An Evaluation of Financial Feasibility of an All-inclusive Hotel Investment in Small Island Developing States: The Case of Trinidad and Tobago

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ABSTRACT

The current study presents a financial model to demonstrate all-inclusive hotel investment appraisal and sensitivity analysis. This thesis intends to study on a hotel investment in the Small Island Development States, Trinidad & Tobago.

The financial viability of all-inclusive hotel is investigated by Cost Benefit Analysis (CBA) and Sensitivity Analysis has been done to address risky variables in this case study. Consequently, based on calculated Net Present Value (NPV) and Internal Rate of Return (IRR) -as most trustable evaluation criterion- the result established to assist investors and bankers to be well informed about the expected returns on equity with possible risk. Admittedly, the unprecedented situation caused by COVID-19 pandemic, leads this thesis to reassess the investment through two other scenarios, aiming to revise the analysis according to the latest projections of the tourism industry future while considering the new norm due to COVID-19 pandemic.

Accordingly, with consideration of COVID-19 pandemic, the results reveal that the viability of the project is best attainable by scenario two. If the project deferred by two years it would become profitable and sustainable investment according to the positive study outcomes. Result of sensitivity analysis also identifies that the occupancy rate and price per night are variables with the highest effect on projects outcomes and hence should be closely monitored.

Keywords: Hotel Investment, Feasibility Study, Financial Analysis, Sensitivity Analysis, Hotel Risk Factor, COVID-19

ÖZ

Mevcut çalışma, her şey dahil otel yatırım değerlendirmesi ve duyarlılık analizini göstermek için bir finansal model sunmaktadır. Bu tez, Küçük Ada Geliştirme Eyaletleri, Trinidad ve Tobago'da bir otel yatırımı üzerinde çalışmayı amaçlamaktadır.

Her şey dahil otelin finansal uygulanabilirliği Maliyet Fayda Analizi (CBA) ile araştırılmış ve bu vaka çalışmasında riskli değişkenleri ele almak için Duyarlılık Analizi yapılmıştır. Sonuç olarak, hesaplanan Net Bugünkü Değer (NPV) ve İç Getiri Oranı (IRR)- en güvenilir değerlendirme kriteri olarak- temel alınarak, sonuç yatırımcıların ve bankacıların hisse senetlerinden beklenen getirilerin ve potansiyel risklerinin farkında olmalarına yardımcı olmak için tasarlanmıştır. Kuşkusuz, COVID-19 salgınının neden olduğu benzeri görülmemiş durum, bu tezi, COVID-19 salgını nedeniyle yeni normu göz önünde bulundurarak, turizm endüstrisinin geleceğinin en son projeksiyonlarına göre analizi yenilemeyi amaçlayan iki başka senaryo üzerinden yatırımı yeniden değerlendirmeye yönlendiriyor.

Buna göre, COVID-19 salgını göz önüne alındığında, sonuçlar projenin uygulanabilirliğinin en iyi senaryo iki ile elde edilebileceğini ortaya koyuyor. Proje iki yıl ertelenirse, olumlu çalışma sonuçlarına göre kârlı ve sürdürülebilir bir yatırım haline gelecektir. Duyarlılık analizi sonucunda ayrıca, konaklama oranı ve gecelik fiyat, proje sonuçları üzerinde en yüksek etkiye sahip değişkenler olduğunu ve dolayısıyla yakından izlenmesi gerektiğini de tanımlar.

Anahtar Kelimeler: Otel Yatırımı, Fizibilite Çalışması, Finansal Analiz, Duyarlılık Analizi, Otel Risk Faktörü, COVID-19

DEDICATION

To My Beloved Husband

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LIST OF ABBREVIATIONS

ADSCR	Annual Debt Service Coverage Ratio
ANCF	Annual Net Cash Flow
CARICOM	Caribbean Community and Common Market
CBA	Cost Benefit Analysis
CDB	Caribbean Development Bank
CFS	Cash Flow Statement
CHTA	Caribbean Hotel and Tourism Association
CM	Club Med
COVID-19	Corona Virus Disease of 2019
DSCR	Debt Service Coverage Ratio
ERL	Eden Resorts Limited
FIRR	Financial Internal Rate of Return
FNPV	Financial Net Present Value
GOTT	Government of Trinidad and Tobago
HAT	Hotel Accommodation Tax
IMF	International Monetary Fund
IRR	Internal Rate of Return
LLCR	Loan Life Coverage Ratio
NCBGF	NCB Global Finance Limited
NPV	Net Present Value
OECD	Organisation for Economic Cooperation and Development
SIDS	Small Island Developing States
T&T	Trinidad & Tobago

TDA	Tourism Development Act
TTD	Trinidad and Tobago Dollars
USD	United States Dollars

Chapter 1

INTRODUCTION

1.1 Introduction

The present thesis examines a case study of a Hotel Investment in Trinidad & Tobago (T&T) in the Caribbean region. Due to lack of study on hotel investments the purpose of this thesis is to appraise such an investment and explore its potentials and risky parameters:

> Regardless of the well-established connection between the businesses and the functional and operational dynamics in hotels, the connection between the investment returns that developers seek in hotels remains unexplored. Similarly, no empirical research seems to have used actual data from major all-inclusive hotel destinations in the world (Barreda et al., 2016).

Hence, a Cost Benefit Analysis (CBA) was done on a case study of all-inclusive hotel investment in T&T. The CBA tends to examine the financial viability of such investments and investigate their risky variables. CBA will help investors and other involved stakeholders to have a better understanding of the project's possible outcomes and any risks involved. Furthermore, in this study, Net Present Value (NPV) and Internal Rate of Return (IRR) will be calculated as two main criteria for decision making. Sensitivity Analysis will also be performed to reveal the risky factors in such investments, enabling the investors to mitigate any adverse outcomes. Refer to Payne et al. (1999), and the author states that financial analysis contains the selected project valuation criterion such as NPV. The proposed cost of capital will be accepted if the project generates a positive NPV.

Based on consideration of an external factor such as Covid-19 this study investigates and analyse the feasibility, profitability and sustainability of project through three scenarios. These scenarios categorized as base scenario (starting the project without considering the negative impacts due to COVID-19 pandemic), first scenario (revision of the base case scenario with different projections of occupancy rates as well as new assumptions on revenues) and second scenario (postponing the construction of the project for two years to lower the unpredictable risks caused by COVID-19 Pandemic).

1.2 The Trinidad and Tobago profile (T&T)

T&T, island country of the southeastern West Indies where consists of two central islands, T&T, within some smaller islands with a population of 1.3 million and consist of 5,128 km^2. T&T is a middle-income, source of oil-energy- country and the political situation is relatively stable. It is the most developed economy in the English-speaking Caribbean. Also, it is part of the Caribbean Community and Common Market (CARICOM)[1], that starts to operates since August 1973 (Fernández et al., 2011).

1.3 Review of Regional Tourism

Tourism is core of service industry of many island in Caribbean. The Caribbean received around 25.68 million tourists in 2018 (UNWTO 2019). Notably, as tourism plays an essential role in this region "the all-inclusive concept is a vital experience invention for the Caribbean market place" (Chamber, 2010). However, several reasons threaten T&T investment as a member of the Small Island Developing States (SIDS)[2]. Although tourism in SIDS is associated with higher than average growth rates (Barrowclough, 2007), there are some drawbacks, principally, the characteristics of

[1] Caribbean Community and Common Market (CARICOM) is an organization which consists of fifteen Caribbean states to support the integration of economy among its affiliates.

[2] Small Island Developing States (SIDS) is A distinctive group that consists of fifty-two developing nations that classified by the United Nation. The characteristics of this group are the exposure of certain vulnerabilities as socially, economically, and environmentally.

the economic problem in SIDS. Namely, the issues are; remoteness from global markets, deficiency to incorporate into the economic globally; domestic capital resources are inadequately; social and economy are highly vulnerable. Therefore, due to budget constraints and current ongoing economic problems in SIDS (i.e. T&T), it is rational to perform Investment Analysis and Risk Assessment on capital-intensive projects such as hotels (Younes, E., & Kett, R. 2007). Accordingly, this study implements a financial evaluation and risk analysis of an All-inclusive Hotel investment in the Caribbean region where competitiveness plays a crucial role.

Chapter 2

LITRATURE REVIW

2.1 All-inclusive Hotel Operation in Small Island Developing States

According to Chambers (2010), tourism is the core of the services industry of most islands within the Caribbean. According to Issa & Jayawardena (2003), initially, during the 1930s, the concept of the all-inclusive has been introduced by Britain in holiday camps. It has included fundamental features such as beverage, safety, comfortability, supportive staff and the present number of various facilities.

Chambers (2010) introduced two rational reasons for the existence of an all-inclusive hotel. Considerably, for the Caribbean destination, the concept of the all-inclusive hotel was a unique and distinctive feature. Based on Issa & Jayawardena (2003), they determine that in the Caribbean market place a vital experience and services inventors are accomplished by the all-inclusive idea. Parallelly, in most Caribbean countries, it occurs as the revolution of hospitality services.

Issa et al. (2003) concluded that the Caribbean's perspective sustainability would be assisted by the all-inclusive concept as the most romantic destination. Besides, Swanson (2009) states that based on an online article in the Caribbean Hotel and Tourism Association (CHTA), the significant proportion of hotel rooms in the Caribbean are belongs to all-inclusive hotels. Therefore, it has a significant impact on Gross Domestic Product, revenue and foreign exchange. Besides, refer to Issa et al.

(2003), “all-inclusive will continue to grow in the Caribbean with a major influence on customer service in the entire hospitality sector.” Consequently, the competitiveness of tourism constituents is represented by a study of the all-inclusive concept within the Caribbean Tourism Industry.

2.2 The All-Inclusive Concept

According to Clark (2000), once the all-inclusive concept has been enlarged in worldwide as a “different” hotel product, in 1976, it was initiate in the Caribbean for the beach destination. Also, it has formed in order to reduce issues for travelers, such as excluding extra charges. It consists of different tourism products, as Poon (1998) explored it as “an important product innovation in the international tourism marketplace.” However, in terms of the Caribbean’s competitiveness, the all-inclusive hotel is identical because of the Caribbean’s sun-sea-sand concept.

The inexpensive destination could be transformed into an attractive destination by distinguishable sea, sand, sun concept of the Caribbean. Furthermore, as destinations compete based on their fees, in the Caribbean, the all-inclusive hotels as service producers could be impacted negatively by this kind of competitiveness. Thus, it is essential to identify, develop and promote the uniqueness of the Caribbean’s island destination and its resorts to enable them to compete beyond just inexpensive competitors.

2.3 Financing in T&T

Fernández et al. (2011) stated that based on the World Bank’s Doing Business Survey, the investment foundation is suitable since 1992 when practically all investment issues have been excluded in Trinidad and Tobago. Trinidad and Tobago have high-rank business indicators such as starting a new business, recruitment, protective of investors

and trading with other countries. Regarding investors protection, T&T ranks are above average globally and even above the Organization for Economic Cooperation and Development (OECD)[3] counties, which is 59th out of 175th countries.

Refer to Quek, P. and Ellsworth (1995), uncertainties in the economy and constriction of bank credit policy cause many businesses to confront cash flow problems significantly. In order to have consequential negotiation with financial institutions, many business owners have restrictions (Ethans, C.S. and Forgie, R., 1994). According to Shaw, G. and Williams, A.M., (1994) despite this crucial issue, in the hospitality industries, very few studies have been done.

2.4 Hotel lifecycle and risk component

According to Younes, E., & Kett, R. (2007), in any real estate investment, a hotel's lifecycle consists of three significant periods such as development, operation and exit and the type of property changes these periods. To develop a hotel, it takes one to three years roughly, and it will be held by typical investors between five to twenty-five years. Ultimately the property will be sold or redeveloped by investors at the end of the lifecycle, which takes at least a year or never occurs. Regarding these three phases, Younes, E., & Kett, R. (2007) define three risks that are directly related to three significant periods. A hotel project is threatened by three types of risks: the development, operation and exit or obsolescence risk. Refer to Younes, E., & Kett, R. (2007), appraising a hotel property must be considered because of investor's passion,

[3] Organization for Economic Cooperation and Development (OECD) is The Organization for Economic Cooperation and Development (OECD) is an exclusive forum that contains thirty-six countries with market economies. The government of these countries works with each other to promote economic growth, affluence and develop sustainability.

characteristics and different kinds of market dynamics. In this regard, the capital market has varied types and risks, and it differently observes the hotel investment risk.

2.4.1 Development Risk

According to Younes, E., & Kett, R. (2007), once an unoccupied land or an existing building transformed into a hotel operation property, an investor would be threatened economically by development risk. It denotes that the negative impacts caused by hold-up risk during progress stages on the development cost or other indicators that would affect the due investment returns. Namely, a hotel development risk component is the cost of capital, timing, identifying the site, planning permissions, viability and projection, resort, capital planning, land purchase, construction, amenities' extension, design, excavating of land. Inherently, to compare with other hotel property, the full-service hotels are highly capital-intensive and complex to develop. As a result, this kind of project requires timing effectively because of a high level of development risk exposure.

2.4.2 Operating Risk

According to Younes, E., & Kett, R. (2007), the total profit earned by holding an asset and cash flow or as asset devaluation is 'holding period return.' The hotel property holding period is varied based on the type of hotel. Between thirty to seventy percent of overall profits are represented by the operating cash flow. Usually, the first year of operation is expecting o face the operating risk. In order to generate expected financial returns to warrant the investment or transfer to exit, the capability of assets and how to manage it to produce a specific amount of cash flow adequately is defined as an operating risk. In a hotel investment, one of the significant exposures towards owners is the operating risk. The net operating income would be affected significantly by any variation in the implementation of the hotel. For instance, the business would be forced

to liquidate by economic depression. Instability of net operating income during the holding period occurs because of operating risk A (Younes, E., & Kett, R. 2007).

Based on Younes, E., & Kett, R. (2007), the authors state that according to the hotel operational structure, the revenues and the fixed cost of the operation are recognized as two primary principles. Furthermore, the operating structure is varied among different kinds of hotels. For instance, a stable and wide-ranging business mix segmentation is required in a conventional full-service hotel. Besides, a full-service hotel's room should sell to a variety of customers to survive since a full-service hotel's room is highly perishable, albeit in long-term stay property is not. Secondly, because of food & beverage services, the quality of services and sales mix cause the high fixed cost for a full-service hotel compared with the limited-service hotel.

However, the hotel operating performance is impacted by factors such as demand and supply in a market as obstructing entry (Younes, E., & Kett, R. 2007). Since Full-service hotel property works occasionally; this class of hotel becomes against the operating risk since the barrier of entry is connected to this type of hotel. Namely, these difficulties are land shortage, liquidity of the investment, constraint of area, a policy of planning (Younes, E., & Kett, R. 2007).

2.4.3 Risk of Obsolescence or Exit

According to Younes, E., & Kett, R. (2007), the hotel property's owner is impacted by this risk, whether to continue economically or close the investment. At the exit stage, the reduction of the property's values is impacted by this risk, which means uncertainty of the future value. The residual value will return to investors as a terminal capitalization rate at the end of project life.

Considerably, obsolescence is impacted by holding a period of asset by inoperable economic devaluation. Obsolescence is categorized into two leading majors as internal and external. Once a hotel did not operate as the initial expectation when it was constructed is known as internal obsolescence, it denotes building deteriorates physically. However, it is repairable by capital expenditure. If the building has been deteriorated fundamentally, by time, it could be irretrievable.

In terms of external obsolescence, income and value loss are resulted by external factors. There are social, legal, economic, demographic and environmental factors and forth are associated with this fact that the hotel's economic feasibility might be lost. For instance, the legislation of safety might influence hotel design as a reduction of the property obsolete. Additionally, a property obsolete might be reduced by the economy, demographic alteration or social dignity, especially in a secondary location. For example, to enhance the feasibility of the economy, the cost of a hotel's land tends to reduce, such as a limited-service hotel, which is acknowledged as a secondary location.

As Younes, E., & Kett, R. (2007) mentioned in terms of investment appraisal, there are diverse implications, sort of lending and managing assets for different kinds of assets. Evaluating the value of an investment in the present price and estimating the project cash flow over a while by applying different financing parameters is required to appraise hotel investment. According to Younes, E., & Kett, R. (2007), the investment evaluation reveals result as follow:

1. At the development stage, the association between the developer’s return and development risk occurs. Higher profit requires while the development risk is high. It means that NPV should be compared with the overall development

expenditure. Developer's income, development risk and the time value of money should be deliberated.

2. During the holding period, the operational cash flow is usually applied by the cost of capital also discounted the residual value of the investment to the first year. These variables have been reflected by the operating risk.
3. A cost of capital would be weighted higher once the debt and equity yields increase because of high operational risk.
4. At the exit stage, the residual value of hotel property is associated with the value of hotel assets by considering capital devaluation and economic growth.

Chapter 3

METHODOLOGY

3.1 Introduction

This section of the thesis explains the approach used to address and respond accurately to the aims and objectives of the study. Based on Jenkins, Harberger, & Kuo (2013), the methodology section has been developed by the investment appraisal approach, which is initially grounded by Jenkins and Harberger in 2002. Moreover, each financial indicator has been followed by a financial analysis which is used in the methodology. In terms of long-term assessment of the feasibility of the project, it entails financial and risks analysis of the hotel investment over its period of operation. Besides, the definition, implications, and benefits of Sensitivity analysis have been explained comprehensively. Therefore, to ensure feasible investment economically, hotel investment requires ultimate association among all indicators involved in this sizeable capital-intensive project. The investment profit would be impacted negatively by any issue that arises during the project development.

3.2 Financial Analysis

One of the primary elements in investment evaluation is Financial analysis. This analysis tends to establish the if the project is viable financially through life span of project's operation. Raising the possibility of profitable projects to be approved, reducing the likelihood of going for bad investment, and possible risk to be decreased is possible by undertaking financial analysis. Thus, for a sizeable capital-intensive project such as a hotel, applying the cost-benefit analysis is essential. This case study

has attempted the model to develop an approach for investment appraisal and analysis efficiently and effectively. According to Harris, P.J. and Hazzard, P.A. (1994) states that the feasibility study is implemented by large companies in terms of validation of information related to the capital investment project. Regarding the feasibility study, the data associated with project estimation and appraising it financially will be collected. Therefore, to acknowledge the viability of the investment, different indicator performance is calculated by the investment's cash flow over the project's period of operation.

The cost benefit approach has been defined by Jenkins et al. (2013) comprehensively, and based on CBA; the financial analysis will be created. All parameters, inputs and outputs in terms of prices and quantities of the project are implemented in detail as case assumptions to develop financial modelling. Generally, in this approach, investment decisions are made based on NPV, which mainly uses as primary evaluation criteria and IRR. In regards to the assessment of financial investment, the most common implemented criteria are NPV and IRR (Allen et al. 2010). Based on a distinctive perspective, various statements of cash flow and income statements entail in the financial model. In regards to obtaining NPV results unbiasedly, the statement of cash flow should be converted from nominal value into real value. Based on this fact, NPV should be computed in real value terms.

The current case defined equity point of view as the owner's perspective and total investment point of view as banker's point of view. Subsequently, NPV, IRR, Annual Debt Service Coverage Ratio (ADSCR), and LLCR (Loan Life Coverage Ratio) as various criteria of evaluation will be computed after calculation of cash flow.

3.2.1 Financial Evaluation Criteria

Several decision criteria are available in terms of financial evaluation of investment; however, the most reliable and conventional methods are NPV and IRR. According to Petkovic´ (2015) and Hajdasinski (2004) in regards to investment appraisal, the most sophisticated approaches are NPV and IRR, and in terms of investment decision-making are known as two assessment methods adequately. Besides, regarding debt service ratios, the most reliable and standard approaches are ADSCR and LLCR.

3.2.2 Time Value of Money

Considerably, in any investment, the value of money has a crucial role. The time value of money is determined as the full effect of several reasons: inflation, incertitude, risk, the desire of consumption, and the chance of investment in the value of money (Jenkins et al. 2013). Any investment determination is involved with capital and its expected profits. Regarding investment viability in order to have an accurate assessment, the adaptation of risk, skepticism and value of time is crucial. Considerably, these factors can be increased or decreased the value of money. In terms of being able to compare with other alternatives and variables, the compounding and discounting of the PV and FV of expenses and incomes at different times is required.

3.2.3 Price Adjustment

When the financial analysis is carrying out the first matter which must be considered is the occurrence or non-occurrence of an event. Because though the incomes and expenses of the project are spread during a year, but it might be an issue. Alteration of demand and supply are interrelated with alteration of real value, and the prices in nominal terms will be changed by inflation. Therefore, market price changes would occur in terms of real or nominal. As a result, the performance of the whole project will be affected by unanticipated changes in prices significantly. Therefore, the price

index for every year will be calculated to reduce the negative impact. Nominal prices are calculated as: In the same year, real prices are multiplied by the price index.

3.2.4 Discount Rate

According to the European Commission (2008) the opportunity cost of capital is an expected profit foregone that the investor would have earned by investing in other projects, rather than investing in the current project, with the same degree of risk. Therefore, the discount rate acknowledges as the opportunity cost of capital. It denotes that using a discount rate is able to alter all current costs and profits accumulated in several years to their PV. Consequently, the risk which is related to the project should be considered by the discount rate.

3.2.5 Net Present Value (NPV)

Theoretically, NPV is "the algebraic sum of the present values of the expected incremental net cash-flows for a project over the project's anticipated lifetime" (Jenkins et al. 2013, p. 101). In terms of investment decision making, particularly for the longstanding project, the NPV performs as trustable financial measurement. Jenkins et al. (2013) state that to compare with other available approaches, the most decisive decision factor without any negative impacts and disadvantages is NPV. Refer to Turner and Guilding (2010); Hajdasinski (2004), while the alteration of financial planning has occurred, the NPV would not fluctuate. Because for investments at a precise time, it implements an accurate and specific economic indicator. Moreover, in regards to the prediction of the project's profits, NPV works precisely with consideration of the time value of money (Cook and Ali 2010); (Brealey and Myers 2003); (Gupta, 1972). NPV is calculated as follows:

$$NPV = \sum_{t=0}^{k} \frac{R_t - C_t}{\prod_t (1 + d_t)}$$

Where *d* refers to the discount rate, *t* refers to the year, *k* refers to the total number of years over which the analysis is conducted, refers to the annual revenue in year *t*, and refers to the total annual cost in year *t*.

What is the meaning of positive NPV? Refer to Jenkins et al. (2019):

> "The project will be commercially viable if the present value of the discounted cash flows is greater than zero. If the NPV is less than zero, the investors cannot expect to earn a rate of return equal to its alternative use of funds, and thus the project should be rejected".

Positive NPV indicates that if the project would be accepted by investor, they will operate business successfully and have profitable investment. Karadag et al. (2009) state that the positive NPV of an investment may cause the projected to be accepted, and if negative, the investment will be rejected. Furthermore, in terms of discounted net cash flow, positive NPV denotes that the investment's rate of return is lower than the discount rate. However, noticeably NPV calculation will compare the current project with another alternative with the same level of risk. On the contrary, when the project cannot bear the opportunity cost of investment, it means negative NPV. Subsequently, when the investment's profit financially would be alike as the best available alternative with a similar degree of risk, it refers to zero NPV.

3.2.6 Internal Rate of Return (IRR)

As mentioned earlier, two of the most reliable and standard investment evaluation criteria are NPV and IRR. In the short term, IRR appraises the return of investments, and the expectation is that IRR to be higher than an estimated return. Although this principle is commonly being used, albeit it has a negative impact on providing reliable results. For example, for particular years, more than one negative cashflow occurs during a project life span. Consequently, in this condition, IRR will represent various

answers, and this deficit has been arisen by the presence of several extractions of the mathematical equation. Jenkins et al. (2013) state that another lack of reliance on IRR is that we might refer to issues which initiated when IRR is ignorant upon various timing and scale. For instance, a comparison between different projects with different life duration.

Although IRR might be more common in practice than NPV, NPV is theoretically more "correct" (Pasqual et al. 2013). There are several drawbacks of the IRR method, which should be considered; Particularly, it does not differentiate between lending and borrowing; thus, the investment analysts have indicated NPV is a preferable measurement over IRR.

Another essential aspect that should be considered is the association between IRR and NPV; if the discount rate would equal the rate of IRR; indeed, the result of NPV is zero. It denotes that the expectation result of NPV would be zero if the result of IRR calculation is precisely equal to the estimated rate of return. In the calculation of NPV, the estimated rate of return formulated as a discount rate.

3.2.7 Debt Service Coverage Ratios (DSCR)

ADSCR and LLCR are the most important ratios to be considered by the bankers' point of view. They are recognizable as two best implementable ratios. In essence, bankers would be aware of the project's performance evidently by examining these two ratios. According to Yescombe (2002), ADSCR's output is monitored by bankers to better understanding of the ability of the project upon their debt service annual commitment. The ADSCR is formulated as:

$$ADSCR_t = \left[Anuall\ Net\ Cash\ Flow\ avaiable_t \Big/ Annual\ Debt\ Repayment_t \right]$$

However, in terms of understanding the possibility of services debt of the year, if the cash flow of the project would not be revealed sufficiently by ADSCR, banker will implement the LLCR. LLCR evaluates if the project is capable to service its debt during loan life. It means that LLCR looks at whole loan life and check PV of total cash flow during loan life period and check PV of loan payment. Overall, it is going to show if whole cash flow of project is able to pay whole loan during loan life. The calculation of LLCR is as follows:

$$LLCR_t = \frac{PV\left(ANCF_{t\ to\ end\ year\ of\ debt}\right)}{PV\left(Annual\ Debt\ Repayment_{t\ to\ end\ year\ of\ debt}\right)}$$

3.3 Sensitivity Analysis

One of the major concerns for the viability of the project is risky variables. Sensitivity analysis enables investors to distinguish between risky and non-risky variables. Using computer spreadsheets, Microsoft Excel different crucial benefits will be presented by financial planning (Harris, P.J., 1991). The impact of particular variables upon the project will be revealed by sensitivity analysis. Thus, the uncertainty rooted in investment, the assessment and development of particular scenarios will be enabled by "What if" scenarios. According to Barbosa et al., (2013); Simpson et al. (2000), the investment decision maker with exposure to risk and uncertainty condition would be benefited by sensitivity analysis.

In the project, there is a possibility of variation in the value of some inputs, albeit there would not be a significant impact on the final result by these possible variations. On the contrary, once the variation of low chance variables arises, it will noticeably influence the final results of the project. Thus, considering the likelihood of those variations and how the result of the project will be impacted is essential.

Chapter 4

FINANCIAL ANALYSIS

4.1 Introduction

The project description is provided in this chapter which followed by a summary of inputs and assumptions of the studied Hotel Investment. Moreover, the future expectation of the operating results of this project is presented. In this financial modelling, some of the investment costs occurred in USD and Trinidad/Tobago Dollar (TTD) currencies or both.

In terms of computing NPV, the incremental cash flow should be calculated. The result of NPV in financial analysis is a necessity. Based on the prior explanation, in order to attract investors, these criteria (i.e. NPV) should be positive for a project compared with other available alternatives with a similar degree of risk. Because one the investor's concern is the possibility of gaining the estimated rate of return from the project.

Worthwhile to mention, in order to assist investors in having better judgment and evaluation of the sustainability of the project financially, the ADSCRs and LLCRs have a crucial role in this analysis. Because during the period of the loan, the debt service requires the estimation of the number of predictable funds that are obtainable by calculating ADSCR and LLCR. The ADSCR and LLCR intend to investigate if the project capable to compensate service loan from the project available cash flow.

4.2 Project Profile

The project has been developed in response to the increasing demand for all-inclusive accommodation within the twin Island State of Trinidad and Tobago, and more specifically in Tobago, where is the most popular tourist destination of the two islands. Eden Resorts Limited (ERL), a limited liability company incorporated in Trinidad and Tobago, requested a loan from the Caribbean Development Bank (CDB), NCB Global Finance Limited (NCBGF) and Citibank Trinidad Limited Syndicate to finance the construction, furnishing and equipping of an all-inclusive luxury resort hotel in the island of Tobago. The project is consistent with CDB's policy of encouraging regionally-owned private sector tourism projects. It is also consistent with the Government of Trinidad and Tobago (GOTT) goal to encourage the development of the tourism industry and accelerate the diversification of the oil-based economy.

The all-inclusive concept originated with Club Mediterranean, more familiarly known as Club Med and was further developed in the island of Jamaica. Under this arrangement, visitors pay a one-time charge for all the components of a holiday to be delivered in a destination. The concept has proven to be famous for the following reasons:

1. Tourists are able to know at the outset the components and cost of their holiday;
2. The purchase of an all- inclusive vacation package entitles the visitor to have access to a range of components in the destination, including accommodation, meals, snacks, beverages, sports, entertainment, gratuities, taxes, tours and airport transfers. Airfares may also be included as part of the package;
3. Hoteliers are able to capture a higher percentage of the visitor expenditure on a holiday;

4. The one-time purchase of all components of the holiday results in travel agents, who sell all-inclusive packages, earning a higher commission on the complete package than would occur if some of the components were purchased after arrival at the destination. Travel agents therefore have a greater incentive to sell all-inclusive holiday packages.
5. When complete, the resort will be managed by Club Med (CM) under a ten-year contract, with an option to renew for the next five years. CM operates several all-inclusive resorts throughout the Caribbean Region and is recognized not only as the pioneer of the all-inclusive concept and internationally as a highly successful and innovative hotel management company specializing in all-inclusive hotels. The project will also benefit from the high name recognition and strong market reputation of the CM group of hotels. CM, the operator designate, is also an equity holder in the project.

4.3 Location of Site

The Project will be located on five hectares (ha) of land at Pigeon Point in Tobago, ten miles (fifteen minutes driving time) from the international airport. The site is well accessed with arterial roads of good quality. The site has a sea frontage of approximately 600 metres (1,970 ft) long and consists totally of white sand beaches. All utilities and communication services are available on the property. Famous tourist attractions close to Pigeon Point include the Bucco Reef, which provides the opportunity for scuba diving enthusiasts and a championship golf course.

The hotel will provide 300 guest rooms, central facilities, sports and entertainment areas and other supporting facilities. The project design of all buildings for hurricane, earthquake and fire resistance, among other things, will be following the current

building code of Trinidad and Tobago. For CDB-financed components of the project, following CDB's Procurement Guidelines, it will be required that tender documents receive CDB's approval before the use of invitations to tender.

The location of Pigeon point in Tobago, the Pigeon Point view and Bucco Reef illustrated as follow:

Figure 1: Location of Pigeon Point on Tobago map

Figure 2: Pigeon Point view

Figure 3: Bucco Reef

4.4 Project Components

The components of the project are as follows:

1. 5 ha of beach-front land;
2. Site preparation works (clearing, grading, coastline improvement, retaining and boundary walls, fencing and drains, road improvement and the installation of water mains;
3. Construction of guest blocks;
4. Common facilities including entry building, restaurants, clubhouse, kitchen, staff and maintenance facilities, pool, gazebos, boutiques, beach and jetty bars, water sports facilities and gymnasium facilities;
5. Recreational facilities, other infrastructure and landscaping, including tennis courts, the main entrance, external paving, covered walkways, drainage, water and electricity supply, telephone services, sewerage and irrigation facilities;
6. Furniture, fixtures and equipment (FF&E);
7. Consultancy services;
8. Project management; and
9. Launch marketing and initial staff training

4.5 Model Parameters and Assumptions

Related criterion and parameters employed in the project's financial model are presented in this chapter.

4.5.1 Project Life and Timing

The project's expected life is around 40 years; however, the project appraisal is based on a 14-year period. The project started in 2020, and it is expected that the construction period will be two years and the hotel will be ready for operation in 2022. The project

end year is in 2033, and the liquidation year is 2034. All the costs and revenues have been stated in the base year values which is in year 2020.

4.5.2 Exchange Rate and Inflation

The Trinidad & Tobago Dollar (TTD) is the local currency. In this financial modelling, USD and TTD currencies are used. The USD to TTD exchange rate is assumed to be 6.75 in year 2020. According to the International Monetary Fund (IMF), the USD inflation rate is 2.00%, while the domestic inflation is 3.00%. In terms of calculating foreign and domestic Inflation and Inflation indices, the price index and estimated exchange rate table on an annual basis are provided as follows.

Table 1:Exchange Rate and Inflation

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Projections of Inflation, Inflation Indices and Interest Rates											
Domestic Inflation Rate - T&T	3.00%	%									
Foreign Inflation Rate - USA	2.00%	%									
Exchange Rate	6.75	*Index*									
Inflation											
Domestic - Genova											
Domestic Inflation Rate - T&T		%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Domestic Price Index - Genova		*Index*	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.47	1.51
Foreign - USA											
Foreign Inflation Rate - USA		%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Foreign Price Index - US		*Index*	1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.29	1.32
Relative Price Index											
Relative Price Index (Domestic / Foreign)		*Index*	**1.00**	**1.01**	**1.02**	**1.03**	**1.04**	**1.05**	**1.06**	**1.14**	**1.15**
Exchange Rates											
Real Exchange Rate		*Index*	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75	6.75
Nominal Exchange Rate		*Index*	**6.75**	**6.82**	**6.88**	**6.95**	**7.02**	**7.09**	**7.16**	**7.66**	**7.74**

4.5.3 Occupancy Rate

The Annual Paid Occupancies of the available 300-rooms all through 365 days with an average guest per room of 1.86. Occupancy levels is expected to reach 85.00% and stays at that rate from year 2024. A review of the all-inclusive hotels indicated that at similar resorts under the management/operation by CM, occupancy levels ranged from 79.00% to 100.00%, stabilized at 85.00%. Projected hotel occupancy levels presented in table 2:

Table 2: Average room occupancy rate

Year of operation	Occupation level %
2022	65.00%
2023	75.00%
2024	85.00%

Table 3: Hotel Occupancy

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Hotel Occupancy											
Operation Period		Flag	-	-	1	1	1	1	1	1	-
Growth Rate of Real Room Rate (Years 2023-2026)		Flag	-	-	-	1	1	1	1	-	-
Annual Paid Occupancy		%	0.00%	0.00%	65.00%	75.00%	85.00%	85.00%	85.00%	85.00%	0.00%
Occupancy Rate - Sensitivity Factor	0.00%	%									
Revenue Generation (first year of operation)	75.00%	%									
Revenue Generation (after the first year)	100.00%	%									
Rooms Available Per Year	300	#									
Rate Per Room Per Night (Base Case Scenario)	400.00	USD									
Growth Rate of Real Room Rate	1.53%	%									
Days in a Year	365	Days									
Million Conversion	1,000,000	#									
Rate Per Room Per Night - With Real Growth Rate		%	-	-	400.00	406.11	412.31	418.61	425.00	425.00	-
Gross Revenue - Paid Occupancy		M USD	-	-	21.353	33.352	38.376	38.962	39.557	39.557	-
Total Gross Revenue (Real)		M USD	-	-	**21.353**	**33.352**	**38.376**	**38.962**	**39.557**	**39.557**	-
Foreign Price Index - US		Index	1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.29	1.32
Total Gross Revenue (Nominal)		M USD	-	-	**22.215**	**35.393**	**41.539**	**43.017**	**44.547**	**51.171**	-
Nominal Exchange Rate		Index	6.75	6.82	6.88	6.95	7.02	7.09	7.16	7.66	7.74
Total Gross Revenue (Nominal)		M TTD	-	-	**152.907**	**245.999**	**291.548**	**304.880**	**318.823**	**392.112**	-

4.5.4 Revenues

The Gross Available Revenue is based on occupancy level and room rate and represents guest revenues net of tour operator commissions 15.00%, override commission 1.00% transfers 1.50%, hotel accommodation tax (HAT) 10.00%, gratuities 2.00% and discounts (5%). The projected room rate of US$400 per room night approximates the current rates being charged at comparator hotels in the region. Revenue is increased by 1.50% (exclusive of inflation) in the first five years of operation and held constant afterwards, to bring it in line with other comparator resorts operated by CM. The gross available revenues are presented as below:

Table 4: Gross Available Revenue

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Gross Available Revenue											
Tour Operators' Commission	15.00%	%									
Overide Commission	1.00%	%									
Transfers	1.50%	%									
Hotel Accomodation Tax (HAT)	10.00%	%									
Gratuity (after GCT deduction)	2.00%	%									
Discounts	5.00%	%									
Total Gross Revenue (Nominal)		M TTD	-	-	152.907	245.999	291.548	304.880	318.823	392.112	-
Less:											
Tour Operators' Commission		M TTD	-	-	22.936	36.900	43.732	45.732	47.823	58.817	-
Overide Commission		M TTD	-	-	1.529	2.460	2.915	3.049	3.188	3.921	-
Transfers		M TTD	-	-	2.294	3.690	4.373	4.573	4.782	5.882	-
Sub-Total		M TTD	-	-	126.148	202.949	240.527	251.526	263.029	323.492	-
Hotel Accomodation Tax (HAT)		M TTD	-	-	12.615	20.295	24.053	25.153	26.303	32.349	-
Sub-Total		M TTD	-	-	113.533	182.654	216.474	226.374	236.726	291.143	-
Gratuity (after HAT deduction)		M TTD	-	-	2.271	3.653	4.329	4.527	4.735	5.823	-
Sub-Total		M TTD	-	-	111.263	179.001	212.145	221.846	231.991	285.320	-
Discounts		M TTD	-	-	5.563	8.950	10.607	11.092	11.600	14.266	-
Gross Available Revenue		M TTD	**-**	**-**	**105.700**	**170.051**	**201.538**	**210.754**	**220.392**	**271.054**	**-**

4.5.5 Expenditures

Operating costs are based on actual data derived from comparator resorts and are expressed as a proportion of the Gross Available Revenue. The distribution is as follows:

Table 5: The Distribution of Expenditures

Item	% of Gross Available Revenue
Cost of sales	12.00%
Departmental expenses	7.10%
Operating equipment undistributed	8.50%
Overhead and Administration	36.00%
Fixed costs	11.00%

4.5.6 Working Capital

The following table represented the percentage allocation of account receivable, account payable and cash balance. Account receivable is calculated by 10.00% of gross available revenue, account payable and cash balance are calculated by 20.00% and

10.00% of total cost of sale, total departmental expenses, total undistributed expenses, total overhead respectively. The working capital calculation is initiated as follow:

Table 6: Working Capital

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Working Capital											
Gross Available Revenue		M TTD	-	-	105.700	170.051	201.538	210.754	220.392	271.054	-
Total Cost of Sales		M TTD	-	-	12.684	20.406	24.185	25.290	26.447	32.526	-
Total Departmental Expenses		M TTD	-	-	7.505	12.074	14.309	14.964	15.648	19.245	-
Total Undistributed Expenses		M TTD	-	-	8.984	14.454	17.131	17.914	18.733	23.040	-
Total Overhead and Administration		M TTD	-	-	38.052	61.218	72.554	75.871	79.341	97.579	-
Accounts Receivable	10.00%	%									
Accounts Payable (% of A, B C and D)	20.00%	%									
Cash Balance (% of A, B, C and D)	10.00%	%									
Accounts Receivable		M TTD	-	-	10.570	17.005	20.154	21.075	22.039	27.105	-
Accounts Payable		M TTD	-	-	13.445	21.630	25.636	26.808	28.034	34.478	-
Cash Balance		M TTD	-	-	6.722	10.815	12.818	13.404	14.017	17.239	-
Change in Accounts Receivable		M TTD	-	-	(10.570)	(6.435)	(3.149)	(0.922)	(0.964)	(0.789)	27.105
Change in Accounts Payable		M TTD	-	-	(13.445)	(8.186)	(4.005)	(1.172)	(1.226)	(1.004)	34.478
Change in Cash Balance		M TTD	-	-	6.722	4.093	2.003	0.586	0.613	0.502	(17.239)

4.5.7 Total Investment (Initial and Sustaining Capital Cost)

The initial and sustaining capital cost of hotel investment has been subcategorized in ten indicators such as Land, Site preparation, Guest rooms, Infrastructure and Landscaping, Furniture, Fixtures and Equipment, Consultancy Services, Startup, Marketing, Training, Legal and Statutory, which are all distributed in year 2020 and 2021. In this project, some of the investment costs occurred in USD and TTD currencies or both. The total investment is estimated at TTD235.867 M, to be financed as follows: Loan 40%: TTD 94.35 M, Equity 60%: TTD 141.52 M and Total: TTD 235.87 M.

Table 7: Estimated Cost of Project

YEARS			2020	2021
Investment Cost Schedule				
Nominal Exchange Rate		*Index*	6.75	6.82
Million Conversion	1,000,000	#		
Investment Cost (Paid in USD)				
[A] Land		*USD*	-	-
[B] Site Preparation		*USD*	291,792	-
[C1] Common Facilities		*USD*	609,991	1,170,267
[C2] Guest Rooms		*USD*	2,079,835	3,747,592
[C3] Infrastructure, Recreational Facilities and Landscaping		*USD*	511,845	1,018,775
[D] Furniture, Fixtures and Fittings		*USD*	-	2,717,589
[E] Consultancy Services		*USD*	-	-
[F] Project Management		*USD*	-	-
[G] Start-up, Marketing, Training & Intial Working Capital		*USD*	-	540,000
[H] Legal and Statutory Services		*USD*	-	-
Investment Cost (Paid in TTD)				
[A] Land		*TTD*	25,000,000	-
[B] Site Preparation		*TTD*	10,753,531	-
[C1] Common Facilities		*TTD*	5,718,669	10,971,256
[C2] Guest Rooms		*TTD*	17,950,963	38,215,569
[C3] Infrastructure, Recreational Facilities and Landscaping		*TTD*	4,071,494	8,103,888
[D] Furniture, Fixtures and Fittings		*TTD*	-	7,279,256
[E] Consultancy Services		*TTD*	6,555,938	4,226,250
[F] Project Management		*TTD*	3,235,313	2,159,063
[G] Start-up, Marketing, Training & Intial Working Capital		*TTD*	-	2,250,000
[H] Legal and Statutory Services		*TTD*	3,125,000	-
Capital Cost Overrun	0.00%	*%*		
Total Investment Cost (Paid in TTD)				
[A] Land		*M TTD*	25.000	-
[B] Site Preparation		*M TTD*	12.723	-
[C1] Common Facilities		*M TTD*	9.836	18.948
[C2] Guest Rooms		*M TTD*	31.990	63.760
[C3] Infrastructure, Recreational Facilities and Landscaping		*M TTD*	7.526	15.048
[D] Furniture, Fixtures and Fittings		*M TTD*	-	25.803
[E] Consultancy Services		*M TTD*	6.556	4.226
[F] Project Management		*M TTD*	3.235	2.159
[G] Start-up, Marketing, Training & Intial Working Capital		*M TTD*	-	5.931
[H] Legal and Statutory Services		*M TTD*	3.125	-
Total Investment Cost		*M TTD*	**99.992**	**135.875**

4.5.8 Depreciation Schedule and Liquidation Value

This project has defined a depreciation schedule by three different types. 1) Land, 2) Site works, Buildings and Associated costs, 3) Furniture, Fixtures and Fittings. Detailed calculations are available in the table below. The value of land is TTD 25.000 M, which will return as the residual value by the end of the project. Expected life of "Site works, buildings and associated costs" is forty years, and six years for "Furniture, fixtures and fittings". These values were also used in income statement as tax depreciation. All values are calculated in nominal terms. The following table is representing the calculations in detail.

Table 8: Depreciation Schedule

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Depreciation Schedule and Liquidation Value											
Project Start Year Flag		*Flag*	1	-	-	-	-	-	-	-	-
Operation Period		*Flag*	-	-	1	1	1	1	1	1	-
Liqudation Period		*Flag*	-	-	-	-	-	-	-	-	1
Million Conversion	1,000,000	*#*									
Depreciated Items											
[A] Land		*M TTD*	25.000	-	-	-	-	-	-	-	-
Residual Value "Land"		*M TTD*	-	-	-	-	-	-	-	-	**25.000**
Expected Life of "Site Preparation, buildings and infrastructure" for Tax Purposes	40	*Years*									
[B] Site Preparation		*M TTD*	12.723	-	-	-	-	-	-	-	-
[C1] Common Facilities		*M TTD*	9.836	18.948	-	-	-	-	-	-	-
[C2] Guest Rooms		*M TTD*	31.990	63.760	-	-	-	-	-	-	-
[C3] Infrastructure, Recreational Facilities and Landscaping		*M TTD*	7.526	15.048	-	-	-	-	-	-	-
[E] Consultancy Services		*M TTD*	6.556	4.226	-	-	-	-	-	-	-
[F] Project Management		*M TTD*	3.235	2.159	-	-	-	-	-	-	-
Site Works, Buildings and Associated Costs		*M TTD*	71.867	104.141	-	-	-	-	-	-	-
Annual Depreciation "Site Works, Buildings and Associated Costs"		*M TTD*	-	-	4.400	4.400	4.400	4.400	4.400	4.400	-
Residual Value "Site Works, Buildings and Associated Costs"		*M TTD*	-	-	-	-	-	-	-	-	**123.206**
Expected Life of "Furniture, Fittings and Equipment" for Tax Purpose	6	*Years*									
[D] Furniture, Fixtures and Fittings		*M TTD*	-	25.803	-	-	-	-	-	-	-
Annual Depreciation "Furniture, Fixtures and Fittings"		*M TTD*	-	-	4.300	4.300	4.300	4.300	4.300	2.711	-
Residual Value "Furniture, Fixtures and Fittings"		*M TTD*	-	-	-	-	-	-	-	-	-
Summary of Depreciation											
Tax Depreciation "Site Works, Buildings and Associated Costs"		*M TTD*	-	-	4.400	4.400	4.400	4.400	4.400	4.400	-
Tax Depreciation "Furniture, Fixtures and Fittings"		*M TTD*	-	-	4.300	4.300	4.300	4.300	4.300	2.711	-
Total Tax Depreciation		*M TTD*	-	-	**8.701**	**8.701**	**8.701**	**8.701**	**8.701**	**7.111**	-

Table 9: Amortization Schedule

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Amortised Items											
Expected Life of "Start-up expenses, marketing and training, legal and statutory services, appraisal fees" for Tax Purposes	5	Years									
[G] Start-up, Marketing, Training & Intial Working Capital		M TTD	-	5.931	-	-	-	-	-	-	-
[H] Legal and Statutory Services		M TTD	3.125	-	-	-	-	-	-	-	-
Appraisal/Front-End Fees	985,000	TTD									
Appraisal/Front-End Fees		M TTD	0.985	-	-	-	-	-	-	-	-
Annual Depreciation "Start-up Marketting, Training & Initial Working Capital"		M TTD	-	-	1.186	1.186	1.186	1.186	1.186	-	-
Annual Depreciation "Legal and Statutory Services"		M TTD	-	-	0.625	0.625	0.625	0.625	0.625	-	-
Annual Depreciation "Appraisal/Front-End Fees"		M TTD	-	-	0.197	0.197	0.197	0.197	0.197	-	-
Residual Value "Start-up Marketting, Training & Initial Working Capital"		M TTD	-	-	-	-	-	-	-	-	-
Residual Value "Legal and Statutory Services"		M TTD	-	-	-	-	-	-	-	-	-
Residual Value "Appraisal/Front-End Fees"		M TTD	-	-	-	-	-	-	-	-	**(0.000)**
Summary of Amortisation											
Amortisation "Start-up Marketting, Training & Initial Working Capital"		M TTD	-	-	1.186	1.186	1.186	1.186	1.186	-	-
Amortisation "Legal and Statutory Services"		M TTD	-	-	0.625	0.625	0.625	0.625	0.625	-	-
Amortisation "Appraisal/Front-End Fees"		M TTD	-	-	0.197	0.197	0.197	0.197	0.197	-	-
Total Amortisation		M TTD	-	-	**2.008**	**2.008**	**2.008**	**2.008**	**2.008**	-	-

4.5.9 Project Financing Structure

In this project, loan financing will be provided by three different financial institutions. The loan repayment period is 12 years, and the first year of the loan payment is in 2022. The loans are granted by the following lending institutions:

Table 10: The Contribution of Lending Institutions (TTD M)

Financial institutions	Total Loan	Interest Rate %	Repayment period
Caribbean Development Bank (CDB)	42.45	6.00	12 years
NCB Global Finance Limited (NCBGF)	9.44	9.00	12 years
Citibank Trinidad Limited Syndicate	42.45	10.00	12 years

Table 11 presents detailed project financing structure in 2020 and 2021.

Table 11: Project Financing Structure

YEARS			2020	2021
Project Financing Structure				
Construction Period		*Flag*	1	1
Total Investment Cost		*M TTD*	99.992	135.875
Financing Parameters				
Loan	40.00%	*%*		
Equity	60.00%	*%*		
Loan Contribution towards Total Investment Costs		*M TTD*	**39.997**	**54.350**
Caribbean Development Bank (CDB)	45.00%	*%*		
NCB Global Finance Limited (NCBGF)	10.00%	*%*		
Citibank Trinidad Limited Syndicate	45.00%	*%*		
Loan From the Caribbean Development Bank (CDB)		*M TTD*	18.00	24.46
Loan From NCB Global Finance Limited (NCBGF)		*M TTD*	4.00	5.43
Loan From the Citibank Trinidad Limited Syndicate		*M TTD*	18.00	24.46

4.5.10 Loans & Loan Repayment schedule

Loan schedules distinctively has provided for three different institutional plans. Also, when the loan granted investor should pay specific percentage of loan which is determined by bank or financial institution. The commitment fee of CDB is 0.75% of the loan value to the bank as commitment fee. Total commitment fee of CDB is equal to TTD 450,000. In table 12 the Caribbean Development Bank (CDB) loan repayment schedule has presented.

Table 12: Caribbean Development Bank (CDB) Loan Repayment Schedule

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Loan Repayment Schedule											
Interest During Construction [IDC] Period		Flag	1	1	-	-	-	-	-	-	-
Debt Repayment Period		Flag	-	-	1	1	1	1	1	1	-
Loan A: Caribbean Development Bank (CDB)											
Loan Repayment Period	12	Years									
Commitment Fees (% of loan)	0.75%	%									
Interest Rate: Caribbean Development Bank (CDB)	6.00%	%									
Loan From the Caribbean Development Bank (CDB)		M TTD	18.00	24.46	-	-	-	-	-	-	-
Beginning Debt		M TTD	-	18.00	42.46	38.92	35.38	31.84	28.30	3.54	-
Interest Accrued		M TTD	-	1.08	2.55	2.34	2.12	1.91	1.70	0.21	-
Principal Repayment		M TTD	-	-	3.54	3.54	3.54	3.54	3.54	3.54	-
Interest Paid		M TTD	-	1.08	2.55	2.34	2.12	1.91	1.70	0.21	-
Total Debt Repayment Scheduled		M TTD	**-**	**1.08**	**6.09**	**5.87**	**5.66**	**5.45**	**5.24**	**3.75**	**-**
Ending Debt		M TTD	18.00	42.46	38.92	35.38	31.84	28.30	24.77	0.00	-
Interest During Construction		M TTD	**-**	**1.08**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Commitment Fees		M TTD	0.13	0.32	-	-	-	-	-	-	-

The commitment fee of NCBGF is 0.10% of the loan value which is equal to TTD 100,000. Table 13 shows detailed NCBGF loan repayment schedule.

Table 13: NCB Global Finance Limited (NCBGF) Loan Repayment Schedule

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Loan Repayment Schedule											
Loan B: NCB Global Finance Limited (NCBGF)											
Interest Rate: NCB Global Finance Limited (NCBGF)	9.00%	%									
Loan From NCB Global Finance Limited (NCBGF)		M TTD	4.00	5.43	-	-	-	-	-	-	-
Beginning Debt		M TTD	-	4.00	9.43	8.65	7.86	7.08	6.29	0.79	-
Interest Accrued		M TTD	-	0.36	0.85	0.78	0.71	0.64	0.57	0.07	-
Principal Repayment		M TTD	-	-	0.79	0.79	0.79	0.79	0.79	0.79	-
Interest Paid		M TTD	-	0.36	0.85	0.78	0.71	0.64	0.57	0.07	-
Total Debt Repayment Scheduled		M TTD	**-**	**0.36**	**1.64**	**1.56**	**1.49**	**1.42**	**1.35**	**0.86**	**-**
Ending Debt		M TTD	4.00	9.43	8.65	7.86	7.08	6.29	5.50	(0.00)	-
Interest During Construction		M TTD	**-**	**0.36**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Commitment Fees		M TTD	0.03	0.07	-	-	-	-	-	-	-

The commitment fee of Citibank Trinidad Limited Syndicate is 0.75% of the loan value which is equal to TTD 450,000. Detailed loan repayment schedule of Citibank Trinidad Limited Syndicate is illustrated in table 14.

Table 14: Citibank Trinidad Limited Syndicate Loan Repayment Schedule

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Loan Repayment Schedule											
Loan C: Citibank Trinidad Limited Syndicate											
Interest Rate: Citibank Trinidad Limited Syndicate	10.00%	%									
Loan From the Citibank Trinidad Limited Syndicate		M TTD	18.00	24.46	-	-	-	-	-	-	-
Beginning Debt		M TTD	-	18.00	42.46	38.92	35.38	31.84	28.30	3.54	-
Interest Accrued		M TTD	-	1.80	4.25	3.89	3.54	3.18	2.83	0.35	-
Principal Repayment		M TTD	-	-	3.54	3.54	3.54	3.54	3.54	3.54	-
Interest Paid		M TTD	-	1.80	4.25	3.89	3.54	3.18	2.83	0.35	-
Total Debt Repayment Scheduled		M TTD	**-**	**1.80**	**7.78**	**7.43**	**7.08**	**6.72**	**6.37**	**3.89**	**-**
Ending Debt		M TTD	18.00	42.46	38.92	35.38	31.84	28.30	24.77	0.00	-
Interest During Construction		M TTD	**-**	**1.80**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Commitment Fees		M TTD	0.13	0.32	-	-	-	-	-	-	-

Consequently, total principal repayment, total interest payment and eventually total debt service comprehensively is presented by table 15.

Table 15: Total Debt Service

YEARS		2020	2021	2022	2023	2024	2025	2026	2033	2034
Loan Repayment Schedule										
Principal Repayment	M TTD	-	-	3.54	3.54	3.54	3.54	3.54	3.54	-
Principal Repayment	M TTD	-	-	0.79	0.79	0.79	0.79	0.79	0.79	-
Principal Repayment	M TTD	-	-	3.54	3.54	3.54	3.54	3.54	3.54	-
Total Principal Repayment	M TTD	**-**	**-**	7.86	7.86	7.86	7.86	7.86	7.86	**-**
Interest Paid	M TTD	-	1.08	2.55	2.34	2.12	1.91	1.70	0.21	-
Interest Paid	M TTD	-	0.36	0.85	0.78	0.71	0.64	0.57	0.07	-
Interest Paid	M TTD	-	1.80	4.25	3.89	3.54	3.18	2.83	0.35	-
Total Interest Payment	M TTD	**-**	3.24	7.64	7.01	6.37	5.73	5.09	0.64	**-**
Total Principal Repayment	M TTD	-	-	7.86	7.86	7.86	7.86	7.86	7.86	-
Total Interest Payment	M TTD	-	3.24	7.64	7.01	6.37	5.73	5.09	0.64	-
Total Debt Service	M TTD	**-**	3.24	15.50	14.87	14.23	13.59	12.96	8.50	**-**

4.5.11 Estimated Tax Liabilities

The corporation tax is 35.00%. However, the project has a 10-year tax holiday under the hotels' Development Act of 1994 however, The Tourism Development Act, Chapter 87:22 (TDA) was presented Tourism Development Incentives to support the improvement of tourism in Trinidad and Tobago. When projects have appearing to contribute considerably to the development and expansion of tourism, Tourism Development Incentives would be granted by Act to owners or operators of different kinds of the tourism project. This incentive is provided as follows: tax benefits; the tax exemption up to ten years would be approved by the Minister regards to the profits generated by tourism projects, customs and excise duty concessions for hotel

development. Detailed calculation of net profit after-tax have been provided in table 16.

Table 16: Estimated Tax Liabilities and Net Profit After Tax

YEARS			2020	2021	2022	2023	2024	2025	2026	2033
Estimated Tax Liabilities										
Tax Free Holidays		Flag	1	1	1	1	1	1	1	-
Corporation Tax	35.00%	%								
Available Revenue		M TTD	-	-	105.70	170.05	201.54	210.75	220.39	271.05
Cost of Sales		M TTD	-	-	12.68	20.41	24.18	25.29	26.45	32.53
Gross Profit Margin		M TTD	**-**	**-**	**93.02**	**149.64**	**177.35**	**185.46**	**193.94**	**238.53**
Operating Costs										
Departmental Expenses (Payroll and Related Expenses)		M TTD	-	-	8	12	14	15	16	19
Undistributed Expenses		M TTD	-	-	9	14	17	18	19	23
Overheads and Administration		M TTD	-	-	38	61	73	76	79	98
Total Operating Costs		M TTD	-	-	54.54	87.75	103.99	108.75	113.72	139.86
Gross Operating Profit		M TTD	**-**	**-**	**38.47**	**61.90**	**73.36**	**76.71**	**80.22**	**98.66**
Fixed Expenses										
Management Fees - Basic 1/		M TTD	-	-	4.23	6.80	8.06	8.43	8.82	10.84
Management Fees - Incentive 2/		M TTD	-	-	3.17	5.10	6.05	6.32	6.61	8.13
F, F & E Reserves		M TTD	-	-	2.64	4.25	5.04	5.27	5.51	6.78
Fire Insurance		M TTD	-	-	1.06	1.70	2.02	2.11	2.20	2.71
Property Tax		M TTD	-	-	0.26	0.43	0.50	0.53	0.55	0.68
Hotel Licence Duty		M TTD	-	-	0.26	0.43	0.50	0.53	0.55	0.68
Depreciation (Straight-Line)		M TTD	-	-	8.70	8.70	8.70	8.70	8.70	7.11
Amortisation		M TTD	-	-	2.01	2.01	2.01	2.01	2.01	-
Total Interest Payment		M TTD	-	3.24	7.64	7.01	6.37	5.73	5.09	0.64
TOTAL FIXED COSTS		M TTD	-	3.24	29.98	36.42	39.25	39.62	40.05	37.56
NET PROFIT BEFORE TAXES		M TTD	**-**	**(3.24)**	**8.50**	**25.48**	**34.11**	**37.09**	**40.18**	**61.10**
Corporation Tax		M TTD	-	-	-	-	-	-	-	21.38
NET PROFIT AFTER TAX		M TTD	**-**	**(3.24)**	**8.50**	**25.48**	**34.11**	**37.09**	**40.18**	**39.71**

4.5.12 Statement of Cash Flow

There are two different points of view as a total investment (bankers) and equity owners' which are implemented by financial analysis by providing cash flow statements. While Cash Flow Statement (CFS) is generated for each stakeholder's concern and should be considered for different point of views (Jenkins et al. 2013). In this regard, for every perspective, there is no necessity to entail all financial indicators in the cash flow statement. In terms of formulating cashflow statements, essential detailed assumptions from previous chapters would be involved. Consequently, the sustainability and feasibility of the hotel project will be assessed by the results of those statements of cash flow.

4.5.13 Total Investment Perspective (Banker's point of view)

In order to meet the if the project capable to service its debt, ADSCR and LLCR are applied by bankers. The main reason which makes bankers' and owners' perspective distinguishable is the way that they observe the loan. It means that the only fact that attracts bankers is whether the initial debt plus interest of the project is financially capable of paying or not. Table 17 presents the nominal CFS.

Table 17: Total Investment Perspective

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Total Investment Perspective - Total Equity											
INFLOWS											
Receipts											
Total Income from Sales		M TTD	-	-	105.700	170.051	201.538	210.754	220.392	271.054	-
Change in Accounts Receivable		M TTD	-	-	(10.570)	(6.435)	(3.149)	(0.922)	(0.964)	(0.789)	27.105
Net Receipts		M TTD	-	-	95.130	163.616	198.389	209.832	219.428	270.265	27.105
Residual Values											
Residual Value "Land"		M TTD	-	-	-	-	-	-	-	-	25.000
Residual Value "Site Works, Buildings and Associated Costs"		M TTD	-	-	-	-	-	-	-	-	123.206
Residual Value "Furniture, Fixtures and Fittings"		M TTD	-	-	-	-	-	-	-	-	-
Total Residual Values		M TTD	-	-	-	-	-	-	-	-	148.206
TOTAL INFLOWS		M TTD	**-**	**-**	**95.130**	**163.616**	**198.389**	**209.832**	**219.428**	**270.265**	**175.311**
OUTFLOWS											
Investment Costs											
Land		M TTD	25.000	-	-	-	-	-	-	-	-
Site Preparation		M TTD	12.723	-	-	-	-	-	-	-	-
Common Facilities		M TTD	9.836	18.948	-	-	-	-	-	-	-
Guest Rooms		M TTD	31.990	63.760	-	-	-	-	-	-	-
Infrastructure, Recreational Facilities and Landscaping		M TTD	7.526	15.048	-	-	-	-	-	-	-
Furniture, Fixtures and Fittings		M TTD	-	25.803	-	-	-	-	-	-	-
Consultancy Services		M TTD	6.556	4.226	-	-	-	-	-	-	-
Project Management		M TTD	3.235	2.159	-	-	-	-	-	-	-
Start-up, Marketing, Training & Intial Working Capital		M TTD	-	5.931	-	-	-	-	-	-	-
Legal and Statutory Services		M TTD	3.125	-	-	-	-	-	-	-	-
Total Investment Cost		M TTD	99.992	135.875	-	-	-	-	-	-	-
Operating Expenditure											
Purchases		M TTD	-	-	12.684	20.406	24.185	25.290	26.447	32.526	-
Departmental Expenses (Payroll)		M TTD	-	-	7.505	12.074	14.309	14.964	15.648	19.245	-
Undistributed Expenses		M TTD	-	-	8.984	14.454	17.131	17.914	18.733	23.040	-
Overheads and Administration		M TTD	-	-	38.052	61.218	72.554	75.871	79.341	97.579	-
Fixed Expenses		M TTD	-	-	11.627	18.706	22.169	23.183	24.243	29.816	-
Changes in Accounts Payable		M TTD	-	-	(13.445)	(8.186)	(4.005)	(1.172)	(1.226)	(1.004)	34.478
Changes in Cash Balance		M TTD	-	-	6.722	4.093	2.003	0.586	0.613	0.502	(17.239)
Income Tax Liability		M TTD	-	-	-	-	-	-	-	21.385	-
Total Operating Expenditure		M TTD	-	-	72.129	122.765	148.345	156.636	163.799	223.089	17.239
TOTAL OUTFLOWS		M TTD	**99.992**	**135.875**	**72.129**	**122.765**	**148.345**	**156.636**	**163.799**	**223.089**	**17.239**
NET FINANCIAL CASH FLOW (Nominal)		M TTD	**(99.992)**	**(135.875)**	**23.000**	**40.851**	**50.044**	**53.196**	**55.629**	**47.176**	**158.072**
Domestic Price Index - Genova		Index	1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.469	1.513
NET FINANCIAL CASH FLOW (Real)		M TTD	**(99.992)**	**(131.917)**	**21.680**	**37.384**	**44.464**	**45.887**	**46.588**	**32.124**	**104.504**
Exchange Rate	6.750	Index									
NET FINANCIAL CASH FLOW (Real)		M USD	**(14.814)**	**(19.543)**	**3.212**	**5.538**	**6.587**	**6.798**	**6.902**	**4.759**	**15.482**

By implementing nominal CFS, the ADSCR and LLCR are computed. The result of total loan service coverage ratio is provided in table 18. Table illustrates the result of both ADSCR and LLCR.

Table 18: Debt Service Coverage Ratio

YEARS		2020	2021	2022	2023	2024	2025	2026	2033
Loan Service Coverage Ratios									
Annual Debt Service Coverage Ratio (ADSCR)									
Total Debt Service	*M TTD*	-	3.24	15.50	14.87	14.23	13.59	12.96	8.50
Cashflow Available for Debt Service	*M TTD*	(99.99)	(135.87)	23.00	40.85	50.04	53.20	55.63	47.18
ADSCR	*Index*	**N/A**	**N/A**	**1.48**	**2.75**	**3.52**	**3.91**	**4.29**	**5.55**
Loan Life Coverage Ratio (LLCR)									
Total Debt Service	*M TTD*	-	3.24	15.50	14.87	14.23	13.59	12.96	8.50
Cashflow Available for Debt Service	*M TTD*	(99.99)	(135.87)	23.00	40.85	50.04	53.20	55.63	47.18
Debt Repayment Period	*Flag*	-	-	1	1	1	1	1	1
Cashflow Available for Debt Service (to end year of debt)	*M TTD*	-	-	23.00	40.85	50.04	53.20	55.63	47.18
PV of Total Debt Service	*M TTD*	-	-	89.05	82.37	75.61	68.74	61.77	8.50
PV of Cashflow Available for Debt Service (to end year of de	*M TTD*	-	-	331.49	345.51	341.22	326.12	305.67	47.18
LLCR	*Index*	**N/A**	**N/A**	**3.72**	**4.19**	**4.51**	**4.74**	**4.95**	**5.55**

In 2022, the hotel's sales will generate enough financial cash flows to service the loan because the result of ADSCR is 1.48. However, during 2020 and 2021 since the hotel is under construction and there is no income, the cash flow has been impacted by investment cost. In this regard, in order to debt coverage to be measurable, the availability of net cash flow for debt service is essential. Yet, overall net financial cash flow has been produced positively. It denotes that, from the total investment point in terms of debt service obligation, the ADSCR of the project is approximately equal to the threshold of 1.5 and will meet the loan obligations sufficiently.

The result of LLCR shows that the availability of net cash flow during loan life from the operation of project is sufficient since the LLCR 3.72 in 2022. Subsequently, both ratio results reveal that the project debt payment to the bank is safe, and no trouble is expected. Therefore, it is expected that all the loans would be granted by banks to this hotel investment.

4.5.14 Owner's point of view

Undeniably, one of the primary intentions of investors is to implement project appraisal and to acknowledge the estimated availability of inflows and outflows. Primarily net cash flow should generate adequately to cover all the expenditures of the project and debt services. Therefore, in order to calculate the return on equity and debt

service, the CFS includes debt financing and debt servicing calculation for investor's perspective. As mentioned earlier, the cash inflow and outflow should change to real value to calculate Financial NPV (FNPV) and IRR. The estimated revenue of inflow will be provided by FNPV and FIRR for investors. In terms of appraising owner's perspective, the requirement of detailed CFS is essential. In this regard, the net cash flow will be constructed after financing and consideration of all details.

In this project, the rate of return on equity is 12.00%, which it denotes to the owner the obtainable opportunity cost of capital. Compared with other optional investment opportunities with the same exposure of risk, the calculated NPV in this project reveals TTD 45.11 Million positive NPV throughout the appraisal period is feasible (refer to table 19). It demonstrates the capability of the project by gaining TTD 45.11 Million and recover the initial investment cost compared with other possible investment opportunities with similar exposure to risk.

Overall, the proforma financial cash flow from the owner's point of view indicates that the project has a positive net cash flow during the period of appraisal, except for the first two years when the project is under construction, and these expenditures are covered through the equity. The result of FIRR in this investment is 16.84%, which is greater than the rate of return as 12.00%. Thus, results show that the project commercially qualifies for implementation. Table 19 illustrates the detailed calculation of the cash flow statement of the owner's perspective in real value.

Table 19: Cash flow Statement of Owner's Point of View

YEARS			2020	2021	2022	2023	2024	2025	2026	2033	2034
Owner's Perspective											
INFLOWS											
Receipts											
Total Income from Sales		M TTD	-	-	105.700	170.051	201.538	210.754	220.392	271.054	-
Change in Accounts Receivable		M TTD	-	-	(10.570)	(6.435)	(3.149)	(0.922)	(0.964)	(0.789)	27.105
Loan Contribution											
Loan From the Caribbean Development Bank (CDB)		M TTD	17.999	24.457	-	-	-	-	-	-	-
Loan From NCB Global Finance Limited (NCBGF)		M TTD	4.000	5.435	-	-	-	-	-	-	-
Loan From the Citibank Trinidad Limited Syndicate		M TTD	17.999	24.457	-	-	-	-	-	-	-
Net Receipts		M TTD	39.997	54.350	95.130	163.616	198.389	209.832	219.428	270.265	27.105
Residual Values											
Residual Value "Land"		M TTD	-	-	-	-	-	-	-	-	25.000
Residual Value "Site Works, Buildings and Associated Cos		M TTD	-	-	-	-	-	-	-	-	123.206
Residual Value "Furniture, Fixtures and Fittings"		M TTD	-	-	-	-	-	-	-	-	-
Total Residual Values		M TTD	-	-	-	-	-	-	-	-	148.206
TOTAL INFLOWS		M TTD	**39.997**	**54.350**	**95.130**	**163.616**	**198.389**	**209.832**	**219.428**	**270.265**	**175.311**
OUTFLOWS											
Investment Costs											
Land		M TTD	25.000	-	-	-	-	-	-	-	-
Site Preparation		M TTD	12.723	-	-	-	-	-	-	-	-
Common Facilities		M TTD	9.836	18.948	-	-	-	-	-	-	-
Guest Rooms		M TTD	31.990	63.760	-	-	-	-	-	-	-
Infrastructure, Recreational Facilities and Landscaping		M TTD	7.526	15.048	-	-	-	-	-	-	-
Furniture, Fixtures and Fittings		M TTD	-	25.803	-	-	-	-	-	-	-
Consultancy Services		M TTD	6.556	4.226	-	-	-	-	-	-	-
Project Management		M TTD	3.235	2.159	-	-	-	-	-	-	-
Start-up, Marketing, Training & Intial Working Capital		M TTD	-	5.931	-	-	-	-	-	-	-
Legal and Statutory Services		M TTD	3.125	-	-	-	-	-	-	-	-
Total Investment Cost		M TTD	99.992	135.875	-	-	-	-	-	-	-
Operating Expenditure											
Purchases		M TTD	-	-	12.684	20.406	24.185	25.290	26.447	32.526	-
Departmental Expenses (Payroll)		M TTD	-	-	7.505	12.074	14.309	14.964	15.648	19.245	-
Undistributed Expenses		M TTD	-	-	8.984	14.454	17.131	17.914	18.733	23.040	-
Overheads and Administration		M TTD	-	-	38.052	61.218	72.554	75.871	79.341	97.579	-
Fixed Expenses		M TTD	-	-	11.627	18.706	22.169	23.183	24.243	29.816	-
Changes in Accounts Payable		M TTD	-	-	(13.445)	(8.186)	(4.005)	(1.172)	(1.226)	(1.004)	34.478
Changes in Cash Balance		M TTD	-	-	6.722	4.093	2.003	0.586	0.613	0.502	(17.239)
Income Tax Liability		M TTD	-	-	-	-	-	-	-	21.385	-
Total Operating Expenditure		M TTD	-	-	72.129	122.765	148.345	156.636	163.799	223.089	17.239
Debt Services											
Total Principal Repayment		M TTD	-	-	7.862	7.862	7.862	7.862	7.862	7.862	-
Total Interest Payment		M TTD	-	3.240	7.642	7.005	6.368	5.732	5.095	0.637	-
Total Debt Service		M TTD	-	3.240	15.504	14.867	14.231	13.594	12.957	8.499	-
TOTAL OUTFLOWS		M TTD	**99.992**	**139.114**	**87.634**	**137.633**	**162.575**	**170.230**	**176.756**	**231.588**	**17.239**
NET FINANCIAL CASH FLOW (Nominal)		M TTD	**(59.995)**	**(84.765)**	**7.496**	**25.983**	**35.814**	**39.602**	**42.672**	**38.676**	**158.072**
Domestic Price Index - Genova		Index	1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.469	1.513
NET FINANCIAL CASH FLOW (Real)		M TTD	**(59.995)**	**(82.296)**	**7.066**	**23.778**	**31.820**	**34.161**	**35.737**	**26.337**	**104.504**
Exchange Rate	6.750	Index									
NET FINANCIAL CASH FLOW (Real)		M USD	**(8.888)**	**(12.192)**	**1.047**	**3.523**	**4.714**	**5.061**	**5.294**	**3.902**	**15.482**
Real Financial Discount Rate	12.00%	%									
Financial NPV	**45.114**	M TTD									
Financial NPV	**6.684**	M USD									
Financial IRR	**16.84%**	%									

Chapter 5

SENSITIVITY ANALYSIS

5.1 Introduction

This chapter comprehensively explained the rationality of sensitivity analysis, and the result of the analysis presented. The calculation of investment parameters that significantly impact the model is known as the main intention of sensitivity analysis. Sensitivity analysis is one of the beneficial approaches in terms of detecting risky variables, albeit it has some limitations. Also, it is able to identify possible impacts that might be occurred by risky variables on the final result of the project. It is worth to mention some of risky variables enable the project to expose changes significantly in the final result. Moreover, one of the main obstructions which should be considered is the measurement of risky variables that influence the project. As a result, it is a worthful achievement to identify critical variables in advance.

5.2 Sensitivity Analysis

Particular parameters as suspected risky variables have been chosen in this study, such as domestic inflation rate, occupancy rate, cost overrun and room rate. Remarkably, in terms of CBA, the major variables of the project are highly vulnerable to possible risks. Considerably, some of the variables would be changeable because the benefits of the project are spread in the project's life span. Therefore, a possible fluctuated variable should be calculated initially. Besides, the consideration of possible deviation and uncertainties of input and output values is essential to achieve realistic and trustable

results. Ultimately, in terms of implementing the sensitivity analysis accurately the association between parameters must be interpreted in model.

5.3 Result of Sensitivity Analysis

This section assigned to interpret sensitivity analysis outcomes. The NPV was tested for its sensitivity to variations in several key project variables, in order to determine possible adverse consequences on project viability. The results of the sensitivity tests are represented as follows:

5.3.1 Sensitivity of NPV to Changes in Occupancy Rate

In the base case, the occupancy rate stabilised at year 2024 as 85.00%, and the NPV at this occupancy level was TTD 45.11M. The sensitivity analysis showed that the NPV was positive in the base case scenario. The break-even for the projects NPV equal to zero is at 68.00% of the occupancy. which means that the NPV is very sensitive to changes in the occupancy rate. Table 20 illustrates sensitivity of occupancy rate in detailed if the occupancy increases or decrease how would affects FNPV and FIRR.

Table 20: Sensitivity Analysis - Occupancy Rate

HOTEL INVESTMENT - SENSITIVITY ANALYSIS				
OCCUPANCY RATE				
Occupancy Rate - Sensitivity Factor	0.00%	%		
			Base Case Scenario	
			Financial	
			FNPV (Million TTD)	**FIRR**
	Occupancy Rate (2024-2033)	% Change in Occupancy rate	45.11	16.84%
	68%	-20%	**0.00**	**12.00%**
	72%	-15%	**11.65**	**13.28%**
	79%	-8%	**28.38**	**15.08%**
	85%	0%	**45.11**	**16.84%**
	91%	8%	**61.85**	**18.55%**
	98%	15%	**78.58**	**20.22%**
				Occupancy Rate
			Break-even	**68%**

5.3.2 Sensitivity of NPV to Changes in Room Rate - Rate Per Night

At a room rate of US$400 per night in the base case scenario, the NPV was TTD 45.11M. The analysis indicated that even below this rate, the NPV was robust. However, the sensitivity result shows that if room rate decreases by $10 the NPV reduces by 12.34%. It means that NPV is highly sensitive to changes in room rate Table 21 comprehensively shows sensitivity of room rate upon FNPV and FIRR.

Table 21: Sensitivity Analysis - Room Rate

HOTEL INVESTMENT - SENSITIVITY ANALYSIS			
ROOM RATE			
Rate Per Room Per Night (Base Case Scenario)	400	*USD*	
		Base Case Scenario	
		Financial	
		FNPV (Million TTD)	**FIRR**
		45.11	16.84%
USD per Night	360	**22.80**	**14.49%**
	370	**28.38**	**15.08%**
	380	**33.96**	**15.67%**
	390	**39.54**	**16.26%**
	400	**45.11**	**16.84%**
	410	**50.69**	**17.41%**
	420	**56.27**	**17.99%**
	430	**61.85**	**18.55%**
	440	**67.42**	**19.11%**

5.3.3 Sensitivity of NPV to Changes in Room Rate and Occupancy Rate

The impact on the NPV was estimated by changes in both occupancy and room rate per night. This table assumes that per night price of rooms and occupancy rate have negative correlation. If per night price increases to USD 415 it is assumed that the total occupancy rate decreases by 10% and the overall NPV drops to TTD 30.33 M. On the other hand, if prices drop to USD 385 it is assumed that the occupancy rate would increase by 5.00% due to lower prices. The overall effect would increase the FNPV to TTD 47.48 million.

This analysis shows that if the management changes its policies and brings down the prices to USD 355, the hotel can reach its almost full occupancy and the project would be better off. The correlation between room rate and occupancy rate in terms of sensitivity comprehensively presented in table 22 as below.

Table 22: Sensitivity Analysis - Room Rate Vs. Occupancy Rate

HOTEL INVESTMENT - SENSITIVITY ANALYSIS								
Room Rate Vs. Occupancy Rate								
	98%	94%	89%	85%	77%	68%	60%	Occupancy Rate
45.11	15%	10%	5%	0%	-10%	-20%	-30%	% Change in Occupancy rate
355	**49.72**	**39.82**	**29.92**	**20.02**	**0.22**	**(19.58)**	**(39.38)**	
370	**59.34**	**49.02**	**38.70**	**28.38**	**7.74**	**(12.89)**	**(33.53)**	
385	**68.96**	**58.22**	**47.48**	**36.75**	**15.27**	**(6.20)**	**(27.67)**	
400	**78.58**	**67.42**	**56.27**	**45.11**	**22.80**	**0.49**	**(21.82)**	
415	**88.20**	**76.63**	**65.05**	**53.48**	**30.33**	**7.19**	**(15.96)**	
430	**97.82**	**85.83**	**73.84**	**61.85**	**37.86**	**13.88**	**(10.10)**	
445	**107.44**	**95.03**	**82.62**	**70.21**	**45.39**	**20.57**	**(4.25)**	

5.3.4 Cost Overrun

In the base case scenario, the total cost of capital is TTD 235.87 M, and NPV is TTD 45.11M; the result shows that if the investment cost increases by 10.00% the NPV reduces by 39.43% (TTD 27.32 M), which means that the NPV is very sensitive to the cost overrun and it still demonstrates positive values. In table 23 the effect of increase and decrease in cost of capital presented.

Table 23:Sensitivity Analysis - Cost Overrun

HOTEL INVESTMENT - SENSITIVITY ANALYSIS			
COST OVERRUN			
Capital Cost Overrun	0.00%	%	
		Financial	
		FNPV (Million TTD)	FIRR
		45.11	16.84%
	-20.00%	**80.71**	**22.40%**
	-15.00%	**71.81**	**20.81%**
	-10.00%	**62.91**	**19.36%**
	-5.00%	**54.01**	**18.05%**
	0.00%	**45.11**	**16.84%**
	5.00%	**36.21**	**15.73%**
	10.00%	**27.32**	**14.70%**
	15.00%	**18.42**	**13.75%**
	20.00%	**9.52**	**12.87%**

5.3.5 Rate of Domestic Inflation

A relationship was evident between the rate of domestic inflation and NPV. In the base case the rate of domestic inflation is 3.00%. I inflation decreased by 2.00% NPV decreased by 1.06% This is indicative that domestic inflation does not have high impact on the project. The sensitivity of domestic inflation upon FNPV and FIRR illustrates in table 24 as below.

Table 24: Sensitivity Analysis - Rate of Domestic Inflation

HOTEL INVESTMENT - SENSITIVITY ANALYSIS			
DOMESTIC INFLATION			
Domestic Inflation Rate - T&T	3.00%	%	
		Financial	
		FNPV (Million TTD)	FIRR
		45.11	16.84%
	-1.00%	**45.14**	**16.44%**
	0.00%	**44.73**	**16.52%**
	1.00%	**44.63**	**16.61%**
	2.00%	**44.77**	**16.72%**
	3.00%	**45.11**	**16.84%**
	5.00%	**46.24**	**17.11%**
	7.00%	**47.75**	**17.40%**
	9.00%	**49.47**	**17.70%**
	11.00%	**51.30**	**18.00%**
	13.00%	**53.15**	**18.30%**

Chapter 6

SCENARIO ANALYSIS

6.1 Introduction

Undeniably, all investors have concern about the return, performance, growth and stability of their investment. Empirically, all businesses implementation, profit, development and sustainability are affected by external and internal factors. These influences might affect either positively or negatively on business performance. In 2020, some firms are adversely affected by Covid-19 pandemic world-widely. At early stage of pandemic many countries have been quarantined and economy have shut down. For instance, the tourism industry is one of the most vulnerable businesses that have impacted significantly in this period. Tourists frighten to travel because some countries have high number of infected cases. Also, due to boarder closure of countries there has not been possibility of hosting tourists. In this regard, many investors intent to have better clarification of potential effect that caused by this external factor towards their business and observe different scenarios to debilitate it. Regarding pandemic, two different scenarios vividly explain in this chapter. First scenario is to start the project by considering the impact of pandemic and second scenario is to postpone the project for two years.

6.2 First Scenario

As mentioned previously, since tourism industry threaten negatively during COVID-19 crisis the first scenario shows the evaluation of project if it operates with impact of COVID-19 on this investment. It entails which assumption and how would be affected

by pandemic. Thus, this section addresses those assumption that revised base on pandemic condition and to what extend they will influence on investment and ultimately NPV outcome. in this regard, providing adjusted CFS is required.

6.2.1 Scenario Assumption

Although the assumption would be same as base scenario in this modelling (i.e. investment cost, loan, inflation etc.) but some of the them should be adjusted in first scenario financial modelling. Particularly the most sensitive one would be highly impacted by this crisis.

6.2.1.1 Occupancy Rate

In base scenario, occupancy rate in the first year of operation in 2022 assumed as 65.00%. However, by assuming first scenario with consideration of pandemic if the project starts to operate in 2022 the occupancy rate will reduce from 65.00% to 16.25%. Although hotel would have sufficient capacity but because of COVID-19 two most important reason that adversely influence on occupancy rate are; first the demand of travelling reduces, secondly a new policy is legislated by government in many countries. Due to obeying the rule of social distancing the expected occupancy rate dramatically declines.

6.2.1.2 Room Rate - Rate Per Room Per Night

In terms of reduction in demand for travelling already the number of hotel's guests are defeated by pandemic in order hence, in order to attract more customers, the rate of room decreases. It was set to USD 400.00 in base scenario and it reduces by 68.75% which means USD 275.00. This estimation is based on the information of available hotel with similar level of concept and quality of current project. Nevertheless, the growth of room rate assumed to be USD 425.00 after four years (2026).

6.2.1.3 Revenue

The main source of revenue in hotel industry is obtained by occupancy rate and room rate. In fact, since the occupancy and room rate significantly reduced the project revenue declined correspondingly. In base scenario the gross available revenue was TTD 105.70 M in 2022, since COVID-19 reflects the level annual paid occupancy the gross available revenue in 2022 is TTD 6.05 M at first scenario. Based on this appraising the hotel income is dramatically impacted during this crisis period.

6.2.1.4 Operating Expenditure

Evidently, since the distribution of expenses are defined as specific percentage of gross available revenue, accordingly by reduction in revenue, expenditures are decrease as well.

6.2.1.5 Net Financial Cash Flow After Financing (Real Value)

The result of all revenue minus all cost gives negative result after financing in first four years of operation from owners' point of view. The result in year 2022 in base case scenario was TTD 7.06 Million however in scenario one is TTD -13.37 Million. It indicates that how project net financial cash flow has been affected considerably by pandemic.

6.2.2 The First Scenario Result

Initially, one the most reliable evaluation criteria to assist investor to make decision is NPV result. NPV for the private investor's point of view was calculated and is equal to TTD -3.74 M It indicates that to compared with other alternative investment opportunities with the same degree of risk the project is not feasible and it is not viable for investor, therefore first scenario should be revised in order to make it feasible. The result derived project to implement second scenario to understand postponing the project for two years is viable for investor or not.

6.3 Second Scenario

According to result of first scenario which demonstrates negative NPV, applying the second scenario have been suggested by revision of first scenario. As mentioned earlier second scenario suggested to postpone the project for two years.

6.3.1 Scenario Assumption

Considerably due to unprecedented situation such as COVID-19 the project impacted significantly. Subsequently, some of certain assumption will be revised to assess the viability of the project by applying second scenario. Also, after two years changes in inflation should be considered over all assumption consistently.

Since the project will postpone for two years, construction starting and ending, commencement and ending of project operation and liquation date are modified accordingly. All the costs and revenues have been stated in the base year values which is in year 2024. In table 25 project timing statement provided.

Table 25:Project Timing Assumption, Scenario Two

Project Timing Parameter	Year
Commencement of Construction	2020
Construction Duration	2
Construction Completion	2023
First Year of Operation	2024
Project End Date	2035
Project Residual Value Date	2036

6.3.1.1 Occupancy Rate

Since it is expected that the world will relief from pandemic within four years the occupancy levels are expected to reach approximately 64.00% at first year of operation 2024 and extend to 85.00% on average from year 2026 and stabilised from this year. Considerably, to compared with occupancy rate in 2022 at scenario one which was 16.25% in second scenario the level of occupancy is upgraded. Table 26 illustrates the average room occupancy rate in scenario two.

Table 26: Average room occupancy rate

Year of operation	Occupation level %
2024	63.75%
2025	75.00%
2026	85.00%

6.3.1.2 Revenue

Since the expected demand for travelling will increase but probably not same as before the projected room rate increased from US$275 to US$375 per room night. Revenue is expected to increase by approximately 3.00% (exclusive of inflation) in the first five years of operation and maintained constant subsequently. As a result, the gross available revenue increases significantly from TTD 6.05 M to TTD 68.73 M.

6.3.1.3 Expenses

The calculation of operation expenses held same as base and first scenario and expressed as a proportion of the gross available revenue. The operating expenditure in year one 2024 is TTD 43.71 M however in first scenario was TTD 3.85 M. by improvement of revenue the operating expense are rises accordingly.

6.3.1.4 Total Investment (Initial and Sustaining Capital Cost)

The initial capital cost of hotel investment is distributed in year 2022 and 2023. The total investment was estimated at TTD 235.86 M in 2020 and 2021 however, after two years by considering inflation it becomes TTD 251.432 M. It will be financed as follows: Loan 40%: TTD 100.57 M, Equity 60%: TTD 150.85 M and Total: TTD 251.432 M.

Table 27: Summary of Total Investment Cost (TTD'000)

Total Investment Cost Paid in TTD	2022	2023	Total
Land	26.523	-	26.523
Site preparation	13.498	-	13.498
Common facilities	10.435	20.620	31.056
Guest rooms	33.938	69.401	103.339
Infrastructure and Landscaping	7.985	16.370	24.355
Furniture, Fixtures and Equipment	-	27.999	27.999
Consultancy Services	6.955	4.618	11.573
Project Management	3.432	2.359	5.792
Start up, Marketing, Training etc.	-	3.983	3.983
Legal and Statutory	3.315	-	
Total Investment	106.081	145.350	251.432

6.3.1.6 Project Financing Structure

The loan financing structure is same as base and first scenario. Nonetheless, due to inflation the amount of loan is adjusted to year 2022 and 2023 accordingly.

Table 28: The Contribution of Lending Institutions (TTD M)

Financial institutions	Total Loan	Interest Rate %	Repayment period
Caribbean Development Bank (CDB)	45.25	6.00	12 years
NCB Global Finance Limited (NCBGF)	10.05	9.00	12 years
Citibank Trinidad Limited Syndicate	45.25	10.00	12 years

6.3.1.7 Estimated Net Income After Tax

In scenario two the result of net income after tax is TTD -0.53 M in first year of operation (2024), however, in first scenario the result was TTD -16.81 M. it means that although net income is not positive but obviously the significant improvement occurs. The improved calculation of net income is provided by table 29 as follow.

Table 29: Estimated Net Income After Tax

Estimated Tax Liabilities									
Tax Free Holidays		Flag	1	1	1	1	1	1	-	-
Corporation Tax	35.00%	%								
Available Revenue		M TTD	68.74	171.88	207.02	220.01	263.16	271.05	279.19	287.56
Cost of Sales		M TTD	8.25	20.63	24.84	26.40	31.58	32.53	33.50	34.51
Gross Profit Margin		M TTD	**60.49**	**151.26**	**182.18**	**193.61**	**231.58**	**238.53**	**245.68**	**253.05**
Operating Costs										
Departmental Expenses (Payroll and Related Expenses)		M TTD	4.88	12.20	14.70	15.62	18.68	19.24	19.82	20.42
Undistributed Expenses		M TTD	5.84	14.61	17.60	18.70	22.37	23.04	23.73	24.44
Overheads and Administration		M TTD	24.75	61.88	74.53	79.20	94.74	97.58	100.51	103.52
Total Operating Costs		M TTD	35.47	88.69	106.82	113.53	135.79	139.86	144.06	148.38
Gross Operating Profit		M TTD	**25.02**	**62.57**	**75.36**	**80.08**	**95.79**	**98.66**	**101.62**	**104.67**
Fixed Expenses										
Management Fees - Basic 1/		M TTD	2.75	6.88	8.28	8.80	10.53	10.84	11.17	11.50
Management Fees - Incentive 2/		M TTD	2.06	5.16	6.21	6.60	7.89	8.13	8.38	8.63
F, F & E Reserves		M TTD	1.72	4.30	5.18	5.50	6.58	6.78	6.98	7.19
Fire Insurance		M TTD	0.69	1.72	2.07	2.20	2.63	2.71	2.79	2.88
Property Tax		M TTD	0.17	0.43	0.52	0.55	0.66	0.68	0.70	0.72
Hotel Licence Duty		M TTD	0.17	0.43	0.52	0.55	0.66	0.68	0.70	0.72
Depreciation (Straight-Line)		M TTD	8.18	8.18	8.18	8.18	8.18	8.18	8.18	8.18
Amortisation		M TTD	1.66	1.66	1.66	-	-	-	-	-
Total Interest Payment		M TTD	8.15	7.47	6.79	6.11	2.72	2.04	1.36	0.68
TOTAL FIXED COSTS		M TTD	25.55	36.22	39.40	38.49	39.85	40.04	40.25	40.49
NET PROFIT BEFORE TAXES		M TTD	**(0.53)**	**26.35**	**35.95**	**41.59**	**55.94**	**58.63**	**61.37**	**64.18**
Corporation Tax		M TTD	-	-	-	-	-	-	21.48	22.46
NET PROFIT AFTER TAX		M TTD	**(0.53)**	**26.35**	**35.95**	**41.59**	**55.94**	**58.63**	**39.89**	**41.72**

6.3.1.8 Total Investment Perspective- Total Equity

In 2024, financial cash flow is provided sufficiently to service debt. Due to the result of ADSCR is 0.90, nevertheless, during construction period in year 2022 and 2023 the ADSCR is negative. Therefore, LLCR applied to demonstrated the adequacy of available net cash flow for debt service during loan life and result is equal to 3.53 in year 2023 that is above threshold of 1.5 and it will compensate the loan obligations.

6.3.1.9 Owner's Point of View

The result of all revenue minus all cost shows negative result after financing in first year of operation from owners' point of view which TTD -1.39 Million. It indicates that how project net financial cash flow has been improved to compared with scenario one. The result of FNVP in second scenario is equal to TTD 25.82 Million and FIRR is 15.38% which is greater than the rate of return as 12.00%. It indicates that to compared with other alternative investment opportunities with the same degree of risk the project is feasible. Although it is not appropriate and attractive as base case scenario but with consideration of COVID-19 impact it worthful than first scenario. Ultimately, the project commercially viable for implementation.

6.3.2 Sensitivity Analysis Results of Scenario Two

Refer to result of sensitivity analysis in base case scenario the result reveals that the sensitivity of NPV towards occupancy rate and room rate. In scenario two the sensitivity analysis applied and results establish as follow.

6.3.2.1 Sensitivity of NPV to Changes in Occupancy Rate

In the second case scenario, the occupancy rate stabilised in year 2026 at 85% and NPV at this occupancy level is TTD 25.82 M. NPV equal to zero reveals the break-even for the project at 72.00% of occupancy. It indicates that the NPV is highly

sensitive to changes in level of occupancy. The sensitivity of occupancy rate is provided by table 30.

Table 30: Sensitivity Analysis - Occupancy Rate

HOTEL INVESTMENT - SENSITIVITY ANALYSIS				
OCCUPANCY RATE				
Occupancy Rate - Sensitivity Factor	0.00%	%		
			Scenario Two	
			Financial	
			FNPV (Million TTD)	**FIRR**
	Occupancy Rate (2026-2035)	% Change in Occupancy rate	25.82	15.38%
	72%	-15%	**(0.00)**	**12.00%**
	77%	-10%	**8.85**	**13.18%**
	81%	-5%	**17.34**	**14.29%**
	85%	0%	**25.82**	**15.38%**
	91%	8%	**38.54**	**16.98%**
	98%	15%	**51.27**	**18.53%**
				Occupancy Rate
			Break-even	**72%**

6.3.2.2 Sensitivity of NPV to Changes in Room Rate Per Night

In scenario two case, at the room rate of US$ 375 per room per night the result of NPV is equal to TTD 25.82 M. the analysis result shows that if room rate decreases by $15.00 the NPV reduces by 26.29%. it indicates that the NPV reduces by TTD 6.82 M. it shows that NPV is significantly sensitive to change in room rate. the sensitivity of FNPV to room rate is illustrates by table 31 in detailed.

Table 31: Sensitivity Analysis - Room Rate

HOTEL INVESTMENT - SENSITIVITY ANALYSIS				
ROOM RATE				
Rate Per Room Per Night (Scenario Two)	375	*USD*		
			Scenario Two	
			Financial	
			FNPV (Million TTD)	FIRR
			25.82	15.38%
		313	**(2.20)**	**11.70%**
		330	**5.46**	**12.73%**
		345	**12.25**	**13.63%**
		360	**19.03**	**14.51%**
		375	**25.82**	**15.38%**
		410	**41.66**	**17.36%**
		420	**46.18**	**17.91%**
		430	**50.70**	**18.46%**
		440	**55.23**	**19.00%**

USD per Night

6.3.3 The Second Scenario Result

The result of NPV for the investor's point of view is equal to TTD 25.82 M and it meets feasibility of project for investor. Although the NPV result in base case is incredibly attractive for investor but the investment is highly threatened by occurrence of COVID-19. The feasibility study of this investment suggests the second scenario case to be implemented.

Chapter 7

CONCLUSION

7.1 Conclusion

In terms of evaluating the feasibility of the all-inclusive hotel investment in T&T, CBA have been done by examination of financial and sensitivity analysis in this thesis. Besides, ADSCR and LLCR have been calculated distinctively to meet the desirability of bankers and owner's equity standpoint to observe the capability of the project towards its debt service. Consequently, in terms of addressing project's risky variables, the sensitivity analysis has been applied.

In base case scenario the viability of the project has been admitted by positive result of NPV equal to TTD 45.11 Million and IRR of 16.84%. Also, based on qualified outcome of ADSCR and LLCR the proposed loan is expected to be approved by the bankers.

In base case scenario several risky variables have been identified by sensitivity analysis. The two most important founded variable are occupancy and room rate. Firstly, NPV is significantly sensitive to occupancy rate. If the level of occupancy decreases by 15.00% NPV will reduce dramatically by 74.17%. It indicates that the occupancy rate is able to adversely impact the sustainability of hotel investment.

Secondly, room rate has been identified as another risky variable. The analysis revealed that NPV decreases by approximately TTD 5.57M when the room rate reduces by only US$ 10 per night. It denotes that the sensitivity of NPV is high to room rate.

Although, the financial analysis outcome leads the investor and banker to trust the viability of the investment, however, due to occurrence of COVID-19 pandemic this investment has become vulnerable. Therefore, the base scenario is not implementable. Hence, scenario one and two have examined in thesis.

The scenario one result shows that the project is not financially and commercially viable due to negative results of NPV, equal to TTD -3.74 Million. If the project starts to operate with pandemic crisis the project will not be sustainable. On the contrary, the scenario two outcome demonstrates positive NPV by postponing the project for two years. FNPV result was TTD 25.82 Million and FIRR was 15.38%. Furthermore, bankers are contented by ADSCR and LLCR result to grant loan.

To sum up, scenario two of the project has positive NPVs to total investment and owner's perspective. Scenario two financial analyses indicate that the project is viable for implementation and the outcome of scenario two is profitable and sustainable.

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