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THEORETICAL BACKGROUND AND EMPIRICAL EVIDENCE**

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# ECONOMIC GROWTH AND INCOME INEQUALITY: THEORETICAL BACKGROUND AND EMPIRICAL EVIDENCE

## 1. INTRODUCTION

All sciences should be aimed at providing humanity with a better quality of life. The classical economists were concerned with this objective of Economics as a science. According to Adam Smith (1884), no society can be flourishing and happy, of which the far greater part of the members are poor and miserable. David Ricardo placed the distribution of income at the centre of his thought when he stated that Political Economy should be aimed at determining the laws that rule the distribution of income (Bigsten, 1983; Ferrán, 1997, Atkinson, 1997). Hartwell (1972) goes further in arguing that "Economics is, in essence, the study of poverty" (p. 3).

However, this primary objective seems to have been lost many times along the history of economic thought. For much of the last century, the subject of income distribution has been absent in the agenda of economic theory and policy (Atkinson, 1997). Recent history has witnessed changes in perception about the ultimate nature of the economic activity. During the 1970s, in the developed world, there was a growing concern with the quality of life, and which was manifested in protests against the consequences of economic growth, such as pollution and depletion of natural resources. In the developing world the main concern was focused on the relationship between economic growth and income distribution, since many countries that had experienced growth rates above their historical standards realised that such growth seemed to have negatively affected the income distribution, leading to increased inequality and a failure to eliminate, even reduce, the level of poverty (Todaro, 1994).

The revival of neoclassical economics during the 1980s, in a context of a debt crisis that particularly affected Latin American countries, once again put economic growth at the forefront of the debate. It was becoming the ultimate objective of economic activity, despite the fact that inequality was increasing and the poverty problem was worsening.

According to the neoclassical perspective, any redistribution would be at

the expense of one of the two productive factors, thus yielding economic inefficiency. The concern was mainly with the factor distribution of income, as it was in classical economics. The division of national income between wages and profits tells nothing directly about how incomes are distributed among people, which is usually understood as the problem of income distribution.

The 1990s witnessed the re-incorporation of income distribution into the main body of economic analysis, although economic growth still remained the ultimate objective. According to the 1998-1999 Inter-American Development Bank report (IADB, 1998-1999), the central argument behind this is that high inequality in income distribution can slow down the pace of the accumulation of physical and human capital, which are the main sources of economic growth. Thus, the main concern is that a poor income distribution harms economic growth. If common welfare were the ultimate objective, economists should be concerned also with the effects of economic growth on income distribution. An undesirable economic growth is one which increases income inequality and widespread poverty leading to social tension and political discontent that jeopardises the well-being of society.

The elimination of widespread poverty and growing income inequality are two of the main problems of development, and should be the principal objectives of development policy. However, the problem of the distribution of income has relatively received little scientific study. This paper reviews the theories that have been developed on the subject and discusses the empirical work on the relationship between economic growth and income distribution. Section 2 is devoted to introducing the theoretical background, while Section 3 presents a literature review on what the empirical evidence says about the relationship between growth and inequality. Section 4 summarizes a set of conclusions.

## 2. THE THEORETICAL BACKGROUND

There are three main concepts involved in the debate presented in this paper that must be discussed: inequality, economic growth, and income distribution.

Inequality is a multidimensional concept. The discussion given in this paper refers to one of those dimensions: the inequality in the distribution of income. Sub-section 2.2 discusses this concept, the different approaches to measure inequality, and the definition of income. Sub-section 2.3 gives a quick overview of the theories of economic growth and their extensions which helps to understand the possible connections between economic growth and income distribution.

However, these connections can only be seen in the light of the theories of income distribution. How the total income generated in a society is distributed among its members and what determines such distribution have been questions placed at the top of the debate in some periods in the history of the economic thought and relegated to the background during others. The dominant ideas in a specific period are linked with those in former periods, even in times when revolutionary changes have occurred. Therefore, having knowledge of the main ideas about the distributive problems developed in the past contributes to a better understanding of the current theoretical debate on income distribution. This is the subject of Sub-section 2.4.

### 2.2 Inequality

In any context the concept of inequality refers always to comparability between elements. The comparison is usually based on specific characteristics which can be measured using adequate indexes or indicators. Thus, the fact is reduced to comparisons between quantities and inequality will relate to differences in these quantities. In these terms, inequality seems to be a straightforward concept which, as Cowell (1995) states, "obviously" suggests a departure from the simple idea of equality, this is, the fact that two or more quantities are the same size.

However, difficulties arise when the concept is framed into the social context and in connection with economic problems. In this context, the concept is generally related to differences in *income*, *consumption* or *wealth* and associated

with *social welfare*. In this common usage the term embodies some sort of value judgement about fairness which will differ according to different ethical viewpoints. Debates on subjects such as the relationship between inequality among individuals and social welfare, fairness in the distribution of wealth, levels of inequality allowed without being offensive to society, can not avoid some ethical arguments.

Naturally, these arguments are also present when regarding the measurement issue. According to Sen (1973) there are broadly two categories of inequality measures. On the one hand those which try to catch the extent of inequality from an *objective* point of view, using statistical measure of relative variation of income, and on the other those that try to measure inequality in terms of some *normative* notion of social welfare which introduces the complication of ethical valuations. The problem is that there is not a clear line drawn delimiting the two approaches. "Even if we take inequality as an objective notion, our interest in its measurement must relate to our normative concern with it, and in judging the relative merits of different objective measures of inequality, it would indeed be relevant to introduce normative considerations. At the same time, even if we take a normative view of the measures of income inequality, this is not necessarily meant to catch the totality of our ethical evaluation" (Sen, 1973, p. 3).

But the problem goes even beyond this point. It has been said earlier that inequality is about comparison. What one would want to compare is the *living standard* of each individual in a specific society. Unfortunately, no agreement has been achieved among social scientists about what exactly the standard of living of an individual means and how to measure it. The controversies arise not only from the different ethical points of view of those who want to measure the extent of inequality, but also from the difficulties in capturing accurately the person's well-being. As reflected by Sen,

You could be *well off*, without being *well*. You could be *well*, without being able to lead the life you *wanted*. You could have got the life you *wanted*, without being *happy*. You could be *happy*, without having much *freedom*. You could have a good deal of freedom without achieving much (Sen, 1985, p. 1., quoted by

Goodman, Johnson, and Webb 1997, p. 11).

Then, it seems quite unlikely to find out a single index able to provide a full description of living standard as this outlined by Sen. The literature on inequality and poverty has often used income, consumption, and wealth as proxies for living standards, but none of these three concepts takes into account health, freedom or achievement. They do not measure happiness unless we assume that happiness is directly equivalent to level of income or consumption. Even more, in fact, what people regard as happiness is influenced by culture and personal preferences, and this varies from individual to individual. These proxies do not measure the "worth" of an individual. Income, consumption and wealth tell us about the command over resources - potential in the case of income and wealth, and actual in the case of consumption, but not about welfare *per se* (Goodman, Johnson, and Webb, 1997).

Furthermore, Cowell (1995) discuss that none of these concepts cover completely the command over resources for all goods and services in society. They exclude "social wage" elements such as the benefits received from enjoying items such as municipal parks, public libraries, the police systems, whose distribution may only be conjectured. According to Lipton and Ravallion (1995) measures based on person's consumption of goods and services are intrinsically limited. They may reveal nothing about the disutility of work, the length or health of the life over which consumption is expected, risk and variability, etc. "Income is a useful indicator if we want to identify which people are likely to lack the resources to achieve a social acceptable standard of living. However, it does not measure accurately their capacity to achieve access (which may be influenced by other factors such as education, information, legal rights, illness, threatened domestic violence or insecurity)" (Wratten, 1995, p.13).

Thus, we can see that the living standard of an individual or household is, in fact, a multidimensional concept involving, in principle, every aspect of direct consumption along with non-consumption activities and services and this makes inequality a multidimensional concept. Supplementary social indicators

are sometimes used to compensate the weakness of income or consumption based measures in capturing adequately many aspects of well-being. Some of those indicators are life expectancy, infant mortality, nutrition, the proportion of household budget spent on food, literacy, school enrolment rates, access to health clinics or drinking water. Again, the idea is to have a standard scale so that different population groups may be compared (Wratten, 1995).

The problem is that when using a wide range of indicators to describe inequality the different variables may tell conflicting stories. Cowell (1995) argues that we often want to answer a question such as "has inequality increased or decreased?" with a straight "yes" or "no". So, making inequality a multidimensional concept the probability of giving ambiguous answers is pretty high. Also, having a standard indicator is useful because it provides a uniform scale against which comparisons can be made in different populations such as urban and rural, populations living in different regions of the country, urban populations living in different parts of the city, male and female headed households, old and young, etc. Comparative data are essential in order to target resources to specific groups of the population. This is why, in practice and for policy purposes, income, consumption, and wealth remain the key measures of inequality, despite the grave deficiencies of compressing the different features of inequality into a single indicator of well-being which provides only a partial picture of reality.

However, standardised indicators of living standards based on income, consumption, and wealth can give rather different measures of inequality depending on the specific circumstances to which they are applied. This is worth discussing here.

### **2.2.1 Inequality In Income, Consumption Or Wealth?**

As it was said earlier, income, consumption, and wealth are three concepts associated with command over resources -potential in the case of income and wealth, and actual in the case of consumption. The controversy about which indicator should be used arises from the discussion on whether we should measure potential or actual enjoyments of

goods and services. Let us have a closer look at this.

Between these three concepts there are such relationships that variations in one yield changes in another, which is interesting to observe. In any year any person may receive one (or a combination) of the following *flow* of resources: earnings, transfers (student grant when young, pension when old) and capital receipts such as legacies and gifts. These flows constitute his income<sup>i</sup>. Also, this person may hold some wealth the value of which might increase (decrease). This increase (decrease) in value constitutes another flow of resources which is also regarded as income (negative). This person can save part of his income. Therefore, the difference between his income and saving is his consumption. At the moment, let us assume that there is no difference between expenditure and consumption which will be discussed later on<sup>ii</sup>. If this person does not save, his wealth at the beginning and at the end of the year will remain the same. If he saves, this person will be increasing his stock of wealth. If his consumption is greater than his income, his wealth will decrease or he will have to borrow.

Goodman, Johnson, and Webb (1997) use the life-cycle theories to explain how these three concepts can give rather different measures of inequality. According to these theories people smooth their consumption when their income varies. Their consumption decisions are not only based on their current income, but also on their expected income in the future. These authors assume an isolated individual who enters his adult life with neither income nor wealth, and that there are no student grants or pensions. Then, he goes through three periods -education, work, and retirement. "Life-cycle theories would predict that he would borrow during the period of education. In the working period he would pay-off these debts and save for retirement. In retirement, he would receive some investment income from his assets but he would also use up his assets. He would die (leaving nothing as he has no children to inherit from him) with nothing" (Goodman, Johnson, and Webb, 1997, p. 13).

The main point here is to see what is going on with this person's income, wealth, and consumption throughout these three periods of his life. According to the

life-cycle theories, consumption would be more or less the same over time.

However, a rather different story is told with respect to income and wealth. During the first period he has no income and ends up with negative wealth. During the second period he has income which is greater than his consumption, because he is paying back debts and saving. Meanwhile, his wealth gradually becomes positive. During the last period he has little income and his wealth is decreasing until his death when it will be zero. Therefore, Goodman, Johnson, and Webb (1997) argue that if a population of three individuals identical in all respects but age is assumed, each one at the beginning of each of these periods previously described, a measure based on wealth or income would show significant inequality, while a measure based on consumption would find no inequality. Even more, the measure based on wealth would rank the individual at the beginning of the third period as the best off followed by the one at the beginning of the first period, and the one at the beginning of the second period, who would be the best off according to an income-based measure.

Obviously, the real world does not work like that. People do not follow that rationality. As the authors argue, capital markets are not perfect and individuals are not always able to borrow as much as they want, they can be risk averse and inherited wealth matters. Also, these individuals may belong to households in which they share living standards with others of different ages, a case in which, again, different stories can be told about inequality if the unit of observation is the household or the individual.

But the main problem arises when considering these indicators as measures of command over resources. To see the differences, based on an example given by Goodman, Johnson, and Webb (1997), let us assume two households (or individuals) with identical characteristics, their income included. One of them spends all its income, whereas the other decides to save (or can just spend) 50% of its income. A measure of living standard based on income will find no difference between these two households. In this case, income is a measure of the *potential* command over resources. A measure based on consumption will tell us a rather different story. It will show a significant inequality between these two households,

since one of them does not access (or cannot achieve access) to all goods and services it could have had with the income at its disposal. In this case, consumption is a measure of *actual* command over resources. In a more illustrative way, using Atkinson's words, "A miserly millionaire who lived on virtually nothing would from one point of view appear rich, and from the other, poor" (Atkinson, 1983, p. 37). So, the choice between income-based and consumption-based measures will make quite a difference to the level of inequality reported.

If one is specially interested in comparing the actual enjoyment of good and services by households (or individuals) in society as a way of comparing their living standards, measures based on consumption seem to be advisable. However, the information commonly available is *expenditure* and not actual consumption which is what one really would like to measure. There are so many goods which are not consumed at the time of purchase as well as so many goods that people consume over a long period of time. "Current expenditure will overestimate consumption if one has just made a large purchase of a durable item, but will underestimate the amount of consumption if they are making use of many goods for which they have already paid in the past" (Goodman, Johnson, and Webb, 1997, p. 21). Also, some households produce for home consumption which increases the command over resources, but this type of consumption is not taken into account when an expenditure-based measure is used. These are perhaps the main weaknesses of expenditure as a proxy for consumption in measuring the living standard of households or individuals in society. Then, it seems quite unlikely that actual command over resources can be measured with accuracy.

Thus, due to the availability and reliability of data as much as anything else, most researchers involved in the analysis of inequality from an economic perspective – to which the debate presented in Section 3 refers - concentrate on income as the primary measure. This means that they concentrate on potential command over resources. However, it is worth pointing out that in the presence of accumulated savings and wealth, income will give only a partial view of potential command over resources.

### 2.2.2 Definition Of Income

Income is the simplest and most fundamental concept in Economics. Despite seeming a straightforward concept, a clear definition is needed when it is going to be used as a measure of living standard. In the broadest sense of the word *income* denotes what comes in. Thus, it may be used in different contexts with quite different meanings. The definition widely accepted in Economics of personal income is *the amount of money, in a given period of time, that an individual can spend in consumption without altering the value of his/her wealth* (Lindahl, 1933; Simons, 1938; Hicks, 1946; Atkinson, 1983).

As it has been stated earlier, personal income is a concept that has to do with command over resources. Simons (1938) put this in terms of possession and exercise of rights. It connotes, broadly, the exercise of control over the use of society's scarce resources. So, in these terms, according to the definition given above, the calculation of personal income implies the estimation of the value of rights which the person might have exercised in consumption without altering the value of his/her store of rights.

Therefore, when the value of store of rights is unaltered, in a given period of time, the potential command over resources equates the actual. In this case, income is a good proxy for living standard. Unfortunately this rarely happens, as it was discussed earlier. Actually, it is the level of enjoyment of individuals through exercising their rights what one would be interested in measuring and comparing. Then how helpful is the concept of income outlined above in measuring these enjoyments? Fisher (1930) uses the concept of *real income* to clarify this. Real income includes all those events such as the use of food, wearing clothes, going to the cinema, etc., which contribute to our enjoyments. However, most of these events occur in different ways producing different levels of enjoyment for different individuals. Therefore, they are difficult to measure by using any standard unit. "They have no common denominator. Even the individual who experiences them cannot weigh and measure them directly. All he can do is to measure the money he paid to get them" (Fisher, 1930, p. 47).



Fisher (1930) identifies three stages in the process that leads to these enjoyments, which occur in the opposite order that they are stated. These stages are: i) the inner enjoyment which he calls *enjoyment income*, ii) the events in the *outer* world which give us inner enjoyment which he calls *real income*, and iii) the amount of money that we have to pay to get those events which he calls *cost of living*. Thus, the cost of living measures the real income which give us our enjoyment income.

Here the following question arises: does the money that the individual receives in a certain period of time equate to his cost of living? We have already seen that, in general, the answer is no. To understand the difference Fisher (1930) uses the concept of *money income*. "Money income includes all money received which is not obviously, and in the nature of the case, to be devoted to reinvestment - or, as the expression is, 'earmarked' for reinvestment. In other words, all money received and really available and intended to be used for spending is money income" (Fisher, 1930, p.49).

Money income is usually less than cost of living. Cost of living practically never equates money income. Many persons live beyond their money income. According to Fisher's definition, money income can never be greater than cost of living.

Thus, the money that the individual receives in a certain period of time would be money income only in the case in which this individual spent all the money received in that period without saving. If the individual saves part of the money received, only that part devoted to be spent will be his/her money income. In this case the money received will be greater than the cost of living. If the individual does not save but borrows, all the money received will be money income and it will be less than the cost of living.

When working on inequality, ideally, what one would be interested in measuring and comparing is the enjoyment income of individuals which is not directly measurable. Cost of living would be the indirect monetary measure of enjoyment income, but then there are problems related to the differences between expenditures and consumption discussed earlier. This is why most of the research done on inequality from an

economic perspective uses the money received in a certain period of time, which has been called just income, as the measure of the potential living standard of individuals (or households). In doing so, there will be a difference between income and cost of living equal to the amount of savings minus the amount of borrowings<sup>iii</sup>. Thus, only if the person neither saves nor borrows or if he/she borrows to save (savings = borrowings), the money received equals the cost of living.

### 2.3 Economic Growth

Economic growth can be defined as a rise in per capita income and national product. To increase national product the volume of investment must be greater than the amount necessary to replace depreciated capital. Therefore, the amount of savings and investment plays a significant role in the process of economic growth. This view is central in the classical models of economic growth such as Harrod (1939), Domar (1946), Solow (1962). Holding constant other variables, an increase in the rate of savings would accelerate the rate of economic growth. This is the simplest statement in the influential Harrod-Domar model.

But obviously those other variables are not constant, they are changing. Changes in the rate at which capital produces output can counteract or add to the effects of the rate of savings on economic growth, as well as the rate at which the total population is growing, affects the rate of growth of per capita income. If the population is growing at the same rate or faster than that of total output, then the rate of per capita income may be zero or even negative. These factors have been incorporated in the classical models of economics growth which predict correct correlation between the rate of growth and variables such as savings rate, output-capital ratio, and population rate. But these models are not able to predict exact levels of growth rates providing specific values of the variables involved which the models assume as exogenous. The reality is not as simple as that. Not only the growth process affects, in fact, the value of all those variables, but also the effect does not follow a definite pattern. The rate of savings, for example, perhaps the most relevant variable in the models of growth, may be influenced by the level of per capita income in society, as well as by how total

income is distributed among the population. It seems logical to think that countries with a low level of income also exhibit small or even negative rates of savings. The very poor countries have limited room for savings. As the economy grows this room for savings may enlarge. But once a certain level of per capita income has been reached, there is not guarantee that the savings rate will keep on growing. Several factors can be mentioned. One is that the notion of what the basic needs are changes as society becomes healthier, which may imply increases in the rate of consumption to such an extent that it may even overcome the savings rate. For example, the USA is one of the world's richest countries, but also has one of the world's lowest rates of savings (Ray, 1998). Another factor is how the benefits of growth are distributed. If the benefits of economic growth go in greater proportion to those groups of population who are regarded as having a high propensity to save, then the overall rate of savings is expected to rise. But if growth benefits more the groups with high propensity to consume, then the overall rate of savings would decrease as a result of growth and would harm subsequent growth. This argument has been used by some scholars in the debate about the effects of growth on income distribution, as it will be seen in the next section.

Another factor affected by the path of economic growth is population growth. Both the death rate and the birth rate tend to be high in countries with low levels of income, which keep the rate of growth of population at low levels and varying within a narrow range of values (For figures, see Ray, 1998, p. 299). Economic growth is expected to bring a rise in the living standard of the population which makes the death rate fall due to improved conditions in hygiene, sanitation, and medicine, while the birth rate reacts with delay<sup>iv</sup>. As a consequence, the growth rate of population initially increases. Once the birth rate adjusts, the growth rate of population starts decreasing and in the long run it reaches low levels again.

Also the capital-output ratio might be an endogenous variable. The value of the capital-output ratio depends on the relative endowments of capital and labour in the economy. This relative endowment of productive factors may change with economic growth. Total output is the result of the interaction of these two productive

factors. When labour is abundant, few additional units of capital are required to produce larger amounts of output. In this case, the capital-output ratio is low. As more capital is incorporated into the productive process (capital accumulation) the capital-output ratio rises because labour becomes a relatively scarce factor. What is at work here is the law of diminishing returns to individual factors of production.

The Solow model takes account of the diminishing returns on capital and predicts a *steady-state* of per capita income in the long run, in which total output will be growing at the rate of growth of the population. As capital is accumulated faster than labour, the capital-output ratio decreases, reaching a point at which no further growth in per capita income is possible. In contradiction with the Harrod-Domar model, in which constant returns are assumed, the Solow model predicts that the savings rate has no long term effect on the rate of growth. Capital accumulation itself is unable to sustain per capita growth. This important conclusion leads to the incorporation of technological progress in the model as the ultimate source of growth. Technical progress increases the productivity of labour so that, the model predicts, in the long run increase in per capita income takes place at the rate of technical progress.

The idea that technical progress may drive long-run per capita growth is quite acceptable. But the following questions arise: how is technical progress introduced and expanded in the production process? Does technical progress evenly increase the productivity of labour? According to Ray (1998), the so called "New Growth Theories" bring to the arena the concept of *human capital*. In short, human capital is regarded as skilled-labour. This is, educated labour that is skilled in production, able to operate sophisticated machinery, able to improve methods of production, and able to create new ideas applicable to economic activities. These theories augment the Solow model by splitting savings into physical and human capital. The introduction of human capital in the model of growth makes it feasible that there may be broadly constant returns to physical and human capital combined, even though physical capital exhibits diminishing returns. This makes the economy appear

to behave as predicted by the simple Harrod-Domar model. In this way, the rate of savings reassumes its role in the long-run growth.

However, the effectiveness of savings and investment cannot be taken just in aggregate terms. There are key sectors in the economy which may require more investment than others. These are the sectors which may be able to shoot up the growth process, spreading the benefits to the whole economy. Models based on dual economies see the industrial sector as the engine of growth so that the balance between rural and urban sectors is of special importance. These models have been in the centre of the debate about economic growth in developing countries, they have also been used to explain and justify the increasing inequality in developing countries as a result of economic growth. The most influential model of this type is the Lewis (1954) Model treated with some detail in the next sub-section.

The connection between inequality and growth has been seen not only through the effects of growth on income distribution, but also in how growth is affected by income inequality. There is recent literature connected with the new theories of endogenous growth that establish the links through economic and political mechanisms<sup>v</sup>. The economic mechanism emphasises the effect of income distribution on the size of domestic demand and, as a consequence, the potential for industrialisation, as well as the role of imperfect capital markets. The latter establishes the links through the investment in human capital. In the presence of imperfect capital markets, the individuals face borrowing restrictions for education. The inheritance of each individual determines whether he invests in education or not. Hence, the distribution of income determines the aggregate level of investment in human capital and then the level of output (Galor and Zeira, 1993).

Alessina and Perotti (1993) highlight three political mechanisms. One stresses the fact that unequal distribution of income is linked to large incentives for the poor to engage in rent-seeking activities or in illegal activities that pose a threat to property rights, thus hindering investment and growth. The second mechanism is the fiscal channel in which income inequality induces the majority of voters

(who are poor) to vote for high taxation aimed at redistributing income. The increase in taxation reduces the after-tax marginal product of capital and, as a consequence, the rate of accumulation decreases and therefore the rate of growth. Finally, the instability channel operates through the fact that a large group of impoverished citizens, facing a small and very rich group of individuals, demand radical changes leading to mass violence and illegal seizures of power that negatively affect the investment opportunities<sup>vi</sup>.

### **2.3.1 The Lewis' Model**

Lewis (1954) put forward an approach of economic development based on the process of transformation of a traditional economy into a modern one. This approach is based on the existence of a dual economy in which a "traditional" sector coexists with a "modern" sector. The term traditional is associated not only with the agricultural sector, which produces the traditional output of society using old techniques of production which are labour-intensive, but also with all those economic activities based on the same conditions of production. These conditions of production include an organisation based on a family whose members share the overall output. On the contrary, the modern sector encompasses all those economic activities that are organised on capitalist principles and use new technologies which are capital-intensive. However, it is worth saying that in the real world this distinction between traditional and modern sector is not that clear. The agricultural sector can operate based on capitalist principles of organisation and may use advanced capital-intensive technologies, while there are economic activities organised in capitalistic form, although using labour-intensive technologies. Nevertheless, such a simple distinction is helpful to explain the main ideas of Lewis' Model.

The fundamental assumption of Lewis' Model is the existence of a large surplus of labour in the traditional sector of the economy which can be transferred to the modern sector without affecting the amount of output in the traditional sector. There are too many workers relative to other factors of production, so that removing the surplus does not affect the level of output. This means that the

marginal product of labour in the traditional sector is zero or very close to zero.

According to Ray (1998), this is a narrow definition of the concept of surplus labour which may be inapplicable to reality. His main argument is that, holding constant other factors of production, there is always the possibility of increasing the output by using additional labour with improved and more intensified techniques. However, the applicability of this concept depends on an adequate interpretation beyond this purely technological definition, Ray (1998) adds. In this sense, even if we assume that zero marginal productivity of labour really exists in traditional activities, we have to remember that payments in these activities are based on income-share criterion (total output divided by the number of workers) and workers will not transfer to activities with positive marginal productivity of labour unless this marginal productivity is greater than their actual payment per unit of labour. Moreover, zero marginal productivity is not a necessary condition for the transfer to go on. It is enough that there exists a differential in marginal productivity of labour between the two sectors. This differential leads to the concept of *disguised unemployment* which has been interpreted as an extension of the concept of surplus labour (Ray, 1998). The extension is complemented with the fact that removing labourers from the traditional activities does not mean removing labour. Actually, the remaining workers in the traditional sector may increase their effort such that total output does not fall. This is, the labour input may remain constant so that removing labourers does not affect total output.

This extension of the concept of surplus labour is fundamental in the description of the process of economic growth as a result of the process of labour transfer from the traditional sector to the modern sector described by the Lewis Model and later extended by Ranis and Fei (1961).

Ray (1998) provides a schematic description of how the process takes place, based on Ranis and Fei (1961), which can be summarised as follows. There are three phases in the process. The first one is the *surplus labour phase*. In this phase a surplus of labour in the traditional sector is assumed in which "wage" is equal to the ratio between total output divided by total number of labourers

(income share criterion). Let us call this "wage"  $w_1$ . If some labourers are transferred from the traditional sector to the modern sector an output surplus is originated, assuming that output does not fall and "wage" does not rise in the traditional sector. This output surplus divided by the number of labourers removed equates  $w_1$ . Since the labourers removed from the traditional sector have now to buy their food,  $w_1$  represents their subsistence level. Multiplying  $w_1$  by the terms of trade (relative price) between the two sectors we get the minimum wage ( $w'$ ) in the modern sector. Thus, in this phase, we have a perfectly elastic supply of labour. This is the so called phase of economic development with unlimited supply of labour, maintaining wages at the subsistence level.

As the process goes on, the output in the traditional sector starts to fall which leads to a rise in food prices. This is, the process moves out of the surplus labour phase. As a consequence, wages in the modern sector have to rise above  $w'$  to compensate this increase in food prices. However, workers in the traditional sector still consume the same per capita amount, which means that their "wages" remain at  $w_1$ . This is called the *disguised unemployment phase*. From this point, the supply of labour in the modern sector is not perfectly elastic any longer. As the process of labour transfer continues, the total output in the traditional sector keeps falling and reaches a point in which the marginal product of labour begins to exceed  $w_1$ . Therefore, the wage in the traditional sector rises above  $w_1$  which induces a sharper increase in the modern sector wage to compensate not only for rising food prices, but also to be able to attract additional labour in order to sustain further growth in this sector. This is the *commercialisation phase*.

From the demand side, the scenario is that, while the economy is in the surplus labour phase, the modern sector demands labour paying wages at the level of subsistence and further expansion can go on, demanding more labour, without raising the wage rate. Once beyond this phase, further investment requires higher wages. Labour turns into a scarce factor of production and food prices rise, increasing the cost of hiring workers. The expansion of the modern sector accelerates growth, but this is limited by the ability of the economy to produce a

surplus of food. Thus, the Lewis Model tells us that the basic requirement to shoot up economic growth is transferring labour from traditional activities to the modern sector, paying wages at the level of subsistence.

## 2.4 Income Distribution

The term "income distribution" is usually coined to "picture" who receives how much income within a specific society.

There are two principal concepts of income distribution encountered in the literature: the *functional* and the *personal* or *size* distribution of income. The functional distribution shows how much income is received by each factor of production. This is, how total income is distributed between land, labour and capital. The theories based on functional distribution consider the existence of only three groups (or classes) in society: labourers, capitalists, and landowners, assuming within-group homogeneity.

On the other hand, the size distribution of income shows how many individuals (or households) receive how much income. This is, how total income, from all sources, is distributed among individuals or households.

Other concepts of income distribution sometimes used in analysis of income inequality are those which make a distinction between urban and rural areas as well as interregional or interstate differentials. However, the theoretical debate about income inequality has been focused on the concepts of functional and size distribution of income.

### 2.4.1 General Theories Of Income Distribution

If some agreement arises from all the debates about distribution of income along the history of economic thought this is that there is no agreement among economists about which are the determinants of income distribution. The main reason is that the distribution of income is the final result of the entire economic process (Bigsten, 1983), and it is well known that there is a lack of unanimity of views even on general economic issues of that process, which makes it logical to expect no agreement on a topic that has been the source of ideological wars and political revolutions (Sahota, 1978).

A theory of income distribution needs a theory which explains prices of

factor of production and factor shares that would explain the factorial distribution of income. "Most theories conceive the central problem of income distribution as the determination of the level of employment and remuneration of the factors of production, usually grouped into capital and labour. They differ mainly in their assumptions about market behaviour and the way in which wages and product prices are determined" (Ahluwalia and Chenery, 1983, p. 43). But a theory of size income distribution needs to explain also the distribution of the ownership of factors among households (Knight, 1976). Some theories fail in going further than the functional distribution of incomes.

The classical period was characterised by focusing only on the functional distribution. Adam Smith devoted his work to the causes of wealth and discussed the division of what was produced between wages, rent, and profit, but he did not develop a theory about the determinants of such distribution. David Ricardo was the one who placed the distribution of income at the centre of his thought. According to Ricardo, the Political Economy was aimed at determining the laws that rule the distribution of income (Bigsten, 1983; Ferrán, 1997). "He was the first economist to derive a meaningful income distribution theory" (Bigsten, 1983, p. 4).

The productive factors are land, capital and labour, and total income is distributed according to rent, profits and wages. The basic idea in Ricardian thought is that a differential rent is produced only when less fertile lands are exploited requiring more capital and/or labour leading to a rise in the price of agricultural products. As a consequence, the owners of the more fertile lands receive an increased rent. This is why Ricardo insisted that the increase in rent is not a cause but a consequence of wealth (Ferrán, 1997). In the Ricardian system, distribution is prior to exchange, thus income distribution does not depend on demand for final products (Bigsten, 1983).

The distribution of total income works as follows: the surplus over the production costs (output value) constitutes the rent and the rest is distributed between profits and wages. "The Ricardian system accepts a Malthusian unlimited supply of labour at the subsistence wage in the long-run; it assigns to 'profits' the residual between marginal product of labour at a

point in time and the subsistence (or institutional) wage, and attributes to landlord rent the remaining residual in total output value" (Cline 1975, p. 360). Since land is not unlimited and not equally fertile, in the long-run, according to this theory, the share of profits tend to fall while rent and wage shares tend to rise (more labour is required), although the real wage is kept at subsistence level.

According to Ricardo, this distribution in favour of the landlords prevents economic growth acceleration and the economy would tend to stagnate, since he regarded landlords as spendthrifts and thought that economic growth was financed by the savings of the capitalists. Moreover, he proposed reducing restrictions to imports and introducing technological innovations without increasing the proportion of labour and keeping wages at subsistence level in order to achieve rapid economic growth (Gillis, Perkins, Roemer, Snodgrass, 1987). This proposition reveals his view that economic growth requires not only redistribution from landlords to capitalists, but also stressing inequality between profits and wages.

The Ricardian theory focuses on the conflict between rent and profits. Later on this focus shifts to the conflict between profits and wages especially with Marx's view. Since Karl Marx regarded the main class conflict to be between capitalists and workers, he only considered two sources of income: profits and wages. Although Marx recognised that rent, benefits and interests were also sources of income, he assumed that these types of income were received only by one class: the capitalists (Ferrán, 1997).

Marx uses the Ricardian "labour theory of value" to diagnose exploitation of workers (Cline, 1975). Like Ricardo, he assumed an unlimited labour supply which allowed the capitalists to hold down the wages at a subsistence level. But the labour surplus was possible through the existence of a "reserve army of labour" that capitalists were stimulated to maintain through labour displacing innovations in order to achieve the profit rate level that capital accumulation requires. Marx refused to accept the Malthusian theory that demographic forces created the labour surplus (Gillis, Perkins, Roemer, Snodgrass, 1987).

In the Marxian theory, the structure of the distribution of incomes is strongly

linked to the structure of the production relations. Therefore, a change in the structure of distribution can only happen as a result of a change in the production conditions. According to Marx, capitalism constantly reproduces its production relations and therefore the laws that rule the corresponding distribution of income. For this reason, the economic position of the working class can only improve when capitalism itself collapses. He saw the industrial concentration as the result of the tendency for the profit rate to fall leading to cyclical crisis until a final apocalyptic crisis. (Cline, 1975; Bigsten, 1983). "In the Marxian long-run the system collapses due to declining wages (whether declining absolutely or only relatively to capitalist income is unclear) and intolerable worker poverty in the face of capitalistic accumulation" (Cline, 1975, p. 361).

Opposite to the Marxian theory in many aspects, the neo-classical or marginal productivity theory postulates that all factors of production are in scarce supply and all of them create value<sup>vii</sup>. This refutes the Marxian view that only labour creates value. The product value is explained by the marginal utility which also explains the remuneration of factors. They generalised the marginal productivity as the basis for payment of all factors, eliminating the attribution of residual income to any one factor. This view is based on the principle that the producers maximise their benefits, and this point is only reached when all factor payments equalise their corresponding marginal productivity. Thus, the distribution of income is regarded as part of the general pricing process in the economy. In this way, the demand of factors depends on product demand, this is, the demand of factors is derived from product demand. The prices of factors and goods are assumed to be determined by market forces. Also, factor substitutability is assumed so that the rise in one factor supply decrease its relative price. Therefore, the neo-classical theory of distribution is based on production functions and elasticities of substitution (Cline, 1975; Bigsten 1983; Ferran, 1997).

Explaining the functional distribution, the neo-classical view helps to explain the size distribution of income. "The sum of payments to the factors of production possessed by an individual determines his income" (Bigsten, 1983, p. 5). Thus, the changes in the functional

distribution and, as a consequence, in the size distribution of income over time can be explained by changes in relative factor supplies, elasticity of substitution between factors, changes in product demand, and the capital or labour saving bias in technological change (Cline, 1975).

While the neo-classical theory uses the marginal productivity of factors to explain income distribution, the Keynesian economics bases its view on marginal propensities to save. According to Ferrán (1997), Nicholas Kaldor establishes this view, stating that the profit share in total income is determined by macroeconomic forces which assure that capitalists expenditures in consumption produce benefits to finance those expenditures. This is, as quoted by Kurz (1994), assuming that only capitalists are net savers, a given amount of profits can only materialise if there is a corresponding amount of net investment and capitalists' consumption.

Kaldor's model assumes that there are only two classes: capitalists and workers. Each class has a specific propensity to save -workers' lower than that of capitalists. In this model, the ratio of investment to national income is an exogenous variable which does not depend on changes in the propensities to save. Then, under full employment condition, equalising saving and investment yields the only one possible distribution of total income between wages and profits (Cline, 1975; Bigsten, 1983). The profit share in total income is expressed by the equation

$$P/Y = [1/(s_p - s_w)] [(I/Y) - s_w] \quad (2.1)$$

Where  $P$  are profits,  $I$  investment,  $Y$  total income,  $s_p$  and  $s_w$  are the propensities to save of capitalists and workers respectively, being  $s_w < s_p$  (See Ferran 1997, pp. 248-249). Assuming that both propensities to save are given, the profit share is determined by the rate of investment. The coefficient  $1/(s_p - s_w)$  measures the changes in the distribution of income due to an unitary change in the investment rate. The smaller the difference between  $s_p$  and  $s_w$  the greater the impact of changes in investment rate on income distribution. Assuming  $s_w$  very small, nearly zero, equation (2.1) leads to

$$P = (1/s_p)I \quad (2.2)$$

This last proposition shows clearly Kaldor's view on capitalists' consumption, stated above<sup>viii</sup>. Therefore, according to Kaldor's model, there is a specific distribution between wages and profits that makes savings equal to investment. An increase in investment forces an increase in savings to restore equilibrium. Since capitalists are assumed to have a higher propensity to save, the equilibrium can only be restored by increasing profits through an increase in the price level (Knight, 1976). This suggests a positive relationship between economic growth and inequality in the factorial distribution of income.

Cline (1975) points out a couple of basic flaws in Kaldor's model. The assumption that there are only two classes makes its application extremely restricted, since it becomes undetermined considering three or more classes. Also, an exogenously given investment is not well justified

While Kaldor built up his model focusing on profit share, Michal Kalecki proposed a model based on Marxian view focused on wage share in which he uses monopoly analysis. In his microeconomic analysis Kalecki uses the Lerner definition of the "degree of monopoly":  $\mu = (p - m)/p$ , where  $p$  is product price and  $m$  is the marginal cost. "If marginal cost is equal to marginal revenue,  $\mu$  is equal to the inverse of the elasticity of demand for the product of the enterprise" (Kalecki, 1951, p. 19). In Kalecki's model the components of variable costs are raw material and labour costs. Aggregating for a closed economy, Kalecki shows that labour share varies negatively with the "average" degree of monopoly power in the economy (Cline, 1977; Bigsten, 1983). So, according to the relationship between the degree of monopoly and the elasticity of product demand stated above, this means that the lower the product demand elasticity, the lower the share of wages in value added. Thus, this model suggests that economic growth relied on a growing monopoly power in the economy would lead to an increasing gap between wage and profit shares in total income. Kalecki's model faces the difficulties of building up a macroeconomic theory of distribution based on microeconomic elements without paying attention to aggregation problems. For example, Ferran (1997) argues that at microeconomic level it is plausible to

assume a given factor supply at a given price, while at macroeconomic level some limitations may arise by factor availability.

#### **2.4.2 Theories Of Size Income Distribution**

The foregoing theories are aimed at explaining the functional distribution of income rather than the size distribution of income. Therefore, they are of limited value in analysing the governmental action. According to Ahluwalia and Chenery (1983), because most of the wage earners belong to the middle-income groups is the reason why policies affecting the distribution between wages and profits mainly concern the upper end of the size distribution. Although, the neo-classical theory makes some contribution in understanding the determinants of the size distribution of incomes, differences in factor endowments seem not to be enough to explain the large inequalities in developing countries, particularly in Latin America. It would be necessary to explain also how these differences in endowments were created.

A number of theories of size income distribution have been developed. According to Sahota (1978) the set of theories of personal income distribution can be classified into two basic groups. One group ranges from those theories developed by economists who believe that income inequalities are largely a consequence of voluntary choice to those in which inheritance and institutions play the main role. The other, which Sahota (1978) calls the "fatalist" group, is constituted by three schools: a) theories based on the premise that incomes are distributed among individuals according to abilities which are genetically determined; b) theories that postulates that income inequalities are largely determined by chance, luck and stochastic factors; and c) the life-cycles theories which give high relevance to the age effect on earning capacities.

The theory presented by Milton Friedman is referred to as the individual choice theory in which stochastic influences are combined with optimising behaviour on behalf of the individuals (Bigsten, 1983). According to Friedman, being risk-taker is what explains that a small group in society can receive a large proportion of total income since, as in the lottery, the amount of money that many can lose is small in comparison with the

large amount that a few individuals can win (Ferran, 1997). The risk averse individual will take less risky choices. As a consequence, a society composed of risk averse individuals will generate less inequality than one composed of risk-taking individuals. This theory suggests that the rich are risk-taking while the poor are risk averse individuals. However, Ferran (1997) refers to the work by Stanley Lebergott (1959) who tests Friedman's model using data from USA and finds that the group who takes the most risky investments is not the richest but the small investors expecting a windfall. Moreover, in most countries (developed or developing), gambling seems to be supported by the low income groups who expect through a windfall to improve their economic position.

Cline (1975) and Sahota (1978) highlight the work by Mincer (1958) among those economists who support the human capital approach. This approach focuses on the explanation of job-earning differentials. "Mincer's human capital model is based on the idea that occupations requiring longer training periods pay higher earnings to compensate for the foregone income during training. More precisely, all individuals are assumed to choose among occupations such that the present discounted value of earnings is equated among all occupations...all incomes are in reality equal. Observed differences are merely statistical illusions stemming from the fact that the high income individual has been on the job a shorter time than his low income cohort" (Cline 1975, pp. 365-366). There are two general objections to this model. First, it focuses only on job-earning differentials as the main source of income inequality, disregarding the effects of other sources such as holding assets. Second, it overemphasises the impact of schooling on earning differentials, but disregards the effects of sex, race and family background on schooling achievement which could limit the range of real choices that individuals have.

Another interesting approach within the context of the job-earning differentials is the "job competition" model attributable mainly to Thurow (1972, 1975) (Cline, 1975; Bigsten, 1983). According to this model "wages are paid based on the characteristics of the job in question and workers are distributed across job opportunities based on their relative



position in the labour queue" (Cline 1975, p. 367). Bigsten (1983) argues that the position of a worker in the queue should be dependent on the potential cost of training the worker which may be determined using some screening device such as education.

The job competition approach refutes the assumption that the labour market determines the wage level. Wages are not set by the marginal product of the worker associated with his/her previously acquired education level, but by the marginal product associated with the skills he/she learns on the job. As a consequence, people with identical levels of education may be paid different wages. This theory disregards that how rapid workers can learn skills on the job might depend in some degree on the level of education previously achieved, which in turn depends on several other factors such as family background. So, according to the job competition view, expanding education would not tend to equalise income distribution. The effect of education expansion would be only to increase the admission requirements for obtaining jobs, while expanding job opportunities would have a more effective equalisation impact.

Abilities and stochastic forces have also been used as explanations for inequalities in the distribution of income. Differences in abilities explains differences in worker's productivity and as a consequence differences in income, while other theories regard stochastic forces as responsible for the skewed shape of the personal distribution of incomes. However, these views give little help for explaining the determinants of income inequality and for policy making aimed at changing the distribution of income. (For details about these theories, see Sahota, 1978, and Bigsten, 1983,).

The theories previously discussed are concerned mainly with the distribution of earnings. They neglect an important source of income which is property.

Sahota (1978) points out that property incomes are more unequally distributed than earnings and that inheritance is the major source of property class perpetuation. Hence, a theory of distribution that neglects property incomes will tell only part of the story.

The personal-income-distribution theory of inheritance takes account of

property incomes. Sahota (1978) and Bigsten, (1983) summarise the view of inheritance, attributable to Meade (1964, 1976), as consisting of a bundle of four major endowments: genetic make-up, parental level of education and training, social contacts, and inherited property itself. The mutual interaction of these endowments affect incomes, savings, and accumulation, so inequality in these endowments explains differences in income.

This brief survey shows that the ideal theory able to explain simultaneously the determinants of factor prices, functional shares and the size distribution of income does not exist. Although the theory of inheritance considers the property incomes, the missing element from all those theories is an explicit treatment of the distribution among households of the various forms of assets such as land, privately owned capital, access to public goods, and human capital. Ahluwalia and Chenery (1983) coincide with Sahota's (1978) view that the distribution of assets is more unequal than the distribution of earnings. Also, Deininger and Squire (1997) refer to six developing countries in which inequality in the distribution of land is greater than that in the distribution of incomes. Ahluwalia and Chenery (1983) associate the variations in income at the lower levels with the lack of human skills, physical capital and access to them. Attanasio and Sékely (1999) document that income inequality in Latin America is, to a large extent, a reflection of a very skewed distribution of income generating assets. Therefore, asset distribution cannot be disregarded when assessing the effects of economic growth on income inequality.

### 3. ECONOMIC GROWTH AND INCOME INEQUALITY: THE EMPIRICAL EVIDENCE

Economists have been widely concerned with the effects of economic growth on inequality and vice versa. Does economic growth tend to improve, worsen or have no necessary effect on income distribution? Are high levels of income inequality a necessary condition for growth acceleration? These are the main questions around which the debate revolves. Perhaps behind this debate is the desire of finding "economic laws" that describe the path of the distribution of income in the course of economic growth. The hypothesis put forward by Simon Kuznets in 1955, well known as the inverted-U hypothesis, has been assumed to have that category of economic law as the centre of the debate for more than 40 years, despite the little empirical support that this hypothesis has received. This is why Gary Fields (1988, p.462) called it "one of the greater ironies in the history of thought on economic development".

To present the debate I have divided the section into five sub-sections. Sub-section 3.1 presents the hypothesis launched by Simon Kuznets in 1955. Sub-section 3.2 is dedicated to the debate on the effects of economic growth on income inequality, as Sub-section 3.3 summarises the findings related to "poverty"<sup>ix</sup>. Sub-section 3.4 looks at the debate in the DCs context, while in Sub-section 3.5 the other side of the coin is presented, this is, income inequality as a cause of economic growth.

#### 3.1 The Kuznets' Hypothesis

Kuznets (1955, p. 18) stated that there was "... a long swing in the inequality characterising the secular income structure: widening in the early phases of economic growth when the transition from the pre-industrial to the industrial civilisation was most rapid; becoming stabilised for a while; and then narrowing in the later phases". Surprisingly, Kuznets recognises that "No adequate empirical evidence is available for checking this conjecture of a long secular swing in income inequality; nor can the phases be dated precisely" (p. 19). Even more, he admits that his paper "...is perhaps 5 per cent empirical information and 95 per cent speculation, some of it possibly tainted by wishful thinking" (p. 26).

However, some supporters of the hypothesis, such as Anand and Kanbur (1993), have tried to provide the "adequate" empirical evidence and formalise the process using mathematical models. The motive seems to be looking for explanations of the increasing inequality in developing countries. If the inverted-U hypothesis holds, then the less developed countries (LDCs) are on the left side of the curve, thus increasing inequality is justified, and it is just a matter of time for the "trickle down" to operate. This is, growth itself generates opportunities for lifting up the bottom end of the income distribution. Hence, it is worth having a closer look to Kuznets' explanations of his "conjecture" and his warning about favouring repetition of past patterns of the now developed countries (DCs) in the present LDCs.

According to Kuznets (1955), excluding government intervention, there are two forces that explain income inequality before taxes: the concentration of savings in the upper-income groups and the industrial structure of the income distribution. The former yields inequality in savings which, all other conditions being equal, has a cumulative effect of increasing the proportion of income-yielding assets in the hands of the upper-income groups leading to larger income shares of these groups and their descendants. The other force is the result of the process of industrialisation and urbanisation, this is, economic growth accompanied by the shift away from agricultural activities. On one hand, the process increases the urban share in total population, which is assumed more unequal than rural population. On the other hand, since average per capita income of rural population is usually found lower than that of the urban, Kuznets (1955) argues, that this gap in relative mean incomes tends to widen as a result of a more rapid growth of the per capita productivity in economic urban activities than in agriculture.

However, despite the cumulative effect of the concentration of savings, eventually these tendencies reverse over time, according to Kuznets (1955), as a result of both government redistributive intervention through legislative interference and political decisions and a group of "less obvious" factors which characterise a dynamic growing economy. First, the decreasing proportion of rich

families as a result of more family control in this income group and the increasing immigration entering at the lower-income levels reduces the share of the top 5 percent of the population. Second, dynamic economies create an atmosphere of relative freedom of individual opportunity giving the chance for more rapid growth to younger industries and hence expanding the emergent middle classes. Third, in these economies there is a rising trend, shifting workers from lower-income to higher-income industries. The last two "less obvious" factors along with the Lewis' view (1954) have been used as arguments by the believers in the trickle down, when they attempt to translate successful experiences in DCs to the LDCs' context. In this respect, Kuznets himself warned against the temptation of favouring the repetition of past patterns of the "now" DCs under the markedly different conditions of the "present" LDCs. This warning has rarely been cited in the literature and surprisingly ignored, a reason why it is worth quoting his own words here as basis for further discussion.

There is danger in simple analogies; in arguing that because an unequal income distribution in Western Europe in the past led to accumulation of savings and financing of basic capital formation, the preservation or accentuation of present income inequalities in the underdeveloped countries is necessary to secure the same result. Even disregarding the implications for the lower-income groups, we may find that in at least some of these countries today the consumption propensities of upper-income groups are far higher and saving propensities far lower than were those of the more puritanical upper-income groups of the presently developed countries. Because they may have proved favourable in the past, it is dangerous to argue that completely free markets, lack of penalties implicit in progressive taxation, and the like are indispensable for the economic growth of the now underdeveloped countries. Under present conditions the results may be quite the opposite - withdrawal of accumulated assets to relatively 'safe' channels, either by flight abroad or into real state; and the inability of governments to serve as basic agents in the kind of capital formation that is indispensable to economic growth (Kuznets 1955, pp 25-26).

Despite these words being completely valid, the process described by

Kuznets (1955) has been taken as inevitable by believers in trickle down whose explanations are almost always related to the nature of structural change. As Gillis, Perkins, Roemer, Snodgrass, (1987) discuss, the main argument is based on the similarities between conditions observed in LDCs and those which prevailed in the industrialised countries before the Industrial Revolution. The theoretical framework to explain rising inequality with economic growth is provided by the Lewis model, discussed earlier, while the Fei-Ranis (1964) extension of the Lewis model explains, according to these authors, that this tendency toward increasing inequality is reversed when all the surplus labour is absorbed into modern-sector employment. Thus, labour becomes a scarce factor of production and further growth, which implies an increase in labour demand, will push the wages up. So, this rise in the general wage level will bring the downturn in inequality and poverty reduction.

### **3.2 The Debate About The Inverted-U Hypothesis**

The Kuznets' hypothesis at the early stages of economic growth received support by the first major study about the relationship between economic growth and income inequality by Adelman and Morris (1973), although they admitted that the downturn predicted by the Fei-Ranis model is not automatic, this is also challenged by Ashwani Saith (1983) who places emphasis on the differences not only between DCs and LDCs, but also the fundamental inter-country differences with regard to size, historical heritage, the timing of their industrialisation process, etc. In this sense, Saith (1983) gives justice to the Kuznets' warning quoting Kuznets' call for national studies: "If emphasis is to be on similarities and differences in the basic characteristics of the process of adoption of the industrial system - for countries distinguished by their size, historical heritage, and the timing of their industrialisation process - we obviously need a variety of national studies" (Kuznets 1954, p. 153, quoted by Saith, 1983, p. 369). Later on Adelman and Fuwa (1994) give relevance to policy choices made in the course of the development process where the downturn in inequality occurs.

But Saith (1983) also challenged the methodological aspects. He discusses the

fact that the inverted-U hypothesis acquired a paradigmatic status with the arrival of the Paukert (1973) and Ahluwalia (1976) papers which attempt to test the hypothesis on the basis of cross-country data<sup>x</sup>. He argues that these econometric studies have little in common from a methodological point of view with Kuznets' studies which were supported by time-series data on the income of the "rich", while these papers concentrate on the bottom 20% or 40% of the population. In fact, Kuznets (1955) did not hypothesise about the income share of "the poor". Even more interesting is Saith's criticism about the estimation of one U-curve from observations on both LDCs and DCs. Actually, when the sample is restricted to the LDCs group of countries the inverted-U hypothesis does not hold. Saith (1983) objects to Ahluwalia's assumption that the position of the DCs on the inverted-U curve reflects the future position of the LDCs on the basis of two arguments. First, that the internal conditions and the international context in which the LDCs (taken from the sample) existed, were essentially different from those in which the DCs (taken from the same sample) developed. Second, that the economic and political life of the LDCs' world is not independent of the DCs' world. "Thus, different cases in Ahluwalia's cross-country regressions are not really independent of each other. Such a dependence would make the cross-sectional exercise even more questionable" (Saith 1983, p. 374).

Capital exportation from DCs to LDCs make feasible further economic growth in DCs still under unlimited labour supply conditions, once the "turning point" on the U-curve is reached in DCs. So, one could speculate on whether some DCs are on the right leg of the inverted-U curve at the expense of their relationship with some LDCs or not and if, under these conditions, those LDCs would be able in the future to reach that leg of the curve as well. In respect of this, Saith (1983) re-estimates the U-curve using only the 41 LDC sub-sample, excluding the "outliers" (the poorest and the richest countries). He shows that a better fit is provided not by the inverted U-curve but rather by an inverted-L curve. Also, Ahluwalia, Carter, and Chenery (1979) use a 36 LDCs sample of which 16 countries are beyond the "turning point" estimated from cross-country data and only Taiwan shows some

evidence of experiencing the second phase of the inverted-U curve. These findings suggest that, in the case of LDCs, the relationship between economic growth and inequality could be better described by an inverted-L curve rather than an inverted U-curve. However, notice that this discussion is focused only on the relevance of the level of growth and/or the rate of growth. Also, when conjecturing about the inverted L-curve, heterogeneity among LDCs is ignored.

Another methodological weakness of those cross-country studies might be the comparability problem which arises as a result of the differences in recipient unit choices, income definition, geographic coverage, and variations in household survey design. Sailesh K. Jha (1996) addresses this problem using an expanded data set up to the 1990s and finds that most of the variations in income distribution are due to country characteristics and not to data comparability problems. Another important finding in Jha's estimates is that the growth rate is not a significant variable, indicating that there is not feedback from the rate of growth to income distribution. This result is consistent with the findings of Ahluwalia (1976), who also suggested that the way in which economic growth is promoted matters for the distribution of income, and with those of Papanek and Kyn (1986), and Adelman and Fuwa (1994).

Gary Fields (1988) assessing the lessons learned from studies which have used cross-sectional data, inter-temporal data, and micro data states that considering the two possible conclusions - one that income inequality "must" increase before it decreases, the other that income inequality may increase or decrease depending on the "type" of country and the policies pursued - the latter is certainly more consistent with the empirical evidence at hand. Also, the studies that consider structural and policy factors along with income level or rate of growth, Fields (1988) reports, show that the extent of inequality in different countries was associated with factors such as education, extent of direct government economic activity, population growth rate, urbanisation, and importance of the agricultural sector in total production. "This provided strong motivation for looking at the changes that have taken place *within*

individual countries and the reasons for them" (Fields 1988, p. 467)<sup>x</sup>.

Later, Fields (1991), using papers produced for 20 countries as part of a research project launched by the World Bank in 1985 and adding information of another 35 countries, confirms his previous finding that there is not a definite relationship between changes in inequality and the level or the rate of economic growth, but that those changes seem to be associated with the "pattern of growth". Further support to this view is given by Mátyás, Kónya and Macquarie (1998), who, using a two panel data set of 47 and 62 countries, find that it is not the GDP per capita which explains income inequalities but rather the specific characteristics of a country such as social structure, political system, and natural resources.

### 3.3 The Effect On Poverty

In relation to poverty, Fields (1991) results show that poverty is nearly always reduced by economic growth, and it is more apt to decrease the more rapid is economic growth. Deininger and Squire (1997) reach similar results, they use an expanded data set on income distribution adding new observations from primary survey data to official statistical publications and research papers. They found that periods of growth are associated with an increase in inequality almost as often (43 cases) as with a decrease in inequality (45 cases). In contrast, they found a strong systematic relationship between overall growth and growth in the income of the poorest quintile, the latter increased in more than 85% percent of 91 cases. This finding is shared by Morley (1995), Psacharopoulos et. al (1995), and Ravallion and Chen (1997) who found that growth reduced "poverty", although not inequality, while Ravallion and Datt (1996) show that aggregate growth is able to reduce "poverty". Also, Jha's (1996) estimates prove that the bottom 20% of the population benefits from economic growth in the long run, suggesting that trickle down seems to operate.

Therefore, these findings in relation to the poorest groups of the population seem to give support to the trickle-down argument, since there is little disagreement about the positive effect of growth on poverty reduction. However, based on these results we could be tempted to make optimistic predictions that

could be overstated. In respect of this, Janvry and Sadoulet (1996) had made a contribution to the methodology for analysing the relation between growth and inequality/poverty. They argue that causal analysis of this relation has usually been done by observing changes in inequality and poverty during broad periods of growth and recession instead of treating country-specific periods of growth and recession as observation units. For example, in the case of Latin America, they report, the 1970s have been associated with growth, mid-1980s with recession, and late 1980s and early 1990s with growth recovery. However, countries like Costa Rica and Colombia were avoiding recession during the mid-1980s, while Brazil and Peru were still in recession in the late 1980s and even early 1990s. Therefore, they suggest, the analysis needs to allow for this country heterogeneity by looking at country-specific spell of growth and recession. Otherwise, if a negative relationship is found between growth and poverty, for example, the sign may derive from recession, from growth, or from both. So, if the strongest relation occurs during recession, optimistic predictions about this relationship could be wrong. Even more, government policies aimed at promoting an equitable income distribution might be driving part of those optimistic results, the reason why Jha (1996) suggests that further research should focus on how much of this growth versus equity trade-off is due to policy.

The focus of the research by Janvry and Sadoulet (1996) is Latin America, and they make another important methodological contribution which allows measurement of how much of the impact of economic growth on income inequality is due to the "pattern of growth". They argue that there are qualitative differences between growth before and after the debt crisis that should be taken into account. Before the crisis, many Latin American economies were still implementing models of import substitution industrialisation, accumulating debt and discriminating against agriculture. After the crisis, following IMF-World Bank prescriptions, most Latin American countries started to apply severe fiscal discipline, restrictive monetary policies, devaluation, and trade liberalisation. Janvry and Sadoulet control for these different "patterns of growth", creating a set of variables which pick up

the "qualitative features of growth" while another set do the same with the "structural features of growth"<sup>xii</sup>. Their findings are very interesting. First, as in previous works, they found that growth itself is not a strong determinant of the change in inequality, while the structural characteristics of the countries were found relevant to inequality. The effect of economic growth on poverty reduction was found favourable in all periods, which reinforces the findings reported above, but they highlight that the main link between income and poverty is established through recessions.

It is important to bare in mind this methodological contribution when assessing results on Latin American inequality, since increasing inequality might be a misleading finding in terms of the inverted-U hypothesis. In fact, Altimir (1995), Beccaria et al. (1992), Fields (1992), Lustig (1995), Morley (1995), and Psacharopoulos et al. (1995) have found that inequality mirrors the economic cycle. This is, inequality rises during periods of recession and falls during recovery, which suggests a negative relationship that contradicts the inverted-U hypothesis. Janvri and Sadoulet (1999), using data for the 1970-1994 period for 12 Latin American countries, do not find support for the inequalizing effect of growth in Latin America. They find a very strong asymmetry in the effects of growth and recession on inequality, whereby one year of recession can cancel the inequality reduction effects of more than one year of growth. This suggests that recessions in Latin America have been devastating on inequality, and growth has been ineffective in reducing it. These findings are in line with those of Adelman and Fuwa (1994) who deal with the effects of policies on the growth-equality trade-off for the poor. They used income distribution data for LDCs compiled by the World Bank for the 1970s and the 1980s. Their regression system confirms the inverted U-hypothesis for both periods, but the most interesting aspect of their results is that the variables portraying the nature of adjustment policies are of significant influence on income distribution to such an extent that the authors recognise that their results suggest that during the 1980s the structural adjustment policies have exacerbated the growth-equality trade-off for the poor. They find that the share of the poorest groups decline very steeply,

reaches a minimum and tends to remain there. This response might be related to the sensitivity of poverty to inequality changes. Kakwani (1993) found that poverty measures were considerably more elastic for changes in inequality than for growth rate, so if inequality remains at high levels, economic growth will be less efficient in reducing poverty. This is confirmed in the case of the USA by Smolensky et al (1994), who found that ".the effectiveness of growth in reducing poverty depends a great deal on how growth is distributed. The rise in inequality offsets the poverty-reducing effects of more than decades' worth of growth..." (Smolensky et al, 1994, p. 222). However, this fact has not been explored thoroughly and more research is needed on this subject.

### **3.4 The "U-Turn" In Developed Countries**

The debate is not limited to the LDCs context. The relationship between income inequality and economic growth for advanced economies, according to Kuznets' view, should lie on the right leg of the inverted-U curve. However, Mátyás, Kónya and Macquarie (1998) report that the Gini coefficient is growing parallel to the GDP in Denmark, Japan, and Sweden. Also, Kirby (2000) surveying evidence on growing inequality in DCs finds that in the USA income inequality increased steadily from the mid 1970s and throughout the 1980s. In the UK, income inequality fell up to the late 1970s but the Gini coefficient rose by more than 30 per cent between 1978 and 1991 which, according to Kirby (2000), is more than double the decline in the UK from 1949-1976. This finding coincides with that of Goodman, Johnson, and Webb (1997) who report that from 1977 onwards, in the UK, the level of inequality as measured by the Gini has registered a continuous increase which is historically unusual. Also Kirby (2000) reports an upward trend in income inequality over the 1980s in Australia, and increase in inequality in New Zealand during the late 1980s.

Rati Ram (1991) presents formal evidence from the USA, which was one of the three countries used by Kuznets (the other two were Germany and the UK), contradicting the inverted-U hypothesis associated with income inequality. After Kuznets (1955), this is one of the few studies made using inter-temporal data of

a single country. He recognises that using data for about half a century might not be able to capture the full Kuznets structure.<sup>xiii</sup> However, his work has the advantage of covering a single country and avoids the problem of dealing with country heterogeneity. The use of cross-sections of states deals with some degree of heterogeneity, but this is much smaller than that in cross-country samples which include countries at various stages of economic development. According to the advanced nature of the USA economy it would be "reasonable" to expect, based on Kuznets' view, that the USA economy would lie on the right leg of the inverted-U curve. The prediction of a monotonic decline in income inequality, even at such a high level of economic development, is not supported by Ram's results, which suggests that the performance of the relationship between growth and income inequality fit better with a U-curve rather than with an inverted-U curve<sup>xiv</sup>.

Donald Harris (1993) makes an important contribution to this debate from a Marxist point of view. He regards "the trickle down idea is analytically invalid and historically incorrect". There is no automatic mechanism in a market economy which could guarantee income inequality reduction with economic growth<sup>xv</sup>. He opposes the neo-classical and neo-keynesian models' assumption of abstract economies operating at full employment with the "real world" of actually functioning capitalist economies operating with a margin of unutilised capacity as well as a reserve army of unemployed labour. Harris' (1993) main argument is that, in these economies, growth has a cyclical character (boom and bust) which produces corresponding cycles in the pattern of income distribution without any necessary long-term tendency in one direction or the other. In boom periods, wages and profits rise and wages may even rise ahead of profits as the army reserve diminishes, Harris argues. But the tendency of profit rate to decrease leads to a downturn imposing the limit to which the income distribution may improve and as the downturn continues the income inequality worsens again. Given the pattern of property ownership, these cycles in the factorial distribution translate to the size distribution. Harris (1993) reports the empirical evidence of this cyclical pattern in the case of USA, showing that over the past 30 years USA

economic growth has been associated with a significant upturn in measured income inequality. "As far as the U.S. economy is concerned, and unfortunately for the Kuznets thesis, it now appears that the inverted U-curve has turned up again" (Harris 1993, p. 69).

### 3.5 Income Inequality As A Cause Of Economic Growth

The debate presented so far has been on the effects of economic growth on income inequality, to which the bulk of the literature has been devoted. Let us now turn our attention to the reverse of the relationship. According to Colman and Nixon (1988), the Lewis Model gives support to the argument that increasing inequality is not only an inevitable effect of economic growth, but also a necessary condition for growth. The basic argument is that savings are essential to increase productive capacity which leads to higher rates of growth, the reason why income must be redistributed towards the groups that save and invest - the rich - in order to ensure capital accumulation and growth. Therefore, an economy with a high concentration of income by the upper groups is more likely to grow faster than one with a more equitable distribution of income. This is the *pro-inequality* argument.

However, in line with Kuznets' (1955) warning, in a LDC context there are no guarantees that the higher-income groups will save a significant proportion of their income in their own country. According to Todaro (1994), unlike the historical experience of the now developed countries, the rich in developing countries are characterised by spending in luxury consumption (usually imported) and saving abroad. This author also challenges the pro-inequality argument pointing out that highly unequal distribution of income is manifested in poor health, nutrition, housing and education for the vast majority of the population, which in turn lead to low levels of productivity and thereby to a slower-growing economy, while the redistribution of income to the lower-income groups would stimulate demand for home production, since the rich tend to spend more of their additional incomes on imported goods. "Rising demand for local goods provides a greater stimulus to local production, local employment, and local investment. Such demand thus creates the conditions for

rapid economic growth and a broader popular participation in that growth" (Todaro 1994, p.159)<sup>xvi</sup>. This is the pro-equality argument.

Empirical works have been conducted to test these arguments. Leightner (1992) did not find evidence to support the pro-inequality argument in the case of Korea for the period 1963-1980. His regressions undermine the rationale for the argument that an increase in private saving causes an increase in investment. In contrast, he finds evidence that an increase in consumption causes an increase in investment. This finding gives support to the pro-equality argument that greater equality produces more consumption which drives investment and growth. Leightner (1992) recognises that his findings are surprising in light of Korea's rapid growth because the Korean government pushed inequality too far and, according to his results, a redistribution of income would have produced greater growth. He also refers to the experience in Japan with similar, or greater growth rates, while its government purposefully increased income equality. Leightner's (1992) work is specific on Korea and does not prove the validity of the pro-equality argument. What his findings show is that increasing inequality is not a necessary condition for growth.

Deininger and Squire (1997) also address the question whether more egalitarian countries grow faster or not. Their results challenge the view that higher inequality accelerates economic growth. To deal with the problem of limited availability of data to assess the impact of initial income distribution on subsequent growth, they complemented their data with information on the distribution of land holdings, which provides a better measure of initial distribution. To investigate the effect of initial inequality on long-term growth, they look at determinants of growth rates for the period 1960-1992. These authors find that the negative impact of the initial *income* inequality on subsequent growth is not very strong<sup>xvii</sup>. However, inequality in the initial distribution of *assets*, measured by the distribution of land, exerts a significant negative effect on subsequent growth. In a previous work Alessina and Rodrik (1994) find a similar result. This result is quite relevant, since it gives further support to findings of research, reported earlier, about the role played by country

characteristics and structural factors in the relationship between economic growth and income inequality, also it might have important policy implications. The authors suggest that if unequal distribution of assets is proved to have a strong negative effect on economic growth, then policies that enhance the number of people who are able to access credit markets could contribute to accelerating economic growth.

The mechanisms through which an unequal initial distribution of income might affect subsequent growth are addressed by both Deininger and Squire (1997) and Garcia Cecilia (1994). Garcia (1994) reviews a group of papers that examine whether there exists a causal relationship between inequality and long-run growth. According to Garcia, there have been two theoretical approaches. One of them focuses on political decisions about income redistribution through taxes - the political mechanism<sup>xviii</sup> - while the other looks at how inequality affects the opportunities of individuals to invest in their education and thus its implication on growth rates -the educational mechanism<sup>xix</sup>. The first group shows that inequality harms growth, while the second group finds a U-shaped relationship between inequality and growth. So, based on the first group one could speculate that more egalitarian distributions would tend to favour growth, while from the latter group no definite relationship can be predicted<sup>xx</sup>. According to Garcia (1994), there is little empirical evidence on the political mechanism which gives little support to it, suggesting that there are other links, while some empirical support is found to the educational mechanism from both the evidence that it is redistribution towards the middle class that tends to have the greater impact on growth and from the correlation between inequality and schooling variables. Similar approaches are empirically tested by Deininger and Squire (1997) who also reach similar results. Also, Alessina and Perotti (1993) find that the evidence is inconclusive on the political channel.

Forbes (2000) challenges empirical works which have reported a negative relationship between inequality and subsequent economic growth, arguing that there are a number of potential problems with these works such as lack of robustness in the estimates, measurement errors in inequality, and omitted variable



bias. This author argues that when adding explanatory variables or regional dummies, the coefficient on inequality often becomes insignificant. Also, a negative bias in the relationship can be introduced by measurement errors from, for example, underreported inequality statistics, or from omitting variables such as the level of corruption, which tends to be positively correlated with inequality and negatively correlated with growth. So, using an improved data set, which not only reduces measurement errors, but also eliminates a potential source of omitted variable bias, Forbes' (2000) results suggest that in the short and medium term, an increase in income inequality has a significant positive impact on subsequent economic growth. This result can be interpreted as saying that, as long as one looks within the same country, increases in inequality promote growth in the short - and medium - term. However, Banerjee and Duflo (2000) report works that find no relationship between inequality and growth, but when the sample is broken up into poor and rich countries a negative relationship is found in the sample of poor countries, while a positive relationship is found in the sample of rich countries. This finding is quite interesting since it suggests that the pro-equality argument would be plausible for poor countries, while in the case of rich countries the pro-inequality argument might be more applicable.

Forbes' (2000) work is focused on the short - and medium - term relationship and the author admits that these results do not directly contradict the previously reported negative relationship between inequality and growth, since the positive impact of inequality on growth could either diminish or reverse in the long-term. It is interesting to observe also that Forbes' (2000) work is intended to give empirical support to theoretical arguments such as "...in more unequal societies, the medium voter will elect a higher rate of taxation to finance public education, which will increase aggregate human capital and economic growth" (Forbes, 2000, p.1-2). However, this would be a long-term effect rather than a short-term effect. In the short-term, it is more reasonable to expect that redistributive taxes (higher taxes) would reduce investment incentives leading to lower growth.

#### 4. CONCLUSIONS

The theories of income distribution, reviewed in this paper, are aimed only at explaining the determinants of the level of employment of productive factors and their relative prices, with the exception of the neo-classical theory which makes a little contribution to explain the size distribution. They are of limited value in analysing government action and the impact of economic growth on size distribution of income. But even those theories which attempt to address the determinants of size distribution are mainly concerned with the determinants of individuals' earnings. To explain earning differentials some of them look at the differences in risk aversion among individuals, while other highlight differences in ability and stochastic factors. Some theories give to schooling the pre-eminent role in explaining the level of income of individuals, while others reduce this role to a simple screening device giving preponderance to either job characteristics or the skills that individuals learn on the job. But these theories, reviewed in this paper, neglect property as a source of income, and as a consequence they can tell only part of the story. Although inheritance has been considered, an explicit treatment of the distribution of the various forms of assets such as land, physical and human capital, and access to public goods is missed in these theories.

However, there has been a recognition in the recent literature that the return on the various assets owned and used in a productive fashion by the household members is relevant for the household income. The distribution of these assets may be affected by the path of economic growth, the reason why analysing these effects might be a good step forward in explaining the links between economic growth and income distribution.

If one had to summarise in few words the main conclusions drawn from the debate on the relationship between economic growth and income inequality, one should say that, despite the literature about the relationship between economic growth and income, inequality is huge and the debate has been very long, no definite relationship has been found and that we are still far from generalising the channels through which economic growth affects the distribution of income. The analysis of

inequality changes that have taken place within individual countries and their causes is perhaps one of the best contributions to clarify how economic growth affects income inequality.

Savings seem to be one of the key variables in the whole debate. It was shown in Section 2 that in classical theories savings are a relevant variable in explaining not only the process of economic growth, but also how this process relates to the distribution of income. Section 3 has shown that the current debate has been mainly around the Kuznets' hypothesis, which achieved a paradigmatic character during the 1970s, its basic assumption being that only the upper-income groups save, in line with Kaldor's view. Despite Kuznets' warning, the argument that the initial inequality in the distribution of income in DCs led to accumulation of savings which financed investment and thus promoted growth has been translated to the LDCs context. Nevertheless, some scholars have shown evidence that there are not enough reasons to think that the savings of the higher-income groups in LDCs will lead to acceleration of economic growth as it happened in today's DCs. In fact, most of the empirical works are based on cross-country analysis which use a mixture of data from DCs and LDCs, disregarding the economic and political links between many DCs and LDCs. Even more, there are some empirical evidence that suggests that the sign of the relationship between inequality and economic growth can switch from positive to negative depending on whether the country is rich or poor, or on whether the relationship is seen in the short - or long - term.

Therefore, it is safe to say that the Kuznets' hypothesis has received little empirical support. The process described by Kuznets is not inevitable. The downturn predicted by the Fei-Ranis

extension of the Lewis Model is not automatic. On the contrary, there is empirical evidence which gives support to the view that the impact of economic growth on income distribution depends more on the "type" of economic growth and the policies pursued than on the level of per capita income or the rate of growth. It seems that the way in which growth is promoted is what matters for its effects on income distribution.

In the case of Latin-American countries, income inequality mirrors the economic cycle. Qualitative differences have been found between growth before and after the debt crisis. One year of recession can cancel the inequality reduction effects of more than one year of growth, according to some empirical works. Recessions in Latin America have significantly increased inequality, while growth has been ineffective in reducing it.

According to many scholars the extent of inequality has been found strongly associated with education, the extent of direct government economic activity, population growth rate, urbanisation, importance of the agricultural sector in total production (Fields, 1988; Adelman and Fuwa, 1994; Jha, 1996), the specific characteristics of a country such as political system and natural resources (Mátyás, Kómya and Macquarie, 1998), and other structural factors such as barriers to entry into high-income jobs, the structure of capital markets and limited access to credits, the existing distribution of property ownership, and the inheritance system (Harris, 1993). Therefore, it seems that looking at the relationship between economic growth and that type of factor, within the boundaries of individual countries, is a relevant contribution in establishing the links between economic growth and income inequality.

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## ENDNOTES

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<sup>i</sup> This concept will be discussed more formally in the next sub-section.

<sup>ii</sup> Atkinson (1983) considers that income can be disposed in one or a combination of the following ways: expenditure, saving, and capital transfers to others. Thus, the difference between income and saving would be, in this case, equal to expenditure plus capital transfers.

<sup>iii</sup> money received = money income + savings;  
cost of living = money income + borrowings;  
money received = cost of living + savings - borrowings

<sup>iv</sup> There is an inertia effect on birth rate. In poor countries population is young with high levels of fertility. Also, with limited flow of information, families tend to reproduce their decisions regarding fertility. For a more detailed discussion see Ray (1998, Chapter 9).

<sup>v</sup> Alessina and Perotti (1993) present a critical survey of this literature.

<sup>vi</sup> I will return to this point in Section 3.5 with empirical evidence.

<sup>vii</sup> This theory was worked out in the late nineteenth and early twentieth centuries led by Alfred Marshall.

<sup>viii</sup> In fact, since  $s_p = 1 - c_p$ , where  $c_p$  is the propensity to consume of capitalists, from  $P = (1/s_p)I$  we get  
$$P = I + c_p P$$

<sup>ix</sup> The definition of poverty varies among the works reviewed in this section. The poorest quintile of the population is used by Fields (1991), Deininger and Squire (1997), and Jha (1996), while methodologies based on definition of a poverty line according a minimum requirement of household income per capita per day is used by Kakwani (1993), Smolensky et al (1994), Psacharopoulos et al (1995), Morley (1995), Ravallion and Datt (1996), Janvry and Sadoulet (1996, 1999), and Ravallion and Chen (1997).

<sup>x</sup> Adelman and Fuwa (1994) report an additional number of works which using cross section regressions confirm the existence of the Kuznets curve. These works are by Bacha (1979); Chenery et al (1974); Ahluwalia, Carter and Chenery (1979); Anand and Kanbur (1986); and Papanek and Kyn (1986, 1987).

<sup>xi</sup> Among the studies examined by Fields (1988) those which considered structural and policy factors are Chiswick (1971), Adelman and Morris (1973), Chenery and Syrquin (1975), and Ahluwalia (1976).

<sup>xii</sup> Qualitative features of growth: predicted growth rate of the Gini coefficient; length of growth or recession sequence; difference in growth of value added between agriculture and manufacturing, and agriculture and services; inflation; real exchange rate growth; international terms of trade; coefficient of variation of GDP per capita; migration rate; and urban minimum wage growth. Structural features of growth: initial GDP per capita, share of agriculture in GDP, initial level of inequality, initial urban and rural poverty levels, natural growth rates of urban and rural population, initial shares of urban and rural in total population.

<sup>xiii</sup> The time-series observations for the U.S. cover the period 1947-1988, and four cross-sections of states pertain to the census years 1949, 1959, 1969 and 1979. (Ram, 1991, p. 1113).

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<sup>xiv</sup> Fosus (1993) makes methodological objections to Ram's (1991) work referred to the use of inequality measures based on family incomes with no control for family composition. Ram (1993) replies showing that the addition of the family composition variable does not add any difference to his original estimates. Also, he points out that many other scholars such as Braun (1991), Bishop, Formby, and Smith (1991), Coughlin and Mandelbaum (1988), and Ray and Rittenmoure (1987), have reported strong evidence that shows either the U-shape for the relationship growth-inequality for the USA or brings out increasing inequality over the 1970s and/or the 1980s.

<sup>xv</sup> It is interesting to notice that Harris (1993) argument is in line with Saith (1983) and Adelman and Fuwa (1994), but from a different point of view and in a different economic context.

<sup>xvi</sup> Todaro (1994) supports his view on research by Ranis (1962), Grupta (1970), Lessard and Williamson (1987), and Mason (1988), and Myrdal's (1968) view.

<sup>xvii</sup> Actually, later Deininger and Squire (1998) question the validity of this negative relationship between income inequality and growth.

<sup>xviii</sup> The argument is that redistributive taxes reduce investment incentives and, as a consequence, the rate of accumulation.

<sup>xix</sup> This is based on the view that lower stock of human capital determine lower growth.

<sup>xx</sup> The works reviewed by Garcia (1994) are: Alesina and Rodrik (1991) and Persson and Tabellini (1992, 1994) for the redistribution approach, and Galor and Zeira (1993), Glomm and Ravikumar (1992), Saint-Paul and Verdier (1992a, b, c), Garcia Peñaloza (1993), and Perotti (1993), for the educational approach.