IS THAILAND'S DEEP SOUTH BEING LEFT BEHIND?

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Abstract: This paper aims to analyze whether the Deep South has been left behind from Thailand's Economic Development. The analysis begins with an investigation of economic growth, changes in income inequality, and the incidence of poverty at the national, regional and provincial level. The Deep South has been left behind compared to other provinces in the country. Although the South is not considered as the poorest region, the figures have been misleading due to the rich tourism provinces within the region. Among the policies the Government has implemented to favor Muslims in the region, Zakat (Islamic alms giving) will be used as a means to solve poverty and income distribution. By establishing a Macroeconomic model, it can be seen that Zakat increases the poor's consumption especially among goods such as food and housing.

1. INTRODUCTION

Along decades of high economic growth, Thailand like many developing countries has experienced the problems of poverty and income distribution. One of the areas that have felt the impact is the Deep South. The majority of the population in the three southern border provinces or as we call the Deep South; Pattani, Naratiwat and Yala are of the Malayu ethnic group whose religion is Islam whereas around 90% of Thailand's population are Buddhists.

Thailand's Government has come up with policies to favor Muslims in the country, for example, the establishment of the Halal Industrial Estate, the Islamic Bank of Thailand, the Institute for Halal Food Standards, and the Halal Science Centre. The Government believes that economic inequality and poverty is among the top priorities. It has decided to use Zakat as a means to distribute resources more equally among people.

Zakat is a special financial duty on net worth to provide for special purposes as determined in the Quran. At the beginning, it was mostly collected by mosques or village committees. It was later on collected and managed by Governments to increase

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efficiency for example in Singapore and Malaysia. Zakat is not a tax that provides income for the state in general. Since it is levied on net worth and not on income, its proportion to income is much higher that its literal ratio of 2.5%. The country's first Zakat fund is now in the process of passing through the Parliament.

This paper aims to analyze whether the Deep South has been left behind from Thailand's Economic Development. To start, it investigates economic growth, changes in income gaps, and the incidence of poverty at the national, regional and provincial level. This is done through comparative statistics and the analysis of the Gini index. Have the economic conditions of the three southern border provinces been overlooked by the other richer tourism provinces in the same region? Moreover, by establishing a macroeconomic model, this can explain how a transfer of income (*via* Zakat) from the rich to the poor affects consumption through the marginal propensity to consume (MPC) and which sectors receive most of the benefits.

The rest of this paper is organized as follows. Section 2 illustrates how a transfer of income *via* Zakat from the rich to the poor affects income and consumption through the marginal propensity to consume (MPC) and which goods receive most of the benefits. Section 3 reviews related literature. Section 4 provides the Theoretical Framework. Section 5 presents a view of the Deep South's growth, income distribution and poverty situation. Section 6 concludes.

2. ZAKAT

Paying Zakat is one of the five pillars of Islam stated in the Koran. The payment of Zakat is a religious obligation and should be fulfilled by Muslims who own wealth above the minimum threshold. Zakat, paid annually, is levied on different types of wealth at a benchmark rate depending on the type of wealth. The goal of Zakat is to redistribute wealth from the rich to the poor. The effect of Zakat is to increase aggregate demand, increase the capital stock, raise economic growth, and reduce inequality.

At the beginning, Zakat was mostly collected by mosques or village committees. It was later on collected and managed by Governments to increase efficiency for example in Singapore and Malaysia. Thailand's first Zakat fund is now in the process of passing through the Parliament.

Zakat shares with income taxation the aim of achieving economic and social objectives. Where they differ is that payment of income tax is mandatory whereas the payment of Zakat is a religious obligation based on wealth. There is limited evidence of state enforcement of Zakat payment even where legislation permits. Thus in most countries Zakat is voluntary and is paid directly to the poor or to a Zakat collection authority. Malaysia, Saudi Arabia, and Pakistan are among the countries where Zakat is administered by the state. In many other countries the state is not directly involved. A further difference is that tax rates can be changed as part of fiscal policy whereas

the rate of Zakat is fixed through religious ruling. Finally, the recipients of Zakat are specifically defined whereas this type of method is rarely used for taxation.

In order to find the impact of Zakat we start with a consumption function representing the rich or Zakat payers (Cr) and the poor or Zakat recipients (Cp). The rich are assumed to be the top quintile income class whereas the poor are the bottom quintile income class. There are i consumer goods, *i.e.* Cr_1 is the consumption of the rich for good1. Cr and Cp at time t are defined as follows:

$$Cr = Cr_1 + Cr_2 + Cr_3 + \ldots + Cr_i$$

$$Cp = Cp_1 + Cp_2 + Cp_3 + \ldots + Cp_i, \text{ and}$$

Total change in demand of the rich and the poor are:

$$dCr = dCr_1 + dCr_2 + dCr_3 + \ldots + dCr_i$$

$$dCp = dCp_1 + dCp_2 + dCp_3 + \ldots + dCp_i$$

Assuming that there are no changes in prices for all goods, for each Cr_i and Cp_i we have:

$$dCr_i = Er_i. (Cr_i / Yr). dYr, \text{ and} \hspace{2cm} \ldots(1)$$

$$dCp_i = Ep_i. (Cp_i / Yp). dYp \hspace{2cm} \ldots(2)$$

Where Er_i and Ep_i are income elasticity of demand for good i of the rich and the poor, and Yr and Yp are income of the rich and the poor respectively.

Table 1
Net impact of Zakat on twenty types of goods during 1996-2007

Types of Goods	1996	1998	2000	2002	2004	2006	2007
Rice and cereal	23.98	26.85	27.62	30.81	33.85	41.93	43.47
Meat	12.18	13.64	14.03	15.65	17.19	21.30	22.08
Sea Food	9.57	10.71	11.02	12.30	13.51	16.73	17.35
Vegetables	3.22	3.60	3.70	4.13	4.54	5.62	5.83
Fruits	4.65	5.21	5.35	5.97	6.56	8.13	8.43
Other Food	36.89	41.30	42.48	47.40	52.08	64.50	66.87
Nonalcohol Beverage	0.69	0.77	0.79	0.89	0.97	1.21	1.25
Alcohol Beverage	0.86	0.97	1.00	1.11	1.22	1.51	1.57
Tobacco	3.09	3.45	3.55	3.96	4.35	5.39	5.59
Clothes and Footwear	3.44	3.85	3.96	4.42	4.86	6.02	6.24
Personal Expense	4.42	4.95	5.09	5.68	6.24	7.73	8.01
Housing Expense	14.88	16.66	17.13	19.12	21.00	26.01	26.97
Lightand Water	4.60	5.15	5.30	5.91	6.50	8.05	8.34
Vehicle	−91.09	−101.97	−104.89	−117.03	−128.58	−159.26	−165.11
Transportation	2.16	2.42	2.49	2.78	3.05	3.78	3.92
Communication	−1.95	−2.19	−2.25	−2.51	−2.76	−3.42	−3.54
Health	−14.48	−16.21	−16.67	−18.60	−20.44	−25.31	−26.25
Education	0.39	0.43	0.45	0.50	0.55	0.68	0.70
Entertainment	−1.04	−1.16	−1.20	−1.33	−1.47	−1.82	−1.88
Other Nonfood	−16.44	−18.40	−18.93	−21.12	−23.20	−28.73	−29.79

Total changes in demand for good i can be calculated from:

$$dC_i = dCr_i + dCp_i, \text{ for all } i. \qquad \qquad ...(3)$$

From equations (1) and (2), we use cross sectional income elasticity of demand of twenty types of goods of the national population's top and bottom quintile income classes from Isra (1999). For simplicity, we set Zakat at 2.5% of income in order to find dYr and dYp. The net impact of a transfer of Zakat, from equation 3), can be seen in Table 1.

Needless to say, Zakat increased the bottom quintile income class's consumption. The highest increases were other food, housing expenses, rice and cereal while the lowest were entertainment, communications and non alcoholic beverages. This enhances their lives by obtaining more of the basic human needs. On the other hand, Zakat's impact on the top quintile income class was a drop in consumption of other nonfood, housing expense and especially vehicles while tobacco, non alcoholic beverages and fruits received the least impact. As for the net impact of a transfer of Zakat from the rich to the poor, there was an increase in all types of good especially other food, rice, cereal and housing expense. The only ones that decreased were vehicles, other nonfood, health, communication and entertainment. It is interesting to see that the transfer had smallest impact during 1998-2000 when the country was still badly hurt from the 1997 economic crisis.

3. RELATED STUDIES ON THAILAND'S INCOME INEQUALITY AND POVERTY

3.1 Income Inequality

Krongkaew (1977) studied income inequality by using household income data from 1963, 1969 and 1972. He found that during the three periods, Thailand's income inequality was very high and increasing (Table 2). Most important, the population in the top quintile income group has a share of more than half of the country's income.

Table 2
Income Inequality in 1963, 1969 and 1972 (percentage)

Income Distribution	1963	1969	1972
Population Income Share			
Bottom 20%	2.9	3.4	2.4
Second lowest 20%	6.2	6.1	5.1
Third lowest 20%	10.5	10.4	9.7
Fourth lowest 20%	20.9	19.2	18.4
Top 20%	59.5	60.9	64.4
Top 1%	9.6	10.5	15.0
Gini Index[1]	.4559	.4822	.5348

Note: [1] real income
Source: Table 9 and 10, Krongkaew (1977).

Table 3
Income inequality in 1976, 1981, 1986 and 1988 (percentage)

Income Distribution	1976[1]	1981[1]	1986[1]	1988[2]
Population Income Share				
Bottom 20%	6.05	5.41	4.55	4.52
Second lowest 20%	9.73	9.10	7.87	7.98
Third lowest 20%	14.00	13.38	12.09	12.20
Fourth lowest 20%	20.96	20.64	19.86	20.30
Top 20%	49.26	51.47	55.63	54.98
Top 10%	33.40	35.44	39.15	37.98
Gini Index	0.426	0.453	0.500	0.478

Source: [1] Table 2.2, Hutaseranee and Jitsuchon (1988).
     [2] Table 6, Bhongmakapat (1990).

Table 4
Subgroup Decomposition of Income Inequality in 1976, 1981 and 1986 (percentage)

Factor Disaggregation	1976	1981	1986
Shorrocks Index	0.304	0.347	0.427
Regional			
Between regions	16.18	19.87	24.90
Within regions	83.82	80.13	75.10
Location			
Between locations	15.01	18.86	24.98
Within locations	84.99	81.14	75.02
Community			
Between communities	20.20	21.77	28.15
Within communities	79.80	78.23	71.85
Gender of Household Leader			
Between different genders	0.28	0.52	0.76
Within same genders	99.72	99.48	99.25
Age of Household Leader			
Between different ages	0.47	0.62	0.27
Within same ages	99.53	99.38	99.73
Education of Household Leader			
Between different educations	–	15.14	20.00
Within same ages	–	84.86	80.00
Economic Class			
Between classes	25.57	26.97	33.82
Within classes	74.43	73.03	66.18
Profession of Household Leader			
Between professions	22.62	24.02	31.31
Within professions	77.38	75.97	68.68
Sector of Production			
Between sectors	21.19	23.94	28.53
Within sectors	78.81	76.06	71.47

Source: Table 2.7, Hutaseranee and Jitsuchon (1988).

Table 5
Urban/Rural Decomposition of Income Inequality in 1969, 1975, 1981, and 1988 (percentage).

Decomposition of Income Inequality	1969	1975	1981	1986
Theil Index				
Total	0.3674	0.3241	0.3495	0.4237
Within areas	(78.1%)	(83.9%)	(84.7%)	(83.4%)
Between areas	(21.9%)	(16.1%)	(15.3%)	(16.6%)
Gini Index (Kakwani's method)	0.4342	0.4306	0.4516	0.4880
Variance of Logarithm	0.6563	0.6854	0.7478	0.8833
Within areas	(87.2%)	(89.7%)	(89.9%)	(83.7%)
Between areas	(12.8%)	(10.3%)	(10.1%)	(16.3%)

Source: Tables 2-2 and 3-10, Ikemoto (1991).

Hutaseranee and Jitsuchon (1988) examined income equality in 1976, 1981 and 1986 whereas Bhongmakapat (1989) studied income inequality in 1988. Results from Hutaseranee and Jitsuchon (1988) and Bhongmakapat (1989) (Table 3) points out the same income inequality trend that Krongkaew (1977) showed. The income share of the population's bottom quintile has decreased while the top quintile has increased continuously. Interestingly, income inequality in 1986 and 1988 has improved a bit.

Hutaseranee and Jitsuchon (1988) also did a decomposition analysis by decomposing income inequality into two parts, between regions and within a region by using the Shorrock index. Results in Table 4 show that imbalance in Thailand's development has been increasing as can be seen from widening gaps between groups and regions.

Ikemoto (1991) helped bridge the gap between studies by Hutaseranee and Jitsuchon (1988) and Bhongmakapat (1989). He looked at income inequality between 1962 and 1986 by using the Theil index[1] and the Variance of Logarithm index (Table 5). Although the trend of income inequality found is not different from past studies, the three different indexes give quite a different view. The Gini Index and Theil Index displayed an improvement of the country's income inequality in 1975. Additionally, Ikemoto discovered that the rise of income in urban areas was much faster than rural areas.

Isra (1995) studied income inequality during 1988, 1990 and 1992. His objective was to compare the problem of income distribution when measured with different units; household income, average household income per capita and adult equivalent scale[2]. He also calculated the Gini Index based on average income per capita at the national, urban/rural and regional level (Table 6). This made possible the comparison with past studies. In general, results showed that Thailand's income inequality trend was same as before. Most important, no matter what unit is used to measure income inequality, they all give the same trends, that is, a rise in income inequality in all periods.

Table 6
Income inequality (Gini Index) in 1988, 1990 and 1992

Area and Region	1988	1990	1992
Country	0.4929	0.5118	0.5310
Urban/Rural			
Urban	0.4167	0.4505	0.4683
Sanitary district	0.4352	0.4648	0.4774
Rural	0.4284	0.4364	0.5334
Region			
North	0.4538	0.4653	0.4710
Northeast	0.4329	0.4231	0.4582
Central	0.4297	0.4469	0.4370
South	0.4554	0.4497	0.4763
Bangkok	0.3932	0.4214	0.4574
Nontaburi,	0.3756	0.4181	0.4596
Patumthani and Samutprakarn			

Source: Table 31, 32 and 33, Isra (1995)

3.2 Poverty

During the past decades, Thailand's development has benefited everyone in the country although not equally. While the country's economy grew continuously, many studies show that the number of people in poverty decreases as people's real income increases.

The topic of poverty gained attention during the 1970s. Oey (1979) measured poverty incidence during 1963, 1969 and 1976 by estimating *via* the poverty line that was calculated based on nutritional requirements. Oey (1979) revealed that Thailand's poverty incidence has decreased continuously during 1963-1976 at both regional and national levels as shown in Table 7.

Hutaseranee and Jitsuchon (1988) studied poverty incidence in Thailand during 1976, 1981 and 1986 while Krongkaew, Tinakorn and Suphachalasai (1991) studied poverty incidence during 1988. Both studies used the same poverty line as Oey (1979). Results of both studies (Table 8) illustrated that poverty incidence in 1979 was 30% and declined to 23% in 1981 but rose to 29.5% in 1986. However, poverty incidence improved in 1988. The population living in poverty dropped especially in the rural areas. Furthermore, if poverty incidence was analyze at the regional or urban/rural level, Thailand's poverty incidence is mostly concentrated in the North-Eastern region and in rural areas. An interesting issue is that although these studies show a decrease in the country's poverty incidence but it did not focus on the intensity of poverty.

Isra (1995) studied poverty in 1988, 1990 and 1992. He measured both the ratio of the population living in poverty and the intensity of poverty based on household,

Table 7
Percentage of the Population each Region Living in Poverty in Urban/Rural areas in 1963, 1969 and 1976

Region and Urban/Rural areas	1963	1969	1976
Country	57	39	31
Rural	61	43	35
Urban	38	16	14
Northeast	74	65	44
Rural	77	67	45
Urban	44	24	20
North	65	36	33
Rural	66	37	34
Urban	56	19	18
South	44	38	31
Rural	46	40	33
Urban	35	24	22
Central	40	16	14
Rural	40	16	15
Urban	40	14	12
Bangkok	28	11	12

Source: Table 3.1, Oey (1979)

adult equivalent scale and household income per capita. Results from Table 9 and 10 reveal that the trend of poverty is the same. The level of poverty measured based on household income per capita shows the ratio of people living in poverty has decreased 1988 to 1990 and 1992. The ratio of people living in poverty did not only decrease at the national level but also at the region and urban/rural level. Regarding the intensity of poverty, Isra used the Foster-Greer-Thorbecke (FGT) Index[3] which also showed a fall from 1988 to 1990 and 1992. This, however, mainly occurred in the Central region of the country and in rural areas.

The latest research on Thailand's income distribution and poverty was conducted by Isra (2001). He found an improvement in the distribution of income between 1994 and 1996 but a drop between 1996 and 1998 to the same level it was at the end of the 1980s. However, the trend of income inequality began to worsen and the degree of inequality rose again to the 1992 level. These changes, interestingly, have a significant positive correlation with the changes in the income share of the top decile and should thus be further examined.

4. THEORETICAL FRAMEWORK

4.1 Economics of Zakat

The effect of the implementation of Zakat is to increase aggregate demand, increase the capital stock, raise economic growth, and lower economic inequality. There are

Table 8
Percentage of the Population each Region Living in Poverty in Urban/Rural areas in 1976, 1981, 1986, 1988

Regions and Urban/Rural areas	1976[1]	1981[1]	1986[1]	1988[2]
Country	30.02	23.04	29.51	21.18
Village	36.16	27.34	35.75	26.30
Sanitary district	14.76	13.47	18.55	12.17
Urban	12.53	7.51	5.90	6.11
Northeast	44.92	35.93	48.17	34.56
Village	48.54	37.92	50.49	36.77
Sanitary district	24.66	20.81	33.25	18.60
Urban	20.90	17.99	18.67	18.62
North	33.20	21.50	25.54	19.95
Village	36.37	23.32	27.74	21.61
Sanitary district	19.23	16.16	20.19	15.14
Urban	17.84	8.03	6.87	10.53
South	30.71	20.37	27.17	19.43
Village	33.84	22.16	31.17	21.72
Sanitary district	18.14	6.75	8.07	10.20
Urban	21.69	15.20	8.61	10.81
Central	12.99	13.55	15.63	12.91
Village	14.26	14.16	17.37	15.04
Sanitary district	7.99	11.62	11.36	5.90
Urban	11.45	11.74	8.87	7.73
Bangkok	7.75	3.89	3.54	3.48
Vicinities	11.97	9.15	8.83	6.58
Outer	6.00	2.58	2.51	–
Inner	6.90	3.70	3.11	2.66

Note: Poverty lines in rural areas are 1981, 3454, 3823 and 4076 Baht per capita per annum in 1976, 1981, 1986 and 1988 respectively. Poverty lines in urban areas are 2961, 5151, 5834, and 6203 Baht per capita per annum respectively. Sanitary districts use the poverty lines of rural areas.
Source: [1] Table 2.15, Hutaseranee and Jitsuchon (1988)
　　　　[2] Table 2.10, Krongkaew, Tinakorn and Suphachalasai (1991)

two separate arguments underlying these claims. The first observe that Zakat is a transfer of wealth from the rich to the poor, so if the poor have a higher MPC than the rich then aggregate demand will rise. The second is the claim that Zakat payers will tend to increase investment in order to avoid the depletion of (idle) wealth subject to the payment of Zakat. The increase in investment will ultimately be matched by an increase in savings and output in equilibrium. There will be a continuous inflow of money or wealth to the poor until they reach the position of a Zakat payer. As a result, this bridges the gap between the poor and the rich, and reduces economic inequality.

The Zakat given can be modeled into the utility function alongside other consumption goods and is chosen as part of the utility maximization process. It is the pleasure derived from the fulfillment of religious duties or from a promise of future reward. Hence one who does not give Zakat loses utility from the social custom.

Table 9
Percentage of the population each region living in poverty in urban/rural areas in
1988, 1990 and 1992

Regions and Urban/Rural areas	1988	1990	1992
Country	0.2235	0.1997	0.1383
Area			
Urban	0.0611	0.0476	0.0247
Sanitary district	0.2790	0.2530	0.1718
Rural	0.2588	0.2268	0.1594
Region			
North	0.2096	0.1731	0.1389
Northeast	0.3517	0.2964	0.2308
Central	0.1586	0.1489	0.0603
South	0.2110	0.2042	0.1209
Bangkok	0.0269	0.0198	0.0107
Nontaburi,Patumthani and Samutprakarn	0.0581	0.0271	0.0167

Source: Table 25, 26, and 27 Isra (2538)

Table 10
Severity of poverty in each region and urban/rural area measured by the FGT index in
1988, 1990 and 1992

Regions and Urban/Rural areas	1988	1990	1992
Country			
Area	0.0275	0.0223	0.0145
Urban	0.0076	0.0072	0.0039
Sanitary District	0.0369	0.0375	0.0234
Rural	0.0315	0.0238	0.0158
Region			
North	0.0239	0.0181	0.0156
Northeast	0.0454	0.0323	0.0215
Central	0.0186	0.0213	0.0062
South	0.0248	0.0215	0.0170
Bangkok	0.0038	0.0034	0.0025
Nontaburi, Patumthani and Samutprakarn	0.0048	0.0030	0.0040

Source: Table 28, 29 and 30, Isra (1995)

Most Islamic economists start with considering a Keynesian consumption function. The function is used to calculate the total amount of consumption in an economy. It consists of autonomous consumption (also called exogenous consumption) which does not depend on the level of income and induced consumption which varies with the level of income. If income is zero, this amount of autonomous consumption must be financed by borrowing or using up savings. The Keynesian function is also called the "Absolute Income Hypothesis"[4] as it only considers present consumption and not potential future income. A simple consumption function can be written as:

$$C = a + bY$$

Where

- C = total consumption
- a = autonomous consumption ($a > 0$)
- b = MPC (induced consumption) is measured as the ratio of the change in consumption to the change in income thus is between 0 and 1. Thus as income increases, so does consumption but not as much.
- Y = disposable income (income after taxes)

Metwally (1981) and Darwish and Zain (1984) were the first to study in this field. Basically they wanted to know how consumption would change in an Islamic economy, that is, comparing its MPC with the conventional economy. They divided the population into two groups *i.e.* Zakat payers and Zakat recipients. The former transfers a portion of their income to the later because of the compulsory levy of Zakat. The consumption function in a conventional economy and Islamic economy therefore becomes:

$$C_C = a + b_1 \beta Y + b_2 (1 - \beta) Y$$

$$C_I = a + b_1 [\beta Y - \alpha Y] + b_2 [(1 - \beta) Y + \alpha Y]$$

Where βY is income of the rich, $(1 - \beta) Y$ is that of the poor and αY is the amount of Zakat paid. From the above equations:

$$C_I - C_C = b_2 \alpha Y - b_1 \alpha Y$$

$$C_I - C_C = (b_2 - b_1) \alpha Y$$

$$d(C_I - C_C)/dY = (b_2 - b_1) \alpha$$

Since $b_2 > b_1$ (people with lower income levels have a higher MPC) and $\alpha > 0$, $(b_2 - b_1)\alpha > 0$. In other words, aggregate consumption in an Islamic economy will be higher than the conventional economy.

4.3 Gini Index

Many indices have been used to explain income inequality. All have their advantages and disadvantages but among others, the Gini Index (G) is mostly used. It was developed by an Italian statistician, Corrado Gini, in his 1912 paper. The Gini Index has a value between 0 (perfect income equality) and 1 (perfect income inequality). The Index is based on the Lorenz curve which shows the real income distribution and the Egalitarian line (45 degree line) which represents perfect income distribution, that is, everyone has the same level of income (Figure 1).

The Gini Index is actually the ratio of the area between the Egalitarian line and the Lorenz curve (area A) over the area under the Egalitarian line (area $A + B$); *i.e.*, G = $A/(A + B)$. Because $A + B = 0.5$ (both axes have a scale of 0 to 1), $G = A/0.5 = 2A$

= 2(0.5 − B) = 1 − 2B. If the Lorenz curve is given by a function Y = L(X), the area B can be found *via* integration and thus:

$$G = 1 - 2\int_0^1 L(X)dX$$

The Gini Index can also be calculated without direct reference to the Lorenz curve. Lerman and Yitzhaki (1994) proposed a method of calculating the Gini Index by using the covariance between relative income and the cumulative density function of income:

$$G = 2*Cov[Yi,F(Yi)]/M$$

where

$$N = \text{population}$$

$$Y_i = \text{income of person } i$$

$$M = \text{income mean}$$

$$F(Y_i) = \text{Cumulative Density Function at } Y = Yi$$

$$Cov = \text{Covariance} = (1/N)S(Y_i - M)[F(Y_i) - m_F]$$

$$m_F = \text{mean of } F(Y_i)$$

However, the mean of $F(Y_i)$ should be 0.5 but will not if the number of observations is small and will lead to a biased result. The problem is solved the larger the number
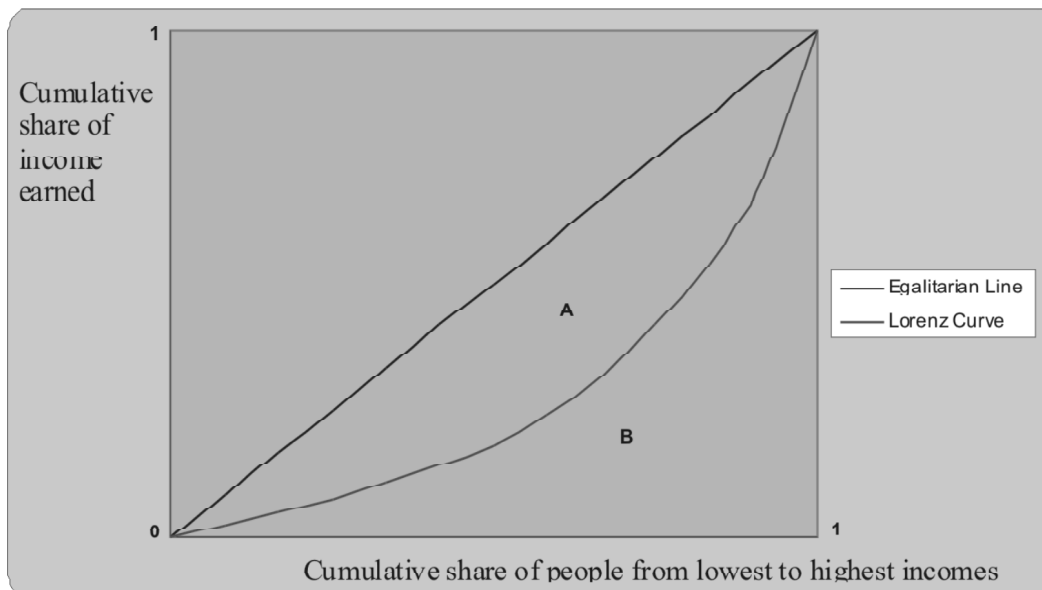

Figure 1: Egalitarian Line and Lorenz Curve

of observations. Usually the data used in income distribution analysis consists of more than a hundred thousand households. Thus this should not be a problem and the equation above can be applied.

5. THE DEEP SOUTH'S ECONOMIC SITUATION

This sections aims to analyze three important economic indicators, economic growth, income inequality, and poverty changes. In terms of growth, it is crystal clear that the three provinces have performed relatively poor in comparison to other provinces. In the case of poverty changes, the story is different.

The long-run path of economic growth is one of the central questions of economics. An increase in economic growth is generally taken as an increase in people's standard of living. Over long periods of time, even small rates of annual growth can create a big change through compounding effects.

Between 2000 and 2003, while Thailand's annual GDP growth rate was 6.33%, the South was 7.21%, the two Southern tourism provinces (Songkhla and Phuket) was 4.76%, and the three Southern border provinces was 6.23% (Table 11). The figures were, however, higher after the violence that occurred in 2004 as the government increased its spending in the area. During 2003 to 2006, the country's GDP growth rate was 9.88%, the South 11.85%, the two Southern tourism provinces 9.40% and the three Southern border provinces 11.58%. The figures were much lower in 2006 to 2009 during the country's political unrest. That is, the national growth rate was 4.86% while in the South it was 3.44%, the two tourism provinces was 2.11% and the three Southern border provinces 4.96%.

In terms of regional income disparity, the three Southern border provinces had a much lower income per capita than other parts of Thailand (Table 12). In 2003, income per capita of the South was 72.06% of the country average, the two tourism provinces was much higher at 139.76% while the three Southern border provinces was only 50.08%. The situation in 2006 became a bit better. Income per capita of the South was 75.15% of Thailand's average while tourism still played a huge role in the three tourism

Table 11
Gross Domestic Product (GDP) growth, Gross Regional Product (GRP) growth, Gross Provincial Product (GPP) growth at current market prices during 2000-03, 2003-06 and 2006-09 (Million Baht)

Region	2000-03	2003-06	2006-09
Country	6.33	9.88	4.86
South	7.21	11.85	3.44
Two tourism provinces	4.76	9.40	2.11
Three border provinces	6.23	11.58	4.96

Note: Calculation based on three year Geometrical Average.

provinces at 130.28%. The three border provinces' income per capita slightly increased to 53.23%. Regional income disparity again increased in 2009. The Southern region's income per capita was 70.76% of the country while the two tourism provinces although suffered a lot from the political crisis, still earned more than average at 119.34%. During the past few years, political conflict gained more attention from the Government leading to the three border provinces income per capita dropping to 52.06% of the country's average.

The Gini Index also illustrates a similar story (Table 13). During the 2000s, the Southern region was regarded as the second highest region with income inequality following the Northeastern region. In 2000, the Gini Index of the South was 0.476 while the Northeastern was 0.483 and in 2002 it was 0.464 while the Northeastern was 0.469. It was only until 2004 when the income inequality in the South was surpassed by the North. In that year, income inequality in the North, Northeastern and South was 0.478, 0.448 and 0.445 respectively. Income inequality in 2006 was 0.494 in the Northeast, 0.483 in the North and 0.473 in the South. Surprisingly in 2007, even Bangkok had more income inequality than the South. The figures where 0.469 in the North, 0.468 in both Bangkok and the Northeast, and 0.460 in the South. As can be seen, income inequality in the South has mostly improved during the past years and this inequality is mainly concentrated in urban areas.

Table 12
Per Capita Income of Population by Region and Province during 2000-2009

Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Country	79,098	81,697	85,947	92,485	100,564	108,956	119,715	129,159	136,511	135,281
South	56,197	55,578	60,667	66,643	74,889	80,445	89,968	92,700	98,743	95,721
	(71.05)	(68.03)	(70.59)	(72.06)	(74.47)	(73.83)	(75.15)	(71.77)	(72.33)	(70.76)
Two tourism	87,856	90,022	102,286	108,908	127,146	122,569	139,026	147,387	157,377	146,622
provinces	(146.33)	(142.02)	(148.58)	(139.76)	(147.10)	(130.30)	(130.28)	(125.87)	(124.23)	(119.34)
Three border	40,629	39,067	42,618	46,980	50,974	55,816	63,728	66,631	71,064	70,429
province	(51.37)	(47.82)	(49.59)	(50.80)	(50.69)	(51.23)	(53.23)	(51.59)	(52.06)	(52.06)

Note: Figures in parenthesis are index of which the national figure equals 100.
Source: NESDB

Table 13
Income Gini Index of Regions and Areas during 2000-2007

Year	Country	Bangkok	Central	North	Northeast	South	Urban	Rural
2000	0.522	0.417	0.448	0.469	0.483	0.476	0.471	0.468
2002	0.507	0.438	0.437	0.467	0.469	0.464	0.473	0.448
2004	0.493	0.422	0.433	0.478	0.448	0.445	0.461	0.445
2006	0.511	0.452	0.443	0.483	0.494	0.473	0.478	0.479
2007	0.497	0.468	0.422	0.469	0.468	0.460	0.473	0.457

Source: National Statistical Office (NSO).

Table 14
Percentage of the population each region living in poverty during 2000-2007

Region	Population living in Poverty				
	2000	*2002*	*2004*	*2006*	*2007*
Bangkok	1.71	2.24	0.78	0.51	1.14
Central	9.03	7.63	4.47	3.31	3.08
North	23.10	20.29	15.68	12.00	12.93
Northeast	35.34	23.06	18.58	16.77	13.05
South	16.64	9.56	6.03	5.49	5.88
South (excluding two tourism and border provinces)	12.05	6.19	5.43	3.68	4.83
Three border provinces	34.18	26.80	14.57	18.80	17.02
Country	20.98	14.93	11.16	9.55	8.48

Note: Calculated from Household Socio-economic survey of the National Statistical Office. Official regional poverty lines are used in the calculation.

The United Nations Development Program (UNDP) once stated in its Human Development Report 2004 that "Declining economic performance and high poverty levels are other important incitements to war, as in Sierra Leone and Somalia. Behind many other conflicts are inequalities among ethnic, religious or linguistic groups (horizontal inequalities). When the cultural, political or socio-economic claims of different groups remain unmet, tension builds and can boil over into violence". Thailand in the case of poverty reduction has, however, been very successful. According to Table 14, the percentage of the poor in total population that was nearly 21% in 2000 decreased continuously to around 15% in 2002, 11% in 2004, 9.5% in 2006 and 8.5% in 2007. The South wasn't the poorest region but the third after the Northeast and North. This tells a similar story as the income inequality shown by the Gini Index. In 2000, while the incidence of poverty was 35.5% for the Northeast, 23.1% for the North, it was only 16.6% for the South. The trend of poverty incidence in three regions continued to drop until 2007 where there was a slight rise for the North and South. That is from 12% in 2006 to 12.9% for the North and from 5.5% to 5.9% for the South.

On the other hand, figures tell a different story for the three border provinces. Although poverty continued to decrease, the numbers were much higher. It dropped from 34.2% in 2000 to 26.8% in 2002 and 14.6% in 2004. It is worth noting that after the violence occurred in 2004, poverty rose again to 18.8% in 2006 then slightly decreased to 17% in 2007. Furthermore, poverty was mainly concentrated in rural areas and within the male population. Poverty makes people's lives more difficult. When income is so low that they cannot obtain their basic needs like nutrition, health care, education and housing, their poverty indirectly creates problems for those who are not poor and becomes a cost for the country through aggravation of violence and drug abuse. Poverty also causes barriers to opportunities like employment and education which are also causes of deprivation and will make the situation even worse.

5. CONCLUSION

Along decades of high economic growth, Thailand like many developing countries has experienced the problems of poverty and income distribution. One of the areas that have felt the impact is the Deep South. The Government believes that economic inequality and poverty is among the top priorities. It has decided to use Zakat as a means to distribute resources more equally among people.

In terms of economic growth after 2000, the three Southern border provinces were behind other provinces in the region. The situation was better after the violence that occurred in 2004 due to increase government spending. If we look at income distribution and poverty, although the Southern region was more equal than the Northeast and North, the three Southern border provinces were overlooked by rich tourism provinces in the same region and had a much lower income per capita compared to other provinces in the country. While the trend of income distribution and poverty is improving for the country and the Southern region, the gap between the three Southern border provinces and other provinces in the country is becoming wider. This implies that the distribution of economic growth and development is unequal. Even though political conflicts have become the Government's priority, this issue should be taken care of as it can be one solution to the uprising violence in the Deep South.

As for the hypothetical impact of Zakat, the bottom quintile income class consumption increased. The highest increases were other food, housing expenses, rice and cereal while the lowest were entertainment, communications and non alcoholic beverages. This enhances their lives by obtaining more of the basic human needs. The net impact of Zakat was an increase in consumption of all types of goods especially other food, rice, cereal and housing expense. The only ones that decreased were vehicles, other nonfood, health, communication and entertainment.

Notes

1   One of the advantages of the Theil index is that it is a weighted average of inequality within subgroups, plus inequality among those subgroups. The decomposability is a property of the Theil index which the more popular Gini coefficient does not offer. The Gini coefficient is more intuitive to many people since it is based on the Lorenz curve. However, it is not easily decomposable like the Theil.

2   Adult Equivalent Scale provides a measure of 'living standard' that is comparable across households with differing compositions. The fictitious population is formed by defining a unit of analysis or income recipient for whom a living standard can then be reported.

3   FGT is a generalized measure of poverty within an economy. It combines information on the extent of poverty (as measured by the Headcount ratio), the intensity of poverty (as measured by the Total Poverty Gap) and inequality among the poor (as measured by the Gini and the coefficient of variation for the poor).

4   Another hypothesis is the "Permanent Income Hypothesis (PIH)". The PIH is a consumption theory developed by Milton Freidman. It states that consumers' choice of

consumption is not determined by their current income but their expected long run income. Thus short term changes of income have only a small effect on consumers' choice of consumption. According to the PIH, a consumer's real wealth determines his consumption not his current real disposable income.

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