Economic Assessment on
Building a Walt Disney Theme Park in Hong Kong

Introduction

This paper provides a broad assessment from a macro perspective of the economic benefits likely to be generated by building a Walt Disney (WD) theme park in Hong Kong, against the major economic costs involved. It focuses on Phase I of the project[1].

Methodology and scenarios analysed

2. The WD theme park with its huge number of foreign and local attendees can be expected to provide a significant stimulus to overall spending in Hong Kong. The economic benefits so derived can be measured in terms of the primary and secondary value added contributions from such additional spending to the economy. Primary value added contribution represents the incomes generated initially from additional spending of the attendees on the various categories of goods and services produced by the sectors concerned. This covers the additional spending of attendees both within and outside the theme park. Secondary value added contribution refers to the incomes generated from subsequent rounds of indirect spending on the further range of economic activities in support of such sectors. Based on these estimated value added contributions, and by using a set of separately determined ratios of value added to employment by sector, the estimated number of additional jobs for the local economy stemming from the theme park operation can also be derived. A schematic depiction of the methodological framework is in ***Annex 1***.

3. There are several key sources of additional spending which could arise from the WD theme park operation in Hong Kong. *First*, it is reckoned that a significant number of the tourists who would have come to Hong Kong even without the project (the existing or base tourists) will visit the theme park and hence spend additional money in Hong Kong, and such additional spending corresponds to their extension of stay here. *Secondly*, a further significant number of tourists, mostly from the neighbouring economies, will be induced to come to Hong Kong to visit the theme park (the induced tourists), and as they are so attracted to come, all their spending during their full length of stay in Hong Kong constitutes additional spending. *Thirdly*, additional spending will be made by local residents visiting the theme park.

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[1] Phase II of the project may be implemented in a remote future period, notionally when Phase I buildout is reached.

4. The amount of quantifiable economic benefits, specifically value added contribution to GDP or income accruing to business establishments and their employees, that will be brought about by such additional spending will depend on a number of key parameters, the values of which are subject to uncertainty and variation. The first set of parameters, as follows, relates to the attendance projection:

(a) *Existing or base tourists*

Between 1987 and 1997, the number of visitor arrivals to Hong Kong increased strongly, by an average of 7.8% per annum. Visitors from the Mainland and Taiwan were the major sources of growth. However, the performance of Hong Kong's tourist industry was hit by the Asian financial turmoil. In 1998, there was a decrease of 8% in visitor arrivals. Although in the first nine months of 1999, visitor arrivals has rebounded to a 11% growth, caution is taken in projecting the growth trend in the future. The projected growth rate of visitor arrivals as base tourists is hence reduced from the historical one.

(b) *Induced tourists*

In the present assessment, the number of induced tourists is derived from an assumed ratio of induced tourists to base tourists. Yet induced tourists are reckoned to have a narrower source span than base tourists. Induced tourists are expected to come from three major sources all within East Asia, largely the Mainland, and to a lesser extent Taiwan and Southeast Asia. In the case of base tourists, those from the Mainland usually have a longer length of stay[(2)] and a lower per diem spending[(3)] than the overall average. On the other hand, it is very likely that many of the induced tourists from Guangdong and Macau will join one-day or two-day tour groups to Hong Kong primarily to visit the theme park, such that their length of stay is considerably shorter. In the present assessment, it is crudely

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(2) The average length of stay of visitors from the Mainland is about 5.1 nights. This is longer than the overall average of about 3.6 nights. On the other hand, the average lengths of stay of visitors from Taiwan and Southeast Asia, at about 2.7 nights and 3.4 nights respectively, are shorter than the overall average. These are based on the averages for the past four years.

(3) The per diem spending of visitors from the Mainland is about $1,200. This is lower than the overall average of about $1,800. On the other hand, the per diem spending of visitors from Taiwan and Southeast Asia, at about $2,700 and $1,900 respectively, are higher than the overall average. These are based on the averages for the past four years.

assumed that two-thirds of the induced tourists from South China will take short trips[4], while the remaining ones will have an average length of stay and per diem spending similar to their base tourist counterpart. These special features of induced tourists have been taken into account in estimating the additional spending by them.

(c) *Market penetration rate and visits per guest ratio*

The market penetration rate refers to the proportion of a certain group of attendees (local residents, base tourists or induced tourists) that will visit the theme park. The visits per guest ratio refers to the number of visits made on average by an attendee during the year. Thus the higher the market penetration rate and visits per guest ratio, the larger is the level of attendance.

A schematic depiction of the relationship between this set of parameters and total attendance is in ***Annex 2***.

5. Not all the spending associated with the theme park could reasonably be treated as additional spending in generating additional value added for the economy. For local residents, it is possible that their spending in the theme park will be offset to a considerable extent by a decrease in their spending on other consumption items, given their budget constraint. For base tourists, part of their spending in the theme park may be offset by reduced spending of other kinds such as local tours, shopping and eating-out. In estimating the economic benefits stemming from the theme park, the extent of such crowding-out effects is captured by the following, as the second set of parameters:

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(4) It is estimated that in the opening year around 55% of the induced tourists will come from South China, 19% from the rest of the Mainland, 22% from Taiwan, and 4% from Southeast Asia. These shares will change gradually to 62%, 21%, 16% and 2% respectively over a 15-year period. Thus the two-thirds of induced tourists from South China who will take short trips to Hong Kong will account for about 37% of all the induced tourists in the opening year, rising to about 41% in Phase I buildout. The average length of stay for this particular group of induced tourists is assumed to be 1.5 nights. Yet their per diem spending is assumed to be similar to their base tourist counterpart.

(a) *Additional length of stay of the base tourists*

The longer the additional length of stay assumed for this group of tourists, the smaller is the crowding-out effect, and vice versa.

(b) *Extent of reduction in other consumption spending by local residents arising from their spending in the theme park*

A 100% reduction means that the spending by local residents in the theme park is fully offset by a cut-back in their other consumption spending, while at the other end of the spectrum a nil reduction denotes the complete absence of such crowding-out effect.

A schematic depiction of the relationship between this set of parameters and total additional spending by local residents and tourists is in ***Annex 3***.

6. By varying the values of these two sets of parameters, six scenarios have been formulated and their respective levels of economic benefits assessed. The assumed values of the various parameters under these six scenarios are set out below:

	Scenario					
	A	B	C	D	E	F
Base tourists[1]						
Number in Year 1 (million)	15.0	13.9	13.9	13.9	13.9	13.9
Number in Year 20 (million)	36.5	25.9	25.9	25.9	25.9	25.9
Induced tourists						
Ratio of induced tourists to base tourists[2] (%)	10.8-13.8	10.8-13.8	8.8-11.8	8.8-11.8	8.8-11.8	8.8-11.8
Number in Year 1 (million)	1.2	1.1	0.9	0.9	0.9	0.9
Number in Year 20 (million)	2.6	2.0	1.6	1.6	1.6	1.6
Market penetration rate[3] (%)						
Local residents	19-23	19-23	19-23	15-19	15-19	15-19
Base tourists	15.5-15.8	15.5-15.8	15.5-15.8	12	12	12
Induced tourists	100	100	100	100	100	100
Visits per guest ratio						
Local residents	1.35	1.35	1.35	1.35	1.35	1.35
Base tourists	1.17	1.17	1.17	1.17	1.17	1.17
Induced tourists	1.15	1.15	1.15	1.15	1.15	1.15
Additional length of stay for base tourists[4] (nights)	0.5	0.5	0.5	0.5	0.2	0.2
Crowding-out effect on spending by local residents (%)	0	0	0	0	0	50

Notes : (1) This includes business visitors, which usually account for around 30% of the total. Yet business visitors will fall out in the present assessment, as it is assumed that they will not extend their stay in Hong Kong even if they visit the theme park. Hence the ratio of induced tourists to base tourists, as well as the market penetration rate and visits per guest ratio for base tourists, do not cover business visitors.

(2) In Scenario A, it is assumed that the number of induced tourists will increase from 1.2 million in 2005 to 2.6 million in 2017, and then remain at that level thereafter. Correspondingly, the ratio of induced tourists to base tourists will increase from 11.4% in 2005 to a maximum of 13.8% in 2017, and then fall gradually back to 10.8% in 2024. This profile is also adopted in Scenario B. In Scenarios C to F, the ratio of induced tourists to base tourists in each year is assumed to be 2 percentage points lower than in Scenarios A and B.

(3) In Scenarios A, B and C, the market penetration rate for local residents is assumed to rise from 19% in the opening year to 23% in Year 20, and that for base tourists is assumed to remain at 15.5-15.8% throughout the period. In Scenarios D, E and F, the market penetration rate for local residents is assumed to rise more gradually, from 15% in the opening year to 19% in Year 20, and that for base tourists is assumed to remain at 12% throughout the period.

(4) As to induced tourists, except for those coming in short trips, the full length of stay of those from a particular source is taken to be similar to that of base tourists from the same source including their extended stay in Hong Kong.

7. *Scenario A* adopts the Base Case projection of base tourists by WD. The values of all the other parameters are assumed by the Government. The number of base tourists is projected to increase by an average of 6.6% per annum in 1998 to 2005, 5.7% per annum in 2005 to 2014, and about 4% per annum thereafter. These average at 5.0% per annum over the period 2005-2020 after the theme park opening.

8. *Scenario B* takes the projection of visitor arrivals produced by the Hong Kong Tourist Association in the middle of this year. Visitor arrivals as base tourists are projected to increase by an average of 4.9% per annum in 1999 to 2008, and 3.3% per annum thereafter. These average at 3.3% per annum over the period 2005-2020 after the theme park opening. This projection is more conservative than that in Scenario A. Other parameters have the same assumed values as in Scenario A.

9. *Scenario C* assumes a lower ratio of induced tourists to base tourists. Other parameters have the same assumed values as in Scenario B.

10. *Scenario D* assumes lower market penetration rates for local residents and base tourists. Other parameters have the same assumed values as in Scenario C.

11. *Scenario E* assumes a shorter additional length of stay for base tourists, and hence also a shorter total length of stay for induced tourists. Thus a greater part of the spending by tourists in the theme park will be offset by reduction in their other spending in Hong Kong. Other parameters have the same assumed values as in Scenario D.

12. *Scenario F* assumes a half crowding-out effect in respect of spending by local residents in the theme park, instead of no crowding-out effect as is assumed in the fore-going scenarios.

13. It should be noted that a continuum of variations in the attendance projection and in the respective parameter values is in fact possible. Thus in essence, these six scenarios are designed mainly for illustration of the differential effects. Nevertheless, Scenario A is taken as the Base Case, as the Government considers that its underlying assumptions form a prudent and reasonable basis for conducting the economic assessment.

Economic benefits assessed under the six scenarios

14. The economic benefits estimated for the six scenarios are based on the same overall methodology and derivation method. For the sake of simplicity, the economic benefits estimated for Scenario A are discussed below in greater detail, while only summary results are given for the other five scenarios.

(i) *Scenario A (Base Case)*

15. For Phase I of the project, the number of attendees is projected to be 5.2 million in the opening year of 2005 as Year 1, comprising 1.9 million visits by local residents, 3.2 million visits by vacation visitors, and 0.2 million visits by business visitors[(5)]. Attendance is projected to increase gradually, at about 4.7% per annum, to slightly over 10 million in Year 16, and then stabilise at around 10.5 million thereafter. At Phase I buildout, total attendance is projected to comprise around 2.8 million visits by local residents, 7.3 million visits by vacation visitors, and 0.5 million visits by business visitors (***Annex 4***).

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(5) Business visitors usually account for about 30% of the total number of visitors to Hong Kong. However, because of their very nature, they are reckoned to account for only a small proportion of the total attendance in the theme park. Their market penetration rate is estimated at only around 4%. Moreover, it is assumed that they will not extend their stay in Hong Kong. Hence the additional spending by this category of visitors, if any, will be very little. It follows that this category of visitors does not feature at all in the present assessment.

16. The number of base tourists, excluding business visitors, making visits to the theme park is projected to be 1.6 million in Year 1, increasing to a stable level of 3.8 million in Year 20 and thereafter. Taking into account the relevant visit per guest ratio, attendance by base tourists is projected to increase from 1.9 million in Year 1 to 4.4 million in Year 20 and thereafter. Based on this projection, and assuming that half of these base tourists will extend their stay by one night, it is estimated that the additional tourist spending from this source will amount to $1.5 billion (at 1999 prices) in Year 1[(6)], increasing to $3.4 billion per annum in Year 20 and thereafter (***Annex 5***).

17. The number of induced tourists, excluding business visitors, is projected to be 1.2 million in Year 1, increasing to a stable level of 2.6 million in Year 13 and thereafter. Taking into account the relevant visit per guest ratio, attendance by induced tourists is projected to increase from 1.4 million in Year 1 to 2.9 million in Year 13 and thereafter. Based on this projection, and assuming that half of these induced tourists will stay one more night than normal, it is estimated that the additional tourist spending from this source will amount to $6.3 billion in Year 1, increasing to $12.2 billion per annum in Year 20 and thereafter (***Annex 5***).

18. Taking the above two components of additional tourist spending together, and adding in the related increased spending on air passenger services provided by the local airlines[(7)], it is estimated that the total additional spending by tourists will amount to $8.3 billion in Year 1, increasing to $16.8 billion per annum in Year 20 and thereafter. The corresponding combined primary and secondary value added contribution to GDP will amount to $5.3 billion in Year 1, increasing to $10.7 billion per annum in Year 20 and thereafter (***Annex 6***).

19. As to local residents, their spending in the theme park is estimated to amount to $680 per head[(8)]. Thus it is estimated that, assuming no crowding-out effect, total additional spending by local residents will amount to $1.2 billion in Year 1, rising to $1.9 billion per annum in Year 20 and thereafter. The corresponding combined primary and secondary value added contribution to GDP will amount to $0.9 billion in Year 1, rising to $1.4 billion per annum in Year 20 and thereafter (***Annex 6***).

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(6) All money figures in this paper are expressed in 1999 prices, unless specified otherwise.

(7) Excluding those induced tourists from South China who can be expected to take one-day or two-day trips to Hong Kong other than by air, it is crudely assumed that around 30% of the remaining induced tourists will travel to Hong Kong by air using Hong Kong's local airlines.

(8) This covers the cost of travelling to the theme park, and the spending in the theme park itself as well as in the related retail, dinning and entertainment facilities.

20. The present value of cumulative value added or income, by discounting the above streams of economic benefits running over a period of 40 years with a real discount rate of 4%, is estimated at around $168 billion (***Annex 7***). This indicates that the gross economic benefits stemming from the theme park operation are likely to be very substantial. Of this total, slightly more than 20% is attributable to primary value added on-site, slightly less than 30% to primary value added off-site, and slightly less than 50% to secondary value added in the various support services.

21. On employment creation, the total additional spending is expected to directly provide around 10 780 additional jobs in the opening year, rising to around 20 980 in Year 20 and thereafter. As a secondary impact, the total additional spending is expected to indirectly provide around 7 660 additional jobs in the opening year, rising to around 14 790 jobs in Year 20 and thereafter. Taken together, the total additional number of jobs is estimated at around 18 400 in the opening year, rising to around 35 800 in Year 20 and thereafter (***Annex 8***):

(b) *Scenarios B, C, D, E and F*

22. The economic benefits under the other five scenarios, as compared to that under the first scenario, are summarised below :

		Scenario					
		A	B	C	D	E	F
(a)	Additional spending by base tourists ($Bn)						
	Year 1	1.5	1.4	1.4	1.1	0.4	0.4
	Year 20	3.4	2.6	2.6	2.0	0.8	0.8
(b)	Additional spending on consumption items by induced tourists ($Bn)						
	Year 1	6.3	5.9	4.9	4.9	4.6	4.6
	Year 20	12.2	9.4	7.7	7.7	7.2	7.2
(c)	Additional spending on air passenger services (provided by local airlines) by induced tourists ($Bn)						
	Year 1	0.6	0.5	0.4	0.4	0.4	0.4
	Year 20	1.1	0.9	0.7	0.7	0.7	0.7
(d)	Additional spending by induced tourists ($Bn) = (b) + (c)						
	Year 1	6.9	6.5	5.3	5.3	5.0	5.0
	Year 20	13.4	10.3	8.4	8.4	7.9	7.9
(e)	Total additional spending by tourists ($Bn) = (a) + (d)						
	Year 1	8.3	7.8	6.7	6.4	5.5	5.5
	Year 20	16.8	12.9	11.0	10.4	8.7	8.7
(f)	Additional spending by local residents ($Bn)						
	Year 1	1.2#	1.3	1.3	1.0	1.0	0.5
	Year 20	1.9	1.9	1.9	1.6	1.6	0.8
(g)	Overall additional spending ($Bn) = (e) + (f)						

	Year 1	9.5	9.1	8.0	7.4	6.5	6.0
	Year 20	18.7	14.8	12.9	12.0	10.3	9.5
(h)	Primary and secondary value added contributions to GDP ($Bn)						
	Year 1	6.2	6.0	5.2	4.9	4.3	3.9
	Year 20	12.1	9.7	8.5	7.8	6.8	6.2
(i)	Present value of the cumulative primary and secondary value added contributions to GDP over 40 years ($Bn)	168	149	132	125	109	101
(j)	Proportion of on-site primary, off-site primary, and secondary value added to present value of cumulative value added (%)	22/ 29/ 49	23/ 29/ 48	25/ 26/ 49	22/ 29/ 49	26/ 25/ 49	28/ 24/ 48
(k)	Additional employment created directly and indirectly from the theme park operation ('000)						
	Year 1	18.4	17.6	15.6	14.4	12.6	11.4
	Year 20	35.8	28.7	25.2	23.2	20.0	18.1
(l)	Years taken to reach Phase I buildout	15	24	26	32	32	32

Notes : All money figures are expressed in 1999 prices.

(#) In Scenario A, the projected attendance by local residents is slightly smaller than in Scenarios B and C, and likewise is the corresponding spending by local residents. This is due to a small capacity constraint being sustained at the theme park, as its overall effective capacity is planned to increase progressively in tandem with the rise in attendance over time. In Scenarios B and C, since the total attendance is smaller than in Scenario A, such capacity constraint will not apply.

23. The combined primary and secondary value added contributions to the economy, in present value terms cumulating over a period of 40 years, are estimated to range from $101 billion in Scenario F to $149 billion in Scenario B. This compares with that of $168 billion estimated for Scenario A. Thus even for these more conservative scenarios, the gross economic benefits stemming from the theme park operation are reckoned to be very substantial.

24. As to employment creation, the total number of jobs directly and indirectly generated from the theme park operation is estimated to range from around 11 400 in Scenario F to around 17 600 in Scenario B in Year 1. By Year 20, the total number of jobs so created will be much more, ranging from around 18 100 in Scenario F to around 28 700 in Scenario B. This compares with the corresponding numbers of around 18 400 and 35 800 estimated for Scenario A.

25. In Scenario A, it will take around 15 years for the theme park to reach Phase I buildout or full capacity. In the other five scenarios, a longer period will be required, ranging from 24 years in Scenario B and 26 years in Scenario C to 32 years in Scenarios D, E and F.

Shorter-term benefits

26. Income and employment generated during construction do not enter into the project evaluation framework, but may nevertheless be regarded

as shorter-term economic benefits. For this theme park project, land formation and infrastructure construction is estimated to cost around $13.8 billion in gross value terms or around $11.9 billion in present value terms. Based on an income multiplier of around unity for such investment expenditure as separately determined from macroeconomic modelling, the direct and spin-off income so generated is estimated at likewise around $11.9 billion in present value terms. Also, based on the average ratio of construction expenditure to construction employment for public sector projects, the additional employment created for the construction sector as a whole from this stage of construction is estimated at around 10 000 man-years[9] before the theme park opening, and around 12 000 man-years up to full completion of the works (***Annex 9***).

27. Erection of superstructure and facilities for Phase I of the theme park is estimated by WD to involve a total capital outlay of around $12.9 billion in money-of-the-day terms spending over 2000-2005[10]. When expressed in 1999 prices, this amounts to around $10.5 billion in gross value terms or around $8.8 billion in present value terms. Using the same income multiplier of around unity, the direct and spin-off income so generated is estimated at likewise around $8.8 billion in present value terms. Also, based on the average ratio of construction expenditure to construction employment for private sector projects, the additional employment created for the construction sector as a whole from this stage of construction is estimated at around 6 000 man-years (***Annex 10***).

Major economic costs

28. The major cost components that have to be gauged in this economic assessment are:

(a) *Land formation and infrastructure construction costs*

Site formation cost and costs of providing transport links and other infrastructural facilities.

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(9) It is the nature of operation of the construction industry that the numbers, types and durations of jobs vary greatly between different categories of construction projects, and at different stages of construction even within each project. Given such diversities, and in view of the intermittent intervals of work, the respective construction employment is better measured in terms of man-years instead of simple head-counts. The mode of employment in construction projects in fact differs from that in factories, offices or service entities, in that the latter employment is in going business concerns and hence is of a continuing nature, so that simple head-counts generally suffice.

(10) The overall project outlay for building Phase I of the theme park is estimated by WD at $14.1 billion in money-of-the-day terms. After excluding project reserve and capitalised interest, this amounts to $12.9 billion for inclusion in the present assessment.

(b) *Superstructure and facilities erection costs*

Capital costs for building Phase I of the theme park and its associated facilities.

(c) *Wider economic costs*

Mainly the costs arising from curtailment of other major facilities, if any.

The recurrent operating costs of the theme park and its associated facilities are also economic costs. But they have already been netted out in the estimation of value added contribution of the theme park to the economy.

29. The land formation and infrastructure construction costs are estimated at around $13.8 billion in gross value terms or around $11.9 billion in present value terms. The superstructure and facilities erection costs are estimated at around $10.5 billion in gross value terms or around $8.8 billion in present value terms. The total economic cost in present value terms is thus estimated at $20.7 billion for the theme park to be built at Penny's Bay (***Annex 11***).

30. As to the wider economic cost, it is known that locating the theme park at Penny's Bay will impinge on the option of developing Container Terminals 10 and 11 on that site. This may entail some opportunity cost for the land. However, according to an assessment by the Economic Services Bureau, it is reckoned that so long as the option of developing CT 12 and 13 at North Lantau or in other alternative locations is retained, and that in the meantime, more back-up land can be provided to the existing Kwai Chung Container Port and CT 9 to increase their handling capacity, the giving up of CT 10 and 11 on that site should not have any appreciable opportunity cost implications for future container port development.

Net economic benefit

31. Matching the gross economic benefits quantified as value added stemming from the theme park operation against the economic costs to be incurred for bringing it in place, in accordance with the project evaluation framework, it is estimated that the net economic benefit in present value terms will amount to $148 billion in Scenario A. For the other five scenarios, the net economic benefit in present value terms is estimated at $128 billion in Scenario B, $112 billion in Scenario C, $105 billion in Scenario D, $89 billion in Scenario E, and $80 billion in Scenario F.

32. The economic viability of the project can also be reflected from its economic rate of return[11], benefit-to-cost ratio or economic pay-back period. It is estimated that the economic rate of return will amount to 25.0% in real terms in Scenario A. This rate decreases to 23.1% in Scenario B, 21.1% in Scenario C, 19.9% in Scenario D, 18.1% in Scenario E, and 16.9% in Scenario F. The benefit-to-cost ratio is estimated at 8.1 in Scenario A. This ratio declines to 7.2 in Scenario B, 6.6 in Scenario C, 6.2 in Scenario D, 5.3 in Scenario E, and 4.9 in Scenario F. As to the economic pay-back period after opening, it is reckoned at 5 years in Scenarios A to C, 6 years in Scenario D, and 7 years in Scenarios E and F.

33. The key indicators of economic viability of the project under the six scenarios formulated, which can be judged as highly robust, are summarised below :

	Scenario					
	A	B	C	D	E	F
Net economic benefit in present value over 40 years (in terms of the cumulative value added contribution to GDP) ($Bn)	148	128	112	105	89	80
Economic rate of return in real terms (%)	25.0	23.1	21.1	19.9	18.1	16.9
Benefit/cost ratio in present value terms	8.1	7.2	6.6	6.2	5.3	4.9
Years taken from opening for economic pay-back (i.e. when the cumulated gross economic benefits just offset the total economic cost)	5	5	5	6	7	7

In addition, it is estimated that, prior to the opening of the theme park, land formation and infrastructure construction will generate value added amounting to around $12 billion in present value terms, and erection of the theme park and its associated facilities value added amounting to around $9 billion in present value terms.

34. Sensitivity test for Scenario A reveals that its economic viability indicators remain robust even with much shorter evaluations time horizons than 40 years (***Annex 12***).

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[11] The economic rate of return refers to the discount rate that equates the present value of the gross economic benefits stream to that of the economic costs stream. Thus it measures the rate of return on the economic resources employed for the project.

Conclusion

35. The present assessment indicates that the WD theme park is likely to bring about substantial net benefits to the economy, mainly as a result of additional tourist spending and to a lesser extent additional spending by local residents, after deducting the land formation, infrastructure construction, site facilities erection and other economic costs involved.

36. Besides the quantified economic benefits as assessed, the theme park can be expected to also bring about significant non-quantifiable benefits. It will no doubt enhance the international image of Hong Kong as a cosmopolitan city, and in particular strengthen the position of Hong Kong as a major tourist centre in Asia. It will also help transfer Walt Disney's strong edge in quality standard, technological innovation, staff training and environmental alertness to the rest of the economy. Moreover, it will help enrich the quality of life of Hong Kong people, by having close access to a world-class theme park with high-quality recreational facilities.

Economic Analysis Division
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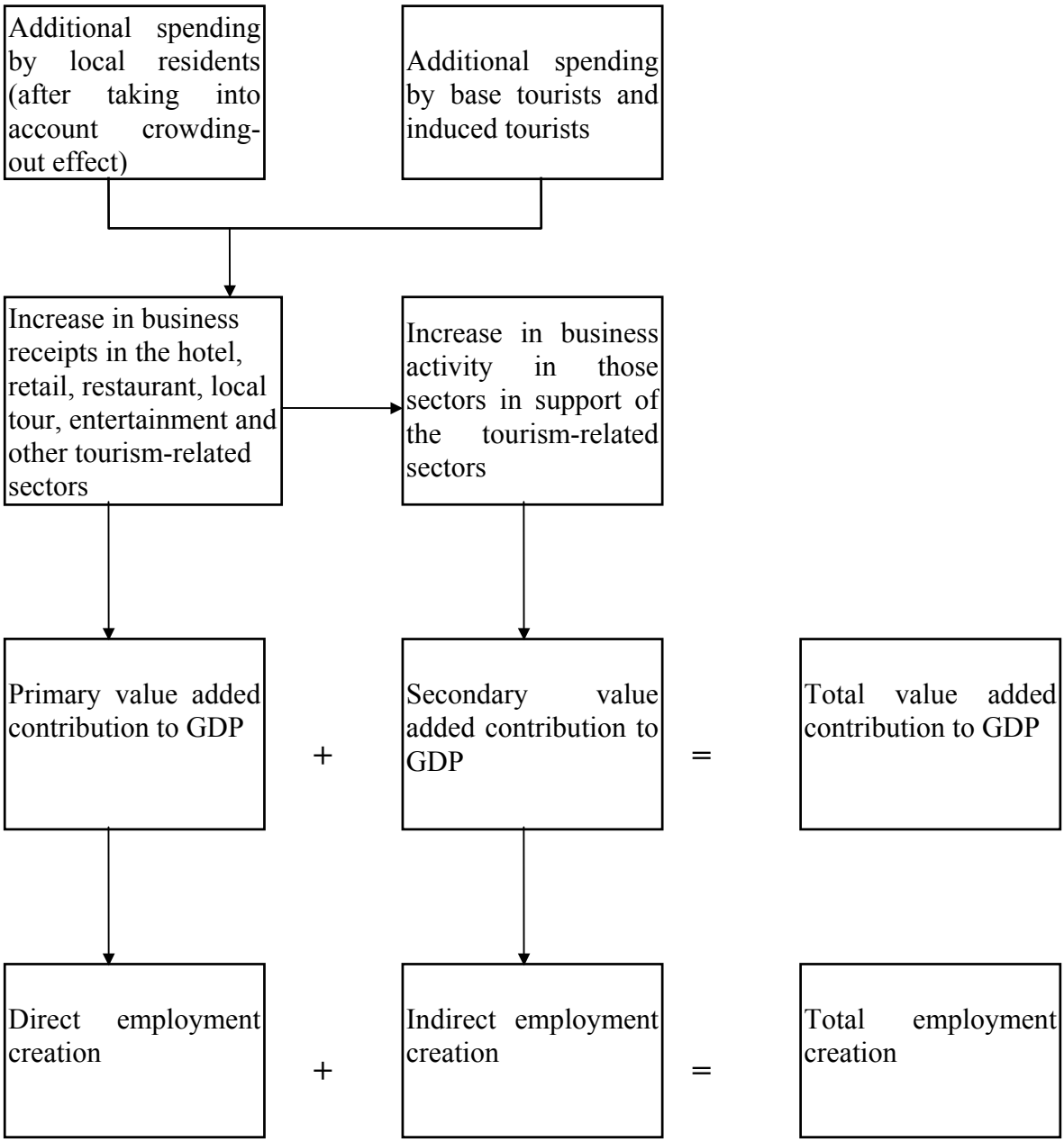
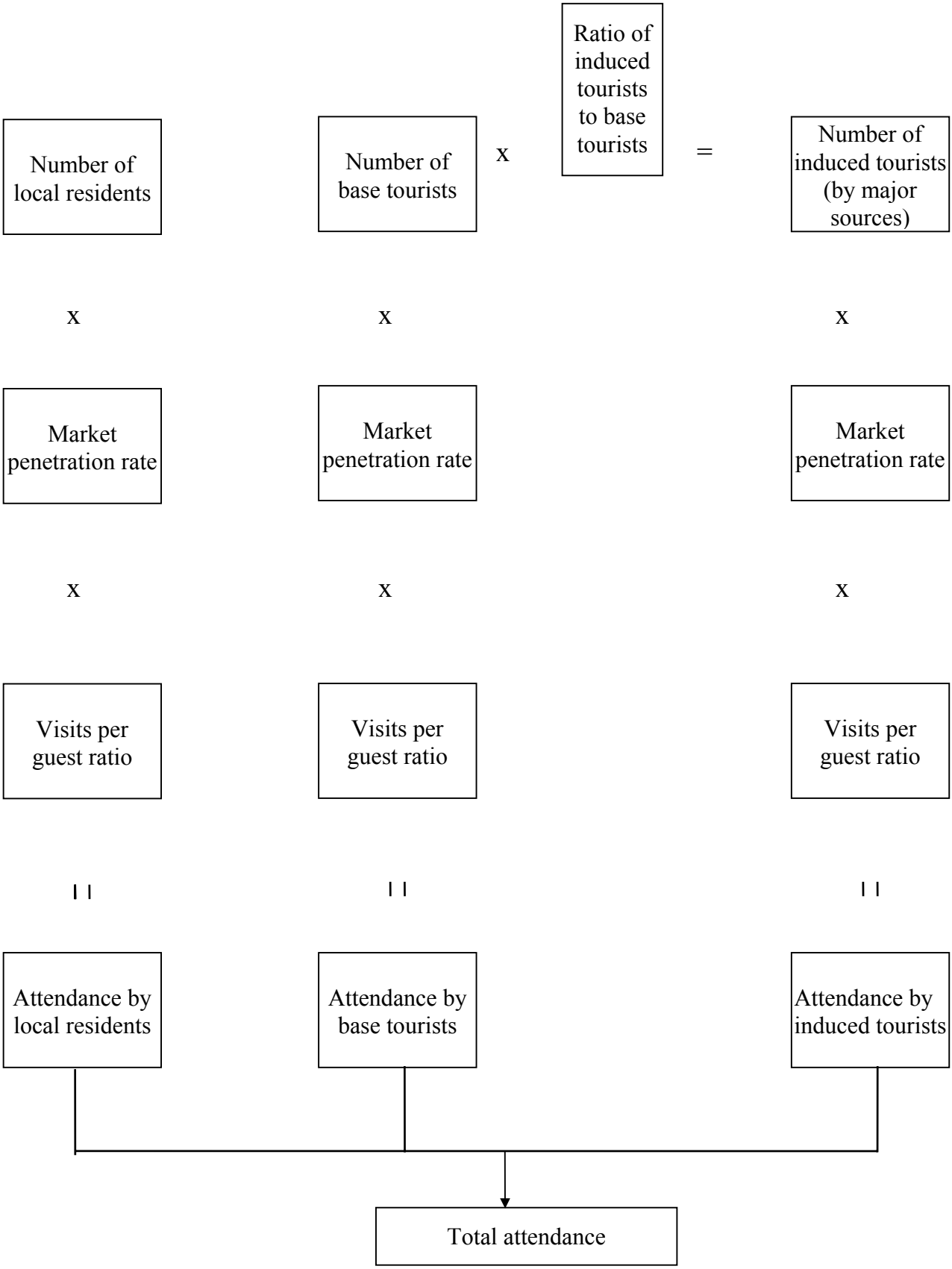
Annex 1

Summary of the methodology for assessing value added contribution and employment creation of WD's project



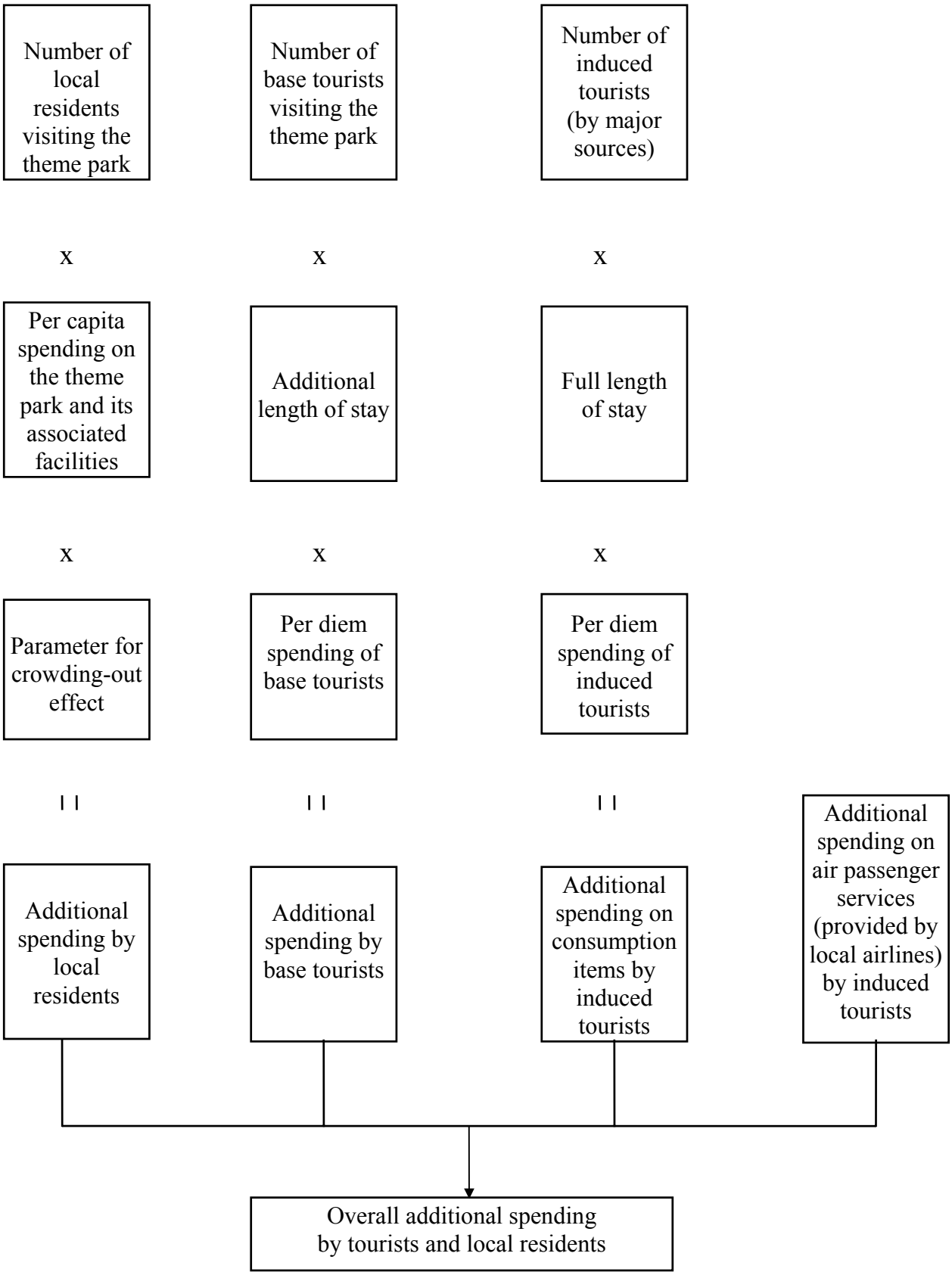
Annex 2

Summary of the methodology for assessing attendance



Annex 3

Summary of the methodology for assessing total additional spending



Attendance projections for Scenario A

Attendance by	Opening year (2005) ('000)	Share in total attendance (%)	Year 2024 ('000)	Share in total attendance (%)
Local residents	1 857	36	2 854	27
Vacation tourists	3 221	62	7 303	69
Base	1 866	36	4 357	41
Induced	1 355	26	2 946	28
Business visitors	181	3	503	5
Capacity constraint	-47	-1	-92	-1
Total	5 212	100	10 568	100

Notes :

(1) In deriving the above attendance projections, it is assumed that the market penetration rate for local residents will rise from 19% in 2005 to 23% in 2024, while those for base tourists, induced tourists and business visitors will remain at around 15.5-15.8%, 100% and 4% respectively throughout the projection period. The visits per guest ratios for these four categories of attendees are assumed at 1.35, 1.17, 1.15 and 1.0 respectively.

(2) The local population size is projected with reference to the population projection prepared by the Census and Statistics Department in 1997. Attendance by local residents is obtained by multiplying this population size by the corresponding market penetration rate and further by the corresponding visits per guest ratio.

(3) The number of base tourists, which includes business visitors, is projected to increase from 9.6 million in 1998 to 15.0 million in 2005 and further to 36.5 million in 2024. Of these, 70% are vacation tourists. The other 30% are business visitors. Attendance by base tourists, excluding business visitors, is obtained by multiplying their number by the corresponding market penetration rate and further by the corresponding visits per guest ratio.

(4) The number of induced tourists is projected to increase from 1.2 million in 2005 to 2.6 million in 2024. Attendance by induced tourists is obtained by multiplying their number by the corresponding visits per guest ratio, with their market penetration being taken as full.

(5) Attendance by business visitors is obtained by multiplying their number by the corresponding market penetration rate and further by the corresponding visits per guest ratio. However, it is assumed that business visitors will not extend their stay in Hong Kong even if they visit the theme park.

(6) There will be a small capacity constraint being sustained at the theme park, as its overall effective capacity is planned to

increase progressively in tandem with the rise in attendance over time.

Annex 5

Additional spending by tourists and local residents under Scenario A

		2005	2024
(a)	Number of base tourists	1.60 million	3.76 million
(b)	Additional length of stay of base tourists	0.5 night	0.5 night
(c)	Average per diem spending of base tourists[1]	$1,818	$1,818
(d)	Additional spending by base tourists = (a) x (b) x (c)	$1,454 million	$3,414 million
(e)	Number of induced tourists[2]	1.2 million	2.6 million
(f)	Average full length of stay of induced Tourists	3.2	3.1
(g)	Average per diem spending of Induced tourists	$1,688	$1,560
(h)	Additional spending on consumption Items by induced tourists (h) = (e) x (f) x (g)	$6,292 million	$12,244 million
(i)	Additional spending on air passenger Services (provided by local airlines) by Induced tourists[3]	$570 million	$1,128 million
(j)	Additional spending by induced Tourists = (h) + (i)	$6,862 million	$13,372 million
(k)	Total additional spending by tourists = (d) + (j)	$8,316 million	$16,786 million
(l)	Number of local residents visiting the Theme park	1.81 million	2.76 million
(m)	Per capita spending by local residents Visiting the theme park	$680	$680
(n)	Additional spending by local Residents = (l) x (m)	$1,231 million	$1,878 million
(o)	Overall additional spending[4] = (k) + (n)	$9,547 million	$18,664 million

Notes :

(1) This is based on the average figure for 1995-98, as the 1998 figure, which is relatively low due to the impact of the regional financial turmoil, may not be representative of the normal level.

(2) Visitors from the Mainland, mostly from South China, are projected to account for 74% of the total number of induced tourists in 2005, with the share rising to 82% in 2024. The remaining induced tourists will come mainly from Taiwan and Southeast Asia. The estimated average length of stay and per diem spending of induced tourists have been adjusted to take into account the composition of these induced tourists, as well as to incorporate the assumption that two-thirds of the induced tourists from South China will take short trips to Hong Kong primarily to visit the theme park, with an average length of stay of only 1.5 nights which is much shorter than the normal length of stay for tourists from this source.

(3) It is crudely assumed that, excluding those induced tourists from South China who will take one-day or two-day trips to Hong Kong primarily to visit the theme park, about 30% of the remaining induced tourists will travel to Hong Kong by Hong Kong's local airlines, with the other 70% travelling by foreign airlines.

(4) As the per diem spending of tourists and per capita spending of local residents are assumed to remain unchanged in real terms throughout the projection period, the total additional spending could be under-stated somewhat over time, to the extent that there could be some real increase in such per diem and per capita spending over time.

Annex 6

Primary and secondary value added contributions under Scenario A

Source	Estimated ratio of value added to business receipts in the related sector[1]	Projected business receipts		Primary value added contribution		Secondary value added contribution[2]		Total Value added Contribution	
		2005 ($Mn)	2024 ($Mn)	2005 ($Mn)	2024 ($Mn)	2005 ($Mn)	2024 ($Mn)	2005 ($Mn)	2024 ($Mn)
Additional spending on Consumption items by tourists[3]									
- Shopping	0.139	3,849	7,781	535	1,082	1,166	2,358	1,702	3,439
- Hotel accommodation	0.614	2,311	4,671	1,419	2,868	667	1,348	2,086	4,216
- Eating out	0.359	906	1,831	325	657	254	513	579	1,170
- Tours	0.062	137	276	8	17	21	43	30	60
- Others	0.440	544	1,099	239	483	191	387	430	870
Additional spending on air passenger services (provided by local airlines) by tourists	0.485	570	1,128	276	547	199	394	476	941
Total additional Spending by Tourists		8,317	16,786	2,803	5,655	2,499	5,042	5,302	10,697
Additional spending by local residents	0.323[4]	1,231	1,878	398	607	535	817	933	1,424
Overall additional Spending		9,547	18,664	3,201	6,262	3,034	5,859	6,236	12,121

Notes : (1) Based on the results of the annual surveys on the various economic sectors for 1996 conducted by the Census and Statistics Department.

(2) A set of income-generation multiplying factors have been applied to the primary value added contributions to arrive at the corresponding secondary value added contributions. These multiplying factors are based on an earlier study "Assessment of the Contribution of Tourism to the Hong Kong Economy" conducted by the Economic Analysis Division. They have subsequently been updated and used as input to HKTA's Vistour Study.

(3) The spending pattern is based on the average of those in 1995-98.

(4) This is the average ratio of value added to business receipts in the retail, restaurant, transport and personal services sectors combined.

Annex 7

Present value of the stream of gross economic benefits under Scenario A

Year	Projected attendance (Million)	Combined primary and secondary value added contributions ($Bn)	Present value* of the combined value added contributions in 1999 ($Bn)
2005	5.21	6.24	4.93
2006	5.47	6.58	5.00
2007	6.22	7.18	5.25
2008	6.49	7.57	5.32
2009	6.92	8.04	5.43
2010	6.96	8.35	5.42
2011	7.18	8.75	5.47
2012	8.14	9.56	5.74
2013	8.19	9.92	5.73
2014	8.80	10.60	5.88
2015	8.53	10.69	5.71
2016	8.84	11.09	5.69
2017	9.13	11.48	5.67
2018	9.31	11.56	5.49
2019	9.50	11.65	5.32
2020	10.38	12.08	5.30
2021	10.28	12.02	5.07
2022	10.41	12.07	4.90
2023	10.42	12.06	4.71
2024	10.57	12.12	4.55
2025	10.57	12.12	4.37
2026	10.57	12.12	4.20
2027	10.57	12.12	4.04
2028	10.57	12.12	3.89
2029	10.57	12.12	3.74
2030	10.57	12.12	3.59
2031	10.57	12.12	3.46
2032	10.57	12.12	3.32
2033	10.57	12.12	3.20
2034	10.57	12.12	3.07
2035	10.57	12.12	2.95
2036	10.57	12.12	2.84
2037	10.57	12.12	2.73
2038	10.57	12.12	2.63
2039	10.57	12.12	2.53
2040	10.57	12.12	2.43
2041	10.57	12.12	2.33
2042	10.57	12.12	2.25
2043	10.57	12.12	2.16
2044	10.57	12.12	2.08
Total			168.35

Note : (*) A social discount rate of 4% in real terms is used for the discounting.

Annex 8

Employment creation under Scenario A

	Estimated ratio of value added to employment in the related sector[1] ($Mn per person engaged)	Primary value added contribution		Direct employment creation		Secondary value added contribution		Indirect employment creation[2]		Total employment creation[3]	
		2005 ($Mn)	2024 ($Mn)	2005 (No.)	2024 (No.)	2005 ($Mn)	2024 ($Mn)	2005 (No.)	2024 (No.)	2005 (No.)	2024 (No.)
Spending on consumption items by tourists											
Shopping	0.199	535	1,082	2 539	5 131	1,166	2,358	2 944	5 952	5 483	11 083
Hotel accommodation	0.445	1,419	2,868	3 014	6 092	667	1,348	1 684	3 403	4 698	9 495
Eating out	0.148	325	657	2 075	4 194	254	513	640	1 294	2 715	5 489
Tours	0.178	8	17	45	91	21	43	54	109	99	199
Others	0.195	239	483	1 161	2 347	191	387	483	976	1 644	3 323
Spening on air passenger services (provided by local airlines) by tourists	0.776	276	547	337	667	199	394	503	994	840	1 661
Spending by local residents	0.233[4]	398	607	1 613	2 461	535	817	1 353	2 064	2 965	4 525
Total		3,201	6,262	10 783	20 983	3,034	5,859	7 660	14 792	18 443	35 775

Notes :

(1) Based on the results of the annual surveys on the various economic sectors for 1996 conducted by the Census and Statistics Department, as well as the employment figures by sector for 1997.

(2) The average level of labour productivity for the whole economy is used in reckoning the indirect employment creation effect.

(3) The level of labour productivity is assumed to remain unchanged over the projection period. As labour productivity could rise over time, the amount of employment creation could thus be over-stated somewhat over time.

(4) This is the average ratio of value added to employment in the retail, restaurant, transport and personal services sectors combined.

Annex 9

Employment generated from land formation and
infrastructure construction for the theme park

Year	Land formation And infrastructure construction costs in gross value terms ($Mn)	Estimated man-years of construction site workers required*	Estimated man-years of site and non-site workers in the construction sector required#
2000	1,188	787	1 023
2001	2,207	1 462	1 900
2002	2,637	1 746	2 270
2003	2,790	1 848	2 402
2004	2,390	1 583	2 058
Sub-total up to before opening (2000-2004)	***11,212***	***7 426***	***9 653 (or around 10 000)***
2005	1,005	666	865
2006	700	464	603
2007	793	525	683
2008	133	88	115
Total (2000-2008)	***13,843***	***9 168***	***11 918 (or around 12 000)***

Notes : (*) This is broadly estimated by using the ratio of construction expenditure to site employment in public sector projects, which averaged at around $1.5 million per site worker in recent years. In practice, this ratio varies widely in accordance with the specific nature of the construction project.

(#) In the construction sector, the ratio of site workers to non-site workers is around 1 to 0.3.

Annex 10

Employment generated from erection of superstructure and associated facilities for the theme park

Year	Projected construction outlays(+) Attractions in the theme park ($Mn)	Hotel ($Mn)	Retail, dining and entertainment ($Mn)	Others ($Mn)	Total ($Mn)	Estimated man-years of construction site workers required*	Estimated man-years of site and non-site workers in the construction sector required#
2000	151	0	0	85	235	104	135
2001	536	59	54	83	732	322	419
2002	856	80	110	84	1,129	497	647
2003	1,563	601	224	206	2,593	1 142	1 485
2004	2,064	1,315	686	954	5,018	2 211	2 874
2005	580	113	58	0	751	331	430
					10,459	4 608	5 990
							(or around 6 000)

Notes : (+) These figures are based on WD's estimates, which are originally expressed in money-of-the-day terms but converted into 1999 prices by using the projected rate of increase in construction costs over the period 2000-2005, at about 5% per annum.

(*) This is broadly estimated by using the ratio of construction expenditure to site employment in private sector projects, which averaged at around $2.3 million per site worker in recent years. In practice, this ratio varies widely in accordance with the specific nature of the construction project. A relatively higher ratio is not unreasonable here, as a great variety of dedicated and thus more expensive fittings, decorations, equipment and functional components will have to be installed in the theme park.

(#) In the construction sector, the ratio of site workers to non-site workers is around 1 to 0.3.

Annex 11

Present value of the steam of economic costs

Year	Land formation and infrastructure costs in gross value terms ($Bn)	Superstructure and facilities erection costs in gross value terms ($Bn)	Total economic costs in gross value terms ($Bn)	Total economic costs in present value terms* ($Bn)
2000	1.19	0.24	1.42	1.37
2001	2.21	0.73	2.94	2.72
2002	2.64	1.13	3.77	3.35
2003	2.79	2.59	5.38	4.60
2004	2.39	5.02	7.41	6.09
2005	1.01	0.75	1.76	1.39
2006	0.70	-	0.70	0.53
2007	0.79	-	0.79	0.58
2008	0.13	-	0.13	0.09
Total	13.84	10.46	24.30	20.70

Note:(*) A social discount rate of 4% in real terms is used for the discounting.

Annex 12

Economic viability indicators with alternative evaluation time horizons for Scenario A

	Cut-off at :			
	20 years after opening	30 years after opening	40 years after opening	50 years after opening
Net economic benefit in present value ($Bn)	86	123	148	164
Economic rate of return in real terms (%)	24.7	25.0	25.0	25.0
Benefit/cost ratio in present value terms	5.1	6.9	8.1	8.9