CHAPTER 5

DISCUSSION OF THE RESULTS

In this chapter, data analysis and discussion of the results of the study are presented. These discussions are made on the basis of various steps identified in the methodology in the previous chapter.

5.1 Estimates of Per Earner Household Income

Multiple regression analysis was used in the study to estimate the per earner household income affected by AIDS in three regions including both urban and rural areas. The per earner household income was estimated, and then calculated into per capita household income to find the income class of AIDS patients. Some statistically insignificant variables were kept in the general model in order to estimate per earner household income, even through those variable were insignificant by statistic test. From an economics point of view many factors could be affecting per earner household income. On the other hand, some statistically significant variables were omitted from the model, even through they are significant. Because they were not reasonable from an economics point of view. The study has already described the association between the chosen independent variables existing in this study and the dependent variable (per earner household income). Among the variables, the constructed, model considered age, and age^2. The main reason for this is based on the fact that income would increase by age. This concept is confirmed by life-cycle hypothesis. However, at a particular age income begin to decrease when people's ability declines.

Table 5.1A shows the coefficient of each variable in BMA-urban areas. The earnings function model used in the BMA-urban area is:

$$Y = \alpha + \beta_1(Occ_1)+\beta_2(Occ_2)+\beta_3(HdAge)+\beta_4(HdAge^2)\ldots\ldots\ldots\ldots\ldots\ldots\ldots(5.1)$$

The model was calculated by multiple regression in order to determine the per earner household income by the coefficient calculated. Dependent variables in this area are comprised of government and private workers, labour, age, and age^2. This Model excludes entertainment (one of the categories of occupations), because there is very little data (see appendix-1). Due to the low number of observations, the entertainment category would not be able to reliably explain the dependant variable. Due to a multicolinearity problem, this study also excludes household size and thus shows the true correlation coefficient between the independent variable and the dependent variables, as shown by R^2. There was no problem of multicollinerity found among the variables use in the model. The R^2 result of 0.030 is quit low however, which might partly be due to fact that the data is crossectional and the sample size is very low (n=41). However, the main reason may be the characteristics of AIDS patients which are not available.

Regarding the BMA-rural areas model, the earnings function model selected is:

$$Y = \alpha + \beta_1(Occ_1)+\beta_2(Occ_2)+\beta_3(Hdsize)+\beta_4(HdAge)+\beta_5(HdAge^2)\ldots\ldots(5.2)$$

Table 5.1B shows the coefficient of each variable in the BMA-rural areas. The entertainment was excluded from occupation categories (see appendix 1). However, this model uses household size because in general this variable can be associated with per earner household income as explained in the previous chapter. This model also gives a low value of R^2 (0.004) which means the independent variables can explain the dependent variables by a correlation coefficient of 0.4 percent. There is no multicolinearity in this model.

Table 5.1A Regression Results of Bangkok Metropolitan-Urban Areas

Dependent Variable = Per Earner Household Income

Variable	Coefficient	t-statistic
Constant	-4235.0300	-0.312
Government and Private Workers	-57293.0031	-1.179
Labour	-9157.4118	-1.822***
Age	806.8973	1.190
Age^2	-9.4793	-0.312

R^2 = 0.030; F-stat 0.2700; n=41

* sig level = 0.01; **sig level = 0.05; ***sig level = 0.10

Table 5.1B Regression Results of Bangkok Metropolitan-Rural Areas

Dependent Variable = Per Earner Household Income

Variable	Coefficient	t-statistic
Constant	-580.6352	-0.143
Government and Private Workers	2014.8388	1.513
Labour	2173.3036	1.589
Household Size	-467.0728	-1.508
Age	203.8725	0.888
Age^2	-1.8409	-0.678

R^2 = 0.004; F-stat 0.4172; n=40

* sig level = 0.01; **sig level = 0.05; ***sig level = 0.10

Table 5.2A shows the coefficient of each variable in the Northern region-urban areas for which the variables are government and private workers, labour, entertainment, age, and age^2. The earnings function model in this region is:

$$Y= \alpha+ \beta_1(Occ_1)+\beta_2(Occ_2)+\beta_3(Occ_3)+\beta_4(HdAge)+\beta_5(HdAge^2).....(5.3)$$

Regarding multicolinearity, the household size was excluded. The R^2 shows that the independent variable would be able to reliably explain approximately 10% of the variation of per earner household income at 10 percent confident level. The R^2 in this model is quite high compared with BMA. It should be mentioned that the sample size by SES (1988) is bigger in the Northern area. Data in this area is shown in appendix 1 (Table 5).

Table 5.2B shows the results of regression analysis for the Northern region in rural areas. This model consists of the following variables: government and private workers, labour, household size, age, and age^2:

$$Y = \alpha+ \beta_1(Occ_1)+\beta_2(Occ_2)+\beta_3(Occ_3)+\beta_4(HdAge)+\beta_5(HdAge^2).....(5.4).$$

The R^2 in this model is rather high in contrast with the urban area (56.7%). Moreover, the F-statistic value in the model confirms the validity of the variables chosen for this model. According to t-statistics, only government and private workers is significant to explain per earner household income (significance level 0.01).

Table 5.2A Regression Results of Northern Region-Urban Areas

Dependent Variable = Per Earner Household Income

Variable	Coefficient	t-statistic
Constant	-14427.7339	-0.967
Government and Private Workers	54.6640	0.027
Labour	13354.3841	2.109*
Entertainment Industry	-9548.4175	-0.492
Age	835.1765	1.206
Age^2	-11.2414	-1.319

R^2 = 0.102; F-stat 0.0995; n=45

* sig level = 0.01; **sig level = 0.05; ***sig level = 0.10

Table 5.2B Regression Results of Northern Region-Rural Areas

Dependent Variable = Per Earner Household Income

Variable	Coefficient	t-statistic
Constant	-121.3298	-0.059
Government and Private Workers	-746.7871	-0.334*
Labour	5570.2974	5.491
Household Size	-493.8801	-1.015
Age	142.4221	0.837
Age^2	-1.8273	-0.929

R^2 = 0.567; F-stat 0.0000; n=43

* sig level = 0.01; **sig level = 0.05; ***sig level = 0.10

Table 5.3A shows the coefficient of each variable in the urban areas of other regions. This model consists of government and private workers, age, and age^2:

$$Y = \alpha + \beta_1(Occ_1)+\beta_2(Occ_2)+\beta_3(Occ_3)+\beta_4(HdAge)+\beta_5(HdAge^2).....(5.5).$$

The R^2 is quite high in the model (39%). Moreover, the F-statistics value in the model confirm the validity of the variables chosen for this model. According to t-statistics age and age^2 are accepted to put in the model. (significant level on age 0.01%, and age^2 0.01%) Other region rural areas is shown in table 5.3B. The variables consist of government and private workers, labour, entertainment, age, and age^2:

$$Y = \alpha + \beta_1(Occ_1)+\beta_2(Occ_2)+\beta_3(Occ_3)+\beta_4(HdAge)+\beta_5(HdAge^2).....(5.6).$$

The R^2 in this model is rather high (75%). Moreover, the F-statistics value in the model confirms the validity of the variables chosen for this model. According to t-statistics, of which labour, age, age^2, and Government and Private worker are accepted in the model by the significant level mentioned in the table 5.3B. The respondent reason is that the number of the SES 1988 sample is higher than any other data set (see appendix-1). Moreover, number of the people with AIDS in this area is big enough.

The results of all the regression analysis has been used to estimate the per earner household income of each occupation in rural and urban areas of all regions. The result of the estimated per earner household income by occupations and other components in each region in the year 1988 is shown in table 5.1A,B - 5.3A,B. These estimates are then converted into per capita income.

Table 5.3A Regression Results of Other Region-Urban Areas

Dependent Variable = Per Earner Household Income

Variable	Coefficient	t-statistic
Constant	-7877.1528	-1.980**
Government and Private Workers	1672.2494	0.508
Labour	5051.5027	1.469
Entertainment Industry	4736.8988	1.094
Age	490.0707	3.960*
Age^2	-5.6994	-3.787*

R^2 = 0.390; F-stat 0.0001; n=46

* sig level = 0.01; **sig level = 0.05; ***sig level = 0.10

Table 5.3B Regression Results of Other Region-Rural Areas

Dependent Variable = Per Earner Household Income

Variable	Coefficient	t-statistic
Constant	-500.3796	-2.636**
Government and Private Workers	1894.8977	2.604***
Labour	4989.5425	9.897*
Entertainment Industry	-1097.8726	-1.569
Age	77.0564	2.279**
Age^2	-1.1117	-2.636**

R^2 = 0.750; F-stat 0.0000; n=44

* sig level = 0.01; **sig level = 0.05; ***sig level = 0.10

5.2 Estimates of Per Capita Income of AIDS Patient

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The regression models as explained in the previous step (table5.1) explain the relationship between the per earner household incomes and occupation, and age in each region in both urban and rural areas. Then per earner household income in those models was calculated by using the coefficient of each variable, based on 1988 values. Also used in these calculations were the number of reported AIDS patients in 1997 and their characteristics. It is assumed that the characteristics of the 1997 AIDS patients are the same as those of people that comprise the 1988 SES statistics. Based on household size and number of earners in a household, the per capita income of each occupation was calculated and compared with the average per capita expenditure of different income classes constructed in an earlier study (Samtisart, 1993) to determine the income class of each patients in various age groups. The way to calculate income class was discussed in chapter 4.

Table 5.4A shows the comparison between per earner household income and the calculated per capita income of AIDS patients, based on 1988 values by regression model of the BMA-urban area. The estimate is according to age, from 15 to 60 year olds. There are 1,308 cases in this area. AIDS patients are grouped by quintile income class as determined by an earlier study in table 5.7. The table reveals that most of patients belong to upper income classes (U_4-U_5). The next largest number is in the poorest income class, and the lowest number of them belong to the medial income classes (U_2-U_3). Similarly, Table 5.4B shows the estimated per earner household income and the calculated per capita income in the BMA-rural area. The data is missing in some age groups, such as 15-16, 18, 50-51, 56-57, and 59-60 year olds. The table reveals that there are 430 cases of AIDS in this area. Therefore, the distribution among age groups is lower than in the BMA-urban area. The per capita income determined expenditure per capita among quintile income classes is available

from an earlier study is shown in Appendix4. In the table 5.7 most of the patients with AIDS belong to the rich income class. The second largest group is in the forth income class, and the smallest group is in the poorer income classes (U_1-U_2). Based on the results there is no AIDS case in the third income class of this area.

Table 5.4A Estimated Per Capita Income of AIDS Patients in Bankok Metropolitan Urban areas Based on SES,1988

Age	AIDS Cases	Earner	House-hold Size	Per Earner Income (Calculated)	Per Capita Income (Calculated)	Age	AIDS Cases	Earner	House-hold Size	Per Earner Income (Calculated)	per Capita Income (Calculated)
15	1	1.73	3.33	5,735.46	2,979.68	38	46	1.39	5.22	10,997.23	2,928.38
16	0					39	32	1.88	4.03	7,076.50	3,301.20
17	2	1.73	3.33	6,742.54	3,502.88	40	35	1.52	3.54	5,361.19	2,301.98
18	1	1	1	1,488.64	1,488.64	41	28	1.73	3.33	12,911.98	6,708.03
19	11	1.73	3.33	7,673.78	3,986.68	42	34	2.13	4.59	8,921.74	4,140.15
20	8	2	2	2,381.96	2,381.96	43	28	1.55	3.48	4,656.74	2,074.12
21	18	1.07	1.18	3,029.34	2,746.94	44	25	2.36	4.73	4,992.10	2,490.77
22	25	1.73	2	-19,306.54	-16,700.16	45	22	2	4	7,149.46	3,574.73
23	38	1.97	2.36	3,791.29	3,164.76	46	11	1.81	3.34	6,570.84	3,560.84
24	28	2.33	3.34	1,199.25	836.6	47	12	3.74	6.33	7,902.64	4,669.18
25	62	1.75	2.3	4,276.23	3,253.65	48	13	1.96	4.09	4,902.48	2,349.35
26	41	1.86	2.54	4,839.19	3,543.66	49	5	2.56	3.98	5,398.35	3,472.31
27	65	1.76	2.59	2,545.74	1,729.92	50	15	3.1	5.88	4,006.80	2,112.43
28	7	1.59	3.61	8,945.04	3,939.78	51	7	1.69	2.31	6,530.38	4,777.64
29	58	1.94	3.35	3,475.35	2,012.59	52	1	3.48	4.63	9,959.73	7,485.93
30	64	1.16	2.6	4,833.10	2,156.31	53	5	3.94	6.53	7,355.28	2,627.84
31	64	2	3.94	4,122.52	2,092.65	54	4	1.46	3.91	4,113.54	1,536.00
32	122	2.03	3.83	8,581.12	4,548.22	55	9	3.35	4.88	-8,342.70	-5,727.06
33	64	1.39	2.95	-12,594.65	-5,934.43	56	1	1.11	1.21	-17,012.90	-15,606.90
34	60	1.41	4.25	9,090.18	3,015.80	57	3	4	8	5,228.74	2,614.37
35	110	1.51	3.63	6,356.35	2,644.10	58	6	1	4.99	4,914.75	984.92
36	61	1.87	3.64	4,479.59	2,310.33	59	5	1.95	5.32	2,997.54	1,098.72
37	44	1.67	3.84	5,427.65	2,360.46	60	7	1.49	3.21	2,402.05	1,114.97
						Total	1,308				

Table 5.4B Estimated Per Capita Income of AIDS Patients in the Bankok Metropolitan Rural Areas Based on SES,1988

Age	AIDS Cases	Earner	House-hold Size	Per Earner Income (Calculated)	Per Capita Income(Calculated)	Age	AIDS Cases	Earner	House-Hold Size	Per Earner Income (Calculated)	Per Capita Income (Calculated)
15	0					38	5	1.80	2.98	4,796.45	2,897.18
16	0					39	8	2.00	4.00	4,877.68	2,438.84
17	2	1.87	3.54	699.97	369.76	40	12	2.41	5.58	3,558.54	1,536.93
18	0					41	19	1.51	4.00	4,682.12	1,767.50
19	2	1.87	3.54	975.23	515.17	42	11	2.23	4.47	3,393.84	1,693.12
20	4	2.00	2.00	40.93	4,000.93	43	6	1.75	6.19	2,939.74	831.11
21	4	0.69	1.62	4,196.82	1,787.53	44	4	2.64	5.12	3,374.58	1,740.02
22	4	2.00	3.00	3,787.04	2,524.69	45	6	2.75	6.32	4,007.02	1,743.56
23	6	1.64	2.80	3,939.33	2,307.32	46	3	4.39	5.59	3,034.90	2,383.40
24	18	1.87	3.54	1,598.98	844.66	47	6	2.29	4.06	4,591.82	2,589.97
25	29	1.00	2.00	4,606.28	2,303.14	48	6	3.53	6.51	2,990.55	1,621.60
26	18	1.8i	3.32	2,832.16	1,544.04	49	2	1.48	4.97	3,636.95	1,083.03
27	21	1.83	3.42	4,122.74	2,206.03	50	0				
28	26	1.53	3.31	3,135.58	1,449.37	51	0				
29	37	2.58	4.29	3,277.94	1,971.35	52	0	3.49	5.35	3,207.12	2,092.12
30	29	1.28	2.91	3,324.79	1,462.45	53	5	5.00	6.00	4,268.34	3,556.95
31	25	1.00	2.36	4,955.41	2,099.75	54	3	2.32	3.86	4,622.29	2,778.16
32	24	1.75	2.62	4,960.19	3,313.11	55	2	1.63	2.74	4,590.94	2,731.11
33	14	2.00	4.50	3,128.66	1,390.51	56	0				
34	12	1.87	3.54	2,570.48	1,357.85	57	0				
35	19	1.00	3.10	4,883.69	1,575.38	58	3	3.49	5.49	3,577.01	2,273.91
36	14	2.63	5.50	341.23	1,630.71	59	0				
37	21	1.33	4.57	3,765.87	1,095.98	60	0				
						Total	430				

Table 5.5A shows per earner household income and calculated per capita income of AIDS patients in Northern-urban areas in 1997. Data is missing for only 15 year old age-group. The number of AIDS patients in this area is 678. The per capita income determined by expenditure per capita are shown in table 5.7. The table reveals that most patients in this area belong to middle income classes (U_2, U_3, and U_4). Similarly, table 5.5B shows the per capita income calculated in Northern- rural areas. There are 4,090 AIDS cases in this area. Most patients are in the middle income classes (R_3-R_4).

Table 5.5A Estimated Per Capita Income of AIDS Patients in the Northern Urban Areas Based on SES, 1988

Age	AIDS Cases	Earner	House-hold Size	Per Earner Income (Calculated)	per Capita Income (Calculated)	Age	AIDS Cases	Earner	House-hold Size	Per Earner Income (Calculated)	per Capita Income (Calculated)
15	0					38	16	2.02	3.84	3,975.49	2,091.27
16	1	1.85	3.12	-3,942.29	-2,337.58	39	14	1.98	3.55	4,014.64	2,239.15
17	0					40	18	1.81	3.70	5,058.43	2,474.53
18	1	1.38	1.76	10,318.13	8,090.35	41	22	1.88	3.92	3,744.31	1,795.74
19	0					42	12	2.31	4.42	2,405.40	1,257.12
20	6	0.80	1.80	6,727.30	2,989.91	43	16	2.22	3.81	2,330.47	1,357.91
21	4	0.83	1.92	2,532.03	1,094.58	44	7	2.74	4.63	3,374.90	1,997.24
22	11	1.16	2.25	2,878.41	1,483.98	45	7	2.37	3.84	5,883.88	3,631.46
23	18	1.37	1.95	2,067.28	1,452.40	46	6	2.58	4.03	4,498.70	2,880.06
24	23	1.03	1.66	4,285.55	2,659.10	47	7	2.45	4.01	2,010.66	1,228.46
25	27	1.42	2.37	2,255.24	1,351.24	48	6	2.39	3.56	2,341.29	1,571.82
26	41	1.88	2.70	2,405.06	1,674.64	49	3	1.94	2.89	864.51	580.33
27	35	1.62	2.45	1,449.30	958.31	50	5	2.53	3.78	1,385.46	927.31
28	39	1.51	2.73	1,635.45	904.59	51	3	2.51	3.77	1,233.81	821.45
29	38	1.70	3.34	5,713.76	2,908.20	52	2	2.44	3.88	2,528.79	1,590.27
30	50	1.59	3.15	3,141.52	1,585.72	53	5	2.89	4.08	-918.69	-650.74
31	34	1.72	3.50	3,887.58	1,910.47	54	3	2.88	3.91	1,362.04	1,003.24
32	41	1.40	3.18	3,746.33	1,649.33	55	4	2.71	3.83	-1,276.08	-902.92
33	36	1.66	3.38	4,247.84	2,086.22	56	2	2.16	2.79	2,845.93	2,203.30
34	21	1.59	3.66	3,796.31	1,649.22	57	1	2.38	2.91	4,950.51	4,048.87
35	43	1.81	3.85	3,342.09	1,571.22	58	2	2.94	3.14	3,685.27	3,450.54
36	27	1.83	3.83	2,357.14	1,126.26	59	0				
37	19	1.84	3.48	1,130.75	597.87	60	2	2.55	4.15	2,568.90	1,578.48
						Total	678				

Table 5.5B Estimated Per Capita Income of AIDS Patients in the Northern Rural Areas Based on SES, 1988

Age	AIDS Cases	Earner	House-hold Size	Per Earner Income	per Capita Income (Calculated)	Age	AIDS Cases	Earner	House-hold Size	Per Earner Income	Per Capita Income (Calculated)
15	0					**38**	100	2.46	3.91	1,394.40	877.30
16	1	2.18	3.35	823.10	535.63	**39**	83	2.19	3.99	1,492.78	819.35
17	4	2.18	1.00	6,647.94	14,492.51	**40**	96	2.39	4.28	1,007.59	562.65
18	15	0.28	1.49	6,637.72	1,247.36	**41**	67	2.36	3.94	999.86	598.90
19	19	1.30	1.87	792.44	550.89	**42**	50	2.92	4.53	1,552.35	1,000.63
20	29	1.38	1.38	1,000.00	1,000.00	**43**	46	3.15	4.36	599.22	432.92
21	60	1.38	2.17	3,804.13	2,419.22	**44**	26	2.89	3.85	871.03	653.84
22	106	1.81	2.52	1,342.26	964.08	**45**	22	2.77	4.18	675.53	447.66
23	117	1.50	3.04	2,146.70	1,059.23	**46**	21	2.87	3.76	1,588.15	1,212.23
24	178	1.25	2.83	3,009.27	1,329.18	**47**	26	3.03	4.36	1,100.07	764.50
25	231	1.97	2.31	2,173.88	1,853.92	**48**	22	3.05	4.52	1,545.11	1,042.61
26	252	1.63	2.66	2,283.42	1,399.24	**49**	15	2.91	3.77	1,523.11	1,175.67
27	277	2.04	3.46	1,511.11	890.94	**50**	16	2.72	3.68	975.86	721.29
28	279	2.15	3.57	2,897.25	1,744.84	**51**	6	3.58	4.32	1,127.89	934.69
29	293	1.98	3.54	1,532.36	857.08	**52**	14	3.33	4.19	1,396.53	1,109.89
30	305	1.68	3.24	2,168.03	1,124.16	**53**	14	2.73	3.97	1,489.77	1,024.45
31	221	1.97	3.73	1,744.57	921.40	**54**	10	2.95	3.50	1,641.23	1,383.32
32	259	1.85	3.78	2,079.00	1,017.50	**55**	14	3.23	3.97	2,141.55	1,742.37
33	214	2.01	3.97	1,461.10	739.75	**56**	8	3.80	4.79	774.91	614.75
34	160	1.74	3.67	1,930.02	915.05	**57**	4	2.72	3.88	1,683.56	1,180.23
35	152	2.24	4.07	1,038.16	571.37	**58**	6	2.55	3.17	939.43	755.70
36	131	1.94	3.81	1,779.59	904.27	**59**	8	2.56	3.50	1,807.31	1,321.92
37	106	2.31	4.00	1,295.30	748.04	**60**	7	2.59	3.73	1,781.20	1,236.81
						Total	4,090				

Table 5.6A shows per capita income calculated according to age group among 15 to 60 year olds in Other region-urban areas. There are 1,804 AIDS cases in these areas. The quintile income classes are arranged in table 5.7. The table shows that most of the patients belong to upper income class in these areas, the second largest number is in the middle income , and the fewest in the lowest income class. Similarly, table 5.6B shows per capita income calculated in the Other region-rural areas. There are 1,819 AIDS cases. Table 5.7 indicates that most AIDS patients belong to the top income class, with only 2 cases in the poorest income class, and none in the second and third income classes.

There are 13,388 AIDS cases in all regions, both urban and rural areas. There are 10,129 AIDS patients age 15 to 60 years old. The estimate found most patient in urban areas belonging to the third and forth income classes, and similarly most of the patients in rural areas belonging to the fourth and fifth income classes (see Table 5.7).

These results contradict the general belief that most of AIDS patient, of which 53.45 % are labours and 37.02% are the other occupation, belong to low income classes. However, other occupation is comprised by many occupations (driver, casual labour, unemployed, housekeeping, prisoners, and others), and some of them belong to upper income classes. If there is more information on the occupations of AIDS patients, the results of this study should be clearer than this. Note also that there are more AIDS pateints in the Other Occupation category than Government and private workers, and entertainment industry categories. The figure especially in rural areas was higher than urban areas (see appendix 1).

Table 5.6A Estimated Per Capita Income of AIDS Patients in the Other Regions in the Urban Areas Based on SES, 1988

Age	AIDS cases	Earner	House-hold Size	Per Earner Income (Calculated)	Per Capita Income (Calculated)	Age	AIDS Cases	Earner	House-hold Size	Per Earner Income (Calculated)	Per Capita Income (Calculated)
15	2	0.94	1.00	1,244.68	1,170.00	38	39	1.76	4.07	4,323.81	1,869.76
16	1	0.84	1.00	2,444.94	2,053.75	39	40	1.77	4.05	4,027.67	1,760.24
17	4	0.56	1.60	2,829.06	990.17	40	59	1.83	3.90	4,253.77	1,996.00
18	8	1.05	1.30	2,377.82	1,920.55	41	31	1.87	4.84	4,332.65	1,673.98
19	15	1.43	1.67	2,827.41	2,421.07	42	32	1.81	4.09	4,264.32	1,887.15
20	25	1.00	1.52	2,359.48	1,552.29	43	28	2.10	3.90	4,209.94	2,266.89
21	26	1.27	1.79	3,761.96	2,669.10	44	21	1.95	4.06	3,948.39	1,896.39
22	28	1.08	2.01	3,050.29	1,638.96	45	20	2.14	4.62	3,684.88	1,706.85
23	63	1.28	1.86	3,280.72	2,257.70	46	9	2.31	4.38	4,215.06	2,223.01
24	70	1.22	2.12	2,094.76	1,205.47	47	14	2.05	4.46	3,960.38	1,820.36
25	119	1.29	2.47	2,829.55	1,477.78	48	15	2.32	4.99	3,877.32	1,802.68
26	105	1.48	2.49	3,420.46	2,033.04	49	10	2.09	4.41	4,619.58	2,189.32
27	106	1.32	2.81	3,519.98	1,653.52	50	8	2.39	4.73	4,393.80	2,220.13
28	107	1.47	2.75	3,342.95	1,786.96	51	6	2.23	4.23	3,654.63	1,926.67
29	98	1.54	2.92	3,498.68	1,845.19	52	11	2.64	4.73	3,503.93	1,955.68
30	129	1.61	3.13	3,601.94	1,852.75	53	1	2.52	4.30	3,701.74	2,169.39
31	85	1.59	3.21	3,696.94	1,831.19	54	7	2.44	4.48	3,986.03	2,170.96
32	89	1.76	3.49	3,278.53	1,653.36	55	4	2.26	3.92	4,208.41	2,426.27
33	75	1.73	3.60	3,653.83	1,755.87	56	2	2.27	4.11	3,611.14	1,994.47
34	72	1.82	3.76	3,054.79	1,478.65	57	7	2.39	4.55	4,262.20	2,238.83
35	86	1.75	3.32	3,801.96	2,004.04	58	6	2.17	3.64	3,537.96	2,109.17
36	59	1.77	3.78	4,266.28	1,997.70	59	1	2.16	3.85	3,316.91	1,860.92
37	58	1.88	3.96	4,270.68	2,027.49	60	3	2.31	4.30	3,330.74	1,789.30
						Total	1,804				

Table 5.6B Estimated Per Capita Income of AIDS Patients in Other Regions in the Rural Areas Based on SES, 1988

Age	AIDS Cases	Earner	House-hold Size	Per Earner Income (Calculated)	Per Capita Income (Calculated)	Age	AIDS Cases	Earner	House-Hold Size	Per Earner Income (Calculated)	Per Capita Income (Calculated)
15	2	2.37	2	210.30	249.20	38	39	2.43	4.75	3,033.09	1,551.66
16	1	2.37	2	4,491.85	5,322.85	39	40	2.54	4.54	3,203.05	1,792.02
17	4	2	2	3,901.84	3,901.84	40	59	2.75	4.53	2,556.09	1,551.71
18	8	1.18	1.6	1,580.61	1,165.70	41	31	2.65	4.67	2,214.15	1,256.43
19	15	1.97	2.12	2,780.76	2,584.01	42	32	2.88	5.17	3,162.60	1,761.76
20	25	0.57	1.58	3,315.97	1,196.27	43	28	3.24	5.11	2,578.70	1,635.03
21	26	0.94	2.13	3,412.86	1,506.14	44	21	3.21	5.08	2,282.75	1,442.45
22	28	1.68	2.9	2,956.96	1,713.00	45	20	3.12	5.09	2,387.60	1,463.52
23	63	1.80	3.27	2,634.98	1,450.45	46	9	3.10	4.80	2,958.41	1,910.64
24	70	1.69	3.21	2,093.63	1,102.25	47	14	3.18	5.02	2,151.09	1,362.64
25	119	1.68	3.12	3,459.18	1,862.64	48	15	3.63	5.09	2,897.79	2,066.60
26	105	1.80	3.42	3,107.74	1,635.65	49	10	3.29	4.78	3,126.92	2,152.21
27	106	1.75	3.43	3,664.59	1,869.69	50	8	3.25	4.75	3,039.15	2,079.42
28	107	1.67	3.51	3,388.18	1,612.04	51	6	3.53	5.17	2,837.20	1,937.20
29	98	1.79	4.06	2,998.96	1,322.20	52	11	3.18	4.80	2,552.53	1,691.05
30	129	1.78	3.81	2,960.63	1,383.18	53	1	3.40	4.83	2,839.37	1,998.73
31	85	1.76	3.92	3,117.59	1,399.73	54	7	3.49	4.82	3,310.52	2,397.04
32	89	1.89	4.17	2,989.82	1,355.10	55	4	3.26	4.68	3,312.67	2,307.55
33	75	2.02	4.13	3,309.07	1,618.48	56	2	3.23	4.49	2,950.11	2,122.24
34	72	1.90	4.21	2,613.22	1,179.36	57	7	3.33	4.61	3,275.17	2,365.80
35	86	2.11	4.48	2,924.18	1,377.23	58	6	3.31	4.36	2,667.72	2,025.27
36	59	2.22	4.99	2,177.40	968.70	59	1	3.44	4.87	2,941.07	2,077.47
37	58	2.28	4.81	3,461.24	1,640.67	60	3	3.21	4.58	3,161.42	2,215.75
							1,819				

Table 5.7 Number of AIDS Cases in Each Income Class in Urban and Rural Areas, 1997

Income Class	Regions			Total
	BMA	Northern	Other	
U_1	108	32	2	142
U_2	46	151	74	271
U_3	79	243	690	1,012
U_4	584	191	979	1,754
U_5	491	61	59	611
R_1	2	2	2	72
R_2	2	74	0	270
R_3	0	690	0	443
R_4	47	979	177	2,437
R_5	379	59	1,640	3,117
Total	**1,738**	**4,768**	**3,623**	**10,129**

Source: MOPH (1997).

5.3 Expected Cost of AIDS in Different Income Classes

The expected cost of AIDS for households belonging to various income classes were calculated by multiplying the mean cost of AIDS (3,718.83 baht/ case/ month) by the probability of being an AIDS patient in each income class. The probability is equal to the number of AIDS patients in each income class divided by the total number of population in that class. The details of the results are shown in column 6 of table 5.8. The table shows that the expected cost of AIDS is higher among the middle income class of urban areas and the upper income class of rural areas. However, the cost among the upper income group (R_4- R_5) in rural areas is quite high compared to its urban counterparts. This implies that most of the AIDS effected households in rural and urban areas belong to the upper income group. In other words, the probabilities of being an AIDS patient are higher among middle and upper income groups.

Table 5.8 The Expected Cost of AIDS in 1997 by Income Class

Income Class	AIDS Cases	Total Cost of AIDS in Each Income Class	Number of People in Each Income Class	Probability Being AIDS Patient	Expected Cost of AIDS
	(Cases)	(Baht/Month)	(Cases)		(Baht)
(1)	(2)	(3)	(4)	(5)	(6)
U_1	142	528,073.86	3,518,475	0.000040	0.15009
U_2	271	1,007,802.90	3,463,704	0.000078	0.29096
U_3	1,012	3,763,456.00	3,534,711	0.000286	1.06471
U_4	1,754	6,522,827.80	3,497,928	0.000501	1.86477
U_5	611	2,272,205.10	2,982,067	0.000205	0.76196
R_1	72	267,755.76	11,334,954	0.000006	0.02362
R_2	270	1,004,084.10	9,506,185	0.000028	0.10562
R_3	443	1,647,441.70	8,843,740	0.000050	0.18628
R_4	2,437	9,062,788.70	7,502,027	0.000325	1.20805
R_5	3,117	11,591,593.00	6,632,437	0.000470	1.74771
Total	10,129	37,668,028.92	60,816,227	0.000167	0.61924

Source: Calculated by this study.

Note: The mean cost of AIDS is 3,718.83 Baht/case/month

5.4 Household Consumption Reallocation in a Situation without AIDS

In order to study the household consumption reallocation in a situation without AIDS, this study used data from an earlier study. The study under reference (Santisart, 1993) gives details of the average per capita income of each income class and the allocation of consumption expenditure among various commodities (10 commodities). The study also calculated the income and price elasticities of all 10 commodities. These figures are used to reallocate expenditure on various consumption

commodities. In the analysis of the present study item number 9 is medical expenditure including the expected cost of AIDS, which was already determined in the earlier step of this study. While reallocating expenditures on various commodities, the study assumed that the entire per capita income is allocated on various consumption commodities. In a situation without AIDS, households will use the money that they otherwise would have spent on treatment for AIDS to reallocate this amount among other commodities. This will increase the consumption expenditure of all other commodities. The net change in consumption could be equal to the opportunity cost (expected cost) of AIDS. Tables 5.9 to 5.13 show the household consumption reallocation of different commodities by income classes in all three regions in both rural and urban areas.

In tables 5.9 to 5.13 the expected cost of AIDS (column 3) is allocated among various commodities as shown in column 8. This column shows changes in consumption in a situation without AIDS. The column also shows the pattern to consume for each commodity with the cost savings available. this is referring to the expected cost of AIDS. Column 9 of each table 5.9 to 5.13 shows the net change in consumption in a situation without AIDS. In fact, the amount of total net change in consumption is expected to be zero. Since, AIDS expense in each income class would be allocated to other commodities, when subtracting expenditures on the other commodities from the AIDS expense the balance will be zero.

The sum of column 8 is expected to be equal to the expected cost of AIDS. However, in some cases this is not so. This is due to rounded off error.

Table 5.9 Households Consumption Reallocation in a Situation Without AIDS in Household Income Class U_1: 1988 Converted to 1997

Commo-Dities	Average Per Capita Expenditure (Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	607.17	-	607.17	0.7290	0.0000379	0.0000276	0.0167797	0.016780
2	483.87	-	483.87	0.8227	0.0000379	0.0000312	0.0150910	0.015091
3	257.01	-	257.01	0.8100	0.0000379	0.0000307	0.0078919	0.007892
4	646.66	-	646.66	1.2041	0.0000379	0.0000456	0.0295179	0.029518
5	21.75	-	21.75	1.4178	0.0000379	0.0000537	0.0011690	0.001169
6	164.24	-	164.24	1.2865	0.0000379	0.0000488	0.0080101	0.008010
7	988.84	-	988.84	0.8061	0.0000379	0.0000306	0.0302177	0.030218
8	158.41	-	158.41	1.5082	0.0000379	0.0000572	0.0090571	0.009057
9	425.76	0.15009	425.61	1.3854	0.0000379	0.0000525	0.0223529	-0.1277331
10	205.51	-	205.51	1.2833	0.0000379	0.0000486	0.0099979	0.009998
Total	3,959.22	0.15009	3,959.07	-	0.0000379	-	0.1500852	-0.000001

Table 5.9 (Continued), Household Income Class R_1

Commo-dities	Average Per Capita Expenditure (Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	667.91	-	667.91	0.8916	0.0000093	0.0000083	0.0055299	0.0055299
2	368.57	-	368.57	0.9629	0.0000093	0.0000089	0.0032955	0.0032955
3	189.94	-	189.94	0.8183	0.0000093	0.0000076	0.0014433	0.0014433
4	252.73	-	252.73	0.9615	0.0000093	0.0000089	0.0022565	0.0022565
5	3.28	-	3.28	1.3838	0.0000093	0.0000128	0.0000421	0.0000421
6	128.26	-	128.26	1.5883	0.0000093	0.0000147	0.0018917	0.0018917
7	538.10	-	538.10	0.7331	0.0000093	0.0000068	0.0036631	0.0036631
8	67.59	-	67.59	1.6910	0.0000093	0.0000157	0.0010613	0.0010613
9	218.27	0.02362	218.25	1.3747	0.0000093	0.0000128	0.0027860	-0.0208361
10	109.23	-	109.23	1.6492	0.0000093	0.0000153	0.0016728	0.0016728
Total	2,543.88	0.02362	2,543.86	-	0.0000093	-	0.0236423	0.0000202

Table 5.10 Households Consumption Reallocation in a Situation Without AIDS in Household Income Class U_1: 1988 Converted to 1997

Commo-dities	Average Per Capita Expenditure Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	560.80	-	560.80	0.6546	0.0000465	0.0000305	0.0170871	0.0170871
2	596.42	-	596.42	0.8950	0.0000465	0.0000417	0.0248462	0.0248462
3	329.73	-	329.73	0.7641	0.0000465	0.0000356	0.0117272	0.0117272
4	1,274.41	-	1,274.41	1.1449	0.0000465	0.0000533	0.0679144	0.0679144
5	53.93	-	53.93	1.2130	0.0000465	0.0000565	0.0030449	0.0030449
6	286.23	-	286.23	1.0094	0.0000465	0.0000470	0.0134482	0.0134482
7	1,592.64	-	1,592.64	0.7788	0.0000465	0.0000363	0.0577336	0.0577336
8	375.32	-	375.32	1.3842	0.0000465	0.0000644	0.0241817	0.0241817
9	785.73	0.29096	785.44	1.5046	0.0000465	0.0000700	0.0550071	-0.2359539
10	396.08	-	396.08	0.8663	0.0000465	0.0000403	0.0159712	0.0159712
Total	6,251.29	0.29096	6,251.00	-	0.0000465	-	0.2909617	0.0000007

Table 5.10 (Continued), Income class R_1

Commo-dities	Average Per Capita Expenditure (Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	723.34	-	723.34	0.9349	0.0000302	0.0000283	0.0204366	0.0204366
2	519.59	-	519.59	0.9802	0.0000302	0.0000296	0.0153913	0.0153913
3	253.19	-	253.19	0.6544	0.0000302	0.0000198	0.0050072	0.0050072
4	367.30	-	367.30	0.8874	0.0000302	0.0000268	0.0098501	0.0098501
5	8.74	-	8.74	1.3514	0.0000302	0.0000408	0.0003569	0.0003569
6	243.59	-	243.59	1.4487	0.0000302	0.0000438	0.0106645	0.0106645
7	741.45	-	741.45	0.7518	0.0000302	0.0000227	0.0168456	0.0168456
8	136.44	-	136.44	1.4370	0.0000302	0.0000434	0.0059252	0.0059252
9	323.73	0.10562	323.62	1.3706	0.0000302	0.0000414	0.0134046	-0.0922197
10	177.86	-	177.86	1.4405	0.0000302	0.0000435	0.0077427	0.0077427
Total	3,495.23	0.10562	3,495.12	-	0.0000302	-	0.1056247	0.0000003

Table 5.11 Households Consumption Reallocation in a Situation Without AIDS in Household Income Class U_3: 1988 Converted to 1997

Commo-dities	Average Per Capita Expenditure (Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	479.14	-	479.14	0.7289	0.0001266	0.0000923	0.0442220	0.0442220
2	680.51	-	680.51	0.9616	0.0001266	0.0001218	0.0828585	0.0828585
3	429.97	-	429.97	0.8394	0.0001266	0.0001063	0.0456999	0.0456999
4	1,930.51	-	1,930.51	0.9656	0.0001266	0.0001223	0.2360355	0.2360355
5	113.69	-	113.69	1.3867	0.0001266	0.0001756	0.0199624	0.0199624
6	410.42	-	410.42	1.0985	0.0001266	0.0001391	0.0570869	0.0570869
7	2,105.17	-	2,105.17	0.8648	0.0001266	0.0001095	0.2305212	0.2305212
8	647.72	-	647.72	1.2848	0.0001266	0.0001627	0.1053734	0.1053734
9	1,080.37	1.06471	1,079.31	1.3841	0.0001266	0.0001753	0.1891558	-0.8755582
10	532.19	-	532.19	0.7974	0.0001266	0.0001010	0.0537342	0.0537342
Total	8,409.69	1.06471	8,408.63	-	0.0001266	-	1.0646498	-0.0000643

Table 5.11 (Continued), Income Class R_1

Commo-dities	Average Per Capita Expenditure Baht/Month)	Expected Cost of AIDS (Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	714.16	-	714.16	1.0238	0.0000433	0.0000443	0.0316238	0.0316238
2	584.47	-	584.47	0.8579	0.0000433	0.0000371	0.0216872	0.0216872
3	297.70	-	297.70	0.6826	0.0000433	0.0000295	0.0087892	0.0087892
4	508.05	-	508.05	0.9608	0.0000433	0.0000416	0.0211127	0.0211127
5	17.37	-	17.37	1.2086	0.0000433	0.0000523	0.0009080	0.0009080
6	330.06	-	330.06	1.3276	0.0000433	0.0000574	0.0189524	0.0189524
7	930.99	-	930.99	0.7766	0.0000433	0.0000336	0.0312713	0.0312713
8	217.36	-	217.36	1.3074	0.0000433	0.0000565	0.0122911	0.0122911
9	440.59	0.18628	440.40	1.2966	0.0000433	0.0000561	0.0246979	-0.1615854
10	266.39	-	266.39	1.2972	0.0000433	0.0000561	0.0149461	0.0149461
Total	4,307.14	0.18628	4,306.95	-	0.0000433	-	0.1862797	-0.0000036

Table 5.12 Households Consumption Reallocation in a Situation Without AIDS in Household Income Class U_4: 1988 Converted to 1997

Commo-dities	Average Per Capita Expenditure (Baht/Month)	Expected Cost of AIDS (Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	419.34	-	419.34	0.7531	0.0001779	0.0001340	0.0561762	0.0561762
2	684.16	-	684.16	1.1365	0.0001779	0.0002022	0.1383122	0.1383122
3	484.68	-	484.68	0.9443	0.0001779	0.0001680	0.0814139	0.0814139
4	2,340.57	-	2,340.57	0.7873	0.0001779	0.0001400	0.3277898	0.3277898
5	127.73	-	127.73	0.8679	0.0001779	0.0001544	0.0197195	0.0197195
6	584.91	-	584.91	1.0156	0.0001779	0.0001807	0.1056684	0.1056684
7	2,806.62	-	2,806.62	0.9196	0.0001779	0.0001636	0.4591093	0.4591093
8	1,048.17	-	1,048.17	1.3450	0.0001779	0.0002393	0.2507769	0.2507769
9	1,325.44	1.86477	1,323.58	1.3639	0.0001779	0.0002426	0.3211180	-1.5436512
10	663.39	-	663.39	0.8860	0.0001779	0.0001576	0.1045529	0.1045529
Total	10,485.01	1.86477	10,483.15	-	0.0001779	-	1.8646371	-0.0001321

Table 5.12 (Continued), Household Income Class R_4

Commo-dities	Average Per Capita Expenditure Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	660.34	-	660.34	0.9062	0.0002219	0.0002011	0.1327968	0.1327968
2	654.22	-	654.22	0.8590	0.0002219	0.0001906	0.1247134	0.1247134
3	328.80	-	328.80	0.6456	0.0002219	0.0001433	0.0471076	0.0471076
4	720.87	-	720.87	0.9558	0.0002219	0.0002121	0.1529044	0.1529044
5	33.15	-	33.15	1.2594	0.0002219	0.0002795	0.0092650	0.0092650
6	460.76	-	460.76	1.3297	0.0002219	0.0002951	0.1359642	0.1359642
7	1,201.02	-	1,201.02	0.7415	0.0002219	0.0001646	0.1976321	0.1976321
8	439.27	-	439.27	1.4068	0.0002219	0.0003122	0.1371387	0.1371387
9	567.96	1.20805	566.75	1.3140	0.0002219	0.0002916	0.1652664	-1.0427790
10	378.43	-	378.43	1.2525	0.0002219	0.0002780	0.1051863	0.1051863
Total	5,444.82	1.20805	5,443.61	-	0.0002219	-	1.2079749	-0.0000704

Table 5.13 Households Consumption Reallocation in a Situation Without AIDS in Household Income Class U_5: 1988 Converted to 1997

Commo-dities	Average Per Capita Expenditure Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	343.18	-	343.18	0.3034	0.0000389	0.0000118	0.0040549	0.0040549
2	717.61	-	717.61	0.6152	0.0000389	0.0000240	0.0171927	0.0171927
3	581.54	-	581.54	0.4726	0.0000389	0.0000184	0.0107032	0.0107032
4	3,177.34	-	3,177.34	0.3020	0.0000389	0.0000118	0.0373690	0.0373690
5	157.76	-	157.76	0.3074	0.0000389	0.0000120	0.0018886	0.0018886
6	1,299.38	-	1,299.38	0.7536	0.0000389	0.0000293	0.0381344	0.0381344
7	5,839.09	-	5,839.09	1.2279	0.0000389	0.0000478	0.2792213	0.2792213
8	3,952.70	-	3,952.70	1.8349	0.0000389	0.0000715	0.2824532	0.2824532
9	2,426.34	0.76196	2,425.58	0.7876	0.0000389	0.0000307	0.0743980	-0.6875584
10	1,071.27	-	1,071.27	0.3962	0.0000389	0.0000154	0.0165293	0.0165293
Total	19,566.21	0.76196	19,565.45	-	0.0000389	-	0.7619446	-0.0000118

Table 5.13 (Continued), Household Income Class R_5

Commo-dities	Average Per Capita Expenditure Baht/Month)	Expected Cost of AIDS Baht/Month)	Expected Cost Without AIDS (Baht/Month)	Income Elasticities	Relative Change in Income (Baht/Month)	Relative Change in Consumption (Baht/Month)	Change in Consumption (Baht/Month)	Net Change in Consumption (Baht/Month)
1	621.15	-	621.15	0.1269	0.0001682	0.0000213	0.0132586	0.0132586
2	753.70	-	753.70	0.1357	0.0001682	0.0000228	0.0172036	0.0172036
3	408.80	-	408.80	0.1245	0.0001682	0.0000209	0.0085609	0.0085609
4	1,144.21	-	1,144.21	0.1738	0.0001682	0.0000292	0.0334499	0.0334499
5	65.77	-	65.77	0.1471	0.0001682	0.0000247	0.0016273	0.0016273
6	700.63	-	700.63	0.3266	0.0001682	0.0000549	0.0384897	0.0384897
7	3,204.67	-	3,204.67	2.1312	0.0001682	0.0003585	1.1488075	1.1488075
8	1,577.05	-	1,577.05	1.2543	0.0001682	0.0002110	0.3327259	0.3327259
9	1,112.34	1.74771	1,110.59	0.5723	0.0001682	0.0000963	0.1069100	-1.6408026
10	803.78	-	803.78	0.3464	0.0001682	0.0000583	0.0468333	0.0468333
Total	10,392.10	1.74771	10,390.35	-	0.0001682	-	1.7478667	0.0001541

5.5 Change in Aggregate Consumption

The net change in monthly consumption per capita of each household in each income class is multiplied by the number of population in each income class (both rural and urban areas). From this the monthly per capita aggregate household consumption in each income class is obtained. In this way the change in aggregate consumption by all AIDS infected cases for one month is estimated. Table 5.14 shows the net change in consumption expenditure of households in different income classes both in urban and rural areas. It also shows the change in per capita expenditure of an average household in urban and rural areas separately. The table 5.14 shows the monthly net change in aggregate consumption expenditure of all 5 income class in a situation without AIDS in urban area. The net change in per capita consumption expenditure of an average household in urban areas is zero baht per month and also for the rural area are the same.

Table 5.14 Net Change in Aggregate Consumption Expenditure Per Month in a Situation Without AIDS In U1-U5 in 1997

Commodities	Net Change in Consumption Without AIDS (Baht/Month)					Total
	U1	U2	U3	U4	U5	
1	59,039.41	59,184.63	156,323.46	196,517.16	12,092.95	483,157.61
2	53,097.54	86,059.77	292,902.28	483,847.67	51,274.29	967,181.54
3	27,767.66	40,619.41	161,547.75	284,804.35	31,920.39	546,659.55
4	103,858.67	235,234.84	834,378.48	1,146,683.11	111,446.26	2,431,601.37
5	4,113.19	10,546.69	70,566.50	68,983.33	5,632.43	159,842.13
6	28,183.37	46,580.42	201,800.56	369,652.18	113,729.19	759,945.71
7	106,321.03	199,971.68	814,885.59	1,606,068.66	832,727.78	3,559,974.73
8	31,867.33	83,757.84	372,491.72	877,274.57	842,366.60	2,207,758.06
9	-449,425.73	-817,274.50	-3,094,845.21	-5,399,580.88	-2,050,485.51	-11,811,611.83
10	35,177.53	55,319.23	189,948.87	365,749.86	49,295.62	695,491.11
Total	0.00	0.00	0.00	0.00	0.00	0.00

Note: Aggregate in each commodities is the sum of net change in consumption by commodities weighted by population

Table 5.14 (Continued), in R1-R5 in 1997

Commodities	Net Change in Consumption Without AIDS (Baht/Month)					Total
	R1	R2	R3	R4	R5	
1	62,620.16	194,273.48	279,679.15	996,312.74	87,945.13	1,620,830.66
2	37,318.77	146,312.48	191,799.89	935,666.33	114,112.19	1,425,209.65
3	16,343.88	47,598.77	77,731.06	353,426.70	56,785.04	551,885.44
4	25,552.43	93,636.73	186,719.17	1147,170.58	221,875.41	1,674,954.31
5	477.28	3,393.14	8,030.30	69,510.63	10,794.29	92.205.64
6	21,421.50	101,378.02	167,613.73	1,020,075.84	255,304.56	1,565,793.64
7	41,481.30	160,136.40	276,561.58	1,482,741.41	7,620,109.01	9,581,029.70
8	12,018.55	56,325.41	108,702.01	1,028,887.58	2,206,990.92	3,412,924.47
9	-236,176.55	-876,657.74	-1429,019.49	-7,822,955.89	-10,884,564.66	-21,249,374.33
10	18,942.68	73,603.32	132,182.61	789,164.09	310,648.13	1,324,540.82
Total	0.00	0.00	0.00	0.00	0.00	0.00

Table 5.15 shows the aggregate consumption change in 1997 in the country overall. The people reallocate their all of cost saving on AIDS through the other commodities. The highest spending is on house and housing expenditure(157.69 million baht), this commodity was followed by transportation and communication (67.45 million baht), and the other food (49.28 million baht). The lowest expending on non alcoholic beverages (3.02 million baht). The aggregate consumption in the whole country was zero by consumption.

Table 5.16 shows aggregate change in total domestic and imported consumption goods. When the change in consumption expenditure of each commodity is multiplied by the respective share containment of domestic and imported goods, the change in aggregate consumption of each commodity for the whole country is obtained. The table reveals that in a situation without AIDS the demand for consumer goods in both domestic goods and imported goods of all income classes in the country changed by 38.55 million and –38.55 million bahts respectively for one year

Table 5.15 Aggregate Change in Consumption in the Whole Kingdom,1997

Commodities	Aggregate Change in Consumption		Aggregate Consumption
	Urban	Rural	in the Whole Country
Rice & Cereals	5,797,891.38	19,449,967.89	25,247,859.26
Meat & Fish	11,606,178.52	17,102,515.75	28,708,694.27
Fruit & Vegetables	6,559,914.63	6,622,625.23	13,182,539.86
Other Food	29,179,216.48	20,099,451.76	49,278,668.24
Non-alcohol Beverages	1,918,105.54	1,106,467.71	3,024,573.25
Clothing & Footwear	9,119,348.57	18,789,523.72	27,908,872.29
House & Housing Expenditure	42,719,696.78	114,972,356.40	157,692,053.18
Transportation & Communication	26,493,096.73	40,955,093.65	67,448,190.38
Medical Expenses, Education	- 141,739,341.93	-254,992,492.00	-396,731,833.93
Other Non-food	8,345,893.31	15,894,489.89	24,240,383.20
Total	**0.00**	**0.00**	**0.00**

Table 5.16 Aggregate Change in Total Domestic and Imported Consumer Goods

Commodities	Net Change in Consumption		Share Containment		Value (Million Baht)	
	(Baht/Month)	(Million Bath)	D	M	D	M
Rice & Cereals	25,247,859.26	25.25	0.99	0.01	25.05	0.20
Meat & Fish	28,708,694.27	28.71	0.97	0.03	27.76	0.95
Fruit & Vegetables	13,182,539.86	13.18	0.97	0.03	12.77	0.41
Other Food	49,278,668.24	49.28	0.953	0.05	46.96	2.32
Non-alcohol Beverages	3,024,573.25	3.02	0.999	0.00	3.02	0.00
Clothing & Footwear	27,908,872.29	27.91	0.978	0.02	27.29	0.61
House & Housing Expenditure	157,692,053.18	157.69	0.888	0.11	140.03	17.66
Transportation & Communication	67,448,190.38	67.45	0.886	0.11	59.76	7.69
Medical Expenses, Education	-396,731,833.93	-396.73	0.824	0.18	-326.91	-69.82
Other Non-food	24,240,383.20	24.24	0.941	0.06	22.81	1.43
Total	**0.00**	**0.00**	-	-	**38.55**	**-38.55**

5.6 Effect on Economic Growth

The economic growth is measured by the increase in real GDP. GDP is comprised of components such as private consumption expenditure, private investment expenditure, government expenditure, and net exports. In this study only the household consumption component is taken into account for measuring the economic impact due to AIDS. All other consumption components are assumed to be unaffected by AIDS.

The analysis showed that in a situation without AIDS the marginal change in consumption expenditure will lead to a 38.55 million baht decrease in imported value in the year 1997.

This result shows that in a situation without AIDS, effect on the economic growth of Thailand will be very little per unit of GDP. These results are the same as in a study on economic impact of AIDS by Bloom and Mahal (1996). In 51 countries they found that the AIDS epidemic has a negative impact but statically insignificant effect on the rate of growth of real income per capita. Moreover, the other study by Bloom et al (1996) reveals the results on the impact of the AIDS epidemic on the UNDP's Human Development Index (HDI). They said, "even though the AIDS epidemic will not affect per capita income significantly, but primarily it can through the negative effect in life expectancy." In addition it can lead to a reduced labour force, affecting the productivity in families.

There are similarities with many researchers who have studied the aggregate impacts of AIDS, particularly as it affect the growth of real income per capita and other measurements economic evaluation. For examples Philipson and Posner (1993) indicate that the epidemic's size is an indicator of macro economic performance, such as economic growth, GNP, and GNP per capita. Similarly the study of World Bank

(1993), also asserts that because of AIDS effect on adults' economically productivity each year, there is a negative economic effect on the country. According to the change in aggregate income, this study was conducted with a multiplier effect value from Samtisart, (1998) to measure Thailand's national income. The model explain the amount of change in income when imports were changed due to the multiplier available. The change in income is shown below;

$$Y = \frac{1}{1-c(1-t)-b+m} * (C+I+G+X-M)$$

$$\frac{dY}{dM} = \frac{-1}{1-c(1-t)-b+m} = -1.4464$$

dY = -1.4664* dM

dY = -1.4664*(-38.55) million baht/year

dY = 56.53 million baht/year

Thus, the result shows that in a situation without AIDS, GDP should increase by 56.53 million baht. At the same time, Thailand could save 38.55 million baht per year on imported goods. This is the result of the reallocation of resources from imported demand for health care expenditure to domestic demand for other commodities. Moreover, MOPH (1997) has estimated that the actual number of cumulative HIV cases at the end of the year 2000 will be between 0.5 and 0.6 million. This case assumes that each HIV cases have an equal time spanned of being AIDS. Regarding the change in aggregate national income in this study, it predicts that the national income would increase between 2,111.22 to 2,533.46 million baht at that time. Moreover, if compare with the GDP it was found that this is equal to 0.08 per cent of existing GDP in the year 1997, Note that the GDP in 1997 is 3,082,660.84 million baht (NSO, 1997). Moreover, a study by UNDP (1992) confirmed the