CHAPTER 4. ECONOMIC ANALYSIS

C O N T E N T S

Note: Necessary data in details are provided in the Annexes next to this chapter. It shows the background of the financial and economic analysis.

Tables and Figures

CHAPTER 4. ECONOMIC ANALYSIS

4.1 Introduction

A decision about the viability of a project must be made from the standpoint of national economy as well as from financial feasibility evaluation of the project entity. This project, in particular, has quite a public nature, involving improvement of infrastructures. Therefore, economic evaluation must be given due consideration.

The net benefits to the economy will consist of expenditures made by visitors in the Pattaya - Na Klua area, less the operating costs of all the facilities to be provided.

For Pattaya to grow as an international tourist resort, it is essentially needed to invest the capital necessary for the infrastructure to improve the current situation into the controlled environmental condition. Therefore, the relatively high investment required here to preserve previously mentioned environment might be warranted in comparison to the case of the non-tourism area.

In the master plan's calculation of the economic internal rate of return (EIR), both the net foreign exchange earnings as well as the gross operating profit (G.O.P.) of the tourism industry in the private sector was included in the economic benefit. As study team attached great importance to the aspect of the regional development in this project, the team took into consideration of "Multiplier Effect" to the total economy.

In this feasibility study, however, the economic benefits for calculating the EIR do not include the net foreign exchange earnings because 1) the degree of multiplier effect of this project is not accurately estimated, and 2) the economic benefits of the project might be doubled by taking the same source, that is, tourists' spendings, both for the GOP and for the net foreign exchange earnings. As a result, the EIR in this analysis is lower than the one in the master plan.

The gross foreign exchange earnings from the increase of foreign tourists and the net foreign exchange earnings (reducing the foreign portion of the construction cost, maintenance & operation cost and other leakage in tourism industries from the above) are calculated later in Section 4.6.

For the purpose of economic evaluation, the investment program has been defined more broadly than the infrastructure project, and includes; (a) infrastructure for tourism area and the towns of Pattaya and Na Klua, including the development of social infrastructures for the local population, such as health and civil centers, school and city park; (b) superstructure facilities by public investment, including the amenity cores, inland activity facilities and beach facilities; (c) superstructure facilities by private investment, including hotels, restaurants and other private amenity facilities.

The economic benefits of each element of the public infrastructure* can be defined theretically, but is difficult to express separately in monetary value in this project. Although it amounts to a considerable sum, it is not included in the economic benefit of EIR calculations in this analysis.

* Examples

Road and Street	Saving energy & time, prevention of traffic accidents
Sewerage	Saving expenditure for alternative projects, disease prevention
Storm Water Drainage	Prevention of damage by floods, effective land use
Solid Waste Disposal	Cost down compared to the current system, disease prevention
Port Facilities	Saving expenditure of alternative project, prevention of water pollution
Water Supply	Saving expenditure for the current small water supply facilities

The key benefits from this project can be summarized as an integrated one which combine various effects of these facilities and attract more tourists for producing additional benefits to the tourism industries rather than the individual economic benefits earned in respective facilities. More benefit to the industry will produce other economic benefit such as increase of the net foreign exchange earnings to the national economy and generating new employment demands directly or indirectly in the study area.

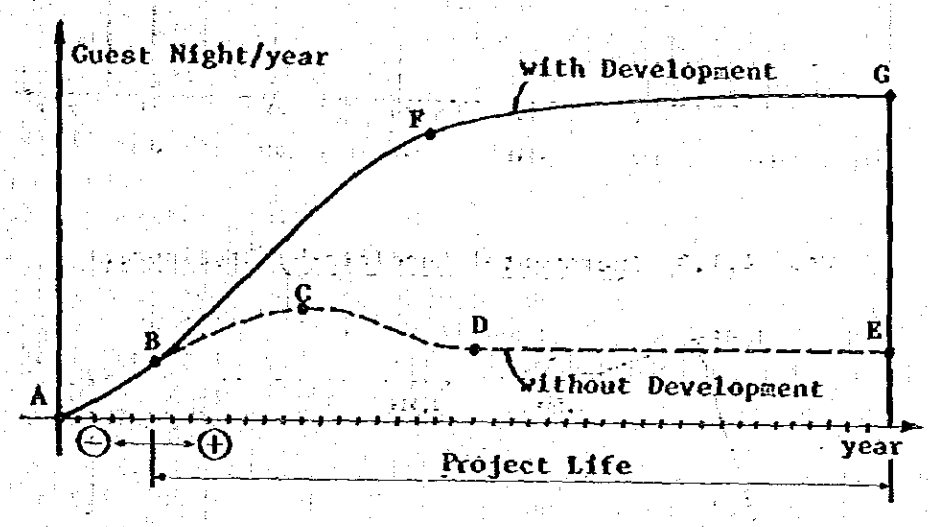
Tourist arrivals in Pattaya are estimated to increase till 1996, including the areas being developed at present and in Southern Pattaya area to be developed in pahse-2. In this report, the economic analysis is made basing on the tourist arrivals to be accommodated in the phase-1 area.

The number of hotel rooms in the phase-1 development area will be 4,300, adding new 700 rooms to existing 3,600 rooms at the end of phase-1. Possible guest nights estimated in phase-1 will reach a saturation point after 1986.

As shown in Fig. 4.1.2, guest nights a year in 1976 is 604,000 person-nights, 1,980,000 person-nights in 1986, and this level will be kept constant after 1986.

The economic benefit includes only the incremental gross operating profit of the tourism industry. The mode of this incremental benefit is illustrated in Fig. 4.1.1.

Fig. 4.1.1 Effect of Development in a Model Figure



Notes;

Stage A ∿ B	:	Arrivals increasing spontaneously,
Stage B ∿ C	:	Arrivals still increasing but a low growth rate,
Point C	:	Peak Arrivals with a deterioration of environment
Stage C ∿ D	:	Arrivals decreasing
Point D	:	Arrivals going down to a bottom
Stage D ∿ E	:	Arrivals keeping on a bottom.
Stage B ∿ F	:	Arrivals increasing further by an improved environment
Point F	:	Arrivals growth rate going to a lower rate
Stage F ∿ G	:	Arrivals keeping on a same level by a competitive sales to the international and/or domestic tourism demand.

Incremental Arrivals by development: Area of BEG.

Fig. 4.1.2 Incremental Arrivals by Development

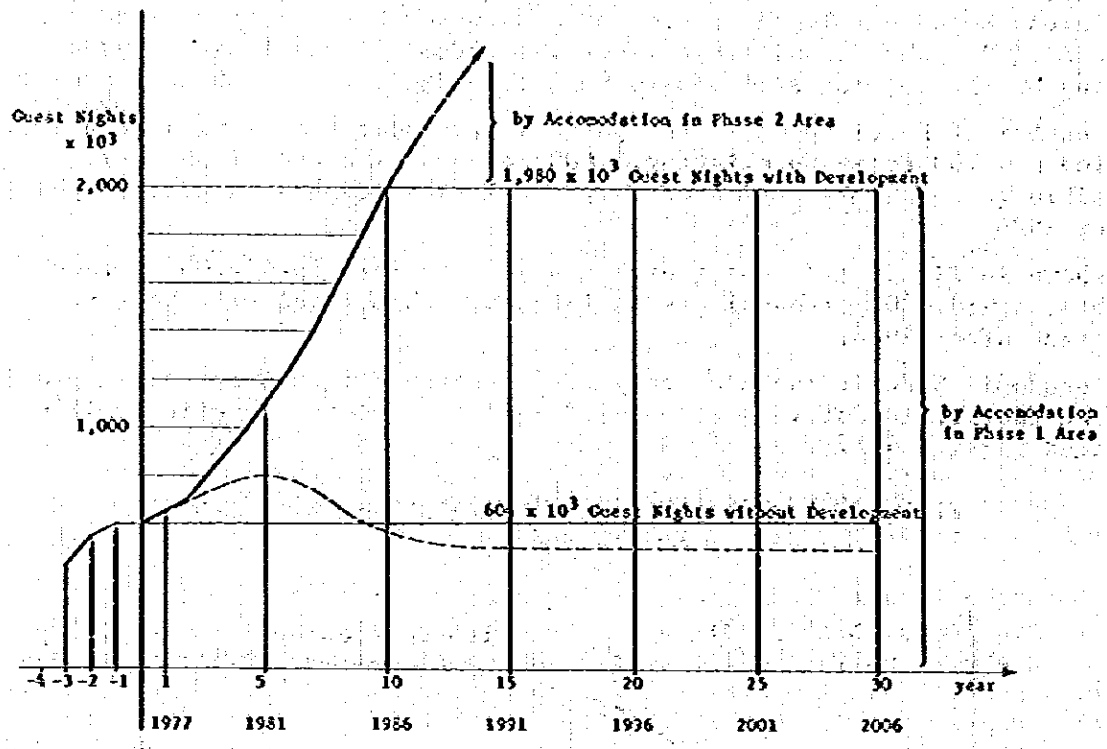
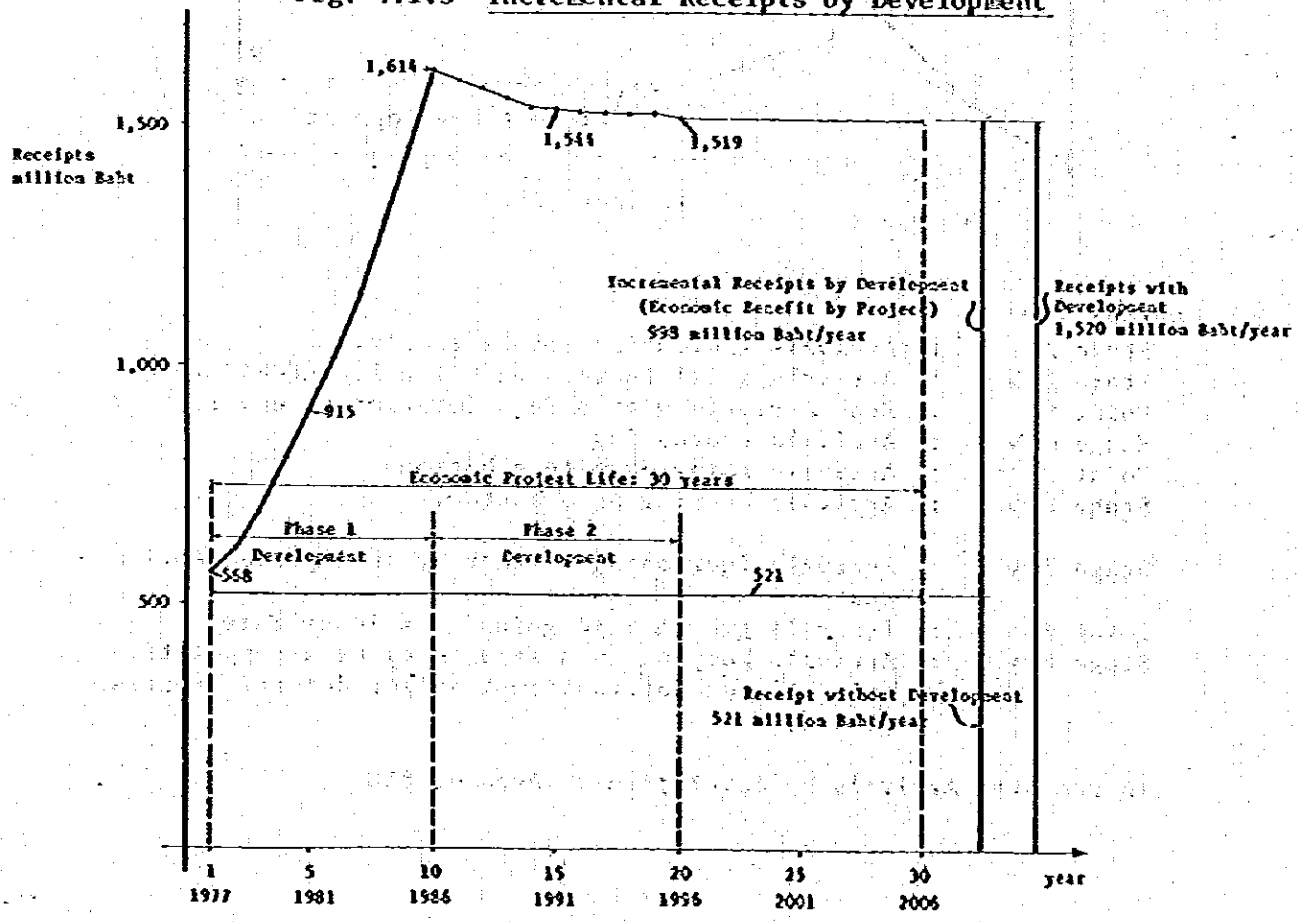


Fig. 4.1.3 Incremental Receipts by Development



4.2 Scope of Economic Analysis

Flow Charts in Figs. 1 to 7 at the beginning of the Annexes shows the order of the economic analysis. Works to be evaluated in the economic analysis include incremental public and private investments as below.

(a) Public Sector

Works included in the economic analysis, namely,

1) road and street, 2) sewerage system, 3) storm water drainage system, 4) solid waste disposal system, 5) port facilities, and 6) water supply system.

Other public facilities below are excluded in the financial analysis but added in the economic analysis.

7) Amenity core, inland activity zones and beach facilities.
8) Social infrastructures such as:

- School: Schoolhouse and related facilities
- Community facilities: Communication Center, Police Boxes, Fire Department and Hospital, etc.
- Open Space: City Park, Children Park and Promenade

(b) Private Sector

9) Hotels
10) Restaurants, etc.

Total project cost with contingencies is 2,959.8 million Baht or US$148 million which includes a land cost of 855.5 million Baht, a construction cost of 1,918.7 million Baht and a consulting service of 185.6 million Baht. These costs include social infrastructure costs for hospital, school, community center and city parks, although it is assumed that their benefits equal their costs.

For defining the investment cost and evaluation of the project, these 10 item facilities were grouped into two categories; namely, item 1) ~ item 6) as "category - A" and the other items as "category - B". Economic evaluation concerns all the items, however, financial analysis for the proposed infrastructure works concern only "category A".

Investment costs are calculated separatly into two zones, namely, the tourism area and the residential area. However, the cost of the integrated facilities which are utilized by both zones for economic reasons was separated arithmetically based on the demand (i.e. sewege treatment facilities in the sewerage system) generated within the zones.

Table 4.2.1 Total Project Cost by Infrastructure and Other Facilities
Phase 1 up to 1986

Unit: million Baht

Category	Land Acquisition [*3]	Civil Works and Equipment	Consulting Services	Total Physical Facilities	Project Administration	Total Project Cost	US$ million
A: Infrastructure [*1]	221.8	706.9	65.3	994.0 (35%)	98.2	1,092.2	54.6
B: Other Facilities [*2]	633.7	961.1	96.1	1,690.9 (57%)	30.8	1,721.7	86.1
Base Line Cost	855.5	1,668.0	161.4	2,684.9	129.0	2,813.9	140.7
Physical Increase	-	117.0	11.3	128.3 (4%)	-	128.3	
Price Increase	-	133.7	12.9	146.6 (5%)	-	146.6	
Contingencies Sub-Total	-	250.7	24.2	274.9	-	274.9	13.8
Total Project Cost	855.5 (29%)	1,918.7 (65%)	185.6 (6%)	2,959.8 (100%)	129.0	3,088.8	154.5

Notes: [*1] : Public Infrastructure such as Road and Street System, Sewerage System, Storm Water Drainage System, Solid Waste Collection and Disposal, Port Facilities and Water Supply System. for Financial and Economic Analysis.

[*2] : Other Facilities in Public Sector -- Tourism -- Amenity Core, Inland Activity Facilities.
-- Residential -- School, Hospital and Open space.

Other Facilities in Private Sector -- Tourism -- Hotels and Restaurants for Economic Analysis.

[*3] : No contingencies put on the land Acquisition.

Table 4.2.2 Total Project Cost of Infrastructure by Major Project Components Phase-1
Category-A

Unit: million Baht

Major Project Components	Land Acquisition	Civil Works and Equipment	Consulting Services	Total Physical Facilities	Project Administration	Total Project Cost	US$ million
Road and Street System	182.5	129.1	11.5	323.1 (29%)	26.0	349.1	17.4
Sewerage System	18.1	159.3	14.7	192.1 (17%)	19.9	212.0	10.6
Storm Water Drainage System	18.4	22.9	2.4	43.7 (4%)	5.6	49.3	2.5
Solid Waste Disposal System	0.6	19.7	1.8	22.1 (2%)	13.1	35.2	1.8
Port Facilities	-	53.6	5.4	59.0 (5%)	6.2	65.2	3.2
Water Supply System [*1]	2.2	322.3	29.5	354.0 (32%)	27.4	381.4	19.1
Base Line Cost	221.8	706.9	65.3	994.0	98.2	1,092.2	54.6
Physical Increase	-	49.5	4.6	54.1 (5%)	-	54.1	2.7
Price Increase	-	56.6	5.2	61.8 (5%)	-	61.8	3.1
Contingencies Sub-Total	-	106.1	9.8	115.9	-	115.9	5.8
Total Project Cost	221.8 (20%)	813.0 (73%)	75.1 (7%)	1,109.9 (100%)	98.2	1,208.1	60.4

Note [*1] Cost on Water Supply System was estimated tentatively based on the study output by the Masterplan.

Table 4.2.3 Total Project Cost by Other Facilities

Category B

Unit: million Baht

Major Project Components	Land Acquisition	Civil Works and Equipment	Consulting Services	Total Physical Facilities	Project Administration	Total Project Cost	US$ million
Public Amenity Core #1	258.0	130.0	13.0	401.0 (22%)	30.8	431.8	21.6
Social Infrastructure #2	140.6	235.3	23.5	399.4 (22%)	-	399.4	20.0
Hotel and Restaurant #3	235.1	595.8	59.6	890.5 (48%)	-	890.5	44.5
Base Line Cost	633.7	961.1	96.1	1,690.9	30.8	1,721.7	86.1
Physical Increase	-	67.5	6.7	74.2 (4%)	-	74.2	
Price Increase	-	77.1	7.7	84.8 (4%)	-	84.8	
Contingencies Sub-Total	-	144.6	14.4	159.0	-	359.0	8.0
Total Project Cost	633.7 (34%)	1,105.7 (60%)	110.5 (6%)	1,849.9 (100%)	30.8	1,880.7	94.1

Notes: #1 : Public Amenity Core ..... Main Amenity Core, Northern Core, Inland Activity Zones, and Beach Facilities.

#2 : Social Infrastructure ..... School and their related facilities, Community Facilities as Communication Center, Fire Department and Hospital and Open Space as City Park, Children Play Park and Promenade.

#3 : Hotel and Restaurant ..... by Privatate Sector.

Table 4.2.4 Breakdown of Project Cost of Infrastructure in Areas

Category A

Unit: million Baht

Area	Land Acquisition			Civil Works and Equipment			Consulting Services			Total Physical Facilities			Project Administration			Total Project Cost			
	L	F	T	L	F	T	L	F	T	L	F	T	L	F	T	L	F	T	US$ million
Tourism Area	192.9	-	192.9	216.0	39.3	255.3	-	26.3	26.3	318.9	95.6	415.5 (21%)	48.8	-	48.8	367.7	95.6	464.3	23.2
Restcentral Area	418.9	-	418.9	323.7	85.0	409.9	-	39.0	39.0	642.6	139.0	578.6 (31%)	49.4	-	49.4	491.0	139.0	628.0	31.4
Base Line Cost	221.8	-	221.8	539.7	148.3	787.0	-	65.3	65.3	760.5	233.6	994.1	98.2	-	98.2	858.7	233.6	1,092.3	54.6
Physical Increase	-	-	-	37.7	11.8	49.5	-	4.6	4.6	37.7	16.4	54.1 (3%)	-	-	-	37.7	16.4	54.1	
Price Increase	-	-	-	43.1	13.5	56.6	-	5.2	5.2	43.1	18.7	61.8 (3%)	-	-	-	43.1	18.7	61.8	
Contingencies Sub-Total	-	-	-	80.8	25.3	106.1	-	9.8	9.8	80.8	35.1	115.9	-	-	-	80.8	35.1	115.9	5.8
Total Project Cost	221.8	-	221.8 (11%)	619.5	193.6	813.1 (39%)	-	75.1	75.1 (3%)	841.3	268.7	1,110.0 (53%)	98.2	-	98.2	939.5	268.7	1,208.2	60.4

Note: L = Local Currency portion in million Baht

F = Foreign Currency portion in million Baht

T = Total

Table 4.3.1 Economic Costs

unit: million Baht

No.	Year	Investment Costs (A) Category "A" Infra-structure	Category "B" Social Infra.	Category "B" Amenity Core	Category "B" Private Invest.	Sub-total	Total	(B) Maintenance Operation Cost	(C) Administration Cost	(D) Sub-Total (A+B+C)	Tax in Investment Cost (E) Category "A"	Category "B"	Total	Economic Cost (D) – (E)
1	1977	-	-	-	22.3	22.3	22.3	-	-	22.3	-	0.1	0.1	22.2
2		-	-	-	22.5	22.5	22.5	-	-	22.5	-	0.1	0.1	22.4
3		33.1	3.5	2.3	30.5	36.3	69.4	-	3.9	73.3	-	0.1	0.1	73.2
4		740.9	180.8	26.3	214.2	421.3	1,162.2	1.7	5.1	1,169.0	42.7	19.7	62.4	1,106.6
5		154.3	136.6	30.4	190.4	357.4	511.7	8.6	6.5	526.8	4.2	21.0	25.2	501.6
6		70.8	40.8	78.3	276.2	395.3	466.1	9.6	7.1	482.8	2.1	19.5	21.6	461.2
7		30.1	23.3	72.7	73.2	169.2	199.3	10.2	7.1	216.6	0.8	5.1	5.9	210.7
8		38.3	13.1	70.4	72.2	155.7	194.0	10.4	7.1	211.5	0.9	4.2	5.1	206.4
9		38.5	13.7	71.4	72.4	157.5	196.0	11.0	7.1	214.1	1.8	4.1	5.9	208.2
10	1986	5.0	13.7	70.6	27.6	111.9	116.9	11.8	7.1	135.8	0.9	0.9	1.8	134.0
11		7.8	-	-	-	-	7.8	13.1	3.9	24.8	0.8	-	0.8	24.0
12		6.4	-	-	-	-	6.4	13.3	3.9	23.6	0.8	-	0.8	22.8
13		6.4	-	-	-	-	6.4	13.4	3.9	23.7	0.8	-	0.8	22.9
14		6.4	-	-	-	-	6.4	13.5	3.9	23.8	0.8	-	0.8	23.0
15		6.4	-	-	-	-	6.4	13.6	3.9	23.9	0.8	-	0.8	23.1
16		6.4	-	-	-	-	6.4	13.7	3.9	24.0	0.8	-	0.8	23.2
17		6.4	-	-	-	-	6.4	13.7	3.9	24.0	0.8	-	0.8	23.2
18		6.4	-	-	-	-	6.4	13.7	3.9	24.0	0.8	-	0.8	23.2
19		6.4	-	-	-	-	6.4	13.7	3.9	24.0	0.8	-	0.8	23.2
20	1996	6.4	-	-	-	-	6.4	13.7	3.9	24.0	0.8	-	0.8	23.2
21		10.3	-	-	-	-	10.3	15.1	3.9	29.3	1.1	-	1.1	28.2
22		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
23		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
24		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
25		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
26		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
27		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
28		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
29		8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
30	2006	8.3	-	-	-	-	8.3	15.1	3.9	27.3	1.1	-	1.1	26.2
Total		1,261.4	425.5	422.4	1,001.5	1,849.4	3,110.8	349.7	129.0	3,589.5	72.4	74.8	147.2	3,442.3

4.3 Economic Costs and Benefits

The project is a on a large scale, including infrastructures, amenity cores, private hotels and restaurants. Some of the facilities to be provided would be served and paid directly by the tourists, while others would be compensated indirectly. Accordingly, the cost and the benefits have been carefully analyzed so as to avoid any double counting.

Economic costs must be converted from the financial cost, taking into account discrepancy between market prices and true economic costs. To analyse the economic aspect of project the following considerations have been taken.

4.3.1 Economic Costs

First, capitals invested to this project in the public sector and in the private sector are conducted. Next, maintenance and operation costs in the public sector 1) ∿ 6) are calculated. Administration costs in the public sector 1) ∿ 7) are added, too. Then, taxes and tariffs included in respective costs are subtracted from the total of all above mentioned 1) ∿ 10) in order to adjust transfer items.

Economic Costs after adjusting transfer items up to 2006 are shown in Tables 4.3.1. Other details are shown in Annex 6 and Annex 7.

Costs of unskilled labor were calculated so as to get the real economic costs. Since the construction and operation of the project are expected to employ relatively unskilled workers from the surrounding region who are currently employed or unemployed. Evaluation of the investment calls for some of the labor unit costs to be set below the current market wage-rates. This shadow pricing, however, does not affect considerably on the real economic costs of labor because the costs are relatively small, namely, about 100 million Baht in the construction cost before contingencies.

Table 4.3.2 Incremental Amount of Economic Benefit

Unit: million Baht

No.	Year	Economic Benefit	Foreign Cost	Corporate Income Tax
1	1977	18.2	3.1	0.1
2	1978	42.1	5.7	0.3
3	1979	89.8	10.0	0.6
4	1980	134.9	15.7	1.4
5	1981	177.1	22.9	6.6
6	1982	214.1	31.0	10.3
7	1983	253.4	40.1	13.9
8	1984	323.3	48.5	24.3
9	1985	391.2	57.0	34.4
10	1986	457.4	67.0	43.2
11	1987	442.1	64.9	41.1
12	1988	442.3	64.6	41.2
13	1989	438.0	63.5	40.9
14	1990	433.4	62.4	40.4
15	1991	432.9	62.1	40.5
16	1992	427.9	61.0	40.0
17	1993	428.4	61.0	40.1
18	1994	428.7	61.0	40.1
19	1995	428.0	60.6	40.1
20	1996	423.0	59.6	39.6
∫	∫	↓	↓	↓
30	2006	423.0	59.6	39.6
	Total	10,656.2	1,517.7	935.1

Table 4.3.3 Incremental Arount: Hotel Industry

Unit: million Baht

No.	Year	(A) Gross Operating Profit	(B) Business Tax	(C) Tax in Cost	(A+B+C) Economic Benefit	Foreign Cost	Corporate Income Tax
1	1977	11.0	1.7	0.6	13.3	1.3	0
2	1978	27.4	3.5	0.9	31.8	2.0	0
3	1979	62.3	7.1	1.6	71.0	3.3	0
4	1980	93.4	11.2	2.7	107.3	5.6	0.6
5	1981	119.6	15.8	4.5	139.9	9.1	5.6
6	1982	139.0	20.6	6.7	166.3	13.5	8.9
7	1983	159.8	25.9	9.2	194.9	18.5	12.3
8	1984	208.5	32.4	11.1	252.0	22.2	22.3
9	1985	255.7	38.8	13.0	307.5	26.1	32.0
10	1986	298.9	45.9	15.5	360.3	31.2	40.4
11	1987	289.0	44.7	15.2	348.9	30.5	38.4
12	1988	290.0	44.9	15.3	350.2	30.7	38.6
13	1989	288.9	44.6	15.2	348.7	30.5	38.4
14	1990	286.7	44.2	15.0	345.9	30.1	38.0
15	1991	287.3	44.3	15.0	346.6	30.2	38.1
16	1992	284.6	43.7	14.8	343.1	29.7	37.6
17	1993	285.3	43.9	14.9	344.1	29.8	37.7
18	1994	285.8	43.9	14.9	344.6	29.9	37.8
19	1995	286.0	44.0	14.9	344.9	29.9	37.8
20	1996	283.2	43.4	14.7	341.3	29.4	37.3
∫	∫	↓	↓	↓	↓	↓	↓
30	2006	283.2	43.4	14.7	341.3	29.4	37.3
	Total	7,074.4	1,078.5	362.7	8,515.6	727.5	874.8

4.3.2 Economic Benefits

Pattaya is an established beach resort in the international tourism market having an accommodation capacity of more than 3,600 hotel rooms and a spontaneously developed tourism center.

According to the result of tourist demand analysis, the additional hotel rooms estimated in the phase 1 is 700 rooms, that is to say about 20% increase of the current accommodation level. In the economic benefits it is excluded the tourism industry's revenue generating on the current arrivals by the existing accommodation levels. Here economic benefits include only the incremental gross operating profit of the tourism industry. Sales costs, personnel costs, administration costs, and new public charges created by this project are subtracted to obtain the gross operational profit from the total sales of the hotel industry and other tourism industries. Tax portion included in the respective costs are added back for adjusting the transfer items like in the case of economic costs.

Business tax that tourists pay are also added to obtain the economic benefits. These calculations on the economic Benefit were made for "with case" of the development and "without case" of the development.

Economic Benefits after the adjustment of the transfer items are shown in tables 4.3.2 - 4.3.4. Other details are shown in Annex 12.

Improved infrastructure facilities in the residential areas in Na Klua and Pattaya constitute large benefits to the local population. The economic analysis has not taken into account these benefits, because of difficulties of separating that part of the investment which will benefit local population from the investment that is needed essentially for the development of tourism in Pattaya.

Table 4.3.4 Incremental Amount: Other Tourism Industries

Unit: million Baht

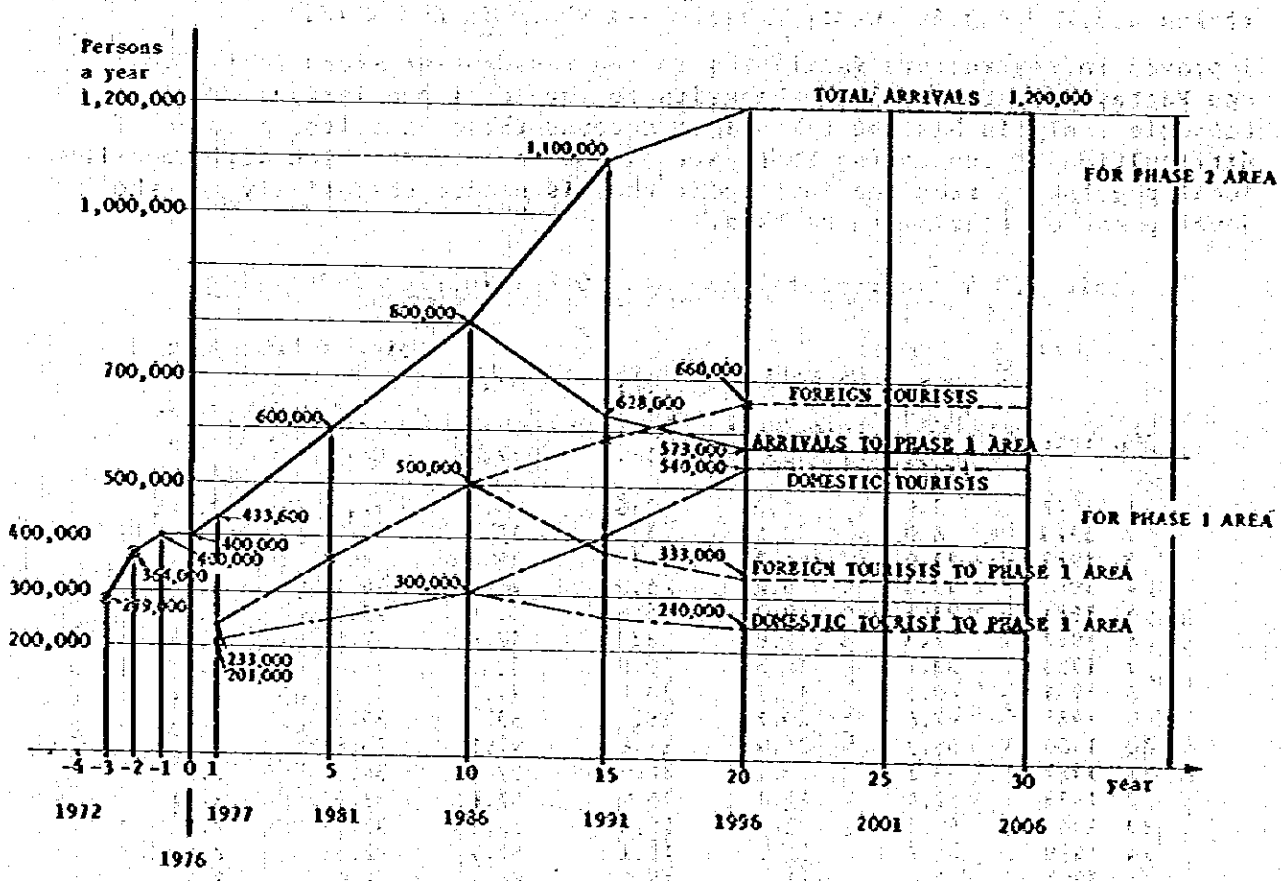
No.	Year	(A) Gross Operating Profit	(B) Business Tax	(C) Tax in Cost	(A+B+C) Economic Benefit	Foreign Cost	Corporate Income Tax
1	1977	2.9	1.2	0.8	4.9	1.8	0.1
2	1978	6.0	2.5	1.8	10.3	3.7	0.3
3	1979	11.0	4.5	3.3	18.8	6.7	0.6
4	1980	15.8	6.8	5.0	27.6	10.1	0.8
5	1981	21.2	9.2	6.8	37.2	13.8	1.0
6	1982	27.3	11.8	8.7	47.8	17.5	1.4
7	1983	33.2	14.5	10.8	58.5	21.6	1.6
8	1984	40.5	17.7	13.1	71.3	26.3	2.0
9	1985	47.6	20.7	15.4	83.7	30.9	2.4
10	1986	55.3	24.0	17.8	97.1	35.8	2.8
11	1987	53.2	23.1	16.9	93.2	34.4	2.7
12	1988	52.4	22.8	16.9	92.1	33.9	2.6
13	1989	50.8	22.1	16.4	89.3	33.0	2.5
14	1990	49.7	21.7	16.1	87.5	32.3	2.4
15	1991	49.0	21.4	15.9	86.3	31.9	2.4
16	1992	48.2	21.0	15.6	84.8	31.3	2.4
17	1993	47.9	20.9	15.5	84.3	31.2	2.4
18	1994	47.7	20.9	15.5	84.1	31.1	2.3
19	1995	47.2	20.6	15.3	83.1	30.7	2.3
20	1996	46.3	20.3	15.1	81.7	30.2	2.3
/	/	↓	↓	↓	↓	↓	↓
30	2006	46.3	20.3	15.1	81.7	30.2	2.3
	Total	1,216.2	530.7	393.7	2,140.6	790.2	60.3

4.3.3 Gross Operating Profit of Tourism Industry

Tourism industries are divided into two categories as hotel industry and other related tourism industries. A fixed cost on hotels business is assumed almost the same amount as a variable cost which changes proportionally with the sales, when room occupancy rate is about 70%. Below this occupancy levels, a fixed cost will be predominately higher than a variable cost. When room occupancy rate is about 35%, a fixed cost will become about 70% of the total cost. Therefore, the variable cost cannot act for representing the cost of hotel operation.

On the other hand, other tourism related facilities such as restaurants, shops and other relatively smaller enterprises than the hotel industry normally, have a lower fixed cost and a higher variable cost than those of the hotel industry. Therefore, only the variable cost is applied to this industry.

Fig. 4.3.1 Visitors (Persons) Arrivals to Phase 1 Area



(a) Hotel Industry

Tourist arrivals in Pattaya are estimated to increase till 1996, including the areas being developed at present and in Southern Pattaya area to be developed in phase-2. In this report, the financial analysis is made basing on the tourist arrivals to be accommodated in the phase-1 area.

The number of hotel rooms in the phase-1 development area will be 4,300, adding new 700 rooms to existing 3,600 rooms at the end of phase-1. Possible guest nights estimated in phase-1 will reach a saturation point after 1986.

As shown in Table 4.3.5, guest nights a year in 1977 will be 657,000 person nights, 1,980,000 person-nights in 1986, and this level will be kept constant after 1986.

Average length of stay of tourists will be expected to be longer along with the improvement of infrastructure, amenity core, and beach facilities after implementation of the project. Average day of stay will increase from 1.5 days in 1977 to 2.5 days in 1986, and further to 3.4 days in 1996. Thus, as possible guest nights a year in phase-1 area will be constant after 1986, guest arrivals a year will decrease. At this stage phase-2 area will be developed and incremental guest arrivals will be accomodated there.

Fig. 4.3.2 Guest Nights and Room Occupancy Rate: Phase 1

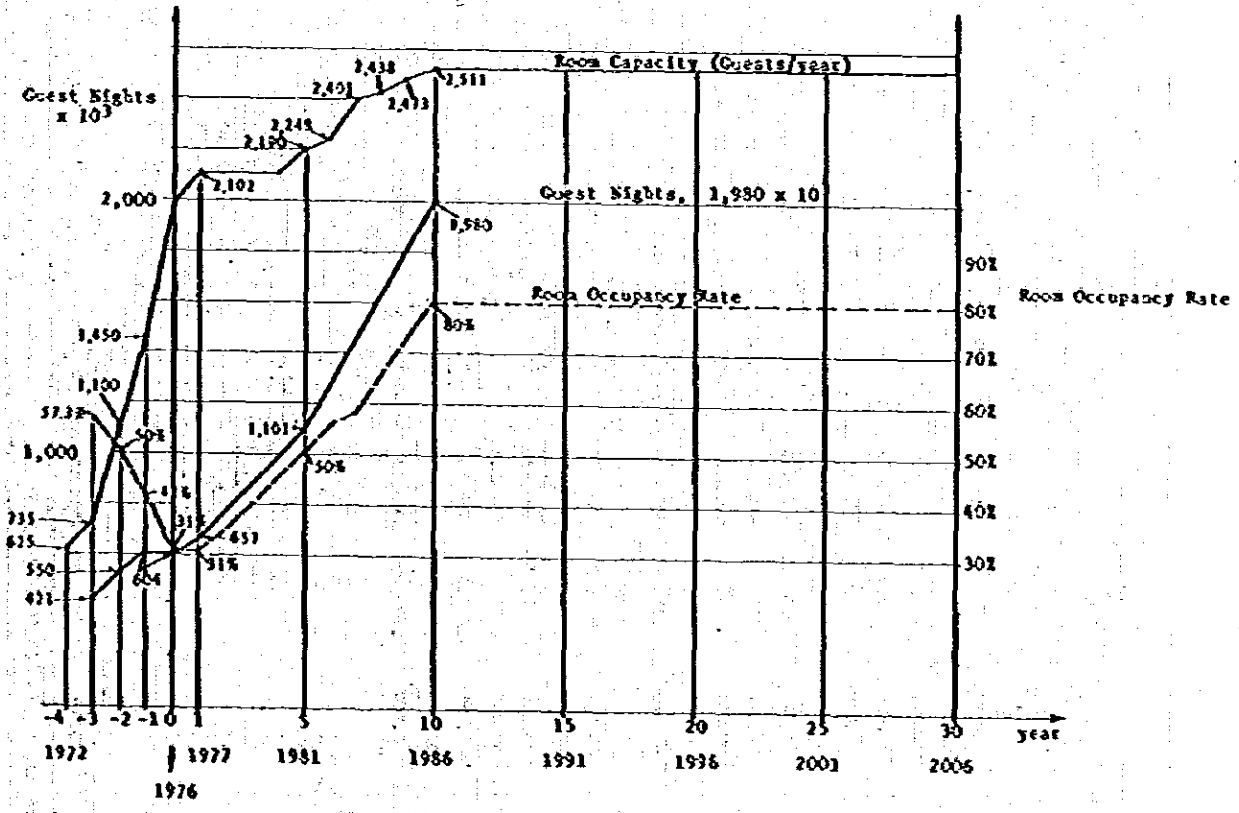


Table 4.3.5 Expenditure and Receipt with Development

Year	Expenditure and Receipt With Development															
	Visitors (Persons) Phase 1/Phase 2			Visitors (Persons) Phase 1				(nights) Average Length of Stay		Expenditure (Baht)			Receipt (million Baht)			
	Foreign Tourists	Domestic Tourists	Total	Foreign Tourists	Domestic Tourists	Total	One-day Visitors	Foreign Tourists	Domestic Tourists	Foreign Tourists	Domestic Tourists	One-day Visitors	Foreign Tourists	Domestic Tourists	One-day Visitors	Total
1977	233,020	200,580	433,600	233,020	200,580	433,600	324,400	1.7	1.3	890	651	130.0	356.2	169.8	42.2	568.2
1978	258,412	211,610	470,022	258,412	211,600	470,022	357,800	1.7	1.3	890	651		391.0	179.1	46.5	616.6
1979	286,414	223,090	509,504	286,414	223,090	509,504	391,200	1.8	1.4	880	644		453.7	201.1	50.9	705.7
1980	317,290	235,012	522,302	317,290	235,012	521,302	424,600	1.9	1.5	870	637		524.5	224.6	55.2	804.3
1981	352,000	248,000	600,000	352,000	248,000	600,000	458,000	2.0	1.6	860	630		605.4	250.0	59.5	914.9
1982	377,720	257,680	635,400	377,720	257,680	635,400	491,400	2.2	1.6	850	630		706.3	259.7	63.9	1,029.9
1983	405,170	267,719	672,889	405,170	267,719	672,889	524,800	2.4	1.6	840	630		816.8	269.9	68.2	1,154.9
1984	434,640	277,949	712,589	434,640	277,949	712,589	558,200	2.6	1.7	830	623		938.0	294.4	72.6	1,305.0
1985	466,110	288,522	754,632	466,110	288,522	754,632	591,600	2.8	1.7	820	623		1,070.2	305.6	76.9	1,452.7
1986	500,000	300,000	800,000	500,000	300,000	800,000	625,000	3.0	1.7	810	623		1,215.0	317.7	81.3	1,614.0
1987	516,300	320,500	836,800	468,750	282,353	751,103		3.2	1.7	800	623		1,200.0	299.0	81.3	1,580.3
1988	533,010	342,283	875,293	441,170	266,667	707,837		3.4	1.8	800	616		1,200.0	295.7		1,577.0
1989	550,120	365,436	915,556	416,667		683,334		3.6	1.8	790	616		1,185.0	295.7		1,562.0
1990	567,630	390,042	957,672	394,737		661,404		3.8	1.8	780	616		1,170.0	295.7		1,547.0
1991	588,000	412,000	1,100,000	375,000	252,632	627,632		4.0	1.9	780	609		1,170.0	292.3	81.3	1,543.6
1992	601,730	435,270	1,037,000	365,854		618,468		4.1	1.9	770	609		1,155.0	292.3	81.3	1,528.6
1993	615,650	459,719	1,075,369	357,143		609,775		4.2	1.9	770	609		1,155.0	292.3		1,528.6
1994	629,760	485,398	1,115,158	348,837		601,469		4.3	1.9	770	609		1,155.0	292.3		1,528.6
1995	644,040	512,379	1,156,419	240,909	240,000	580,909		4.4	2.0	770	602		1,155.0	297.6		1,533.9
1996	660,000	540,000	1,200,000	333,333		573,333		4.5	2.0	760	602		1,140.0	297.6		1,518.9
1997																
1998																
1999																
2000																
2001																
2002																
2003																
2004																
2005																
2006	660,000	540,000	1,200,000	333,333	240,000	573,333	625,000	4.5	2.0	760	602	130.0	1,140.0	297.6	81.3	1,518.9
Total	16,137,016	12,173,189	28,380,205	10,806,506	7,493,044	18,299,550	17,247,000	—	—	—	—	—	30,162.2	8,398.4	2,249.2	40,803.7
Share	57%	43%	100%										74%	21%	5%	100%

Table 4.3.6 Guest Nights and Room Occupancy Rate at Key Years

No.	Year	Phasing	Arrivals (1,000 Arrivals)	Guest Night (1,000 Visitors)	Hotel Rooms Phase 1 Area	Room Occupancy Rate
-4	1972		N.A	N.A	1,071	
-3	1973		279*	421	1,258	57.3
-2	1974		364*	550	1,884	50.0
-1	1975		400	604	2,484	41.6
0	1976		400	604	3,365	30.7
1	1977		433	657	3,600*1	31.2
2	1978		470	714	3,600	34.0
3	1979		519	842	3,600	40.0
4	1980	Phase-1	552	955	3,600	45.4
5	1981		600	1,101	3,750*2	50.3
10	1986		800	2,010	4,300*2	80.0
15	1991		628	1,980	4,300	78.8
20	1996	Phase-2	573	1,980	4,300	78.8
25	2001		573	1,980	4,300	78.8
30	2006		573	1,980	4,300	78.8

Notes: 1) Existing hotel rooms ..... 3,600 rooms.
2) Additional hotel rooms for phase 1 area.

Year	1981	1982	1983	1984	1985	1986
Additional	150 rooms	100	262	62	60	66
Accumulated	150 rooms	250	512	574	634	700

An average spending per guest per day is analyzed separately by room charges, meals, touring, shopping, and others as shown in Annex 2, Expenditure by Tourists.

Average expenditure per guest per day is considered to vary in accordance with length of stay. Generally speaking, expenditure for room and meals will be constant, while expenditure for touring, shopping, and others will become smaller, as the days stayed increase.

Room rates in Pattaya was analyzed based on current information by the T.O.T. Pattaya Office and defined the room rates for the first class and economy class. Average room rate is US$18/day or 360 Baht/day considering group and off-season discounts. The room rate after tax and service charge is US$21.3/day or 426 Baht/day. According to the data of the T.O.T. and analysis by the study team, the following was revealed.

Table 4.3.7 Average Expenditure per Guest per Day

Unit: U.S. Dollar

Days stayed (night)	Total	Hotel Industry	Other Tourism Industries
2	43.2 (100.0%)	25.5 (59.0%)	17.7 (41.0%)
5	37.6 (100.0%)	24.0 (63.8%)	13.6 (36.2%)
8	35.3 (190.0%)	23.2 (65.7%)	12.1 (34.3%)

From the above analysis, tourists' expenditure in the hotels is expected to decrease slightly in the future, provided that the annual accommodation capacity of the hotels is constant and tourists' average length of stay increases.

Profit and Loss Statement of the hotel industry is analyzed in consideration of operating expenses of two hotel classes: First class for foreign tourists and economy class for domestic tourists.

Operating expenses are classified into three subdivided groups:

- Group A; sales costs for foods, beverages, and others
- Group B; payroll and other departmental expenses,
- Group C; other undistributed expenses such as administration, management, promotion, utilities and maintenance.

Addition, the operating expenses are estimated in accordance with hotel classes and room-occupancy rates.

Annex 4, Profitability of the Tourism Industry shows more details on this subject.

The results of the analysis are as follows:

Table 4.3.8 Cost and Expenses in Hotel Industry

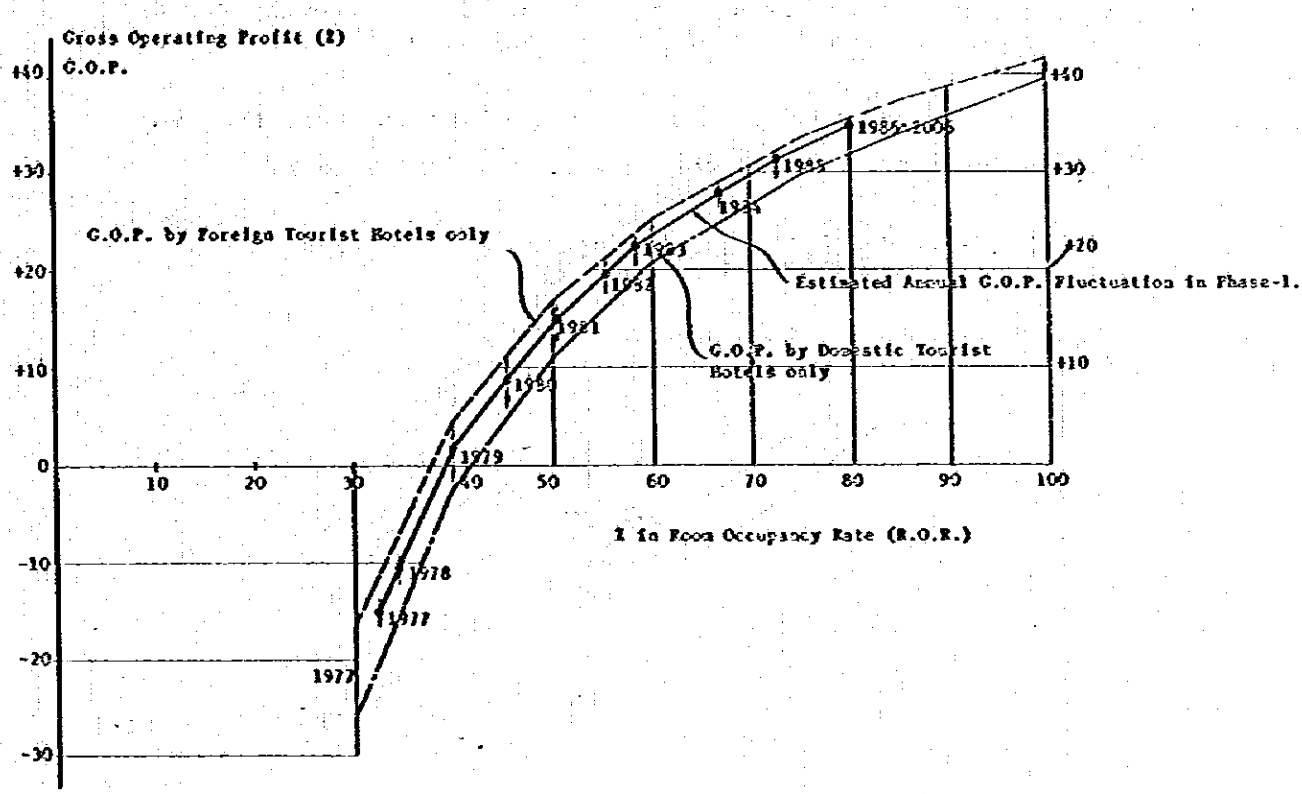
Unit: x 10^3 Baht/room/year

Class	Foreign Tourist		Domestic Tourist		Average *2	
Cost Group	Fixed Cost	Variable Cost	Fixed Cost	Variable Cost	Fixed Cost	Variable Cost
A	-	54.7R *1	-	38.5R	-	51.3R
B	36.4	+ 27.5R	28.9	+ 19.3R	34.3	+ 25.4R
C *3	31.5	+ 9.6R	24.0	+ 6.9R	29.3	+ 8.9R
TOTAL	67.9	+ 91.9R	52.9	+ 64.7R	63.6	+ 85.6R

Notes:
1. R means Room Occupancy Rate (%)
2. Average ratio of Foreign Tourist (guest-nights) to Domestic Tourist (guest-nights) is 2.85 for 30 years by 2006.
3. Group C, operating cost includes the current utility charges.
4. Utility charges newly created by the implementation are excluded in this table.

According to the findings by the study team, the hotel occupancy rate of the Pattaya area is low, as a whole; consequently, the Gross Operating Profit of the hotel industry is presently negative. Annex 4 shows the typical gross operating profit will be changed to the positive value from the negative one within few years after the implementation of the project. Fig. 4.3.3 shows the inclination of the profit of the hotel industry in the future. In this estimate, an increase of the number of hotel rooms is also taken into account.

Fig. 4.3.3 Gross Operating Profit (G.O.P.)
for Hotel Industry in Pattaya



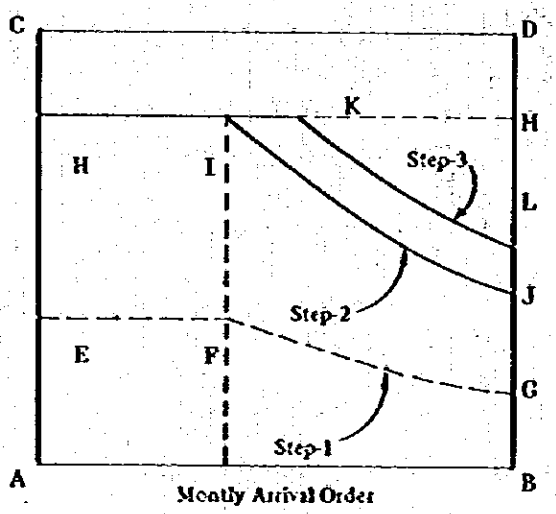
As infrastructures are being implemented further, promotion becomes necessary to attract more tourists to Pattaya. The reason for intensive promotional efforts is to make less the seasonal fluctuations of tourist arrivals. Tourist arrivals during the peak months of November through April significantly differ from that of the off-season months. The results of analysis on the seasonal fluctuation is shown in Annex 1, Seasonal Pattern of Tourist Arrivals.

The next objective is to extend the peak months to include May and October so that the duration of the peak season becomes seven months instead of the current five months.

It will be very difficult to raise the annual room occupancy rate up to 80% under current seasonal pattern of tourist arrivals, if neglecting the efforts to increase the number of peak months. It is strongly recommended for the related public or private organization to promote next two conditions.

1) To keep room occupancy rate in the peak months more than 90%
2) To increase duration of the peak months from 5 to 7.

Fig. 4.3.4 Model for Room Occupancy Rate Increase



Annual Room Occupancy Rate,%

- ☐ ABCD : Number of rooms ..... (100)
- ☐ ABEFG : Number of rooms used at present, Step-1 ..... (30 ~ 50)
- ☐ ABHIJ : Number of rooms used in present pattern of distribution when R.O.R. in peak months is assumed to be 90%. Then AH/AC = 90%, Step-2 ..... (70)
- ☐ ABHKL : Largest possible number of rooms used, Step-3 by increment of peak months ..... (80)

  when $\frac{KLM}{IJM} \leq 50\%$.

Here, IJKL is the portion where more number of tourists should be invited than the present seasonal pattern, by the promotional effort on the part of tourist resorts.

(b) Other Tourism Industries

In the other tourism industries, all of the costs are assumed as variable costs. As to incomes, though the expenditure per day tripper is kept constant, daily expenditure by night staying visitors will be reduced as the length of stay increases. Therefore, incomes will gradually decrease as in the case of the hotel industry. The gross operating profit rate on sales is kept constant, about 14%, and the total amount of the gross operating profit for 30 years grows 2.5 times than the profit without development. Annex 12 shows other details on the gross operating profit of the other tourism industries.

Table 4.3.9 Revenue of Tourism Industries

With and Without Cases	Average Length of Stay (nights)	Average Daily Expenditure, in Baht (US$)	Accumulated Revenue for 30 years million Baht (US$)
A. With Development,			
By Foreign Tourists	1.7 ∿ 4.5	890 ∿ 760 (44.5 ∿ 38.0)	30,162 (1,508)
By Domestic Tourists	1.3 ∿ 2.0	651 ∿ 602 (32.6) (30.1)	8,398 (420)
By One-day Visitors	a day	130 (6.5)	2,243 (112)
Sub total	-	-	40,803 (2,040)
B. Without Development,			
By Foreign Tour	1.7	890 (44.5)	9,531 (477)
By Domestic Tourists	1.3	651 (30.1)	4,824 (241)
By One-day Visitors	a day	130 (6.5)	1,266 (63)
Sub total	-	-	15,621 (781)
C. Incremental Revenue (A-B)			
By Foreign Tourists	-	-	20,631 = 82% (1,031)
By Domestic Tourists	-	-	3,574 = 14% (179)
By One-day Visitors	-	-	977 = 4% (49)
Total	-	-	25,182 = 100% (1,259)

Note: Other details are shown in Annex 12.

Economic Resource Flow, Base Case, without Loans

** ECONOMIC-RESOURCE-FLOW -- 3-a-1, Sensitivity Test, without Loan, Base Case (100,000 BAHT)

YEAR	ECONOMIC BENEFIT (E)	LOANS (N)	RESOURCE INFLOW (I=E + N)	ECONOMIC COST (F)	DEBT SERVICE (D)	RESOURCE OUTFLOW (O=F + D)	ANNUAL BALANCE (B=I - O)	ACCUMULATED	NET PRESENT VALUE 10.0 %	15.0 %	20.0 %
1977	182.	0.	182.	222.	0.	222.	-40.	-43.	-36.	-35.	-33.
1978	421.	0.	421.	224.	0.	224.	197.	157.	155.	149.	137.
1979	898.	0.	895.	732.	0.	732.	165.	323.	125.	109.	95.
1980	1349.	0.	1349.	11065.	0.	11065.	-9717.	-9394.	-6037.	-5556.	-4655.
1981	1771.	0.	1771.	5316.	0.	5316.	-3245.	-12639.	-2015.	-1513.	-1334.
1982	2141.	0.	2141.	4612.	0.	4612.	-2471.	-15110.	-1335.	-1258.	-875.
1983	2534.	0.	2534.	2107.	0.	2107.	427.	-14683.	217.	151.	117.
1984	3233.	0.	3233.	2084.	0.	2084.	1149.	-13516.	565.	392.	272.
1985	3912.	0.	3912.	2032.	0.	2082.	1833.	-11626.	774.	520.	355.
1986	4574.	0.	4574.	1340.	0.	1340.	3234.	-8459.	1247.	799.	522.
1987	4421.	0.	4421.	240.	0.	240.	4181.	-4267.	1465.	899.	561.
1988	4423.	0.	4423.	228.	0.	228.	4195.	-76.	1337.	784.	473.
1989	4389.	0.	4389.	229.	0.	229.	4151.	4077.	1232.	675.	399.
1990	4336.	0.	4336.	233.	0.	230.	4104.	8181.	1055.	550.	323.
1991	4329.	0.	4322.	231.	0.	231.	4039.	12219.	951.	534.	245.
1992	4279.	0.	4279.	232.	0.	232.	4047.	16326.	881.	452.	219.
1993	4286.	0.	4286.	232.	0.	232.	4052.	20378.	802.	377.	193.
1994	4287.	0.	4287.	232.	0.	232.	4055.	24433.	729.	328.	152.
1995	4283.	0.	4283.	232.	0.	232.	4063.	28491.	652.	284.	127.
1996	4230.	0.	4233.	232.	0.	232.	3972.	32479.	594.	244.	104.
1997	4230.	0.	4233.	282.	0.	282.	3965.	36427.	535.	210.	95.
1998	4230.	0.	4233.	262.	0.	262.	3959.	40395.	487.	183.	72.
1999	4230.	0.	4233.	262.	0.	262.	3969.	44363.	443.	159.	63.
2000	4230.	0.	4233.	262.	0.	262.	3969.	48331.	403.	139.	53.
2001	4230.	0.	4233.	262.	0.	262.	3969.	52299.	359.	121.	42.
2002	4230.	0.	4233.	262.	0.	262.	3968.	56267.	335.	105.	35.
2003	4230.	0.	4233.	262.	0.	262.	3968.	60235.	303.	91.	29.
2004	4230.	0.	4233.	262.	0.	262.	3969.	64203.	275.	79.	24.
2005	4230.	0.	4233.	262.	0.	262.	3959.	68171.	250.	69.	20.
2006	4230.	0.	4233.	262.	0.	262.	3965.	72139.	227.	60.	17.
	126562.	0.	126562.	34423.	0.	34423.	72139.	652097.	5318.	170.	-2125.

Economic Resource Flow, Base Case, with Loans

** ECONOMIC-RESOURCE-FLOW ** 3-b-1, Sensitivity Test, with Loan, Base Case (100,000 BAHT)

YEAR	ECONOMIC BENEFIT (E)	LOANS (N)	RESOURCE INFLOW (I=E + N)	ECONOMIC COST (F)	DEBT SERVICE (D)	RESOURCE OUTFLOW (O=F + D)	ANNUAL BALANCE (B=I - O)	ACCUMULATED	NET PRESENT VALUE 10.0 %	15.0 %	20.0 %
1977	182.	0.	182.	222.	0.	222.	-40.	-43.	-36.	-35.	-33.
1978	421.	0.	421.	224.	0.	224.	197.	157.	163.	149.	137.
1979	898.	145.	1253.	732.	0.	732.	331.	488.	249.	218.	192.
1980	1349.	3704.	5353.	11048.	12.	11078.	-6026.	-5538.	-4114.	-3665.	-2935.
1981	1771.	791.	2562.	5316.	293.	5335.	-2764.	-8302.	-1716.	-1374.	-1111.
1982	2141.	357.	2498.	4612.	368.	4983.	-2482.	-10764.	-1393.	-1044.	-825.
1983	2534.	154.	2688.	2107.	375.	2482.	206.	-10559.	136.	77.	57.
1984	3233.	191.	3424.	2064.	389.	2453.	974.	-9584.	454.	318.	224.
1985	3912.	193.	4135.	2082.	401.	2483.	1822.	-7963.	688.	451.	356.
1986	4574.	25.	4597.	1340.	415.	1755.	2844.	-5119.	1695.	701.	459.
1987	4421.	0.	4421.	249.	695.	935.	3486.	-1632.	1222.	749.	447.
1988	4423.	0.	4423.	228.	674.	902.	3521.	1889.	1122.	658.	385.
1989	4389.	0.	4389.	229.	653.	882.	3498.	5387.	1019.	549.	322.
1990	4336.	0.	4336.	233.	632.	862.	3472.	8859.	916.	491.	273.
1991	4329.	0.	4329.	231.	611.	842.	3487.	12345.	835.	428.	226.
1992	4279.	0.	4279.	232.	591.	823.	3456.	15831.	752.	359.	187.
1993	4286.	0.	4286.	232.	570.	802.	3482.	19283.	689.	326.	157.
1994	4287.	0.	4287.	232.	549.	781.	3504.	22793.	631.	283.	132.
1995	4283.	0.	4283.	232.	528.	760.	3520.	26310.	574.	247.	110.
1996	4230.	0.	4233.	232.	507.	739.	3491.	29830.	519.	213.	91.
1997	4230.	0.	4233.	262.	486.	748.	3482.	33282.	459.	186.	75.
1998	4230.	0.	4233.	262.	465.	728.	3502.	36784.	435.	162.	63.
1999	4230.	0.	4233.	262.	443.	707.	3523.	40283.	395.	141.	53.
2000	4230.	0.	4233.	262.	424.	686.	3544.	43832.	360.	124.	45.
2001	4230.	0.	4233.	262.	403.	665.	3565.	47397.	329.	108.	37.
2002	4230.	0.	4233.	262.	382.	644.	3585.	50983.	301.	93.	31.
2003	4230.	0.	4233.	262.	361.	623.	3607.	54589.	275.	83.	26.
2004	4230.	0.	4233.	262.	340.	602.	3628.	58207.	252.	72.	22.
2005	4230.	0.	4233.	262.	320.	582.	3648.	61855.	230.	63.	18.
2006	4230.	0.	4233.	262.	299.	561.	3669.	65535.	210.	55.	15.
	126562.	5559.	132121.	34423.	12163.	46585.	85555.	578342.	2618.	1478.	-237.

4.4 Economic Internal Rate of Return, EIR

In financial evaluation, separate rates of return are calculated for each project area-namely tourism area and residential area. However, separate rates of return are not calculated for the economic analysis, for that it is difficult to separate a part of the investment beneficial to local population and some other part of the investment in the residential area are indirectly for the tourism industries. As a result any double counting on the benefits may be avoided.

Economic life has been defined as for 30 years, an average economic life for hotels and other private investments, namely from 25 years to 35 years and of 25 years for the proposed public investments such as infrastructure (road, sewerage etc.), social infrastructures (school and hospital) and amenity cores. Economic analysis has been made on the streams from 1977 to 2006 (30 years). Based on the economic cost and revenue streams and an estimated economic life of 30 years, the internal economic rate of return is calculated as 15.3%.

The resource flow chart is drawn on the basis of the data in 4.3. The resource inflow included the economic benefits calculated in the process mentioned in 4.3.

When foreign loans is included, it increases the resources of the Thai Government. For this reason, it is included in the resource inflow. Resource outflow includes the economic cost calculated in the process mentioned in 4.3.

However, the inclusion of foreign loans necessitate loan repayment and interest payment to be included in the resource outflow at the time of the payment. Resource outflow is shown in Tables 4.4.1.

The calculated EIRs in accordance with the resource flow charts are shown in the Table 4.4.2.

Table 4.4.2 Economic Internal Rate of Return

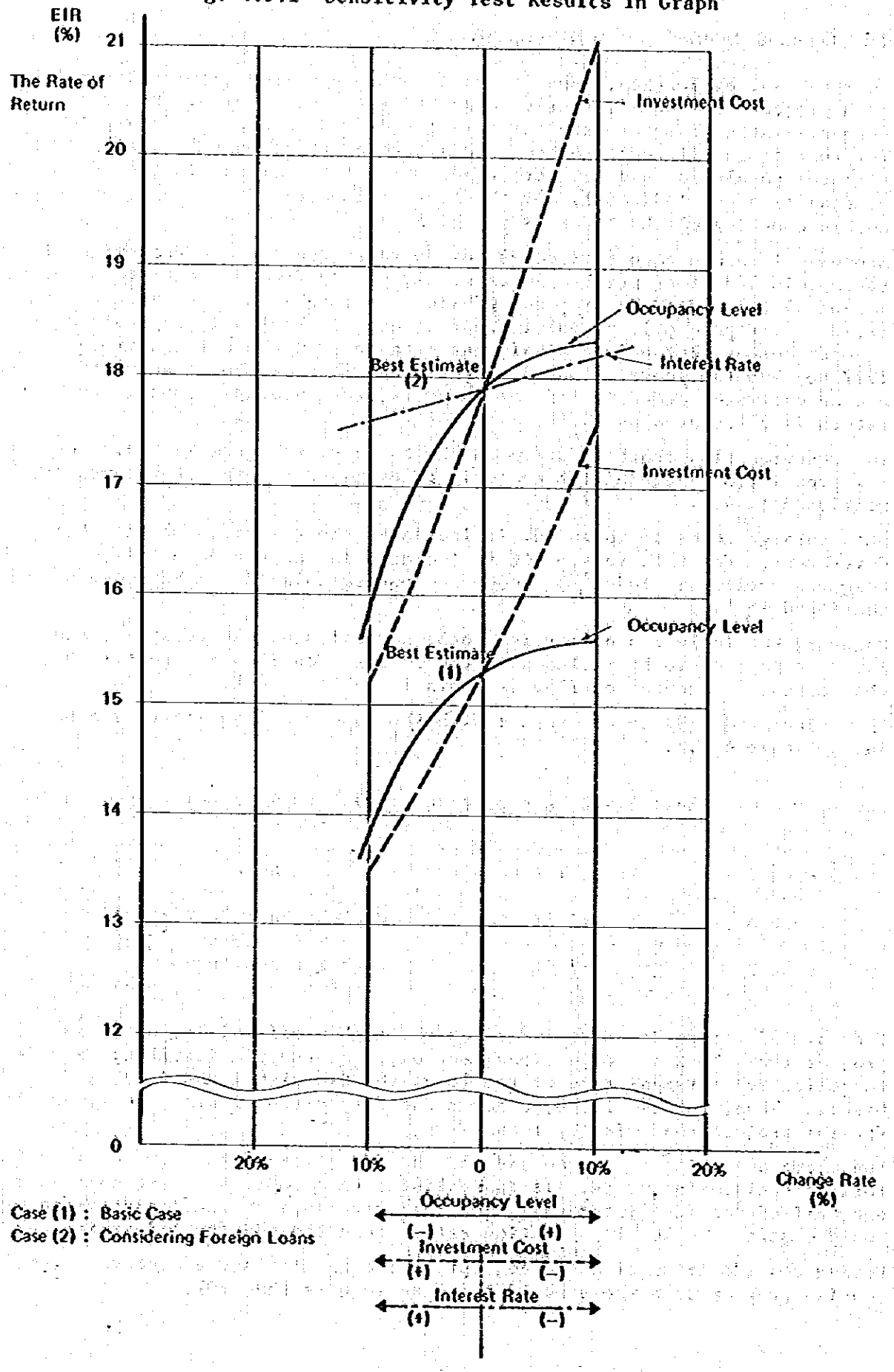
Case	Rate of Return	Note
Case A	15.3%	Without Foreign Loans
Case B	17.9%	With Foreign Loans

The rate of return of 15.3% indicates the high profitability of this project from the point of national economy. As the profitability exceeds the effective interest rate of the loan, the EIR with loans is 2.6% higher. Thus, foreign loans, under assumed conditions, are more favorable for the project than without loans.

The above analysis has not considered the direct benefits from the investment for the residential areas. It is realistic to assume, however, that over one half of the investment (58%) for infrastructure of the project area would benefit the local population rather than the tourism industries.

Paying consideration of above concept, the economic rate of return on the tourism program as a whole would increase to more than 20%.

Fig. 4.5.1 Sensitivity Test Results in Graph



Case (1) : Basic Case
Case (2) : Considering Foreign Loans

4.5 Sensitivity Analysis and its Evaluation

On the basis of the described assumption and with an estimated economic life of 30 years, the economic internal rate of return on the investments in the project areas-both the tourism area and residential area, would be 15.3% for the basic case and 17.9% with foreign loans included. Key variables of the sensitivity analysis are the shadow wages, the room occupancy rate, the investment cost and the interest rate of foreign loans. The results are shown on Table 4.5.1.

Table 4.5.1 Sensitivity Tests (in %)

	Percentage of Variations	Case A	Case B
Best Estimate		15.3%	17.9%
Variations of Factors			
Application of the shadow wages *1		15.3%	17.9%
Occupancy level of the hotel industry *2	-4%	14.8%	17.2%
" "	-9%	13.6	15.6%
Investment cost *3	+10%	13.5%	15.2%
"	-10%	17.6%	21.1%
Interest rate *4	+1%	-	17.5%
"	-1%	-	18.3%

Case A: Basic Case as Economic Feasibility of the Project.
Case B: Considering Foreign Loans

*1 Unskilled labor cost is estimated at 70% of the amount actually paid in the current market wage rates.

*2 Best estimate takes the occupancy level at 78.8% after 1987 on the assumption that the current 5 peak months will change to 7 months. In this sensitivity analysis, variations of the rates of return are analysed in two case: 1) with 6 peak months (occupancy level after 1987 is 74.8%) and 2) with 5 peak months as at present (occupancy level after 1987 is 69.8%). Refer to Annex 1.

*3 Maintenance and operation costs in respective infrastructure works also fluctuate with the change of the investment cost.

*4 Rates vary only when the foreign loans are considered.

As the ratio of the unskilled labor in the economic cost of this project is small, the rate of return remains almost the same even if the shadow price of the unskilled labor is applied. The rate of reutn drops sharply when the room occupancy rate goes down. For instance, when the room occupancy level is lowered by 9%, however, the rate of return drops by 13.6%.

The rate of return is most affected by the variation in the amount of investment. The change in the interest rate does not give much impact.

The rate of return in the sensitivity test on the basic case are higher than 13% in all cases. The rate, 13%, would be sufficient enough level of the return considering the nature of the project.

The rate of return with foreign loans keeps still higher value of 15%, that is naturally more favorable for the project.

It can be concluded that this project is feasible not only financially but also economically.

4.6 Other Economic Benefits

4.6.1 Foreign Exchange Earnings

At present foreign exchange earnings contribute greatly to Thailand for its economic developments. For the national economic, the foreign exchange earnings can be recognized as a benefit. Therefore, the amount of the net foreign exchange earnings becomes one of the important factors for evaluating the project.

This project is expected to increase the gross foreign exchange earnings by US$1,031.5 million, nominally in 30 years and the net foreign exchange earnings, deducting the foreign cost portion from the gross foreign exchange earnings, is calculated as US$933.3 million. The foreign exchange reserves at the end of 1977 in Thailand were US$1,323 million* Against this, the gross foreign exchange earnings and the net foreign exchange earnings correspond to 78% and 70.5%, respectively. And the annual gross foreign exchange earnings are expected to reach US$44.1 million* in 1987, which corresponds to 51% of US$87 million, the gross foreign exchange earnings earned by the tourism sector in 1976. This is shown in Table 4.6.1.

* Bank of Thailand Quarterly Report, April, 1978.

Table 4.6.1 Net Foreign Exchange Earnings (in US$ million)

f Year	Gross *1 Foreign Exchange Earnings	Foreign Portion in Investment Costs	Foreign Portion in M & O Costs	Net Foreign Exchange Earnings	Accumulated
1(1977)	1.9	0	0.2	1.7	1.7
2	3.7	0	0.3	3.4	5.1
3	6.8	0	0.5	6.3	11.4
4	10.3	7.8	0.8	1.7	13.1
5	14.4	2.5	1.2	10.7	23.8
6	19.4	1.9	1.7	15.8	39.6
7	25.0	0.6	2.1	22.3	61.9
8	31.0	0.6	2.5	27.9	89.8
9	37.6	0.7	3.0	33.9	123.7
10(1986)	44.9	0.2	3.5	41.2	164.9
11	44.1	0.2	3.3	40.6	205.5
12	44.1	0.2	3.3	40.6	246.1
13	43.4	0.2	3.3	39.9	286.0
14	42.6	0.2	3.2	39.2	325.2
15	42.6	0.2	3.2	39.2	364.4
16	41.9	0.2	3.2	38.5	402.9
17	41.9	0.2	3.2	38.5	441.4
18	41.9	0.2	3.2	38.5	479.9
19	41.9	0.2	3.1	38.6	518.5
20(1996)	41.1	0.2	3.1	37.8	556.3
21	41.1	0.3	3.1	37.7	594.0
	|	|	|	|	|
30(2006)	41.1	0.3	3.1	37.7	933.3
Total	1,031.5	19.3	78.9	933.3	-

Note: This figure shows only incremental amounts with the project by expenditure from foreign tourists. Some of domestic tourists will spent indirectly foreign exchange, however, this amount is excluded.

4.6.2 Employment Effect

In the project area, there were about 42,500 people in 1976, and the population was distributed over 3 districts as below.

Table 4.6.2 Current Population

District	Population
Bang Lamung	6,481
Na Klua	20,842
Nong Pleu	15,208
Total	42,531 persons

According to the survey done by Bang Lamung Amphoe Office in 1977, the average number of members per household is about six persons. The ratio of the employed population to the total population was 40% in 1976. According to the 1976 survey of age group distribution in the study area, 60.5% of the total population belongs to the age group of "15-59" years. This project can provide employment opportunities for the local people, it will contribute greatly to the stabilization of mobile population. The employment structure is summarized as 11.2% for Agriculture and fishery, 1.7% for Production process and 87.1% for Service.

As the economy of this area mostly depends on the tourism industry, the employment effect of the project is bigger in its indirect effect on the private sector than in its direct effect on the public sector. Considering the future development of Pattaya, the service function will increase its importance. From the standpoint of local area development, Pattaya tourism development would have to keep improving following relationships in order to produce advantage on multiplier effects.

- As the number of tourist arrival increase, tourist service function will be accelerated. Simultaneously the potentiality of local community service function would be raised and developed into the high level of economical structural development.
- As the tourism development progresses, demand for labour force and employment opportunity will be increased. At present, around 80% of hotel employees are brought into Pattaya from Bangkok. As a result, mobility of the local population will be stable and local community will benefit from the tourism development.
- Since the economical base of the local communities relies heavily on tourism industry, in order to prevent failure in coping with the population increase by social development, new town planning approach has to be taken.

The estimation process of the hotel related service population is based on the frame work flow chart in the master plan.

There are 1,900 farmers and fishermen in the study area at present. Taking into consideration of the future development of sophisticated economical structure, the local industry population would gradually absorb the major portion. And it is predicted that the agriculture and fishery population will be reduced to 1,000 in the year 1996.

Regarding the production process, there are 300 persons employed in the tapioca factories. Considering the detrimental effects to the tourism development of Pattaya, it is preferred for those factories to be remained in the surrounding of the study area while providing the necessary sewerage system.

When in full operation, it is estimated that the project will provide direct and indirect employment for a minimum of 9,100 persons, which will be equal to 53.5% of the employed population in 1976.

Table 4.6.3 Future Population for Local Community

Items	1976	1987	1996
Total population (persons)	42,500	58,100	80,200
Total employed population	17,000	26,100	40,100
Farmers & fishermen	1,900	1,500	
Production process workers	300	300	
Service workers for local community	14,800	11,300	
Service workers for tourists		13,000	

Note: The employment ratio for 1986 is assumed at 45% and that for 1996 at 50%.
Other details are shown in Annex 13.

4.7 Recommendation

As analysed in previous sections, this project will greatly contribute to the national interest of Thailand, and will be feasible from the financial point of view. Therefore, early implementation of the project is much preferred and necessary.

For the effective realization of this project, the study team recommends:

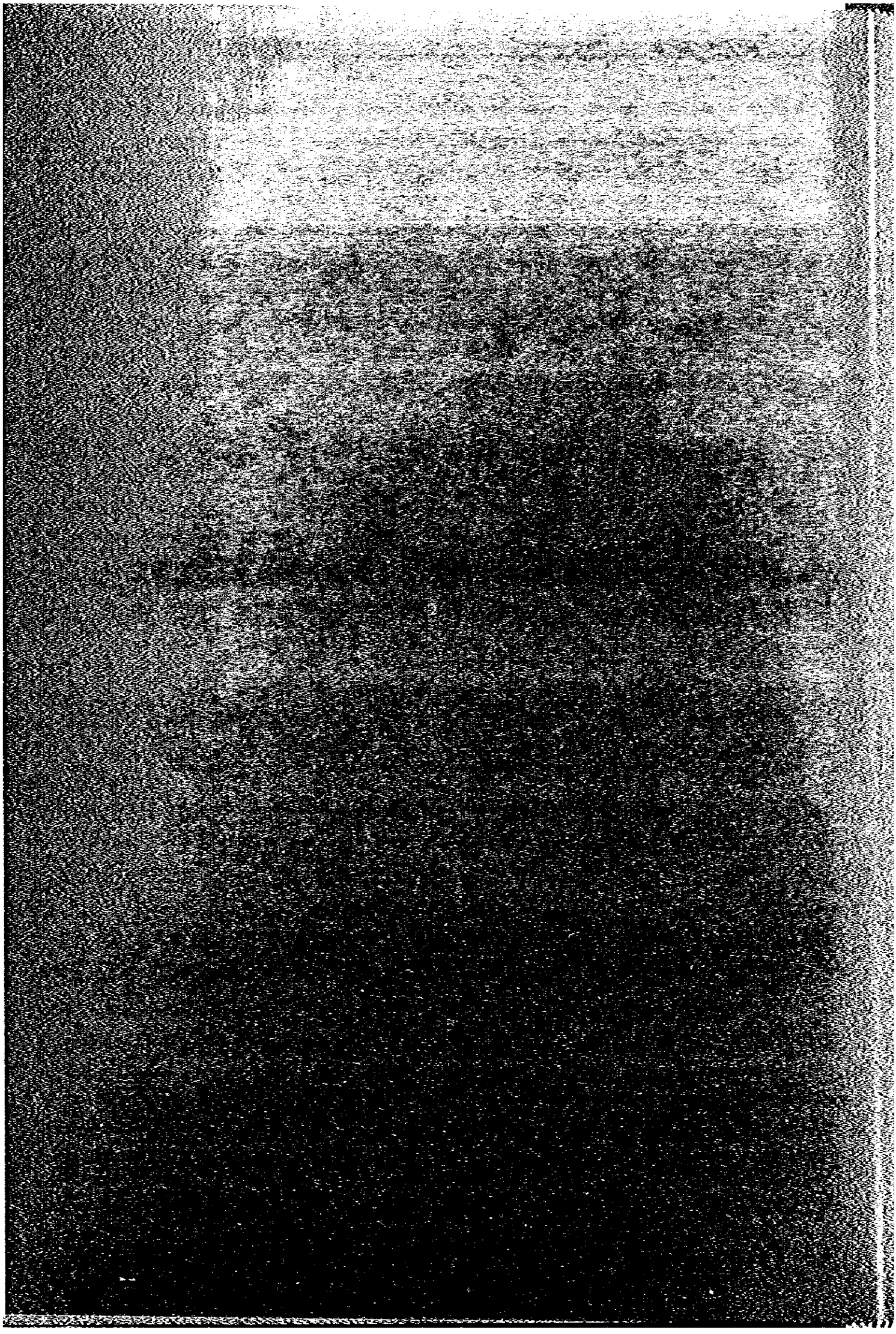
First, the land required for the project must be urgently procured. Ever since as follows: the announcement of the master plan, the land price in the project area has risen five to ten times as much as before. This rise in land price is expected to continue in the future. Without prompt action, there might be a cost overrun in the project.

Second, it is advantageous to appoint consultants who will assist management of the whole project for coordination of various works mentioned in the final report. If the respective works are executed independently, there arise a great loss of redundant investments and technical discrepancies. This project must be implemented on a single controlled policy and implementation program.

Third, the legislative measures necessary for the realization of the project are required. Private land use plan, which would impede the land use plan proposed in the final report, should be examined beforehand by the authorities concerned for the harmony with the project.

Finally, when infrastructure works are completed, sales promotional efforts both in public and private sector are called for to invite more tourists from abroad and from every part of Thailand.

ANNEXES



ANNEXES

CONTENTS

ANNEXES

1. Objective and Scope

The annex here are ancillary reference materials for chapters 3 and 4 in Volume 3 showing the background of figures in the content.

They are classified into three main types.

1) Figures for economic and financial analysis and their background.
2) Total costs and their breakdown in respective systems based on technical study (in Volume-2).
3) Results of economic and financial analysis.

Basic figures are established in the Master Plan and some of the figures are modified later through the Feasibility Study.

In the project implementation stage and the operation or running stage, these figures must be compared to the available latest figures of the time to carry out the more realistic and economical management of the project.

2. Outline

Annex 1 shows the status of tourist arrivals to Pattaya according to the analysis of the current pattern and forecasts of the future trend.

Annex 2 shows the breakdown of the tourists' expenditure and its forecast in the future, on the assumption that the expenditure corresponds to the length of stay.

Annex 3 focuses on the hotel room charges. It analyses the present status and the future tendencies.

Annex 4 analyses the profitability of the tourism industries. It also shows the bases of figures used in the economic and Financial analysis such as the gross operating profit.

Annex 5 shows implementation schedule of the other facilities.

Annex 6 shows the breakdown of costs required for the construction and operation of each public infrastructure and other facilities based on the technical study in Volume 2.

Annex 7 is the annual outflow and investment table including land price and contingency to the construction cost from the Annex 6.

Annex 8 shows the total tax and unskilled labor cost included in respective facilities. It also shows the administration cost for the operation of the administrative organization that implements the project.

Annex 9 shows the Background for estimation of the utility charges.

Annex 10 estimates how the utility charges are levied on users (household and hotel industry).

Annex 11 studies the users' ability to pay public charges to be imposed. (Service & Annual Charges).

Annex 12 shows profit and loss statements of the tourism industries. It also shows receipt of the industry with the project and without the project.

Annex 13 studies a future population in the study area.

Annex 14 shows results of the analysis on the financial and economic study.

The basic flow charts of the financial and the economic analysis are shown as follows. These chart show the correlation between respective figures.

Fig. 1 Flow Chart of Financial and Economic Analysis - (1)

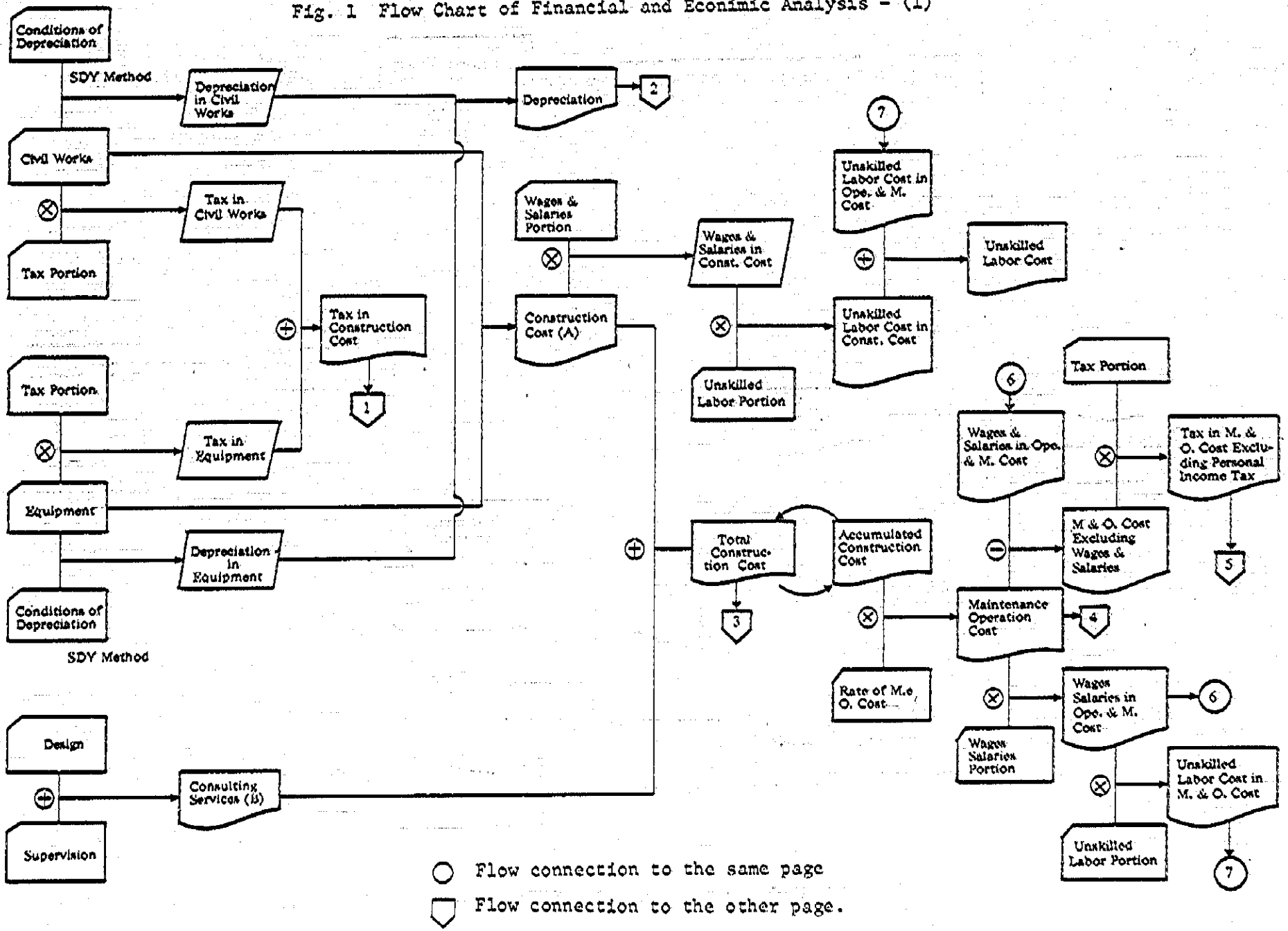


Fig. 2 Flow Chart of Financial and Economic Analysis - (2)

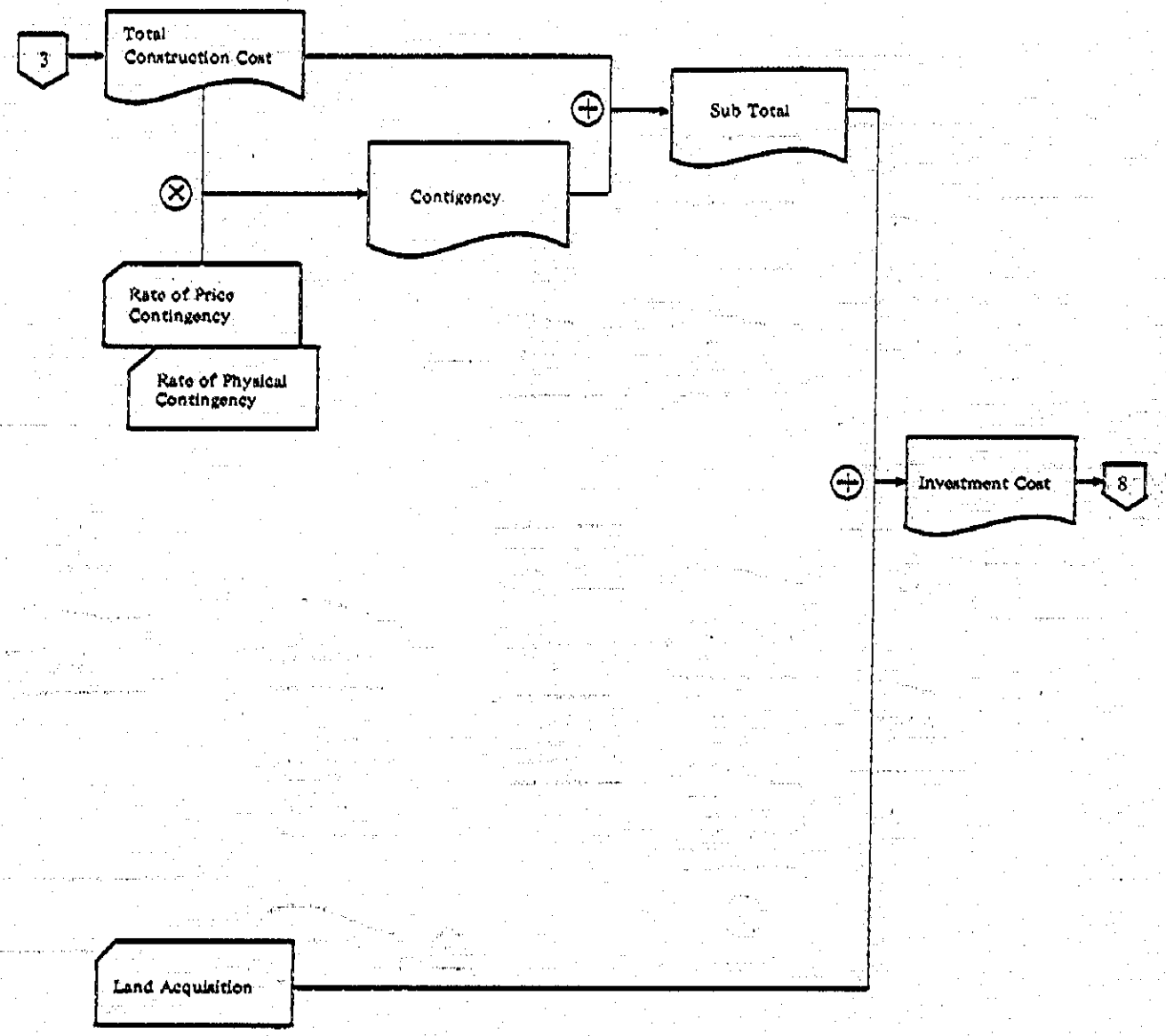


Fig. 3 Flow Chart of Financial and Economic Analysis - (3)

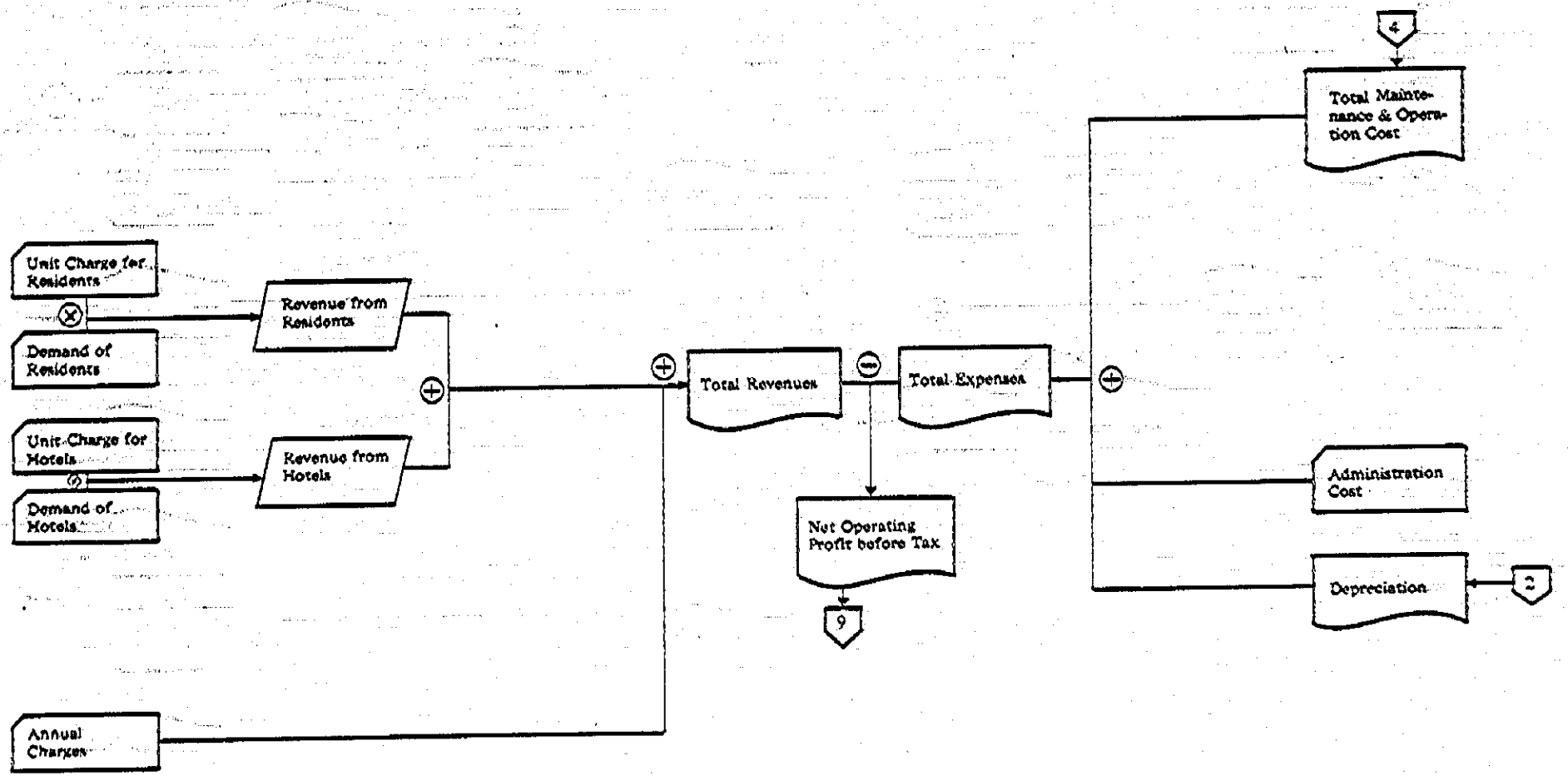


Fig. 4 Flow Chart of Financial and Economic Analysis - (4)

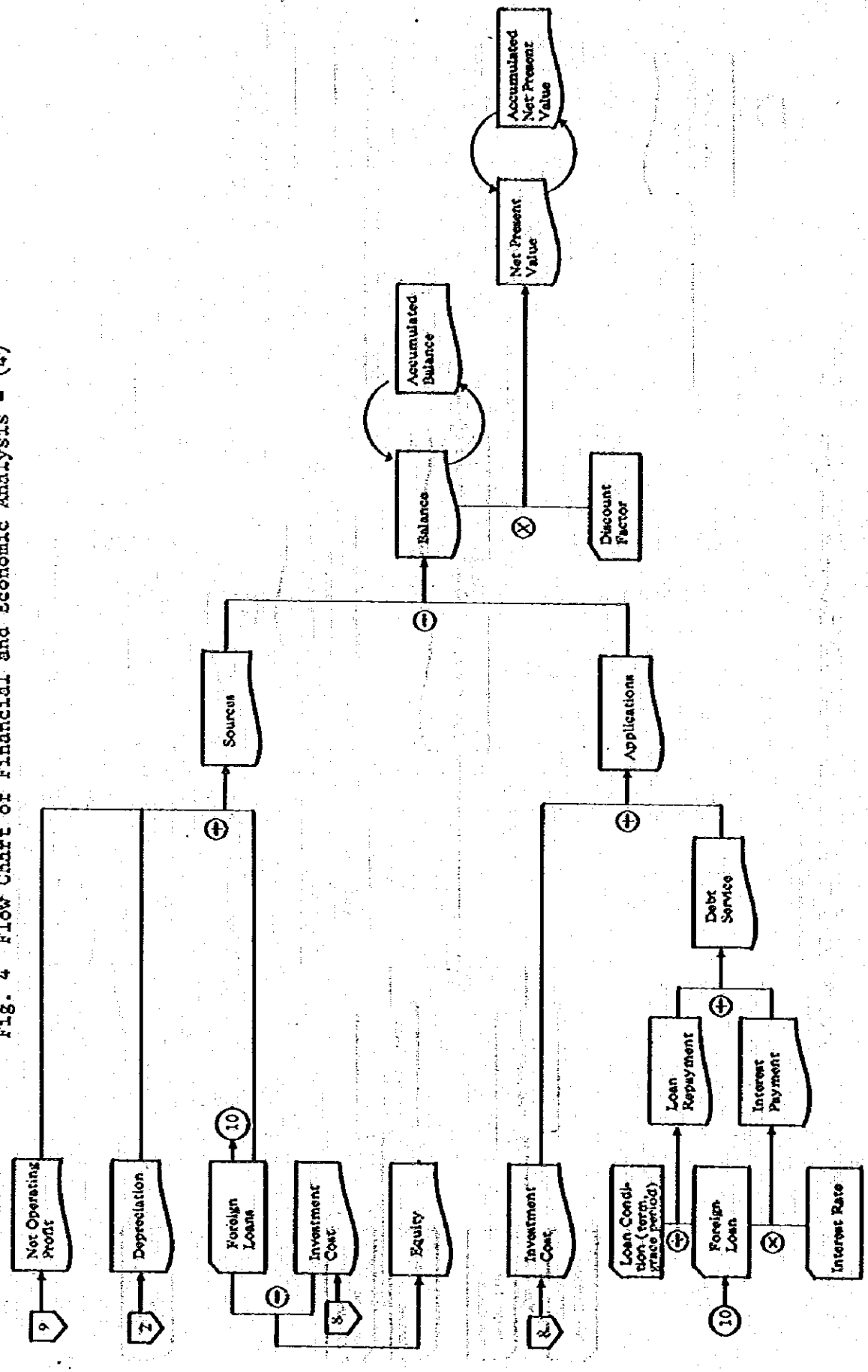


Fig. 5 Flow Chart of Financial and Economic Analysis - (5)

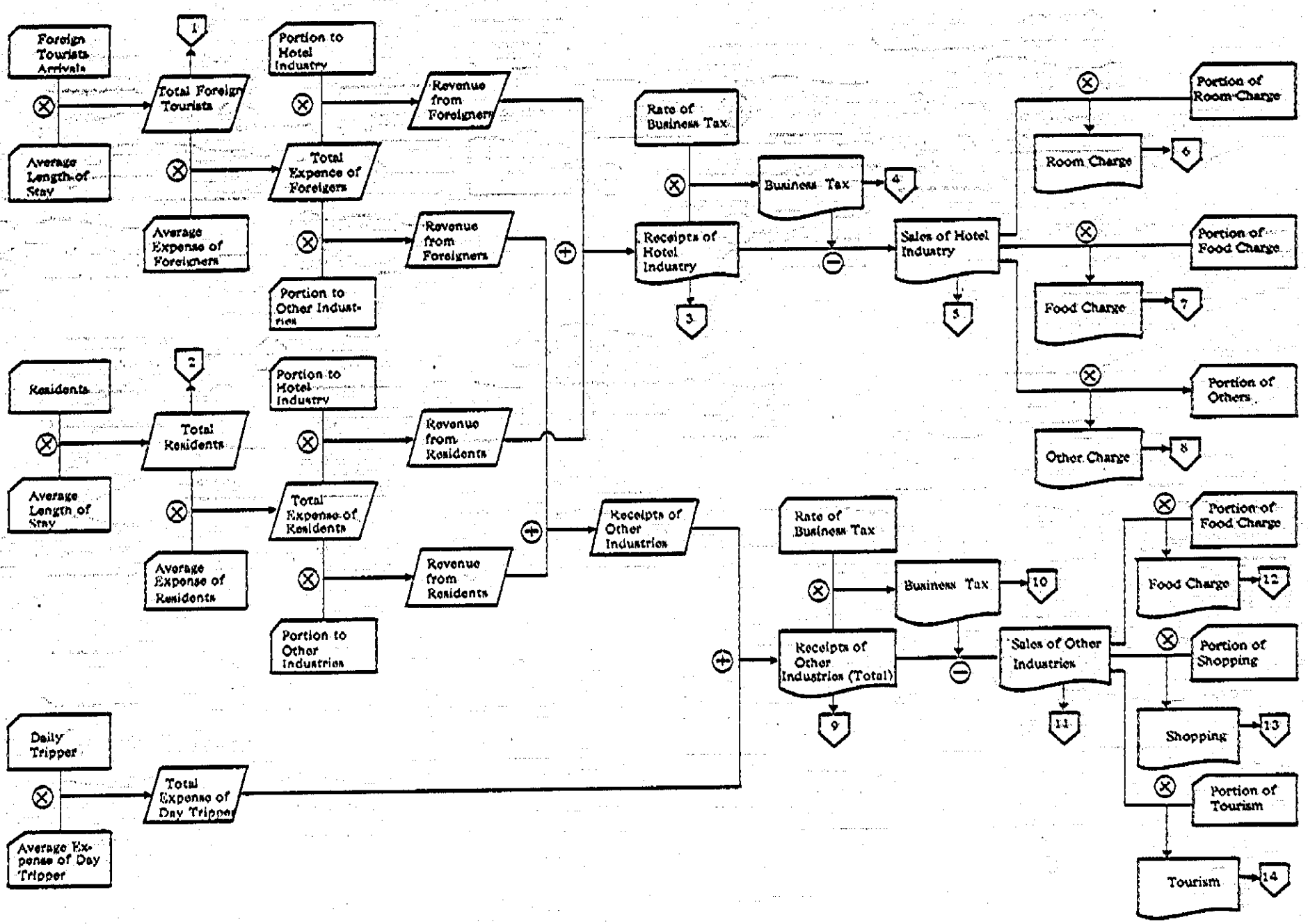


Fig. 6 Flow Chart of Financial and Economic Analysis - (6)

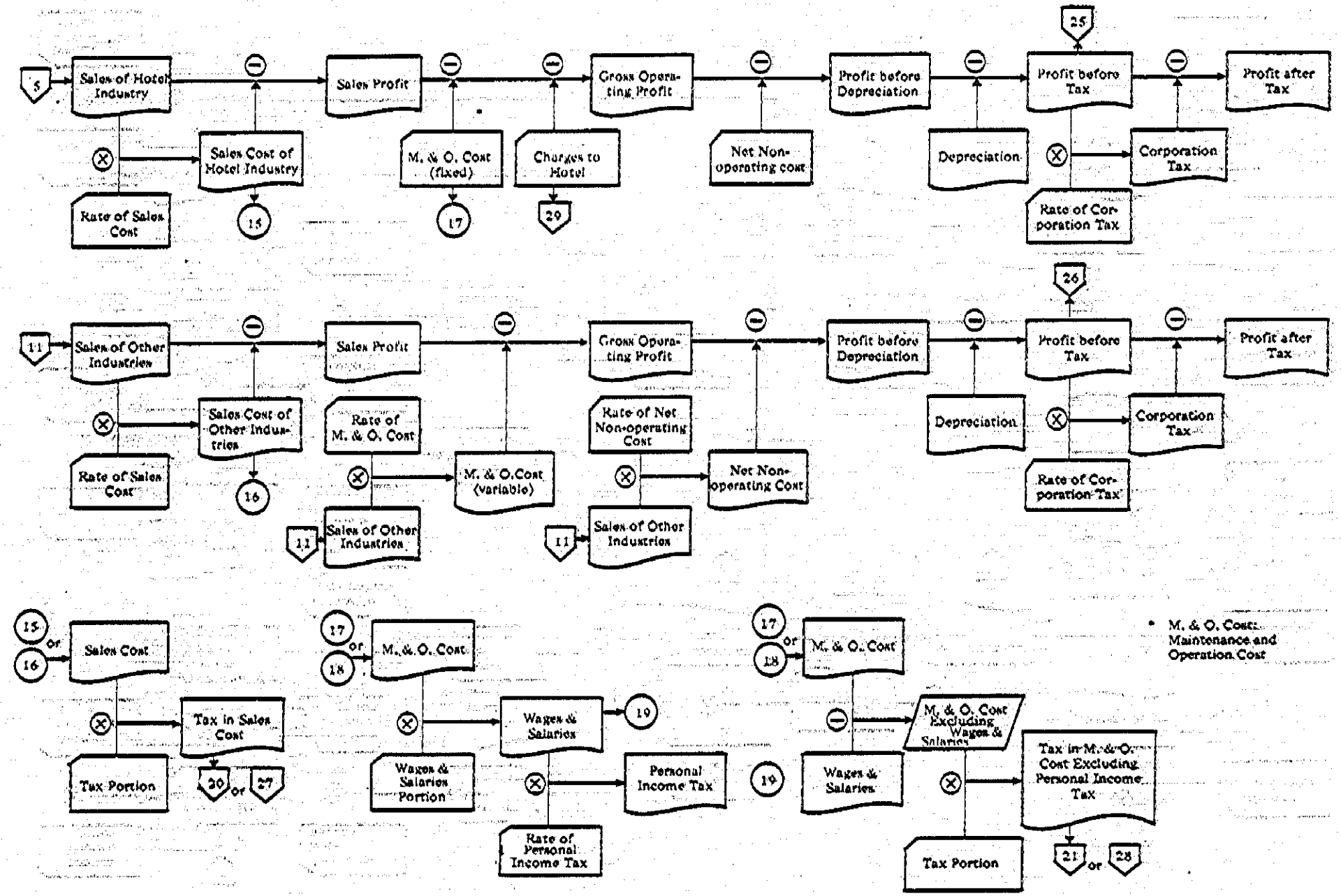
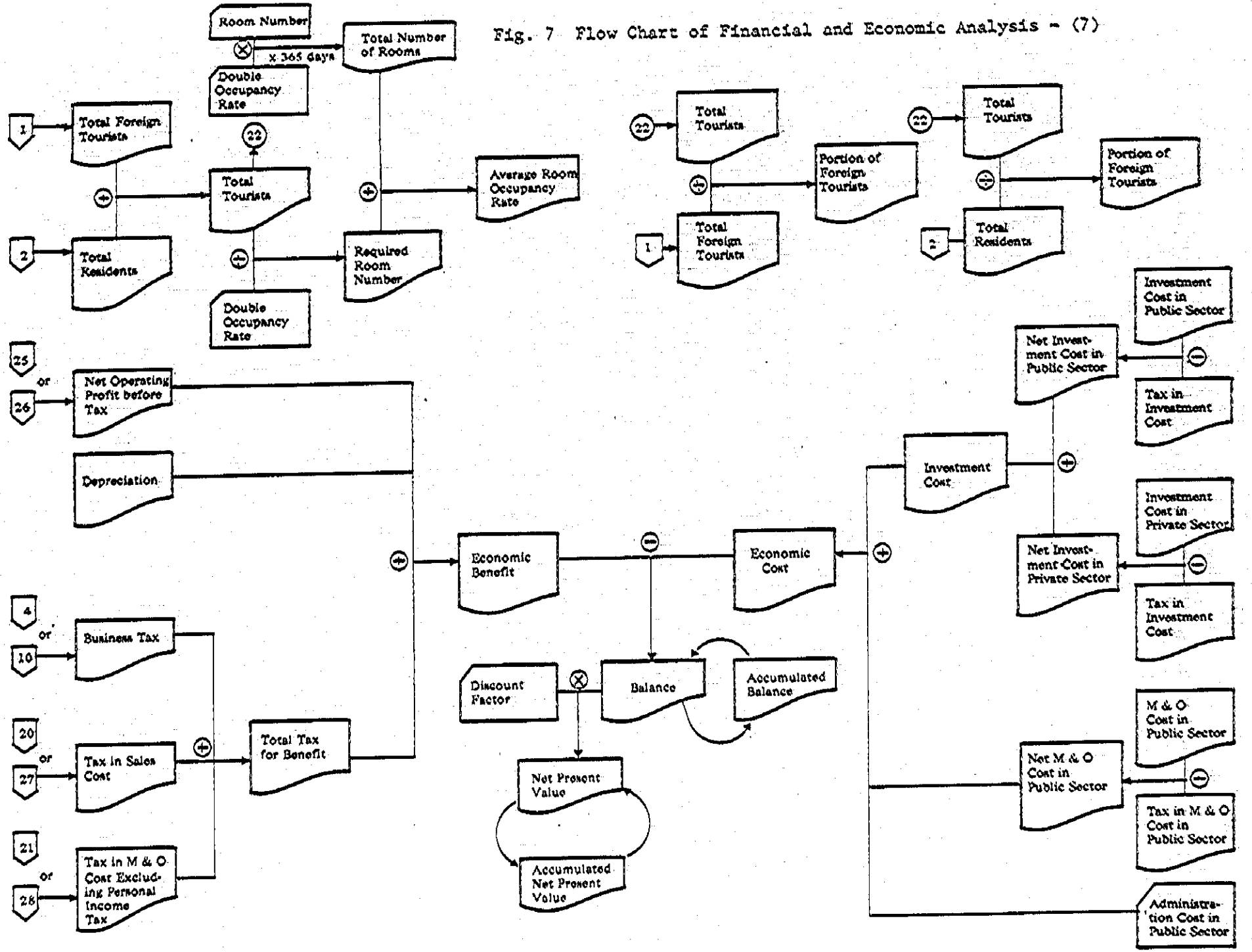


Fig. 7 Flow Chart of Financial and Economic Analysis - (7)



ANNEX 1. SEASONAL PATTARN OF TOURIST ARRIVALS

CONTENTS

ANNEX 1. SEASONAL PATTERN OF TOURIST ARRIVALS

1.1 Introduction

Monthly distribution of arrivals in annual rate during three years from 1973 to 1975 marked the highest 12% in December 1974, and the lowest 4.4% in June 1975. In average, it can be said the rate is between 11.0% (December and January) and 4.6% (June) as shwon in Table 1.

Fig. 1 shows the monthly fluctuation of annual distribution for three years from the highest to the lowest. This figure shows the following facts: 1) The peak season at present is 5 months from November to March; 2) the average in this season is 10.6%; and 3); and 3) 53% fo annual hotel guests are concentrated in these 5 peak months.

High rate following the peak season is recorded in April, October, and August. Such high rate in August compared to the neighboring months of July and September is explained by the local factor, that is, tourists from Asian countries increase this month.

The lowest rate is recorded during the rainy season from June to September except August.

Such fluctuations expressed in a guadratic equation, keeping the rate in peak seasons constant, are shown in Fig. 2.

Seasons	Rate(%)
peak months Nov. - Mar.	10.6% constant
other months Apr. - Oct.	$y = 0.104x^2 - 2.551x + 20.75$

where y : Distribution of arrivals in annual rate.
x : Monthly order of the rate (6th to 12th).

1.2 Rate in the Future

Though the present room occupancy rate (R.O.R.) is low, it can be made the following assumptions in order to get the R.O.R. of the future when a rise of arrivals is expected during and/or after the implementation of the infrastructure project.

a) The present pattern of annual arrivals distribution will not be changed by the increase of tourists arrivals until R.O.R. reaches 90% in peak months.

b) After it reaches 90%, increased number of peak months will absorb the further increase of tourists arrivals.

Fig. 3 shows necessary steps to approach to the goal which will generate higher room occupancy rate than the current pattern.

Step 1 ..... To recognize the present situation of a lower R.O.R.

Step 2 ..... To make an effort to increase R.O.R. of peak month to 90% in the present pattern.

Step 3 ..... To promote the number of the peak months from current 5 months to more.

Table 1. Monthly Hotel Arrivals in Pattaya

Month	1973 Number of arrivals	1973 Annual distribution (%)	1974 Number of arrivals	1974 Annual distribution (%)	1975 Number of arrivals	1975 Annual distribution (%)	Average Annual Distribution (%)	Monthly Fluctuation	Peak Month *
January	32,569	11.7	40,500	11.1	26,293	10.3	11.0 max.	1.32	o
February	29,923	10.7	34,671	9.5	27,867	11.0	10.4	1.26	o
March	28,983	10.4	35,433	9.7	27,559	10.9	10.3	1.25	o
April	24,646	8.8	29,729	8.2	21,370	8.4	8.5	1.02	
May	19,056	6.8	21,794	6.0	17,312	6.8	6.5	0.78	
June	14,014	5.0	15,902	4.4	11,241	4.4	4.6 min.	0.55	
July	18,459	6.6	19,533	5.4	13,239	5.7	5.7	0.68	
August	24,562	8.8	27,961	7.7	18,629	7.3	7.9	0.95	
September	14,834	5.3	20,278	5.6	12,954	5.1	5.3	0.64	
October	20,841	7.5	32,455	8.9	19,192	7.6	8.0	0.96	
November	24,806	8.9	41,964	11.5	29,111	11.5	10.6	1.27	o
December	26,585	9.5	43,595	12.0	29,299	11.5	11.0	1.32	o
Total	279,278	100.0	363,815	100.0	254,066	100.0	100.0	12.00	5 months

Notes:
1. Source: Tourist Organization of Thailand (TOT).
2. In 1976 TOT surveyed by collecting data from 19 major hotels in Pattaya during 1973 and 1974; and 7 hotels during 1975.
3. The above figures include foreign residents in Thailand as well as foreign tourists.
4. Peak months: Monthly Fluctuation over 1.25

Fig. 1. Monthly Arrival Order (%) from 1973 to 1975

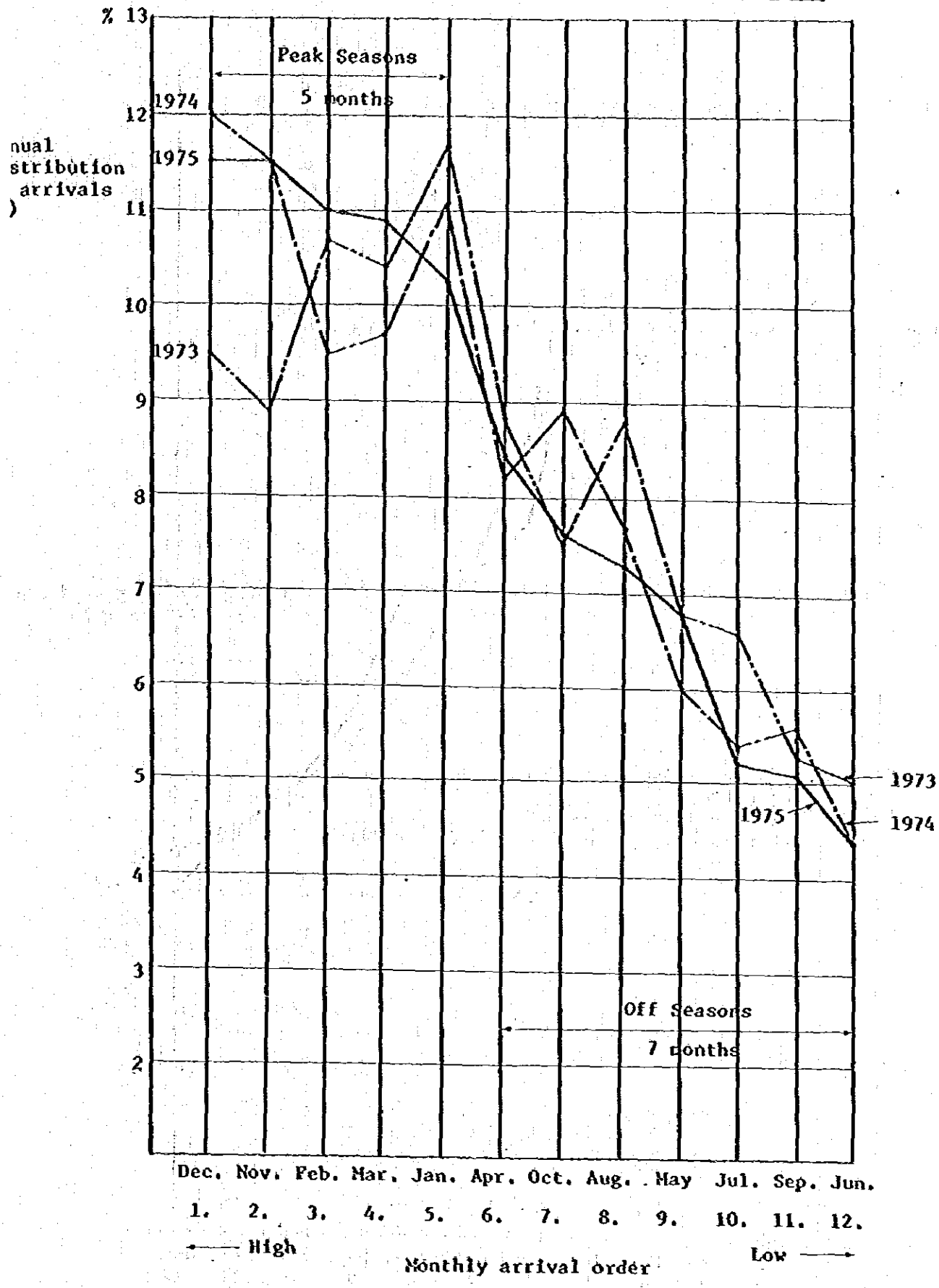


Fig. 2. Average Monthly Arrival Order (%) from 1973 to 1975

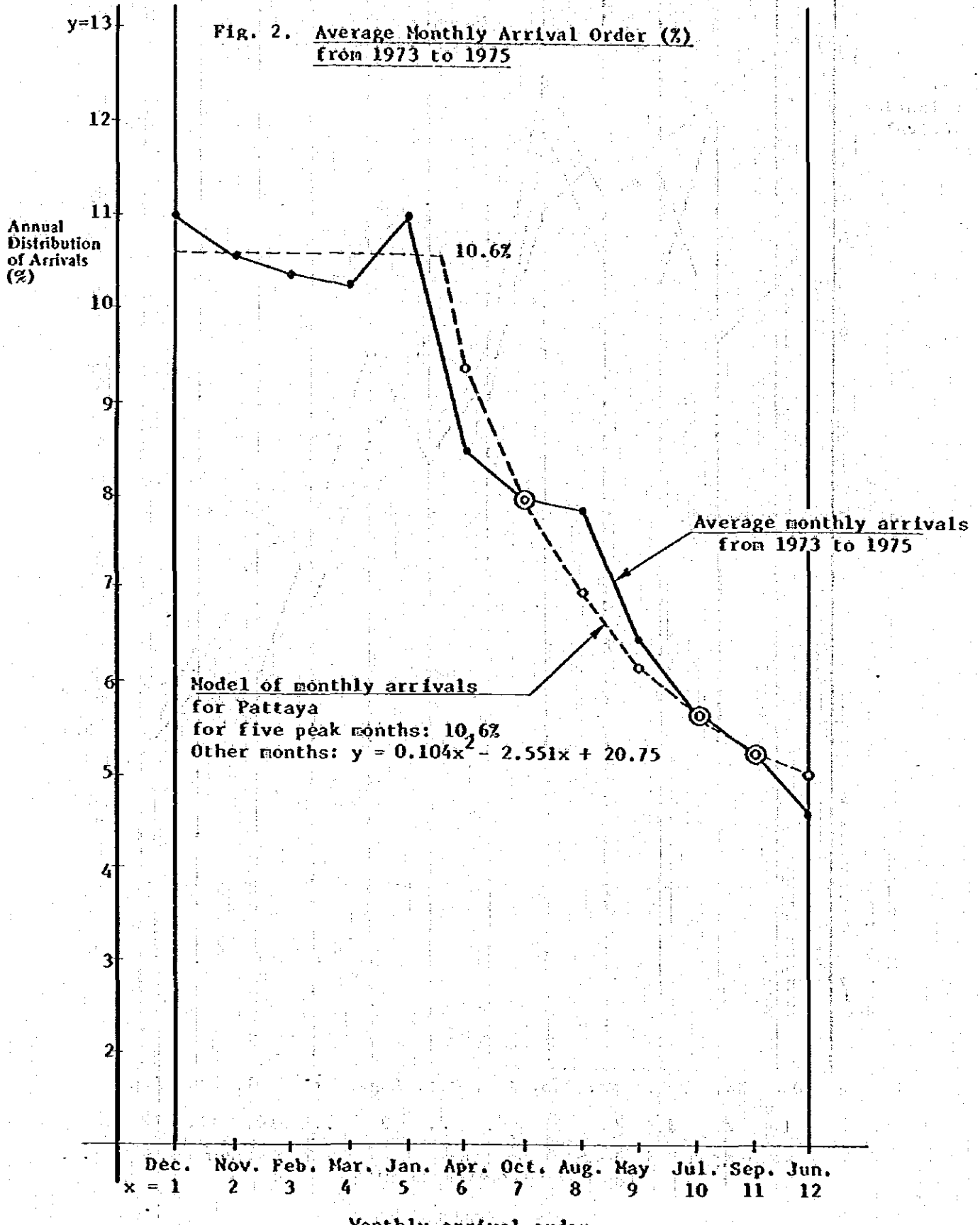
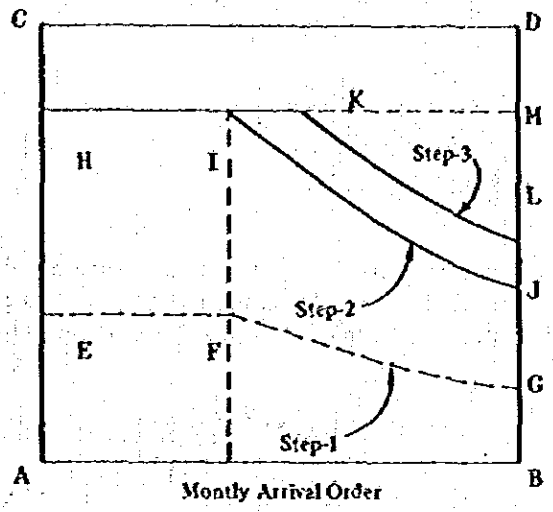


Fig. 3 Model for R.O.R. Increasement



Annual Room Occupancy Rate

☐ ABCD : Number of rooms ..... (100)

☐ ABEFG : Number of rooms used at present, Step-1 ..... (30 ∿ 50)

☐ ABHIJ : Number of rooms used in present pattern of distribution when R.O.R. in peak months is assumed to be 90%. Then AH/AC = 90%, Step-2 ..... (70)

☐ ABHKL : Largest possible number of rooms used, Step-3 by increment of peak months ..... (80)

when $\frac{KLM}{IJM} \leq 50\%$.

Here, IJKL is the portion where more number of tourists should be invited than the present seasonal pattern, by the promotional effort on the part of tourist resorts.

1.3 R.O.R. in Peak Months and Annual Average

Room Occupancy Ratio (R.O.R.) depends on the number of rooms occupied and number of rooms available.

$$R.O.R. = \frac{\text{Annual total number of rooms occupied (N.O.R.)}}{\text{Annual total number of rooms provided (A.N.R.)}}$$

where, $N.O.R. = A \times L \div D$

A : Annual total arrivals (Persons)
L : Average length of stay (Nights)
D : Double occupancy rate (Persons/room)

$$A.N.R. = P \times 12 \div R_{max} \times A \times L \div D$$

P : Annual distribution of arrivals in peak months (%)
R_{max}: Allowable maximum room occupancy in peak months (%)

then

$$R.D.R. = \frac{N.O.R.}{A.N.R.} = \frac{A \times L \div D}{P \times 12 \div R_{max} \times A \times L \div D}$$

$$= \frac{1}{P \times 12 \div R_{max}}$$

$$= \frac{R_{max}}{P} \times \frac{1}{12}$$

Considering the increase of number of peak months, annual distribution of occupancies will be as shown in Fig. 3 and Table 4. Fig. 5 shows a relationship of R.O.R. between annual rate and peak months' rate.

Table 2. R.O.R. in Peak Months and Annual Average

No. of Peak Months	No. of used rooms*1	R.O.R.*2
5	100.0	70.7
6	107.1	75.8
7	113.2	79.7
8	118.4	83.8
9	122.7	86.8
10	125.2	88.6
11	126.6	89.6
12	127.2	90.0
5*3	56.7	40.0

*1 : 5 peak months are shown as 100.
*2 : Annual R.O.R. when R.O.R. in the peak months is 90%.
*3 : When annual R.O.R. is about 40.0% as Pattaya at present.

Fig. 4 Number of peak months and maximum R.O.R.

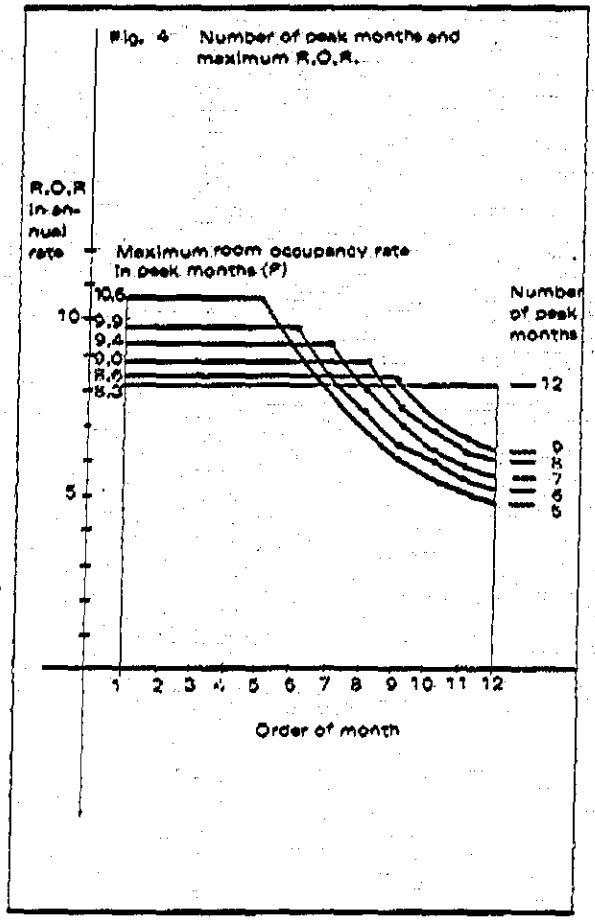
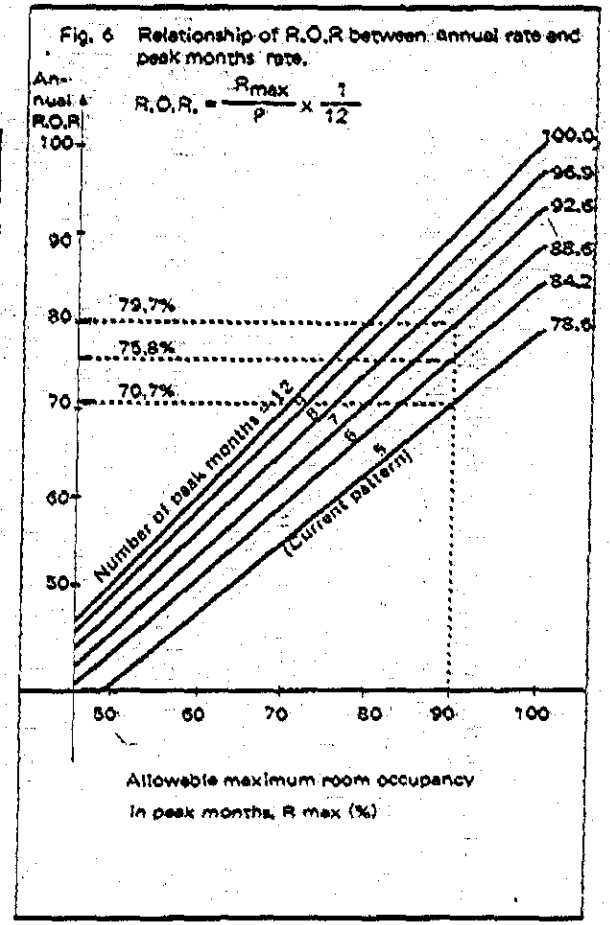


Table 5 Annual distribution of occupancy

Order of month	Number of peak months 5	6	7	8	9
1	10.6	9.9	9.4	9.0	8.6
2					
3					
4					
5	10.6				
6	9.2	9.9			
7	8.1	8.6	9.4		
8	7.1	7.7	8.2	9.0	
9	6.3	6.7	7.4	7.8	8.6
10	5.8	6.3	6.6	7.2	8.0
11	5.4	5.8	6.2	6.6	7.6
12	5.1	5.5	5.8	6.4	7.1
Total	100	100	100	100	100

* Current pattern

Fig. 6 Relationship of R.O.R between annual rate and peak months rate.



1.4 Figures Used in the Planning and the Sensitivity Tests

From the aforementioned analysis, the following figures are used as the basis for project planning.

a) Peak months : 7 months

b) R.O.R. in peak months : 90%

c) Annual average of R.O.R. : 80%

For sensitivity analysis, the following figures will be considered.

	No. of Peak Months	Annual R.O.R.	Rate of Diminish *1
Alternative A	6	75.8	94.6%
Alternative B	5	70.7	88.4

*1 : Rate of R.O.R. when basis of the annual R.O.R. (80%) is taken as 100.

1.5 Increasement of the Number of Peak Months

According to figure 2.1.2, monthly fluctuations in R.O.R. show mainly 3 patterns in the type of tourists, i.e. tourists from neighbouring countries, tourists from Europe, and tourists from U.S.A. These patterns are shown below:

a) Tourists from neighbouring countries: Malaysia, Japan, Australia, etc.

b) Tourists from Europe: West Germany, Sweden, etc.

c) U.S.A.

	1	2	3	4	5	6	7	8	9	10	11	12
a)	H	H	H	H	L	L	L	M	L	M	H	H
b)	H	H	M	M	M	M	M	M	M	M	M	H
c)	H	M	M	H	H	H	H	H	M	M	M	H
Total	H	H	H	M	L	L	L	M	L	M	H	H
Future Prospect				H	M					H		

where H means large number of tourists,
M means medium number of tourists,
L means small number of tourists.

In the future, promotional measures to increase tourists in April and October are deemed important.

ANNEX 2. EXPENDITURE BY TOURIST

C O N T E N T S

ANNEX 2. EXPENDITURE BY TOURISTS

2.1 Spending by Tourist

According to the survey conducted by T.O.T., one international tourist spent approximately 38 US Dollars in 1974, which is equivalent to 760 Baht, calculated with the rate of 20 Baht = US 1 Dollar. This figure is estimated to have been slightly increasing since then, but here, it can be assumed tourists will continue spending the same amount.

When the infrastructure and the amenity core begin operation, tourists' daily spending will increase, but it will not be taken into account either.

On the other hand, with the extension of staying period, per diem spending will reduce. Namely, though the room charge and payment for meals will not change, spendings like for shopping per one trip which are not much related to the length of stay will be smaller per day. Therefore, in the future, with the extension of average staying period, mean expenditure per day will be a little smaller.

For the purpose of study, tourists are categorized into three groupes, namely, foreign tourists, domestic tourists which mean those who dispatch from anywhere Thailand, and one-day visitors which mean those who do not spent any night in Pattaya.

Expenditure analysis was made basically by availabel data for the international tourists, then these data was applied with necessary modification to the expenditure pattarn by domestic tourists.

2.2 Trend of Day to Day Spending by Foreign Tourists

According to the survey by T.O.T. conducted in 1974, international tourists stayed for five days in average. They paid 11.6 US Dollar/day for room charge, 7.2 US Dollar/day for meals, 6.6 US Dollar/day for tours, 10.0 US Dollar/day for shopping, 2.5 US Dollar/day for miscellaneous purposes. The recent trend of these is shown in Table-1.

The percentage of shopping on Tai Silk (which is the speciality in this country) is approximately 4% of average per diem expenditure of the total shopping expenditure which is 1.4 US Dollar/day.

The following estimation is made about the average expenditure of tourists in Pattaya considering the character of this area. The estimationis made based on the interviews by study team. The survey items of expenditure are the same with the 5 items by T.O.T., that is, room charge, food, tour, shopping, and miscellaneous expenses.

2.2.1 Room Charges

The room charge is estimated based on the present one in Pattaya (as of December, 1977, from T.O.T. source). Refer to Annex 3.

2.2.2 Meals

Meals are taken in the hotels and outside. We assumed that two thirds of meals are taken in the hotels, and in regardless of the length of stay, tourists are supposed to spend constant amount of money for meals every day. Meals outside hotels are mainly taken at the restaurants is Pattaya downtown, south of Pattaya beach.

In the future, more restaurants will be opened in other places, too. From these conditions, it is assumed the expenditure for one meal in the hotel is to be 7.5 US Dollar/day (150 Baht/day), and outside the hotel, 3.7 US Dollar/day (75 Baht/day).

2.2.3 Touring

One way transportation form Bangkok to Pattaya costs about 3 Dollars, but it is not included in the expenditure. The place for touring in Pattaya, so far, is rather limited except the one to Ko Lan Island. In the future, however, it is expected more revenue will come after the completion of amenity core and other facilities for inland activities. One-night visitor is assumed to spend about 10 US Dollars and the per diem expenditure is supposed to decrease by the extension of stay.

2.2.4 Shopping

Like for touring, per diem expenditure is higher when the period of stay is shorter, and for one-night visitors, it is assumed to be approximately 10US Dollar/day and on the fifth day, it will reduce to be 2.5 US Dollar/day.

2.2.5 Miscellaneous Expenses

Miscellaneous expenses are assumed to be 4 US Dollars a day in average. It includes all other spendings which do not fall under four items above.

The total expenditure in five items in relation to the period of stay (nights) is shown in Table-3. Table-4 shows the accumulation of these expenditures. Table-5 shows the average spending per diem obtained from Table-4. According to these data, mean per diem expenditure of tourists who stay for three days is assumed to be 40.5 US Dollar (810 Baht), those who stay for 7 days will spend 35.8 US Dollar (716 Baht). Those who stay for 5 days will spend 37.6 US Dollar (752 Baht) per day which is almost equal to the result of T.O.T. Survey of 1974. Percentage of expenditure in the hotel for those who stay for one day and those who stay for five days are 53.6% and 63.8% respectively, showing about 10% higher rate in the case of those who stay shorter. This is due, perhaps, to the fact that expenditure in the hotel is more or less constant, while outside the hotel, average daily expenditure is smaller.

2.3 Relationship with Tourism Industry

Analyses of expenditure in the preceding section are made according to the five expenditure items viewed from the tourists. Here, these items are classified according to the types of tourism industry, (restaurants, shops avtivity, facilities, etc.). Economic analysis will be done in accordance with these items.

In the hotel,

a. Room charge:

b. Restaurant: meals in thehotel, and other expenditure in the hotel

c. Activity:

d. Shop: Shopping in the hotel

Out of the hotel,

a. Restaurant: meals out of the hotel and 1/2 of miscellaneous expenditure out of the hotel

b. Activity: Activity out of the hotel and 1/2 of miscellaneous expenditure out of the hotel

c. Shop: Shopping out of the hotel

Daily expenditure obtained in this manner by days of stay is shown in the percentage in Table-6.

Table-1 Expenditure by a Tourist

(i) Average expenditure per day/person

1964 - 69	30.00 US$	(Census 1964)
1970 - 73	36.70 US$	(Census 1971)
1974 - 75	37.85 US$	(Census 1975)

(ii) Census 1975

Countries of nationality	Lodging	Food	Transportation & sightseeing	Shopping			Others	Average expenditure per day/person
				Thai silk	Others	Total		
Total	11.60	7.19	6.55	1.40	8.59	9.99	2.52	37.85
Overseas visitors								
North America								
U. S.	13.94	8.70	7.56	2.38	11.54	13.92	3.04	47.16
Canada	13.65	7.93	7.76	2.15	9.97	12.12	2.96	44.42
Europe								
U. K.	13.45	8.00	7.29	1.15	8.06	9.21	2.92	40.87
France	13.49	7.95	7.20	0.52	12.45	12.97	2.74	44.35
W. Germany	13.56	8.71	8.03	2.06	8.59	10.65	3.02	43.97
Netherlands	13.36	7.45	7.38	2.42	9.47	11.89	2.64	42.72
Switzerland	13.22	7.02	7.26	1.57	9.68	11.25	2.48	41.23
Others	12.96	8.04	6.95	1.59	8.55	10.14	2.84	40.93
Pacific & Asia								
Australia	13.17	7.84	8.02	2.31	10.22	12.53	3.10	44.66
China	10.44	6.10	5.88	1.25	6.35	7.60	2.55	32.57
India	9.78	5.82	4.97	1.08	5.68	6.76	1.85	29.18
Japan	13.08	8.39	7.13	1.30	10.26	11.56	2.10	42.26
New Zealand	13.53	7.85	7.26	1.38	11.26	12.64	2.80	44.08
Philippines	11.42	6.19	5.92	1.74	5.59	7.33	1.73	32.59
Others	9.94	6.05	5.59	1.76	8.21	9.97	1.64	33.19
Neighboring visitors								
Malaysia	7.05	5.00	4.27	0.52	5.04	5.56	2.28	24.16
of which visitors by land	6.67	4.80	4.05	0.45	4.58	5.03	2.31	22.86
of which visitors by air	10.32	6.64	6.17	1.11	8.75	9.86	2.04	35.03
Singapore	9.57	6.11	5.91	1.09	6.38	7.47	2.16	31.22
of which visitors by land	7.71	6.05	5.60	0.90	4.86	5.76	2.20	27.32
of which visitors by air	11.16	6.16	6.17	1.27	7.67	8.94	2.13	34.56
Others	10.45	5.95	6.40	0.55	8.86	9.41	1.86	34.07
Others	11.45	6.42	6.26	1.39	8.35	9.74	2.38	36.25

2.4 Spending Pattern by Domestic Tourist

It is assumed that spending by domestic tourists are less than those by foreign tourists. According to T.O.T. data shown on Table-1, the daily average expenditure by the neighboring visiters, such as Malaysia and Singapore by land are US$23 ∿ 27 a day which is about 70% of the daily spendings by an arrival to Thailand.

Therefore it is estimated that the daily average expenditure by domestic tourist is about 70% of those spending by foreign tourist. Table-6 shows estimated expenditure by the length of stay for foreign tourists as well as domestic tourists.

2.5 Spending Pattern by One-day Visitors

There is no available data of this spending pattarn. Estimation was made based on following conditions.

1) 20% of one-day visitors are domestic foreigners
2) 80% of one-day visitors are local visitors.
3) A domestic foreign one-day visitors will spend 10.9 US$ a day assuming that a visitor will spend as same amount of daily spending in outside of hotel for three day staying domestic tourist. Refer to Table-6.
4) Local visitors will spend 50% of those spending by a domestic foreign one-day visitor.

Table 2 Spending by One-day Visitor

Unit: US$

Spending for	Foreign One-day Visitor a day	Local One-day Visitor a day	Average
Food and Others	4.3	2.2	
Touring	2.9	1.4	
Shopping	3.7	1.9	
Total	10.9	5.5	6.5

As a result, it is estimated that the average expenditure by an one-day visitor is US$6.5 or 130 Baht.

Table-3 Estimated Expenditure Each Day

unit: US Dollar

day (night)	Room Charges	Meals			Touring			Shopping			Miscellaneous Expenses		
	Subtotal	Sub-total	in*	out*	Sub-total	in	out	Sub-total	in	out	Sub-total	in	out
by 1 st.	13.3	11.2	7.5	3.7	10.0	2.0	8.0	10.0	1.2	8.8	4.0	2.0	2.0
by 2 nd.	13.3	11.2	7.5	3.7	4.0	1.5	2.5	5.0	1.0	4.0	4.0	1.5	2.5
by 3 rd.	13.3	11.2	7.5	3.7	3.0	1.0	2.0	3.8	0.8	3.0	4.0	1.2	2.8
by 4 th.	13.3	11.2	7.5	3.7	2.0	0.5	1.5	3.0	0.5	2.5	4.0	1.0	3.0
by 5 th.	13.3	11.2	7.5	3.7	1.7	0.3	1.4	2.5	0.4	2.1	4.0	0.8	3.2
by 6 th.	13.3	11.2	7.5	3.7	1.5	0.3	1.2	2.0	0.3	1.7	4.0	0.6	3.4
by 7 th.	13.3	11.2	7.5	3.7	1.3	0.2	1.1	1.7	0.3	1.4	4.0	0.5	3.5
by 8 th.	13.3	11.2	7.5	3.7	1.1	0.2	0.9	1.5	0.3	1.2	4.0	0.4	3.6

* in : Expenditure in the Hotel
out: Expenditure out of the Hotel

Table-4 Accumulation of Daily Expenditure

unit: US Dollar

day (night)	Room Charges	Meals			Touring			Shopping			Miscellaneous Expenses		
	in	Sub-total	in*	out*	Sub-total	in	out	Sub-total	in	out	Sub-total	in	out
by 1 st.	13.3	11.2	7.5	3.7	10.0	2.0	8.0	10.0	1.2	8.8	4.0	2.0	2.0
by 2 nd.	26.6	22.4	15.0	7.4	14.0	3.5	10.5	15.0	2.2	12.8	8.0	3.5	4.5
by 3 rd.	39.9	33.6	22.5	11.1	17.0	4.5	12.5	18.8	3.0	15.8	12.0	4.7	7.3
by 4 th.	53.2	44.8	30.0	14.8	19.0	5.0	14.0	21.8	3.5	18.3	16.0	5.7	10.3
by 5 th.	66.5	56.0	37.5	18.5	20.7	5.3	15.4	24.3	3.9	20.4	20.0	6.5	13.5
by 6 th.	79.8	67.2	45.0	22.2	22.2	5.6	16.6	26.3	4.2	22.1	24.0	7.1	16.9
by 7 th.	93.1	78.4	52.5	25.0	23.5	5.8	17.7	28.0	4.5	23.5	28.0	7.6	20.4
by 8 th.	106.4	89.6	60.0	29.6	24.6	6.0	18.6	29.5	4.8	24.7	32.0	8.0	24.0

* in : Expenditure in the Hotel
out: Expenditure out of the Hotel

Fig. 1 Daily Expenditure and its Accumulation
(refer to Table-4)

unit: US Dollar

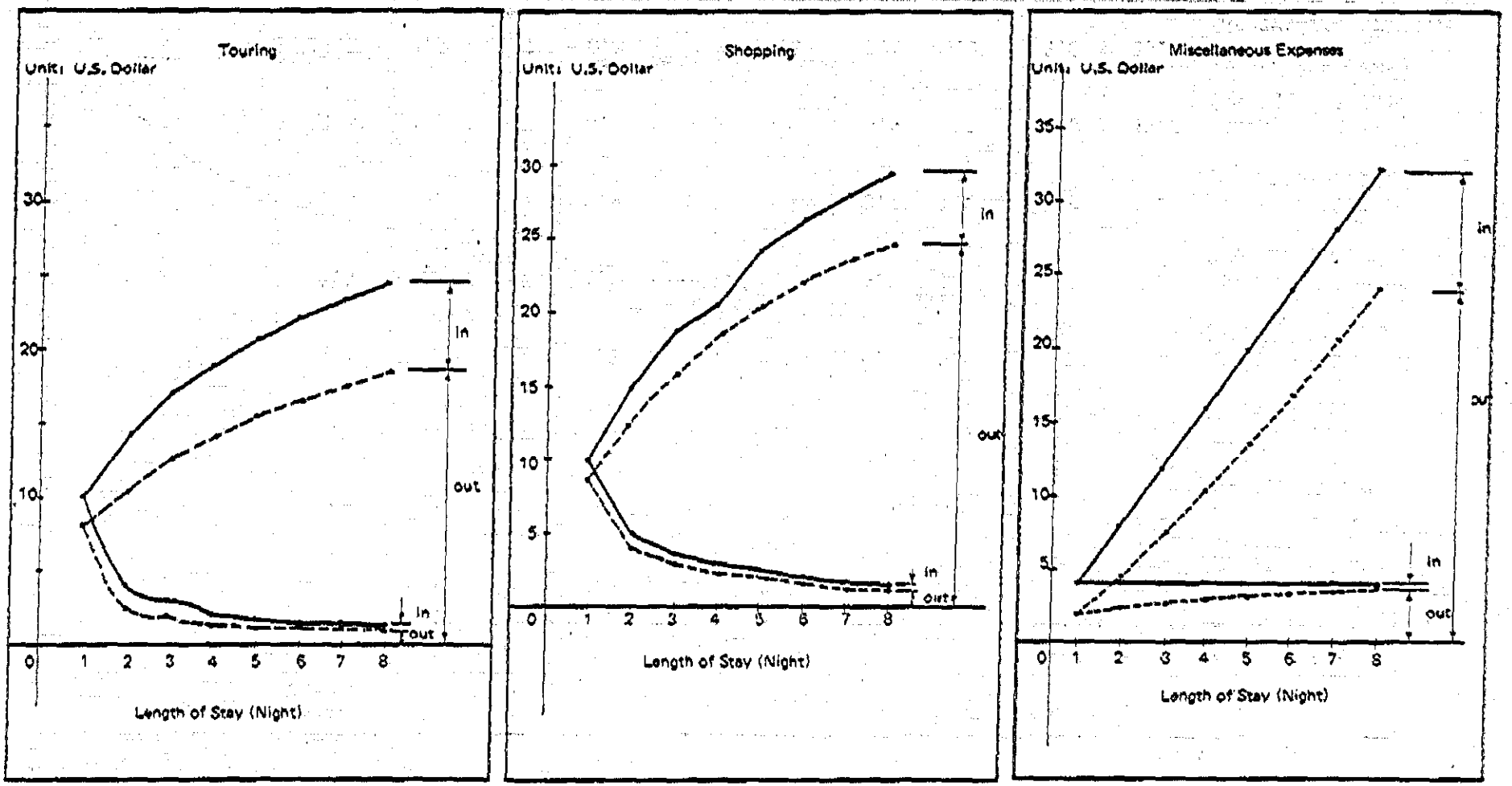


Table-5 Average Spending per Diem

unit: US Dollar

Total length of stay (night)	Room Charges	Meals		Touring		Shopping		Miscellaneous Expenses		Total		
	in	in*	out*	in	out	in	out	in	out		in	out
1	13.3	7.5	3.7	2.0	8.0	1.2	8.8	2.0	2.0	48.5	26.0 (53.6%)	22.5 (46.4%)
2	13.3	7.5	3.7	1.8	5.3	1.1	6.4	1.8	2.3	43.2	25.5 (59.0%)	17.7 (41.0%)
3	13.3	7.5	3.7	1.5	4.2	1.0	5.3	1.6	2.4	40.5	24.9 (61.5%)	15.6 (38.5%)
4	13.3	7.5	3.7	1.3	3.5	0.9	4.6	1.4	2.6	38.8	24.4 (62.9%)	14.4 (37.1%)
5	13.3	7.5	3.7	1.1	3.1	0.8	4.1	1.3	2.7	37.6	24.0 (63.8%)	13.6 (36.2%)
6	13.3	7.5	3.7	0.9	2.8	0.7	3.7	1.2	2.8	36.6	23.6 (64.5%)	13.0 (35.5%)
7	13.3	7.5	3.7	0.8	2.5	0.6	3.4	1.1	2.9	35.8	23.3 (65.1%)	12.5 (34.9%)
8	13.3	7.5	3.7	0.8	2.3	0.6	3.1	1.0	3.0	35.3	23.2 (65.7%)	12.1 (34.3%)

* in : Expenditure in the Hotel
out: Expenditure out the Hotel

Fig. 2 Average Spending per Diem
(refer to Table-5)

unit: US Dollar

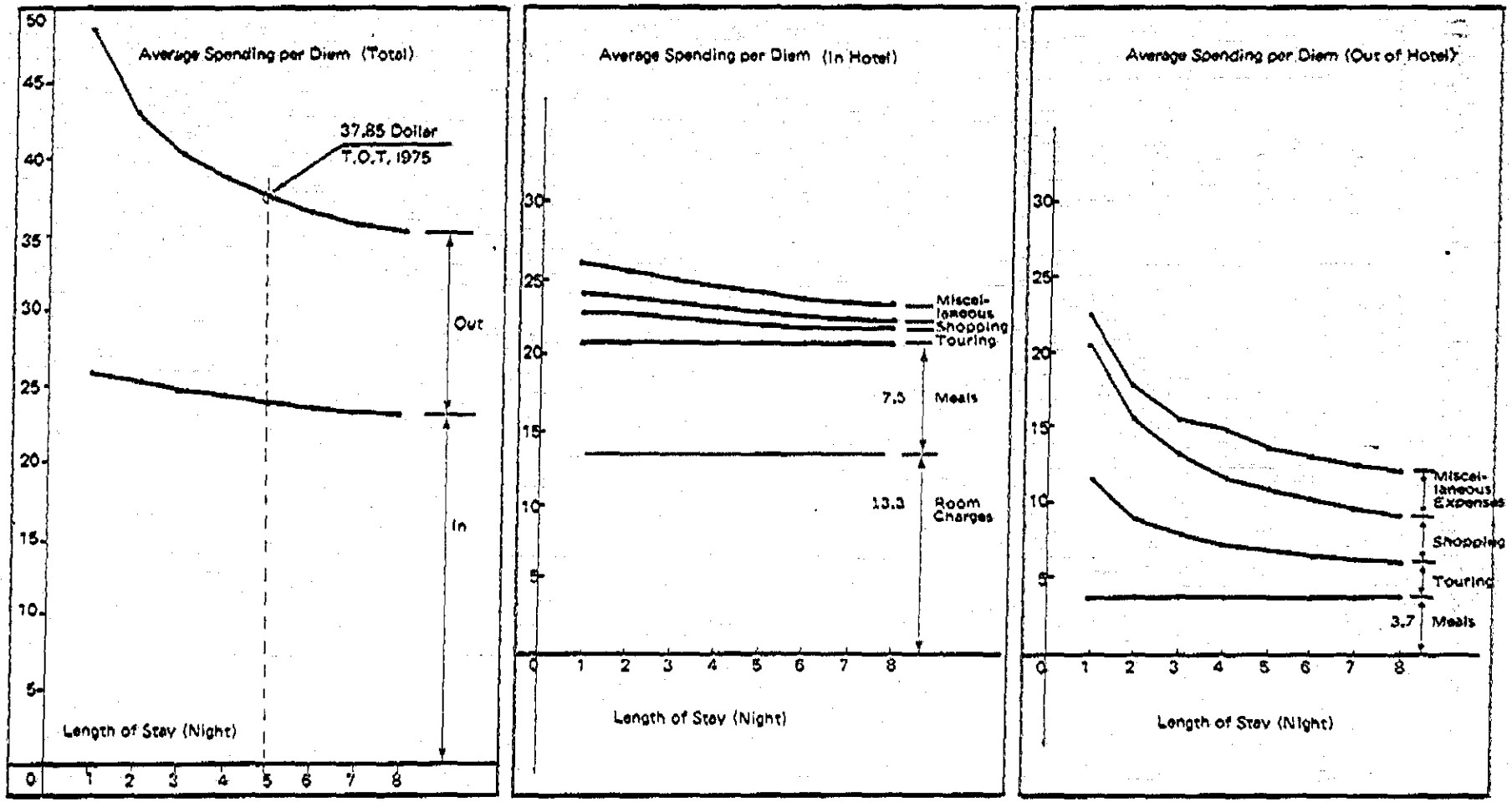


Table-6 Estimated Spending Pattern (Out of the Hotel)

Length of Stay (Night)	Restaurant	Amenity and Inland Activities	Shopping	Total
1	20.8%	39.9%	39.3%	100%
2	27.4%	37.4%	36.2%	100%
3	31.4%	34.6%	34.0%	100%
4	34.7%	33.3%	32.0%	100%
5	37.2%	32.8%	30.0%	100%

Fig. 3 Estimated Spending Pattern (Out of the Hotel)
(refer to Table-6)

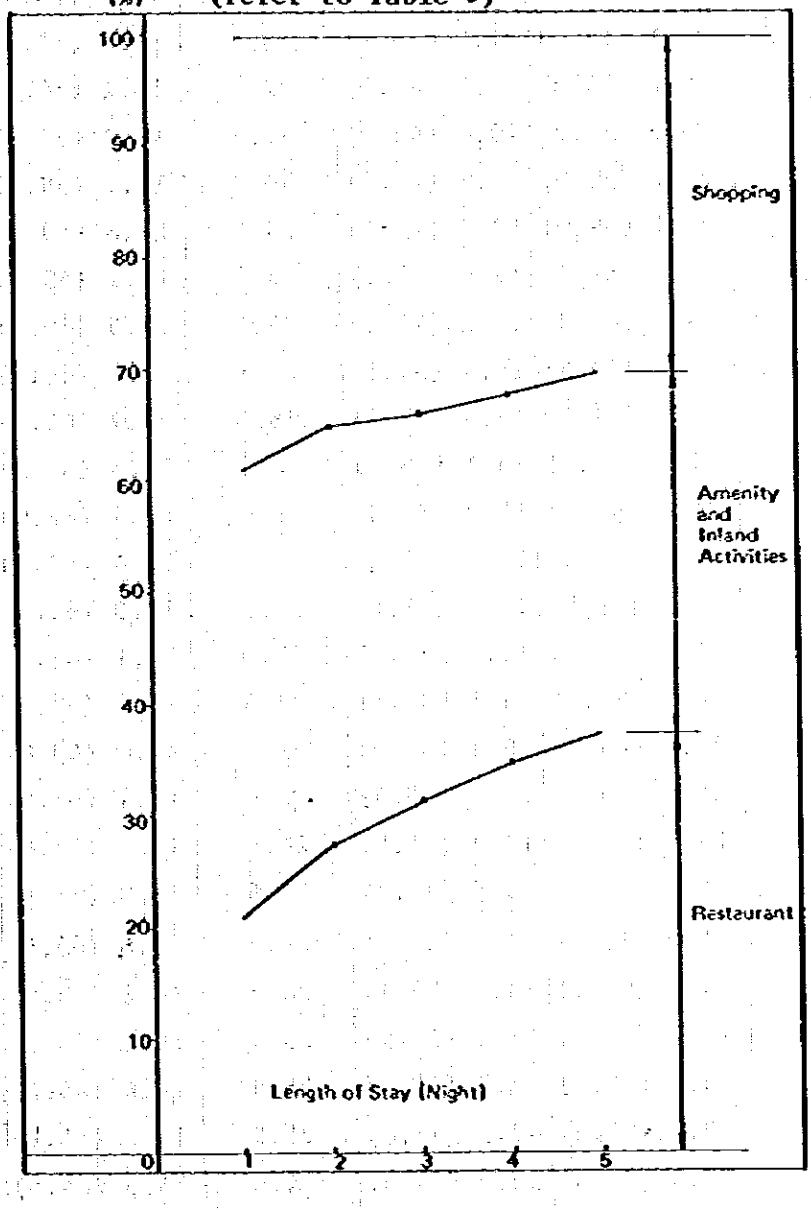


Table 7 Expenditure by Length of Stay (Nights)

Length of Stay (nights)	Foreign Tourists				Domestic Tourist			
	Expenditure in US Dollar a day	in Hotel US Dollar	%	out of Hotel US Dollar	%	Expenditure in US Dollar a day	in Hotel US Dollar	%	out of Hotel US Dollar	%
1.0	48.5	26.0	(53.6)	22.5	(46.4)	34.0	18.2	(53.6)	15.8	(46.4)
1.2	47.5	26.1	(54.8)	21.4	(45.2)	33.3	18.2	(54.8)	15.1	(45.2)
1.4	46.5	26.1	(56.0)	20.4	(44.0)	32.2	18.1	(56.0)	14.1	(44.0)
1.6	45.5	25.9	(57.0)	19.6	(43.0)	31.5	18.0	(57.0)	13.5	(43.0)
1.8	44.5	25.7	(58.0)	18.8	(42.0)	30.8	17.9	(58.0)	12.9	(42.0)
2.0	43.0	25.4	(59.0)	17.6	(41.0)	30.1	17.8	(59.0)	12.3	(41.0)
2.2	42.5	25.3	(59.5)	17.2	(40.5)	29.8	17.7	(59.5)	12.1	(40.5)
2.4	42.0	25.2	(60.0)	16.8	(40.0)	29.4	17.6	(60.0)	11.8	(40.0)
2.6	41.5	25.1	(60.5)	16.4	(39.5)	29.1	17.6	(60.5)	11.5	(39.5)
2.8	41.0	25.2	(61.5)	15.8	(38.5)	28.7	17.7	(61.5)	11.0	(38.5)
3.0	40.5	24.9	(61.5)	15.6	(38.5)	28.4	17.5	(61.5)	10.9	(38.5)
3.2	40.0	24.8	(62.0)	15.2	(38.0)	28.0	17.4	(62.0)	10.6	(38.0)
3.4	40.0	24.8	(62.0)	15.2	(38.0)	28.0	17.4	(62.0)	10.6	(38.0)
3.6	39.5	24.7	(62.5)	14.8	(37.5)	27.7	17.3	(62.5)	10.4	(37.5)
3.8	39.0	24.3	(62.5)	14.7	(37.5)	27.3	17.1	(62.5)	10.2	(37.5)
4.0	39.0	24.5	(62.9)	14.5	(37.1)	27.3	17.2	(62.9)	10.1	(37.1)
4.2	38.5	24.2	(63.0)	14.3	(37.0)	27.0	17.0	(63.0)	10.0	(37.0)
4.4	38.5	24.4	(63.5)	14.1	(36.5)	27.0	17.1	(63.5)	9.9	(36.5)
4.6	38.0	24.1	(63.6)	13.9	(36.4)	26.6	16.9	(63.6)	9.7	(36.4)
4.8	38.0	24.2	(63.7)	13.8	(36.3)	26.6	16.9	(63.7)	9.7	(36.3)
5.0	37.5	23.9	(63.8)	13.6	(36.2)	26.3	16.8	(63.8)	9.5	(36.2)
5.2	37.5	24.0	(63.9)	13.5	(36.1)	26.3	16.8	(63.9)	9.5	(36.1)
5.4	37.0	23.7	(64.1)	13.3	(35.9)	25.9	16.6	(64.1)	9.3	(35.9)
5.6	37.0	23.8	(64.2)	13.2	(35.8)	25.9	16.6	(64.2)	9.3	(35.8)
5.8	37.0	23.8	(64.4)	13.2	(35.6)	25.9	16.7	(64.4)	9.2	(35.6)
6.0	36.5	23.5	(64.5)	13.0	(35.5)	25.6	16.5	(64.5)	9.1	(35.5)
7.0	36.0	23.4	(65.1)	12.6	(34.9)	25.2	16.4	(65.1)	8.8	(34.9)
8.0	35.5	23.3	(65.7)	12.2	(34.3)	24.9	16.4	(65.7)	8.5	(34.3)