Development Discussion Papers

Tourism, Environment and Profitability:

The case of the Paphos Holiday Complex

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ABSTRACT*

This paper presents a project evaluation study in which the
methodological tools taught in the H.I.I.D. Program in Investment
Appraisal and Management are applied. It examines the feasibility
of a hotel project in Cyprus covering all aspects of investment
appraisal. It begins with an analysis of the market for tourism
in Cyprus and a definition of the project concept. The financial
appraisal analyses the project cash flow from the total
investment and owners' perspectives. The economic appraisal of
the project is completed after working out the economic discount
rate, foreign exchange premium and a series of economic
conversion factors for Cyprus. The distributive analysis
identifies the project externalities and shows how these may be
attributed to various economic groups. Sensitivity and risk
analysis further enhances the appraisal by identifying and
measuring the level of uncertainty surrounding the projected
results. Finally, the study considers the impact of the project
on the environment.

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1. INTRODUCTION

The Paphos Holiday Complex is a major tourism project sponsored by the Cyprus Development Bank (CDB). The sponsors are interested in formulating and implementing an up-market tourist project that is both financially and economically viable and one that takes into account environmental costs and benefits. If found feasible, CDB intends to invite investors from the private sector and the public at large to participate in the equity of the proposed project.

This appraisal aims to define the project parameters and to evaluate their financial and economic implications. The study also attempts to assess the interaction of the project with the environment of the area.

The growth in tourism

Cyprus relies heavily on tourism to foster fast economic growth[1]. Due to a rapidly increasing demand for summer vacation resorts and the relatively small capacity of the island, the growth of tourism in Cyprus has largely been supply determined. Investments in tourist related projects (mainly hotels and hotel apartments) have shown spectacular growth over the past ten years[2]. With the

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[1] Tourism is a major foreign exchange earner and a prime contributor to the country's balance of payments. Gross receipts from tourism reached CP 321 million in 1987 (CP 1.00 = US$ 0.49) or 34% of total foreign exchange earnings for that year.

[2] The number of available beds in Cyprus has grown from around 6,800 in 1978 to 40,850 in 1988. In the same period the total number of tourists visiting Cyprus has increased from 214,000 to about 1,110,000 tourists per year.

dramatic growth in bed capacity and the resulting increase in tourist traffic to the island, however, it is becoming increasingly necessary to evaluate and consider the environmental impacts of tourist development projects.

The nature of tourism in Cyprus

The majority of tourists visiting Cyprus come from Western Europe[3]. The image of the tourist that has been attracted to Cyprus is rather typical of the "**mass tourist"** exhibiting the following general characteristics:

- **package tour preference** - in 1988, 65% of tourists arriving to Cyprus were on all inclusive tours of which the majority (about 74%) arrived on chartered flights.
- **rather sensitive to price** - hoteliers have to sell at market competitive rates to tour operators in order to secure reservations.
- **highly seasonal demand** - typical tourist chooses his destination primarily on **sun and sea** availability (about 80% of tourists visit Cyprus between April and October).
- **short length of stay** - in 1988 the average length of stay was only about 10.5 days per person
- **low out-of-pocket spending** - the daily non-accommodation expenditure for package tourists in 1987 was estimated to be

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[3] Western European tourists visiting Cyprus in 1988 accounted for nearly 90% of total tourist arrivals with over 50% coming from the U.K. and the Scandinavian countries.

about 13.9 Cyprus pounds per person, as compared to 17.4

Cyprus pounds per person for other tourists[4].

The growth in mass tourism and economic constraints

Although tourism in Cyprus has evolved as one of the most dynamic

of the economy in the past decade[5], its rapid expansion has also

brought about serious resource constraint problems. The country

now faces labour shortage problems, insufficient electricity and

strained water supply, restricted beach access, congested roads,

and the dislocation and change of lifestyle in the villages. The

uncontrolled expansion of mass tourism in Cyprus also emphasized

the inadequacy of existing infrastructure and the lack of tourist

support facilities.

Amidst mounting concern that the rate of hotel development in

recent years has been too rapid and rather misdirected, the

Cyprus government is directing its immediate efforts towards

maintaining and improving the quality of the tourist product,

rather than further boosting accommodation capacity. The Paphos

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[4] Source: The Tourist Expenditure Survey for 1987, The
Cyprus Tourism Organisation, June 1988.

[5] Foreign exchange earnings from tourism amounted to 36.2%
of total receipts from goods and services in 1988. The
contribution of tourism to G.D.P. exceeds 15%, the highest
relative to other economic activities. The development of tourism
sector has further fuelled growth in the construction, transport,
agriculture and manufacturing industries. In terms of job
creation, the combined hotel/restaurant sector accounts for
nearly 20% of the total economically active population.

Holiday Complex is a project that aims to be in line with this policy.

The situation of the project

The Paphos Holiday Complex is intended to be a leading holiday resort targeting the upper class segment of the Western European market and is expected to generally upgrade the quality of the Cyprus tourist product. It will be situated on a unique stretch of land[6], owned by the Cyprus Development Bank, the project promoters, which is by the seaside about three miles north of Paphos town.

Paphos is still relatively unspoiled from the adverse effects of mass tourism which are evident in other areas of Cyprus. It combines sun, sea and the other common tourist attractions available throughout the island with natural scenery and abundant cultural heritage (archaeological sites of the Greek and Roman era). The location and size of the available land present a further opportunity for positively differentiating the project.

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[6] The site abuts on the new Paphos - Coral Bay road, about 1 mile north of the historical Tombs of the Kings. It is about 87,300 square meters and slopes gently towards the sea from which it is separated by a thin strip of Government land. The sea frontage is about 155 meters.

2. THE MARKET

Market growth and bed capacity

Tourist arrivals to Cyprus have been steadily increasing reaching the 1.11 million mark in 1988 (more than doubling since 1982 - 0.53 million)[7]. Bed capacity has also risen at a similar pace, going from 19.7 in 1982 to 40.9 thousand beds in 1988. As of April 1989, there were 10.7 thousand beds under construction and approved plans for the development of 12.0 thousand additional beds. In 1991, bed capacity is expected to exceed 60.0 thousand beds.

Seasonality

The market for hotel rooms in Cyprus is marked by a strong seasonality phenomenon, with the high season lasting from April to October (peak July-August). The occupancy rates within this period range between 60-70% with July and August rising to 85-90%. March and November occupancy rates fall down to 30-40% while the lowest rates of about 20% can be observed during January and December.

Occupancy rates

Despite the fast growth in bed supply, yearly occupancy rates for seaside hotels have increased steadily reaching an average of about 63% in 1988. Occupancy rates for 4-star seaside hotels (the

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[7] The average length of time a tourist stays in Cyprus remained fixed over the last years (around 10.5 days).

category this project falls into), have been consistently above the national average by 3-4 percentage points (about 66% in 1988). These higher occupancy rates have persisted despite a higher relative increase in bed capacity in this category vis-a-vis other categories. When the overall occupancy rates rise, the low season rates tend to increase comparatively more than the high season rates, as the latter already touch the possible maxima (90-95%). In the recent past this trend can be observed by the flattening out of the occupancy curves.

Paphos market overview

Paphos is associated with the more eclectic type of holiday maker. The typical Paphos tourist seeks good quality in accommodation, a high standard of service, entertainment and sports facility availability, and a varied environment and culture to explore. The Paphos area is evolving as a prominent tourist destination with very high occupancy rates (average hotel occupancy rate of 74% compared to a national average of 63%, in 1988). This is attributable to the following factors:

- The region's year round mild climate that encourages winter tourism.
- The natural character of the hinterland and the varied landscape of the Paphos district.
- The historical monuments and archaeological sites.
- The opening of an international airport at Paphos.

The project's prime competitors are expected to be 4 and 5 star hotels in the Paphos area and similar hotels in the rest of Cyprus and south Europe such as Portugal, Italy, Greece and Spain. Cyprus, and the Paphos (4-5 star hotels) in particular, should amount only to a small percentage of the total options available to the potential Western European tourist customer. It is therefore reasonable to assume that the project's relevant market is in fact far wider than the narrow Cyprus market. Nevertheless, for the purposes of analysis, it will be assumed that the project's relevant competitors are the existing and planned 4-5 star hotels in the Paphos area.

Existing competitors

Currently there are five 4 star hotels in the Paphos area (no 5 star hotel exists as yet). They are all located along the sea front within walking distance of the Paphos town centre.

Hotel	Bed capacity
Paphos Beach	380
The Annabelle	256
Alexander the Great	344
Cypria Maris	474
Ledra Beach	520
Total	1,974

With the exception of Ledra Beach hotel which opened in 1989, the above hotels had an average occupancy rate of about 76% during 1988. All hotels offer good overall facilities, including heated swimming pool, tennis and squash courts, other sports facilities

and live entertainment. The net revenue per guestnight from accommodation in 1988 ranged from CP 10.00 - CP 14.00 while the net average total revenue per guestnight was between CP 16.00 - CP 20.00.

Potential new entrants

The higher than average rates and occupancies achieved by hotels in Paphos have provided attractive inducement for further development in the area[8]. Because of substantial excess demand for the Paphos type of vacation it is anticipated that the growth in bed supply is not expected to put significant downward pressure on the occupancies and rates currently achieved. It should also be mentioned that the implementation of planned projects could be impeded due to financial constraints.

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[8] There are currently under construction in Paphos one 5 star hotel (600 beds), two 4 star hotels (852 beds), and two 3 star hotels (494 beds). As of April 1989, the total bed capacity under construction (including extensions to existing units) is close to 3,600 beds.

A further strong indication of the expected growth in tourism activity is the Cyprus Tourism Organisation approvals for new units. As of May 1989, there are approvals for 8 new hotels (about 3,000 beds) and 3 new hotel apartments (about 200 beds) and another 200 beds as extension to existing establishments.

3. THE PROJECT

The target market

The project will aim to attract a different/better class of tourist. It will cater for the needs of European (middle to higher income) families and organised groups who seek **a comfortable vacation at a seaside resort which also offers excitement and privacy**. The targeted customer of the project is characterised as follows:

- less sensitive to price
- not seriously constrained by seasonality aspects
- quality and environmentally conscious
- seeking a unique experience
- travelling individually or on special rather than "mass market" package tours

The target market of the project will be West European families and organised groups (such as companies or clubs), in the middle to upper income class, which are either sports active or who seek a holiday that caters for the special needs of every family member (e.g. privacy, interesting tours, relaxation for the parents and sports activities or fun games for the young members of the family).

Project features

The design and construction of the resort's facilities as well as its operational features will be of high international standards.

The project will provide a comprehensive range of facilities and be self-contained. It will consist of a main hotel building of 350 room capacity and another 200 rooms in bungalow type accommodation. Construction of buildings will cover only 12% of the available land (about 12,500 square meters). The remaining 75,000 square meters of open space will be used to give the project a unique character[9].

In addition to being a fully featured 4-star beach hotel the project will have the following unique features which will aim to fulfill the identified demand for **excitement and privacy**:

- **Superior sports facilities** (with tournament organizer, training instructors and referees) which will enable guests to pursue their favourite sports activity and add the **excitement** of athletic competition to their vacation.
- **Exclusive personal service and extensive landscaping** with outside gardens and secluded patios where the tourist could enjoy the unique scenery and natural environment in conditions of **privacy**.

Other facilities will include the following:

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[9] By comparison other 4 star hotels in the Paphos area are more densely built by 3 to 5 times.

<u>Indoor facilities</u>

- conference hall
- shopping centre
- gymnastics/health club
- heated indoor swimming pool
- bowling centre
- four squash courts
- specialty restaurants
- beauty parlour
- billiard and table tennis room
- computer and video games room
- night club

<u>Outdoor facilities</u>

- imaginatively designed swimming pool
- activity pool for children
- diving and water sports centre
- fishing gear
- eight tennis courts
- full size soccer pitch
- volley ball court
- basket ball court
- mini golf course
- children's playgrounds
- car parking facilities
- extensive landscaped areas and gardens.
- bus service to Paphos town and airport

<u>Projected market performance</u>

Market performance in the hotel industry in Cyprus is generally taken to depend on the ability of the project to attain a competitive advantage on the following two rather inter-dependent market factors:

- **superior quality** and/or better fit of the product to the needs of a substantial target market

- **effective management** in selling/promoting the product and efficiently operating the hotel.

Superior product is a function of:

- **hotel comfort** (room facilities and space, variety and quality of food and drink, cleanliness, service, temperature, common facilities, space per guest, etc.).

- **location** and proximity to centres of attraction (uniqueness of site, beach quality, availability of attractive tours, proximity to town and shopping areas)

The project is expected to out-perform its immediate competitors (current 4 star hotels in Paphos) on **hotel comfort**. In particular, guests will be more satisfied with respect to open space and overall availability of facilities and personal service. The uniqueness of the Paphos Holiday Complex will be based to a large extent on its environmental appeal emanating from the preservation and enhancement of a natural environment. Due to its extensive land availability it will also be substantially less congested than competing hotels. The project competitiveness is likely to be further boosted from a better match of product features to target market needs.

With respect to **location** factors the project is expected to be competitively at par or marginally better than its main competitors. Although in relation to its competitors, the project may have a somewhat inferior beach this may be outweighed by its rather unique location and proximity to archaeological attractions. The project's relative disadvantage of not being

within walking distance to the Paphos town may be mitigated through the availability of a frequent bus service for customers (which may also include the Paphos airport in its itinerary).

Effective management is also expected to be a further source of competitive advantage for the project. This will emanate from the employment of professional management with proven organisational and marketing capabilities and many years experience in the tourist and hotel industry. Due the importance of management the project provides for top salaries for its key executives.

Taking into consideration the project's competitive edge (which is expected to be sustainable during the first 5-10 operating years) it is projected that it will attain a slightly higher occupancy level than other 4 star hotels in Paphos[10]. This will result from a higher demand during the low season (where the project is expected to attract sports and special interest tourism). It is also projected that the project will be able to charge marginally higher than average prices for accommodation and food.

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[10] Guest occupancy in the low season is projected to reach 55% on the third year of operation as compared to the Paphos market average which is about 50%.

Projected occupancy

Year	1994	1995	1996	...	2003
Available bed capacity	1100	1100	1100	...	1100
Occupancy - low season	20.0%	40.0%	55.0%	...	55.0%
Occupancy - high season	75.0%	85.0%	92.0%	...	92.0%
Average occupancy	52.2%	66.4%	76.7%	...	76.7%

Projected hotel rates

(1990 prices[11])	Cyprus pounds per guestnight[12]			
Source of revenue	Low season		High season	
Accommodation	12.00	49.6%	19.50	59.1%
Food	8.00	33.1%	8.50	25.8%
Beverage	3.00	12.4%	3.50	10.6%
Other	1.20	5.0%	1.50	4.5%
Total	24.20		33.00	

Implementation Plan

Large hotel projects of the size of the Paphos Holiday Complex

have long implementation periods. At the time of the preparation

of this report the project was at the pre-feasibility stage. It

is expected to take at least a year for the preparation of

detailed studies, design drawings and the securing and

mobilization of funds. The selection of contractors and the

actual construction phase will take another three years. A

realistic project completion date would therefore be the end of

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[11] Projected hotel rates are adjusted upwards for 5% assumed inflation using 1990 prices as a base year.

[12] Low season = 5 months January to March and November to December, High season = 7 months from April to October. Hotel revenues are given net of service charge, municipality tax and Cyprus Tourism Organisation tax.

1993. In the subsequent evaluation of the project, it is assumed that the project will be fully operational in 1994.

Capital Cost and Financial Plan

The nominal cost of the project at completion is estimated at CP 19.2 million. A summary breakdown of the project cost is given below[13]:

Project Cost

	CP million
Land	2.2
Buildings and Externals	8.1
Electrical and Mechanical	4.3
Furniture, Furnishings and Equipment	2.5
Preliminary and Pre-Operational	0.5
Initial Working Capital	0.3
Loan Interest during Implementation	1.3

	19.2

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[13] This table is the summary of a more detailed breakdown of the project cost. In the detailed breakdown, the different cost categories were also broken down into their respective local and foreign components.

The project cost was initially estimated at the 1990 price levels. The local and foreign components of the cost were then inflated by the expected changes in the general price level (local and foreign) to arrive at the nominal value of the project cost. Loan interest during the implementation period was calculated according to an assumed loan disbursement schedule which would be in line with the funding needs of the project. Details of the assumptions used for the calculation of the working capital requirements of the project are given in the following sections.

The above cost is proposed to be financed as follows[14]:

Financial Plan

	%	CP million
Share Capital	43%	8.2
Local Loans	10%	2.0
Foreign Loans	47%	9.0

		19.2

Management During Implementation

The Project Management Division of the Cyprus Development Bank
will undertake the management of the project during this very
important stage. This is to ensure that the project is completed
on time, according to budget and at the required quality
standards.

Management During Operation

The success of the project will depend to a large extent on the
ability of its management to market it effectively and to operate
it efficiently. It is therefore intended to recruit, either from
the local or if necessary from the international market, a well
qualified and experienced management team.

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[14] Equity capital will be secured through the issue of
shares to the public. Although local loans are preferable to
foreign loans (interest rate in Cyprus is fixed at 9%), CP 2.0
million is the maximum amount that can be expected to be secured
from local sources because the local banking sector faces severe
liquidity constraints. Given adequate guarantees and satisfactory
performance projections, no problems are anticipated in securing
the remaining CP 9.0 million from overseas financial
institutions. At the current exchange rate of CP 1.00=US $2.04
this amounts to US$ 18.4 million.

4. FINANCIAL EVALUATION

In the financial evaluation of the project, the financial cash flows are projected over the project's economic life so as to establish whether these satisfy the expectations of the owners and the bankers of the project.

The pro-forma cash flow statement from the owners' point of view is first developed in nominal terms so as to take into account all the effects of inflation on the cash profile of the project. These cash flows are then deflated to their real values and included in the real (constant price level) pro-forma cash flow. The net cash flows are then discounted by the real private opportunity cost of equity funds to obtain the net present value (NPV) from the owners' point of view.

Similarly, the pro-forma cash flow statement from the point of view of the total invested capital is prepared in real terms. The cash flows are then discounted by the private opportunity cost of capital to obtain the NPV of the project from the total investment point of view[15].

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[15] For a complete description of the effects of inflation on the cash flow profile of the project and a detailed methodology of how to incorporate inflation in the cash flow projections and to prepare cash flow statements from different perspectives see G. Jenkins and A. Harberger, Manual on Cost Benefit Analysis of Investment Decisions, Harvard Institute for International Development, Chapters 3 and 6.

Owners' Perspective

The table below shows extracts from the pro-forma cash flow statement from the perspective of the owners, presented in nominal terms. The notes at the end of this section explain how the main components of the cash flow are derived.

PRO FORMA CASH FLOW STATEMENT - OWNER'S PERSPECTIVE

CALENDAR YEAR	1990...1993	1994	1995	1996...2004
Domestic Inflation Index(1) 1.00	1.16	1.22	1.28	1.34 1.98

INFLOWS	Cyprus pounds (000's)			

From operations: (2)				
-Accommodation		4669	5997	7128
-Food		2147	2849	3446
-Beverage		872	1148	1383
-Other		370	485	582

Total from operations		8059	10479	12540
Service charge (3)		302	400	483
Local Loans (4)	1000			
Foreign Loans (4)	5000			
In use Values: (5)				
Land				4356
Buildings				11753
Electromechanical				3015
Furnishings & Equipment				1233

0	6000	8361 10879 13023		20357

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CALENDAR YEAR	1990...1993		1994	1995	1996...2004	
Domestic Inflation Index	1.00	1.16	1.22	1.28	1.34	1.98

OUTFLOWS   Cyprus pounds (000's)

Investments: (6)						
-Land	2200					
-Buildings	73	2800				
-Electromechanical	39	1966				
-Furnishings & Equipment	0	2079				
-Preliminary	140	127				
Operating expenses: (7)						
-Food cost			701	931	1128	
-Beverage cost			197	262	316	
-Payroll			2657	2919	3206	
-Departmental			619	795	946	
-Electricity			219	266	307	
-Fuel			51	63	74	
-Water			30	37	42	
-Maintenance			350	425	491	
-Admin. & marketing			428	636	629	
Corporate Taxation (8)			84	242	369	
Staff service charge (3)			302	400	483	
Working capital: (9)						
-Accounts receivable			672	202	172	-1470
-Accounts payable			-438	-82	-75	923
-Cash reserves			62	19	16	-137
Loan repayments: (4)						
-Foreign Interest			683	945	945	847
Principal			0	0	934	1032
-Local Interest			135	180	180	160
Principal			0	0	217	237
Total outflows	2452	7790	7059	9291	10380	-684
Net Cash Flow	-2452	-1790	1302	1588	2643	21041

The net cash flow line shows the amounts that the owners have to
contribute during the implementation of the project and the
surpluses available to them during operations after the servicing
of the loan obligations. It can be seen that the project will be
able to comfortably repay its loans and leave a surplus to the
owners every year from the commencement of operations.

All items in the above proforma cash flow statement are subsequently deflated by the domestic inflation index to 1990 price levels (the base year). The net cash flow thus obtained is discounted by 11.4%[16] to yield a positive NPV of CP 1.75 million. The table below shows extracts from the results:

<u>Proforma Cash Flow Statement - Owners' Perspective</u>

Real Values

	1990...1993	1994	1995	1996...2004	
Net Cash Flow	-2452	-1546	1071	1245	1972	10627

Discount Rate= 11.4%

Net Present Value = <u>CP 1.75 million</u>.

Total Investment Perspective

All inputs to the proforma cash flow statement from the total investment point of view are the same to that of the owners' except that loans, interest and principal repayments do not enter into the calculation of the net financial cash flow. The net cash

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[16] The discount rate of 11.4% represents the real private cost of equity funds. Private investors normally require approximately 17% nominal return from tourist/hotel related investments. Given that the expected domestic inflation rate is taken to be 5%, the real opportunity cost of funds is calculated to be: (17 - 5) / 1.05 = 11.4%

flow is discounted by 9.2%[17] to yield a positive NPV of CP 2.45

million. The table below shows extracts from the results:

Proforma Cash Flow Statement   - Total investment perspective

Real Values

	1990...1993	1994	1995	1996...2004		
Net Cash Flow	-2452	-6023	1997	3028	3671	10627

Discount Rate= 9.2%

Net Present Value = <u>CP 2.45 million</u>.

Notes to the Financial Evaluation Section

1. The expected domestic inflation over the life of the project

   is taken to be 5% per year.

2. The project's revenues are derived by multiplying the

   projected number of guestnights by the revenue per

   guestnight[18] for each operational year. The hotel is

   expected to have very high occupancies during the spring and

   summer months (high season) and lower occupancies during the

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[17] The discount rate of 9.2% represents the real private opportunity cost of capital and is a weighted average of the cost of debt and the opportunity cost of equity funds. Assuming that the average debt to equity ratio over the life of the project will be in the region of 35% debt and 65% equity and that the average nominal cost of debt is 10.2% and the opportunity cost of equity funds is 17%, then the weighted average cost of capital is: (0.35 x 10.2) + (0.65 x 17) = 14.6% nominal or,
   (14.6 - 5) / 1.05 = 9.2% real.

[18] The number of guestnights are derived by multiplying the available bednights by the projected bed occupancy of the hotel.

winter months (low season). This separation into low and high season is necessary in determining revenues, since hotels charge different rates during those two periods. As it will be shown later, this distinction will also be important for the economic analysis[19].

3. The hotel levies a service charge of 10% on all its food and beverage sales. This amount is then distributed to the hotel's staff according to a point system.

4. Local loans amount to CP 2.0 million and bear a fixed interest rate of 9% per year. Foreign loans amount to CP 9.0 million[20] and are taken to bear a nominal interest rate of 10.5%. Both loans are assumed to be repaid in seven years commencing one year after the start of operations; interest is paid the year it accrues. As foreign loans are repaid in US dollars, the Cyprus pound equivalent is determined by adopting the nominal exchange rate prevailing during the period of payment.

5. A straight line depreciation method is used to establish the in use value of the assets at the end of the projection period. The economic life of assets is taken to be 45 years

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[19] For an analysis of the projected revenues, see "Projected market performance", page 12).

[20] US$ 18.4 million at the nominal exchange rate of US$1.00=CP 0.49

for the buildings, 15 years for the electrical and
mechanical installations and 12 years for the furnishings
and equipment. The value of land is taken to remain constant
in real terms.

6. In addition to the initial investment which is spread over
   the period 1990 to 1993 according to the implementation
   plan, a re-investment of CP 1.5 million (nominal) is
   included in the sixth operational year. It is normal for
   hotels to carry out periodic reinvestments in addition to
   their routine annual repairs and maintenance expenditure so
   as to maintain or even enhance their competitiveness.

7. Hotel operating expenses are broken down into nine major
   categories. Each of these categories has a fixed cost
   component and a variable component. The variable cost
   depends on the guest occupancy of the hotel. With the
   exception of staff costs which are treated separately, the
   breakdown of costs is given below at 1990 price levels:

	Fixed CP 000's/year	Variable CP/Guestnight
Cost category		
Food	10	2.70
Beverage	5	0.75
Departmental	90	2.00
Electricity	75	0.50
Fuel	15	0.13
Water	10	0.07
Repairs & Maintenance	120	0.80
Administration & Marketing	100	1.20
Total	425	8.15

The staff complement of the project consists of 370 permanent staff which are employed throughout the year and temporary staff which are employed only during the high season. The number of temporary staff required depends on the hotel occupancy during the high season and varies from 0 at 55% occupancy to 100 persons at 100% occupancy. The average monthly cost (at 1990 price levels) for permanent staff is taken to be CP 420 while that of temporary staff CP 220.

Staff costs are taken to increase by 3% relative to the general price level. All other costs are assumed to increase only by the expected change in the general price level of 5% per year.

8. The project will be liable to three types of taxes: corporate tax, special contribution and defence levy. The basis for calculating these taxes are the annual profits of the project. Income statements were therefore prepared for

the whole of the projection period. These include all revenue and expenditure items including interest and depreciation charges. The depreciation expense (capital cost allowance) is calculated on the historical cost of depreciable assets.

In arriving at the tax liabilities of the project, all provisions of the Cyprus tax law concerning capital and investment allowances as well as current rates of taxation were taken into account. Taxes are assumed to be paid in the year they accrue.

9. Working capital consists of receivables, payables and cash reserves. It is interesting to note that, as with the case of other hotels in Cyprus, working capital requirements are low compared to the volume of business. The reason is that hotels take full advantage of the generous credit terms given by suppliers and the down payments received from tour operators. In the projections, it is assumed that receivables amount to one month of annual sales, accounts payable to one month of all operational costs, cash requirements to 0.8% of sales.

5. ECONOMIC EVALUATION

Prior to adjusting the financial cash flows with the appropriate economic conversion factors, two other major adjustments have to be made to the inflow side of the financial cash flows in order to arrive at the proforma cash flow statement from the economic perspective.

The first adjustment that has to be made relates to the financial inflows from hotel operations. This involves taking into account the benefits to the economy arising from the **incremental guestnights** attributable to the project[21]. All incremental guestnights are assumed to have full economic benefits while for the project's non-incremental guestnights, the economic benefit is only the saving of resources from the reduction of the variable costs of other competing hotels. When competing hotels loose these guestnights to the project they save their variable cost associated with each guestnight. This variable cost is assumed to be the same as that of the project's.

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[21] It is assumed that 40% of the projected low season guestnights in every operational year will be incremental to the economy, despite the fact that competing hotels both in the Paphos region and elsewhere in Cyprus have excess capacity. The product offered by the hotel is unique in many respects; the hotel will address markets which have not been properly exploited by other hotels and is therefore expected to create its own clientele.

During the high season, it is assumed that 90% of the projected guestnights will be incremental to the economy. A high proportion is used for the summer season since competing hotels are near to full capacity during this period.

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The second adjustment is to include two groups of economic benefits which are not captured by the financial cash flows . The first group of benefits consists of a series of taxes[22] that are in effect paid by the tourists but are not included in the hotel's accounts. The second group of benefits arises from tourist spending outside the hotel. Given that no excessive economic rents accrue to the sellers, the resource cost to the economy can be assumed to approximate the total benefit from such revenues[23]. Therefore, only the foreign exchange premium can be considered as the net economic benefit from this source. This premium has to be a adjusted downwards to take into account the fact that a portion of the economic cost (around 50%) also has a foreign content. Both the above groups of benefits are earned only by the incremental guestnights.

The table below shows extracts of the cash flow statement from the economy's point of view. The net cash flow is discounted by 9.5% ,the economic cost of public funds, to obtain a net present value to the economy of CP 6.9 million. This high NPV results from the weight given by the foreign exchange premium on the

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[22] A tourist in Cyprus faces the following taxes: CP 4.00 airport tax, CP 0.64 for each hotel overnight stay to the Cyprus Tourism Organisation and Municipality. In addition he has to pay a 3% tax on his food and beverage consumption at the hotel.

[23] Surveys show that each tourist spends on average CP 13.9 per day on food, clothing, souvenirs, local travel etc. Tourist Expenditure Survey June 1987, The Cyprus Tourism Organisation. Adjusted for 5% inflation it is projected that for 1990 tourist expenditure will be CP 16.00.

inflow side, the taxes paid by the tourists and the removal of transfers as costs in the outflows side (basically corporate taxation).

PRO FORMA CASH FLOW STATEMENT – ECONOMIC PERSPECTIVE

CALENDAR YEAR	Conversion Factors[24]	1990...1993		1994	1995	1996...2004
INFLOWS		Cyprus pounds (000's)				
From Tourist Expenditure:						
Outside of Hotel	0.07			193	232	259
From Taxes	1.14			271	324	363
From Hotel Operations	1.14			6693	8064	9051
Service Charge	1.14			234	280	312
In use Values:						
Land	1.00					2200
Buildings	0.94					5580
Electromechanical	1.06					1614
Furnishings & Equipm.	1.04					648
		0	0	7391	8900	9986	10042

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[24] The financial values are multiplied by a conversion factor to arrive at the economic values. A conversion factor is the economic price of a variable (e.g. the financial price adjusted for market distortions and foreign exchange premium) divided by the financial price.

CALENDAR YEAR	Conversion Factors	1990...1993		1994	1995	1996...2004	
		Cyprus pounds (000's)					
OUTFLOWS							
Investments:							
-Land	1.00	2200					
-Buildings	0.94	69	2274				
-Electromechanical	1.06	41	1800				
-Furnishings & Equipm.	1.04		1868				
-Preliminary	0.57	80	63				
Operating expenses:							
-Food cost	0.95			548	693	799	
-Beverage cost	0.82			133	168	193	
-Payroll	1.00			2186	2287	2392	
-Departmental	1.07			545	667	755	
-Electricity	0.73			131	152	167	
-Fuel	1.62			68	80	89	
-Water	5.00			123	143	158	
-Maintenance	1.02			294	340	374	
-Admin. & marketing	0.95			334	399	446	
Corporate Taxation	0.00						
Staff service charge	1.00			248	313	360	
Working capital:							
-Account receivable	1.14			630	180	146	-847
-Accounts payable	1.10			-396	-71	-62	513
-Cash reserves	1.00			51	15	12	-69
Total outflows		2390	6004	4896	5367	5830	-403
Net Cash Flow		-2390	-6004	2495	3533	4156	10445

The economic discount rate

The discount rate used in the economic analysis was based on the social opportunity cost of public funds approach, which is a "weighted average of the marginal productivity of capital in the private sector and the rate for time preference for consumption

including the cost to the economy from foreign borrowing[25]". The
economic discount rate was estimated to be 9.5% using data on the
supply and demand of funds in Cyprus as shown below:

	Qs	Inflation rate[26]	Income groups High[27]	Low	Govt.	Foreign Loans
Supply of funds	100%	3.00%	Ws1	Ws2	Ws3	Ws4
Marginal cost of funds (Ps)			0.080	0.060	0.080	0.1260[28]
Share [S_Share(i)]			69.0%	13.0%	2.0%	16.00%
Elasticity of Supply, [Ns(i)]			0.700	0.500	0.000	3.000
Taxes [T(i)]			0.150	0.000	0.000	0.000
Subsidies[K(i)]			0.000	0.000	0.000	0.000
Weighted Ns(i)			0.483	0.065	0.000	0.4800
Weighted Ps(i)			0.037	0.029	0.048	0.0932
[Weighted Es(i)*Weighted Ps(i)			0.018	0.002	0.000	0.0447

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[25] Jenkins G. J. and Harberger A. C., <u>Manual on Cost Benefit Analysis of Investment Decisions</u>, Harvard Institute for International Development, Chapter 12, page 3

[26] The economic discount rate is based on 1987 data adjusted for 3.0% inflation the approximate rate for that year.

[27] High income savers were assumed to be those earning an annual salary of over CP 7,000 during 1985. Source: Household Income and Expenditure survey, The Department of Statistics 1985.

[28] The marginal cost of foreign borrowing is arrived at as follows: MC = AC (1 + 1/e)
<u>where</u>:   MC = Marginal cost of foreign borrowing
          AC = Average cost of borrowed funds   = 9.5%
          e = Elasticity of supply of foreign funds   = 3.0

```
                                   Economic sectors
                  Qd          Primary Secondary Tertiary
-----------------------------------------------------------------
Demand for funds 100%         Wd1     Wd2     Wd3
=================================================================
Rate of return (Pd)           0.100   0.160   0.180
Share [D_Share(i)]             12.0%   15.0%   73.0%
Elasticity of Demand [Nd(i)]  -1.000  -1.000  -1.000
-----------------------------------------------------------------
Taxes [T(i)]                   0.000   0.000   0.000
Subsidies [K(i)]               0.140   0.020   0.020
=================================================================
Weighted Nd(i)                -0.120  -0.150  -0.730
Weighted Pd(i)                 0.056   0.123   0.142
[Weighted Nd(i)*Weighted Pd(i) -0.007  -0.018  -0.104
-----------------------------------------------------------------
```

Social Opp.Cost of Public Funds [ie] = ([Weighted Es(i)*rs(i)]
- [Weighted Nd(i)*rd(i) * Qd/Qs)] / [Es-Nd] * [Qd/Qs]

S.O.C.P.F. [ie] = **9.5%**

Economic foreign exchange premium

The economic price of foreign exchange (Ee) was estimated as the
ratio of percentage tariffs on imports over the percentage
subsidies on exports weighted by the elasticity in the demand and
supply for foreign exchange[29]. A five year analysis shows the
economic foreign exchange premium to stabilize at around 14% as
shown below:

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[29] Jenkins G. J. and Harberger A. C., Manual on Cost Benefit
Analysis of Investment Decisions, Harvard Institute for
International Development, Chapter 16.

(Economic Exchange Price (Ee) / Market Exchange Price (Em))

	Variable	Year 1 1984	Year 2 1985	Year 3 1986	Year 4 1987	Year 5 1988
Import Tariffs	it	95.8	104.9	105.7	113.9	134.8
Imports (C.I.F.)	i	796.5	762.3	659.1	711.4	866.8
Export Subsidies	xk	40.4	42.8	42.9	48.1	56.0
Exports (F.O.B.)	x	456.3	442.7	437.7	546.7	608.7
% Rate of Imports Tariffs	Tm	12.03%	13.76%	16.04%	16.01%	15.55%
% Rate of Exports Subsidy	Kx	8.85%	9.66%	9.79%	8.80%	9.19%
Elasticity of Supply	Esx	1.00	1.00	1.00	1.00	1.00
Elasticity of Demand	Edi	-1.50	-1.50	-1.50	-1.50	-1.50
Qd/Qs	Qd/Qs	1.75	1.72	1.51	1.30	1.42
Ee/Em		1.11	1.13	1.14	1.14	1.14

$$Ee = Esx*(1+Kx) - (Edi*Qd/Qs)*(1+Tm) \ / \ Esx-Edi*(Qd/Qs)$$

Ee = **14%**

Economic conversion factors

The economic evaluation of the project employs a number of conversion factors to adjust the financial cash flows to their true economic values. As an example, we show how we arrived at an estimate of the conversion factor we used for electricity.

The conversion factor of electricity

Electricity in Cyprus is generated by thermal, oil fired power stations. Power generation and distribution is the responsibility of a semi-government organisation, the Electricity Authority of Cyprus (EAC).

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The operating costs associated with the production and distribution of electricity are heavy fuel oil, labour, other materials and services, and the cost of capital. Therefore, in order to arrive at the final conversion factor for electricity, the conversion factors of each of the above cost categories must first be calculated. The calculations are based on 1985 cost and revenue data on the production and sale of electricity in Cyprus.

General data

In 1985, a total of 1178 million KWh were produced and distributed to consumers. The average price paid by consumers was CP 0.075 per KWh[30]. The total annual financial costs of producing and distributing this amount of electricity were the following:

	CP million
Heavy fuel oil	34.7
Salaries & related expenses	16.4
Other materials and services	1.6
Depreciation (financial)	3.3
Interest (financial)	2.4
Total	58.5

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[30] Only 887 million KWh were actually billed to consumers. The remaining 291 million KWh were consumed in the area of Cyprus currently occupied by the Turkish invasion force. As the value of this electricity is presently uncollectible, the EAC overcharges the paying consumers in order to recover the cost of its production.

(a) Conversion factor of heavy fuel oil

The quantity of fuel oil used for the production of the above amount of electricity was 371,000 metric tonnes at an average cost of CP 93.5 per metric tonne. Most of the fuel (80%) is imported directly by the EAC while the remainder (20%) is purchased from the local refinery. A breakdown of the quantities purchased from each source together with the average prices paid is given below:

	Metric Tonnes	Price CP/tonne
Imported directly	296000	99.1[31]
Purchased from refinery	75000	72.0

The difference in price between the locally purchased and imported fuels, is because the locally supplied fuel is subsidised[32].

Since the fuel used is an **importable** good, its economic cost is the CIF cost + trade margin + freight to place of consumption. The economic cost of fuel is therefore CP 99.1 per metric tonne and the conversion factor is calculated at 99.1 / 93.5 = 1.06. This conversion factor has to be adjusted, as shown below, for the economic cost of foreign exchange.

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[31] This price includes CIF and pumping costs to the storage tanks.

[32] The refinery recovers the cost of the subsidy through differential pricing whereby the price charged for petrol exceeds its cost of production.

(b) Conversion factor of labour

The EAC is an organisation that pays wages and provides benefits which are substantially above (about 20%) the market wages. EAC employees can therefore be classified as being in the "protected" sector.

As the economic opportunity cost of labour in this case is equal to the unprotected sector wage for each type of skill employed, the conversion factor for the labour cost associated with the production and sale of electricity is taken as 0.80.

(c) Conversion factor of other materials and services

The economic value of these inputs is taken to be equal to their financial value. The conversion factor, however, is adjusted by the foreign exchange premium according to the foreign content of the inputs.

(d) Conversion factors of the cost of capital

In the financial accounts, the annual cost of capital is given as the depreciation of assets and the interest charge on loans. These costs have to be adjusted so as to reflect the true economic cost of capital.

Depreciation expense should be calculated on the real values of assets and not on the historical cost as given in the financial accounts. The real depreciation charge is calculated at

approximately CP 5.0 million compared to the CP 3.3 million given in the financial accounts. The conversion factor for depreciation expense therefore becomes 5.0 / 3.3 = 1.52 . This factor will also need to be adjusted for the foreign exchange premium according to the foreign content of the assets.

The loans should be charged at the social opportunity cost of capital rate and not the financial interest rate because the former is the true cost of the loans to the economy. The average financial interest rate paid on the loans was 8.1% while the social opportunity cost of capital was calculated at 9.5 %. The conversion factor for interest expense therefore becomes 9.5 / 8.1 = 1.17. This factor should not be adjusted with the foreign exchange premium even though most of the loans to EAC are foreign loans. When a foreign loan is received, the economy gains the foreign exchange premium but when the loan is repaid, the economy looses this premium[33]. If the conversion factor is adjusted to include the foreign exchange premium lost during the repayment of loans, it would be penalising the economic cost of loans since it would not take into account the premium gained when the loan is received.

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[33] The foreign exchange premium on the interest paid on the loan compensates for the time value between the foreign exchange premium gained on receiving the loan and the premium lost upon repayment.

The above conversion factors (except that of the interest) are adjusted with a 14% premium on foreign exchange as follows:

	Conversion Factor	Foreign Content	Adjusted Conv. Factor
Heavy fuel oil	1.06	100%	1.20
Salaries	0.80	0%	0.80
Other materials etc.	1.00	30%	1.04
Depreciation	1.52	70%	1.62
Interest	1.17	-	1.17

The financial costs associated with the production and distribution of 1178 million KWh of electricity are multiplied by the adjusted conversion factors to arrive at their economic costs (in CP million) as follows:

	Financial Cost	Adjusted C. Factor	Economic Cost
Heavy fuel oil	34.7	1.20	41.6
Salaries	16.4	0.80	13.1
Other materials etc.	1.6	1.04	1.7
Cost of Capital:			
-Depreciation	3.3	1.62	5.3
-Interest	2.4	1.17	2.8
Total	58.4		64.6

The economic cost of electricity in CP per KWh is therefore:

64.6 / 1178 = 0.055

and the economic conversion factor of electricity

0.055 / 0.075 = 0.73

6. DISTRIBUTIONAL ANALYSIS

A project generates externalities when its financial inflows and outflows differ from their respective economic values. In distributional analysis, these externalities (positive or negative) are first identified, presented in net present value terms and then allocated to the various affected groups in the economy. In this way one can see who is gaining or loosing from the existence of the project in the economy.

There are basically four ways in which a project can generate externalities:

- The first is that a project may generate economic income and/or incur economic expenditure that is not taken into account in the financial projections. An example of this is the project under study, which generates economic income from taxes paid by tourists and from tourist expenditure outside the hotel. This income is not captured by the financial projections.

- The non-incrementality of a project's cash flows to the economy is another source of externalities. If for example, the cash inflows of a project are not incremental to the economy, they will not be included in the economic evaluation and a negative externality will arise. The meaning of this externality is that the project is capturing

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net revenues (sales less marginal costs) from existing
similar projects in the economy. The net revenues of these
projects will therefore be lower by the amount of the
externality. The project under study will generate this type
of externality as not all its guestnights are considered as
incremental to the economy. Other competing hotels will
loose net revenues because of the existence of this project.

- A third important source of externalities is the difference
  of the financial prices of inputs and outputs of a project
  with their respective economic ones (hence the use of
  conversion factors). The existence of distortions in the
  market such as taxes and subsidies, monopolies and price
  controls on the inputs and outputs of a project are the
  primary source of this type of externality.

- The fourth source of externalities is the premium on foreign
  exchange which the project is credited and/or charged with
  on the amount of foreign exchange it earns or spends . The
  divergence between the market price of foreign exchange and
  its economic value as expressed by the foreign exchange
  premium is solely due to the introduction by the government
  of tariffs and/or subsidies on the traded goods sector.
  Therefore all the foreign exchange premium gain or loss
  generated by the project goes to the government; it
  represents a net revenue gain or loss to the government.

The Paphos Holiday Complex generates externalities totalling CP 4.8 million[34]. These are allocated to the government, the electricity authority, to other competing hotels and to other groups in the economy as shown in the table below:

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DISTRIBUTION OF EXTERNALITIES      Real values (CP 000's)
                                   Electr.Other  Other
                        Total  Govt.  Auth.  Hotels groups
        ------------------------------------------------------
INFLOWS
--------

From Guest Expenditure
Outside of Hotel        1176   1176
From Taxes              1648   1648
From Hotel Operations  -1107   5037          -6144
Service charge          -197    174           -371
In use Values:
Land                       0
Buildings               -100      3                        -103
Electromechanical         26     26
Furnishings & Equipment    7      7
Investments:
-Land                      0
-Buildings               374    -12                         386
-Electromechanical      -199   -199
-Furnishings & Equipment -75    -75
-Preliminary             193    193
Operating expenses:
-Food cost               188    -38                         226
-Beverage cost           190    162                          29
-Payroll                   0
-Departmental           -223   -223
-Electricity             283    -67    350
-Fuel                   -156    -36                        -120
-Water                  -577                               -577
-Repairs                 -34    -34
-Admin. & marketing      107    107
Corporate Taxation      3301   3301
Staff service charge       0
Working capital:
-Accounts receivable     -64    -64
-Accounts payable         27                                 27
-Cash reserves             0

                        ------------------------------------
Total Externalities     4788³⁵ 11085   350  -6515   -132
                        ====================================
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[35] The reconciliation of distributive analysis at project
level was calculated as follows:

$$NPV(e, re) = NPV(f,rf) + NPV(f,re) - NPV(f,rf) + PVE(re)$$
$$= 2452 + 2130 - 2452 + 4788$$
$$= 6918 \text{ (same as NPV Economy)}$$

It can be seen from the above that the major beneficiary of the externalities generated by the project is the government because it receives all the taxes paid by the tourists, the corporate taxes paid by the project and the net benefit from the premium on foreign exchange.

It is also interesting to note, that since a large portion of the financial revenue of the project during the low season months is not considered as incremental to the economy, the hotel in effect captures net revenues which would have otherwise been generated by other competing hotels. This negative externality amounts to CP 6.5 million and is allocated to other substitute hotels in the island.

7. SENSITIVITY ANALYSIS

A sensitivity analysis has been carried out to observe the impact of changes in key variables on the NPV's of the owner, the total investment and the economy, as well as on the nominal net cash flow of the owner. The nominal cash flows are important to the owners since they can establish whether the net cash available each year is adequate to service obligations or if there is a need for additional equity contributions.

The variables tested were domestic inflation rate, project cost, hotel occupancy, hotel revenues per guest, payroll costs and the number of guestnights considered as incremental to the economy[36]. A summary of the results of the sensitivity analysis on the NPV's of the project from the different perspectives is given below:

	Net Present Value (CP 000's)		
	Owner	Total Invest.	Economy
Base Case	1747	2452	6918
Domestic inflation at 8%	1665	2283	7143
Project cost higher by 10%	964	1699	6015
Average occupancy lower by 10%	186	634	3979
Revenues/guest lower by 10%	-502	-168	3303
Payroll costs higher by 10%	1084	1678	5730
Incremental guestnights lower by 10%	1747	2452	3672

The analysis indicates that the project's returns are more sensitive to changes in revenues earned per guest. Even small

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[36] This variable affects only the Net Present Value from the economy's point of view.

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changes to this variable cause substantial fluctuations to the project's NPV's. The NPV from the economic point of view is also sensitive to the number of bednights considered as incremental.

The nominal net cash flows from the point of view of the owner were also found to be more sensitive to changes in the revenues earned per guest. Within a realistic range of possible fluctuations of this variable however, the project can still generate adequate cash to service all obligations without the need for additional cash contributions by the owners.

The effect of the uncertainty encompassing the above variables was tested further through the application of risk analysis.

8. RISK ANALYSIS

The variables tested for risk are the ones that are relatively uncertain and have a high impact on the project[37]. These variables are the revenues earned per guest, occupancy levels (for low and high season), project costs and staff costs. The assigned probability distributions and range limits of these variables are given in the table below:

Risk variable	Probability Distribution	Minimum value	Maximum value
Hotel rates factor (1)	Triangular	0.90	1.15
Occupancy -high season Year 1 (3)	Normal	55.00%	80.00%
Occupancy -high season Year 2 (3)	Normal	75.00%	95.00%
Occupancy -high season Year 3+(3)	Normal	84.00%	97.00%
Occupancy -low season Year 1 (3)	Normal	15.00%	35.00%
Occupancy -low season Year 2 (3)	Normal	30.00%	60.00%
Occupancy -low season Year 3+ (3)	Normal	40.00%	70.00%
Project cost factor (1)	Uniform	0.90	1.15
Incremental nights-low season	Uniform	20.00%	65.00%
Incremental nights-low season	Uniform	70.00%	98.00%
Payroll cost real growth rate	Step (2)		

Notes:
(1) A factor of 1 equals base case value
(2) The payroll real growth rate was assumed to vary according to a step probability distribution as shown in the table below.

Probability		0.15	0.60		0.25
Value intervals	2.0%	2.5%	3.5%	4.0%	

(3) Occupancy levels were assumed to be negatively correlated to the hotel rate factor.

The results of the risk analysis are shown in the table below:

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[37] Risk analysis was applied using "RiskMaster" a computer software package developed by Savvakis C. Savvides. For reference on the methodology used see "Risk Analysis in Investment Appraisal", Harvard Institute for International Development, Discussion paper 276, October 1988.

	Net Present Value (in CP 000's)		
	Owners	Total	Economy
Expected value	1763	2518	4993
Standard deviation	965	1077	3262
Minimum value	-750	-332	-3375
Maximum value	4479	5589	14105
Prob. of neg. return	3.25%	0.75%	5.50%

All the NPV's (owners, total investment and economy) have a positive expected value. The standard deviations however, suggest a large spread of possible values. As illustrated in the graph below, the economy's perspective, although showing the highest expected value, seems to be more responsive to risk and return. This is mainly due to the wide uncertainty of the projected assumption regarding the amount of "incremental guests". Nevertheless, the probability of negative returns is very low and must be considered within acceptable levels from all perspectives.

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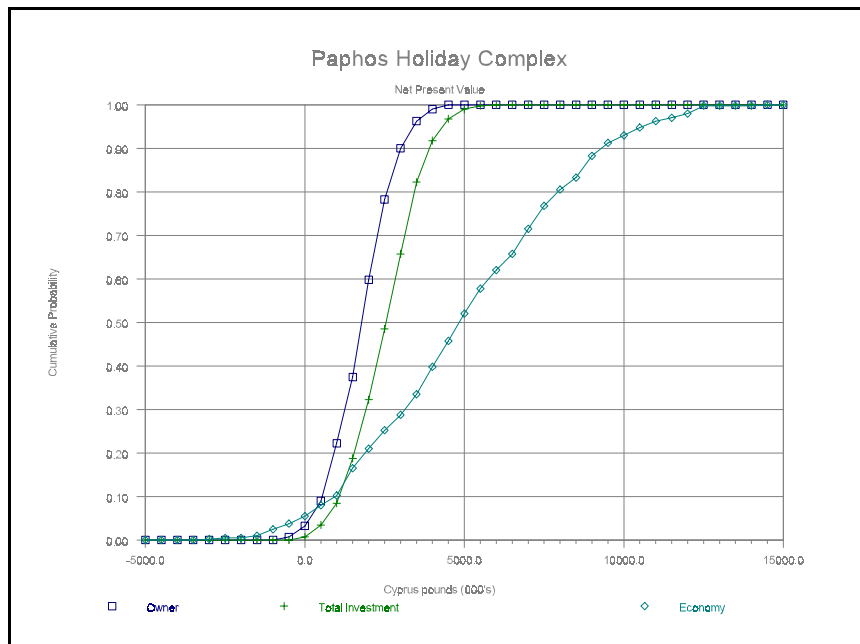
A projection of the net cash flow from the owners' point of view in nominal prices, as shown in the diagram below, indicates that the probability of the project having financing difficulties is very small. Following the implementation years, without a substantial risk of negative deviation from the base case scenario, the project shows a positive net cash flow for the first five years of operation.

Net Cash Flow - Owners' perspective

Nominal values
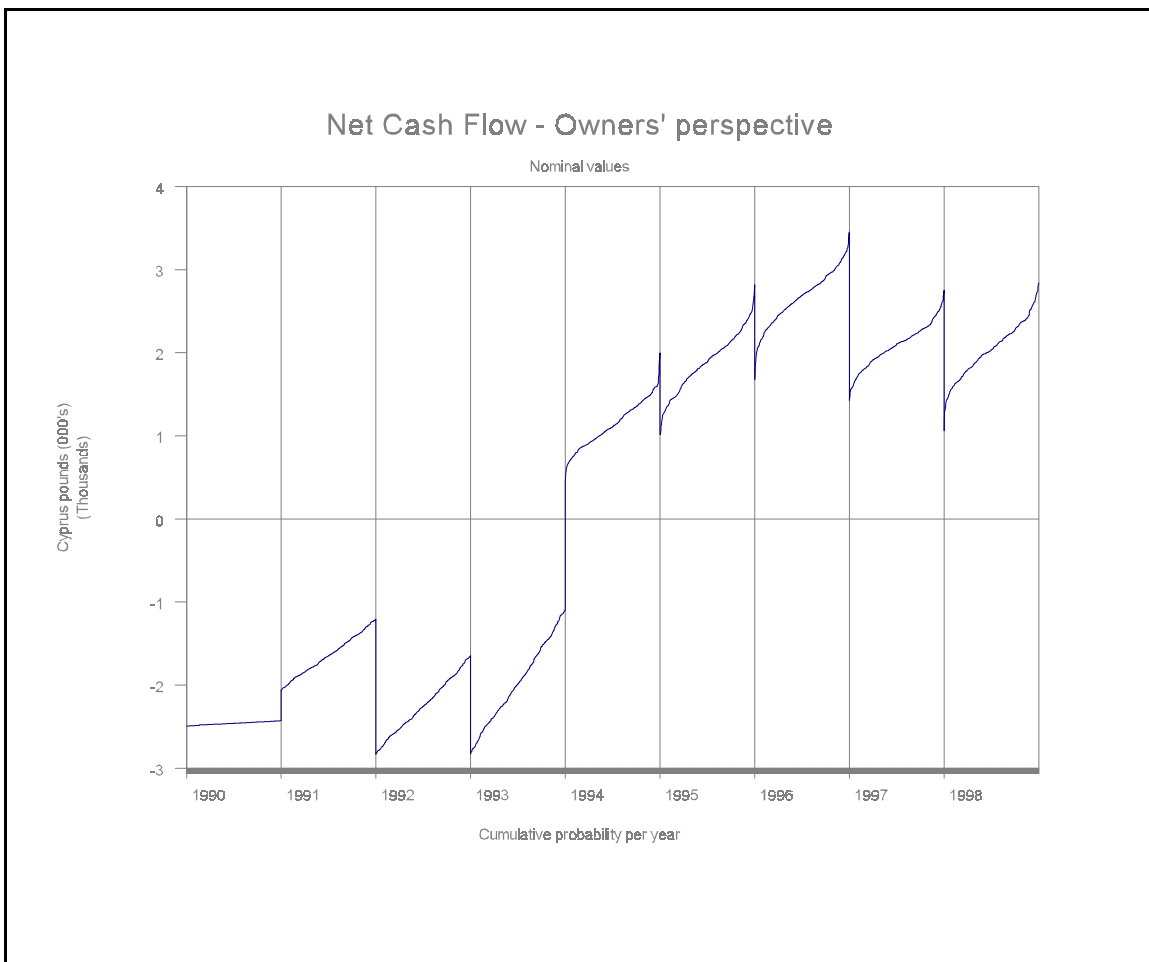
9. ENVIRONMENTAL CONSIDERATIONS

The impact of the project on the environment

The following issues have been reviewed in order to assess the impact of the project on the environment[38]:

1. Land values

Prices of adjacent plots of land are expected to increase in real terms when the project is implemented. The price increase will reflect the additional economic rents that will be generated by new projects such as restaurants, shops, night clubs and accommodation facilities that could be built on these plots.

Land values can be expected to rise by at least 15% in a radius of about 300 meters from the project site. This increase comes to about CP 0.9 million in real terms and should be included as an economic benefit attributable to the project.

2. Traffic congestion

Tourism contributes to the congestion and overcrowding problem in Cyprus. This is more evident during the peak tourist season which overlaps considerably with the domestic summer holidays. Overcrowding of beaches and coastal resorts

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[38] A more extensive evaluation of the environmental impacts of the project was not possible due to lack of primary data.

as well as traffic congestion and lack of parking space are very evident during the summer period.

Traffic congestion delays arise when the number of vehicles passing through a road exceed a certain threshold (which depends on the road width, number of lanes etc.) and as a result the speed of the traffic flow begins to decrease. Therefore, road users need additional time to reach their destination. This delay can be costed in terms of loss of leisure and/or working time, higher fuel consumption, vehicle wear and heavier air and noise pollution.

Although the average delay cost per vehicle may be very small, the marginal cost of a single vehicle causing the additional delay could be very large. This is because the cost of the additional delay is multiplied by all the number of vehicles being delayed.

The project will increase traffic flow in the area since employee vehicles, tourist buses, rented cars, taxis, supply and waste disposal vehicles etc. will use the adjacent road to commute to the hotel. This increase in traffic is not expected to be so significant as to create congestion problems in the existing road network. The road adjacent to the project site is a dual carriageway with a design capacity of approximately 9000 passenger car units (PCU's)

per day. The average daily traffic in 1989 is expected to be about 4200 PCU's and the annual growth rate is projected at 5.2%. This indicates that the existing road has a large unutilised capacity and can easily accommodate any additional traffic generated by the project. Nevertheless, the project may exacerbate existing congestion problems in the nearby Paphos town.

3. Road pavement damage

The degree of damage of the road pavement primarily depends on the number and weight of the vehicles using the road. The additional traffic generated by the project will create some pavement damage. The magnitude of this cost, although not quantified, should however be insignificantly small.

4. Wastewater pollution

The hotel will have its own sewage treatment plant; sewage will be treated so that it can be suitable for irrigating the project's gardens. There will be no dumping of waste in the sea.

5. Noise pollution

Possible sources of noise pollution are increased traffic and tourist activity (boats, sports etc.). However, because of the remoteness of the location and the high amount of

space per guest available the project is unlikely to create
significant noise pollution.

6. Change of landscape

The project is expected to have a positive environmental
impact arising from the landscaping of an area which is
currently barren and rather hostile to potential visitors.

7. Change of the waterfront

The extent of the change will depend on the beach
improvement plan which has not yet been prepared.
Nevertheless, it is expected that the beach will be made
suitable for bathing while preserving a lot from its
original character.

8. Access to the beach.

This is unlikely to be a problem. A path for pedestrians
will be required by the local authorities along the
waterfront. The beach is now rarely visited. The project in
fact will provide access to the beach.

9. Loss of view.

The environmental cost from loss of view should not be as
high as that of other hotels. Building regulations in the
area are such that only 12% of the project land will be
built up. The remaining space will be used for planting,

landscaping, recreation facilities. Accommodation facilities

will comprise of a hotel block (350 rooms in 4 floors) and

200 single floor bungalows. The effect of the 4-storey hotel

block on the sea view will be reduced because the project

land slopes towards the sea. In addition, care will be taken

in the design stage to create buildings that would blend

with the environment and be aesthetically appealing.

**The impact of investments in environmental enhancements on the
project return**

The Paphos Holiday Complex project concept is based on the

premise that an investment in the preservation and enhancement of

the hotel's environment is both financially as well as

economically rewarding. To isolate the direction and net effect

of the environmental investments, the base case scenario was

altered so that all environmental marginal costs and benefits

were deducted.

The project costs and benefits relating to improvements of the

environment, above what is considered to be the level attained by

other competing hotels[39], were discounted to the base year using

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[39] The major costs were identified as the cost of the
investment in additional land (CP 400 thousand), the capital
costs of landscaping (CP 100 thousand) and operating costs for
maintaining the landscape (CP 43 thousand per year).

The marginal benefits emanating from these additional costs are
taken to be the average rates that the hotel can charge as
formulated, less what it is considered attainable without them.
It is assumed that the project can charge a 10% premium on the

the economic discount rate of 9.5%. Total marginal costs in present value terms were estimated to be about CP 1.0 million and marginal benefits gained (due to added competitiveness) CP 4.0 million. The net present value of the project from the economy's perspective thus falls from CP 7.0 to CP 4.0 million after deducting the additional environmental costs and benefits. The expected NPV may even be substantially lower if one takes into account that there would be a decrease in the number of incremental guests since the project will not be sufficiently differentiated without the environmental enhancements.

It was further estimated, through sensitivity analysis, that the total additional environmental costs can be recouped by a mere increase of 3% in the average hotel rate. It may therefore be concluded that the net effect of the environmental enhancements on the project are significantly positive.

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rates charged by competing hotels as a direct result of the degree of differentiation achieved due to the investments in enhancing the project environment.

10. CONCLUSIONS

The Paphos Holiday Complex is a unique and competitively superior project. Its main competitive advantage stems from its ability to market a differentiated product formulated to the needs of a substantial and potentially rewarding target market. The main elements of the project's marketing strategy are reflected in the following product features:

- additional open space per guest

- spread out development

- good architectural design

- extensive landscaping

- provision of tournament level sports and
  recreation facilities

- better hotel management

- good environmental blending

All the above contribute to making the Complex a very competitive product with good prospects of success. Hotel rates are expected to be higher than the competition and occupancies at least as good (with winter occupancy better than average). As the project, to a large extent, will create its "own" clientele, a large proportion of low season guests will be incremental to the economy.

The project yields satisfactory returns to all interested parties, including high returns to the economy. It will also be capable of repaying its loans without difficulty.

The project's returns are very sensitive to revenues earned per guest. The returns to the economy are also sensitive to the number of guestnights that are considered to be incremental. Risk analysis, however, indicates that, within the range of possible variation of the key project variables, there is very low probability of negative return.

In conclusion, this appraisal strongly indicates that the Paphos Holiday Complex makes good financial, economic and environmental sense for potential investors and the people of Cyprus in general.