Understanding the Formulation of the Revised Poverty Line in Malaysia

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ABSTRAK

Metod yang digunakan untuk menghitung Pendapatan Garis Kemiskinan (PGK) bagi menganggar insiden kemiskinan di Malaysia sehingga ke Rancangan Malaysia Kelapan 2001-2005 mempunyai beberapa kelemahan. Bagi tujuan meningkatkan ketepatan mengenalpasti isi rumah miskin, Kerajaan Malaysia telah mengkaji semula metod pengiraan PGK bagi Rancangan Malaysia Kesembilan 2006-2010. Artikel ini cuba menerangkan butir-butir asas dalam menentukan satu PGK yang boleh diterima kerana metod penentuan PGK ini sangat mempengaruhi profil kemiskinan, yang merupakan kunci kepada pembentukan dasar-dasar pembasmian kemiskinan. Artikel ini akan menerangkan secara umum bagaimana PGK yang dikaji semula ini dibentuk.

ABSTRACT

The method of calculating the Poverty Line (PL) used to estimate the Malaysian poverty incidence up to the Eighth Malaysia Plan 2001-2005 has a number of "flaws". In order to improve the accuracy of identifying the poor households, the Malaysian Government has revised the method of calculating the PL for the Ninth Malaysia Plan 2006-2010. This article attempts to explain the basic ingredients in determining an acceptable PL as the method of determining the PL can greatly influence poverty profiles, which are the key to the formulation of poverty reduction policies. It will explain in general how the revised PL was formulated.

INTRODUCTION: ABSOLUTE OR RELATIVE POVERTY?

In order to correctly identify the poor, the first problem is to set the Poverty Line Income (PLI). The PLI is the level of income that is just sufficient to obtain the minimum necessities of life or basic needs which includes both food and non-food items. A person/household is considered poor if his or her income falls below that line.

This approach to specifying the Poverty Line (PL) is known as the absolute approach to measuring poverty. In contrast, the relative approach defines PL in

relation to the average standard of living of a particular society at a particular time. This approach is based on the concept of "relative deprivation", which denotes the deprivation suffered by the worse-off persons in the society relative to the better-off persons. Under this definition, the poor are those who gain when income becomes more evenly distributed and the non-poor are those who lose. The PL under this approach changes with the average earnings of the wage and salary earners.

Kakwani (2001) argues that the relative approach is not appropriate to measure poverty, particularly in developing countries. In the developing countries, our concern is more with the absolute standard of living, to ensure that nobody in the society would have a standard of living that is below the "minimum necessary for physical efficiency". Moreover, the relative approach has many serious drawbacks. The most severe criticism is that it may show a reduction in poverty when people's income may be falling all around, resulting in a fall of the standard of living of the poor as well as the non-poor. A reduction (or increase) in poverty will show up only if there is a change in the relative income distribution. A poverty measure based on a relative approach is, in fact, a measure of inequality and thus we should instead look at various measures of inequality.

Under the relative approach, poverty is completely insensitive to economic growth if the inequality of income does not improve. The only way to reduce poverty will be to reduce inequality. Thus, under this definition the impressive economic growth enjoyed by Malaysia and many East Asian countries will play absolutely no role in reducing poverty, which is untrue. Moreover, if we follow the relative approach within different regions in a country, then the richer regions should have a higher PL than the poorer regions because of higher average standards of living. Thus, we may have a situation where the richer regions have a higher incidence of poverty than the poorer regions, which may lead to greater government resources flowing to richer regions and fewer resources to the poorer regions.

However, Kakwani and Sajaia (2004) stress that rejection of relative poverty must not be confused with being indifferent to the contemporary standard of living of the society. The PL should, of course, take into account current standards of living and should only be defined in relation to the living standards of a particular society at a particular time. The poverty threshold must change gradually as the standard of society adapts itself to new conditions. The relative approach implies that the poverty threshold should change monthly or quarterly as data become available. The standard of living of a society is more stable than what is indicated by monthly or quarterly changes in economic situations.

The authors also emphasized that an absolute PL cannot remain absolute forever. It should change in line with the long run changes in the society's average standard of living. Thus, the absolute PL becomes a relative PL in the long run. As the society's average standard of living changes, people's

consumption patterns also change as they adapt to the new standards of living. Hence, the absolute PL should be revised in the long run in order to take account of the changes in people's consumption patterns. The PL is also country specific and should reflect the country's standard of living.

The method of calculating the Poverty Line (PL) used to estimate the Malaysian poverty incidence up to the Eighth Malaysia Plan 2001-2005 has a number of "flaws". In order to improve the accuracy of identifying the poor households, the Malaysian Government has revised the method of calculating the PL for the Ninth Malaysia Plan 2006-2010. This article attempts to explain the basic ingredients in determining an acceptable PL as the method of determining the PL can greatly influence poverty profiles, which are the key to the formulation of poverty reduction policies. It will explain in general how the revised PL was formulated.

THE NEED FOR POVERTY LINE

Setting the Poverty Line (PL) is the starting point of any poverty analysis and often it is most contentious. The method of determining the PL can greatly influence poverty profiles, which are the key to the formulation of poverty reduction policies.

PLs have many purposes. Poverty profiles provide overall estimates of poverty, the distribution of poverty across sectors, geographical regions, socioeconomic groups and a comparison of key characteristics of the poor and those of the non-poor. Once specified, then the incidence of poverty can be estimated. The depth of poverty can be revealed by calculating the poverty gap, that captures the mean aggregate incomes or consumption shortfall relative to the PL across the whole population. Hence, this measure can estimate the total resources needed to lift all the poor up to the PL. Another measure, the severity of poverty, takes into account the incidence of poverty, the depth of poverty and inequality of income or consumption among the poor. This is useful if the policy focus is on eradicating extreme poverty. These measures form useful tools for monitoring poverty over time in order to ensure that government policies are effective in alleviating poverty.

Sen (1999) argues that poverty should be viewed as the deprivation of basic capabilities rather than merely as lowness of income. The policymakers would want to know whether the identified poor based on income also suffer some form of deprivation in other aspects of their lives, such as ill health, lack of education, vulnerability, social exclusion, etc. To understand this relationship, the poor need to be identified and then measure the degree to which the poor are deprived of the basic capabilities compared to the non-poor. This information is extremely useful in targeting the basic services—education, health and nutrition, etc—to the poor.

In some countries (UK, Eastern Europe and the countries of the former Soviet Union) the PL is also useful in implementing social protection programmes meant for the poor, whose benefits should be directly related to the PLs. The amount given to the poor should be proportional to the income shortfall from the PL. All benefits should be fully protected against price inflation, which suggests that the PL should be adjusted regularly in line with rises in the consumer prices.

Bidanu et. al (2001) argue that the PL can play a political role by helping to maintain poverty as a focus of public attention. The existence of a PL helped to raise public awareness of the circumstances of the poor and how they have been changing over time. Public concern over poverty may also result in larger allocation for poverty reduction measures.

What is the relationship between minimum wage and the PL? Normally a minimum wage is set so that employers do not exploit low-paid unskilled workers. A common belief is that the higher the minimum wage, the lower the incidence of poverty. Thus, some quarters like the trade unions often called upon this measure to alleviate poverty. This belief may not be true for two reasons. First, the low paid workers do not necessarily come from poor families. According to Kakwani (2004) a variety of professional studies show that one in four low-wage workers come from the families of the bottom 20 percent of income distribution. Second, too high minimum wages may lead to a higher unemployment rate among the low-wage earners.

Moreover, Kakwani argues that the minimum wage should be determined based on wage earnings rather than on the PL. The PL sets the society's minimum standard of living by taking into account the family's needs, whereas the minimum wage should be determined on the basis of the labor market's ability to pay wages to the most unskilled persons in the society. If minimum wage is set too high, the employers shift the additional costs as higher prices, which will affect the poor families more than the non-poor families. Thus, the government should not use the minimum wage as a policy for alleviating poverty, but by means of well-designed welfare programmes that are tied to the PL.

POVERTY LINE AXIOMS

The PL that specifies the society's minimum standard of living should be fixed across all individuals. In other words, it should be horizontally equitable, which means that all individuals should be treated equally. Since all individuals are different with respect to their basic needs and they live in different geographical regions facing different prices, the PL cannot and should not be the same PL for all individuals. In order to achieve horizontal equity, the PL should be adjusted for the individual circumstances so that everyone on the PL have the same standard of living irrespective of his or her circumstances.

These circumstances include the fact that individuals vary with respect to their age and sex and, hence their food and non-food requirements are different. For example, children will require less food than adults and women require less food than men in order to maintain an adequate nutritional standard. Thus, the construction of the PL should take account of different individual needs. This leads us to suggest the following axiom.

Axiom 1:   The poverty line should be proportional to individual needs.

If two persons A and B have the same income, but A has greater needs than B, then A is poorer than B. Thus, the same PL should not be applied to both persons. A's PL should be higher than that of B. If person A has poorer health than person B, then person A has to spend a part of his or her income on medical attention and will thus require greater income in order to maintain the same standard of living.

Axiom 2:   If two persons A and B have the same needs and face the same prices, but A has more expensive tastes than B, then A should not have higher poverty line than B.

By this axiom, the difference in individual tastes is a matter of personal choice and should not be a criterion in the measurement of poverty.

Axiom 3:   If A enjoys a higher standard of living than B, then the real poverty line for A cannot be higher than that of B.

The above axiom implies that PL is fixed in terms of level of living required so that the consistency criterion is met. This axiom implies that the difference in regional PLs for persons with the same needs should be entirely attributed to difference in regional costs of living. For example, the richer regions generally have more expensive tastes, which should not entitle them to have a higher real PL.

Axiom 4:   A person on the PL in period t_1, denoted by zt_1 should have exactly the same standard of living as the person on the PL in period t_2, denoted by zt_2.

This axiom implies that the PL should be fixed over time and adjusted over time by means of the true cost of living index so that the observed differences in PL measure the real change in the PL. This means that the standard of living implied by the PL does not change over time.

BASIC PROPERTIES OF THE POVERTY LINE

INDIVIDUAL NEEDS

It has already been pointed out that a person with greater needs will require a greater income than a person with a lesser needs in order to be able to enjoy the same level of living standard. As such, the determination of PL should take account of individuals' needs. However, the evaluation of individuals needs is very problematic since these needs can vary widely across individuals that it is almost impossible to quantify all of them. In order to solve this problem, the measure will focus on only some of the most important individual needs.

Individuals vary with respect to their age and sex and thus their food and non-food requirements also differ. Children require less food than adults in order to maintain the same nutritional standard while women require less food than men, but may require more expenditure on clothing. Thus, a person with greater needs should have a higher PL than a person with lesser needs. If person A has poorer health than person B, then person A has to spend a greater part of his or her income on medical attention and will thus require greater income in order to maintain the same standard of living.

EQUIVALENT ADULT SCALES

Since it is very difficult to measure each individual's consumption separately, surveys typically estimate total household consumption (or income), which then is evenly distributed among household members. Then adult equivalent scales are generally used to take account of the relative needs of individuals of different age and sex within the household. The adult equivalent scale measures the relative income required by households of different composition to maintain the same standard of living. Kakwani takes the view that the estimation of adult equivalent scales from the observed consumption behavior is not feasible but attempt to take account of individual needs by using the information on calorie requirements, which vary with individuals' age and sex.

ECONOMIES OF SCALE

A household consumes either private goods, which can be attributed to individuals in the household or public goods, where several individuals within the household can consume jointly without jeopardizing the satisfaction derived by other members of the household. For instance, two or more persons can share a refrigerator or a television set obtaining the same satisfaction as a single person using the same facilities, resulting economies of scale. Economies of scale in household consumption generally occur as a result of joint consumption of public good – the doubling of household size does not result in a doubling of consumption expenditure in order to maintain the same standard of living. Thus,

the PL should take account of the economies scale in the larger households. Unfortunately, Kakwani and Sajaia point out that there exists no credible method to estimate them.

<div align="center">REGIONAL COSTS OF LIVING</div>

Since individuals live in different geographical regions facing different prices, same level of nominal income will buy different level of goods and services. Individuals living in more expensive areas and regions will require more income in order to enjoy the same minimum standard of living and thus, should not have the same PL for all regions and areas. Thus, PL should be adjusted for differences in costs of living across areas and regions.

<div align="center">CONSISTENCY OF PL</div>

Ravallion and Bidani (1994) define a poverty profile to be inconsistent if one of two households deemed to have exactly the same standard of living, but located in different regions are classified as poor and the other as not. Thus, consistency requires that the PL be fixed in terms of the level of living required.

   The real PL is the nominal PL adjusted for regional differences in the cost of living. In order to maintain consistency, the difference in regional PLs for people with the same needs should be entirely attributed to differences in regional costs of living. If persons A and B have the same needs and face the same price vectors, but living in different regions, they should have exactly the same PLs. Consistency is an essential requirement of PLs for without consistency it is impossible to make poverty comparisons across regions.

<div align="center">THE PL SHOULD REFLECT THE CONSUMPTION PATTERNS OF THE POPULATION</div>

The PLs should be derived from the basic food and non-food baskets, which reflect the consumption patterns of the poor and the choice of the basic needs basket should take account the consumption patterns in each region and area. Ravallion and Bidani (1994) call this specificity, which implies that we should have a separate food basket for each area or region. But if we have separate basket for each region, then we may violate the consistency of the PLs in terms of maintaining a constant standard of living across the regions and area. Thus, there can be a conflict between consistency and specificity. How can we resolve this issue? As a matter of fact, this is the most contentious issue in the specification of PLs.

<div align="center">THE PL SHOULD BE CONSISTENT OVER TIME</div>

To monitor poverty, we need to have poverty profiles that are comparable over time. The comparability of poverty profiles requires that the minimum standard

of living implied by the PL should be fixed over time. The PL should change over time only because of changes in prices. This property implies that the PL should be adjusted over time by means of the true cost of living index, so the observed differences in the PL measure the real change in the PL. Thus, consumer price indices play an important role in obtaining PLs that are consistent over time.

APPROACHES IN CONSTRUCTING THE POVERTY LINE

The approaches in estimating the PL can be classified in three ways (see for example, Asra and Santos-Francisco 2001; Ravallion 1998; Bidani et al., 2001; Kakwani 2001, 2002).

DIRECT CALORIE INTAKE METHOD

Some household expenditure surveys provide information on quantities of food consumed by the households, which can be converted into calories by using the food calorie conversion factors, which are generally available from the country's nutritional departments. This gives the total calorie consumed by each household and when divided by household members, gives the per capita calorie intake. A household is classified as poor if its per capita calorie intake is less than the standard per capita calorie requirement. For example, Bangladesh employed a national threshold of 2,122 calories per capita per day based on Food and Agriculture Organization standards for a healthy diet in South Asia. Sri Lanka also uses this method.

The DCI method is simple to use if the household surveys provide the information on quantities of food, which is generally not available for many countries. Asra and Santos-Francisco (2001) argue that this method measures "undernourishment", not poverty, which entails deprivation in all other aspects of welfare together with calorie intake. Kakwani (2002) argues that this method faces serious consistency problem. Two households consuming the same number of calories may have different standard of living, with one household having a much higher per capita income or expenditure than the other. Hence, identifying the poor based on the calorie intake will be misleading, resulting in rich households being classified as poor and vice versa.

FOOD ENERGY INTAKE METHOD

The Food Energy Intake method (FEI) estimates the PL by finding the consumption expenditure or income level at which food energy intake is just sufficient to meet pre-determined food energy requirements. Once this consumption or income level is located, it automatically provides the allowance for both food and nonfood consumption. Separate PLs are computed for groups

or regions having similar tastes and preferences and facing uniform prices. Hence, this method takes into account differences in regional cost of living as well as variations in basic needs and preferences, thus meeting the specificity requirement.

PLs using the FEI method can be obtained either by calculating the mean income or expenditure of households whose estimated calorie intakes are approximately equal to the stipulated requirements; or by using the empirical relationship between food energy intakes and consumption expenditure (either regressing intake against consumption and invert the estimated function, or simply regressing consumption expenditure on nutritional intake). India and Pakistan are among the many countries using this method.

According to Kakwani (2002), the main drawback of this measure is that since the regions can differ with respect to their living standard, the food preferences will also differ. Those living in richer regions generally have more expensive tastes and, thus, buy fewer calories with the same food cost, resulting in their PL being higher than that of the poorer region. Thus, it violates the consistency requirement of a PL. It may lead to a situation where the richer regions have a higher incidence of poverty than the poorer regions. That is, this method cannot separate the effects of regional costs of living differences from the differences in living standards across the regions.

<div align="center">COST OF BASIC NEEDS METHOD</div>

The cost of basic needs approach (CBN) estimates the PL by computing the cost of a food basket that enables households to meet a predetermined minimum daily nutritional requirement and then adding to this cost an allowance for basic nonfood consumption. Three steps are involved in implementing this method: (1) defining a bundle of food items meeting the predetermined minimum daily nutritional requirement, usually in the form of calorie intake; (2) estimating the cost of this food bundle; and (3) computing an allowance for nonfood items.

1. *Food PL (PL F)*   This can be determined by two methods: (a) by choosing a commonly consumed and least-cost food bundle that yields the specified calorie requirement, and valuing this at current prices. A food basket derived in this manner does not guarantee that people with food expenditure level equal to the PL are actually consuming the required minimum nutritional intake because of diverse food preferences. (b) The second approach is to determine the food basket that meets the calorie specification which is actually consumed by "a reference group" (normally "a priori" definition of a poor group) as shown by household consumption surveys. Selecting these households ensures that non-basic food items are not represented in the basket. As the composition of the bundle is based on existing consumption patterns in the study area, the food items included in the basket clearly reflects the tastes, culture, and norms of that particular area. This method requires detailed consumption data including

the total food expenditure levels and the quantities of the food items actually consumed as well as which prices to be used: the average market prices or the prices paid by the "poor".

2. *Non-food* PL   The method of deriving the nonfood PL is analogous to the method of computing the food PL, that is, by choosing some non-food items considered essential. However, since there is no absolute standard for minimum nonfood requirement similar to that of food that has a standard calorie intake as basis, constructing the non-food PL remains arbitrary and controversial. The non-food PL should be estimated as objectively as possible so that poverty comparisons can be made over time and across various socioeconomic and demographic groups. Thus Kakwani and Sajaia (2004) proposed to use the Consumer Theory to determine the non-food PL.

In the standard consumer theory, a consumer maximizes a utility function u(q) by choosing a bundle of goods and services q to satisfy the budget constraint pq = x, with p being the price vector and x is the total available income to spend. From this theory, we can derive the expenditure function for each commodity, which is the minimum expenditure on the commodity that will be required to obtain a u level of utility at a given price vector p. If we add the expenditure functions of all commodities, we obtain the total income or expenditure function. Thus, the total expenditure function is the minimum total expenditure that will be required by a consumer to enjoy a u level of utility.

Suppose the food PL F is obtained from the standard nutritional requirements. Substituting F into the food expenditure function (derived from the consumer theory), we can solve it for the utility level u_z, which will be implied by the food PL at the given price vector p. Using u_z into the total expenditure function, we can obtain the total PL, z, which will be consistent with the utility level u_z. The non-food PL will be equal to z-F.

In Figure 1, the horizontal axis represents the utility level and the vertical axis represents the expenditures. The figure depicts the food and the total expenditure function, both of which are the increasing functions of the utility level. C is the point that corresponds to the food PL on the food expenditure function. Corresponding to point C, we obtain B on the x-axis, which gives the utility level u_z that is consistent with the food PL. Corresponding to point B on the x-axis, we obtain point D on the total expenditure function, which gives BD as the total PL that is consistent with the utility level u_z. Obviously then, CD will be the non-food PL. The non-food PL so obtained will be consistent with the standard consumer theory.

Ravallion (1998) suggested estimating the non-food PL using the idea that if a person's total income is just enough to reach the food threshold, anything that a person spends on non-food items will be considered as basic non-food needs. According to this idea, the non-food PL is the household's non-food expenditure at which the household's total expenditure is equal to the food PL. At this point, the household's income is just sufficient to buy only the

nutritionally adequate food basket so that any expenditure a household incurs on non-food will be absolutely essential.

In the Figure 1, E is the point at which the total expenditure is equal to the food PL. At this point, FE will be the non-food PL, which will always be less than CD, the non-food expenditure after satisfying the food poverty line. The non-food PL FE will correspond to the utility level u_z^*, whereas the food PL corresponds to the utility level u_z. Thus, the food and non-food PLs do not imply the same level of consumer utility and Kakwani and Sajaia claim that Ravallion's method is inconsistent with the standard utility theory. However, before resolving this debate, let us first look at the weaknesses of the methodology of estimating the Malaysian PLI.
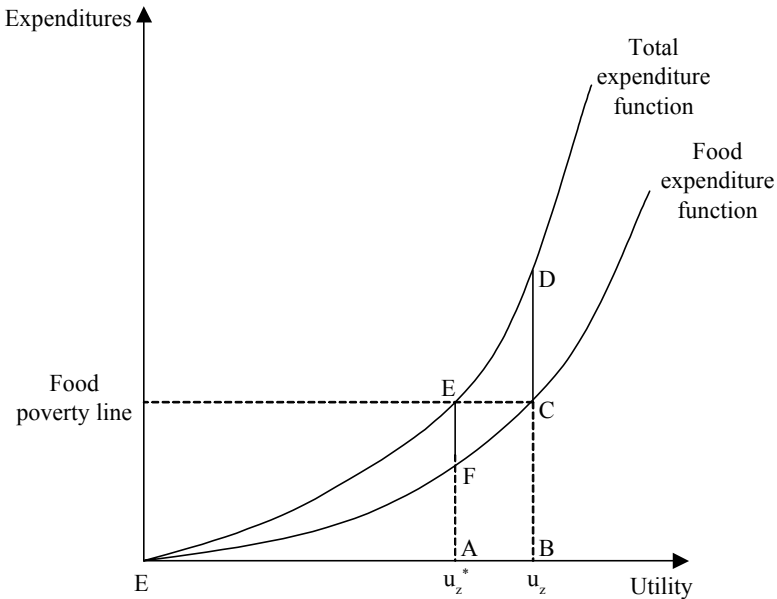

FIGURE 1. Determination of non-food poverty line

SOME "BASIC FLAWS" OF THE MALAYSIAN PLI

The PLI for Malaysia was introduced in June 1977 using the 1973 Household Expenditure Survey (HES). It was estimated based on the minimum requirements of a "model" five-person household for three major components, namely food, clothing and footwear, and other non-food items such as rent, fuel and power; furniture and household equipment; medical care and health expenses; transport and communications; and recreation, education and cultural services. For the

food component, the minimum expenditure was based on a daily requirement of 9,910 calories for this family of five comprising an adult male, an adult female and three children of either sex between 1-3, 4-6, 7-9 years of age. The minimum requirements for clothing and footwear were based on standards set by the Department of Social Welfare for the requirements of inmates in welfare homes. The other non-food items are based on the level of expenditure of the lower income households. The PLI is updated to reflect changes in the levels of prices by taking into account changes in the Consumer Price Indices as well as the average household size.

Some of the issues often raised by researchers of Malaysian poverty concern the appropriateness of using the same PLI, adjusted for inflation, for over two decades (Shireen 1998; Ragayah 2001). While the approach of adjusting the PLI to inflation is adequate for absolute deprivation, its relevance as a measure of relative deprivation is questionable. Shireen (1998) has shown that poverty in Malaysia is officially seen as a situation of relative rather than absolute deprivation. She argued that a PLI that is updated for inflation over a long period of time ceases to reflect relative deprivation since the Malaysian standard of living had not remained constant over the period (Shireen 1998:161). Second, a separate PLI for urban and rural areas is more accurate because the relationship between food energy intake and consumption expenditure varies by region, activity levels, relative prices and taste. This may result in an underestimate of the incidence of urban poverty since the income level required to sustain a household subsistence level in the rural areas may not be adequate for a similar household in the urban areas. Third, it does not allow for economies of scale in consumption. Fourth, the PLI also neglects the differences in consumption patterns between regions as well as the changes in consumption patterns as income grows.

Similarly, the Malaysian PLI does not take into account the differences in household size. While the incidence of poverty among households is a simple measure, it is not very accurate compared to the per capita income measure. For example, a single person household might fall below the PLI if the PLI utilised refers to the household income, but could be placed above the PLI if the per capita income measure is used. Although the incidence of poverty might be the same under both measures as the poor households are expected to have more members, the per capita measure helps to more accurately identify the poverty eradication targets. This approach accounts for the fact that in Malaysia poverty incidence is correlated with small families, a result which is quite contrary to other countries' experience. Moreover, the PLI does not reflect the intensity dan severity of the poverty problem. Other measures such as the *poverty gap measure* or the *squared poverty gap index* should be used. These measures gives deeper understanding of the poverty problem to the policymakers and policy analysts.

Table 1 below attempts to show how far the current Malaysian PL fulfills the basic properties of the PL as described above.

TABLE 1. Malaysian and Thai PL: How far do they fulfill the basic properties of the PL?

Country	Individual Needs (Axiom 1)			Equivalent Adult	Economies of Scale	Regional Cost of Living	Consistency (Axiom 3)	Reflect Consumption Pattern (Specificity)	Consistent Over Time (Axiom 4)
	Age	Sex	F Size						
Thailand	<1 1-3 : : 60+	Yes	Yes	X	X	Yes: for 9 regions, 5 U 4 R	Yes	Yes	Yes
Malaysia	M=20-39 F=20-39 3 Children, M or F 1-3 4-6 7-9	Yes	X	X	X	3 regions, but not by U & R	? since do not take account of U & R cost differences	?	Yes

CONCLUSION: REVISED POVERTY LINE MEASURE
FOR MALAYSIA

In view of the weaknesses stated above, Economic Planning Unit (EPU) Malaysia
has set up a Technical Working Group (TWG) to revise the above methodology
specifically by calculating *for each household* its unique PLI, based on its size
and composition. The methodology still involves calculating the costs of basic
needs for food and non-food components.

The Food Basket Like the 1977 method, the new approach estimates the food
component based on the dietary requirements of Malaysians. The energy
requirement of each household is based on the sex and ages of its members.
Experts from the Ministry of Health (MoH) and academia ensure the food basket
derived would be able to meet the daily k/calorie requirement of Malaysians.
MoH (2004) provides the energy and k/calorie requirements of Malaysians
according to the three regions of Peninsular Malaysia, Sabah (including Labuan)
and Sarawak. It also defines the food basket that will yield a balance diet
comprising a variety of foods that contains 10-20% calories from protein, 20-
30% from fat and 50-60% from carbohydrate. The main categories of food
included are cereal and cereal products (uncooked rice, wheat flour and plain
biscuits); meat (chicken), eggs and fish; milk (full cream milk powder, sweetened
condensed milk); oil and fats (cooking oil and margarine, which are palm oil-
based); sugar; vegetables, fruits and pulses.
      The computation uses two options: option 1 is for households with
children under 7 years old, where the basket includes full-cream milk
powder while households without these children are assumed to have a reduced
milk powder diet that are being substituted for by more chicken, eggs and
vegetables. The food baskets for the two regions in East Malaysia makes
allowance for the absence of dhall in their diets, which is substituted for by
having more fish.
      From the sex, age and number of family members, the total amount of
grams required for each food item can be calculated by multiplying the grams
per calorie table by the household's total calorie needs per month, which would
vary according to the household size and composition. By multiplying the total
amount of grams required for each food by its price, the result is the food PLI
for each family. And since the prices of these food items vary by state and
strata, the PLI also varies according to locations. The final food PLI is adjusted
upwards by five percent for the cost of condiments.

Non-Food Component This was estimated based on Ravallion (1998) study
that propose lower and upper bounds for the non-food PLI. For the lower bound,
the non-food PLI is based on the expenditures of households whose total
expenditure is close to the food PLI, that is $AE = CB$ at utility level U^*_Z in

Figure 1. In the case of the upper bound, the non-food PLI is based on the spending of households whose food expenditure is close to the food PLI at utility level U_Z in Figure 1, which is CD. The upper bound non-food PLI was considered too high as a benchmark for poverty. It was found that the mean expenditure food share of households whose food spending was within 10 percent of the food PLI was around 40 percent, which was thought to be too low to use as the basis to calculate basic non-food needs. Hence, the upper bound was not considered an appropriate framework for calculating the non-food PLI in the Malaysian case.

Kakwani and Sajaia's claim that the lower bound is inconsistent with consumer theory is true only if we assume the food PL to be CB and the non-food PL is FE. However, Ravallion is recommending AE = CB as the lower bound for the estimate of the non-food PL. Ravillion supports the lower bound approach based on two assumptions:

- Once survival needs have been satisfied, as total expenditure rises, basic non-food needs will have to be satisfied before non-survival basic food needs. These non-food needs are the pre-requisites for members of the household to participate in society. That is, non-food spending of households whose income is just sufficient to meet the food PLI must be on really essential non-food items;

- Both food and non-food items are normal goods once survival needs are satisfied.

A few experiments were carried out to determine the acceptable non-food PLI (Appendix 1), that is, for households whose total spending is within 10 percent of the food PLI (Case A); is within 10 percent of the food PLI multiplied by 1.1 (Case B); is within 10 percent of the food PLI multiplied by 1.2 (Case C). Explorations on the presence of economies of scale in consumption indicate that these are present in the case of housing and are therefore taken into account in calculating the PLI. At the time when the TWG was disbanded, it was not possible for a real estimate to be made because prior to 2004, prices of non-food items by state and strata had never been collected. However, estimates were made based on the different food PLIs plus the constant non-food PLI for the various states in Peninsular Malaysia. Non-food PLIs for Sabah and Sarawak vary since their respective prices are available for the estimation. While the TWG did recommend that Case A be the PL to determine 'extreme poverty' to replace the 'hardcore poverty', as well as the case on which the revised Malaysian PLI should be based, it was left to the EPU to calculate the food PLI and non-food PLI based on the 2004 HES/HIS. In the end the 9MP states that the expenditure pattern of non-food components of the PLI was based on the actual expenditure on the bottom 20 percent expenditure group derived from the household expenditure surveys (HES). Non-food components comprise clothing,

housing, transport and other items. The results of their calculations are shown in Box 16-2 in the Ninth Malaysia Plan (Malaysia 327-329), reproduced in Appendix 1.

While the 1977 methodology may yield a reasonably accurate picture of poverty incidence in Malaysia, it does not identify the characteristics of households that live in poverty. For example, using the 2004 methodology, it was found that now poverty rates are much higher amongst larger households, a result which is opposite to the 1977 methodology. As such, it is expected that the new methodology will be able to inform and help direct public policy towards poverty alleviation more accurately than the previous method.

APPENDIX 1

BOX 16-2 (RMK9: 327-329)
MALAYSIA'S POVERTY LINE INCOME

The PLI is defined separately for each household in the household income survey (HIS) based on its size, demographic composition and its location (state and stratum). A household is considered poor if its income is less that its own PLI, that is, it lacks the resources to meet the basic needs of its individual members. A household is considered hardcore poor it its income is less than the food PLI. As food requirement is based on a nutritionally adequate diet, the hardcore poverty threshold income is much higher than the old definition of half the PLI.

The Food PLI

Table A shows the food PLIs based on the two methodologies.

TABLE A   Food PLI Based on 1977 and 2005 Methodologies (RM)

Region	1977 Methodology	2005 Methodology
Peninsular Malaysia	272	398
Sabah	352	503
Sarawak	304	482
Malaysia	294	415

Comparison of the 1977 and 2005 Methodology

Table B compares the PLI based on the two methodologies

TABLE B   Comparison of PLI for 2004 (RM per month)

Region	1977 Methodology	2005 Methodology		
		Urban	Rural	Overall
Peninsular Malaysia	543	663	657	661
Sabah	704	881	897	888
Sarawak	608	777	753	765
Malaysia	588	687	698	691

Table C compares the incidence of poverty and hardcore poverty based on the two methodologies

TABLE C   Comparison of incidence of poverty for 2004 (%)

Region	Overall Poverty		Hardcore Poverty	
	1977 *Methodology*	2005 *Methodology*	1977 *Methodology*	2005 *Methodology*
Peninsular Malaysia	3.1	3.6	3.1	1.2
Sabah	16.5	23.0	2.9	6.5
Sarawak	3.8	7.5	0.4	1.1
Malaysia	4.4	5.7	0.7	1.2

Table D shows the incidence of poverty and hardcore poverty by State using the 2005 methodology

TABLE D   Monthly PLI, Incidence of Poverty and Hardcore Poverty, 2005
(2005 Methodology)

State	Overall Poverty[2]				Hardcore Poverty[2]		
	Household size	Gross PLI(RM)	Per Capita PLI(RM)	Incidence of Hardcore (%)[3]	Gross Food Poverty	Per Capita PLI(RM)	Incidence of (%)[4]
Johor	4.3	634	151	2.0	384	91	0.3
Kedah	4.6	654	143	7.0	402	88	1.3
Kelantan	5.2	675	130	10.6	438	84	1.3
Melaka	4.4	650	151	1.8	385	89	0.2
Negeri Sembilan	4.2	598	146	1.4	371	90	0.2
Pahang	4.2	609	147	4.0	392	94	1.0
Pulau Pinang	4.1	615	152	0.3	373	91	Neg.[5]
Perak	4.1	589	144	4.9	371	90	1.1
Perlis	4.2	587	140	6.3	367	87	1.7
Selangor	4.6	726	159	1.0	420	92	Neg.[5]
Terengganu	5.0	734	148	15.4	469	94	4.4
W.P. Kuala Lumpur	3.9	713	189	1.5	373	98	0.2
Peninsular Malaysia	4.4	661	152	3.6	398	91	0.7
Sabah[1]	5.2	888	173	23.0	503	97	6.5
Sarawak	4.6	765	167	7.5	482	105	1.1
Malaysia	4.5	691	155	5.7	415	93	1.2

Note: 1. Includes Wilayah Persekutuan Labuan   4. Based on gross food PLI
2. Based on 2005 methodology   5. Less than 0.05 per cent
3. Based on gross PLI

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