The fair value of the revenue that could be generated by Bangkok Mass

Transit System Public Co., Ltd. (BTSC) from the core system of its SkyTrain

business until the end of its concession from the perspective of the BTS Rail

**Mass Transit Growth infrastructure fund (BTSGIF)** 

1000 Phahonyothin Road, Chatuchak, Bangkok 10900

File No. 2022/199

Prepared for: BTS Rail Mass Transit Growth Infrastructure Fund

175 Sathorn City Tower, 7<sup>th</sup>, 21<sup>st</sup> and 26<sup>th</sup> Floor,

South Sathorn Road, Sathorn, Bangkok 10120



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## PRIVATE & CONFIDENTIAL

May 11, 2022

BTS Rail Mass Transit Growth Infrastructure Fund 175 Sathorn City Tower, 7<sup>th</sup>, 21<sup>st</sup> and 26<sup>th</sup> Floor, South Sathorn Road, Sathorn, Bangkok 10120

Attention: Fund Manager

Dear Sirs:

Re: AATL File No. 2022/199

Appraisal of Property

Pursuant to your instructions, American Appraisal (Thailand) Ltd. has made an appraisal of the fair value of the revenue that could be generated by Bangkok Mass Transit System Public Co., Ltd. ("BTSC") from 2 lines of the core system of its SkyTrain business ("the Property") until the end of its concession from the perspective of the BTS Rail Mass Transit Growth infrastructure fund ("BTSGIF"). The revenue shall include only the revenue from the SkyTrain business and; it shall not include the revenue from the O&M service business or advertising business. This revenue has been purchased by BTSGIF.

BTS SkyTrain is an elevated rail system with a total length of 23.5 kilometers which comprises the 17.0 kilometer long Sukhumvit line and the 6.5 kilometer long Silom line. It is sited centrally above the major transportation routes around the major business and shopping areas of Bangkok such as Ploenchit, Ratchadamri, Siam Square, Silom, and Sathorn, and extending northward to Mo Chit, eastward to Soi On Nut, and southward to Sathorn Bridge. It consists of two main routes: Sukhumvit Route and Silom Route.

BTSC was awarded the concession contract by the Bangkok Metropolitan Administration (BMA) in September 1991 to exclusively operate this SkyTrain system and to receive revenue from providing service to the public for a period of 30 years starting from December 5, 1999 and ending on December 4, 2029.

While the revenue has been purchased by BTSGIF, BTSC will continue to operate the system under the concession but would be reimbursed operation and management costs and capital expenditures by BTSGIF. Our report will be used for public purposes and in connection with one of the report requirements of



Securities and Exchange Commission Thailand (SEC). The date of appraisal is March 31, 2022 and the next 7 quarters.

According to the resolution of the Council of Ministers as of November 15, 2011, an infrastructure fund, of which IFF is one, is exempted from paying corporate income tax. We have; therefore, excluded corporate income tax in the cash flow projection.

Fair Value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The property under this appraisal which is the net future revenue that could be generated by Bangkok Mass Transit System Public Co., Ltd. (BTSC) from the core system of its SkyTrain business ("the Property") until the end of its concession is a unique property. Thus, we consider that the income approach is the most appropriate and the only approach to estimate the fair value of this property.

Based on our investigation, analysis, and techniques as outlined in this report, our findings are as follows: -

The Date of Appraisal	Fair Value of The Net Future Revenue of The Property from The Perspective of BTSGIF
2022	
March 31, 2022	Baht 38,740,000,000
June 30, 2022*	Baht 38,690,000,000
September 30, 2022*	Baht 38,640,000,000
December 31, 2022*	Baht 38,590,000,000
2023	
March 31, 2023*	Baht 38,540,000,000
June 30, 2023*	Baht 37,980,000,000
September 30, 2023*	Baht 37,400,000,000
December 31, 2023*	Baht 36,820,000,000

<sup>\*</sup>The conclusion of values is based on the assumptions of the appraisal date on March 31, 2022. We assumed that there will be no unforeseen events that will happen between now and the date of appraisal that would significantly affect the business of BTSGIF.

This conclusion of values is subject to the assumptions and limiting conditions, extraordinary assumptions and hypothetical conditions contained in the report.



We assumed that the data we obtained in the course of the valuation, along with the opinions and representations provided to us by the Company are true and accurate. We have no reason to suspect that any material facts have been omitted, nor are we aware of any facts or circumstances, which would render the information, opinion and representations made to us to be untrue, inaccurate or misleading.

We certify that we have neither present nor prospective interest in the Property or in the value reported.

Yours faithfully,

AMERICAN APPRAISAL (THAILAND) LTD.

Rocolfo L. Vergara Managing Director

Key Valuer Approved by the Office of the SEC Examiner and Qualified Senior Valuer - 301, 022

Chompoonuch Chatmahakulchai

Manager - Financial Valuation

Thai Valuers Association Member No. 02-1-0814-63

Appraised By: Chompoonuch Chatmahakulchai

Wanpen Thongwattana



#### **EXHIBIT**

#### ASSUMPTIONS AND LIMITING CONDITIONS

This valuation consulting service was performed with the following general assumptions and limiting conditions:

- 1. To the best of our knowledge, all data, including historical financial data if any, relied upon in reaching opinions and conclusions or set forth in this report are true and accurate. Although gathered from reliable sources, no guarantee is made nor liability assumed for the truth or accuracy of any data, opinions, or estimates furnished by others that have been used in this analysis.
- 2. No responsibility is assumed for matters legal in nature. No investigation has been made of the title to or any liabilities against the property appraised. We have assumed that the owner's claim is valid, the property rights are good and marketable, and there are no encumbrances that cannot be cleared through normal processes, unless otherwise stated in the report.
- 3. Possession of this report or any copy thereof does not carry with it the right of publication. No portion of this report (especially any conclusion, the identity of any individuals signing or associated with this report or the firms with which they are connected, or any reference to the professional associations or organizations with which they are affiliated or the designations awarded by those organizations) shall be disseminated to third parties through prospectus, advertising, public relations, news, or any other means of communication without the written consent and approval of American Appraisal (Thailand) Ltd.
- 4. Areas, dimensions, and descriptions of property, if any, used in this analysis have not been verified, unless stated to the contrary in the report. Any areas, dimensions, and descriptions of property included in the report are provided for identification purposes only and should not be used in a conveyance or other legal document without proper verification by an attorney. Plats, if any, presented in the report are intended only as aids in visualizing the property and its environment. Although the material was prepared using the best available data, it should not be considered as a survey or scaled for size.
- 5. Unless stated to the contrary in the report, no environmental impact study has been ordered or made. Full compliance with all applicable environmental regulations and laws is assumed unless otherwise stated, defined, and considered in the report. We have also assumed responsible ownership and that all required licenses, consents, or other legislative or administrative authority from any local, or national government or private entity organization either have been or can be obtained or renewed for any use that is relevant to this analysis.
- 6. The value estimate contained within the report specifically excludes the impact of substances such as asbestos, urea-formaldehyde foam insulation, other chemicals, toxic wastes, or other potentially hazardous materials or of structural damage or environmental contamination resulting from earthquakes or other causes, unless stated to the contrary in the report. It is recommended that the reader of the report consult a qualified structural engineer and/or industrial hygienist for the evaluation of possible structural/environmental defects, the existence of which could have a material impact on value
- 7. No soil analysis or geological studies were ordered or made in conjunction with the report, nor were any water, oil, gas, or other subsurface mineral and use rights or conditions investigated, unless stated to the contrary in the report.
- 8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with unless a nonconformity has been stated, defined, and considered in the report. Further, it is assumed that the utilization of the land and improvements is within the boundaries of the property described and that no encroachment or trespass exists unless noted in the report.
- 9. If we have made a physical inspection of the property, the inspection was made by individuals generally familiar with real estate and building construction. However, we do not opine on nor are we responsible for, the structural integrity of the property including its conformity to specific governmental code requirements, such as fire, building and safety, earthquake, and occupancy, or any physical defects that were not readily apparent to the appraisers during their inspection.



# **Extraordinary Assumptions and Hypothetical Conditions**

When a value opinion is subject to an extraordinary assumption or hypothetical condition, the appraiser must state that condition so that its effect on the value opinion or conclusion is clear. An extraordinary assumption is an assumption that is directly related to a specific assignment, which if found to be false, could alter the appraiser's opinions or conclusions. Extraordinary assumptions presume as fact otherwise uncertain information about physical, legal, or economic characteristics of the subject property; or about conditions external to the property such as market conditions or trends; or about the integrity of data used in an analysis. An extraordinary assumption may be used in an assignment only if:

- It is required to properly develop credible opinions and conclusions;
- The appraiser has a reasonable basis for the extraordinary assumption;
- Use of the extraordinary assumption results in a credible analysis; and
- The appraisal conforms to the appraisal guidelines of The International Valuation Standard (IVS), The Thai Valuers Association (TVA) and The Valuers Association of Thailand (VAT).

Hypothetical conditions assume conditions contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis. A hypothetical condition may be used in an assignment only if:

- Use of the hypothetical condition is clearly required for legal purposes, for purposes of reasonable analysis, or for purposes of comparison;
- Use of the hypothetical condition results in a credible analysis; and
- The appraisal conforms to the appraisal guidelines of The International Valuation Standard (IVS), The Thai Valuers Association (TVA) and The Valuers Association of Thailand (VAT).

This appraisal report is subject to the following hypothetical conditions and extraordinary assumptions:

# **Hypothetical Conditions:**

• There are no hypothetical conditions for this appraisal.

## **Extraordinary Assumptions:**

• We were furnished with the net revenue target for FY 2022/2023; as well as other records, documents and information that have been utilized without further verification as correctly reflecting the operations and the financial condition of BTSGIF. We were provided with revenue forecasts, prepared by Systra MVA (Thailand) Ltd. dated May 6, 2022, and expense forecasts,



prepared by InfraAsia (Thailand) Ltd. dated May 6, 2022. We conducted a study of market conditions and analysis of published information concerning the economy, which we used to evaluate BTSGIF's ability and capacity to generate further investment returns. The historical data was reviewed with representatives of the company and have been utilized without further verification as correctly reflecting the results of operations and the financial condition of the company. We have relied upon this information in order to develop our opinion of value. If any component of the provided information is found to be materially inaccurate or falsified, we have the right to amend our analysis.



## NARRATIVE REPORT

## 1. INTRODUCTION

In accordance with your authorization, we have made an appraisal of the fair value of the revenue that could be generated by Bangkok Mass Transit System Public Co., Ltd. (BTSC) from the core system of its SkyTrain business ("the Property") until the end of its concession from the perspective of the BTS Rail Mass Transit Growth infrastructure fund ("BTSGIF"). The revenue shall include only the revenue from the SkyTrain business and; it shall not include the revenue from the O&M service business or advertising business. This revenue has been purchased by BTSGIF.

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BTSC was awarded the concession contract by the Bangkok Metropolitan Administration (BMA) in September 1991 to exclusively operate this SkyTrain system and to receive revenue from providing service to the public for a period of 30 years starting from December 5, 1999 and ending on December 4, 2029.

While the revenue has been purchased by BTSGIF, BTSC will continue to operate the system under the concession but would be reimbursed operation and management costs and capital expenditures by BTSGIF. Our report will be used for public purposes and in connection with one of the report requirements of Securities and Exchange Commission Thailand (SEC). The date of appraisal is March 31, 2022 and the next 7 quarters.

Fair Value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Several key principles of fair value measurement are:

- Fair value should reflect an exit price which is the price that would be accepted to sell the asset.
- The hypothetical transaction is assumed to be an orderly transaction, not a forced sale.



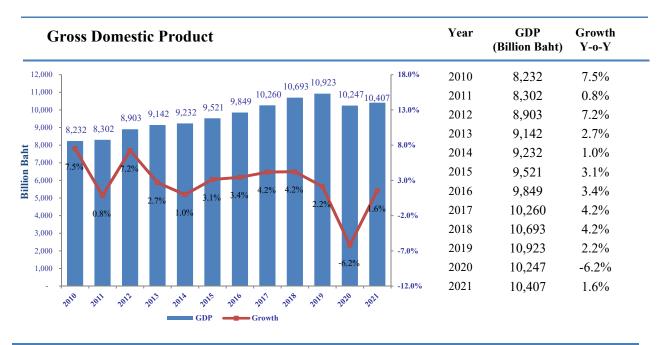
- The asset (liability) is transferred in an exchange between market participants.
- The hypothetical transaction is assumed to occur in the principal market, which is market with the highest volume and level of activity, or most advantageous market.
- Fair value should not reflect any adjustment for transaction costs but it may include transportation costs in certain circumstances.

## 2. GENERAL ECONOMIC CONDITIONS OF THAILAND

A sound appraisal of a company must consider current and prospective economic conditions, both in the national economy and the industry or industries with which the company is allied. The major variables reviewed in order to evaluate the overall state of the national economy include the current level of and changes in gross domestic product (GDP), unemployment rate, interest rate, and inflation rate. An overview of the national economy for the last several years, as well as a consideration of forecasted economic data, was used to develop this outlook.

# 2.1 Gross Domestic Product (GDP)

Thailand's GDP from 2010 to 2021 at 2002 Price as the base year are presented in the following graph:



Source: Office of The National Economic & Social Development Board



According to office of the National Economic and Social Development Board (NESDB), the Thai Economy in the fourth quarter of 2021 expanded by 1.9% (%YoY), recovering from a contraction of 0.2% in the previous quarter. After seasonally adjusted, the Thai economy increased by 1.8% from the third quarter (%QoQ sa).

On expenditure side: export of goods and services and government expenditure accelerated. Private consumption and public investment returned to expansions, while private investment decreased.

In 2021, the Thai economy expanded by 1.6%, recovering from a 6.2% contraction in 2020. Export of goods, private consumption, and investments expanded by 18.8%, 0.3%, and 3.4%, respectively.

In the fourth quarter of 2021, private consumption expenditures increased by 0.3%, compared with a 3.2% drop in the previous quarter, mainly due to an improving COVID-19 situation where the rate of daily new infections steadily declined, easing of the COVID-19 control measures, as well as the government's consumption stimulus measures. The expenditure in non-durable goods grew by 3.7%, accelerating from a 1.3% growth in the previous quarter. This was in line with the continual expansion of spending on food and non-alcoholic beverages by 3.3%. The expenditure in services decreased by 1.7%, improving from a 5.4% drop in the previous quarter. The spending in the health and housing (including water, electricity, and gas & other fuels) grew by 16.4% and 4.2%, respectively.

However, spending in restaurants & hotels, and recreation & culture decreased by 0.2% and 2.0%, respectively. The expenditure in semi-durable goods declined by 0.8%, an improving from a 6.5% drop in the previous quarter, in accordance with a positive growth of spending on furnishings and clothing & footwear which grew by 1.6% and 0.9%, respectively. The expenditure on durable goods decreased by 5.3%, compared to a 13.9% drop in the previous quarter, due to the 8.2% contraction on purchase of vehicles, compared with a 21.3% drop in the previous quarter. The improvement in private consumption expenditures in this quarter was in line with an increase in the consumer confidence index towards the economic situation which improved from 34.9 in the previous quarter to 38.9.

In 2021, private consumption expenditure increased by 0.3%, compared with a 1.0% drop in 2020.

In the fourth quarter of 2021, private investment declined by 0.9 % compared with a 2.6% growth in the previous quarter, in accordance with the decline in the investment in machinery and equipment while the investment in construction continually decreased. The investment in machinery and equipment decreased by



0.9% compared with a 3.7% growth in the previous quarter. This was in line with a drop in newly registered motor vehicles for investment, together with a slowdown in the imports of capital goods, and domestic machinery sales, which grew at a slower pace by 9.7% and 11.7%, compared with a growth of 22.0% and 16.1% in the previous quarter, respectively. Meanwhile, the investment in construction decreased by 0.9%, continuing from a 0.7% drop in the previous quarter. This was partly due to the slower drive from the construction of public infrastructure. The Business Sentiment Index rose to 48.1 from 41.3 in the previous quarter.

In 2021, private investment grew by 3.2%, improving from an 8.2% drop in 2020. In details, the investment in machinery and equipment grew by 4.2% compared with a 9.7% drop. The investment in construction declined by 0.6%, compared with a 2.3% drop in 2020.

In the fourth quarter of 2021, public investment grew by 1.7%, rebounding from a 6.2% drop in the third quarter of 2021. The government investment expanded by 11.6%, accelerating from a decline of 10.5% in the third quarter of 2021. Meanwhile, the state enterprise investment decreased by 15.9%, in contrast to a 3.1% rise in the previous quarter.

In 2021, public investment grew by 3.8%, compared with a 5.1% increase in 2020.

In the fourth quarter of 2021, government consumption increased by 8.1%, accelerating from 1.5% in the third quarter of 2021, due to compensation of employees increasing by 0.4%, higher than 0.3% in the previous quarter. In addition, purchases of goods and services rose by 11.4%, accelerating from a decrease of 5.6% in the prior quarter. Social transfers in kind – purchased market production increased by 38.5%, from 48.7% in the prior quarter. Consumption of fixed capital grew by 1.9%. Meanwhile, purchases by households and enterprises rose by 3.8%.

In 2021, government consumption grew by 3.2%, compared with a 1.4% increase in 2020.

In the fourth quarter of 2021, exports in US dollar terms continually increased following the recovery of economy and global trade volume. Export value in the fourth quarter of 2021 was recorded at 70.5 billion US dollars, increasing by 21.3%, higher than a 15.7% growth in the previous quarter. The exports volume index expanded by 16.8%, accelerating from a 12.2% increase in the previous quarter. Exports volume of agricultural and fishery products increased by 23.9% and 9.5% from the previous quarter, respectively.



Also, exports volume of manufacturing products continually increased by 16.9%, continued from an 18.0% increase in the previous quarter. The exports price increased by 3.8% compared with a 3.1% rise in the previous quarter. Export price of fishery and manufacturing rose by 2.4%, and 4.2%, respectively, while the agricultural price decreased by 0.8%. Excluding unwrought gold, export value expanded by 20.8 percent compared with a 24.2% increase in the previous quarter. In Baht terms, export value was recorded at 2,355 billion Baht, expanded by 32.2%, accelerating from a 21.6% growth in the previous quarter.

In 2021, export in US dollar terms recorded at 269.6 billion US dollars, increasing by 18.8%, the highest growth rate in 11 years. The export volume index and export price rose by 15.0% and 3.3%, respectively. In Baht terms, export value recorded at 8,633 billion Baht, expanding by 21.6% compared with a 5.8% drop in 2020.

Export markets: Exports to the main markets continuously expanded. Exports to the US expanded by 24.3%, following the growth in exports of automatic data processing machines and parts, rubber products, and motor cars, parts & accessories. Exports to China expanded by 17.3% mainly due to the increase in exports of polymers of ethylene, automatic data processing machines and parts, fresh, chilled, and frozen and dried fruits. Exports to EU (27)<sup>1</sup>, increased by 20.8% following the acceleration in exports of automatic data processing machines and parts, air conditioning machine and parts, and motor cars, parts & accessories. Exports to ASEAN (5)<sup>2</sup> grew by 42.9%, mainly due to the growth in exports to Malaysia, Singapore, Indonesia, and the Philippines. Exports to CLMV (Cambodia, Laos, Myanmar and Vietnam) increased by 13.4% in line with an increase in exports to Vietnam, Cambodia, and Myanmar. Exports to Australia expanded by 14.6% as supported by the acceleration in exports of motor cars, parts & accessories, polymers of ethylene, and rubber product. In addition, exports to the Middle East (15)<sup>3</sup> increased by 33.6% supporting by the growth in exports of motor cars, parts & accessories, as well as woods and wood products. However, exports to Japan slightly declined by 0.4%, mainly due to a contraction in exports of motor cars, parts & accessories, machinery and parts, and prepared poultry.

Import value in US dollar terms in the fourth quarter of 2021 was recorded at 59.7 billion US dollars, increasing by 20.6% compared with a 31.8% increase in the previous quarter, corresponding to some industrial manufacturing sector that

<sup>&</sup>lt;sup>1</sup> EU (27) consists of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

<sup>&</sup>lt;sup>2</sup> ASEAN (5) consist of Brunei, Indonesia, Malaysia, Philippines, and Singapore.

<sup>&</sup>lt;sup>3</sup> The Middle East (15) consist of United Arab Emirates, Bahrain, Cyprus, Israel, Iraq, Iran, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, Yemen.



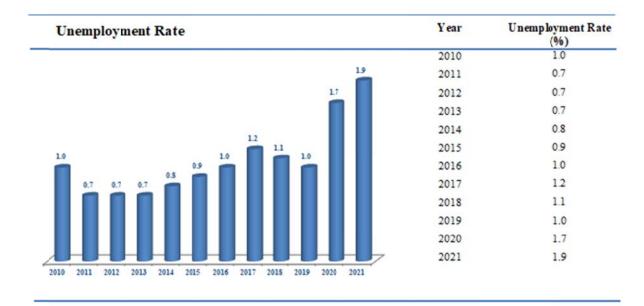
continues to expand, such as manufacture of electronic components and boards, automotive production, basic iron and steel production and manufacture of plastics and synthetics rubber products, etc. Import quantity rose by 14.0% compared with a 27.9% increase in the previous quarter, following an increase in import quantity of raw materials and intermediate goods, capital goods, and consumer goods which rose by 20.5%, 13.4%, and 7.5%, respectively.

Import price rose by 5.7%, compared with a 3.0% increase in the previous quarter. The import price of raw materials and intermediate goods rose by 21.3% compared with an 18.3% expand in the previous quarter due to the continual increase in prices of commodities in the world market such as crude oil and metal materials. Import values excluding unwrought gold expanded by 21.8%. In Thai Baht terms, the import value stood at 1,992 billion Baht, increasing by 31.6% compared with a 38.5% increase in the previous quarter.

In 2021, the import value was recorded at 229.6 billion US dollars, increased by 23.4%. Import quantity and import price rose by 18.3%, and 4.3%, respectively. In Thai Baht terms, import value increased by 26.4%, compared with a 13.3% decrease in 2020.

# 2.2 Unemployment

The following graph shows the unemployment rate from 2010 to 2021.



Source: National Statistical Office of Thailand

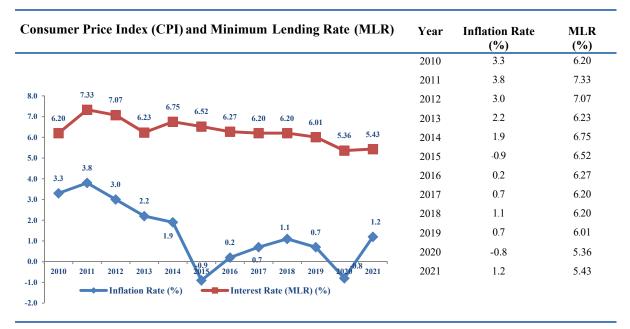


According to NESDB, in the fourth quarter of 2021, employment decreased following the decline in employment in non-agricultural sector whereas employment in the agricultural sector continued to increase. The unemployment rate decreased from the previous quarter and was lower than the same quarter last year. In the fourth quarter of 2021, employment declined by 1.0%, continued from a 0.6% contraction in the previous quarter. Non-agricultural employment (shared 66.76%) continued to decrease for two consecutive quarters by 2.1%, mainly due to a decline in the employment in construction and accommodation and food service activities sectors. However, employment in wholesale and retail trade; repair of motor vehicles and motorcycles sector continued to grow for two consecutive quarters by 0.7%. On the one hand, agricultural employment (shared 33.24%) increased for five consecutive quarters by 1.3%, in tandem with the increase in production of several key agricultural products such as sugarcane, palm oil and fruit, etc. The unemployment rate was at 1.64 %, lower than 2.25% in the previous quarter, and also lower than the unemployment rate at 1.86% in the same quarter last year. The average number of unemployed was at 632,000 people, compared with 727,000 people in the same quarter last year.

In 2021, average unemployment rate stood at 1.93 percent, compared with 1.69 percent in 2020.

## 2.3 Inflation and Interest Rate

The following graph shows annual change in Consumer Price Index (CPI) and Minimum Lending Rate (MLR) from 2010 to 2021.



Source: Office of The National Economic & Social Development Board and Bank of Thailand \*Average MLR of BBL, KBANK, KTB, and SCB



In the fourth quarter of 2021, headline inflation was averaged at 2.4%, compared to 0.7% in the previous quarter. Food and non-alcoholic beverages price index increased by 0.3%, compared with a 1.0% decrease in the previous quarter. This was partly due to increase in price of seasoning and condiments; vegetables and fruits price; meats; and eggs and dairy products price, by 5.9%, 3.5%, 0.6%, and 0.6 %, respectively. Non-food and beverage price index increased by 3.8% compared with a 1.9% increase in the previous quarter, following the increasing in price of transport & communication by 10.7%, as well as a rise of energy price index by 20.5% compared with a 10.6% increase in the previous quarter. Core inflation averaged at 0.3%<sup>4</sup>.

In 2021, headline inflation was averaged at 1.2%, compared to -0.8% in the previous year.

Average minimum lending rate (MLR) per annum unchanged at 5.49% in the fourth quarter of 2021.

In 2021, average minimum lending rate (MLR) per annum was at 5.43%

# 2.4 Outlook for Economy of Thailand

According to the economic forecast by NESDB, the Thai economy in 2022 is expected to grow in the range of 3.5% - 4.5%. This is due to the following mainly reasons.

- (1) The regaining in domestic demand;
- (2) The recovery of domestic tourism;
- (3) The continual expansion of export of goods; and
- (4) The support from public investment. Export value of goods in US dollar terms is anticipated to expand by 4.9%. Meanwhile, private consumption and private investment are expected to increase by 4.5% and 3.8%, respectively. Public investment is projected to increase by 4.6%. Headline inflation is estimated to be in the range of 1.5 2.5% and the current account is projected to record a surplus of 1.5% of GDP.

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<sup>&</sup>lt;sup>4</sup> In January 2022, headline inflation was 3.2%, core inflation was 0.5%.



#### 3. NATURE OF BUSINESS

Bangkok Mass Transit System Public Co., Ltd. (BTSC) was awarded the concession contract by the Bangkok Metropolitan Administration (BMA) in September 1991 to build and exclusively operate the elevated rail mass transit system for a concession period of 30 years.

# 3.1 Ownership and rights

Although BTSC is the fund provider party in all the civil, electrical and mechanical works, it is stated in the concession contract that the civil works will be transferred to BMA on a build-transfer-operate basis after completion of construction, while the electrical and mechanical works will be transferred to BMA on a build-operate-transfer basis at the expiration of the concession. The company finished the construction and started its operation on December 5, 1999.

Under the concession, BTSC has the exclusive right to receive all related revenues including advertising, copyright and fare revenue. According to the promotional privileges granted by the Board of Investment, the company will be exempted from tax for eight years commencing on the first day of operation. In addition, all imported machinery will be exempted from duties.

## 3.2 Existing Layout

BTS SkyTrain is described as an elevated rail system with a total length of 23.5 kilometers, sited centrally above the major transportation routes around the major business and shopping areas such as Ploenchit, Ratchadamri, Siam Square, Silom, and Sathorn, and extending northward to Mo Chit, eastward to Soi On Nut, and southward to Sathorn Bridge.

The operation of BTS SkyTrain consists of two main routes:

- 1. <u>Sukhumvit Route</u>: Sukhumvit Route starts at Sukhumvit Soi 77 and ends at Mo Chit, with a length of 17 kilometers. This route consists of 17 stations as follows: Mo Chit (N8), Saphan Khwai (N7), Ari (N5), Sanam Pao (N4), Victory Monument (N3), Phaya Thai (N2), Ratchathewi (N1), Siam (CEN), Chit Lom (E1), Phloen Chit (E2), Nana (E3), Asok (E4), Phrom Phong (E5), Thong Lo (E6), Ekkamai (E7), Phra Khanong (E8), and On Nut (E9).
- 2. <u>Silom Route</u>: Silom Route starts at Sathorn Bridge and ends at Rama I Road, with the length of 6.5 kilometers. This route consists of 7 stations as follows: National Stadium (W1), Ratchadamri (S1), Sala Daeng (S2), Chong Nonsi (S3), Saint Louis (S4), Surasak (S5), and Saphan Taksin (S6).



The introduction of one additional station - S4 (located between Chong Nonsi (S3) and Surasak (S5)) during FY2020/2021 increased the core system station number to 24 stations.

#### 3.3 Fares

BTS SkyTrain quotes fares based on a distance fare system / distance-based system, represented by a set of discrete fares depending on the number of stations travelled. Current fares (Effective fares) range from Baht 16 to Baht 44.

The concession agreement allows for 'authorized' fares to be increased based on change in CPI of Bangkok. However, the effective fares may not be increased more than once in any 18 month period, and must not exceed the applicable authorized fare. The new fare schedule will have to be advised to BMA in writing and to the general public 30 days prior to taking effect.

## 3.4 Operation

BTSC, currently operating 18 hours a day (06.00 a.m. - 24.00 p.m.), has 98 four-carriage trains. The length of a 4-car train is 86.6 meters, car width 3.12 meters, with an overall passenger capacity of 1,490 persons, all seats occupied and standees creating a load condition 8 persons per square meter. There are 42 seats per car, (168 seats per train).

#### 3.5 Ticket

The ticket used in the system can be classified into three types:

# 1. Single Journey Ticket

Single-Journey Ticket (SJT) which is a one-trip ticket. The ticket value will equal the fare for each trip.

## 2. One-Day Pass

One-Day Pass which is valid for unlimited rides on the date of issue or registration only, non-refundable and available at all BTS Ticket Offices.

- 3. SmartPass (Rabbit Card)
- 3.1 30-Day SmartPass (Discontinuation of 30-Day Trip Passes starts on October 1, 2021 onwards, Announced on September 1, 2021)



Trips on passes are valid for 30 days and unlimited travel distance within the core system for number of trips specified.

# 3.2 Sky SmartPass (Stored Value SmartPass)

Stored-Value Ticket (SVT) which is a multiple-trip ticket. The ticket value is deducted each time by the appropriate fare for each trip. Value can be added to the ticket at any ticket office.

#### 4. VALUATION

There are three generally accepted valuation approaches. The theory of these approaches is outlined as follows:

## Cost Approach:

The cost approach establishes value based on the cost of reproduction or cost of replacement of the property less depreciation from physical deterioration and functional and economic obsolescence, if present and measurable.

Reproduction cost new is defined as the estimated amount required to reproduce the property at one time in like kind and materials in accordance with current market prices for materials, labor, and manufacturing equipment, contractors' overhead and profit, and fees, but without provision for overtime, bonuses for labor, or premiums for materials or property.

Replacement cost new is defined as the estimated amount required to replace the property at one time with a modern new unit using the most current technology and materials that will duplicate the production capacity and utility of an existing unit at current market prices for materials, labor, and manufacturing equipment, contractors' overhead and profit, and fees, but without provision for overtime, bonuses for labor, or premiums for material or property.

## *Market Approach:*

The market approach considers actual arm's-length transactions for which the market value of investment alternatives to the subject company can be observed. The value of a company or an ownership interest in the company can be estimated by developing relevant multiples for the comparative companies that relate value to underlying revenue, earnings, or cash flow variables, and then applying these multiples to the comparable underlying revenue, earnings, or cash flow variables for the subject company. The valuation multiples can be derived from guideline publicly traded company transactions or guideline transactions of private companies.



## *Income Approach:*

The income approach provides an estimate of the present value of the monetary benefits expected to flow to the owners of the business. It requires projection of the cash flows that the business is expected to generate. These cash flows are then converted to their present value by means of discounting, using a rate of return that accounts for the time value of money and the appropriate degree of risk in the investment. The value of the business is the sum of the discounted cash flows.

The property under this appraisal which is the net future revenue that could be generated by Bangkok Mass Transit System Public Co., Ltd. (BTSC) from the 2 core lines system of its SkyTrain business ("the Property") until the end of its concession is a unique property. Thus, we consider that the income approach is the most appropriate and the only approach to estimate the fair value of this property.

## 5. APPLICATION OF INCOME APPROACH

The discounted debt-free net cash flow analysis, a special form of the income approach, explicitly recognizes that the current value of an asset is premised upon the expected receipt of future economic benefits such as cost savings, periodic income, or sales revenue. Indications of values are developed by discounting future debt-free net cash flows to their net present value at a rate that reflects both the current return requirements of the market and the risks inherent in the specific investment.

We were furnished with the net revenue target for FY 2022/2023; as well as other records, documents and information that have been utilized without further verification as correctly reflecting the operations and the financial condition of BTSGIF. We were provided with revenue forecasts, prepared by Systra MVA (Thailand) Ltd. dated May 6, 2022, and expense forecasts, prepared by InfraAsia (Thailand) Ltd. dated May 6, 2022. We conducted a study of market conditions and analysis of published information concerning the economy, which we used to evaluate BTSGIF's ability and capacity to generate further investment returns. The historical data was reviewed with representatives of the company and have been utilized without further verification as correctly reflecting the results of operations and the financial condition of the company. We have relied upon this information in order to develop our opinion of value. If any component of the provided information is found to be materially inaccurate or falsified, we have the right to amend our analysis.



# *Notes to cash flow projection:*

As presented in Appendix 1, the cash flow projection is prepared on the basis of a fiscal year ending March 31 and beginning April 1 of the previous year. The cash flows are projected until December 4, 2029 which is the date the concession period ends.

The cash flow projection only refers to the two routes of BTS SkyTrain: Sukhumvit Route (from Soi Sukhumvit 77 to Mo Chit) and Silom Route (from Saphan Taksin to National Stadium).

The revenues and the expenses from FY2022/2023 were based on budget provided by BTSGIF. The revenues from FY2023/2024 - FY2029/2030 were based on the revenue forecasts prepared by Systra MVA (Thailand) Ltd. dated May 6, 2022. The expenses in FY2023/2024 - FY2029/2030 were based on the expense forecasts prepared by InfraAsia (Thailand) Ltd. dated May 6, 2022.

Assumptions to the cash flow projection are as follows:

- Farebox Revenue: The revenue is based on three factors: effective fare, average weekday ridership, and ridership annualization factor<sup>5</sup>.
- The average weekday ridership is expected in FY2022/23 -FY2029/30 as follows:

	Unit: thousand pax/day							
FY2022/23 FY2023/24 FY2024/25 FY2025/26								
<b>p</b> 446 633 737								
FY2026/27	FY2027/28	FY2028/29	FY2029/30					
894	929	951	975					
	446 FY2026/27	FY2022/23 FY2023/24 446 633 FY2026/27 FY2027/28	FY2022/23         FY2023/24         FY2024/25           446         633         737           FY2026/27         FY2027/28         FY2028/29					

This figure is expected to be 0.9 million trips in FY2027/2028 owing to the expected completion of new mass transit lines. From FY2027/2028 onwards, the ridership is projected to grow by 2% - 4% annually.

■ The effective fare is projected to range from Baht 32.29/trip to Baht 38.96/trip during FY2022/2023 to FY2029/2030.

<sup>&</sup>lt;sup>5</sup> Ridership annualization factor is the factor used to convert average weekday ridership to annual ridership, and is estimated to be 330.24. That is, annual ridership is equal to 330.24 multiplied by average weekday ridership.



- Repair and Maintenance Expenses: This category of expenses comprises:
  - -Siemens Maintenance Contract. This includes the E&M maintenance services and Overhaul of Sukhumvit Route (SKT) and 3 additional 4-car trains (12 Cars).
  - -Overhaul of Silom Route (SLM) & Refurbishment (for Rolling Stocks). This includes overhauls of Silom Route (SLM) and refurbishment of rolling stock.
  - -P&C Maintenance cost (Outsourced and In House). This includes preventive, corrective maintenance of rolling stock, signaling, civil works, permanent way, power supply, communications, station E&M (building services), automatic fare collection, escalators & lifts, workshop equipment & service vehicles, stores / management overhaul, and S4(Siemens).

The repair and maintenance expenses were based on the forecast prepared by InfraAsia (Thailand) Ltd.

- Operating Expenses: Operating expenses consist of staff costs, utilities expenses, other direct operating costs\* and indirect operating costs. The expense is based on the forecast by InfraAsia (Thailand) Ltd.
  - \* This expense is including point costs, which is based on forecasts by Systra MVA (Thailand) Ltd.

## Capital Expenditures:

Capital expenditures, based on the forecast by InfraAsia (Thailand) Ltd. and BTSC, are to be spent in FY2022/23 - FY2029/30 as follows:

Unit: Million Baht

Capital Expenditures	FY2022/23	FY2023/24	FY2024/25	FY2025/26
Capital Expenditures – Others*	56	150	147	164
Additional Investment				
- S6 Station	40	160	200	-

Capital Expenditures	FY2026/27	FY2027/28	FY2028/29	FY2029/30
Capital Expenditures – Others*	147	183	172	104
Additional Investment				
- S6 Station	-	-	-	-

<sup>\*</sup> This includes reinforcement (AFC, power supply), assets replacement & assets renewal, 10% of other admin cost, and 25% of Maintenance Costs (P&C) - In House (non Siemens).



Other than the above, it is assumed that no additional capital expenditure will be needed on the core network until the end of the concession period.

Remark: the estimated expenses for the operation, maintenance and capital expenditure are derived from core system of Skytrain business only. The common expenses or undistributed expenses between core lines and extension lines are computed based on a proportion of length or distance between core lines and extension lines.

- Incentive Fee: BTSGIF will pay an incentive fee to BTSC based on the following schedule:
  - 10% of incremental net revenue above 100% and not exceeding 125% of budgeted net revenue
  - 15% of incremental net revenue above 125% of budgeted net revenue

For this appraisal, we assumed that the net revenue will be as per the budget; therefore, there is no incentive fee.

## Discount Rate:

The mathematical procedure of applying a specific rate to the anticipated future income stream in order to develop a present worth estimate is known as discounting. Because of the uncertainty about the future, coupled with considerations of marketability, liquidity preference, and time preference, future income or benefits are worth less than present funds or benefits.

As a guide in selecting this rate, a review was made of the stock market, the various rates of return currently required by an average equity investor, and the current yields on various securities. The steps followed in the discount rate development are as follows:

The cost of equity or required return on equity is estimated using the Capital Asset Pricing Model (CAPM);

The cost of debt is determined from the corporate bond yield;

The indicated cost of equity and debts are proportionately weighted using the estimated capital structure of the property under appraisal for an indication of the cost of capital or discount rate.



The discount rate appropriate for the appraised property is estimated at 6.00%. Our computations for the discount rate are presented in Appendix 2.

#### 6. CONCLUSION

Based on our investigation, analysis, and techniques as outlined in this report, our findings are as follows: -

The Date of Appraisal	Fair Value of The Net Future Revenue of The Property from The Perspective of BTSGIF						
2022							
March 31, 2022	Baht 38,740,000,000						
June 30, 2022*	Baht 38,690,000,000						
September 30, 2022*	Baht 38,640,000,000						
December 31, 2022*	Baht 38,590,000,000						
2023							
March 31, 2023*	Baht 38,540,000,000						
June 30, 2023*	Baht 37,980,000,000						
September 30, 2023*	Baht 37,400,000,000						
December 31, 2023*	Baht 36,820,000,000						

<sup>\*</sup>The conclusion of values is based on the assumptions of the appraisal date on March 31, 2022. We assumed that there will be no unforeseen events that will happen between now and the date of appraisal that would significantly affect the business of BTSGIF.

This conclusion of values is subject to the assumptions and limiting conditions, extraordinary assumptions and hypothetical conditions contained in the report.

We assumed that the data we obtained in the course of the valuation, along with the opinions and representations provided to us by the Company are true and accurate. We have no reason to suspect that any material facts have been omitted, nor are we aware of any facts or circumstances, which would render the information, opinion and representations made to us to be untrue, inaccurate or misleading. Our value is subject to the assumptions and limiting conditions contained herein.

We certify that we have neither present nor prospective interest in the property or in the value reported.

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# **APPENDICES**

File No.: 2022/199



# **APPENDIX 1**

**Cash Flow Projection** 

File No.: 2022/199

Cash Flow Projection
Valuation date:31/03/2022

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (E	JF)	32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Daily Weekday F	Ridership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
Dully Weellang 1	(growth)		42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Ridershi	• • • • • • • • • • • • • • • • • • • •	147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79
	(growth)		42%	16%	13%				-30%
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)	1,757	50%	16%	18%	7%	9%	2%	-27%
Total Revenues	(8.07.07)	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
Total revenues	Siemens Maintenance Contract	.,,,,,,	377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and Maintenance Expenses		727	765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
0 1 7	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Expen	ises	1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
Less.	Additional Investment - S6 Station	40	160	200	-	-	-	-	-
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	1	1	1	1	1	1	1	1
	Adjusted Free Cash Flow	2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Discount Period	0.50	1.50	2.50	3.50	4.50	5.50	6.50	7.34
	Discount Factor	0.971	0.916	0.864	0.816		0.726		0.652
	Present Value as at 31/03/2022	2,378	4,115	4,720	5,718	5,833	6,041	5,782	4,151

Discount Rate	6.00%
Net Present Value (Million Baht)	38,737
Rounded to (Million Baht)	38,740

Cash Flow Projection Valuation date:30/06/2022

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (E	F)	32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Daily Weekday R	kidership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
	(growth)		42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Ridership (Million trips)	147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79	
-	(growth)		42%	16%	13%	7%	4%	2%	-30%
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)	.,,	50%	16%	18%	7%	9%	2%	-27%
Total Revenues	18	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	Siemens Maintenance Contract		377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and Maintenance Expenses		727	765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Expen		1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
Less.	Additional Investment - S6 Station	40	160	200	-	-	-	-	-
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	0.75	1	1	1	1	1	1	1
	Adjusted Free Cash Flow	1,836	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Discount Period	0.38	1.25	2.25	3.25	4.25	5.25	6.25	7.09
	Discount Factor	0.978	0.930	0.877	0.827	0.781	0.736	0.695	0.662
	Present Value as at 30/06/2022	1,796	4,175	4,789	5,802	5,918	6,130	5,866	4,212

Discount Rate	6.00%
Net Present Value (Million Baht)	38,689
Rounded to (Million Baht)	38,690

Cash Flow Projection Valuation date:30/09/2022

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (El	F)	32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Daily Weekday R	idership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
	(growth)		42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Ridership	(Million trips)	147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79
-	(growth)		42%	16%	13%	7%	4%	2%	-30%
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)	,,,,,,	50%	16%	18%	7%	9%	2%	-27%
Total Revenues	10 /	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	Siemens Maintenance Contract		377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and	Maintenance Expenses	727	765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Expens		1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
20001	Additional Investment - S6 Station	40	160	200	-	-	-	-	-
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	0.5	1	1	1	1	1	1	1
	Adjusted Free Cash Flow	1,224	4,491	5,460	7,012	7,581	8,323	8,444	6,367
ı	Discount Period	0.25	1.00	2.00	3.00	4.00	5.00	6.00	6.84
	Discount Factor	0.986	0.943	0.890	0.840	0.792	0.747	0.705	0.671
	Present Value as at 30/09/2022	1,206	4,237	4,859	5,887	6,005	6,220	5,952	4,274

Discount Rate	6.00%
Net Present Value (Million Baht)	38,641
Rounded to (Million Baht)	38,640

Cash Flow Projection
Valuation date:31/12/2022

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (E	EF)	32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Daily Weekday I	Ridership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
	(growth)		42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Ridershi		147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79
(growth)		42%	16%	13%	7%	4%	2%	-30%	
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)	,,,,,,	50%	16%	18%	7%	9%	2%	-27%
Total Revenues	10 /	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	Siemens Maintenance Contract		377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and	Total Repair and Maintenance Expenses		765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Exper	nses	1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
	Additional Investment - S6 Station	40	160	200	-	-	-	-	-
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	0.25	1	1	1	1	1	1	1
	Adjustment Factor for the Year Adjusted Free Cash Flow	612	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Discount Period	0.13	0.75	1.75	2.75	3.75	4.75	5.75	6.59
	Discount Factor	0.993		0.903	0.852	0.804	0.758		0.681
	Present Value as at 31/12/2022	608	4,299	4,931	5,974	6,093	6,311	6,040	4,337

Discount Rate	6.00%
Net Present Value (Million Baht)	38,591
Rounded to (Million Baht)	38,590

Cash Flow Projection Valuation date:31/03/2023

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (I	CF)	32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Daily Weekday l	Ridership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
	(growth)		42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Ridershi	ip (Million trips)	147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79
(growth)		42%	16%	13%	7%	4%	2%	-30%	
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)	,,,,,	50%	16%	18%	7%	9%	2%	-27%
Total Revenues	10 /	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	Siemens Maintenance Contract		377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and	d Maintenance Expenses	727	765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Expen	nses	1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
	Additional Investment - S6 Station	40	160	200	-	-	-	-	-
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	0	1	1	1	1	1	1	1
	Adjusted Free Cash Flow	- "	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Discount Period	_	0.50	1.50	2.50	3.50	4.50	5.50	6.34
	Discount Factor	1.000	0.971	0.916	0.864	0.816	0.769	0.726	0.691
	Present Value as at 31/03/2023	-	4,362	5,003	6,061	6,183	6,404	6,128	4,400

Discount Rate	6.00%
Net Present Value (Million Baht)	38,541
Rounded to (Million Baht)	38,540

Cash Flow Projection Valuation date:30/06/2023

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (EF	7)	32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Daily Weekday Ri	idership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
	(growth)		42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Ridership		147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79
(growth)		42%	16%	13%	7%	4%	2%	-30%	
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)	1,,,,,,	50%	16%	18%	7%	9%	2%	-27%
Total Revenues	18	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	Siemens Maintenance Contract	Í	377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and	Maintenance Expenses	727	765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Expens		1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
	Additional Investment - S6 Station	40	160	200	-	-	-	-	-
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	0	0.75	1	1	1	1	1	1
	Adjusted Free Cash Flow	-	3,368	5,460	7,012	7,581	8,323	8,444	6,367
	Discount Period	-	0.38	1.25	2.25	3.25	4.25	5.25	6.09
	Discount Factor	1.000	0.978	0.930	0.877	0.827	0.781	0.736	0.701
	Present Value as at 30/06/2023	-	3,295	5,076	6,150	6,273	6,498	6,218	4,465

Discount Rate	6.00%
Net Present Value (Million Baht)	37,976
Rounded to (Million Baht)	37,980

Cash Flow Projection Valuation date:30/09/2023

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (EF)		32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
. ,	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Doily Wookdoy Pide	ership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
Daily Weekday Kide	(growth)	440	42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Didanchin (		147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79
Annual Ridership (Million trips)		147.39	42%						
	(growth)		42%	16%	13%	7%	4%	2%	-30%
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)		50%	16%	18%	7%	9%	2%	-27%
Total Revenues		4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	Siemens Maintenance Contract		377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and M	aintenance Expenses	727	765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Expenses		1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
Less.	Additional Investment - S6 Station	40	160	200	-		-		-
	Additional investment - 50 Station	40	100	200					
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	0	0.5	1	1	1	1	1	1
	Adjusted Free Cash Flow	_	2,245	5,460	7,012	7,581	8,323	8,444	6,367
	required free Cash frow	1	2,243	5,400	7,012	7,501	0,525	0,777	0,507
	Discount Period	_	0.25	1.00	2.00	3.00	4.00	5.00	5.84
	Discount Factor	1.000	0.986	0.943	0.890	0.840			0.712
	Present Value as at 30/09/2023		2,213	5,151	6,241	6,365	6,593	6,310	4,530

Discount Rate	6.00%
Net Present Value (Million Baht)	37,403
Rounded to (Million Baht)	37,400

Cash Flow Projection
Valuation date:31/12/2023

(Unit: Million Baht)		FY2022/23 4/22-3/23	FY2023/24 4/23-3/24	FY2024/25 4/24-3/25	FY2025/26 4/25-3/26	FY2026/27 4/26-3/27	FY2027/28 4/27-3/28	FY2028/29 4/28-3/29	FY2029/30 4/29-11/29
Effective Fare (E	F)	32.29	34.24	34.23	35.81	35.86	37.45	37.26	38.96
	(growth)		6.06%	-0.04%	4.62%	0.14%	4.42%	-0.49%	4.55%
Daily Weekday F	Ridership (thousand pax/day)by MVA	446	633	737	833	894	929	951	975
	(growth)		42%	16%	13%	7%	4%	2%	3%
	Ridership Annualization Factor (days)	330	330	330	330	330	330	330	224
Annual Ridership		147.39	209.14	243.52	274.93	295.13	306.93	314.06	218.79
(growth)		42%	16%	13%	7%	4%	2%	-30%	
	Fare Box Revenue	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	(growth)	.,,	50%	16%	18%	7%	9%	2%	-27%
Total Revenues	10	4,759	7,162	8,335	9,846	10,584	11,494	11,703	8,524
	Siemens Maintenance Contract		377	385	394	403	412	421	235
	Overhaul & Refurbishment(for Rolling stocks)		247	265	207	246	217	183	9
	P&C Maintenance cost (Outsourced and InHouse)		142	145	146	149	152	156	108
Total Repair and	Maintenance Expenses	727	765	795	747	797	781	759	351
	Staff Costs	599	639	669	704	723	765	801	576
	Utilities Expenses	380	391	403	429	453	466	478	332
	Other Direct Operating Costs	338	389	481	606	693	783	851	657
	Point Costs	278	326	410	527	607	694	758	592
	Indirect Operating Costs	170	177	181	185	189	194	198	137
Operating Expen	· ·	1,488	1,596	1,734	1,924	2,059	2,207	2,328	1,702
Total Expenses		2,215	2,361	2,529	2,670	2,856	2,988	3,087	2,053
EBITDA		2,544	4,801	5,807	7,176	7,728	8,506	8,616	6,471
Less:	Capital Expenditures - Others	56	150	147	164	147	183	172	104
	Additional Investment - S6 Station	40	160	200	-	-	-	-	-
Free Cash Flow		2,448	4,491	5,460	7,012	7,581	8,323	8,444	6,367
	Adjustment Factor for the Year	0	0.25	1	1	1	1	1	1
	Adjusted Free Cash Flow	-	1,123	5,460	7,012	7,581	8,323	8,444	6,367
	Discount Period	_	0.13	0.75	1.75	2.75	3.75	4.75	5.59
	Discount Factor	1.000		0.957	0.903	0.852	0.804	0.758	
	Present Value as at 31/12/2023	-	1,115	5,226	6,332	6,459	6,690	6,402	4,597

Discount Rate	6.00%
Net Present Value (Million Baht)	36,821
Rounded to (Million Baht)	36,820



# **APPENDIX 2**

**Discount Rate Development** 

File No.: 2022/199



## DISCOUNT RATE DEVELOPMENT

We estimated a discount rate for the income approach based on BTSGIF's weighted average cost of capital ("WACC"). The cost of equity capital and cost of debt capital were developed based on market-derived data and factors relevant to the economy, the industry, and BTSGIF as of the Valuation Date. Certain data inputs were derived from the observed data of selected guideline companies and adjusted for the specific differences between the guideline companies and BTSGIF. These costs were then weighted in terms of a typical industry capital structure to arrive at an estimated WACC.

The WACC is normally an estimate of the after-tax rate of return on investment required by all investors of capital. However, since BTSGIF is exempted from paying corporate income tax, the cost of debt was not tax effected in our calculation of WACC. Cost of equity and debt are weighted based on the concluded capital structure to arrive at the WACC. The WACC is determined as follows:

 $WACC = (W_d)(K_d) + (W_e)(K_e)$ 

Where

W<sub>d</sub> = Market value weighting of debt to total capital

 $K_d$  = Before-tax cost of debt

W<sub>e</sub> = Market value weighting of equity to total capital

 $K_e$  = Cost of equity

As part of the WACC analysis, 4 guideline companies were selected. The guideline companies chosen are briefly described as follows:

# **Guideline Company in Singapore**

# **ComfortDelGro Corporation Limited (CMDG.SI)**

ComfortDelGro Corporation Limited, an investment holding company, operates as a passenger land transportation company. The company provides public bus and charter bus services; rail services; motor vehicle evaluation and other related services.

## **Guideline Company in Hong Kong**

## MTR Corporation Limited (0066.HK)

MTR Corporation Limited engages in the construction and operation of mass transit railway systems in Hong Kong.

File No.: 2022/199



## **Guideline Company in Thailand**

## BTS Group Holdings Public Co., Ltd. (BTSG)

BTS Group Holdings Public Co., Ltd. (BTSG) is primarily in the business of Mass Transit. The Company operates Bangkok's BTS SkyTrain system and the Bus Rapid Transit (BRT) System. BTS Group Holdings PCL is also involved in Media & Advertising, Property Development, and Services business.

## **Guideline Company in Japan**

## **Tokyu Corporation (9005.T)**

Tokyu Corporation engages in the lifestyle services and retail businesses in Japan and internationally. It operates through Transportation, Real Estate, Life Services, and Hotel and Resort segments.

## **Cost of Equity**

The cost of equity (K<sub>e</sub>), or required return on equity, was estimated using the capital asset pricing model ("CAPM") and the build-up method.

The CAPM uses a risk-free rate of return and an appropriate market risk premium for equity investments and the specific risks of the investment.

The build-up method is an additive model in which the return on an asset is estimated as the sum of the risk-free rate and one or more risk premia. Each premium represents the estimated return an investor requires for assuming a specific risk. The building blocks are summed to develop an estimate of the cost of equity.

As part of the analysis, 4 guideline companies were selected and studied, as discussed previously.

The CAPM uses the following formula to arrive at an appropriate cost of equity (required return on equity):

$$K_e = R_f + (\beta x ERP x Relative Volatility Adjustment Factor) + SCA$$

## Singapore

Where

 $K_e = Cost of equity$ 



 $R_f = Risk-free rate of$ = 2.18%return

The yield on the 7.68-year Thai Government Bond as of the Valuation Date was used as a proxy for the risk-free rate.

= Beta

0.93

Beta is a measure of the risk of a

given security relative to that of the overall market. The concluded beta is based on the median / the average / our review of the selected guideline companies / unlevered beta of selected guideline the companies, which was then relevered based the on

concluded capital structure.

4.24% ERP = SG Market equity risk premium

The ERP is the expected return of the market (R<sub>m</sub>) in excess of

the risk-free rate  $(R_f)$ , or, mathematically,  $R_m - R_f$ . The market equity risk premium is estimated based on consideration of historical realized returns on equity investments over a risk-free rate. Data sources reviewed generated a range of equity risk premium

indications.

SCA = Specific company 1.0% risk adjustment

The SCA considers factors such as geographic scope, diversity of

product lines, customer concentration, depth management, financial strength, perceived risk in achieving projections, size premium and other company-specific factors relative to the chosen guideline

companies.

Relative Volatility Adjustment Factor = 1.11

A factor used to adjust the market risk premium from the SG market

to Thai market.

Employing the above, the cost of equity (K<sub>e</sub>) was estimated as follows:



 $K_e = R_f + (\beta x ERP x Relative Volatility Adjustment Factor) + SCA$ 

 $K_e = 2.18\% + (0.93 \times 4.24\% \times 1.11) + 1.00\%$ 

 $K_e = 7.57\%$ 

The result of the foregoing calculations is an indication of the return required by equity investors.

## Hong Kong

Where

 $K_e$  = Cost of equity

 $R_f = Risk-free rate of = 2.18\%$ 

 $\beta$  = Beta = 0.54

ERP = HK Market equity = 4.84% risk premium

The yield on the 7.68-year Thai Government Bond as of the Valuation Date was used as a proxy for the risk-free rate.

Beta is a measure of the risk of a given security relative to that of the overall market. concluded beta is based on the median / the average / our review of the selected guideline companies / unlevered beta of guideline selected the companies, which was then relevered based on the concluded capital structure.

The ERP is the expected return of the market (R<sub>m</sub>) in excess of the risk-free rate  $(R_f)$ , or, mathematically,  $R_m - R_f$ . market equity risk premium is estimated based on consideration of historical realized returns equity on investments over a risk-free rate. Data sources reviewed generated a range of equity risk premium indications.



SCA = Specific company = 1.0% risk adjustment

The SCA considers factors such as geographic scope, diversity of product lines, customer concentration, depth of management, financial strength, perceived risk in achieving projections, size premium and other company-specific factors relative to the chosen guideline companies.

Relative Volatility Adjustment Factor = 0.80

A factor used to adjust the market risk premium from the HK market to Thai market.

Employing the above, the cost of equity  $(K_e)$  was estimated as follows:

$$K_e = R_f + (\beta x ERP x Relative Volatility Adjustment Factor) + SCA$$

$$K_e = 2.18\% + (0.54 \times 4.84\% \times 0.80) + 1.0\%$$

$$K_e = 5.29\%$$

The result of the foregoing calculations is an indication of the return required by equity investors.

## Japan

Where

 $K_e$  = Cost of equity

 $R_f = Risk-free rate of = 2.18\%$  return

The yield on the 7.68-year Thai Government Bond as of the Valuation Date was used as a proxy for the risk-free rate.

 $\beta$  = Beta = 0.51

Beta is a measure of the risk of a given security relative to that of the overall market. The concluded beta is based on the median / the average / our review of the selected guideline companies / unlevered beta of selected guideline the companies, which was then relevered based on the concluded capital structure.



ERP = JP Market equity = 4.94% risk premium

The ERP is the expected return of the market (R<sub>m</sub>) in excess of the risk-free rate  $(R_f)$ , or, mathematically,  $R_m - R_f$ . market equity risk premium is estimated based consideration of historical realized returns equity on investments over a risk-free rate. Data sources reviewed generated a range of equity risk premium indications.

SCA = Specific company = 1.0% risk adjustment

The SCA considers factors such as geographic scope, diversity of product lines, customer concentration, depth of management, financial strength, perceived risk in achieving projections, size premium and other company-specific factors relative to the chosen guideline companies.

Relative Volatility Adjustment Factor = 0.72

A factor used to adjust the market risk premium from the Japan market to Thai market.

Employing the above, the cost of equity (K<sub>e</sub>) was estimated as follows:

 $K_e = R_f + (\beta x ERP x Relative Volatility Adjustment Factor) + SCA$ 

 $K_e = 2.18\% + (0.51 \times 4.94\% \times 0.72) + 1.0\%$ 

 $K_e = 4.99\%$ 

The result of the foregoing calculations is an indication of the return required by equity investors.

### **Thailand**

Where

 $K_e$  = Cost of equity



 $R_f = Risk-free rate of$ = 2.18%

return

The yield on the 7.68-year Thai Government Bond as of the Valuation Date was used as a proxy for the risk-free rate.

0.56 = Beta

Beta is a measure of the risk of a given security relative to that of the overall market. The concluded beta is based on the median / the average / our review of the selected guideline companies / unlevered beta of selected guideline the companies, which was then relevered based the on concluded capital structure.

= 5.82% ERP = TH Market equity risk premium

The ERP is the expected return of the market (R<sub>m</sub>) in excess of the risk-free rate  $(R_f)$ , or, mathematically,  $R_m - R_f$ . The market equity risk premium is estimated based on consideration of historical realized returns on equity investments over a risk-free rate. Data sources reviewed generated a range of equity risk premium indications.

SCA = Specific company 1.0% risk adjustment

The SCA considers factors such as geographic scope, diversity of product lines, customer concentration, depth management, financial strength, perceived risk in achieving projections, size premium and other company-specific factors relative to the chosen guideline companies.

Employing the above, the cost of equity  $(K_e)$  was estimated as follows:



$$K_e = R_f + \beta(ERP) + SCA$$

$$K_e = 2.18\% + 0.56(5.82\%) + 1.0\%$$

$$K_e = 6.46\%$$

The result of the foregoing calculations is an indication of the return required by equity investors.

The cost of equity (K<sub>e</sub>) is then calculated by employing the weighted average of the cost of equity which derived from Singapore, Hong Kong, Japan and Thailand. We considered a structure with 25% the cost of equity in Singapore, 25% Hong Kong, 25% Japan and 25% Thailand for computing the cost of equity.

$$K_{e} = (W_{SG})(K_{e}\_SG) + (W_{HK})(K_{e}_{HK}) + (W_{JP})(K_{e}_{JP}) + (W_{TH})(K_{e}\_TH)$$

$$K_e = 0.25(7.57\%) + 0.25(5.29\%) + 0.25(4.99\%) + 0.25(6.46\%)$$

$$K_e = 6.08\%$$

### **Cost of Debt**

The cost of debt  $(K_d)$  is the current average borrowing cost that a market participant would expect to pay to obtain its debt financing based on the assumed capital structure. While interest expense is tax deductible, BTSGIF is exempted from paying corporate income tax.

For BTSGIF, we estimated the pre-tax cost of debt by reference to market interest rates and discussion with the management and internal analysis. The pre-tax cost of debt for BTSGIF was 4.23% based on average long-term Thai corporate bond rate for A-rated bonds from the Thai Bond Market Association.

## **Capital Structure**

A debt-to-total-capital ratio of 0% was concluded based on the Fund's capital structure.

## **WACC Conclusion**

Based on the preceding analysis of each of the components, the concluded WACC was calculated as follows:

WACC = 
$$(W_d)(K_d) + (W_e)(K_e)$$
  
WACC =  $0.0(4.23\%) + 1.0(6.08\%)$ 

WACC = 6.00% (rounded)

The discount rate was concluded to be 6.00%.

\*\*\*\*\*\*

# Calculation of Country Specific Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

Subject Cour	ntry:	7	Thailand					
WACC Calc	ulation	- Considering Sp	ecific Co	untry/Political F	actors			
WACC	=	(% Debt)	X	Kd	+	(% Equity)	X	Ke
WACC	=	0.0%	X	4.23%	+	100.0%	X	6.08%
WACC	=	0.00%			+	6.08%		
WACC	=	6.08%						
Concluded V	WACC	: 6.00%						

## Calculation of Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

#### Singapore Cost of Equity

Guideline Company	Published Levered Beta (a)	Book Value Interest-Bearing Debt (b)	Liquidation Value Preferred Stock (b)	Stock Price per Share (b)	Common Shares Outstanding (b)	Market Value of Common Equity (c)	Total Invested Capital ("TIC") (d)	Debt to TIC (e)	Equity to TIC (f)
1 3		(SGD Millions*)	(SGD Millions*)	(SGD*)	(SGD Millions)	1 / /		()	
ComfortDelgro Corporation (CMDG.SI)	1.01	341.0	0.0	1.47	2,166.7	3,185.1	3,526.1	10%	90%
AVERAGE	1.01	341.0	0.0	1.47	2166.71	3,185.1	3,526.1	10%	90%
MEDIAN	1.01	341.0	0.0	1.47	2166.71	3,185.1	3,526.1	10%	90%

\* Data is presented in millions of SG dollars for all guideline publicly traded companies unless noted otherwise.

Concluded Variables		
Capital Structure for the Subject Company		
Percent Debt	0%	
Percent Equity	100%	
Tax Rate for the Subject Company	0.0% (g)	
Levered/Relevered Beta for the Subject Company	0.93	

#### Computation of Unlevered Beta for Guideline Companies

BU = BL / [1 + (1 - T) x (Wd / We)]

ComfortDelgro Corporation (CMDG.SI)	<u>BU</u> 0.93	<u>Tax Rate</u> 17.0%
AVERAGE	0.93	
MEDIAN	0.93	

#### Computation of Relevered Beta for Subject Company

 $BL = BU \times [1 + (1 - T) \times (Wd / We)]$ 

 Concluded Unlevered Beta
 0.93

 Relevered Beta for Subject Company
 0.93

#### Definitions:

BU = Beta unlevered

BL = Beta levered

T = Income tax rate for the company

Wd = Percentage of debt capital in the capital structure; debt capital is comprised of interest-bearing debt and preferred stock

We = Percentage of equity capital in the capital structure; equity capital is comprised of the market value of common equity

#### Notes:

- (a) Three-year beta, if available, from Bloomberg
- (b) Data are based on information from Bloomberg
- (c) Market Value of Common Equity = Stock Price per Share x Common Shares Outstanding
- (d) Total Invested Capital ("TIC") = Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock + Market Value of Common Equity
- (e) (Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock) / TIC
- (f) Market Value of Common Equity / TIC
- (g) This is the estimated effective tax rate for the subject company.

# Calculation of Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

Cost of Equity			Source
Risk-Free Rate of Return (h)		2.18%	This is based on yield on 7.68-year Government Bond from Thai Bond Market Association.
Equity Risk Premium: Thailand Market Volatility SG Market Volatility Relative Volatility Adjustment Factor (2.27 / 2.04) SG Equity Risk Premium Equity Risk Premium (1.11 x 4.24%) Levered/Relevered Beta for the Subject Company Concluded Equity Risk Premium (4.72% x 0.93) Specific Company Risk Adjustment	2.27 2.04 1.11 4.24%	4.72% 0.93 4.39% 1.0%	SET index volatility (Standard Deviation of Return on Market) STI index volatility (Standard Deviation of Return on Market) Thailand market volatility / SG market volatility  Relative Volatility Adjustment Factor x SG Equity Risk Premium Relevered 5-year beta from Bloomberg Equity Risk Premium x Levered/Relevered Beta for the Subject Company
Indicated Cost of Equity (2.18%+4.39% +1.0%)  Concluded Cost of Equity	_	7.57%	
Notes:			

<sup>(</sup>h) This is based on yield on 7.68-year Government Bond from Thai Bond Market Association.

#### Calculation of Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

#### Hong Kong Cost of Equity

	Published	Book Value	Liquidation	Stock	Common	Market Value	Total		
	Levered	Interest-Bearing	Value Preferred	Price per	Shares	of Common	Invested Capital	Debt to	Equity to
Guideline Company	Beta (a)	Debt (b)	Stock (b)	Share (b)	Outstanding (b)	Equity (c)	("TIC") (d)	TIC (e)	TIC (f)
		(HKD Millions*)	(HKD Millions*)	(HKD*)	(HKD Millions)	(HKD Millions*)	(HKD Millions*)		
MTR Corporation Ltd. (0066.HK)	0.64	54,129.0	0.0	42.15	6,193.5	261,054.5	315,183.5	17%	83%
AVERAGE	0.64	54,129.0	0.0			261,054.5	315,183.5	17%	83%
MEDIAN	0.64	54,129.0	0.0			261,054.5	315,183.5	17%	83%

<sup>\*</sup> Data is presented in millions of HKD for all guideline publicly traded companies unless noted otherwise.

Concluded Variables	
Capital Structure for the Subject Company	
Percent Debt	0%
Percent Equity	100%
Tax Rate for the Subject Company	0.0% (g)
Levered/Relevered Beta for the Subject Company	0.54

#### Computation of Unlevered Beta for Guideline Companies

BU = BL / [1 + (1 - T) x (Wd / We)]

MTR Corporation Ltd. (0066.HK)	<u>BU</u> 0.54	<u>Tax Rate</u> 16.5%
AVERAGE	0.54	
MEDIAN	0.54	

## Computation of Relevered Beta for Subject Company $BL = BU \times [1 + (1 - T) \times (Wd / We)]$

Concluded Unlevered Beta 0.54 Relevered Beta for Subject Company 0.54

#### Definitions:

BU = Beta unlevered

BL = Beta levered

T = Income tax rate for the company

Wd = Percentage of debt capital in the capital structure; debt capital is comprised of interest-bearing debt and preferred stock

We = Percentage of equity capital in the capital structure; equity capital is comprised of the market value of common equity

#### Notes:

- (a) Three-year beta, if available, from Bloomberg
- (b) Data are based on information from Bloomberg
- Market Value of Common Equity = Stock Price per Share x Common Shares Outstandin
- (d) Total Invested Capital ("TIC") = Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock + Market Value of Common Equity
- (e) (Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock) / TIC
- (f) Market Value of Common Equity / TIC
- (g) This is the estimated effective tax rate for the subject company.

## Calculation of Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

Co	st of Equity				Source
	Risk-Free Rate of Return (h)			2.18%	This is based on yield on 7.68-year Government Bond from Thai Bond Market Association.
	Equity Risk Premium: Thailand Market Volatility HK Market Volatility Relative Volatility Adjustment Factor (2.27 / 2.82) HK Equity Risk Premium Equity Risk Premium Equity Risk Premium (0.80 x 4.84%) Levered/Relevered Beta for the Subject Company Concluded Equity Risk Premium (3.9% x 0.54) Specific Company Risk Adjustment Indicated Cost of Equity (2.18% + 2.11%+1%)	2.27 2.82	0.80 4.84% 	3.9% 0.54 2.11% 1.0%	SET index volatility (Standard Deviation of Return on Market) HSI index volatility (Standard Deviation of Return on Market) Thailand market volatility / HK market volatility  Relative Volatility Adjustment Factor x HK Equity Risk Premium Relevered 5-year beta from Bloomberg  Equity Risk Premium x Levered/Relevered Beta for the Subject Company
Co	ncluded Cost of Equity			5.29%	

Notes

<sup>(</sup>h) This is based on yield on 7.68-year Government Bond from Thai Bond Market Association.

## Calculation of Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

#### Japan Cost of Equity

	Published	Book Value	Liquidation	Stock	Common	Market Value	Total		
	Levered	Interest-Bearing	Value Preferred	Price per	Shares	of Common	Invested Capital	Debt to	Equity to
Guideline Company	Beta (a)	Debt (b)	Stock (b)	Share (b)	Outstanding (b)	Equity (c)	("TIC") (d)	TIC (e)	TIC (f)
		(SGD Millions*)	(SGD Millions*)	(SGD*)	(SGD Millions)	(SGD Millions*)	(SGD Millions*)		
Tokyu Corporation (9005.T)	0.95	1,193,872.0	0.0	1,592.0	604.1	961,711.3	2,155,583.3	55%	45%
AVERAGE	0.95	1,193,872.0	0.0	1,592.0	604.09	961,711.3	2,155,583.3	55%	45%
MEDIAN	0.95	1,193,872.0	0.0	1,592.0	604.09	961,711.3	2,155,583.3	55%	45%

<sup>\*</sup> Data is presented in millions of SG dollars for all guideline publicly traded companies unless noted otherwise.

Concluded Variables		
Capital Structure for the Subject Company		
Percent Debt	0%	
Percent Equity	100%	
Tax Rate for the Subject Company	0.0% (g)	
Levered/Relevered Beta for the Subject Company	0.51	

#### Computation of Unlevered Beta for Guideline Companies

BU = BL / [1 + (1 - T) x (Wd / We)]

Tokyu Corporation (9005.T)	0.51	30.62%
AVERAGE	0.51	
MEDIAN	0.51	

### Computation of Relevered Beta for Subject Company

 $BL = BU \times [1 + (1 - T) \times (Wd / We)]$ 

 Concluded Unlevered Beta
 0.51

 Relevered Beta for Subject Company
 0.51

#### Definitions:

BU = Beta unlevered

BL = Beta levered

T = Income tax rate for the company

Wd = Percentage of debt capital in the capital structure; debt capital is comprised of interest-bearing debt and preferred stock

We = Percentage of equity capital in the capital structure; equity capital is comprised of the market value of common equity

#### Notes:

- (a) Three-year beta, if available, from Bloomberg
- (b) Data are based on information from Bloomberg
- (c) Market Value of Common Equity = Stock Price per Share x Common Shares Outstanding
- d) Total Invested Capital ("TIC") = Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock + Market Value of Common Equity
- (e) (Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock) / TIC
- (f) Market Value of Common Equity / TIC
- (g) This is the estimated effective tax rate for the subject company.

## Calculation of Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

(	Cost of Equity				Source
	Risk-Free Rate of Return (h)			2.18%	This is based on yield on 7.68-year Government Bond from Thai Bond Market Association.
	Equity Risk Premium:				
	Thailand Market Volatility	2.27			SET index volatility (Standard Deviation of Return on Market)
	SG Market Volatility	3.14			STI index volatility (Standard Deviation of Return on Market)
	Relative Volatility Adjustment Factor (2.27 / 3.14)	,	0.72		Thailand market volatility / JP market volatility
	JP Equity Risk Premium		4.94%		
	Equity Risk Premium (0.72 x 4.94%)			3.56%	Relative Volatility Adjustment Factor x JP Equity Risk Premium
	Levered/Relevered Beta for the Subject Company			0.51	Relevered 5-year beta from Bloomberg
	Concluded Equity Risk Premium (3.56% x 0.51)			1.81%	Equity Risk Premium x Levered/Relevered Beta for the Subject Company
	Specific Company Risk Adjustment			1.0%	
	Indicated Cost of Equity (2.18%+1.81% +1.0%)			4.99%	
(	Concluded Cost of Equity		_	4.99%	
N	Jotes:				

Notes:
(h) This is based on yield on 7.68-year Government Bond from Thai Bond Market Association.

#### Calculation of Weighted Average Cost of Capital ("WACC") Valuation as of March 31, 2022

### Thailand Cost of Equity

-	Published		Book Value	Liquidation	Stock	Common	Market Value	Total		
	Levered		Interest-Bearing	Value Preferred	Price per	Shares	of Common	Invested Capital	Debt to	Equity to
Guideline Company	Beta (a)		Debt (b)	Stock (b)	Share (b)	Outstanding (b)	Equity (c)	("TIC") (d)	TIC (e)	TIC (f)
			(Baht Millions*)	(Baht Millions*)	(Baht*)	(Baht Millions)	(Baht Millions*)	(Baht Millions*)		
BTS Group Holdings Public Co., Ltd. (BTSG)		0.99	113,463	0.0	9.15	13,164.5	120,455.0	233,918.2	49%	51%
AVERAGE		0.99	113,463	0.0	9.15	13,164.5	120,455.0	233,918.2	49%	51%
MEDIAN		0.99	113,463	0.0	9.15	13,164.5	120,455.0	233,918.2	49%	51%

Data is presented in millions of Baht for all guideline publicly traded companies unless noted otherwise.

Concluded Variables Capital Structure for the Subject Company Percent Debt 0% Percent Equity 100% Tax Rate for the Subject Company
Levered/Relevered Beta for the Subject Company 0.0% (g) 0.56

Computation of Unlevered Beta for Guideline Companies

BU = BL / [1 + (1 - T) x (Wd / We)]

BTS Group Holdings Public Co., Ltd. (BTSG)

Tax Rate 20.0% 0.56 0.56

Computation of Relevered Beta for Subject Company BL = BU x [1 + (1 - T) x (Wd / We)]

> 0.56 Concluded Unlevered Beta

> > 0.56

Relevered Beta for Subject Company

Definitions:

AVERAGE

MEDIAN

BU = Beta unlevered

BL = Beta levered

T = Income tax rate for the company

Wd = Percentage of debt capital in the capital structure; debt capital is comprised of interest-bearing debt and preferred stock

We = Percentage of equity capital in the capital structure; equity capital is comprised of the market value of common equity

#### Notes:

- (a) Three-year beta, if available, from Bloomberg
- Data are based on information from Bloomberg
- Market Value of Common Equity = Stock Price per Share x Common Shares Outstanding
  Total Invested Capital ("TIC") = Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock + Market Value of Common Equity (d)
- (Book Value Interest-Bearing Debt + Liquidation Value Preferred Stock) / TIC
- Market Value of Common Equity / TIC
- This is the estimated effective tax rate for the subject company which reflects the combined effects of federal and state income tax payments.

#### Cost of Equity

Risk-Free Rate of Return (h)		2.18%
Plus Equity Risk Premium		
Market Risk Premium	5.82%	
Times Levered/Relevered Beta	0.56	
Adjusted Market Risk Premium		3.29%
Plus Specific Company Risk Adjustment		1.0%
Indicated Cost of Equity		6.46%

Cost of Debt Concluded Pretax Cost of Debt 4.23% (i) Income Tax Rate 0.00% Concluded After-Tax Cost of Debt 4.23%

- (h) This is based on yield on 7.68-year Government Bond from Thai Bond Market Association.
- (i) Average long-term Thai corporate bond rate for A rating from Thai Bond Market Association