed forecasts for traffic and revenues for a range of expressways in Zhejiang province. From these projects, we have collected multiple groups of data on traffic growth and GDP growth and can conclude that the future time elasticity coefficient will remain largely between 0.50-0.95.

China's economic outlook has grown complicated since 2015. Its economic performance has met a lot of expected and unexpected impacts and challenges and the downward pressure has remarkably increased. Despite positive signs in Chinese economy in the first quarter of 2016, consumption growth has slowed notably and both the total value of trade and surplus have dropped because of weak domestic and international demands. The policies are in essence on enhancing the demand. Many companies have begun delaying opening, laying off employees, shutting down, or eliminating outdated capacity. China's manufacturing sector will remain at the dual bottom of the reduction of excessive-capacity cycle and the stock-minimising cycle. Therefore, it is still affected by structural and cyclic factors, China's economy is expected to face downward pressure in the second half of 2016 and 2017. The Consultant predicts that the Chinese economy will start to pick up gradually in 2018.

Consequently, the Consultant has taken into full account the domestic and international economic state in forecasting the traffic volume and toll revenues for the Hangzhou Bay Bridge in the next few years, giving special considerations and attention to the growth features of economic indices and changes in the time elasticity coefficient for the time between 2017 and 2020 in the near future, especially the years 2017 and 2018.

The value of the time adjustment coefficient for the coming years for the Hangzhou Bay Bridge are shown in Table 3-3.

Table 3-3 The Value of Time Adjustment Coefficient (b) for the Future

Time	2017	2018-2020	2020-2025	2025-2030	2030-2033
For passenger vehicles	0.82	0.90	0.80	0.70	0.60
For goods vehicles	0.75	0.85	0.75	0.65	0.55

Source: The Consultant, 2016

3.3.4 Future Trends of Economic Indices

Generally speaking, there are great uncertainties in forecasting the future growth rate of socioeconomic parameters. Trend forecasts must take into account multiple aspects in order to be convincing. The forecasts are thus based on the following:

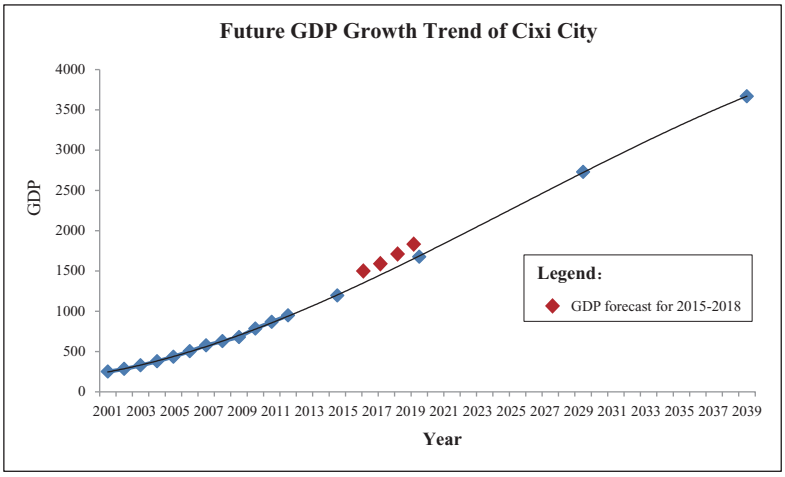
- Historical growth trends: We have collected historical data and made judgements;
- "13th five-year" (2016-20) plan: We have used the future growth targets and requirements as reference;
- Overall urban planning: We have used the future growth targets and requirements as reference;
- Domestic/international urban development experience: We have reviewed the indices of each stage during the urban development process of developed cities;
- The development plans of other industries: We have used the future growth targets and requirements as reference.

(1) Analysis of Future GDP Growth

For each TAZ in this project, future GDP growth forecasting is based on the economic trends predicted in accordance with the economic growth targets in the local "13th five-year" plan, with transformation of economic growth pattern, sound development policies, and the GDP growth rates for the next five years as the control points of future trends.

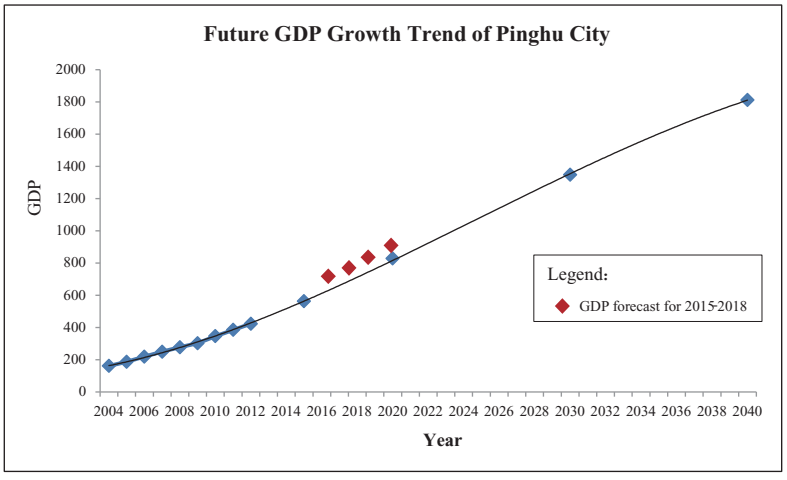
The historical-future growth trends of each TAZ will be based on the local "13th five-year" plan and the short, and long and medium term economic targets in overall planning of some cities. For example, the average annual GDP growth rates of cities in Zhejiang province are mostly in the 5%-9% range in a context of stable, rather than fast economic growth. Figure 3-4 and Figure 3-5 illustrate the future GDP trends of Cixi city and Pinghu city respectively. The economic analysis of other zones is similar. Given the near term domestic economy, the Consultant has given special consideration to the growth in 2015, 2016, 2017, and 2018 when conducting GDP forecasts for each zone.

Figure 3-4 The GDP Growth Trend of Cixi City



Source: The Consultant, 2016

Figure 3-5 The GDP growth Trend of Pinghu



Source: The Consultant, 2016

We have obtained the growth rates of the economic indices for the 19 zones by combining the future trends identified (control value) for the chosen economic indices based on various plans and references and the regression analysis of the historical data of the traffic analysis zones, as summarized in Table 3-4. These growth rates are applied to the economic-traffic model built previously to calculate the growth rates of future traffic.

Table 3-4 GDP Growth Rates Assumptions for Economic Zones

Zone	2016-2020	2021-2025	2026-2030	2031-2033
Cixi	6.9%	5.8%	4.6%	3.8%
Yuyao	6.9%	5.8%	4.6%	3.8%
Haiyan	7.0%	5.9%	4.7%	3.9%
Haining	7.1%	6.1%	4.7%	3.9%
Pinghu	6.8%	6.2%	4.8%	3.9%
Jiaxing	7.0%	5.7%	4.5%	3.8%
Ningbo	6.8%	5.7%	4.5%	3.8%
Shaoxing	6.5%	5.4%	4.3%	3.6%
Zhoushan	7.1%	5.9%	4.6%	3.6%
Hangzhou	6.6%	5.2%	3.9%	3.0%
Huzhou	6.5%	5.2%	3.9%	2.9%
Jinhua	7.0%	5.8%	4.6%	3.8%
Quzhou	6.8%	6.0%	4.7%	3.8%
Lishui	6.8%	5.8%	4.6%	3.8%
Taizhou	6.7%	5.6%	4.5%	3.8%
Wenzhou	7.1%	5.7%	4.6%	3.8%
Jiangsu	7.5%	6.2%	4.8%	3.9%
Shanghai	6.0%	5.1%	4.2%	3.4%
Others of China	6.2%	5.9%	4.7%	3.9%

Source: The Consultant, 2016

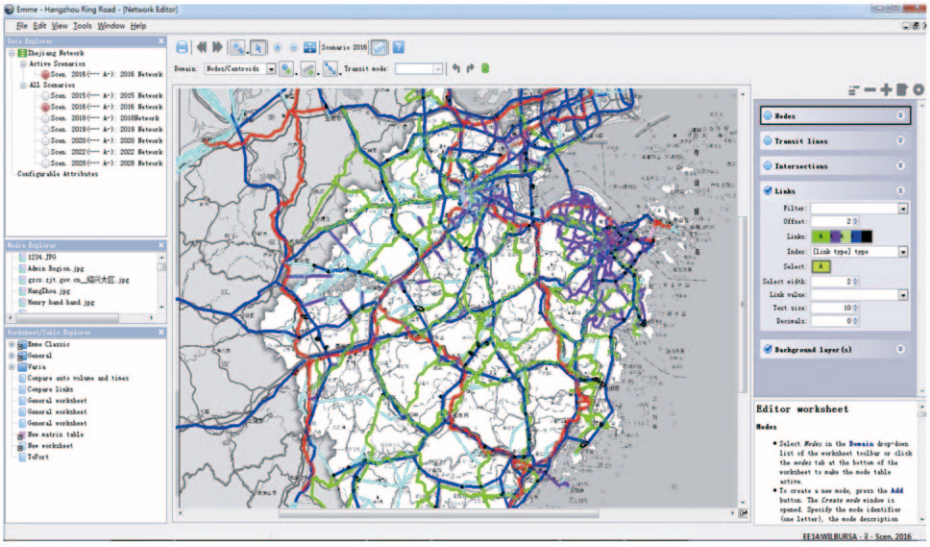
3.4 Traffic Model Analysis

3.4.1 Road Network

When building a base year road network for the model of this project, we have input the road network information into EMME/3 to create a supply model using the road network information obtained from Zhejiang province's expressway toll clearing system and the expressways and planned network diagram from the official website of Zhejiang province's expressway administration as a basis. All major roads are included in the simulated road network, including trunk roads such as expressways and national highways.

The road network features include speeds, capacities, distances, and the service status is represented by quantitative delay and cost functions. The station-to-station distances in the road network rely on the information in the system. For the location and length of national and provincial freeways, we've used the 2010 version of *China Road Atlas* as the basis for base year traffic data calibration. Figure 3-4 shows the road network established using EMME/3 for this project.

Figure 3-6 Road Network Model for Zhejiang Province



Source: The Consultant, 2016

3.4.2 Volume Delay Function (VDF)

The travel time generally depends on the travel speed, which varies with the level of congestion. The level of congestion of the project expressway is low in the base year, but will grow with traffic in the coming years, so it is necessary to estimate travel speeds through traffic assignment with capacity constraints. The volumes and levels of service obtained from traffic assignment are stored in a data warehouse. The volume delay function employed in our model is as follows:

VDF = Len*[60/Sf+A*(V/C-R1)+B*(V/C-R2)]

Where VDF = Volume Delay Function
Len = Length
Sf = Free flow speed
V/C = Volume to Capacity Ratio
R_1,R_2 = Coefficient of Volume to Capacity Ratio
A,B = Model Coefficient

3.4.3 Passenger Car Unit (PCU)

As similar in other traffic forecasting studies, all types of vehicles would be converted into "passenger car unit (PCU)" before they would be processed by the forecasting model. The PCU conversion factors used by the Consultant in this Study were summarized in Table 3-5.

Table 3-5 Passenger Car Units

Vehicle type	No.	Name	PCU factor
Passenger Vehicles	1	PV 1	1.0
	2	PV 2	1.5
	3	PV 3	2.0
	4	PV 4	2.5
Goods Vehicles	5	GV 1	1.5
	6	GV 2	2.0
	7	GV 3	2.5
	8	GV 4	2.5
	9	GV 5	3.0
	10	GV 6	3.0
	11	GV 7	3.0

Source: The Consultant, 2016

3.4.4 Toll Assumptions for Hangzhou Bay Bridge

According to *Temporary Regulations on Toll Collection for Expressways in Zhejiang Province by Actual Driving Path* in 2012, the tolls for all expressways in Zhejiang province will be charged by actual driving path from May 15, 2012. In the meantime, a reduction of RMB5, RMB10, RMB15, can RMB20 will be available for the Hangzhou Bay Bridge for Class 1-7 vehicles depending on vehicle type for three years. According to the regulations in Zhejiao [2015] File No.108 of *Letter on Restoring Original Toll Rates of Hangzhou Bay Bridge* (May 14, 2015), the original toll rates were restored on May 20, 2015. In this study, the Consultant has assumed that the original rates will be implemented till the end of the operation period of the bridge.

In the traffic model, the Consultant assumed that the tolls of the bridge will be collected by the rates given in Table 3-6.

Table 3-6 Toll Rates of Hangzhou Bay Bridge

Vehicle type	**Class 1**	**Class 2**	**Class 3**	**Class 4**			
Toll (time)	RMB80	RMB80	RMB160	RMB240			
Vehicle type	**Class 1**	**Class 2**	**Class 3**	**Class 4**	**Class 5**	**Class 6**	**Class 7**
Toll (time)	RMB80	RMB160	RMB240	RMB280	RMB320	RMB240	RMB280

Source: Hangzhou Bay Bridge Development Co. Ltd., 2016

On the other hand, according to "*Implementation Plan for Toll Exemption for Small Passenger Vehicles During Major Holidays*" issued on July 24, 2012, passenger vehicles with not more than seven seats and motorcycles were allowed to enjoy toll free travels on tollways during the Spring Festival, the Qingming Festival, the International Labor Day, and the National Day holidays specified for each year by the State Council publication. The tollways (and toll bridges and tunnels) are those built under the "*Highway Law of the People's Republic of China*" and "*Regulations on Administration of Tollways*", including the Hangzhou Bay Bridge. In this study, the Consultant has taken into account the effects of the toll exemption policy and made necessary adjustments when forecasting traffic volumes and toll revenues for the bridge to generate accurate forecasts.

In assessing the average number of days affected by this exemption policy, the Consultant has reviewed "*Decision to Revise Regulations on Public Holidays for National Annual Festivals and Memorial Days*" of 2012 and assumed that the length of the four national statutory holidays in the future will be as follows:

- The Spring Festival – 7 days
- The Qingming Festival – 3 days
- The International Labor Day – 3 days
- The National Day – 7 days

A total of 20 holiday days of the four national statutory holidays will be used as a basis for calculating the effects of the toll free policy on traffic volumes and toll revenues of the bridge in future years. In addition, the Consultant has assumed that the policy will be implemented till the end of the operation period of the bridge.

3.4.5 Future Road Network Assumptions

When examining the effects of future road network changes on the traffic volume of the bridge (induction or diversion), the Consultant has collected the "Thirteenth Five Planning" and short term construction plans of adjacent expressways and reviewed the progress of expressways under construction. Table 3-7 and Figure 3-5 summarizes future road network changes of the bridge.

Table 3-7 Future Years Road Network Systems

SN	Expressway	To be opened in	Length (km)	Lanes	Design Speed (km/h)
1	Hangzhou Bay Bridge Hangyong Link (Yuci Line)	2018	17.9	4	100
2	Sushao Expressway (Suzhou Outer Ring-Qianjiang Channel)	2019	43.6	6	100
3	Hangshaotai Expressway	2019	162.3	4/6	100
4	Ningbo Section Phase 1 of a second Hangzhou-Ningbo expressway	2020	56.1	6	120
5	North Link Phase 2 to the Hangzhou Bay Bridge	2020	27	6	120
6	A second Hangzhou-Ningbo (Xiaocao Town in Yuyao) Expressway	2022	135	6	120

Source: Hangzhou Bay Bridge Company, 2016

Figure 3-7 Future Year Road Network

Source: Hangzhou Bay Bridge Development Co. Ltd., 2016

Some expressways mentioned earlier are under construction. Hangzhou Bay Bridge Hangyong link (Yuci Line) is in progress and expected to be completed in the second half of 2017 and opened in 2018. The Sushao Expressway (Suzhou Outer Ring-Qianjiang Channel) is under construction. Ningbo Section Phase 1 of a second Hangzhou-Ningbo expressway and North Link Phase 2 to the Hangzhou Bay Bridge are being reviewed.

3.4.6 Road Capacity

The major factors that affect the road capacity of an expressway include the design standards (design speed), composition of vehicle types, and hourly distribution of traffic volumes (peak hour factor). The design speed for the Hangzhou Bay Bridge is 100km/hour. According to Highway Engineering Technical Specifications (*JTG B01-2014*), the traffic capacity of section flow at level of service 3 is 1,600(pcu/lane/hour), the peak hour factor of the bridge PHF=7.57% (from calculation based on historical traffic volumes); the average conversion coefficient of passenger cars is 1.43(pcu/veh) (from calculation based on historical traffic volumes). The traffic capacity of the project expressway can be calculated as follows:

1600(pcu/hour/lane)x6(lane)÷1.43(pcu/veh)÷7.57%≈88,680(veh/day)

Table 3-8 Service Levels and Maximum Capacity of Expressways

Level of Service	v/c	Design Speed 120 Maximum Capacity [pcu/(hr•ln]	100 Maximum Capacity [pcu/(hr•ln]	80 Maximum Capacity [pcu/(hr•ln]
1	v/c≤0.35	750	730	700
2	0.35<v/c≤0.55	1200	1150	1100
3	0.55<v/c≤0.75	1650	1600	1500
4	0.75<v/c≤0.90	1980	1850	1800
5	0.90<v/c≤1.00	2200	2100	2000
6	v/c>1.00	0~2200	0~2200	0~2200

Source: Highway Engineering Technical Specifications (JTG B01-2014)

Since the growth patterns of passenger cars and trucks will be different in the future, the existing formulae values may not be exactly the same for estimating future capacity of the Expressway.

3.4.7 Trip Assignment Procedure

In this study, generalized cost is used as the determining factor for path selection of trip makers in balanced traffic assignment. This traffic assignment takes into consideration of all cost factors in path selection such as travel time,travel distance, and travel costs. The latter can be divided into vehicle operating costs and toll costs. The generalized cost of a certain road section can be represented as follows:

$$GC_{ij} = T_{ij} + [C_{ij} + Tol_{ij}]/VOT$$

Where GC_{ij} – Generalized cost of travel
T_{ij} – Travel time from traffic zone i to j
C_{ij} – Travel Cost from traffic zone i to j such as estimated vehicle operating cost
Tol_{ij} – Toll required from traffic zone i to j
VOT – Value of Time for different types of vehicles

The traffic assignment model used by the Consultant measures the willingness of an ordinary driver to pay tolls. The process takes into consideration the speeds and level of congestion of the project expressway and its rival routes. In the trip matrix, trips between two zones are assigned to the path with the lowest generalized cost. Trip distribution is an iterative process, in which every trip during an iteration would be assigned to the path of the least generalized cost. Generalized cost includes travel time, travel distance, toll charges and vehicle operation costs. For example: If there are 2 highways of the same class are included during certain iteration, the highway which carries the lower volume would be selected as the travel path. However, in subsequent iterations, these 2 highways may have different generalized costs which would then dictate which would be the more attractive path. This process will be repetitive until traffic volumes on the competing highway facilities convege to reach an equilibrium condition.

3.4.8 Induced and Diverted Traffic Volume

Any new roads (expressways) built near the project expressway will transfer, induce traffic to or divert traffic from the project expressway. This study has examined three scenarios in the model. In the first scenario, competing roads are open in parallel with the project expressway, which could significantly divert traffic from the project expressway. This can be analyzed and forecasted using the conventional traffic model. In the second scenario, the extensions of the expressway (e.g., the North Link Phase 2 to the Hangzhou Bay Bridge and the Hangzhou-Ningbo expressway link to the Hangzhou Bay Bridge) in the project is improved, which makes the corridor more favorable and attracts traffic from nearby competing parallel roads (e.g., the Qiangjiang Tunnel and Jiashao Bridge). With traffic distribution data on the competing roads, this can also be measured through assignment using the traditional model. Thirdly, regarding the induced effect of the new roads nearby and improvements of the corridor itself, we have reviewed our past experience and introduced an induced traffic module to the traffic model to reflect the traffic induced by new roads in the future.

In determining the effects of new roads on the induced traffic of the project expressway, it is critical to:

- Determine the change of generalized costs (GC) and volume delay function (VDF) between various traffic zones caused by the opening of new roads;

- Find the zone trips (OD pairs) with reduced costs and determine whether they still (partially) include the road section in the project;

- Determine the relationship between reduced trip costs and growth of induced traffic

The calculation of induced trips is as follows:

$$\mathbf{Gi = gi \bullet (1+Pi \bullet f)}$$

Where Gi – Induced trips
gi – trips before induction
Pi – The percentage of reduced trip costs after the opening of the new road;
f – elasticity coefficient for induced traffic;

According to the Consultant's wealth of previous experience in tollway induction models, the induction coefficient of highways in developed cities is approximately 0.5 (e.g., Abu Dhabi of UAE), and the regional induction coefficient is 0.3-0.5 for the recent study of expressways in Ningbo, Zhejiang province. Given the fast economic growth in its adjacent areas, the induction coefficient can be 0.5 for the bridge.

3.5 OD Trip Pattern of the Bridge

When the traffic volume on the bridge is assigned in the model based on the traffic demand matrix of Zhejiang province, we can understand the traffic volume and direction for each zone. The Consultant has divided the 386 OD points into 19 zones (as with economic analysis) for simpler observation and reading.

It can be seen from the assignment results that Shanghai and Ningbo account for the largest share of trips, which is over 20%, followed by Cixi city and Zhejiang province, with 15% share and 11% share respectively. The share of trips from other provinces is around 2% and that of long distance trips is very small.

Table 3-9 and Table 3-10 give the calibrated average daily 19×19 OD percentages for passenger and goods vehicles for the bridge. Figure 3-6 illustrates the expected average daily OD distribution for passenger and goods vehicles.

Table 3-9 OD percentages distribution for passenger vehicles

OD*	Cixi	Haining	Haiyan	Hangzhou	Huzhou	Jiaxing	Jiangsu	Jinhua	Lishui	Ningbo	Pinghu	Quzhou	Shanghai	Shaoxing	Taizhou	Wenzhou	Yuyao	Zhoushan	Other	Total
Cixi		0.1%	0.4%	0.6%	0.5%	2.3%	3.6%				1.2%		8.1%						0.2%	17.1%
Haining	0.1%																			0.1%
Haiyan	0.4%					0.2%	0.2%			0.5%	0.1%		0.3%					0.1%	0.0%	1.8%
Hangzhou	0.6%																			0.6%
Huzhou	0.5%									0.3%										0.8%
Jiaxing	2.3%		0.1%			0.4%				2.7%								0.4%		5.9%
Jiangsu	3.6%		0.1%			0.6%				5.2%								1.1%		10.6%
Jinhua																				0.0%
Lishui																				0.0%
Ningbo			0.6%		0.3%	3.1%	5.9%				1.4%		14.7%							25.9%
Pinghu	1.2%					0.1%				1.1%								0.1%		2.6%
Quzhou																				0.0%
Shanghai	8.3%		0.3%			1.6%				13.2%					0.2%		0.3%	3.5%		27.5%
Shaoxing																				0.0%
Taizhou													0.2%							0.2%
Wenzhou																				0.0%
Yuyao													0.2%							0.2%
Shanghai			0.1%			0.5%	1.2%				0.2%		3.7%							5.7%
Other	0.2%																			0.2%
Total	17.3%	0.1%	1.6%	0.6%	0.8%	8.7%	10.9%	0.0%	0.0%	23.0%	2.9%	0.0%	27.3%	0.0%	0.2%	0.0%	0.3%	5.2%	0.2%	100%

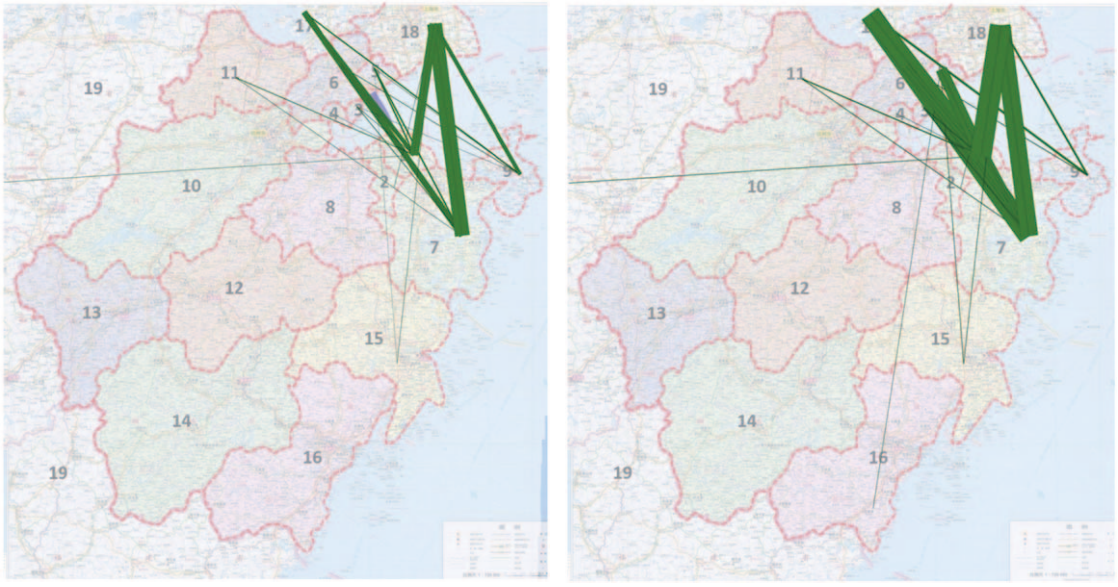
Note: ODs accounting for less than 0.1% are not displayed. Source: The Consultant, 2016

Table 3-10 OD percentages distribution for goods vehicles

OD*	Cixi	Haining	Haiyan	Hangzhou	Huzhou	Jiaxing	Jiangsu	Jinhua	Lishui	Ningbo	Pinghu	Quzhou	Shanghai	Shaoxing	Taizhou	Wenzhou	Yuyao	Zhoushan	Other	Total
Cixi			0.3%	0.3%	0.3%	2.6%	7.5%				5.3%		8.5%						0.3%	25.1%
Haining	0.1%																			0.1%
Haiyan	0.4%									0.3%										0.7%
Hangzhou	0.4%																			0.4%
Huzhou	0.4%									0.3%										0.6%
Jiaxing	3.0%									2.8%								0.3%		6.1%
Jiangsu	7.5%					1.4%				8.6%								0.5%		18.0%
Jinhua																				0.0%
Lishui																				0.0%
Ningbo			0.2%		0.2%	2.5%	8.5%				2.5%		7.6%							21.6%
Pinghu	4.2%									2.0%					0.2%					6.4%
Quzhou																				0.0%
Shanghai	9.1%					0.4%				7.0%					0.2%		0.1%	0.6%		17.3%
Shaoxing																				0.0%
Taizhou											0.2%		0.2%							0.4%
Wenzhou																				0.0%
Yuyao																				0.0%
Zhoushan						0.1%	1.2%						0.9%							2.3%
Other	0.2%																			0.2%
Total	25.2%	0.0%	0.6%	0.3%	0.5%	7.1%	17.2%	0.0%	0.0%	20.9%	8.0%	0.0%	17.2%	0.0%	0.4%	0.0%	0.1%	1.3%	0.3%	100%

* ODs accounting for less than 0.1% are not displayed. Source: The Consultant, 2016

Figure 3-8 Analysis of expected trip distributions



Source: The Consultant, 2016

4 FORECAST ANALYSIS FOR TRAFFIC VOLUMES AND TOLL REVENUES

4.1 Forecasts of Traffic Volumes and Toll Revenues

Based on previous research and analysis, the average daily traffic volume and toll revenues for the years between 2017 and 2033 are calculated by the computer traffic assignment model using 2016 as the base year. The Consultant has assumed that the toll-collection period of the Huhangyong Expressway will end in 2028 and consequently the road will be toll-free from 2028.

Table 4-1 and 4-2 show the preliminary forecasts of weighted average traffic volumes and toll revenues per vehicle type for the project. The toll revenue forecasts are based on the current year prices. As the Consultant is not a company that gives expert device on economies, there is no assumptions made of the inflation rate for the coming years in this report.

Table 4-1 Forecasts of average daily traffic volumes per vehicle type for the bridge (vehicles/day)

Year	PV1	PV2	PV3	PV4	GV1	GV2	GV3	GV4	GV5	GV6	GV7	Total	Annual growth rate
2016	20,857	281	454	421	3,631	1,543	1,138	387	2,525	85	291	31,613	4.9%
2017	22,155	299	482	447	3,785	1,610	1,188	404	2,638	89	303	33,399	5.6%
2018	23,593	318	513	475	3,953	1,682	1,242	422	2,768	93	317	35,376	5.9%
2019	25,051	335	544	508	4,162	1,773	1,309	445	2,917	97	332	37,472	5.9%
2020	28,013	379	628	570	4,587	1,889	1,399	481	3,191	115	398	41,650	11.2%
2021	29,374	397	658	597	4,736	1,950	1,444	496	3,296	119	412	43,479	4.4%
2022	29,866	407	683	613	4,847	1,969	1,446	498	3,310	122	423	44,183	1.6%
2023	31,208	425	714	645	4,983	2,024	1,488	512	3,404	125	435	45,964	4.0%
2024	32,542	443	744	672	5,114	2,078	1,532	526	3,496	128	448	47,723	3.8%
2025	33,958	461	776	699	5,240	2,130	1,571	539	3,585	131	459	49,548	3.8%
2026	35,203	477	803	722	5,344	2,176	1,603	640	3,659	134	469	51,231	3.4%
2027	36,571	493	829	746	5,444	2,423	1,634	652	3,730	136	479	53,137	3.7%
2028	37,535	507	827	719	5,007	2,236	1,605	563	3,140	139	484	52,763	–0.7%
2029	38,687	522	853	740	5,099	2,275	1,664	574	3,194	141	493	54,243	2.8%
2030	39,841	537	878	761	5,187	2,313	1,696	584	3,339	143	501	55,781	2.8%
2031	40,808	550	900	779	5,249	2,340	1,716	591	3,459	145	508	57,045	2.3%
2032	41,775	566	921	797	5,306	2,367	1,736	598	3,543	147	515	58,270	2.1%
2033	42,850	579	942	814	5,359	2,393	1,754	607	3,587	148	521	59,554	2.2%

Source: The Consultant, 2016

Notes:

(1) The traffic volume data includes regular free vehicles, not those free vehicles during holidays;

(2) The forecasts have taken into account the fact that Class 1 passenger vehicles with 7 seats or less are exempt from tolls during the Spring Festival, the Qingming Festival, the International Labor Day, and the National Day holidays and it is estimated that annually 20 days will be exempt from tolls for the coming years;

(3) The toll discounts are no longer available for the Hangzhou Bay Bridge, so the forecasts of future annual traffic volumes and revenues are based on the current toll rates;

(4) The Hangzhou-Ningbo link (Yuyao-Cixi Line) to the Hangzhou Bay Bridge will be opened in 2018 and have only slight effect on the Hangzhou Bay Bridge because it will serve primarily Yuyao and Cixi rather than connect the Bridge directly;

(5) The opening in 2019 of the Sushao Expressway (Suzhou Outer Ring-Qianjiang Channel) and Hangshaotai Expressway that connect to the Qianjiang Channel, which has already been diverting the traffic since its operation will have only slight effect on the Hangzhou Bay Bridge;

(6) The North Link Phase 2 to the Hangzhou Bay Bridge will be opened in 2020 and connect the bridge to the Yuyao-Cixi line, thus greatly facilitating the travels from and to the Ningbo Port and inducing high traffic to the bridge;

(7) A second Hangzhou-Ningbo (Xiaocao Town in Yuyao) Expressway to be opened in 2022 will serve primarily connections between Hangzhou and Ningbo and have only slight effect on the Hangzhou Bay Bridge;

(8) The Huhangyong Expressway will be toll-free from 2028 onwards, which will divert some traffic from the Hangzhou Bay Bridge.

Table 4-2 Forecasts of toll revenues for Hangzhou Bay Bridge (base case) [RMB, current price]

Year	Average daily revenues (RMB) (1)	Annual revenues (in millions) (1)	Annual growth rate
2016	3,518,379	1,287.73	5.6%
2017	3,705,172	1,352.39	5.0%
2018	3,912,825	1,428.18	5.6%
2019	4,138,890	1,510.69	5.8%
2020	4,580,632	1,676.51	11.0%
2021	4,767,937	1,740.30	3.8%
2022	4,833,688	1,764.30	1.4%
2023	5,014,487	1,830.29	3.7%
2024	5,192,055	1,900.29	3.8%
2025	5,373,092	1,961.18	3.2%
2026	5,553,895	2,027.17	3.4%
2027	5,748,908	2,098.35	3.5%
2028	5,547,235	2,030.29	–3.2%
2029	5,693,621	2,078.17	2.4%
2030	5,860,735	2,139.17	2.9%
2031	5,996,809	2,188.84	2.3%
2032	6,121,395	2,240.43	2.4%
2033	6,241,501	2,278.15	1.7%
Total	–	¥33,532.42	–

Source: The Consultant, 2016

Notes: (1) The toll revenue forecasts are based on the current year prices. As the ConsultantConsultant is not a company that gives expert device on economies, it has not made assumptions of the inflation rate for the coming years;

(2) Vehicles exempt from tolls are excluded in the toll revenue forecasts;

(3) The forecasts have taken into account that passenger vehicles with 7 seats or less are exempt from tolls during the Spring Festival, the Qingming Festival, the International Labor Day, and the National Day holidays and it is estimated that annually 20 days will be exempt from tolls for the coming years;

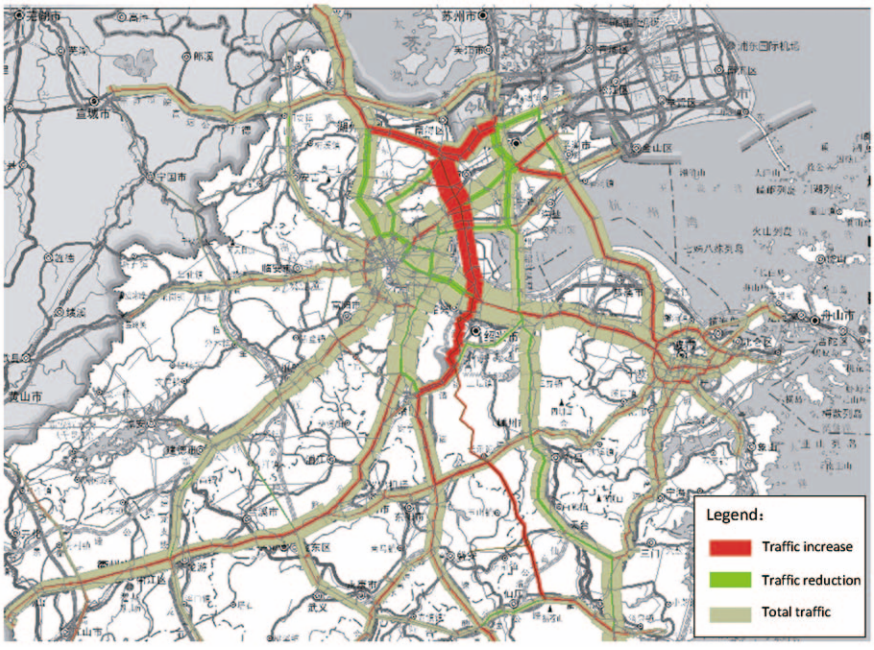
(4) The growth rate of total revenues for 2019 will be 5.8%, with 5.1% from natural growth, 1.3% from induced traffic from the opening of the Sushao Expressway and the Hangshaotai Expressway, and -0.6% from diversion of the two.

4.2 Focused Analysis of Traffic Volumes

4.2.1 Analysis of Effects on Traffic Volumes in 2019

In 2019, the Sushao Expressway (Suzhou Outer Ring-Qianjiang Channel) and the Hangshaotai Expressway will be opened, connecting the north and south sections of the Qianjiang Channel respectively. They will induce traffic to the Qianjiang Channel and divert traffic from the Jiashao Bridge in the directions of Huzhou city, Tongxiang City and between Jiangsu province and Shaoxing city, Zhuji city, and Shengzhou city in Zhejiang province. Because these expressways are far from the Hangzhou Bay Bridge and they are separated by the Jiashao Bridge, the effects on the bridge will be small.

Figure 4-1 Effects from road network opened in 2019



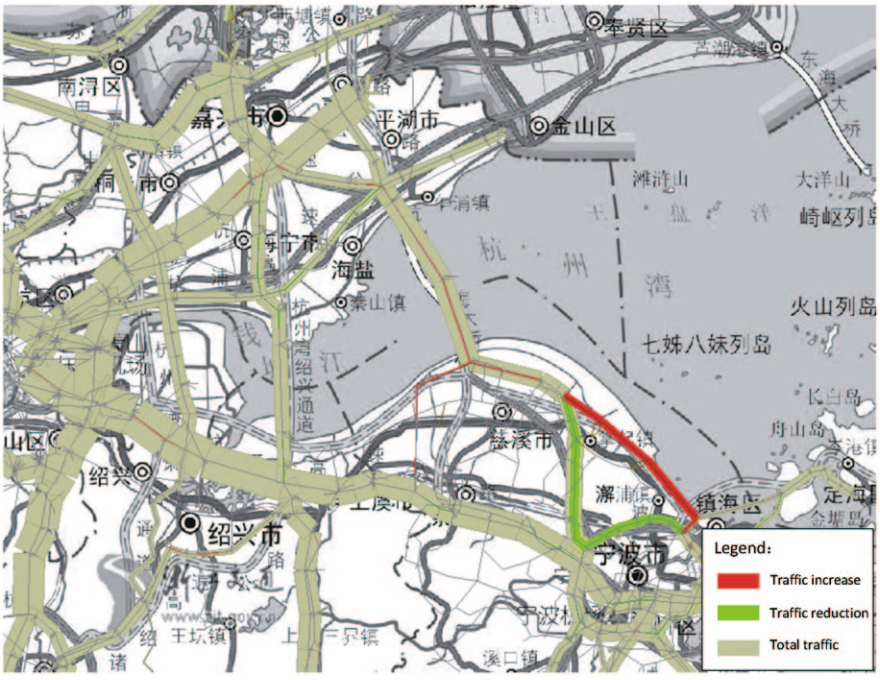
Source: The ConsultantConsultant, 2016

The opening of the Sushao Expressway (Suzhou Outer Ring-Qianjiang Corridor) and the Hangshaotai Expressway in 2019 will have inducing and diverting effects on the traffic for the bridge. The induced traffic from newly opened expressways in 2019 will account for 1.3%, and the diverted traffic is -0.6%. The opening of the new expressways will have slight effects on various vehicle types, the total effects being 0.7%, which is also small.

4.2.2 Analysis of Effects on Traffic Volumes in 2020

Ningbo Section Phase 1 of a second Hangzhou-Ningbo expressway and North Link Phase 2 to the Hangzhou Bay Bridge will be opened in 2020, connecting the south and north ends of the bridge respectively. This will induce some traffic to the bridge from the directions of Jiaxing and Pinghu and between Jiangsu province and Ningbo or Shaoxing in Zhejiang province.

Figure 4-2 Effects from road network opened in 2020



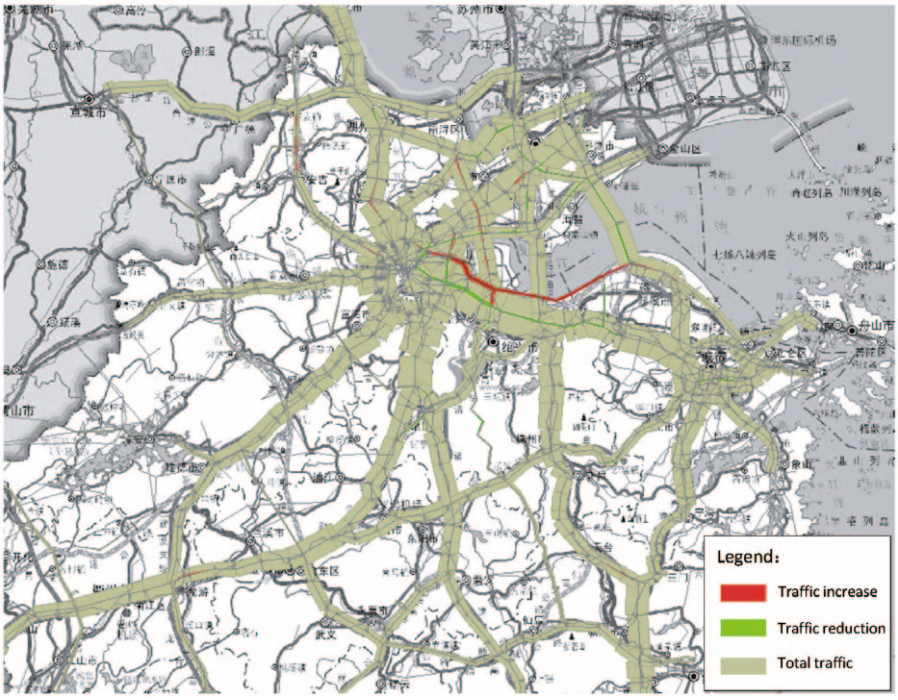
Source: The Consultant, 2016

From statistical analysis it can be seen that the opening of Ningbo Section Phase 1 of a second Hangzhou-Ningbo expressway and North Link Phase 2 to the Hangzhou Bay Bridge in 2020 will have great inducing effects on Class 6 and 7 goods vehicles, followed by Class 3 passenger vehicles. The percentage of induced traffic will be around 5.727% for Class 1 passenger vehicles, 6.957% for Class 2 passenger vehicles, 9.209% for Class 3 passenger vehicles, 6.378% for Class 4 passenger vehicles, 6.085% for Class 1 goods vehicles, 2.472% for Class 2 goods vehicles, 2.809% for Class 3 goods vehicles, 3.760% for Class 4 goods vehicles, 5.030% for Class 5 goods vehicles, 14.254% for Class 6 goods vehicles, and 15.445% for Class 7 goods vehicles. The overall inducing effects will be 5.546%.

4.2.3 Analysis of Effects on Traffic Volumes in 2022

In 2022, a second Hangzhou-Ningbo (Xiaocao Town in Yuyao) Expressway will be opened to serve traffic between Hangzhou and Ningbo. It will be in parallel with the current Huhangyong Expressway, with its east end connecting the south end of the Hangzhou Bay Bridge. The impacts to the bridge will be limited.

Figure 4-3 Effects from road network opened in 2022



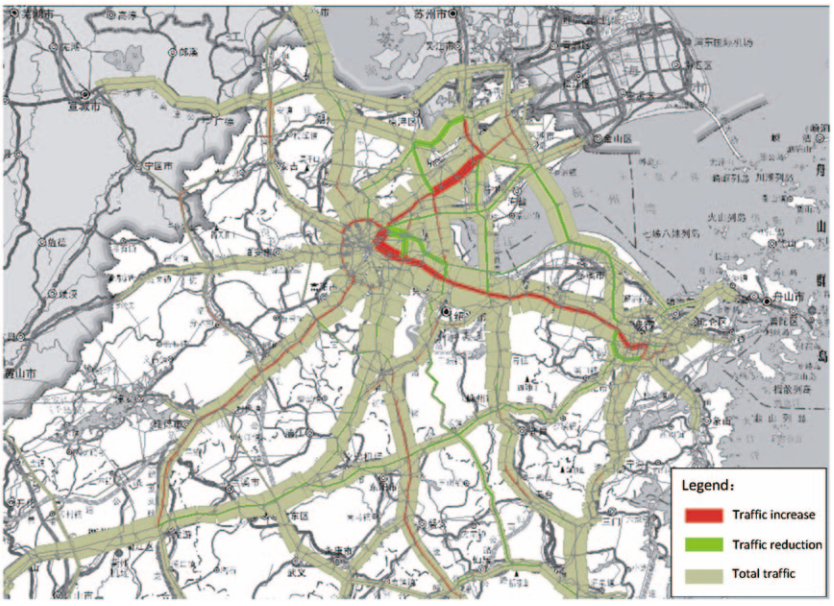
Source: The ConsultantConsultant, 2016

From statistical analysis it can be seen that the percentage of induced traffic from the opening of a second Hangzhou-Ningbo (Xiaocao Town in Yuyao) Expressway in 2022 is around -3.131% for Class 1 passenger vehicles, -2.430% for Class 2 passenger vehicles, -0.903% for Class 3 passenger vehicles, -2.021% for Class 4 passenger vehicles, -0.790% for Class 1 goods vehicles, -2.098% for Class 2 goods vehicles, -2.946% for Class 3 goods vehicles, -2.829% for Class 4 goods vehicles, -2.669% for Class 5 goods vehicles, -0.577% for Class 6 goods vehicles, and 0.559% for Class 7 goods vehicles. The overall inducing effects will be -2.548%.

4.2.4 Analysis of Effects on Traffic Volumes in 2028

In 2028 the Huhangyong Expressway will be free of tolls and divert traffic from the bridge, which will still be charging tolls. The effected directions will be Jiaxing and Tongxiang and between Jiangsu province and Shaoxing and Ningbo in Zhejiang province.

Figure 4-4 Toll-free impact from Huhangyong Expressway in 2028



Source: The Consultant, 2016

From statistical analysis it can be seen that toll revocation for Huhangyong Expressway in 2028 will significantly divert traffic of Classs 4 and 5 goods vehicles and the percentage of diverted traffic will be around -0.565% for Class 1 passenger vehicles, -0.351% for Class 2 passenger vehicles, -3.359% for Class 3 passenger vehicles, -6.509% for Class 4 passenger vehicles, -9.630% for Class 1 goods vehicles, -7.836% for Class 2 goods vehicles, -4.494% for Class 3 goods vehicles, -15.315% for Class 4 goods vehicles, -17.336% for Class 5 goods vehicles, -0.023% for Class 6 goods vehicles, and -0.779% for Class 7 goods vehicles. The overall inducing effects will be -5.399%.

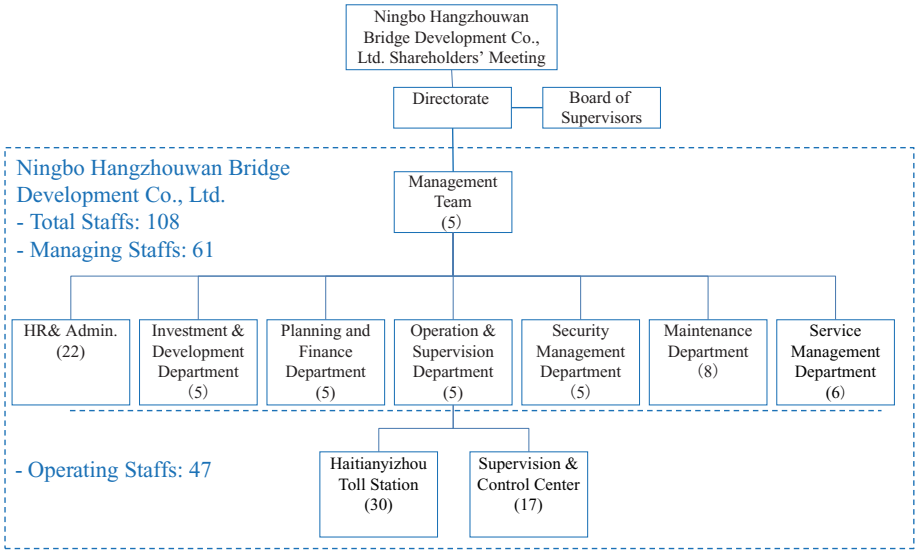
5 REVIEW OF HISTORICAL OPERATION AND MAINTENANCE

5.1 Staffing of Management Company and Historical Expenditure

5.1.1 Organizational Structure of Management Company

Hangzhou Bay Bridge Development Co., Ltd is responsible for the routine management of the bridge. Because there is only one toll station and routine maintenance is outsourced, the organizational structure is simple with a small staff. Figure 5-1 depicts the organizational structure and staff.

Figure 5-1 Organizational structure of Hangzhou Bay Bridge Development Co., Ltd



Source: Hangzhou Bay Bridge Company, 2016

5.1.2 Historical Expenditure of Management Company

The Consultant has collected data on the management company's staff cost and administration cost during the past four years (2012-15). The Consultant has obtained per capita cost and used it as a basis for forecasting expense in the coming years.

Table 5-1 Historical expenditure of management company (in RMB10,000)

Item		2012	2013	2014	2015
Administrative staff cost	Salaries	934.70	1033.50	1154.76	1388.65
	Welfare	140.95	154.21	131.74	135.97
	Social insurance contribution	140.66	170.44	163.27	231.28
	Housing fund and annuity	161.08	180.50	121.14	109.26
	Employment education	8.00	7.83		16.66
	Labor protection	7.50	52.77	14.84	52.80
	Sub-total	1392.89	1599.25	1585.75	1934.62
Monitoring and charging staff cost	Salaries		175.08	209.88	255.55
	Welfare	211.65		96.80	38.13
	Social insurance contribution and annuity				83.34
	Housing fund				22.73
	Sub-total	211.65	175.08	306.68	399.75
Administrative cost	Office expenses	319.23	220.17	191.30	213.35
	Mail and communication expenses		19.69	19.55	19.21
	Business travel, training and investigation expenses	103.94	38.38	29.52	32.98
	Transport expenses	169.21	105.00	120.09	154.83
	Conference and entertainment	551.48	348.20	293.09	185.77
	Depreciation and amortization	126.64	127.77	119.14	119.54
	Advisory fees	73.38	39.37	58.20	257.57
	Insurance premium	26.38	34.28	7.65	34.65
	Trade union funds	21.39	23.21	20.88	31.42
	Publicity expenses	59.78	24.51	29.97	163.72
	Taxes	65.15	14.29	18.55	15.88
	Property management fee, utilities and rent	775.79	821.15	612.85	847.96
	Operating costs				39.31
	Safety expenses				24.66
	Other	75.16	21.39	18.93	49.79
	Sub-total	2367.53	1837.41	1539.72	2190.64
Total		3972.07	3611.74	3432.15	4525.01

Source: Hangzhou Bay Bridge Company, 2016

It can be seen from the project company's historical expense that its managing staff cost (per capita RMB317,000 in 2015) and administrative cost are much higher than those of other expressways in the same area. This may be caused by the large number of executives. The expense of toll collecting staff is at a relatively reasonable level (per capita RMB85,000 in 2015).

5.2 Historical Operation Expense

5.2.1 Structure of Operation Expense

The routine maintenance of the Hangzhou Bay Bridge is outsourced to a specialist contractor, with which the management company signs a three-year contract. Due to a special structure and complex engineering of the bridge, it will incur pilot expense for a long period.

In addition to routine and special maintenance expense, the bridge's routine operation cost include toll collection monitoring cost (excluding personnel expenses), routine safety cost, electricity fee of the bridge, insurance premium of the bridge, allowance for administrative expense of the authority, and safety award.

5.2.2 Historical Operation Expense

The Consultant has obtained and sorted data on the operation expense of the past four years from the management company of the bridge. Table 5-2 gives a breakdown of the expenses.

Table 5-2 Breakdown of historical operation expense
(Unit: RMB10,000)

Item		2012	2013	2014	2015
Regular items	Routine maintenance	2,054.71	1,540.33	2,368.31	1,696.99
	Power supply system inspection	237.14	237.24	223.81	223.80
	Navigation mark maintenance	649.00	648.99	649.00	649.00
	Power, power cable, and bridge tower maintenance	13.97	13.26	24.41	22.32
	Operation monitoring and control	137.50	137.51	137.50	137.50
	Inspection of monitoring, charging, and communication systems)	263.74	263.88	256.30	250.32
	Sub-total	3,356.06	2,841.21	3,659.33	2,979.93

Item		2012	2013	2014	2015
Observational research items	Observational research and experiments of local scouring of piers	477.76	244.97	244.50	180.00
	Durability study for the exposed station of the offshore platform		28.00	30.00	30.00
	Concrete structure durability monitoring and study			11.19	6.71
	Bridge monitoring and assessment	750.35	867.01	84.00	105.00
	Sub-total	1228.11	1139.98	369.69	321.71
Special maintenance	Track maintenance of the bridge foundation, piers, and concreate box beams		752.21	381.30	606.72
	Inspection and maintenance of king-tower, cables, and steel box girders		48.15	97.42	125.61
	Maintenance of concrete and steel bridge floors	1,508.30	700.59	675.61	1159.95
	Maintenance of auxiliary facilities and transport safety facilities	266.61	73.24	1069.91	1054.29
	Preparation of special maintenance plan and regulations	133.05	48.00		
	Sub-total	1907.96	1622.19	2224.24	2946.57
Monitoring and toll collection	Maintenance expense for the connected charging system	5.00	5.70		148.91
	Pass card expenses for connected charging	30.00	71.6	34.30	83.66
	Service fees of unified charging			45.91	
	ETC cost allocation	28.94	119.44	227.89	
	Traffic guiding and publicity expenses		22.42	77.15	
	Upgrade and maintenance of the three system	53.83	211.87	660.17	435.22
	Sub-total	117.77	431.03	1045.42	667.79
Routine safety	Ensuring smooth-traffic expenses	200.00	200.01		
	Joint logistics	124.85	181.75	194.80	326.30
	Emergency ship rentals		32.00	36.00	32.00
	Water safety service fees	206.54	61.00	61.00	61.00
	Special police fees		93.65	99.56	120.00
	Safety facilities and emergency supplies	29.01	52.27	69.93	55.86
	Other safety costs	206.30	178.63	116.48	48.94
	Sub-total	766.70	799.31	577.77	644.10

Item	2012	2013	2014	2015
Electricity fee of the bridge	418.08	376.87	354.42	404.13
Insurance premium	604.52	592.39	764.41	820.26
Allowances for administrative expenses of the authority	600.00	600.00	1,030.00	1,030.00
Safety awards	70.00	69.99	75.00	77.00
Routine maintenance and other expenses of the service area	253.66	238.02	275.57	906.87
Other expenses	60.66		247.91	194.41
Total	9,383.52	8,710.99	10,623.76	10,992.77

Source: Hangzhou Bay Bridge Company, 2016

5.3 Summary of Historical Operation and Maintenance

The Consultant has summarized the management company, staff, and operation cost as follows to serve as reference in forecasting operation and maintenance cost for coming years.

- The management company has a high-efficient streamlined staff. Regarding the expense of different position, the expenses of managing and toll collecting staff are higher than the local level for an expressway management company. The maintenance expense, in particular, is far higher than those of other expressway companies.

- Due to a special structure and complex technologies, the bridge incurs many pilot study expenses in addition to routine maintenance cost.

- The bridge differs from ordinary expressways that it provides lighting along its whole length. The depreciation of the 2,212 light poles leads to extra electricity fee and maintenance cost for the transmission and distribution system.

- As a city icon of Ningbo, the bridge incurs large annual expense in safety management, which is stressed in routine management.

The operation and management expenses of the Hangzhou Bay Bridge are high on the whole. The Consultant's forecasts of its operation and maintenance expenses in coming years are as follows.

- It's foreseeable that the project management company will keep its structure unchanged for a long period, which implies that the staff cost and administration cost will grow steadily from the current level.

- The operation of the expressway of the project is expected to continue in its current pattern, with the figures in 2015 as the basis, routine maintenance expenses for coming years will increase over time and with the growth in traffic volume.

6 FORECAST OF OPERATION AND MANAGEMENT EXPENSES

6.1 Forecast Methods

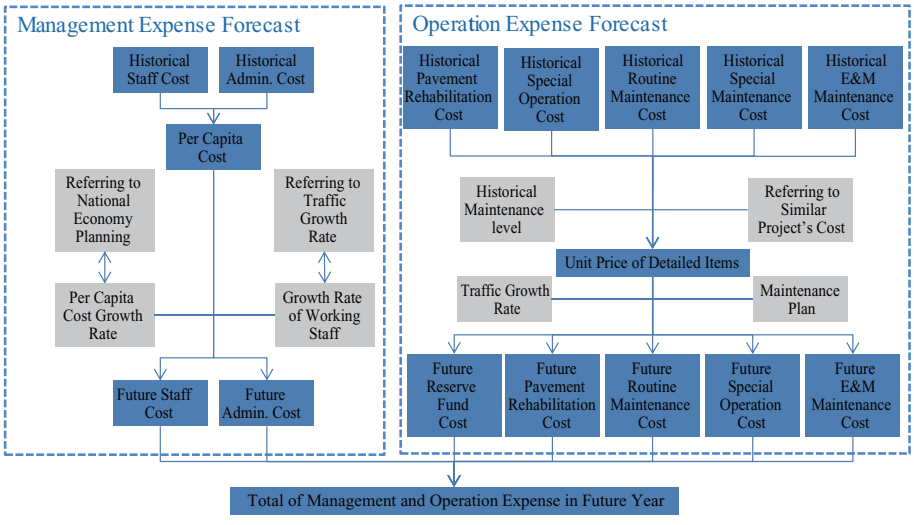
The expense for coming years can be divided into operation expense and management expense.

Given the traffic volumes and level of past maintenance of the project expressway, we believe that maintaining the current level of routine maintenance is sufficient. What we should consider is that in the future, with elapse of time and traffic volume growth, special maintenance expense will increase and the Consultant will select an appropriate unit price using expressways of the same type as a reference.

As to the increase in staff cost, we have taken into consideration the expectations to raise the income salary of employees in China's national economic development plan and selected an appropriate growth rate from our experience in staff cost forecasting for a local company of the same catagory.

The advices of engineering experts are followed and the Consultant's experience reviewed in the pavement rehabilitation and renewal of electromechanical equipment. All the forecasts of operation and maintenance expenses are based on 2015 prices, taking no inflation into account.

Figure 6-1 Forecasting process for operation and management expense



Source: The Consultant, 2016

6.2 Structure of the Forecast Model for Operation and Management Expense

6.3 Forecasts of Various Expenses

The forecasts of the operation and management expense are divided into two parts, namely, forecast of the operation expense and forecast of the management expense. The management expense fall into staff cost and administrative cost while operation expense consist of routine items, observational research items, special maintenance, monitoring and toll collection, routine safety, electricity fee of the bridge, insurance premium of the bridge, allowance for administrative expense of the authority, safety award, routine maintenance and other expenses of the service area. In addition, a rehabilitation is needed after certain years of operation. Given the traffic volumes of the project expressway and its past maintenance, we believe that it is sufficient to maintain the current level of routine maintenance and observational research. In the future, as traffic volume grows over time, special maintenance expenses will increase and the Consultant will select an appropriate unit price using expressways of the same type as a reference. The advices of engineering experts are followed and the Consultant's experience reviewed in the rehabilitation of the bridge pavement and renewal of electromechanical equipment. After detailed analysis, the Consultant has obtained forecasts of operation and management expenses for 2016 to 2033. The forecasts of operation and management expenses use the comparable prices of 2015 as benchmark. As the Consultant is not in position to give expert device in economy aspect, no assumptions are made for the inflation rate in the coming years. The forecasts include no operation or management expenses of the Haitianyizhou. The detailed predications for each item of expenses are described as follows and the results are provided in Table 6-1 and Table 6-2.

A. Management expense

Staff cost

- **Administrative staff cost:** Based on the historical staff cost provided by the Bridge management company, it is determined that the per capita cost of administrative staff in 2016 is RMB0.33 million, which will increase by 3% annually.

- **Monitoring and charging staff cost:** Based on the historical staff cost provided by the Bridge management company, it is determined that the per capita cost of monitoring and toll-collection staff in 2016 is RMB110,000/head, which will increase by 4% annually (taking into account staff increase due to traffic growth).

Administrative cost

- Based on the historical records from the Project company in the past four years collected by the Consultant, and taking into the consideration the actual cost in the most recent 2015, it is finally determined that RMB20.4 million is taken as the annual administrative cost of 2016, which will increase by 1% annually.

B. Operation expense

General cost

- **Costs for routine maintenance:** Based on the current and historical maintenance cost of the Bridge company, it is determined that the routine maintenance cost of 2016 is RMB14.4 million, or RMB0.4 million per km (the routine maintenance cost of general highways is about RMB0.1 million per km). According to the experience of the transport consultant, 30% of the routine maintenance is related to traffic and time. Such cost will increase with the traffic growth.

- **Cost for power supply system inspection:** Based on the current contract implementation and historical expenditure, it is determined that the power system inspection cost for 2016 is RMB2.24 million, which will keep unchanged in the coming years.

- **Cost for navigation mark maintenance:** Based on the current contract implementation and historical expenditure, it is determined that the navigation mark maintenance cost for 2016 is RMB6.49 million, which will keep unchanged in the coming years.

- **Cost for power, power cable, and bridge tower maintenance:** Based on the current contract implementation and historical expenditure, it is determined that the cost for power, power cable, and bridge tower maintenance for 2016 is RMB0.23 million, which will keep unchanged in the coming years.

- **Cost for operation monitoring and control:** Based on the current contract implementation and historical expenditure, it is determined that the cost for operation monitoring and control for 2016 is RMB1.38 million, which will keep unchanged in the coming years.

- **Inspection cost for three systems (monitoring, charging, and communication systems):** Based on the current contract implementation and historical expenditure, it is determined that the inspection cost for monitoring, charging, and communication systems for 2016 is RMB2.58 million, which will keep unchanged in the coming years.

Observation and research cost

- The current observation and research includes: the observation on local scouring of piers, durability study for the exposed station of the offshore platform, concrete structure durability monitoring and study, and bridge monitoring and assessment. Based on historical spending, especially in 2015, it is determined that the observation and research cost for 2016 is RMB7.65 million, which will remain unchanged in the coming years.

Special maintenance cost

- Special maintenance is complicated. The special maintenance plan for each year is prepared according to the new situations arising in the previous year. However, it may be reasonably arranged according to the urgency and project time limit. Based on the situation in the past four years, the Bridge's decoration and maintenance will involve the maintenance of bridge foundation, piers, and concreate box beam; maintenance of king-tower, cable, and steel box girder; maintenance of auxiliary facilities and traffic safety facilities; and preparation of special maintenance plan and regulations. From the past four years' situation, the special maintenance cost is still relatively evenly distributed. According to the Consultant's estimates, the special maintenance cost for 2016 will be RMB25 million, 50% of which will increase with the growth in traffic volume.

Monitoring system cost

- The monitoring system costs in the past four years included the toll collection system expenditure, public promotion expenses, and expense of upgrade for the three systems. The annual cost of the former two items is about RMB2.25 million. The three systems are usually upgraded in every 5-7 years, and each upgrade costs about RMB20 million, equivalent to an annualized RMB3.3 million.

Routine safety assurance cost

- The routine safety cost include logistics expenses, emergency ship rentals expenses, water safety service expenses, special police expenses, costs of safety facilities and emergency supplies, and other expenses. In reference to the past four years' expenditure, the cost of these items for 2016 is respectively RMB2.4 million, RMB0.32 million, RMB0.61 million, RMB1.2 million, RMB0.55 million, and RMB0.5 million. Besides, there will be an extra annual expense of RMB2 million for overweight-vehicles handling expenses.

Bridge electricity cost

- The average annual electricity cost in the past four years is RMB3.88 million. Considering the future electricity cost may increase due to equipment aging, the electricity cost for 2016 is determined to be RMB4.1 million, which will remain unchanged in the future.

Bridge insurance cost

- The average annual insurance cost in the past four years is RMB6.95 million. Considering the tendency of increase year by year, the insurance cost for 2016 is estimated to be RMB8.6 million, which will increase by 4% each year.

Office expense

- The office expense in 2014 and 2015 is RMB10.3 million, an annual increase of RMB4.3 million over the previous two years. It is estimated that office expense in 2016 is RMB10.3 million, which will increase by 4% each year.

Safety awards expense

- The expense of safety awards in the past four years remains at RMB0.7-0.8 million. It is estimated at RMB0.8 million in 2016, which will remain unchanged in the future.

Service area's daily maintenance expense

- The average expense of service area's maintenance expense in the past four years is RMB4.18 million. Taking into account the service area's upgrade, it is estimated at RMB5.5 million in 2016, which will remain unchanged in the future.

C. Rehabilitation cost

Rehabilitation mainly involves updating, replacing or re-paving mechanisms, facilities and parts reaching their service life. According to the Consultant, the rehabilitation needed in the future years will include cathodic protection of steel pipe pile, coating of pier and concrete beam, paving of bridge and road surface, and cables and pipe lines of the three systems and power supplies. The cathodic protection costs about RMB80 million each time; pier and beam coating about RMB70 million each time; the total area of bridge and road surface paving is 1,105,946m^2, and the unit price is RMB380/m^2 (two layers), which makes about RMB420.26 million for each paving update. The general practice of highway companies is to reserve a part of each year's toll revenue for the overhaul cost. According to the Consultant, the first rehabilitation should take place in 2020, and the second in 2032 (this rehabilitation is arranged because the bridge should be kept in good technical condition before it is returned to the government). Therefore, the first overhaul cost should be allocated evenly from 2020 to 2022, and the second from 2030 to 2032.

D. Reserve fund

In the actual highway maintenance, there will be a lot of unexpected factors. Therefore, the Consultant suggests a reserve fund of 10% of annual total operating cost budget for the sudden events.

6.3.1 Results of Operation and Management Expense Forecast

Based on the above model and taking into account of the future traffic growth, the Consultant has forecast the operation and management expense for the years from 2016 to 2033. The numbers are based on the current prices in 2016, without taking into account the impact of inflation. The forecasts are shown in the following tables.

Table 6-1 Operation and management expense forecast for future years (RMB10,000) [based on comparable prices]

Item	Unit price of base year	Unit	Qty.	Unit	2016	2017	2018	2019	2020	2021
1. Maintenance expense					**4,570**	**4,671**	**4,776**	**4,883**	**4,993**	**5,106**
① Staff cost					2,530	2,611	2,695	2,781	2,870	2,962
a.Administrative staff cost	33.00	RMB10,000/person	61.0	Person	2,013	2,073	2,135	2,199	2,265	2,333
b.Monitoring and charging staff cost	11.00	RMB10,000/person	47.0	Person	517	538	560	582	605	629
② Administrative cost	2,040.00	RMB10,000/year	1.0	Year	2,040	2,060	2,081	2,102	2,123	2,144
2. Operation expense					**10,240**	**10,405**	**10,581**	**10,765**	**11,045**	**11,211**
① General cost					2,732	2,755	2,780	2,806	2,855	2,874
a. Cost for routine maintenance	1,440.00	RMB10,000/year	1.0	Year	1,440	1,463	1,488	1,514	1,563	1,582
b. Cost for power supply system inspection	224.00	RMB10,000/year	1.0	Year	224	224	224	224	224	224
c. Cost for navigation mark maintenance	649.00	RMB10,000/year	1.0	Year	649	649	649	649	649	649
d. Cost for power, power cable, and bridge tower maintenance	23.00	RMB10,000/year	1.0	Year	23	23	23	23	23	23
e. Cost for operation monitoring and control	138.00	RMB10,000/year	1.0	Year	138	138	138	138	138	138
f. Inspection costs for three systems (monitoring, charging, and communication systems)	258.00	RMB10,000/year	1.0	Year	258	258	258	258	258	258
② Observation and research cost	765.00	RMB10,000/year	1.0	Year	765	765	765	765	765	765
③ Special maintenance cost	2,500.00	RMB10,000/year	1.0	Year	2,500	2,567	2,639	2,715	2,861	2,920
④ Charging monitoring cost	555.00	RMB10,000/year	1.0	Year	555	555	555	555	555	555
⑤ Routine safety cost	758.00	RMB10,000/year	1.0	Year	758	758	758	758	758	758
⑥ Bridge electricity cost	410.00	RMB10,000/year	1.0	Year	410	410	410	410	410	410
⑦ Bridge insurance cost	860.00	RMB10,000/year	1.0	Year	860	894	930	967	1,006	1,046
⑧ Office expense	1,030.00	RMB10,000/year	1.0	Year	1,030	1,071	1,114	1,159	1,205	1,253
⑨ Security awards expense	80.00	RMB10,000/year	1.0	Year	80	80	80	80	80	80
⑩ Service area's daily maintenance expense	550.00	RMB10,000/year	1.0	Year	550	550	550	550	550	550
3. Rehabilitation cost	**57,206.00**	**RMB10,000/time**	**1.0**	**Time**	**0**	**0**	**0**	**0**	**19,069**	**19,069**
4. Reserve fund					**1,024**	**1,041**	**1,058**	**1,077**	**1,105**	**1,121**
Total (1+2+3+4)					**15,834**	**16,117**	**16,415**	**16,725**	**36,212**	**36,507**

Table 6-2 Operation and management expense forecast for future years (RMB10,000) [based on comparable prices]

Item	Unit price of base year	Unit	Qty.	Unit	2022	2023	2024	2025	2026	2027
1. Maintenance expense					**5,222**	**5,342**	**5,465**	**5,591**	**5,721**	**5,856**
① Staff cost					3,057	3,155	3,256	3,360	3,468	3,580
a.Administrative staff cost	33.00	RMB10,000/person	61.0	Person	2,403	2,475	2,549	2,625	2,704	2,785
b.Monitoring and charging staff cost	11.00	RMB10,000/person	47.0	Person	654	680	707	735	764	795
② Administrative cost	2,040.00	RMB10,000/year	1.0	Year	2,165	2,187	2,209	2,231	2,253	2,276
2. Operation expense					**11,332**	**11,414**	**11,582**	**11,755**	**11,929**	**12,114**
① General cost					2,881	2,812	2,828	2,844	2,859	2,876
a. Cost for routine maintenance	1,440.00	RMB10,000/year	1.0	Year	1,589	1,520	1,536	1,552	1,567	1,584
b. Cost for power supply system inspection	224.00	RMB10,000/year	1.0	Year	224	224	224	224	224	224
c. Cost for navigation mark maintenance	649.00	RMB10,000/year	1.0	Year	649	649	649	649	649	649
d. Cost for power, power cable, and bridge tower maintenance	23.00	RMB10,000/year	1.0	Year	23	23	23	23	23	23
e. Cost for operation monitoring and control	138.00	RMB10,000/year	1.0	Year	138	138	138	138	138	138
f. Inspection costs for three systems (monitoring, charging, and communication systems)	258.00	RMB10,000/year	1.0	Year	258	258	258	258	258	258
② Observation and research cost	765.00	RMB10,000/year	1.0	Year	765	765	765	765	765	765
③ Special maintenance cost	2,500.00	RMB10,000/year	1.0	Year	2,942	2,997	3,050	3,104	3,155	3,211
④ Charging monitoring cost	555.00	RMB10,000/year	1.0	Year	555	555	555	555	555	555
⑤ Routine safety cost	758.00	RMB10,000/year	1.0	Year	758	758	758	758	758	758
⑥ Bridge electricity cost	410.00	RMB10,000/year	1.0	Year	410	410	410	410	410	410
⑦ Bridge insurance cost	860.00	RMB10,000/year	1.0	Year	1,088	1,132	1,177	1,224	1,273	1,324
⑧ Office expense	1,030.00	RMB10,000/year	1.0	Year	1,303	1,355	1,409	1,465	1,524	1,585
⑨ Security awards expense	80.00	RMB10,000/year	1.0	Year	80	80	80	80	80	80
⑩ Service area's daily maintenance expense	550.00	RMB10,000/year	1.0	Year	550	550	550	550	550	550
3. Rehabilitation cost	**57,206.00**	**RMB10,000/time**	**1.0**	**Time**	**19,069**	**0**	**0**	**0**	**0**	**0**
4. Reserve fund					**1,133**	**1,141**	**1,158**	**1,176**	**1,193**	**1,211**
Total (1+2+3+4)					**36,756**	**17,897**	**18,205**	**18,522**	**18,843**	**19,181**

Table 6-3 Operation and management expense forecast for future years (RMB10,000) [based on comparable prices]

Item	Unit price of base year	Unit	Qty.	Unit	2028	2029	2030	2031	2032	2033
1. Maintenance expense					**5,995**	**6,137**	**6,283**	**6,433**	**6,588**	**6,748**
① Staff cost					3,696	3,815	3,938	4,065	4,196	4,332
a.Administrative staff cost	33.00	RMB10,000/person	61.0	Person	2,869	2,955	3,044	3,135	3,229	3,326
b.Monitoring and charging staff cost	11.00	RMB10,000/person	47.0	Person	827	860	894	930	967	1,006
② Administrative cost	2,040.00	RMB10,000/year	1.0	Year	2,299	2,322	2,345	2,368	2,392	2,416
2. Operation expense					**12,230**	**12,407**	**12,593**	**12,772**	**12,952**	**13,136**
① General cost					2,876	2,889	2,903	2,914	2,924	2,934
a. Cost for routine maintenance	1,440.00	RMB10,000/year	1.0	Year	1,584	1,597	1,611	1,622	1,632	1,642
b. Cost for power supply system inspection	224.00	RMB10,000/year	1.0	Year	224	224	224	224	224	224
c. Cost for navigation mark maintenance	649.00	RMB10,000/year	1.0	Year	649	649	649	649	649	649
d. Cost for power, power cable, and bridge tower maintenance	23.00	RMB10,000/year	1.0	Year	23	23	23	23	23	23
e. Cost for operation monitoring and control	138.00	RMB10,000/year	1.0	Year	138	138	138	138	138	138
f. Inspection costs for three systems (monitoring, charging, and communication systems)	258.00	RMB10,000/year	1.0	Year	258	258	258	258	258	258
② Observation and research cost	765.00	RMB10,000/year	1.0	Year	765	765	765	765	765	765
③ Special maintenance cost	2,500.00	RMB10,000/year	1.0	Year	3,211	3,254	3,300	3,337	3,371	3,404
④ Charging monitoring cost	555.00	RMB10,000/year	1.0	Year	555	555	555	555	555	555
⑤ Routine safety cost	758.00	RMB10,000/year	1.0	Year	758	758	758	758	758	758
⑥ Bridge electricity cost	410.00	RMB10,000/year	1.0	Year	410	410	410	410	410	410
⑦ Bridge insurance cost	860.00	RMB10,000/year	1.0	Year	1,377	1,432	1,489	1,549	1,611	1,675
⑧ Office expense	1,030.00	RMB10,000/year	1.0	Year	1,648	1,714	1,783	1,854	1,928	2,005
⑨ Security awards expense	80.00	RMB10,000/year	1.0	Year	80	80	80	80	80	80
⑩ Service area's daily maintenance expense	550.00	RMB10,000/year	1.0	Year	550	550	550	550	550	550
3. Rehabilitation cost	**57,206.00**	**RMB10,000/time**	**1.0**	**Time**	**0**	**0**	**19,069**	**19,069**	**19,069**	**0**
4. Reserve fund					**1,223**	**1,241**	**1,259**	**1,277**	**1,295**	**1,314**
Total (1+2+3+4)					**19,448**	**19,785**	**39,204**	**39,551**	**39,904**	**21,198**

7 CONCLUSIONS

The Hangzhou Bay Bridge is an important section of the national highway G15 (Shenyang-Haikou). The Bridge will strengthen the connection between Shanghai and Zhejiang's deep-water harbors, support the development of Shanghai international shipping center, further underscore Shanghai's leading position in the Yangtze River Delta, and facilitate and promote the rapid and sustained economic development of Zhejiang, Shanghai, Jiangsu and other places.

Based on the forecast of the traffic volume and toll revenues from 2016 to 2033, this study provides detailed analysis and forecasts for the Bridge's future operation and maintenance costs. The forecast is made with the Consultant's expertise and years of experience with toll roads. From 2016 to 2033, the total revenue of the Bridge is expected to be RMB33.532 billion (current year price), and the maintenance and Operating costs RMB4.463 billion (price in 2015).

This Consultant adopted the most updated and reliable forecasting techniques and professional guidelines in forecasting future traffic and revenue. However, the forecasted results in this Study and the actual conditions for the future years may have differences due to uncertainties and unforeseen events that could not be predicted at this juncture. In addition, the results of this Study would only reflect the general traffic and revenue variations over the entire commissioned period. Discrepancies for certain individual year(s) may still be possible. Despite extreme efforts were used by the Consultant to maintain technical excellence in the exercise, the Consultant bears no responsibility or liability for any inaccurate forecasting results.

The following is reproduction of the report from the Company's reporting accountants, Deloitte Touche Tohmatsu, dated 30 September 2016 prepared for, among other purposes, inclusion in the announcement of the Company dated 30 September 2016.

INDEPENDENT ASSURANCE REPORT ON CALCULATIONS OF DISCOUNTED FUTURE ESTIMATED CASH FLOWS IN CONNECTION WITH THE VALUATION OF THE WHOLE OPERATION RIGHTS TILL 30 APRIL 2033 OF HANGZHOU BAY BRIDGE, NINGBO

TO THE DIRECTORS OF SHANGHAI INDUSTRIAL HOLDINGS LIMITED

We have examined the calculations of the discounted future estimated cash flows on which the valuation prepared by DTZ Cushman & Wakefield Limited dated 30 September 2016, of the whole operation rights till 30 April 2033 of Hangzhou Bay Bridge, Ningbo ("**Hangzhou Bay Bridge**") held by 寧波市杭州灣大橋發展有限公司 (Ningbo Hangzhou Bay Bridge Development Co., Ltd.) ("**Hangzhou Bay Bridge Development**") in the People's Republic of China as at 30 June 2016 (the "**Valuation**") is based. The Valuation based on the discounted future estimated cash flows is regarded as a profit forecast under Rule 14.61 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the "**Listing Rules**") and will be included in the announcement dated 30 September 2016 to be issued by Shanghai Industrial Holdings Limited (the "**Company**") in connection with the acquisition of indirect equity interest in a company engaged in the operation of Hangzhou Bay Bridge (the "**Announcement**").

Directors' Responsibility for the Discounted Future Estimated Cash Flows

The directors of the Company are responsible for the preparation of the discounted future estimated cash flows in accordance with the bases and assumptions determined by the directors and set out in the Announcement (the "**Assumptions**"). This responsibility includes carrying out appropriate procedures relevant to the preparation of the discounted future estimated cash flows for the Valuation and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the "Code of Ethics for Professional Accountants" issued by the Hong Kong Institute of Certified Public Accountants (the "**HKICPA**"), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our firm applies Hong Kong Standard on Quality Control 1 "Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements" issued by the HKICPA and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Reporting Accountants' Responsibility

Our responsibility is to express an opinion on the arithmetical accuracy of the calculations of the discounted future estimated cash flows on which the Valuation is based and to report solely to you, as a body, as required by Rule 14.62(2) of the Listing Rules, and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the contents of this report.

Our engagement was conducted in accordance with Hong Kong Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" issued by the HKICPA. This standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain reasonable assurance on whether the discounted future estimated cash flows, so far as the calculations are concerned, have been properly compiled in accordance with the Assumptions. Our work was limited primarily to making inquiries of the Company's management, considering the analyses and assumptions on which the discounted future estimated cash flows are based and checking the arithmetic accuracy of the compilation of the discounted future estimated cash flows. Our work does not constitute any valuation of Hangzhou Bay Bridge.

Because the Valuation relates to discounted future estimated cash flows, no accounting policies of the Company have been adopted in its preparation. The Assumptions include hypothetical assumptions about future events and management actions which cannot be confirmed and verified in the same way as past results and these may or may not occur. Even if the events and actions anticipated do occur, actual results are still likely to be different from the Valuation and the variation may be material. Accordingly, we have not reviewed, considered or conducted any work on the reasonableness and the validity of the Assumptions and do not express any opinion whatsoever thereon.

Opinion

Based on the foregoing, in our opinion, the discounted future estimated cash flows, so far as the calculations are concerned, have been properly compiled, in all material respects, in accordance with the Assumptions.

Deloitte Touche Tohmatsu
Certified Public Accountants
Hong Kong

30 September 2016

The following is reproduction of the letter from the Board dated 30 September 2016 prepared for, among other purposes, inclusion in the announcement of the Company dated 30 September 2016.

30 September 2016

Listing Division
The Stock Exchange of Hong Kong Limited
11th Floor, One International Finance Centre
1 Harbour View Street
Hong Kong

Dear Sir / Madam,

Discloseable and Connected Transaction – Acquisition of indirect equity interest in a company engaged in the operation of Hangzhou Bay Bridge

We refer to the announcement of Shanghai Industrial Holdings Limited (the "**Company**") dated 30 September 2016 in relation to the acquisition of indirect equity interest in a company engaged in the operation of Hangzhou Bay Bridge (the "**Announcement**"). Unless the context otherwise requires, terms defined in the Announcement shall have the same meanings when used herein.

We have reviewed and discussed the Valuation Report, which forms one of the basis for determining the Consideration for the Acquisition. We note that the methodology applied in deriving the valuation of the market value of the Operation Rights is regarded as a profit forecast under Rule 14.61 of the Listing Rules. Pursuant to Rule 14.62 of the Listing Rules, we have engaged Deloitte Touche Tohmatsu, acting as the Company's auditors, to examine the arithmetical accuracy of the calculation of the Valuation Report in accordance with Hong Kong Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" issued by the Hong Kong Institute of Certified Public Accountants.

On the basis of the above, we confirm that the valuation of the market value of the Operation Rights as contained in the Valuation Report has been made after due and careful enquiry.

Yours faithfully,
For and on behalf of the board of directors of
Shanghai Industrial Holdings Limited
Xu Bo
Executive Director and Deputy CEO

1. RESPONSIBILITY STATEMENT

This circular, for which the Directors collectively and individually accept full responsibility, includes particulars given in compliance with the Listing Rules for the purpose of giving information with regard to the Group. The Directors having made all reasonable enquiries, confirm that to the best of their knowledge and belief the information contained in this circular is accurate and complete in all material respects and not misleading or deceptive, and there are no other matters the omission of which would make any statement herein or this circular misleading.

2. DISCLOSURE OF INTERESTS

(a) Disclosure of directors' and chief executive's interests and short positions in the Company

As at the Latest Practicable Date, the interests and short positions in the shares, underlying shares and debentures of the Company and its associated corporations (within the meaning of Part XV of the SFO) of the Directors and chief executive of the Company which were required to be notified to the Company and the Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interests and short positions which they were taken or deemed to have under the provisions of the SFO), or which were required, pursuant to Section 352 of the SFO, to be entered in the register referred to therein, or which were required to be notified to the Company and the Stock Exchange pursuant to the Model Code for Securities Transactions by Directors of Listed Issuers (the "**Model Code**") set out in Appendix 10 of the Listing Rules, were as follows:

Interests in shares and underlying shares of the Company

Name of Director	Capacity	Nature of interests	Number of issued ordinary shares held	Number of outstanding shares options *(Note 2)*	Total	Approximate percentage of the issued shares
Zhou Jun	Beneficial owner	Personal	195,000	–	195,000	0.02%
Xu Bo	Beneficial owner	Personal	–	600,000	600,000	0.06%

Notes:

(1) All interests stated above represented long positions.

(2) Such long position represents underlying shares derived from unlisted and physically-settled derivatives.

Interest in shares and underlying shares of association corporations

Shanghai Industrial Development Co., Ltd.

Name of Director	Capacity	Nature of interests	Number of issued ordinary shares held *(Note 2)*	Approximate percentage of the issued shares
Lu Shen	Beneficial owner	Personal	101,200	0.01%

Shanghai Industrial Urban Development Group Limited

Name of Director	Capacity	Nature of interests	Number of outstanding shares options *(Note 2)*	Approximate percentage of the issued shares
Zhou Jun	Beneficial owner	Personal	7,000,000	0.15%

Notes:

(1) All interests stated above represented long positions.

(2) Such long position represents underlying shares derived from unlisted and physically-settled derivatives.

Shanghai Pharmaceuticals Holding Co., Ltd.

Name of Director	Class of Shares	Capacity	Nature of interests	Number of issued shares held	Approximate percentage of issued shares
Lu Shen	A Share	Beneficial owner	Personal	6,440	0.0003%

Notes: All interests stated above represented long positions.

Save as disclosed above, as at the Latest Practicable Date, none of the Directors or chief executives of the Company had any interests or short position in the shares, underlying shares or debentures of the Company and its associated corporations (within the meaning of Part XV of the SFO) which were required to be notified to the Company and the Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interests and short positions which they were taken or deemed to have under such provisions of the SFO), or which were required, pursuant to Section 352 of the SFO, to be entered in the register referred to therein, or which were otherwise required to be notified to the Company and the Stock Exchange pursuant to the Model Code.

(b) Disclosure of substantial shareholders' interests and short positions in the Company

As at the Latest Practicable Date, so far as was known to the Directors or chief executive of the Company, the interests and short of the persons (not being a Director or chief executive of the Company) in the shares and underlying shares of the Company which were required to be disclosed to the Company and the Stock Exchange pursuant to Divisions 2 and 3 of Part XV of the SFO were as follows:

Name of Shareholder	Capacity	Number of issued ordinary shares beneficially held	Approximate percentage of the issued shares
SIIC	Interests held by controlled corporations	639,170,748 *(Note 1)*	58.82%

Notes:

(1) SIIC through its subsidiaries, namely Shanghai Investment Holdings Limited, SIIC Capital (B.V.I.) Limited, SIIC Trading Company Limited, Shanghai Industrial Financial (Holdings) Company, Limited, SIIC CM Development Funds Limited, The Tien Chu Ve Tsin (Hong Kong) Company Limited, South Pacific Hotel (Hong Kong) Limited, SIIC Treasury (B.V.I.) Limited, South Pacific International Trading Limited and SIIC CM Development Limited held 519,409,748 shares, 80,000,000 shares, 15,127,000 shares, 13,685,000 shares, 3,005,000 shares, 2,790,000 shares, 2,156,000 shares, 1,559,000 shares, 1,429,000 shares and 10,000 shares of the Company respectively, and was accordingly deemed to be interested in the respective shares held by the aforementioned companies.

(2) All interests stated above represented long positions.

Save as disclosed above, as at the Latest Practicable Date, so far as was known to the Directors or chief executive of the Company based on the register maintained by the Company pursuant to Part XV of the SFO, no other persons (not being a Director or chief executive of the Company) had, or were deemed or taken to have, any interests or short positions in the shares or underlying shares which were required to be disclosed to the Company and the Stock Exchange pursuant to Divisions 2 and 3 of Part XV of the SFO.

(c) As at the Latest Practicable Date, so far as was known to the Directors, the following Directors are also directors or employees of SIIC:

Name of Director	Position held in SIIC
Wang Wei	Chairman
Zhou Jun	Executive Director and President
Lu Shen	Executive Director and Executive Vice President
Xu Bo	Executive Director and Vice President

3. DIRECTORS' SERVICE CONTRACTS

As at the Latest Practicable Date, none of the Directors had entered or proposed to enter into a service contract with the Company or any member of the Group which would expire or was not determinable by the relevant employer within one year without payment of compensation other than statutory compensation.

4. DIRECTOR'S INTEREST IN ASSETS

As at the Latest Practicable Date, none of the Directors had any direct or indirect interests in any assets which had been acquired or disposed of by, or leased to any member of the Group or were proposed to be acquired or disposed of by, or leased to any member of the Group since 31 December 2015, being the date to which the latest audited consolidated accounts of the Group were made up.

5. DIRECTORS' INTEREST IN CONTRACTS

As at the Latest Practicable Date, none of the Directors was materially interested in any contract or arrangement entered into by any member of the Group which contract or arrangement was subsisting as at the Latest Practicable Date and which was significant in relation to the business of the Group since 31 December 2015, being the date to which the latest audited consolidated accounts of the Group were made up.

6. DIRECTORS' INTEREST IN COMPETING BUSINESS

As at the Latest Practicable Date, none of the Directors or any of their respective close associates had any interest in any business which competes or is likely to compete, either directly or indirectly, with the Group's business.

7. MATERIAL ADVERSE CHANGES

As at the Latest Practicable Date, the Directors were not aware of any material adverse changes in the financial or trading position of the Group since 31 December 2015, the date to which the last published audited consolidated accounts of the Group were made up.

8. QUALIFICATION AND CONSENT OF EXPERTS

The following are the qualification of the experts who have given their opinion or advice for the inclusion in this circular:

Name	Qualification
DTZ Cushman & Wakefield Limited	Independent Valuer
Deloitte Touche Tohmatsu	Certified Public Accountants
Somerley	a corporation licensed to carry out type 1 (dealing in securities) and type 6 (advising on corporate finance) regulated activities under the Securities and Futures Ordinance (Chapter 571 of the Laws of Hong Kong)
WB Group Consulting (Shenzhen) Limited	Independent Professional Traffic Consultant

Each of the experts named above has given and has not withdrawn its written consent to the issue of this circular with the inclusion of its letter, report, opinion (as the case may be) and the references to its name (including its qualifications) in the form and context in which they respectively appear.

As at the Latest Practicable Date, each of the experts named above did not have any shareholding in any member of the Group or any right (whether legally enforceable or not) to subscribe for or to nominate persons to subscribe for securities in any member of the Group.

As at the Latest Practicable Date, each of the experts named above did not have any direct or indirect interest in any assets of the Group which have, since 31 December 2015, being the date to which the latest published audited consolidated accounts of the Group were made up, been acquired or disposed of by or leased to any member of the Group, or are proposed to be acquired or disposed of by or leased to any member of the Group.

9. MISCELLANEOUS

(a) The registered office of the Company is at 26th Floor, Harcourt House, 39 Gloucester Road, Wanchai, Hong Kong.

(b) The share registrar and transfer office of the Company is Tricor Secretaries Limited, 22nd Floor, Hopewell Centre, 183 Queen's Road East, Hong Kong.

(c) The company secretary of the Company is Mr. Yee Foo Hei who is a fellow member of The Hong Kong Institute of Chartered Secretaries, The Institute of Chartered Secretaries & Administrators and The Association of Chartered Certified Accountants.

(d) The English text of this circular shall prevail over the Chinese text in the event of any inconsistency.

10. DOCUMENTS AVAILABLE FOR INSPECTION

Copies of the following documents will be available for inspection during normal office hours at 26th Floor, Harcourt House, 39 Gloucester Road, Wanchai, Hong Kong up to and including the date of the EGM:

(a) the Sale and Purchase Agreement;

(b) the letter from the Independent Board Committee dated 24 October 2016, the text of which is set out on pages 18 and 19 of this circular;

(c) the letter from Somerley dated 24 October 2016, the text of which is set out on pages 20 to 35 of this circular;

(d) the written consents referred to in the section headed "8. Qualification and Consent of Experts" in this appendix; and

(e) this circular.

上海實業控股有限公司
SHANGHAI INDUSTRIAL HOLDINGS LIMITED

(Incorporated in Hong Kong with limited liability)

(Stock Code: 363)

NOTICE OF EXTRAORDINARY GENERAL MEETING

NOTICE IS HEREBY GIVEN that an extraordinary general meeting of Shanghai Industrial Holdings Limited (the "**Company**") will be held at the Conference Room of the Company, 26th Floor, Harcourt House, 39 Gloucester Road, Wanchai, Hong Kong at 10:00 a.m. on Wednesday, 16 November 2016 for the purpose of considering and, if thought fit, passing the following resolution, with or without amendments, as ordinary resolution of the Company:

ORDINARY RESOLUTION

"**THAT**

(a) the sale and purchase agreement (the "**Sale and Purchase Agreement**") dated 30 September 2016 entered into between Shanghai Industrial Investment (Holdings) Company Limited ("**SIIC**") (as vendor) and S.I. Infrastructure Holdings Limited (a wholly-owned subsidiary of the Company, as purchaser) in relation to the sale and purchase of 100% of the issued share capital of Yield Express Limited and all outstanding shareholder's loans owing by S.I. infrastructure Bridge (Hong Kong) Limited to SIIC as at the date of completion of the Acquisition at the consideration of HK$1,803,000,000 (the "**Acquisition**") (a copy of which is produced to the meeting marked "**A**" and initialled by the chairman of this meeting for the purpose of identification), and all transactions contemplated under or referred to in the Sale and Purchase Agreement and in connection therewith and any other agreements or documents in connection therewith be and are hereby approved, confirmed and/or ratified; and

(b) any one director of the Company or the secretary be and is hereby authorised for and on behalf of the Company to do all such acts and things as he or they may in his or their absolute discretion consider to be necessary, desirable, appropriate or expedient to implement or assist any subsidiary of the Company to implement and/or give effect to the Sale and Purchase Agreement and the transactions contemplated thereunder and all matters incidental to, ancillary to or in connection with the Sale and Purchase Agreement and/or any further agreement or document as mentioned in paragraph (a) of this resolution and/or the transactions contemplated thereunder and all other matters incidental thereto, including agreeing and making any modification, amendments,

waivers, variations or extensions of the Sale and Purchase Agreement and/or any further agreement or document as mentioned in paragraph (a) of this resolution and/or the transactions contemplated thereunder."

Hong Kong, 24 October 2016

Registered office:
26th Floor, Harcourt House,
39 Gloucester Road,
Wanchai, Hong Kong

By Order of the Board of
Shanghai Industrial Holdings Limited
Yee Foo Hei
Company Secretary

Notes:

1. A shareholder of the Company entitled to attend and vote at the extraordinary general meeting (the "**EGM**") is entitled to appoint one or more proxies, if holding two or more shares, to attend and vote on his behalf. A proxy need not be a shareholder of the Company.

2. Where there are joint registered holders of any share, any one of such persons may vote at the EGM, either personally or by proxy, in respect of such share as if he were solely entitled thereto, but if more than one of such joint holders are present at the EGM personally or by proxy, that one of the said persons so present whose name stands first on the Register of Members of the Company shall, in respect of such share, be entitled alone to vote in respect thereof.

3. The register of members of the Company will be closed from Tuesday, 15 November 2016, to Wednesday, 16 November 2016, both days inclusive, during which period no transfer of shares will be effected. As such, all transfers accompanied by the relevant share certificates must be lodged with the Company's share registrar, Tricor Secretaries Limited of 22nd Floor, Hopewell Centre, 183 Queen's Road East, Hong Kong by 4:30 p.m. on Monday, 14 November 2016 for the purpose of determining shareholders' eligibility to attend and vote at the EGM.

4. A form of proxy for use at the EGM is enclosed with the circular to the shareholders.

5. In order to be valid, a proxy form together with the power of attorney or other authority (if any) under which it is signed or a notarially certified copy of that power of attorney or authority, must be deposited at the registered office of the Company at 26th Floor, Harcourt House, 39 Gloucester Road, Wanchai, Hong Kong not less than 48 hours before the time for holding the EGM or adjourned meeting or poll (as the case may be).

6. Completion and return of a proxy form will not preclude a shareholder from attending and voting in person if he is subsequently able to be present and, in such event, the instrument appointing a proxy shall be deemed to be revoked.

7. The ordinary resolution set out above will be determined by way of a poll.