

**MEASURING THE EXTENT OF
POVERTY IN HONG KONG**

BY

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A THESIS
SUBMITTED TO THE DIVISION OF ECONOMICS
OF THE GRADUATE SCHOOL OF
THE CHINESE UNIVERSITY OF HONG KONG
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF PHILOSOPHY

JUNE 1995



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ABSTRACT

Poverty is not a new phenomenon. Poverty even remains widespread within the affluent nations. In recent years, developed and developing countries alike have paid considerable attention to this problem. Nevertheless, there is no comprehensive study on this topic in Hong Kong since the mid-80s. In the present thesis, based on the 'absolute concept of poverty', an Engel model which takes the household attributes and type of housing into consideration is developed. A set of consumption-based poverty lines for different household compositions are derived to measure the incidence of poverty in the population.

The empirical results show that, excluding the expenditure spent on rent and rates, the poverty line for a household containing two adults and two children was \$3,637 per month in 1990, which was much higher than the monthly amount received from the public assistance scheme. Moreover, households in a number of distinct categories are particularly likely to be poor -- households where the number of earners is small; the head of the household is above 60, the head of the household has no or little formal education, the head of household is employed in a low-pay occupation and/or is a female; and households living in non-self-contained or temporary housing areas. The poverty rate in Hong Kong in 1990 is found to be about 12% which is rather low among developing Asian countries but a bit higher than some western affluent nations.

ACKNOWLEDGMENTS

I would like to express my deepest appreciation and thanks to my thesis supervisor, Dr. Kwong Kai Sun Sunny who has given me much useful advice and close supervision throughout the year.

I am also indebted to the Census & Statistics Department (HES Section) who has kindly given me permission to use the household expenditure data and invaluable advice and assistance in the preparation of the dataset.

Last but not least, I would like to express my hearty gratitude to all my classmates and friends who have given me invaluable support and encouragement.

Lau Yin Ling

June 1995

CHAPTER ONE INTRODUCTION

Poverty is one of mankind's most challenging problems. Despite enormous economic growth and increasing income maintenance transfers, the magnitude of the problem is still daunting. According to recent World Bank estimates, more than one billion people in the developing world are still living in absolute poverty¹. Moreover, much of the social research over the last few decades have shown that poverty is remarkably persistent even in the affluent nations. These findings seem to suggest that poverty can never be eliminated in any society.

In fact, poverty has been the subject of study for a long time. The earliest study on poverty was undertaken by Booth² though his criteria of poverty were intuitive and qualitative. The first study with a clearly specified poverty level was that of Rowntree's (1901) investigation of the social and economic conditions of the wage-earning classes in York in 1899. He attempted to establish a more precise absolute poverty level based on nutritional and other requirements. In the United States, surveys in poverty were initiated later. In the 1960s, Orshansky (1965a) used the minimum food expenditures and the Engel coefficient to construct the poverty line in the United States. These pioneering studies provided the basis for much of the later research on poverty in the developed and developing economies.

In many developing countries, especially those of South and Southeast Asia, there has been extensive research on poverty in recent years. These studies have helped to shed light on the problem of poverty in the developing countries. Due to past neglect and the extensiveness of the problem, eradication of poverty is a high

¹World Development Report 1990 estimates that this is the number of people who are struggling to survive on less than \$370 a year. The concept of absolute poverty will be discussed thoroughly in Chapter 2.

²For a description of Booth's study, see Fried and Elman (eds.), (1968)

priority in the developmental work of national governments and international agencies. In line with this priority, the issue of the measurement of poverty has also been of increasing importance in the developing world.

In the empirical work on poverty, it is important to seek an appropriate indicator to reflect household welfare. In the developing world, the food consumption is the most vital requirement and the shares of food in household budgets in these countries are typically over 50%. Hence calorie intake and basic needs are commonly taken as the welfare indicators. Another welfare indicator that is usually adopted is the food ratio. The popularity of using this measure as a welfare indicator stems from the observation by Engel (1895) that food share was inversely related to the household income and so the household who has a smaller food ratio is regarded to be better off. This idea will be exploited later in the thesis.

In Hong Kong, the GDP at constant market prices has experienced some fluctuations in the past 25 years. However, even in years of economic downturn, the recession was mild and short-lived and thus Hong Kong has managed to maintain remarkable GDP (at constant market prices) growth rates in the past 25 years. Even so, there are always poor people in Hong Kong. The problem of poverty did not go away as Hong Kong grew in prosperity. There were several studies that attempted to estimate the extent of poverty in this affluent city in the 70s and the early 80s. Yet there has been no systematic investigation of this topic in the last ten years. Hence, a reappraisal of poverty in this increasingly affluent city is needed.

The analysis of poverty can be split into two distinct methodological issues, namely, identifying the poor among the total population and constructing an index of poverty using the available information on the poor. The current discussion will mainly focus on the identification issue. The objectives of this thesis are threefold. First, based on what has been called the 'absolute concept of poverty', a model is

developed which takes the household attributes into consideration and then a set of consumption-based poverty lines are derived for different household compositions. The population can then be divided into the poor and the nonpoor. Second, two poverty indexes (head-count ratio and poverty gap ratio) are used to assess the extent of the poverty in Hong Kong in 1990. Third, the demographic and socio-economic characteristics of the poor are identified in order to analyse the incidence of poverty in Hong Kong.

The structure of this thesis is as follows. Chapter two is a literature review on the previous studies of poverty. Although this issue has been the subject of study since the last century, there has been an upsurge of interest in this issue in the last few decades, leading to a substantial literature and to significant innovations at conceptual and empirical levels. Chapter three describes the theoretical framework of the Engel model. Adjustment of differences in household needs is addressed in the model in arriving at the consumption-based poverty line. Chapter four describes the data employed and analyses the general consumption pattern revealed by the 1989/90 Household Expenditure Survey (HES). From the expenditure data, the general consumption pattern confirms what the Engel's law predicts and so it is believed that the Engel model is applicable in the case of Hong Kong. Chapter five turns to the specification of the model. The model is designed to capture the effect of household size, household composition and the existence, if any, of economies of scale in household consumption. In Hong Kong, the type of housing in which the household is living appeared to have a remarkable effect on the consumption pattern. Some adjustment of the data is therefore suggested to incorporate this effect in the Engel function. Empirical results are then presented and discussed. After defining the minimum welfare level as a certain food ratio, a set of equivalence scales and poverty lines can be determined for different types of families. The poverty ratios of Hong Kong in 1990 can then be computed. After measuring the extent of poverty in Hong

Kong in 1990, Chapter six turns to find out the absolute poverty profile in this affluent city and the demographic and socio-economic characteristics of the poor are identified.

CHAPTER TWO LITERATURE REVIEW

'Poverty' has traditionally been defined as a situation in which one or more persons do not attain a level of economic well-being deemed to constitute a reasonable minimum by the standards of the society in question (Ravallion, 1994). In poverty analysis, there are a number of quite different conceptual approaches to the measurement of well-being. The bulk of the academic literature defines 'well-being' as the material standard of living and thus 'poverty' is considered as some specific form of commodity deprivation. Another approach that is increasingly gaining ground defines 'well-being' as the subjective utility of the individuals or households. The variation in these definitions of 'well-being' has been discussed in the literature (e.g. Pollak and Wales, 1979; Deaton and Muellbauer, 1986). In the 1980s, Sen (1985) suggested a rather different concept of 'well-being'. He argued that 'poverty' should be interpreted as a lack of capabilities, rather than commodities. The task of poverty analysis is to determine what those capabilities are in specific societies and who fails to reach them. This perspective, however, has been far from universally adopted in research studies.

Another fundamental question, which is also the main concern of this thesis, is how 'the poor' are to be identified. This identification problem involves the determination of an appropriate poverty line and then ascertaining those who fall below it and those who do not. Three major approaches are commonly employed in both poverty research and social policy in deciding the poverty threshold. Hagenars and de Vos (1988) have summarized the three types of poverty definitions that resulted from these approaches.

- (1) Concept of absolute poverty: Poverty is having less than an objectively defined, absolute minimum.
- (2) Concept of relative poverty: Poverty is having less than others in society.

- (3) Concept of subjective poverty: Poverty is feeling not having enough to make ends meet for a family.

Since a different meaning was given to 'poverty' in each of these cases, there cannot be a universal method in identifying the poor in the studies of poverty. A number of different approaches to this identification issue have been proposed and applied, and these are reviewed in turn in the remainder of this Chapter.

2.1 CONCEPT OF ABSOLUTE POVERTY

The concept of absolute poverty is based on the assumption that individuals or households who fail to achieve a minimal standard of living, regardless of their relative position, are classified as poor. The minimal standard of living is objectively determined from the approach employed. The basic needs approach (or termed subsistence minimum approach or budget standard approach) and the food ratio approach are the two major approaches adopted within this category.

The basic needs approach to poverty is the first and oldest attempt at formulating a viable concept of poverty. Based on the cost of 'basic needs', usually defined as food, housing and clothing, the poverty threshold can be determined (Booth; Rowntree, 1901) and this approach has been the basis of numerous poverty line definitions, among which the Beveridge Report in Britain and the Social Security Administration (SSA) poverty index in the United States are the most well known.

The usual procedure of this approach is to estimate first the cost of minimum food requirements, and to use this cost of food as the basis for the poverty line. In the Rowntree's study of poverty in York in 1899, his concept of 'primary' poverty, which applied to families whose income was 'insufficient to obtain the minimum necessities

for the maintenance of merely physical efficiency', has received most attention. His calculation of the absolute minimum cost of food starts with an estimate of the minimum requirements of protein and calories to maintain families of various sizes in a state of physical efficiency and then translates these into the cheapest possible diet. This method is commonly used in other research in the estimation of the cost of food (e.g. Orshansky, 1965a; Chung, 1979; Shari, 1979). When a certain estimate of the minimum food budget is chosen, it is augmented by an allowance for other indispensable needs of survival. The minimum cost of such indispensable needs as clothing, rent, fuel and household sundries were estimated separately in Rowntree's studies (Rowntree, 1901, 1941; Rowntree and Lavers, 1951). Then this minimum cost was added to the minimum diet cost and the amount so obtained is the poverty line.

The choice of the other necessity items besides food is certainly questionable. Therefore Orshansky (1965a) determined the poverty line in the United States more directly on the basis of food requirements. Similar to the work of Rowntree, this method begins with the minimum cost of a nutritionally adequate diet for each household. The poverty line was then obtained by multiplying the minimum cost diet by the inverse of the average Engel coefficient which is defined as the ratio of food expenditure to income³. If food constitutes one-third of total household budget, the poverty line would be three times the amount of the minimum cost diet.

The basic needs approach is the most common method used in constructing poverty lines in developing countries. Their procedures differ from Rowntree's or Orshansky's only in what commodities and quantities are included in the basic food basket and/or the allowance for the non-food items. To cite some examples, Rao (1981) considered 50% of the per capita total expenditure at the deprivation point (the

³Orshansky (1965a) used 1/3 to be the Engel coefficient for families with three or more members and 27% for those with two members.

proportion of expenditure spent on food level from where its decline is clear-cut and smooth) as sufficient to cover the essentials of life other than food. Moreover, the poverty line estimated by the Ministry of Welfare Services in Malaysia is identified in terms of the income required to maintain a family in 'good nutritional health' as well as to satisfy 'minimum conventional needs in respect of clothing, household management, transport and communication'. The minimum food budget was estimated separately for adults (male and female) by ethnic group, and children (divided into two age groups), both according to rural and urban location. The non-food expenditure is estimated by taking the absolute expenditure incurred on four basic items by households in the lower income class. The value was then divided by the average household size of the lower income class to yield the non-food cost per person. Another estimate of the poverty line for each household size class was calculated in the same way as Orshansky: that is the inverse of the Engel coefficient is multiplied by the minimum food budget for that household size class (Anand, 1983). Recently, Perumal (1992) has taken the allowance for non-food items on the basis of the estimated food budget, and the relationship between the proportion of income allocated on food and non-food items. The results revealed that the estimates of the poverty threshold obtained from this method were generally lower than the official poverty threshold in Malaysia.⁴

Although this approach has been widely adopted, it involves a number of serious conceptual difficulties, as has been pointed out by Townsend (1954, 1962), Rein (1970), and others. Most importantly, there is no single 'subsistence' level that can be adopted as a basis for the poverty line. The nutritional requirements of individuals vary considerably with age, sex, body weight, occupation, physical activity and thus there is a lack of agreement on the criteria of nutritional adequacy. It was also argued

⁴See Dandekar and Rath (1971), Krongkaew (1979), Shari (1979), Tan and Holazo (1979), Cutler (1984) for further examples of the basic needs approach in the developing countries.

that there is a disparity between expert judgment and actual consumption behavior of the households. The minimum cost diets require the households to be equipped with dietary knowledge and excellent managerial skills to allocate their expenditure 'optimally', which are typically absent in the case of the poor. For the non-food items, the minimum needs norms change from region to region due to the climatic and social factors and so non-food items of minimum subsistence requirements are not easy to specify. The method adopted by Orshansky avoided this kind of judgment, but Friedman (1965) argued that Orshansky's use of three as her multiplier was unrealistic. In light of the observation that the poor typically spent about 60 percent of their incomes on food rather than 33 percent used by Orshansky, Friedman believed that the multiplier for the poor should have been proportionately lower.

In addition to absolute poverty scales defined in terms of minimum thresholds, one might alternatively derive a poverty line based on the relationship between expenditures on food and total income. The household budgets undertaken by Engel (1895) revealed that food expenditures decrease, relative to total expenditure, with rising household income. The underlying assumption is that as household income increases, proportionately larger amounts are spent on other goods and services. This observation later on gave rise to alternative definitions of poverty. The proportion of the budget devoted to food can serve as an indicator of material well-being and so households spending the same proportion of total income on food are regarded to have the same standard of living. A certain food-income ratio is taken to be the poverty threshold: families with an actual food-income ratio higher than this threshold are considered to be poor and families with a lower food-income ratio are considered to be non-poor. Since this observation also applies to other necessities, it follows that poor households are those who spend very large proportions of their incomes on necessity items.

This approach soon attracted numerous studies. Rose (1969), in a study of poverty in Canada, defined low-income families and individuals as those using 70% or more of their incomes for food, clothing and shelter. Similarly, Canadian 'Low Income Cut-offs' (LICOs) consider those households spending 'substantially more' (20% more) on food, clothing and shelter than the national average are defined to be in 'straightened circumstances' (Phipps, 1991). The food ratio approach has been somewhat modified by Oshima (1977). The poverty line is determined by first grouping the households according to per capita income into a number of equal deciles arranged in ascending order. For each income decile, the Engel coefficient, defined as the percentage of expenditure allocated to food, is calculated. Then the per capita expenditures corresponding to the income decile in which the Engel coefficient begins to fall is interpreted as the income level whose households have met most of their very urgent food needs so that a larger portion of the additional incomes can be spent on non-food items. All those whose incomes fall below this income level are considered to be poor. Examples of this method can be found in Rao (1981) in determining the per capita total expenditure at the deprivation point and Shari (1979) in estimating the poverty line in Malaysia.

Compared with the basic needs approach, the food ratio approach overcomes the arbitrariness in determining the nutritionally adequate diet and non-food items needed by the poor. Furthermore, this method explicitly allows actual expenditure patterns to be the determinants of the poverty line, instead of a prescribed economical diet. In considering the different needs of heterogeneous households, the food ratio approach also allows an easy derivation of the equivalence scales for families of different types.

Recognition of the fact that the needs and the consumption patterns of two families of the same size presumably depend on their composition and the existence of economies of scale in consumption, attempts have been made to construct the equivalence scales to allow comparison between different types of household units. In

fact, different poverty line definitions produce different lines for different household types, and therefore have their own implicit scales. For the basic needs approach, differences in family size are taken into account by assessing the necessary caloric intake for family members according to sex, age and geographic location. Then an attempt is made to determine specific budgets on food for specific types of families. If other costs of basic needs are estimated separately, allowance is made for economies of scale especially in rent and household sundries in arriving at a final poverty line.

On the other hand, the food ratio approach derives the equivalence scales for families of different types by including family size and other demographic characteristics as additional explanatory variables in the Engel function which is used to derive the relationship between food expenditures and total income or expenditure in society. A wide selection of Engel function has been explored in the literature. For example, Prais and Houthakker (1971), in their classic study of Engel curves, investigated five basic forms for Engel curves, including double logarithm, log reciprocal, semilogarithmic, linear and hyperbola. It is difficult to express any preference as to which of these forms is the most appropriate as each of which has some claim to superiority, at least for some goods and over part of the expenditure range. The functional forms commonly used in empirical research are the double logarithm functional form (Watts, 1967; van Praag, et al., 1982b; Phipps and Garner, 1994) and the Working (1943) - Leser (1963) form (Deaton, 1981; Deaton, Ruiz-Castillo and Thomas, 1989; Bosch-Domènech, 1991). In the latter form, food share (the logarithm of food expenditure in the double logarithm functional form) is regressed on the logarithm of total expenditure or income (per capita) and other relevant demographic characteristics. By fixing some reference welfare level and hence food share or share of budget on necessities, one can use the regression equation to calculate the difference in consumption which would be needed to exactly compensate one household for its different demographic characteristics to that of the reference household. Then the equivalence scales are evaluated at the ratio of the

incomes or expenditure of households with different demographic characteristics to that of the reference household. The poverty thresholds are then determined by the parameters estimated from the regression equation and the reference welfare level.

Recently, in evaluating the level of poverty in the postwar period in the U.S., Slesnick (1993) has applied an econometric model of aggregate consumer behavior in which a system of individual demand functions from the translog indirect utility function⁵ for each consuming unit is derived. The poverty measure is based on the welfare function which is given by total nominal expenditure on all goods and services divided by two deflators: a cost-of-living index and a general equivalence scale which is estimated from the demand system. Applying the Roy's identity to the translog indirect utility function, one can obtain the system of individual expenditure shares. From this the total expenditure required by the reference household to attain the Economy Food Plan under a certain price level and then the poverty threshold level of welfare can be calculated. Similar to the basic needs and the food ratio approaches, this method also takes account of the minimum cost of a food basket and then this expenditure is taken as the basis to derive the total expenditure required for the reference household. However, this method is much more sophisticated as the whole demand system is needed to be estimated, which requires a long time series of aggregate consumption.

2.2 CONCEPT OF RELATIVE POVERTY

Another approach to the definition of poverty is to deal with poverty as a relative phenomenon. That is, relative poverty is defined as the inability to attain a given

⁵The translog indirect utility function is introduced by Christensen, Jorgenson, and Lau (1975) and discussed by Jorgenson and Lau (1975).

contemporary standard of living of the society in question and so it is more a measure of income distribution and inequality than a measure of absolute deprivation.

Relative poverty can be defined in a number of ways. A common practice is to use some proportion of the arithmetic mean or median of the distribution of consumption or income as the relative poverty line. Many studies have used a poverty line which is set at about 50% of the national median, following Fuchs (1967). For instance, the CCSD (Canadian Council on Social Development) considers households with less than half the average income of others in the community to be relatively deprived and hence these households may be classified as 'poor' (Phipps, 1991). This approach does have the considerable appeal of simplicity as it yields results which can be readily understood and thus it may be a particularly useful method for comparisons across countries or over time. A number of cross-country analyses, including Buhmann et al. (1988), Gustafsson and Uusitalo (1990), Smeeding et al. (1990) and Phipps and Garner (1994), defined the poverty line as one half of the median equivalent income. Piachaud (1988) defined a constant relative poverty level and obtained new estimates of the extent of poverty from 1899 to 1983 in Britain, based on the consistent standard. With the use of this criterion, measured poverty will change only if the income distribution changes. At the same time, the adoption of this standard does not mean that the poor are necessarily always present as it is possible that no one has less than half the national median in the society. However, measured poverty will be the same in two societies with the same distribution of income even if the level of income is twice as high in one as in the other. Likewise, no poverty will be recorded in a society if all are equally poor.

Furthermore, a poverty line may be defined as the border line of a certain percentile. It has been pointed out that this definition seems to predetermine the extent of relative poverty. No matter how much income increases, according to this definition, it is never possible to eradicate relative poverty, irrespective of the extent of

absolute poverty. Moreover, the choice of a certain percentile or a particular ratio of the income distribution as the dividing line between poor and non-poor is somewhat arbitrary.

Another measure of relative poverty is that of relative deprivation with respect to resources and style of living. The impetus for focusing directly on patterns of living and deprivation in measuring poverty has come primarily from Townsend's research in Britain (1979). He proposed that 'poverty must be regarded as a general form of relative deprivation which is the effect of the maldistribution of resources' and the poor are those 'whose resources are so depressed from the mean as to be deprived of enjoying the benefits and participating in the activities which are customary in that society'. Townsend's concept of deprivation is much broader than saying that the poor are the 10 percent or 20 percent in the society with the least resources. He argued that possession by individual and families of relatively low resources does not automatically mean that they are living in poverty, but only if they are excluded from the ordinary way of life and activities of that society. In implementing this approach, Townsend used a list of indicators (commodities and social services) that are highly correlated with income. Scoring one for each item not possessed and zero otherwise and then a summary deprivation index was constructed based on the number of areas in which the individual's consumption fell below social norms. Townsend hypothesized 'as resources for any individual or family are diminished, there is a point at which there occurs a sudden withdrawal from participation in the customs and activities sanctioned by the society', and this could be defined as the poverty line.

Criticism of Townsend's methodology falls under two main areas. The first relates to the selection of the deprivation indicators and the role of differences in tastes. Piachaud (1987) argued that a large part of the variation of deprivation scores is due to differences in styles of living, wholly unrelated to poverty. The second major area of criticism relates to the existence of a threshold. Piachaud (1987) doubted

whether there is a marked change in deprivation below a certain level and asserted that reality is more accurately described as a continuum from great wealth to chronic poverty.

Later Mack and Lansley (1985), in the LWT poverty study, attempted to respond to these criticisms. They still calculated a deprivation index, but the distinction was made between those lacking an item because they did not want it or they could not afford it - thereby separating choice from constraint. In a further departure from Townsend, they chose a critical level of the deprivation index to distinguish between the poor and the non-poor. Those who do not have and 'would like but can't afford' three or more items are counted as poor. Piachaud (1987) criticized that the choice of a cut-off on the deprivation scale is arbitrary. If all the items were necessities then the lack of even one of them might be said to constitute poverty. Moreover, many of those who lacked 'necessities' did not lack 'non-necessities'. As Ashton (1984) has observed 'many people who say they cannot afford an essential may have, or may have had, the resources to purchase it but allocate their resources instead for an apparent non-essential'.

This methodology has been formalized and taken further by Desai and Shah (1988). They proposed an indicator to reflect 'distance' from modal values in the sample in the frequency with which particular events are experienced by the respondent within a certain time period - rather than a simple dichotomy. In aggregation over different events, Townsend assigned equal weights to each consumption event, but Desai and Shah suggested the weights employed be some inverse function of the proportion of the population actually deprived in terms of the 'event' in question. That is, being deprived of something which almost everyone has is more important than being deprived of something which most people do not have. Clearly, the methods based on style of living indicators face a number of serious problems such as the derivation of a particular cut-off to distinguish between 'the poor' and the rest of the

population, the selection and aggregation of items whose enforced absence can be taken to represent deprivation.

With continued economic growth over the years, the concept of absolute poverty has lost a good deal of its significance in developed countries with increasing material wealth. Poverty in these countries is now a matter of deprivation from social and economic norms. Thus absolute poverty considerations have dominated the literature for the developing countries while relative poverty has been more important in the developed countries.

2.3 CONCEPT OF SUBJECTIVE POVERTY

The relative and absolute poverty line definitions mentioned above are objective ones in the sense that they take objective criteria for poverty as their point of departure. Another different category of definition is subjective in the sense that it is based on the perception of poverty of the population. This approach has been developed primarily in the Netherlands and the United States and the theoretical underpinnings have been provided primarily by researchers at Leyden (Goedhart, et al., 1977; van Praag, et al., 1980, 1982a, 1982b; Kapteyn, et al., 1985; Hagenaars, 1986).

A number of variants of this approach have been applied. Under these variants, respondents may be asked: (1) to judge the level of living for a list of hypothetical families of different composition (Dubnoff, 1985), or what income hypothetical families would require to reach different levels of living (Rainwater, 1974); (2) how they feel about their own current income level (Dubnoff, et al., 1981); (3) what income they consider to be the minimum amount needed to make ends meet (Goedhart, et al., 1977; Colasanto, et al., 1984; Hagenaars, 1986); (4) what income levels they would

consider, in their own conditions, to be 'very bad', 'bad', etc., on a scale up to 'very good' (van Praag, et al., 1982a, 1982b).

The first variant asks for views about hypothetical families, and the rest focus on respondents' views about their own situation or what a particular income would mean to them. The former has the advantage that each respondent's views about the needs of a range of household types can be obtained. However, people may have limited knowledge of the needs of families differing in size and composition from their own. Asking about their own situation or how they evaluate income for themselves can overcome this problem and allow a full range of household types to be covered.

The most developed and common forms of this approach are the Subjective Poverty Line method used by Goedhart, et al. (Goedhart, et al., 1977; Kapteyn, et al., 1985) and the Leyden method employed by van Praag and colleagues (van Praag, et al., 1982a, 1982b; Hagenaars, 1986). The former is based on responses to question (3) above (the 'minimum income question'). This method presupposes that not everyone's perception of minimum necessary income will be the same. Generally speaking, the higher the level of actual income, the more demanding people are and the higher would be their stated minimum. A respondent's answer to the minimum income question is denoted by y_{\min} , which is systematically influenced by the respondents' actual net income, y , and family size, s : $y_{\min} = f(y, s)$. In Goedhart et al. (1977), they used a loglinear estimation for $f(\cdot)$. Then for a particular household size, the poverty line is the point where, on average, actual net income is equal to the stated minimum income needed. Other empirical studies using this method include van Praag et al. (1980) employing small samples drawn in nine European countries to contrast the subjective poverty lines with food poverty lines; Danziger, et al. (1984) and de Vos and Ganner (1991) using data in the United States to contrast estimates of the subjective poverty lines with the official US poverty line.

The more complex Leyden method is based on responses to question (4) (the 'income evaluation question') which income levels rated on a scale from 'very good' to 'very bad'. Individual welfare functions of income are then estimated from the income and welfare evaluations. A critical welfare level must be chosen and the corresponding level of income for each individual is derived. The overall poverty line is estimated in the same way as the responses to the minimum income question. Using data in eight European countries, both van Praag et al. (1982a) and Hagenars (1986) employed the Leyden method and concluded that poverty lines differ substantially across these countries. In terms of the overall extent of poverty, it was found that France has higher poverty line and poverty ratio while lower poverty lines and poverty ratios were found in the Netherlands and Germany.

This approach is critically dependent on the assumptions that the respondents attach the same meaning to the words chosen for the survey (e.g. making ends meet, good, bad) and that they can assign monetary values to these words. Nevertheless, these assumptions are particularly difficult for cross-national surveys, where these words must be translated from language to language. Further, as pointed out by Piachaud (1987) and Walker (1987), it may matter who in the household is interviewed and the concept of income the respondents have in mind may not always be the same as the researchers'. For those respondents who evaluate the adequacy of income directly with what it will buy, a further problem arises from the accuracy of the price lists that they have in mind.

2.4 STUDIES OF POVERTY IN HONG KONG

Public assistance has long existed in Hong Kong but it was not until 1971 that cash assistance was introduced. As stated in the annual report (1989-90) of the Social Welfare Department, the Public Assistance Scheme is intended to bring the income of

needy individuals and families up to a prescribed level to meet essential needs. Starting from 1 July 1993, the public assistance payments were replaced by a Comprehensive Social Security Assistance Scheme. The nature and eligibility criteria under the two schemes remain unchanged. In 1990, the monthly basic allowance is \$620 for a single person; \$465 for the first and the second eligible family member and \$455 for the subsequent two members⁶. The profiles of public assistance recipients have been systematically compiled by the Social Welfare Department but they represent only the poorest in society. Therefore if we simply use the assistance amount, for instance, \$1,840 for a household of four (2 adults and 2 children) as the poverty line in 1990, it is believed that this yields too low a poverty line and so underestimates the poverty rate in Hong Kong.

Chau (1979, 1980), following the work of Rowntree and Orshansky, estimated the absolute poverty in Hong Kong from the 1960s to 1970s. He used the 1974 basic allowance and rent allowance from the public assistance scheme as the estimates of food and housing cost. Two approaches were then adopted to estimate the essential expenditures for other goods and services. In the first approach, an Engel coefficient, 0.6, was used to convert the food expenditure into a minimum budget. In the second approach, the average expenditure per capita on other goods and services by the poorest quintile of the population who responded to the 1973-74 household expenditure survey was used to determine the absolute poverty line. The absolute poverty line (based on a household of four) for 1975 in terms of annual per capita income is set at US\$374 (HK\$1,870). Using another definition which presented poverty as being relative, poverty lines were determined by relative food consumption for households of different sizes. It was found that the relative poverty income in 1964 was higher than the absolute one for households of all sizes up to seven members. Nevertheless, Chau confined the analysis of the change in the incidence of poverty on

⁶The details of the basic allowance are shown in the Appendix I. For other types and rates of payment in 1990, see the Hong Kong Annual Department Report - Social Welfare Department 1989-90.

the basis of the absolute poverty line. Based on the 1963-64 expenditure survey, 35 percent of the households consumed below the poverty line but this figure fell sharply to 3.5 percent in the 70s. However, only a moderate reduction of poverty was achieved between 1971 and 1976. The percentage of households with income below the poverty line fell from 21 percent in 1971 to 14 percent in 1976.

Inspired by Townsend's study of poverty in the United Kingdom, Chow (1982, 1983) conducted a survey on the style of living of low income families in Hong Kong in 1981. Since it was thought that the indicators were culturally bound, another nine items were employed to construct the deprivation index. Chow took the mean score as the deprivation threshold and it appeared that the corresponding income threshold was \$2,000 to \$2,199 for a household and \$400 to \$499 for a single person per month in 1981. In other words, any household (an average of four) or single person having this income below would have to adopt a deprived living style. According to the findings of the 1981 Census and the poverty line proposed, 13 percent of the households or 14.9 percent in terms of persons in the population were identified to be living in poverty.

The estimations of the above two studies, nevertheless, were very rough as they made no distinction between households of different composition and thus they need some modification in order to yield a more accurate poverty rate in Hong Kong. Employing the 1989/90 Household Expenditure Survey (HES) and mainly following the work of Deaton (1981) and Deaton and Muellbauer (1986), in the present study a model is proposed to derive the absolute poverty lines in Hong Kong for 1990. This model takes account of heterogeneous household compositions and some unique features of Hong Kong to determine a set of poverty lines for different household types. It is hoped that a more accurate extent of poverty in Hong Kong can be measured.

CHAPTER THREE THEORETICAL FRAMEWORK

The different approaches discussed in the previous chapter mainly concern the identification issue in poverty analyses. But how to choose an appropriate unit of analysis in the poverty measurement? How to assess the level of 'economic well-being'? Should poverty be measured by a deficiency in income, consumption or wealth? These are conceptual issues that must be addressed in setting the poverty line. Therefore, they are first clarified before proceeding to the setting of the model.

3.1 CONCEPTUAL ISSUES

In most empirical work on poverty, the household is taken as the basic unit of analysis. This is based on the assumption that poverty of household members cannot be considered independently of each other as some assets are indivisible. There may also be economies of scale in consumption and so the division of family resources by the size of the household underestimates the individual level of economic well-being. Following the practice of most previous studies, household is chosen as the unit of analysis in the present model. Hence if a household is classified as poor (or nonpoor), the individual household members will also be so classified.

A popular way of making use of the data on household behavior has been to select some observable value as a proxy for household material welfare. Engel's 1857 statement, "The proportion of the outgo used for food, other things being equal, is the best measure of the material standard of living of a population" (US Department of Labor 1960, p.1198), has inspired numerous researchers to use the proportion of income or expenditure spent on food as a proxy for the standard of living of particular households. In his pioneering work, Engel observed that (a) for households of the

same demographic composition, the food share varies inversely with income or total expenditure (Engel's Law) and that (b) for households with the same income or total expenditure level, the food share is an increasing function of the household size. Since food is seen as the first necessity, it is believed that it has such a high priority for an extremely poor individual that he is most likely to spend the entire incremental income on food alone. Food ceases to be a relatively important item of expenditure as soon as the subsistence needs are met. Therefore, food share, in many empirical research, is regarded as an inverse indicator of material welfare.

To determine whether a particular household is poor, it is necessary to have a measure of the household's economic resources. In practice, income and expenditure are commonly used in the poverty literature. Though income can reflect the budget restrictions within which the household can choose its consumption goods, it focuses on measuring the ability to purchase those goods whereas the main concern now is with what is in fact consumed. According to the permanent income hypothesis, income is a poor proxy for consumption even for households at low income level. Households in the lower tail of the income distribution are disproportionately represented by those with temporary reductions in income and they typically exhibit high ratios of consumption to income in an effort to maintain their standard of living. This suggests that poverty rates computed using households' consumption levels could be quite different from corresponding measures based on income levels.

In the implementation of the present model, food share is used as an inverse indicator of material household welfare. Moreover, expenditure data instead of income data is employed in measuring the extent of poverty in Hong Kong and hence, poverty is measured in terms of a deficiency in consumption.

3.2 THE MODEL

The essential assumption behind all interpersonal comparisons of welfare is that all households have identical preferences if various conditioning factors are allowed for (Deaton, 1981). In the current discussion, we concern ourselves with the analysis of a cross-section study in which it is assumed that all households face identical prices so that explanations of behavioral differences are sought in differences in total expenditure and in household attributes. Hence, the preferences of a society of N households can be represented by

$$(3.1) \quad U^h = u(X^h, A^h)$$

where $h = 1, \dots, N$. U^h is the utility of household h , X^h is the consumption vector, and A^h is a list of factors or characteristics that captures the differences in preferences among households. In the present context, A^h is a vector of household attributes of household h including family size and the number of persons in different categories. A utility-maximizing household maximizes (3.1) subject to a price vector for goods, P , and total outlay (i.e. total expenditure), Y^h , with the vector A^h taken as fixed.

Corresponding to the utility function (3.1), and any price vector P , the cost function $C(U^h, P, A^h)$ gives the minimum cost for a household h with characteristics A^h to attain welfare level U^h at prices P . For a cost-minimizing (which implies utility-maximizing) household, this is equal to total expenditure Y^h , so that

$$(3.2) \quad C(U^h, P, A^h) = Y^h$$

and this function is the basis for comparisons of welfare between households with different attributes. Suppose \bar{U} is the subsistence utility level, the cheapest way for

household h to reach \bar{U} given the price vector P is given by the following cost function:

$$(3.3) \quad C(\bar{U}, P, A^h) = \bar{Y}^h$$

Hence, \bar{Y}^h is the poverty line of household h under the subsistence utility level \bar{U} . Likewise, if the household with characteristics A^r is the reference household, its corresponding poverty line \bar{Y}^r under the subsistence utility level \bar{U} is given by the cost function:

$$(3.4) \quad C(\bar{U}, P, A^r) = \bar{Y}^r$$

In demand analysis, whenever the derivative exists, the derivatives of the cost function with respect to the prices give the Hicksian demand functions. One can derive budget shares directly from the cost function (Deaton, 1986), that is,

$$(3.5) \quad w_i = \frac{\partial \ln C(U, P, A)}{\partial \ln P_i}$$

where w_i is the share of budget devoted to good i . Given a cost function, equation (3.5) gives the budget share as a function of prices, household attributes and utility level. Since the latter is not observable, one has to invert (3.1) to get the indirect utility function in terms of prices, total expenditure and household attributes, that is,

$$(3.6) \quad U^h = V(Y^h, P, A^h)$$

so that substitution of (3.6) into the right-hand side of (3.5) gives the budget shares in terms of total expenditure Y^h , prices P and household attributes A^h , all of which are observable. Write this function as follows:

$$(3.7) \quad w_i^h = w(Y^h, P, A^h)$$

It is this function (3.7) which can be fitted to the data.

Nevertheless, households differ in size, age composition, and other characteristics and so, in general, households with different characteristics are expected to have different expenditure patterns. Where two households differ in composition, a simple comparison of aggregate household consumption could be quite misleading about the well-being of a given household. Moreover, deflating the aggregate household expenditure by household size overlooks the economies of scale that operate for many items of consumption and ignores the variation of needs with age. For instance, for very young children, food expenditure is likely to be larger than it is for adults. To cope with these issues, the common practice for poverty estimation is to convert each household into a certain number of 'equivalent adults' using equivalence scales.

The equivalence scale is naturally defined using the cost function. That is, for any given welfare level and the cost functions of household h and the reference household, the equivalence scale $m(A^h)$ measures the relative costs of achieving the same welfare level at the same prices for a household with characteristics A^h vis-à-vis the reference household. For example, if the reference household with characteristics A^r contains one single adult and it costs twice as much to maintain another household with characteristics A^h at the same welfare level, then $m(A^h)$ takes the value of two. As previously stated, it is absurd that $m(A^h)$ is simply a counting function of household size and so the differences in household composition can be recognized by expressing $m(A^h)$ as the number of equivalent households with children only counting fractionally as the adults. In general, one would also expect $m(A^h)$ to increase with household size but at a diminishing rate indicating the opportunities for economies of scale in consumption.

It is asserted here that households which behave identically should have identical welfare level (Deaton, 1980). Then for any given set of demand functions, it should lead back to unique equivalence scales. There are a number of ways to specifying the cost function and each gives rise to different equivalence scales and different models of household behavior. Two of the influential models in estimating the equivalence scales were proposed by Barten (1964) and Prais and Houthakker (1971).

Unfortunately neither the Barten model nor the Prais-Houthakker model can yield equivalence scales when estimated on a single cross-section of household data. The available short time series consumption data in Hong Kong makes the estimation of price coefficients, as can be achieved in more sophisticated models, impossible to undertake. In the present study, a much simpler and clearly feasible technique that is due to Engel is employed. In the Engel model, it assumes that the effects of composition are not commodity specific. Then when the utility function of a household is expressed in equivalent households terms, (3.1) can be rewritten as follows:

$$(3.8) \quad U^h = u(X^h, A^h) = u' \left(\frac{X^h}{m(A^h)} \right)$$

where $X^h/m(A^h)$ is the equivalent consumption vector of household h , relative to a reference household r whose scale factor $m(A^r)$ is normalized to be one.

Corresponding to the specific direct utility function (3.8), the indirect utility function is

$$(3.9) \quad V' \left(\frac{P}{m(A^h)}, Y^h \right)$$

Since the indirect function is homogeneous of degree zero in P and Y^h , (3.9) can be rewritten as follows:

$$(3.10) \quad V^h(P, \frac{Y^h}{m(A^h)})$$

where $Y^h/m(A^h)$ is the equivalent income of household h . Therefore, in the Engel model, the cost function can be written as

$$(3.11) \quad C(U^h, P, A^h) = m(A^h)C(U^h, P)$$

where $C(U^h, P)$ is the cost function for some reference household type and the scale $m(A^h)$ is the number of equivalent households generated by A^h .

Then the demand functions for food in equivalent household form is

$$(3.12) \quad \frac{X_f^h}{m(A^h)} = g_f(\frac{Y^h}{m(A^h)}, P)$$

which in budget share form becomes

$$(3.13) \quad w_f^h = \frac{P_f X_f^h}{Y^h} = \frac{P_f g_f(Y^h/m(A^h), P)}{Y^h/m(A^h)}$$

In (3.13), w_f^h is a function of $Y^h/m(A^h)$ only and not of Y^h or $m(A^h)$ separately. Hence the Engel model ascribes all variation in the budget allocation to variation in the single ratio $Y^h/m(A^h)$. If h is a household with characteristics A^h , r is the reference household with $m(A^r)$ being unity, and further suppose h and r have the same budget share, we must have

$$(3.14) \quad \frac{Y^h}{m(A^h)} = \frac{Y^r}{m(A^r)} = Y^r$$

This immediately gives the equivalence scale

$$(3.15) \quad m(A^h) = Y^h / Y^r$$

which gives another equivalent definition of the equivalence scales. That is, to attain the same food share, a household with characteristics A^h needs to spend m times more than the reference household with characteristics A^r . Or put in another way, Y^h is the equivalent expenditure for household h to be as well off as the reference household r .

The assertion that the food share is a welfare indicator in the model follows from equation (3.11). Using (3.5), the share of budget devoted to food is given by differentiating the logarithm of the cost function with respect to the logarithm of the price of food, P_f , that is,

$$(3.16) \quad w_f^h = \frac{\partial \ln C(U^h, P, A^h)}{\partial \ln P_f} = \frac{\partial \ln C(U^h, P)}{\partial \ln P_f}$$

where the last equality follows from (3.11). Clearly, if prices are identical to all households, w_f^h varies with U^h and is thus a welfare indicator. Hence households with the same food share must have the same welfare level.

The use of (3.15) requires a fitted Engel curve. One functional form of the Engel curve that frequently fits the data well is the Working-Leser form, which will be extended in the present model to take into account household attributes. The Working-Leser form for Engel curve relates budget share linearly to the logarithm of total expenditure, i.e.

$$(3.17) \quad w_i = \alpha_i + \beta_i \log Y$$

This functional form meets the most obvious requirement that the adding-up conditions ideally hold for the estimated parameters. It turns out to be unnecessary to make any special restrictions on the parameters that generate estimates to satisfy the adding-up property. Note too that for those commodities with $\beta_i > 0$, the budget share increases with total expenditure, for those with $\beta_i < 0$, the budget share decreases. Hence, luxuries and necessities can be naturally identified by equation (3.17).

With the fitted Engel curve, the next step is to determine the poverty lines for different household types. Corresponding to the utility function (3.1), the Engel curve is

$$(3.18) \quad w_f^h = \frac{P_f X_f^h}{Y^h} = \frac{P_f G_f(Y^h, P, A^h)}{Y^h}$$

where $G_f(Y^h, P, A^h)$ is the Marshallian demand function for food. Suppose the subsistence welfare level is indicated by a critical food ratio θ , then

$$(3.19) \quad \frac{\theta}{P_f} = \frac{G_f(\bar{Y}^h, P, A^h)}{\bar{Y}^h}$$

Hence the poverty line of household h , \bar{Y}^h , is

$$(3.20) \quad \bar{Y}^h = \rho(\theta, P, A^h)$$

When expressed in equivalent households terms, (3.18) is written as (3.13).

Rewriting (3.13) as follows:

$$(3.13') \quad w_f^h = \frac{P_f X_f^h}{Y^h} = \frac{P_f g_f(Y^h/m(A^h), P)}{Y^h/m(A^h)}$$

With the subsistence welfare level being kept at θ , we have

$$(3.21) \quad \frac{\theta}{P_f} = \frac{g_f(\bar{Y}^h/m(A^h), P)}{\bar{Y}^h/m(A^h)}$$

In the current analysis, it is assumed that all households face identical prices. Therefore, P can be suppressed as the argument in the functions. Then the poverty line of household h is given by the following function

$$(3.22) \quad \bar{Y}^h = \psi(\theta, m(A^h))$$

With a set of Engel estimated equivalence scales, the poverty lines which represent the level of consumption that divides the households of particular size and composition into the poor and nonpoor can be obtained. There remains the problem of measuring the level of poverty. A number of poverty indexes have recently been proposed for measuring the extent of poverty. In the current discussion, only the head-count and the poverty gap ratios are considered. The head-count ratio is the simplest and the most common measure of poverty. It is given by the proportion of the population for whom consumption (or another suitable measure of living standard) Y^h is less than the poverty line \bar{Y}^h . Suppose q households are poor by this definition in a population with N households. Then the head-count ratio, H , is simply the proportion of the population deemed poor:

$$(3.23) \quad H = q / N$$

This measure is easily understood and communicated. However, the head-count ratio is totally insensitive to differences in the depth of poverty.

A better measure from this point of view is the poverty gap ratio, based on the aggregate poverty deficit of the poor relative to the poverty line. This ratio considers the average distances of the poor below the poverty line in assessing aggregate poverty, and so it gives a better idea of the depth of poverty. To see how this measure is defined: let consumption be arranged in ascending order and consider those households ($h = 1$ to q) whose consumption is not greater than the corresponding poverty line \bar{Y}^h , then the poverty gap ratio is defined as follows:

$$(3.24) \quad PG = \frac{1}{N} \sum_{h=1}^q (1 - Y^h / \bar{Y}^h)$$

Thus the poverty gap ratio is the mean proportionate poverty gap in the population (where the non-poor have zero poverty gap).⁷

⁷See Ravallion (1994) for further interpretations and discussion of this measure. Some literature (e.g. Quibria (1991)) defined the poverty (income) gap ratio as

$$G = \frac{1}{q} \sum_{h=1}^q (1 - Y^h / \bar{Y}^h)$$

In fact, this measure can be obtained by dividing the measure PG by the head count index and it reflects the mean consumption shortfall of the poor expressed as a proportion of the poverty line. Yet Ravallion (1994) argued that the measure G will increase if someone just below the poverty line is made sufficiently better off to escape poverty. Nevertheless, this problem does not arise if ratio G is multiplied by the head count index to yield PG. Then under the same circumstances, PG will register a decrease in poverty. For other aggregate measures that summarize the extent of poverty, see for example Sen (1976), Clark, Hemming and Ulph (1981), Foster (1984), Rodgers and Rodgers (1991).

CHAPTER FOUR THE DATA

Data employed for the estimation of the Engel curve for food come from the expenditure data of the 1989/90 Household Expenditure Survey (HES) conducted by the Census and Statistics Department. In the survey, the primitive observation is the 'household', which is defined as any group of persons, whether related or not, who live together and make common provision for food, or other essentials for living; or any person who makes provision for his/her own meals and no one else's meals (i.e. a one-person household). Many of the characteristics of the household are based on the head of the household.

HES is conducted once every five years. Its primary purpose is to collect accurate information for establishing the expenditure weights used for compiling the CPIs so as to ensure that the indexes relate adequately to the spending patterns of households.

4.1 SAMPLING METHODS

The 1989/90 HES covered approximately 90% of the land households in Hong Kong. The target population was all land domestic households in the urban areas of Hong Kong, including Hong Kong Island, Kowloon, New Kowloon and the new towns and market towns in the New Territories. Marine households, collective households and households living in the rural areas and outlying islands were excluded from the survey. Those households which were away from Hong Kong during the reference period of the survey are also excluded. Households of all expenditure groups were enumerated in the survey, with the exception of households receiving

public assistance which were the subject of a separate study by the Social Welfare Department. The exact demarcation of the areas covered is shown in Appendix II.

A stratified proportionate sample design was adopted in the 1989/90 HES. The population was divided into homogeneous groups using stratifying variables that are closely related with expenditure pattern so that with a given sample size, more precise estimates of household expenditures could be obtained.

Households in different income groups tend to have dissimilar spending habits and households with similar income levels tend to cluster together in a district and so the geographical area is a useful stratification factor. The census districts were grouped according to the distribution of households by income as obtained in the 1986 Population By-Census, such that households of similar income levels would fall within the same group. Furthermore, the type of housing in which a household lives is another important stratification factor. Households residing in public housing estates, in general, spend a smaller proportion of their income on rent, and thus can afford to spend relatively more on other goods and services than those living in private housing. Hence the groups of census districts were further separated into public and private according to type of housing.

Since there is seasonal variation in consumption pattern during different periods of the year, time was also used as an implicit stratification factor. The 12-month survey period was divided into 26 bi-weekly cycles and each sample household was asked to take part in only one cycle.

Based on 'geographical area' and 'type of housing', 27 strata or homogeneous groups of households were formed as shown in Appendix II. Within each of the 27 strata, systematic selection of living quarters was applied. A uniform sampling fraction

was used across all strata. The sample was divided into 26 sub-samples. One sub-sample was enumerated in each of the 26 bi-weekly cycles of the survey.

Having taken into account various factors such as the desired precision of the survey results, the target sample size was about 4800 households. After allowing for non-response and unsuitable cases (e.g. living quarters being vacant or not used for residential purpose, collective households, households receiving public assistance etc.) expected in the survey, a larger random sample consisting of some 8200 living quarters was drawn. After excluding the unsuitable cases and those households being absent from Hong Kong during the reference period of the survey, about 70% of the remaining households co-operated and provided records of their expenditure during a bi-weekly period and thus finally a total of 4854 households were retained in the final tabulation for the survey.

The sample of the 1989/90 HES does not include those households receiving public assistance which are most probably identified to be poor. Nevertheless, excluding the data of these households in fitting the Engel curve can avoid the outliers whose consumption patterns may be distorted. However, this point must be kept in mind in analysing the extent of poverty of the whole population. Other than excluding those households believed to be in the lowest tail of the income distribution, the sample is designed to be a representative of the whole population. The variables estimated in the survey were the average bi-weekly expenditure per household by commodity/service. In the poverty calculations, each bi-weekly expenditure item is multiplied by 26 to obtain the corresponding annual expenditure of that item for each household.

A critical element in the evaluation of a consumption-based measure of poverty is the definition of total expenditure. In the 1989/90 HES, household expenditures refer to consumption expenditures on goods and services (including payments in kind),

but business expenses, remittance, bettings, charities, payments of income tax, life insurance premium of the endowment type, house mortgage payments, investments on properties and stocks and shares, and various other payment which are of a savings nature are excluded. In general, the HES reports the out-of-pocket expenditures of the households during the 2-week diary-keeping period except for regular payment, and major infrequent expenses which are to be recalled in full if they are incurred during the 3-month reference period. However, in the treatment of employer-subsidized, owner-occupied and rent-free accommodations where actual rent is not paid out in full, a rent is imputed with the assistance of the Rating and Valuation Department to these accommodations and the imputed amount is added to the other payments to obtain the amount of total expenditures. In other words, for the households living in those types of housing, their total expenditures do not represent the actual payments made.

4.2 GENERAL EXPENDITURE PATTERNS FROM 1989/90 HES

The overall distribution of household expenditure on different sections of commodities / services by detailed expenditure group is presented in Table 4.1. Most notably, food and housing account for approximately 60 percent of average household expenditure and the other 40 percent are spent on relatively less essential items such as clothing, footwear, transport and vehicles, services and so on.

According to the Engel's law, as total expenditure goes up, the portion of expenditure spent on food would fall. The Engel ratios by detailed expenditure group are shown in Table 4.2. The figures in Table 4.2 reveals that the Engel ratios decline continuously as total expenditure increases. The food ratio (Ratio A) drops from nearly 0.5 for the lowest expenditure group to 0.15 for the highest one. Many empirical studies suggest that some information about welfare is likely to be lost by

looking at foodstuffs alone. Therefore, poverty analysis is likely to require attention on other items. From Tables 4.1 and 4.2, housing is an obvious example.

Analysing household expenditure by type of housing, one finds that households living in public housing spent a relatively higher proportion of their expenditure on foodstuffs and a much smaller proportion on housing than their counterparts living in private housing. This may be partly due to the fact that households residing in public housing normally pay a rent lower than that of households living in private housing and hence they can afford to spend relative more on most of the other categories of goods and services. Tables 4.3 and 4.4 present the average bi-weekly household expenditure on different sections of commodities / services by broad expenditure groups under two different types of housing. It may be noted that while the average total bi-weekly expenditure for public housing households was much smaller than that for private housing households (i.e. \$3,656 compared to \$6,408), the amount of expenditures spent on foodstuffs were quite close for these two categories of households. The survey results show that households residing in public housing spent an average of \$1,718 a fortnight on foodstuffs, whereas households residing in private housing spent \$1,852. In contrast, the average bi-weekly household expenditures on housing were \$306 and \$2,096 for households living in public and private housing respectively. This means that type of housing is an important factor that affects household expenditure pattern and appropriate adjustments to total household expenditures have to be made before running Engel regressions.

From the 1989/90 HES, the average amount of expenditure per capita generally fell as the household size increased. This was true not only for the overall expenditure, but also for expenditures on individual sections of commodities/services i.e. foodstuffs, housing, clothing and footwear, transport and vehicles and services. Such pattern could partly be explained by the different degrees of economies of scale in the consumption of different commodities/services as household sizes increased.

However, as shown in Table 4.5, when the household size increased, the proportion of expenditure spent on foodstuffs and services rose whereas that on housing fell.

Table 4.6 shows the expenditure patterns of households with different compositions. In general, a single person or a couple is observed to spend a greater share of their total expenditure on housing and a smaller share on food, as against households with one or more children. Besides, with the addition of each child to a household, the percentage share of expenditure on food increased while the share on housing declined.

With reference to these findings, it is believed that the idea of the Engel model can be fitted well into the situation of Hong Kong. Household size, household composition and the type of housing in which the households are living are found to be critical factors in affecting the proportion of expenditure spent on foodstuffs and thus the following Engel model is extended to incorporate these effects.

Table 4.7 presents the sample (unweighted) means and standard deviations for expenditure and demographic variables. The full sample size is 4854. For the current analysis, 18 household records are excluded, leaving an effective sample size of 4836 in the calculation. The 18 observations are dropped mainly because the value on 'expenditure on rent and rates' is missing. Apart from that, the basic requirement that the food share should lie between zero and one is also checked for each household record. As a result, the statistical analysis shown in Table 4.7 is computed from 4836 observations.

Table 4.1: Average Bi-weekly Household Expenditure by Commodity Section and Detailed Expenditure Group

Section of commodities /services	Expenditure Group (HK\$, bi-weekly)							
	0 - below 1150		1150 - below 2310		2310 - below 3460		3460 - below 4620	
	\$	%	\$	%	\$	%	\$	%
Foodstuffs	393.66	49.98	848.28	47.53	1321.44	45.37	1643.70	40.79
Housing*	149.65	19.00	349.40	19.58	598.09	20.53	948.33	23.54
Fuel & Light	32.20	4.09	68.29	3.83	101.33	3.48	124.32	3.09
Alcoholic Drinks & Tobacco	48.77	6.19	62.85	3.52	59.76	2.05	68.84	1.71
Clothing & Footwear	13.89	1.76	74.53	4.18	131.08	4.50	232.11	5.76
Durable Goods	5.54	0.70	30.66	1.72	65.92	2.26	136.99	3.40
Miscellaneous Goods	41.16	5.23	94.46	5.29	181.88	6.24	259.75	6.45
Transport & Vehicles	56.11	7.12	123.33	6.91	197.58	6.78	259.91	6.45
Services	46.63	5.92	133.02	7.45	255.66	8.78	355.43	8.82
All Sections	787.60	100.00	1784.81	100.00	2912.73	100.00	4029.38	100.00

Table 4.1 (continued)

Section of commodities / services	Expenditure Group (HK\$, bi-weekly)							
	4620 - below 5770		5770 - below 6920		6920 - below 8080		8080 - below 10380	
	\$	%	\$	%	\$	%	\$	%
Foodstuffs	2001.42	38.74	2277.13	35.98	2507.13	33.55	2739.19	30.12
Housing*	1220.55	23.62	1562.05	24.68	19.05.51	25.46	2384.29	26.22
Fuel & Light	132.83	2.57	158.75	2.51	160.36	2.15	175.23	1.93
Alcoholic Drinks & Tobacco	62.21	1.20	69.26	1.09	106.34	1.42	86.14	0.95
Clothing & Footwear	356.94	6.91	487.42	7.70	645.38	8.64	834.64	9.18
Durable Goods	193.92	3.75	279.52	4.42	273.74	3.66	427.86	4.71
Miscellaneous Goods	358.52	6.94	421.70	6.66	525.86	7.04	694.73	7.64
Transport & Vehicles	352.64	6.83	409.49	6.47	505.02	6.76	715.66	7.87
Services	487.37	9.43	664.03	10.49	845.65	11.32	1035.97	11.39
All Sections	5166.39	100.00	6329.36	100.00	7471.98	100.00	9093.71	100.00

Table 4.1 (continued)

Section of commodities / services	Expenditure Group (HKS, bi-weekly)							
	10380 - below 12690		12690 - below 17310		17310 and over		All	
	\$	%	\$	%	\$	%	\$	%
Foodstuffs	3351.53	29.35	3633.00	25.04	3746.24	14.75	1795.89	34.21
Housing*	2919.78	25.56	4237.51	29.20	9264.27	36.49	1343.09	25.58
Fuel & Light	198.51	1.74	225.74	1.56	277.00	1.09	126.06	2.40
Alcoholic Drinks & Tobacco	75.05	0.66	90.88	0.63	164.71	0.65	71.03	1.35
Clothing & Footwear	1113.44	9.75	1620.40	11.17	2246.21	8.85	395.00	7.52
Durable Goods	545.05	4.77	554.79	3.82	1326.52	5.22	201.27	3.83
Miscellaneous Goods	824.42	7.22	979.61	6.75	1580.37	6.22	351.53	6.70
Transport & Vehicles	869.72	7.62	930.93	6.62	3338.46	13.15	398.98	7.60
Services	1523.51	13.34	2237.97	15.42	3447.44	13.58	567.49	10.81
All Sections	11421.04	100.00	14510.83	100.00	25391.21	100.00	5250.32	100.00

*Under the definition of the expenditure on individual sections of commodities / services in the 1989/90 HES, expenditure on housing includes 4 components: rent, including rates; water; other housing charges; and materials for house maintenance.

Source: Report of the Household Expenditure Survey 1989/90, Census and Statistics Department.

Table 4.2: Engel Ratios by Detailed Expenditure Group

Expenditure group (HK\$ Bi-weekly)	Ratio A	Ratio B	Ratio C
0 - Below 1150	0.50	0.69	0.61
1150 - Below 2310	0.48	0.67	0.58
2310 - Below 3460	0.45	0.66	0.56
3460 - Below 4620	0.41	0.64	0.52
4620 - Below 5770	0.39	0.62	0.50
5770 - Below 6920	0.36	0.61	0.47
6920 - Below 8080	0.34	0.59	0.44
8080 - Below 10380	0.30	0.56	0.40
10380 - Below 12690	0.29	0.55	0.37
12690 - Below 17310	0.25	0.54	0.34
17310 & Over	0.15	0.51	0.21
All	0.34	0.60	0.45

Ratio A = Expenditure on food / Total expenditure

Ratio B = (Expenditure on food and housing*) / Total expenditure

Ratio C = Expenditure on food / (Total expenditure - expenditure on rent and rates)

*Under the definition of the expenditure on individual sections of commodities / services in the 1989/90 HES, expenditure on housing includes 4 components: rent, including rates; water; other housing charges; and materials for house maintenance.

Source: Report of the Household Expenditure Survey 1989/90, Census and Statistics Department.

**Table 4.3: Average Bi-weekly Household Expenditure by Commodity Section and Broad Expenditure Group
Type of Housing - All Public Housing**

Section of Commodities / Services	Expenditure Group (HK\$ Bi-weekly)					
	0 - below 1150	1150 - below 4620	4620 - below 8080	8080 - below 17310	17310 & over	All
Foodstuffs	397.39 (50.53)	1439.52 (50.61)	2615.14 (45.19)	3865.40 (30.08)	*	1718.47 (47.00)
Housing**	132.78 (16.88)	268.70 (9.45)	376.94 (6.51)	690.23 (6.80)	*	306.38 (8.38)
Fuel & Light	39.65 (5.04)	105.91 (3.72)	141.26 (2.44)	159.36 (1.57)	*	111.02 (3.04)
Alcoholic Drinks and Tobacco	49.99 (6.36)	70.56 (2.48)	107.04 (1.85)	165.69 (1.63)	*	81.38 (2.23)
Clothing & Footwear	9.21 (1.17)	160.28 (5.64)	568.05 (9.82)	1316.10 (12.96)	*	291.06 (7.96)
Durable Goods	8.08 (1.03)	90.07 (3.17)	311.25 (5.38)	546.01 (5.38)	*	152.21 (4.16)
Miscellaneous Goods	39.36 (5.01)	203.72 (7.16)	495.62 (8.56)	1016.14 (10.01)	*	291.00 (7.96)
Transport & Vehicles	61.25 (7.79)	221.72 (7.80)	481.58 (8.32)	917.13 (9.03)	*	296.80 (8.12)
Services	48.73 (6.20)	283.84 (9.98)	689.70 (11.92)	1475.41 (14.53)	*	407.62 (11.15)
All Sections	786.44 (100.00)	2844.33 (100.00)	5786.59 (100.00)	10151.46 (100.00)	*	3655.94 (100.00)

The definitions of different types of housing are given in the Appendix III.

Proportions of expenditure spent on different commodities / services are given in parentheses.

*Data suppressed and not recommended for use due to small sample size.

**Under the definition of the expenditure on individual sections of commodities / services in the 1989/90 HES, expenditure on housing includes 4 components: rent, including rates; water; other housing charges; and materials for house maintenance.

Source: Report of the Household Expenditure Survey 1989/90, Census and Statistics Department.

**Table 4.4: Average Bi-weekly Household Expenditure by Commodity Section and Broad Expenditure Group
Type of Housing - All Private Housing**

Section of Commodities / Services	Expenditure Group (HK\$ Bi-weekly)					
	0 - below 1150	1150 - below 4620	4620 - below 8080	8080 - below 17310	17310 & over	All
Foodstuffs	386.87 (48.99)	1140.47 (35.85)	2038.61 (33.13)	2894.60 (26.83)	3722.73 (14.60)	1852.09 (28.90)
Housing**	180.36 (22.84)	1126.40 (35.40)	1916.18 (31.14)	3300.88 (30.59)	9410.75 (36.91)	2095.62 (32.71)
Fuel & Light	18.62 (2.36)	93.61 (2.94)	149.36 (2.43)	196.67 (1.82)	279.45 (1.10)	136.98 (2.14)
Alcoholic Drinks and Tobacco	46.53 (5.89)	55.15 (1.73)	61.62 (1.00)	68.06 (0.63)	157.19 (0.62)	63.51 (0.99)
Clothing & Footwear	22.40 (2.84)	138.59 (4.36)	421.45 (6.85)	997.90 (9.25)	2189.34 (8.59)	470.44 (7.34)
Durable Goods	0.91 (0.12)	69.41 (2.18)	209.70 (3.41)	467.07 (4.33)	1301.20 (5.10)	236.88 (3.70)
Miscellaneous Goods	44.44 (5.63)	162.44 (5.11)	384.84 (6.25)	732.79 (6.79)	1572.58 (6.17)	395.47 (6.17)
Transport & Vehicles	46.76 (5.92)	171.22 (5.38)	374.70 (6.09)	768.98 (7.13)	3387.22 (13.29)	473.16 (7.38)
Services	42.81 (5.42)	224.20 (7.05)	597.34 (9.71)	1362.94 (12.63)	3474.97 (13.63)	683.50 (10.67)
All Sections	789.71 (100.00)	3181.49 (100.00)	6153.81 (100.00)	10789.89 (100.00)	25495.44 (100.00)	6407.65 (100.00)

The definitions of different types of housing are given in the Appendix III.

Proportions of expenditure spent on different commodities / services are given in parentheses.

**Under the definition of the expenditure on individual sections of commodities / services in the 1989/90 HES, expenditure on housing includes 4 components: rent, including rates; water; other housing charges; and materials for house maintenance.

Source: Report of the Household Expenditure Survey 1989/90, Census and Statistics Department.

Table 4.5: Average Bi-weekly (per capita) Expenditure on Foodstuffs and Housing by Household Size

Household Size	Group of Commodity / Services					
	Foodstuffs			Housing*		
	Average bi-weekly expenditure (\$)	Average bi-weekly per capita expenditure (\$)	%	Average bi-weekly expenditure (\$)	Average bi-weekly per capita expenditure (\$)	%
1 person	757	757	26	991	991	34
2 persons	1378	689	31	1305	652	30
3 persons	1673	558	34	1364	455	27
4 persons	1896	474	34	1412	353	26
5 persons	2167	433	36	1367	273	23
6 persons	2383	397	37	1456	243	22
7 persons	3024	432	39	1388	198	18
8 persons or more	3150	-	42	1508	-	20

*Under the definition of the expenditure on individual sections of commodities / services in the 1989/90 HES, expenditure on housing includes 4 components: rent, including rates; water; other housing charges; and materials for house maintenance.

Source: *Report of the Household Expenditure Survey 1989/90*, Census and Statistics Department.

Table 4.6: Average Bi-weekly Household Expenditure on Foodstuffs and Housing by Household Composition

Household Composition	Foodstuffs		Housing*	
	HKS (bi-weekly)	%	HKS (bi-weekly)	%
Head and Spouse	1473.48	30.45	1483.19	30.65
Head and Child/Children	1619.48	38.20	887.58	20.94
Head, Spouse and 1 Child	1637.89	33.62	1303.34	26.75
Head, Spouse and 2 Children	1865.23	36.28	1225.07	23.83
Head, Spouse and 3 or more Children	2273.61	41.12	945.27	17.10
Head, Spouse, Child/Children and Others	2360.98	30.05	2283.70	29.06
Single Person	757.11	26.25	991.00	34.35
Others	1821.66	33.63	1477.90	27.29

*Under the definition of the expenditure on individual sections of commodities / services in the 1989/90 HES, expenditure on housing includes 4 components: rent, including rates; water; other housing charges; and materials for house maintenance.

Source: *Report of the Household Expenditure Survey 1989/90*, Census and Statistics Department.

Table 4.7: Variable Means and Standard Deviations

Variable Name	Mean	Std Deviation	Minimum	Maximum
Household size	3.68	1.61	1	13
No. of children	1.00	1.10	0	9
No. of adults	2.68	1.27	0	9
Total expenditure (HK\$ bi-weekly)	5128.73	4345.75	202.60	75601.00
Expenditure on food (HK\$ bi-weekly)	1788.78	1119.74	0.00	13962.50
Expenditure on rent and rates (HK\$ bi-weekly)	1150.86	1815.76	4.1	32970.00
Food Ratio*	0.51	0.16	0.00	0.96

*Food Ratio = Annual food expenditure / (Annual total expenditure - Annual expenditure on rents and rates)

Source: Computed from raw data of the *Household Expenditure Survey 1989/90* provided by the Census and Statistics Department.

CHAPTER FIVE THE EXTENT OF POVERTY IN HONG KONG

5.1 SPECIFICATION OF THE MODEL

According to the Engel model, food share is considered to be a good indicator of the material standard of living of the household. This suggests that the larger the food ratio, the lower is the family welfare. Yet households living in private housing, when compared with those living in the public housing estates in the same expenditure group, mostly spend a smaller proportion of their expenditure on food because they have a greater burden on housing expenditures⁸. As a result, one cannot conclude that the households living in the private housing are better off due to a lower food ratio. In order to capture this effect on the food ratio (so that the idea of Engel model can still be applied, i.e. a larger food ratio indicates a lower household welfare and vice versa), the amount of the total expenditure net of the expenditure on rent and rates (denoted \tilde{Y}) is suggested to be employed in the fitting of the Engel curve for food. By using this variable, one can focus on the out-of-pocket expenditures⁹ excluding rent and rates and find out how much the households allocate their expenditures on food.

Conceptually, there is some modification to the general model in the demand analysis. In general, a utility-maximizing household h maximizes (3.1) subject to the price vector P and the total outlay Y^h . However, in the case of Hong Kong, housing is not a choice variable to most of the households, especially in the short run. One can specify the utility function as follows,

⁸In the current model, expenditure on housing refers to the expenditure on rent and rates.

⁹As stated in the Chapter 4, in the 1989/90 HES, for employer-subsidized, owner-occupied and rent-free accommodations where actual rent is not paid out in full, the amount of rent is imputed so that the corresponding total expenditures of these households are not fully out-of-pocket expenditures. Thus, if excluding the component of expenditure on rent and rates, the total expenditures remained are all actual payments made except expenditure on rent and rates for any household type.

$$(5.1) \quad U^h = u(\xi(X_1, X_2, \dots, X_m), X_0)$$

where $X_1, X_2, \dots, X_m, X_0$ constitute the consumption vector in (3.1). Since housing consumption, X_0 , is fixed and $u(\cdot, \cdot)$ is assumed strictly increasing in $\xi(X_1, X_2, \dots, X_m)$, instead of maximizing (5.1), one can equivalently maximize $\xi(X_1, X_2, \dots, X_m)$, subject to, of course, the following budget constraint

$$(5.2) \quad \begin{aligned} \sum_{i=1}^m P_i X_i + P_0 X_0 &\leq Y^h \\ \Leftrightarrow \sum_{i=1}^m P_i X_i &\leq Y^h - P_0 X_0 = \tilde{Y}^h \end{aligned}$$

where P_0 is the price of housing and \tilde{Y}^h is the amount of the total expenditure net of the expenditure on rent and rates, which is the variable suggested to be used in fitting the Engel curve in Hong Kong. With this modification, one can estimate the Engel curve and determine the poverty lines of different household types in the same way as the general model discussed in Chapter three. The poverty lines of household h is given by the following function

$$(5.3) \quad \tilde{Y}^{h*} = \tau(\theta, m(A^h))$$

Following the work of Deaton (1981) and Deaton and Muellbauer (1986), an extension of the Working-Leser equation that incorporates a vector of household attributes is chosen to estimate the Engel curve for food:

$$(5.4) \quad w_f^h = \beta_0 + \beta_1 \ln\left(\frac{\tilde{Y}^h}{n^h}\right) + \beta_2 n_c^h + \beta_3 n_a^h + \varepsilon$$

where w_f^h is the food share (the ratio of annual food expenditure to annual total expenditures net of expenditure on rent and rates) of household h

\tilde{Y}^h is the total expenditures (net of expenditure on rent and rates) of household h

n^h is the total number of persons in household h

n_c^h is the number of children (aged 0-17) in household h

n_a^h is the number of adults (age ≥ 18) in household h

$\beta_0, \beta_1, \beta_2, \beta_3$ are parameters and ε is a random error.

For the detailed definition of the variables used, refer to Appendix III.

The Engel curve (5.4) is in the log-linear form. It is based on the empirical evidences observed by Engel that (a) the food share varies inversely with total expenditure and (b) the food share varies directly with the household size. The amount of the total expenditure net of rent and rates is employed to capture the effect of type of housing on consumption behavior. Demographic variables, as represented by household size and household composition, are also crucial explanatory variables in the Engel curve analysis. In (5.4), the logarithm of per capita household expenditure, instead of total household expenditure, is put into the regression for making some allowance for the household size. The separation of number of children and adults as two explanatory variables is used to indicate the different needs for food resulted from different household compositions. Based on this reasoning, it is expected that all coefficients in (5.4) should be negative implying that food share decreases with per capita expenditure and there exists economies of scale in consumption.

With an estimated Engel curve for food, one can calculate the Engel estimates of equivalence scales. In essence, one looks at how aggregate household consumption of foodstuffs during some survey periods tend to vary with household size and composition over the cross-section of households surveyed. By fixing some reference welfare level (equivalently a specific food share, w_f^r), one can use the regression

equation to calculate the budget \tilde{Y}^h that would cause household h to have the same food share as a reference household (two adults and two children) with budget \tilde{Y}^r . The difference $(\tilde{Y}^h - \tilde{Y}^r)$ is the additional expenditure required for household h to reach the same food share. That is, it represents the difference in consumption which would be needed to exactly compensate household h to restore the food share for its different demographic characteristics.¹⁰ In comparing household h with the reference household r , it is assumed that both households enjoy the same material welfare if they spend the same proportion of their expenditure on food. Hence, comparison of their aggregate household consumption at the same food share will yield an index of the cost of maintaining the larger or smaller family relative to the reference household and so the Engel estimates of equivalence scale $E^h = m(A^h)$ is the ratio $\tilde{Y}^h / \tilde{Y}^r$.

For the specific Engel curve given by (5.4), \tilde{Y}^h is the expenditure required by household h to reach the same level of well-being as the reference household r , with \tilde{Y}^r , n_c^r and n_a^r . If the reference welfare level is chosen to be the subsistence level (i.e. $w_f^r = \theta$), \tilde{Y}^r and \tilde{Y}^h represent the poverty lines of the reference household and household h respectively.

When the food shares are equal, \tilde{Y}^h is defined by

$$(5.5) \quad \beta_0 + \beta_1 \ln\left(\frac{\tilde{Y}^h}{n^h}\right) + \beta_2 n_c^h + \beta_3 n_a^h = \beta_0 + \beta_1 \ln\left(\frac{\tilde{Y}^r}{n^r}\right) + \beta_2 n_c^r + \beta_3 n_a^r$$

Rearranging and taking antilogs we have

$$(5.6) \quad E^h = m(A^h) = \frac{\tilde{Y}^h}{\tilde{Y}^r} = \frac{n^h}{n^r} \exp\left[\left(\frac{\beta_2}{\beta_1}\right)(n_c^r - n_c^h) + \left(\frac{\beta_3}{\beta_1}\right)(n_a^r - n_a^h)\right]$$

¹⁰Equivalence scales generally do not take into account the fact the children themselves make a contribution to the parents' well-being. Pollak and Wales (1979) pointed to the importance of this assumption, arguing that in a 'perfect contraceptive society' a revealed preference argument would lead to the conclusion that people choose to have children so as to maximise their own total welfare. Hence there is no need for compensation for the extra costs of children, because the fact that they are chosen implies that they yield benefits also.

which is expressed in terms of $n_c^h, n_a^h, n_c^r, n_a^r, \beta_1, \beta_2, \beta_3$.

After estimating the parameters of (5.4) by OLS, a set of Engel estimates of equivalence scales can be obtained. The expenditure level of the reference household containing 2 adults and 2 children with food share (defined as the ratio of annual food expenditure to annual total expenditures net of expenditure on housing) 0.6 can then be calculated from the following equation:

$$(5.7) \quad 0.6 = \hat{\beta}_0 + \hat{\beta}_1 \ln\left(\frac{\tilde{Y}^r}{n^r}\right) + \hat{\beta}_2 n_c^r + \hat{\beta}_3 n_a^r$$

The use of 0.6 as the reference welfare level can be traced back to the work of Friedman (1965). In Hong Kong, Chow (1983) also suggested that if food consumption is used as the sole indicator, the poverty line would have to be drawn somewhere at 60 percent of the total household expenditure. Moreover, from the actual figures in the 1989/90 HES, if the expenditure on housing is excluded, the proportion of expenditure spent on food is around 0.6 for the lower expenditure groups (see Ratio C in Table 4.2). Therefore, 0.6 is chosen to be the subsistence welfare level.

\tilde{Y}^r obtained from (5.7) represents the poverty line for the reference household. With the help of the estimates of Engel equivalence scales, the expenditure levels corresponding to the subsistence welfare level 0.6 for other households with different demographic characteristics can be obtained from (5.6). The amount yielded (\tilde{Y}^h) represents the poverty line of household h . By comparing the actual expenditure level (total expenditures net of expenditure on housing) recorded in the survey to the corresponding \tilde{Y}^h of that particular household, if the actual expenditure (total

expenditures net of expenditure on housing) is smaller than the corresponding \tilde{Y}^h , the household is classified as poor.

5.2 EMPIRICAL RESULTS

Based on the expenditure data from the 1989/90 HES, the parameters of equation (5.4) as estimated by OLS are reported in the following regression where the number of children and adults characterize the demographics of the households:

$$(5.8) \quad \hat{w}_f^h = 1.926 - 0.136 \ln\left(\frac{\tilde{Y}^h}{n^h}\right) - 0.024n_c^h - 0.005n_a^h$$

$$(57.909)(-43.294) \quad (-12.937) \quad (-2.930)$$

$$\bar{R}^2 = 0.2795$$

The t-ratios are given in parentheses. The t statistics indicate that all coefficients are significantly different from zero at one percent level.¹¹

All estimated parameters are negative as a priori reasoning would suggest. The significant negative coefficients collectively imply that the crude head count embodied in per capita expenditure overstates the costs of maintaining the family and thus the negative coefficients do not only confirm what the Engel's law predicts but also indicate the importance of economies of scale in household consumption. It can be verified by equation (5.6). n^h/n^r is the crude measure of costs obtained by taking ratios of head counts. Since β_1 , β_2 and β_3 are all negative, the ratio β_2/β_1 and β_3/β_1 are both positive. For households with at least 2 adults and 2 children, the second term is smaller than unity and the equivalence scale computed is less than the head count ratio. Besides, the children coefficient is absolutely larger than that of adults

¹¹More sophisticated testing on the model cannot be performed due to the limited access to the raw dataset from the Census and Statistics Department.

suggesting that the children have lower needs than the adults or there is a larger economies of scale in consumption of children goods¹². This finding is also consistent with the results in most empirical studies in which the cost of one child is found to be a fraction of that of an adult (e.g. Deaton and Muellbauer, 1986; Bosch-Domènech, 1991).

The last column of Table 5.1 reports the calculated equivalence scales using Engel curve estimates obtained by (5.8) with the reference household being two adults and two children. From Table 5.1, one finds that a household with three adults and two children needs to spend 21% more than a reference household. Hence, the cost of this additional adult is 21% of that for maintaining the reference household. The additional cost of adding more and more adults to the household is increasing at a diminishing rate indicating that there is economies of scale in the cost of maintaining the family. In a similar fashion, the cost of a household with 2 adults is only 71% of that of the reference household. The addition of one child leads to an increase in the cost of maintaining the family by 25%. Yet the costs of the second and the third child are much smaller indicating that there is also economies of scale in consumption of children goods.

The poverty line of the reference household can be calculated from (5.7) by using the parameters estimated from (5.8). With a set of Engel estimates of equivalence scales and 0.6 being taken as the subsistence welfare level, the corresponding poverty lines for other household types can also be obtained by (5.6) and these are reported in the third column of Table 5.2. It appeared that the poverty threshold was \$43,639 per year or \$3,637 per month in 1989/90 for a reference household with two adults and two children. In other words, those households (with 2

¹²This can be verified by taking the derivatives of E^h with respect to n_c^h and n_a^h . Since the children coefficient is absolutely larger than that of adults, we have $\frac{\partial E^h}{\partial n_a^h} > \frac{\partial E^h}{\partial n_c^h}$.

adults and 2 children) having less than this amount¹³ to spend on non-housing consumption are classified to be poor.

Employing the budget approach¹⁴ proposed by Chau (1979, 1980) on the 1989/90 HES data, households with four members having less than \$36,800 per year or \$3,067 per month to consume are identified to be poor. The poverty lines calculated from the budget approach are presented in the second column of Table 5.3. Since the budget approach only defines the poverty lines by household size, the poverty lines reported in Table 5.3 are different from those in Table 5.2. In general, the more children the household contains, the poverty line calculated from (5.6) may be lower. However, if the household contains mainly adults, the budget approach gives a lower poverty line for that household type. The fourth column of Table 5.3 gives the sum of basic allowance and long term supplement¹⁵ in the Public Assistance Scheme by household size. If these amounts are used as another proxy of the poverty lines in Hong Kong, it appears that these amounts are too low when compared with those obtained from the current or budget approach. It seems that the monthly Public Assistance payable is not sufficient enough to meet both the basic (such as food, clothing, etc) and special (such as travelling, schooling expenses, etc) needs for different family sizes.

Upon having identified the poor, the next step would be to aggregate the poor into a poverty index within society. The present analysis indicates that there were 574 households in the sample living in poverty in 1990. In terms of the consumption-based head-count ratio, the poverty rate of Hong Kong in 1990 is 11.87%. Since the raw data of the 1979/80 and 1984/85 has been scrapped by the Census and Statistics

¹³This amount does not include the expenditure needed to be spent on rent and rates.

¹⁴The basic allowance from the Public Assistance Scheme serves as the estimate of the cost of food. Then an Engel coefficient is used to convert the food expenditure into a minimum budget. In deriving the poverty line in 1974, an Engel coefficient of 0.6 was used.

¹⁵The long term supplement is given to those who have been receiving Public Assistance continuously for 12 months in order to help replace household and durable goods.

Department, we cannot compute the corresponding poverty rates for other years in order to investigate whether the poverty rate has declined owing to the significant increase in the per capita GDP from the 1970s to the 1990s.

It is commonly argued that the head-count ratio is insensitive to the depth of poverty. Another measure of poverty, the poverty gap ratio, is also commonly used. In the current study, the poverty gap ratio is 2.90%. Generally speaking, both the head-count ratio and the poverty gap ratio are not too high. Table 5.4 shows the head-count indexes in different countries. It appeared that the poverty rate in Hong Kong is rather low when compared with other developing Asian countries but it is still a bit higher than that in the developed countries such as the United States.

Nevertheless, it should be noted that the poverty indexes computed above do not include the households receiving public assistance. According to the annual departmental report of the Social Welfare Department, there were 66,288 public assistance households in the financial year 1989/90 which was about 4 percent of the total number of households in 1990. When taking this figure into consideration, the poverty rate (head-count ratio) in Hong Kong may increase to about 16% in 1990.

Table 5.1: Equivalence Scales of Different Household Compositions

No. of children	No. of adults	Equivalence scale
0	1	0.367
0	2	0.710
0	3	1.031
0	4	1.329
0	5	1.607
0	6	1.866
0	7	2.106
1	0	0.318
1	1	0.616
1	2	0.894
1	3	1.153
1	4	1.394
1	5	1.619
1	6	1.827
2	1	0.775
2	2	1.000
2	3	1.209
2	4	1.404
2	5	1.584
2	6	1.752
3	1	0.867
3	2	1.049
3	3	1.218
3	4	1.374
3	5	1.519
4	1	0.910
4	2	1.056
4	3	1.192
4	4	1.318
5	1	0.916
5	2	1.034

Note: The household containing two adults and two children is taken as the reference household.

Table 5.2: Poverty Lines of Different Household Compositions

No. of children	No. of adults	Poverty Line ($\theta = 0.6$) (HK\$ yearly)
0	1	16018.60
0	2	30992.69
0	3	44973.36
0	4	58009.46
0	5	70147.73
0	6	81432.85
0	7	91907.54
1	0	13893.50
1	1	26881.06
1	2	39006.98
1	3	50313.65
1	4	60841.60
1	5	70629.58
1	6	79714.66
2	1	33832.13
2	2	43638.81
2	3	52770.07
2	4	61259.53
2	5	69139.34
2	6	76440.22
3	1	37849.48
3	2	45769.35
3	3	53132.56
3	4	59966.99
3	5	66299.30
4	1	39697.37
4	2	46083.74
4	3	52011.49
4	4	57503.73
5	1	39970.06
5	2	45111.40

Note: The poverty lines calculated do not include the amount needed to be spent on rent and rates.

Table 5.3: Poverty Lines Calculated from the Budget Approach and Public Assistance

Household Size	Budget Approach		Public Assistance	
	HK\$ yearly ¹	HK\$ monthly	HK\$ yearly ²	HK\$ monthly
1	12400	1033	8230	686
2	18600	1550	12740	1062
3	27700	2308	18200	1517
4	36800	3067	23660	1972
5	45700	3808	29790	2483
6	55000	4583	35130	2928
7	63500	5292	40470	3373
8	72400	6033	45810	3818

¹Poverty line = The sum of basic allowance / 0.6 * 12

²Poverty line = The sum of basic allowance * 12 + Long term supplement

The long term supplement is given to those who have been continuously for 12 months, in order to help replace household and durable goods.

The rates of basic allowance and long term supplement in 1989 are shown in Appendix I.

For the purpose of comparison, the poverty lines calculated by two methods do not include the amount needed to be spent on rent and rates.

Table 5.4: Head-Count Indexes in Different Countries

Year	Country	Head-Count Index (%)
1989	United States	10 *
1990	Hong Kong	12 **
1990	Indonesia	15
1990	Malaysia	15
1990	Thailand	22
late 80s	India	25
1991	Philippines	41

*Figure obtained from: Slesnick, D. T. (1993), "Gaining Ground: Poverty in the Postwar United States", Journal of Political Economy, 101, p.29.

**Figure computed from the micro-data of the 1989/90 HES.

Other figures obtained from: The World Bank (1993), Trends in Developing Economies 1993, Washington, D. C.: The World Bank.

CHAPTER SIX THE ABSOLUTE POVERTY PROFILE IN HONG KONG

In the urge to eradicate poverty, one needs first to know a lot about the poor. Many of the previous studies on poverty have sought to find out the characteristics of the poor. (e.g. Anand, 1983; Buhmann et al., 1988; Fields, 1980; McGregor and Borooah, 1992; Orshansky, 1965b; Phipps, 1991; Quibria, 1991; Shari, 1979) Here below are some generalizations on the poverty profiles from the previous studies.

Among the demographic variables, poverty is positively correlated with family size and inversely with the number of income earners in a household. Poor households were larger, on the average, than the families that were better off. Mainly, they include fewer adults or income-earners but contain more children or other economically dependent members. Therefore the incidence of poverty is greater among families in which the head is currently unemployed or works in part-time or insecure jobs. Taking into account the dynamics of poverty, many studies show that higher incidence of poverty is found among families headed by prime-age workers or among the old. Moreover a great majority of the poor households are those whose head has received no or little schooling or headed by a female as the mobility chances of women and those with little educational level are limited by the lack of opportunities in some high-pay jobs such as professional and managerial occupations. In the agricultural societies, poverty is overwhelmingly a rural phenomenon and thus higher incidence of poverty is among farmers or those who have disproportionately little or no land.

Hong Kong is a small territory with a negligible agricultural sector and so location and land ownership are not some vital variables to identify the poor from the whole population. We shall now focus on examining the demographic, socio-economic characteristics (especially those of the household head) between households

with low expenditure and other households to have a look at the absolute poverty profile in Hong Kong.

6.1 HOUSEHOLD SIZE AND POVERTY

In contrast to the findings of other studies, household size is not an important variable in determining the incidence of poverty in Hong Kong. It can be seen from Table 6.1 that the incidence of poverty does not unequivocally increase with household size. It can be explained by the fact that as time goes by, the average size of household decreases in Hong Kong. From the 1989/90 household expenditure data, the average household size is only 3.68. Moreover, the larger families tend to contain a larger number of adults rather than children and hence a lower dependency rate is associated with the increase in household size.

The number of earners is closely correlated with the size of household. The relationship between poverty and the number of earners is shown in Table 6.2. The results reveal that the great majority of poor households (85%) have two or fewer than two earners and as expected, the incidence of poverty decreases significantly with the number of earners. Moreover, for those households without any earners, 36% of them are identified to be poor. With the increase of an additional earner, the average household size goes up but the dependency rate falls with each increase in the number of earners. Nevertheless, a larger family may imply a larger number of children or adults. In the case of Hong Kong, more than 70% of households are of size equal to or less than four. For those having more than four members, they mainly contain a larger number of adults which also implies a larger number of earners. As a result, the incidence of poverty does not increase with the household size as usually expected.

6.2 HOUSEHOLD CHARACTERISTICS AND POVERTY

Table 6.3 shows the incidence of poverty according to various demographic and socio-economic characteristics of the household head. The differentials according to the age of the household head are suggestive of the life cycle effect. The proportion of poor households is found to increase significantly with the age of the household head and nearly one half of poor households (42.2%) have heads over 60 years of age.

The proportion of poor households of each age group computed is affected by the number of households in that category in the sample. For instance, the households with heads aged 20 or below only take up 0.7% of the sample and thus it is not surprising that the proportion of poor household is only 0.5%. Despite this, it does not mean that these households are less vulnerable to poverty than others. As a result, the poverty rates of different age groups are calculated and presented in the last column of Table 6.3. These figures reveal the fact that poverty varies over the life course of the family which can be indicated by the age of the household head. A higher poverty rate among households headed by a prime-age person might be due to lower earnings at the prime working age and fewer number of earners in this particular age group. As the family head enters middle age, the earning power is higher and so the poverty rate declines. However, it rises again in the later years during the periods of childbearing in the family. After the birth of the children, the children constituted a demand upon family resources, while contributing nothing. This situation changes when the children are old enough to join the labor market. Nevertheless, if the children leave the household after marriage and the household head retires from the labor market, the likelihood of poverty increases again. These findings are consistent with the activity status data: 22.8% of the households headed by a retired person are living in poverty.

The earning power is highly correlated with the educational attainment in Hong Kong. Therefore, poverty is clearly associated with education. The incidence of

poverty declines with an increase in the educational level attained by the household head. Of the poor, over 70% have received no more than six years of formal education. Furthermore, the poverty rates decrease continuously with higher educational level attained by the household head.

An examination of the incidence of poverty according to the industries in which the household heads are employed shows that this variable does not seem to make an appreciable difference in the frequency of poverty. In general, there does not exist any industry with the poverty rates significantly higher or lower than the others. The poverty rates of the manufacturing industries and the wholesale and retail trade are only a little bit higher than the other industries. In contrast, the financing, insurance, business services sector has a relatively lower poverty rate.

Compared with the industry in which the household head is employed, occupation is a far more useful discriminator of a household's economic status. The variation in poverty rates among different occupations is much larger. The majority of the poor are found in the lower-pay categories: services workers (e.g. housekeepers, waiters), plant and machinery operators and assemblers and elementary occupations (e.g. helpers and cleaners in offices, building caretakers and window cleaners). The poverty rates among these categories are about four times higher than those among the administrators and professionals. The workers employed in the occupations with higher poverty rates are mostly unskilled labor and therefore the earning capacity of these workers is lower. Furthermore, the occupation in which the household head works is associated with the educational level he / she has attained. For those services workers or the elementary laborers, their educational level is usually much lower than that of the administrators and professionals.

As expected, the highest poverty rate is found among families with a female-head. Thus poverty appears to be associated with the absence of a male breadwinner.

6.3 *TYPE OF HOUSING AND POVERTY*

In any economy, housing is a vital aspect of general welfare. In the case of Hong Kong, the type of housing in which the household is living has a remarkable effect on the general consumption pattern. Facing the increasing demand for housing, the Hong Kong government reacted by enacting rent control ordinances on the one hand and by increased efforts in providing more public and low-cost housing on the other. As a result, the housing expenditures in Hong Kong do not adequately represent housing consumption as the government subsidises a lot on the public housing estates and so the rent for the public housing is significantly lower than the market rental price. Due to a heavy burden on housing, the private housing tenants can only allocate a relatively smaller proportion of their budget on foodstuffs.

In order to take this effect into consideration, the expenditure on housing is excluded in the model and the food share in the model is somewhat adjusted to be defined as the ratio of the expenditure spent on foodstuffs to the total expenditure net of expenditure on rent and rates. After excluding the expenditure on housing, the food share in general increases more for those households living in private housing. The results in Table 6.4 show that the proportion of the poor living in private housing is larger than that living in public housing. However, considering the poverty rates, higher poverty rates are mostly found within the public housing category especially those living in the converted blocks, Housing Authority Group B rental blocks and temporary housing areas. The Group B rental blocks are those buildings formerly managed by the Resettlement Department and most of the units are not self-contained. Although only about 10% of the total number of households were living in these non-self-contained or temporary housing areas, it is believed that the poor especially the chronic ones cluster together in these areas. Therefore, higher poverty rates are found within these housing categories.

In conclusion, the general picture of the absolute poverty profile in Hong Kong is similar to those of other countries. The current study also shows that the incidence of poverty is higher when the number of earners in the household is small and/or when the head of the household (a) is above 60 years of age, (b) has received no or little formal schooling, (c) is employed in the lower-pay occupation, (d) is a female. Nevertheless, since extended family is not common in Hong Kong and so higher incidence of poverty does not correlate with the increase in the household size in Hong Kong. Furthermore, the Hong Kong Government has put much effort in providing low-cost housing for the middle- and lower- income groups since the 70s. Thus one can expect those households living in the non-self-contained or temporary housing areas are most probably classified to be poor as they are either not eligible for applying for the public housing estates or they are waiting to be housed in these estates.

Table 6.1: Household Size and the Incidence of Poverty (percent)

Size of Households	Distribution of Households in the Entire Sample	Distribution of Poor Households¹	Proportion of Poor Households²
1	9.4	15.5	19.6
2	15.3	18.6	14.5
3	19.9	20.2	12.1
4	27.2	20.4	8.9
5	16.3	13.4	9.8
6	7.9	7.8	11.8
7	2.6	2.3	10.2
8	1.0	1.4	16.3
9	0.3	0.2	6.7
10 and over	0.2	0.2	11.1
	100.0	100.0	

¹This column shows the proportion of poor households in different categories to the total number of poor households found in the sample.

²This column shows the proportion of poor households in different household size categories.

Source: Computed from raw data of the *Household Expenditure Survey 1989/90* provided by the Census and Statistics Department.

Table 6.2: Number of Earners and the Incidence of Poverty (percent)

Number of Earners	Distribution of		
	Households in the Entire Sample	Distribution of Poor Households ¹	Proportion of Poor Households ²
0	5.9	17.9	36.4
1	40.4	40.4	11.9
2	35.1	27.0	9.1
3	11.4	9.6	10.0
4	5.0	3.5	8.3
5	1.7	1.0	7.4
6	0.5	0.3	9.1
7	0.1	0.2	25.0
	100.0	100.0	

¹This column shows the proportion of poor households in different categories to the total number of poor households found in the sample.

²This column shows the proportion of poor households in different categories by number of earners.

Source: Computed from raw data of the *Household Expenditure Survey 1989/90* provided by the Census and Statistics Department.

**Table 6.3: Characteristics of the Household Head and the Incidence of Poverty
(percent)**

Characteristics of the Household Head	Distribution of Households in the Entire Sample	Distribution of Poor Households¹	Proportion of Poor Households²
Age			
20 or below	0.7	0.5	8.3
21 - 30	12.0	8.7	8.6
31 - 40	29.5	17.2	6.9
41 - 50	19.8	14.5	8.7
51 - 60	18.1	16.9	11.1
61 - 70	13.4	23.7	21.0
71 or above	6.5	18.5	34.0
	100.0	100.0	
Activity Status			
Employer	5.6	2.1	4.4
Self-employed	5.3	5.4	12.2
Employee	60.9	46.2	9.0
Outworker	0.6	1.0	19.4
Unpaid family worker	0.0	0.0	0.0
Student worker	0.1	0.2	33.0
Unemployed	0.9	1.7	22.7
Person of independent means	0.1	0.3	50.0
Home-maker	14.7	19.7	15.9
Retired person	11.2	21.6	22.8
Full-time student	0.4	0.3	11.1
Other economically inactive persons	0.2	1.4	72.7
	100.0	100.0	

Table 6.3 (continued)

Characteristics of the Household Head	Distribution of Households in the Entire Sample	Distribution of Poor Households ¹	Proportion of Poor Households ²
Industry in which the Household Head Worked			
Agriculture, Fishing, Mining and Quarrying	0.2	0.0	0.0
All Manufacturing	19.5	20.4	12.4
Electricity, Gas and Water	0.7	0.3	6.1
Construction	7.1	4.5	7.6
Wholesale and Retail Trade and Restaurants and Hotels	15.7	14.6	11.1
Transport, Storage and Communication	9.6	4.0	5.0
Financing, Insurance, Real Estate and Business Services	5.7	1.4	2.9
Services	14.9	11.1	8.9
Not Applicable	26.7	43.6	19.3
	100.0	100.0	
Occupation			
Managers and Administrators	8.5	2.3	3.2
Professionals	3.3	0.5	1.9
Associate Professionals	8.6	3.3	4.6
Clerks	6.4	3.0	5.5
Service Workers and Shop and Market Sales Workers	9.2	8.5	11.0
Skilled Agricultural and Fishery Workers	0.1	0.0	0.0
Craft and Related Workers	14.3	9.9	8.3
Plant and Machine Operators and Assemblers	10.0	9.6	11.4
Elementary Occupations	12.8	19.5	18.1
Not Applicable	26.7	43.4	19.3
	100.0	100.0	

Table 6.3 (continued)

Characteristics of the Household Head	Distribution of Households in the Whole Sample	Distribution of Poor Households ¹	Proportion of Poor Households ²
Educational Attainment			
No Schooling / Kindergarten	12.4	25.6	24.5
Primary	35.2	44.8	15.1
Lower Secondary	16.3	14.5	10.5
Upper Secondary	22.9	11.0	5.7
Matriculation / Post Secondary	7.6	2.4	3.8
University or above	5.6	1.7	3.7
	100.0	100.0	
Sex			
Male	73.1	65.5	10.6
Female	26.9	34.5	15.2
	100.0	100.0	

The definitions of the variables are given in Appendix III.

¹This column shows the proportion of poor households in different categories to the total number of poor households found in the sample.

²This column shows the proportion of poor households in different categories by characteristics of the household head.

Source: Computed from raw data of the *Household Expenditure Survey 1989/90* provided by the Census and Statistics Department.

Table 6.4: Type of Housing and the Incidence of Poverty (percent)

Type of Housing	Distribution		
	Distribution of Households in the Entire Sample	Distribution of Poor Households ¹	Proportion of Poor Households ²
Public and Aided Housing	44.9	59.2	15.6
Former Government Low Cost Housing Blocks	4.1	5.2	15.2
Former Housing Authority Blocks	2.9	2.4	10.1
New Housing Authority Blocks	25.4	28.4	13.3
Converted Blocks	0.6	1.6	33.3
Housing Authority Group B Rental Blocks	7.6	16.4	25.5
Housing Authority Temporary Housing Areas and Cottage Areas	2.0	3.3	19.2
Housing Society Rental Blocks	2.4	1.9	9.6
	100.0	100.0	
Private Housing	55.1	40.8	8.8
Private Housing Blocks - Self-contained	43.9	35.4	9.6
Private Housing Blocks - non-self- contained	0.0	0.0	0.0
HOS/ PSPS / MTH	6.4	1.4	2.6
Housing Society Urban Improvement Scheme Estates	0.0	0.0	0.0
Modern Houses / Village Type / Simple Stone Structures	1.1	0.2	1.9
Private Temporary Structures	1.7	2.8	19.0
Other Private Permanent Housing	1.8	1.0	6.7
	100.0	100.0	

The definitions of the variables are given in Appendix III.

¹This column shows the proportion of poor households in different categories to the total number of poor households found in the sample.

²This column shows the proportion of the number of poor households in different household type categories.

Source: Computed from raw data of the *Household Expenditure Survey 1989/90* provided by the Census and Statistics Department.

CHAPTER SEVEN CONCLUDING REMARKS AND RECOMMENDATIONS

In the 70s and the early 80s, there were two studies attempting to find out the poverty rates in Hong Kong. Nevertheless, their estimates were rather rough as they did not consider the household composition in affecting the well-being of the households. Chau's study (1979, 1980) was similar to the current analysis. The main departure was that he used the basic allowances of the public assistance scheme as the basis to estimate the cost of food while in the current analysis, the consumption patterns of general public (while excluding those receiving public assistance) from different expenditure groups are used to determine the Engel function in Hong Kong and from which the poverty lines of different household types are determined. From the aggregate data released by the Census and Statistics Department, the demographic variables such as household size, household composition and the type of housing in which the household is living have a substantial effect on the proportion of budget spent on foodstuffs. Especially in the case of Hong Kong, the government provides a lot of low-cost housing estates for the general public. As a result, for those households living in the private housing, they have a relatively much greater burden on housing and the proportion of budget spent on foodstuffs is relatively lower than their counterparts living in public housing estates. Therefore, besides incorporating the household size and household composition in the same way as the previous studies (Deaton, 1981; Deaton and Muellbauer, 1986), the proposed model in the current analysis eliminates the effect of the type of housing on the consumption pattern by concentrating on looking into how the households allocate their budget on foodstuffs if the expenditure on housing is excluded.

The empirical results show that both the household size and household composition have a significant effect on the Engel function in Hong Kong. With the

subsistence welfare level, and hence the critical food ratio, in the model is chosen to be 60 percent, the poverty line derived for a reference household (two adults and two children) in 1990 was \$3,637 per month which is much higher than the monthly amount received from the public assistance.

In planning the social policy in alleviating the problem of poverty, one needs first to know who are the poor. In the current analysis, the general picture of the absolute poverty profile is mainly consistent with the findings in the previous studies. Yet some interesting results are found to be quite different from those as usually expected. In Hong Kong, higher incidence of poverty does not correlate with larger household size. It can be explained partly by the fact that the fertility rate of Hong Kong drops continuously since the 80s and so a larger family size mainly indicates a larger number of adults in the family. In the empirical research on poverty in other countries, besides deriving the poverty line or equivalence scales, they mainly focus on investigating the cost of children. The poverty on children attracts much attention especially in the under-developed countries. However, in the ageing society as Hong Kong, the older one are those who are more vulnerable to poverty and so the poverty on the old should attract more attention in Hong Kong.

The head-count poverty ratio in Hong Kong in 1990 was found to be 11.87%. This figure was rather low when compared with other developing Asian countries. Yet it was still higher than those in the Western developed societies. Furthermore, since the raw data of the 1979/80, 1985/85 HES were demolished by the Census and Statistical Department, we cannot determine the poverty lines and poverty rates in Hong Kong in the 80s in order to investigate whether the problem of poverty has improved with the city grew in prosperity. Although the society can maintain remarkable economic growth rates since the 70s, the problem of poverty should not be neglected. As a result, perhaps further studies can make use of the latest expenditure

data from the 1994/95 HES to work on the problem of poverty in order to find out the trend of poverty rates in Hong Kong in the 90s.

PUBLIC ASSISTANCE SCHEME IN 1989/90

The Basic Allowance

The basic scale rates for different sizes of family in addition to one person (1989/90)

	1989/90
For single person	\$20
For family	
First additional adult member	\$10
Third to fourth adult member	\$8
Each additional dependent child	\$5

Low Income Subsidy

	1989/90
For single person	\$10
For family	
With 2 adult members	\$10
With 3 or more members	\$15

The Low Income Subsidy is a grant to help low income households pay for their electricity bills. The amount of the subsidy is based on the household's income and the number of family members.

For other types and rates of public assistance, see the following pages.

Departmental Reports - Social Welfare Department

Sources: Hong Kong Annual Reports, Social Welfare Department, 1989-90; Government Gazette, 1989.

APPENDIX I

PUBLIC ASSISTANCE SCHEME IN 1989/90

The Basic Scale Rates

The basic scale rates for different sizes of families effective from 1.4.1989 are:

	<u>\$ per month</u>
For single person	620
For family	
First to second eligible member	465 each
Third to fourth eligible member	455 each
Each additional eligible member	445

Long Term Supplement

	<u>\$ per year</u>
For single person	790
For family	
with 2 - 4 members	1,580
with 5 or more members	2,370

The Long term supplement is given to those who have been receiving Public Assistance continuously for 12 months, in order to help replace household and durable goods.

For other types and rates of payment, please refer to the *Hong Kong Annual Departmental Report - Social Welfare Department 1989-90*.

Source: *Hong Kong Annual Departmental Report - Social Welfare Department 1989-90*, Government Printer HK.

APPENDIX II

STRATIFICATION USED IN THE 1989/90 HES SAMPLE

(a) Private Housing

<u>Stratum no.</u>	<u>Census districts</u>
01	Central, Sheung Wan, Aberdeen
02	Mid-levels, Pokfulam, Peak
03	North Point & Quarry Bay
04	Shau Kei Wan & Chai Wan
05	West, Wan Chai
06	Tai Hang, South
07	Tsim Sha Tsui, Shek Kip Mei, Jordan Valley
08	Yau Ma Tei, Mong Kok
09	Hung Hom
10	Ho Man Tin, Kowloon Tong, Lai Chi Kok
11	Kowloon City & Wong Tai Sin, Tsz Wan Shan & Ngau Chi Wan, Yau Tong
12	Kwun Tong
13	Sham Shui Po, Cheung Sha Wan
14	Tsuen Wan New Town, Tuen Mun New Town
15	Yuen Long New Town, Sheung Shui / Fanling New Town, Tai Po New Town
16	Shatin New Town

(b) Public Housing

<u>Stratum no.</u>	<u>Census districts</u>
17	West, Pokfulam, North Point & Quarry Bay, Tai Hang
18	Aberdeen, Shau Kei Wan & Chai Wan
19	Hung Hom, Ho Man Tin
20	Kowloon City & Wong Tai Sin
21	Tsz Wan Shan & Ngau Chi Wan, Cheung Sha Wan
22	Kwun Tong, Shek Kip Mei, Lai Chi Kok
23	Jordan Valley, Yau Tong
24	Tsuen Wan New Town
25	Tuen Mun New Town, Yuen Long New Town
26	Sheung Shui / Fanling New Town, Tai Po New Town
27	Shatin New Town (incl. Tseung Kwan O)

APPENDIX III

DEFINITIONS OF TERMS USED IN THE 1989/90 HES

Activity Status

This refers to the status of a person in relation to economic activity in society. The population is broadly classified as economically active or economically inactive.

Economically Active

1. Employer - one who works for profit or fees in his own unincorporated business / profession and employs at least one persons (other than domestic servant) for wage, salary, or payment in kind. A salaried manager is an employee, not an employer.
2. Self-employed - one who works on his own account, neither employed by someone else nor employing others, e.g. hawkers, private tutors.
3. Employee - covers all persons in paid employment, whether on monthly, daily or piece rates or on commission basis, or whether on permanent, casual or seasonal basis. Excluded from this group are outworkers and unpaid family workers and included are apprentices, trainees, learners, domestic helpers and baby-sitters.
4. Outworker - one who is free to take his work home or anywhere he pleases. A postman on his round or an electrician making electrical repairs outside his workshop is not an outworker because his place of work, though it changes, is designated by the nature of his employment and not left to his free choice.
5. Unpaid family worker - includes anyone (related nor not) who lives with the family and does work (not domestic help) as part of the family enterprise, in return for food and lodging. He is still classified as unpaid if he receives irregular or occasional payment of pocket money, not being any agreed from of regular salaries, wages, commission, bonus or share of profits.
6. Student worker - a full time student who performs some work for a wage / salary.
7. Unemployed - A person is classified as unemployed if:
 - (i) he is between 15 to 64 year of age and not of independent means,
 - (ii) he has no work and is seeking a job.This excludes persons on sick leave or holiday or on industrial dispute but includes those who are waiting to take up a job or just commencing work or those who are not seeking work because they believe work is not available or because of temporary sickness or those who are temporarily or indefinitely laid off work without pay. A person who is unemployed should be classified to the occupation and industry in which he was last engaged.

Economically Inactive

1. Person of independent means - one who does not have to work for a living. He lives by either letting a house or flat (or part of a house) or sub-letting it to others, or on capital accumulated in previous years, or on income from investments or remittances from overseas.

2. Home-maker - one who takes care of domestic work in the household without pay and is usually the housewife.
3. Retired person
4. Full-time student - student workers are not included in this group.
5. Other economically inactive persons - persons under 15 years of age not at school and not at work, unpaid workers working on a voluntary basis without pay for a social or religious organization, etc.

Age

The age of a person is the number of complete years a person has passed since birth.

Earners

An earner is a household member whose activity status is either employer, employee, outworker or self-employed and who receives income from employment.

Educational attainment

This refers to the highest level of education attained by a person.

Expenditures

Household expenditures refer to consumption expenditures on goods and services (including payments in kind), and do not include business expenses, remittance, bettings, charities, payments of income tax, life insurance premium of the endowment type, house mortgage payments, investments on properties and stocks and shares, and various other payments which are of a savings nature. Expenditures represent actual payments made during the 2-week diary-keeping period except for regular payments, and major infrequent expenses which are to be recalled in full if they are incurred during the 3-month reference period. Each household member is to include everything that he pays for during the survey period, whether it is paid for out of his own money, house-keeping money, money from a loan or any other source, and whether payment is by cash, cheque, postal order, bankers' order, credit card, credit account, cash coupons or other means. For credit card or credit account, the amount of expenditure signed during the survey period is recorded, and not the amount of expenditure settled for the credit account bills received in that period. Except for payments by credit card or credit account, payments made during the reference period which are for goods obtained previously or going to be delivered later are also included; any goods ordered or delivered but not paid during the reference period are excluded. For employer-subsidized, owner-occupied and rent-free accommodations where actual rent is not paid out in full, a rent is imputed with the assistance of the Rating and Valuation Department to these accommodation. In the case of resident domestic servants, who are by definition members of a household, cash wages paid to them are taken as a household expense on domestic service. However, such wages are not counted as income to the household.

Head of household

This is the person who is acknowledged as the head by other members of the household. If this criterion is not applicable, the head of the household is the person who:

1. is recognized to be the major decision maker of the household; or
2. owns the household accommodation; or
3. is legally responsible for the rent of the accommodations; or
4. has the household accommodation as one of the benefits from his employment.

If the individual thus defined is the wife of a member, the latter is taken to be the head of the household. If two members of different sex have equal claim, the male is taken; while if two members of the same sex have equal claim, the older one is taken.

Household size

This is the number of persons who are found to be in the household during the major part of the survey period.

Industry

A worker is classified according to the kinds of principal product he makes or service he renders. The classification used follows closely the major divisions of the International Standard Industrial Classification which groups all branches of economic activity by type of product or type of service.

Monthly house mortgage payment

This is the amount of monthly installment payment incurred by the household in connection with the house mortgage arrangement for the living quarter.

Occupation

This is the kind of work performed by a person. The classification used follows closely the International Standard Classification of Occupations laid down by the International Labor Office.

Tenure

This is the terms or conditions under which an accommodation is held. It is distinguished into the following types:

1. Living quarter provided or subsidized by employer (including all staff quarters)
2. Owner of the living quarter (including owned with mortgage)
3. Sole tenant - one who rents a whole house or a flat / floor which is occupied by his household without sub-letting.
4. Main tenant - one who rents from a persons, who does not reside in the same living quarter, a whole house or a flat / floor which is occupied by his household and of which part is sub-let to another household(s).
5. Sub-tenant - one who rents any kind of accommodation unit from a person who also resides in the same living quarter, the person letting the accommodation may be either an owner-occupier or a main tenant.

6. Co-tenant - one who rents part of a house or flat / floor for the exclusive use of his household from a person who does not reside in the same living quarter. He must be sharing the living quarter with at least one or more other co-tenant.
7. Residing in the premises rent free (with or without permission)

Type of housing

This refers to the type of building in which the living quarter is located. Housing is broadly classified into public and private housing.

Public and Aided Housing

1. Former Government Low Cost Housing Blocks
2. Former Housing Authority Blocks
3. New Housing Authority Blocks
4. Converted Blocks
- 1 - 4 Housing Authority Group A Rental Blocks
5. Housing Authority Group B Rental Blocks
6. Housing Authority Temporary Housing Areas and Cottage Areas
7. Housing Society Rental Blocks

Housing Authority rental blocks (Group A)

These are Government low cost housing blocks under the management of the Hong Kong Housing Authority. Units in these blocks are self-contained. Converted Mark I to Mark III blocks are also grouped under this category.

Housing Authority rental blocks (Group B)

These are buildings formerly managed by the Resettlement Department but put under the management of the Hong Kong Housing Authority since 1973. They can be further divided into Mark I to Mark IV estates. Units in Mark I to Mark III estates are not self-contained.

Private Housing

1. Private Housing Blocks - self-contained

These include apartment blocks, tenement blocks and composite buildings. A self-contained living quarter is a complete unit of residence which must satisfy the following conditions:

- (i) it must have its own entrance for the exclusive use of the household(s) occupying the living quarter;
- (ii) it must have an internal kitchen, a toilet and / or a bathroom.

Living quarters in modern tenement blocks without permanent partitioned rooms but have kitchen and toilet facilities should be considered self-contained.

2. Private Housing Blocks - non-self-contained
3. Housing Authority Home Ownership Scheme (HOS) / Private Sector Participation Scheme (PSPS) / Middle-income Housing (MTH)
4. Housing Society Urban Improvement Scheme Estates
5. Modern Houses - these includes bungalows and villas with bathroom, flush toilet system, internal kitchen and running water supply / Village Type / Simple Stone Structures

6. Private Temporary Structures - these include roof-top structures, mobile dwellings, temporary huts and non-quarters.
7. Other Private Permanent Housing (including staff quarters)

1. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

2. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

3. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

4. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

5. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

6. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

7. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

8. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

9. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

10. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

11. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

12. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

13. J. S. G. (1981), *Urban and Suburban Poverty* (1981). London: Paul Chapman and Co. Ltd.

BIBLIOGRAPHY

- Abel-Smith, B. and Townsend, P. (1965), *The Poor and the Poorest - A New Analysis of the Ministry of Labour's Family Expenditure Surveys of 1953-54 and 1960*, England: G. Bell & Sons Ltd.
- Anand, S. (1983), *Inequality and Poverty in Malaysia, Measurement and Decomposition*, Oxford: Oxford University Press.
- Ashton P. (1984), "Poverty and its Beholders", *New Society*, 70, 95-98.
- Atkinson, A. B. (1983), *The Economics of Inequality*, 2nd edition, Oxford: Clarendon Press.
- Barten, A. P. (1964), "Family Composition, Prices and Expenditure Patterns", in P. E. Hart, G. Mills and J. K. Whitaker (eds.), *Econometric Analysis for National Planning*, London: Butterworth.
- Bosch-Domènech, A. (1991), "Economies of Scale, Location, Age and Sex Discrimination in Household Demand", *European Economic Review*, 35, 1589-1595.
- Bradbury, B. (1989), "Family Size Equivalence Scales and Survey Evaluations of Income and Well-Being", *Journal of Social Policy*, 18, 383-408.
- Buhmann, B., Rainwater, L., Schmaus, G. and Smeeding, T. M. (1988), "Equivalence Scales, Well-Being, Inequality, and Poverty: Sensitivity Estimates Across Ten Countries Using the Luxembourg Income Study (LIS) Database", *Review of Income and Wealth*, 34, 115-142.
- Callan, T. and Nolan, B. (1991), "Concepts of Poverty and the Poverty Line", *Journal of Economic Surveys*, 5, 243-261.
- Census and Statistics Department, Hong Kong (1990), *Report of the Household Expenditure Survey 1989/90*, Hong Kong: Census and Statistics Department.
- Chau, L. L. C. (1979), "Economic Growth and Reduction of Poverty in Hong Kong", *The Philippine Economic Journal*, 58, 570-615.
- Chau, L. L. C. (1980), "The Size and Profile of Poverty in Hong Kong", in C. K. Leung, J. W. Cushman and Gungwu Wang (eds.), *Hong Kong: Dilemmas of Growth*, Australia: The Australian National University.
- Chow, W. S. Nelson (1982), *Poverty in an Affluent City - A Report of a Survey on Low Income Families in Hong Kong*, Department of Social Work, The Chinese University of Hong Kong.

- Deaton, A. S., Ruiz-Castillo, J. and Thomas, D. (1989), "The Influence of Household Composition on Household Expenditure Patterns: Theory and Spanish Evidence", *Journal of Political Economy*, 97, 179-200.
- Deaton, A. and Muellbauer, J. (1980), *Economics and Consumer Behavior*, Cambridge: Cambridge University Press.
- (1986), "On Measuring Child Costs: With Applications to Poor Countries", *Journal of Political Economy*, 94, 720-44.
- Desai, M. (1986), "Drawing the Line: On Defining the Poverty Threshold", in P. Golding (ed.), *Excluding the Poor*, London:CPAG.
- Desai, M. and Shah, A. (1988), "An Econometric Approach to the Measurement of Poverty", *Oxford Economic Papers*, 40, 505-522.
- Dubnoff, S. (1985), "How Much Income is Enough: Measuring Public Judgements", *Public Opinion Quarterly*, 49, 285-299.
- Dubnoff, S., Vaughan, D. and Lancaster, C. (1981), "Income Satisfaction Measures in Equivalence Scale Applications", *American Statistical Association Proceedings*, Washington.
- Engel, E. (1895), "Die Lebenskosten belgischer Arbeiterfamilien früher and jetzt. Ermittelt aus Familienhaushaltsrechnungen und vergleichend zusammengestellt", *Bulletin of the International Institute of Statistics*, 9, 1-74.
- Fiegehen, G. C., Lansley, P. S. and Smith A. D. (1977), *Poverty and Progress in Britain 1953-1973*, Cambridge etc.: Cambridge University Press.
- Fields, G. S. (1980), *Poverty, Inequality, and Development*, Cambridge etc.: Cambridge University Press.
- Foster, J. (1984), "On Economic Poverty: A Survey of Aggregate Measures", *Advances in Econometrics*, 3, 215-251.
- Fried, A. and Elman R. M. (eds.) (1968), *Charles Booth's London: A Portrait of the Poor at the Turn of the Century, Drawn from His "Life and Labour of the People in London"*, New York: Pantheon Books.
- Friedman, R. D. (1965), *Poverty: Definition and Perspective*, Washington, D. C.: American Enterprise Institute.
- Fuchs, V. R. (1967), "Redefining Poverty and Redistributing Income", *The Public Interest*, 8, 88-95.
- Glewwe, P. and van der Gaag, J. (1990), "Identifying the Poor in Developing Countries: Do Different Definitions Matter?" *World Development*, 18, 803-814.

- _____ (1983), *The Extent and Nature of Poverty in Hong Kong*, Department of Social Work, The University of Hong Kong.
- Christensen, L. R., Jorgenson, D. W. and Lau, L. J. (1975), "Transcendental Logarithmic Utility Functions", *American Economic Review*, 65, 367-383.
- Chung, Y. I. (1979), "Transition in the Substance of Poverty in Korea, 1953-76", *The Philippine Economic Journal*, 58, 493-540.
- Clark, S., Hemming, R. and Ulph, D. (1981), "On Indices for the Measurement of Poverty", *Economic Journal*, 91, 515-526.
- Colasanto, D., Kapteyn, A. and van der Gaag, J. (1984), "Two Subjective Definitions of Poverty: Results from the Wisconsin Basic Needs Study", *Journal of Human Resources*, 19, 127-138.
- Coulter, F. A. E., Cowell, F. A. and Jenkins, S. P. (1992), "Differences in Needs and Assessment of Income Distributions", *Bulletin of Economic Research*, 44, 77-124.
- Culter, P. (1984), "The Measurement of Poverty: A Review of Attempts to Quantify the Poor, with Special Reference to India", *World Development*, 12, 1119-1130.
- Dandekar, V. M. and Rath, N. (1971), "Poverty in India: Dimensions and Trends", *Economic and Political Weekly*, 6, January 2 and 9, 25-146.
- Danziger, S., van der Gaag, J., Taussig, M. K. and Smolensky, E. (1984), "The Direct Measurement of Welfare Levels: How Much Does It Take To Make Ends Meet?" *Review of Economics and Statistics*, 66, 500-505.
- de Vos, K. and Garner, T. I. (1991), "An Evaluation of Subjective Poverty Definitions: Comparing Results From the U.S. and the Netherlands", *Review of Income and Wealth*, 37, 267-285.
- Deaton, A. S. (1980), "The Measurement of Welfare: Theory and Practical Guidelines", *Living Standards Measurement Study Working Paper No.7*, Washington, D.C.: The World Bank.
- _____ (1981), "Three Essays on a Sri Lanka Household Survey", *Living Standards Measurement Study Working Paper No.11*, Washington, D.C.: The World Bank.
- _____ (1986), "Demand Analysis", in Z. Griliches and M. D. Intriligator (eds.), *Handbook of Econometrics*, 3, Amsterdam: North-Holland.
- Deaton, A. S. and Case, A. (1988), "Analysis of Household Expenditures", *Living Standards Measurement Study Working Paper No.28*, Washington, D. C.: The World Bank.

- Goedhart, T., Halberstadt, V., Kapteyn A. and van Praag B. (1977), "The Poverty Line: Concept and Measurement", *The Journal of Human Resources*, 12, 503-520.
- Gustafsson, B. and Uusitalo, H. (1990), "The Welfare State and Poverty in Finland and Sweden from the Mid-1960s to the Mid-1980s", *Review of Income and Wealth*, 36, 249-266.
- Hagenaars, A. J. M. (1986), *The Perception of Poverty*, Amsterdam etc.: North-Holland.
- (1991), "The Definition and Measurement of Poverty", in L. Osberg (ed.), *Economic Inequality and Poverty: International Perspectives*, Armonk: M. E. Sharpe.
- Hagenaars, A. and de Vos, K. (1988), "The Definition and Measurement of Poverty", *The Journal of Human Resources*, 23, 211-221.
- Hong Kong Annual Departmental Report - Social Welfare Department 1989-90*, Government Printer HK.
- Hong Kong Annual Departmental Report - Social Welfare Department 1990-91*, Government Printer HK.
- Jorgenson, D. W. and Lau, L. J. (1975), "The Structure of Consumer Preferences", *Annals of Social and Economic Measurement*, 4, 49-101.
- Kapteyn, A., van de Geer, S. and van den Stadt, H. (1985), "The Impact of Changes in Income and Family Composition on Subjective Measures of Well-Being", in M. David and T. Smeeding (eds.), *Horizontal Equity and the Distribution of the Tax Burden*, Chicago: NBER and Chicago University Press.
- Krongkaew, M. (1979), "The Determination of Poverty Band in Thailand", *The Philippine Economic Journal*, 58, 396-417.
- Leser, C. E. V. (1963), "Forms of Engel Functions", *Econometrica*, 31, 694-703.
- Mack, J. and Lansley, S. (1985), *Poor Britain*, London: Allen and Unwin.
- McGregor, P. P. L. and Borooah, V. K. (1992), "Is Low Spending or Low Income a Better Indicator of whether or not a Household is Poor: Some Results From the 1985 Family Expenditure Survey", *Journal of Social Policy*, 21, 53-69.
- Nelson, J. A. (1993), "Household Equivalence Scales: Theory versus Policy?" *Journal of Labor Economics*, 11, 471-493.
- Orshansky, M. (1965a), "Counting the Poor: Another Look at the Poverty Profile", *Social Security Bulletin*, 28, 3-29.

- _____ (1965b), "Who's Who Among the Poor: A Demographic View of Poverty", *Social Security Bulletin*, 28, 3-32.
- Oshima, H. T. (1977), "Some Notes on Defining and Estimating Poverty Levels", Mimeographes, University of the Philippines.
- Palmer, J. L., Smeeding, T. M. and Barbara, B. (1988), *The Vulnerable*, Washington, D.C.: Urban Institute Press.
- Perumal, M. (1992), "New Budget Standard Poverty Lines for Malaysia", *Review of Income and Wealth*, 38, 341-353.
- Phipps, S. A. (1991), "Measuring Poverty Among Canadian Households: Sensitivity to Choice of Measure and Scale", *Journal of Human Resources*, 28, 162-184.
- Phipps, S. and Garner, T. I. (1994), "Are Equivalence Scales the same for the United States and Canada?" *Review of Income and Wealth*, 40, 1-17.
- Piachaud, D. (1987), "Problems in the Definition and Measurement of Poverty", *Journal of Social Policy*, 16, 147-164.
- _____ (1988), "Poverty in Britain 1899-1983", *Journal of Social Policy*, 17, 335-349.
- Pollak, R. A. and Wales, T. J. (1979), "Welfare Comparisons and Equivalence Scales", *American Economic Review, Papers and Proceedings*, 69, 216-221.
- Prais, S. J. and Houthakker, H. S. (1971), *The Analysis of Family Budgets*, 2nd edition, Cambridge etc.: Cambridge University Press.
- Quibria, M. G. (1991), "Understanding Poverty: An Introduction to Conceptual and Measurement Issues", *Asian Development Review*, 9, 90-112.
- Rainwater, L. (1974), *What Money Buys: Inequality and the Social Meaning of Income*, New York: Basic Books.
- Rao, V. V. B. (1981), "Measurement of Deprivation and Poverty Based on the Proportion Spent on Food: An Exploratory Exercise", *World Development*, 9, 337-353.
- Ravallion, M. (1994), *Poverty Comparisons*, Switzerland: Harwood Academic Publishers.
- Rein, M. (1970), "Problems in the Definition and Measurement of Poverty", in P. Townsend (ed.), *The Concept of Poverty*, London: Heinemann Educational Books Ltd.
- Ringen, S. (1988a), *The Possibility of Politics: A Study in the Political Economy of the Welfare State*, Oxford: Clarendon Press.

- _____ (1988b), "Direct and Indirect Measures of Poverty", *Journal of Social Policy*, 17, 351-365.
- Rodgers, J. L. and Rodgers, J. R. (1991), "Measuring the Intensity of Poverty Among Subpopulations: Applications to the United States", *The Journal of Human Resources*, 26, 338-361.
- Rose, A. (1969), "Poverty in Canada: An Essay Review", *Social Service Review*, 43, 74-84.
- Rosenthal, G. (1968), "Identifying the Poor: Economic Measures of Poverty", in D. P. Moynihan (ed.), *On Understanding Poverty*, New York: Basic Books.
- Rowntree, B. S. (1901), *Poverty: A Study of Town Life*, London: Macmillan.
- _____ (1941), *Poverty and Progress*, London: Longmans, Green and Co.
- Rowntree, B. S. and Lavers, G. R. (1951), *Poverty and the Welfare State*, London: Longmans.
- Ruggles, P. (1990), *Drawing the Line: Alternative Poverty Measures and Their Implications for Public Policy*, Washington, D.C.: The Urban Institute Press.
- Seidl, C. (1988), "Poverty Measurement: A Survey", in D. Bös, M. Rose and C. Seidl (eds.), *Welfare and Efficiency in Public Economics*, Berlin: Springer-Verlag.
- Sen, A. (1976), "Poverty: An Ordinal Approach to Measurement", *Econometrica*, 44, 219-231.
- _____ (1985), *Commodities and Capabilities*, Amsterdam etc: North-Holland.
- Shari, I. (1979), "Estimation of Poverty Lines and the Incidence of Poverty in Peninsular Malaysia, 1973", *The Philippine Economic Journal*, 58, 418-449.
- Sharma, A. (1990), *Concept and Measurement of Poverty*, New Delhi: Anmol Publications.
- Slesnick, D. T. (1993), "Gaining Ground: Poverty in the Postwar United States", *Journal of Political Economy*, 101, 1-38.
- Smeeding, T. M., O'Higgins, M. and Rainwater L. (1990), *Poverty, Inequality and Income Distribution in Comparative Perspective*, New York etc.: Harvester Wheatsheaf.
- Tan, E. A. and Holazo, V. (1979), "Measuring Poverty Incidence in a Segmented Market: The Philippine Case", *The Philippine Economic Journal*, 58, 450-492.

- Tsakoglou, P. (1991), "Estimation and Comparison of Two Simple Models of Equivalence Scales for the Cost of Children", *The Economic Journal*, 101, 343-357.
- Townsend, P. (1954), "Measuring Poverty", *British Journal of Sociology*, 5, 130-137.
- (1962), "The Meaning of Poverty", *British Journal of Sociology*, 13, 210-227.
- (1979), *Poverty in the United Kingdom*, Harmondsworth: Penguin.
- U.S. Department of Labor, Bureau of Labor Statistics (1960), 'Estimating Equivalent Incomes or Budget Costs by Family Type', *Monthly Labor Review*, November, 1197-1200.
- van Praag, B., Goedhart, T. and Kapteyn, A. (1980), "The Poverty Line - A Pilot Survey in Europe", *The Review of Economics and Statistics*, 62, 461-465.
- van Praag, B. M. S., Hagenaars, A. J. M. and van Weeren, H. (1982a), "Poverty in Europe", *Review of Income and Wealth*, 28, 345-359.
- van Praag, B. M. S., Spit, J. S. and van de Stadt, H. (1982b), "A Comparison Between the Food Ratio Poverty Line and the Leyden Poverty Line", *The Review of Economics and Statistics*, 64, 691-694.
- Walker, R. (1987), "Consensual Approaches to the Definition of Poverty: Towards an Alternative Methodology", *Journal of Social Policy*, 16, 213-226.
- Watts, H. W. (1967), "The Iso-Prop Index: An Approach to the Determination of Differential Poverty Income Thresholds", *Journal of Human Resources*, 2, 3-18.
- Working, H. (1943), "Statistical Laws of Family Expenditure", *Journal of American Statistical Association*, 38, 43-56.
- World Bank (1990), *World Development Report 1990*, New York: Oxford University Press.

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