

***Finance for  
Development:  
theoretical concepts,  
practical evidence  
and  
new concerns***

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## INTRODUCTION

One of the reasons I chose this topic is strictly due to my interest for social issues, and specifically how economics and finance can be related to those. Concerning my Christian aim, since I was a child I've thought to those children around the world that cannot have the same "privileges" of advanced countries' children. At the same time due to my personal previous studies I support the general idea to offer to poor population the right tools to support their development process. But providing means doesn't matter to provide just money, but it means providing money, people, ideas and technical support as well. Basically, these are the reason for which in next pages I will cover the matter Finance for Development and I wanted to afford this debated topic by covering the general framework and specific applications of that. Specifically, it is my intention to cover accurately the literature available at this time, following a specific path for a complete analysis of the topic that is: Development – Economic growth – Finance's role – Aid and International Agencies. Moreover, the recent crisis has highlighted the limits of real finance, conceived just a "world" to make profits or generally making business. In this sense, I want to support the view of several economists that claim for paying more attention to ethic fundamentals and acting so with respect to the overall society. However, the debate is still more complex and detailed that will not be matter of discussion in next pages. Conversely, my analysis will be more concerned first of all on the definition of development as a whole, that as I will mention later, it is more than the simple economic figure of a county and for this the first chapter is called "The concept of development". Moreover, it represents the basic question around which I have built up the overall discussion. In this sense, initially, I analyze the starting situation that currently we can see, namely, thanks to the vast and well explained literature I coped with, it results that less developed countries (LDCs) seem to have common features in political terms, due to health and education conditions and so on. At the same time, part of the analysis will focus on the theoretical explanation of that, by covering the models of P. Aghion & P. Bolton (" Theory of Trickle-down economy") and Lewis ("The Dual economy theory") as well specific relevant observations pointed out by M. Kalecki, who in particular analyzed common financial aspects present in LDCs. The author indeed, provide to the literature interesting facts concerning the inter-linkage among investment and saving rate, which as recognized are quite low and at the same time, are the weak points in the economic process of LDCs. Finally, I will complete chapter one by summing up models that tried to catch up the stylized

facts of a standard process of development (i.e. Rostow's model) and I've also included some pages specifically dedicated to African countries. In this regard, for a deep overview, I will make reference to the eight Session of the ECA Conference of Ministries of Finance called "*Finance for Africa*".

The second chapter of my work will cover the main aspect due to LDCs' conditions that is economic growth. If from one side it can be recognized as the engine of the overall process of development, on the other Thirlwall raises the question (that I support): "can social development exists without economic growth? And, can economic growth be experienced without social development?". We will see the answer later, even if the basic idea of a comprehensive process touching also social aspects, is something claimed even from the Nobel prize A. Sen. However, just to came back to chapter due, it will deeply analyze several theoretical models of economic growth by passing through the classical theories of Malthus and Solow (and its critics), and the idea of Endogenous growth supported by many economists in different ways as Rebelo, Romer and Lucas. At the same time, this section will be followed by another one within the same chapter, concerning models explaining differences among countries, that is more recent and at the same time very interesting. In particular, I will provide the economical intuitions of Caselli, Galor & Zeira and Sachs from one side, and a vision of models concerning saving as key variable (i.e. Thirlwall, Harrod and Domar) on the other one.

The third chapter is dedicated to analyze financial matters as tools for achieving economic growth and social development. In this regard after a brief overview of the general idea and, recalling chapter one concerning financial common characteristics in LDCs, I will focus on the core issue of the total work that is: how finance can really affect development. In order to provide a deep analysis of that (on which I spent much time), I report the considerations of professor Pagano as well as observations made by Greenwood and Jovanovic, before starting to cope with more complex theoretical models. It was my aim indeed, discuss the matter providing to the reader the main contribution coming from literature as well as empirical evidence of what discover these years, so to a have a final reliable vision of the finance's role. In this sense, I want to recall the works of King & Levine, McKinnon & Shaw and Murinde which, from different points of view arrive to one big dilemma: financial liberalization or financial repression? Still today there is no an unique answer in this sense, indeed we have supporters of liberalization from one side (i.e. World Bank) and strong opponent to that (i.e. Stiglitz) on the other. However, in both cases is commonly shared

the idea that before taking a decision, some macroeconomic policies have to be pursued, and we will see what they are. Due to this, one section of chapter, will be focused on the applicable theoretical monetary and fiscal policies allowing to solve or at least reduce the impact of structural economical problems (i.e. high inflation) and promote growth. Finally another section, is dedicated to how finance can be a tool for prevailing poverty. In this regard, the aim is to provide to the reader those problems arising in using one possible effective tool for prevailing poverty (maybe still underutilized), that is microcredit. The basis for this section are been the paper of two strong supporters of the idea of microfinance that are Hulme and Mosley.

The fourth and last chapter of my thesis has been concentrated on aid as a tool for growth. In particular, as said before aid alone doesn't guarantee welfare and long-run growth (economical and social). In this sense, I will deal with aid's dynamics and how it can become effective in the next future. Since external aid can be regarded as a tool supporting economic growth, I believe new efforts have to be spent to make it possible. Together with theoretical concepts, I will also provide empirical evidences on aid-growth relationship by using the papers of Easterly, Chenery, P. Collier & Dollar, the one of Burnside & Dollar (specific on aid's effectiveness) and the World Bank's 2009 research report "Assessing Aid". Specifically on World Bank, will be developed a small section within the last chapter, where will be analyzed the role of the Organization along these years from its birth, the eligibility criteria to get funds and the actual financial products offered by the Institution. At the same time, a new architecture for the world finance is been requested from the real economy and in this framework also development finance has to be changed, by adapting new innovative products to the different needs of the less developed countries with the final goal of reducing poverty and fostering economic growth. Following this patten I suppose to fill the final purpose of this work, which is that of providing a complete view of past and recent updating due to the matter of development finance, starting from the current framework, and covering the main theoretical models and empirical evidence, as well as recent concerns with particular emphasis on how address aid and how to make it efficient. In particular it will be demonstrated that still thee is a window for developing financial products allowing to fund the most important elements LDCs need to develop their own economic growth that are infrastructure and industrialization. Within this framework, I will specifically focus on the Growth and Employment Strategy Paper implemented by the government of Cameroon. It is indeed a clear example on the theory I sustained, namely how infrastructure becomes the recognized starting point for a

comprehensive development process as a whole. Moreover, in respect of what analyzed in chapter three, will be provided a financial view of the paper, by covering the financial resources planned to be used during the implementation of the program itself. Among them, monetary, fiscal and debt policies are the main focus point together with the micro-finance that for the first time become a specific goal of a LDC's government. Thus, by looking at the case of Cameroon it is possible to find all the aspects concerning what said along this work.



# CHAPTER I.

## THE CONCEPT OF DEVELOPMENT

### ❖ CONCEIVING DEVELOPMENT AS AN INTEGRATED PROCESS OF DYNAMIC FACTORS

Before starting to talk about economic growth and its relationship with finance, I believe it is important to clarify how the world of development economics is figured out from scholars and, how it is conceived from my personal point of view. In particular, we will see the definition of development by analyzing the several aspects which compose the main concept.

Generally speaking, development itself implies a change or transformation but, when referring to a country, its society or its economy, the concept of development can be interpreted very broadly. For example, the use of the term “development” concerns some countries and regions of the world that are extremely poor, whereas other countries, representing a relatively small fraction of the world population, are very prosperous. But, how can poor countries reach the rich countries? In this sense ‘development’ is usually connected with economic growth or more precisely growth of national income per capita (GDP). Thus, basically, developed countries, are those that are so defined advanced countries, namely they differentiate from the developing ones for the presence of a solid industrial base. However, the establishment or not of a developed system of firms is just the first visible difference; in this sense, my primary aim is to stress out the common features characterizing a country as developed or not. In other words, I will answer to the question: “which are the socio economic factors that hamper development?”. In this regard, most of the scholars focus their attention on two variables that are: Efficiency and Income redistribution which involves several aspects (lack of an solid industry base and agricultural prevalence, political situation, population issues, health problems, education matters, development of international trade and technological progress).

#### ***a) Efficiency (how productivity can be stimulated)***

I always use to think about efficiency as an endogenous variable, which is not formally expressed in any parameter in the several theory of economic growth that we will cover later, but, often it is addressed as something that deals with productivity. In this regard, I want to briefly explain a

possible definition of productivity provided by D. Weil<sup>1</sup>, who split productivity (A) in two different factors:

$$A = T \times E$$

where T stands for technology measure and E is the efficiency measure. From this equation one could explain easily the differences among countries regarding productivity level thus growth, however usually is not easy to have a measure of those factors. With regard to technology one can take as a proxy the number of patents, R&D expenditures and so on. By contrast, it is more difficult to measure efficiency, since it is a relative concept. This implies that measuring a country's efficiency, one has to look to a country as benchmark, that usually it is represented by the United States. However, the practical way to try to increase efficiency is focusing on improving those elements which are missing or less consistent relative to the country model. In this sense, you have to focus on the inefficiencies of a country, on those things that don't work well. The most obvious one is that due to externalities that can affect heavily a country such as civil wars, natural disaster, international shocks and so on, on which a country can do little. But, however some other factors exist which the governments are responsible for their well functioning. In particular, the most relevant form of inefficiency is the erroneous allocation of resources. Within this category one usually refers both to those resources employed in unproductive activities (expenditure in military actions for example) and also on those resourced don't utilized or better (I mean with regard to LDCs), don't fully exploited. In this range enters all the comparative advantage that a less developed country could have, in terms of natural resources, land, but above all in terms of people. As seen before population growth becomes a successful factor when right policies are associated with, when education is spread over, thus when there is underemployment. With this I want to address relevance to all people that don't work, but would be available if the demand of labour would also increase (industry and infrastructures represent the two main ways). Efficiency however, it is also affected but many causes that we will see below as health threats and food (and water) scarcity. But how about reaching an optimal level? The answer, in this case is quite complex and open to different views. Weil in the book provide the theoretical concept according to which the output will be maximised, when the marginal productivity of all the sectors of the economy is equal, namely the workers are paid their marginal (and not average) productivity.

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<sup>1</sup> D. Weil (2007) *"Economic growth"*.

However, generally the politics of a country determines that, in this sense, it is task of the government distribute efficiently resources. I mean all kind of incentives (i.e. fiscal one), subsidies toward industry can be one effort, making available technology in agricultural sector is a strong weapon to increase efficiency, and favouring foreign investment is another tool. However, the presumption of a successful outcome, it is a reliable government, no mobility barriers to allow people to move toward most productive (and fairly paid) sectors and sustain a competitive environment. China in this regards represents a successful case, indeed most people during these years are moved from rural areas toward big industrialized cities.

### ***b) The Redistribution of income***

Another element on which the overall discussion about development is concentrating is the redistribution of income, an argument that in part is due to the argument before, concerning with the resource allocation. Moreover, generally speaking, with the concept of redistribution of income you call back the concept of poverty, defined by World Bank as the inability of people to attain a minimum standard of living<sup>2</sup>. However, I would like to postpone the discussion about poverty in last part when I will focus more on the institution addressed to fight poverty (World Bank) to cope with those that are the redistribution dynamics. First of all, this matter was just faced by the economist at the middle of the last century, when S. Kuznets hypothesized the following relationship:

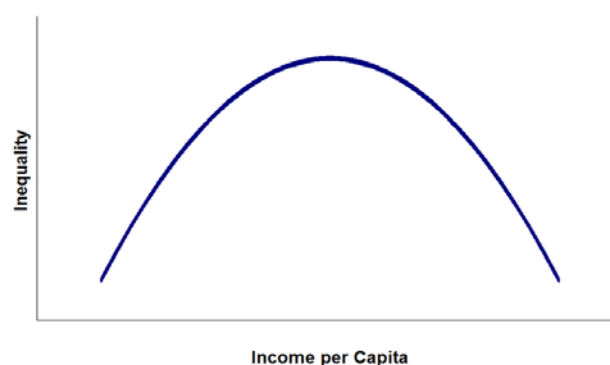


Figure 1, (internet source): *The Kuznets curve*

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<sup>2</sup> And in this regard, the *development gap* is assumed to be the difference in the level of average income among rich (developed) and poor (developing countries).

Namely, countries` distribution of income follows a personal pattern that is the same of economic growth<sup>3</sup>; thus inequality increases up to a certain stage of per capita increase and then declines, tracing out an inverted U-shape curve. However, the most important studies is that one proposed by Gini, an Italian economist who derived at the end of last century the so called “Gini Index”, to measure how much inequality is present in a country. Indeed starting from the Lorenz curve who put in relation the level of income and population percentage that receives that income for each country, Gini assumed the area below the bisector to be equal to one that is the maximum level a country can have. In the other case the country and bisector will coincide so perfect distribution of income exists. Once derived the curve for a country, you have just to calculate the area between the curve and the bisector which represent the Gini index expressing how much inequality a country has<sup>4</sup>.

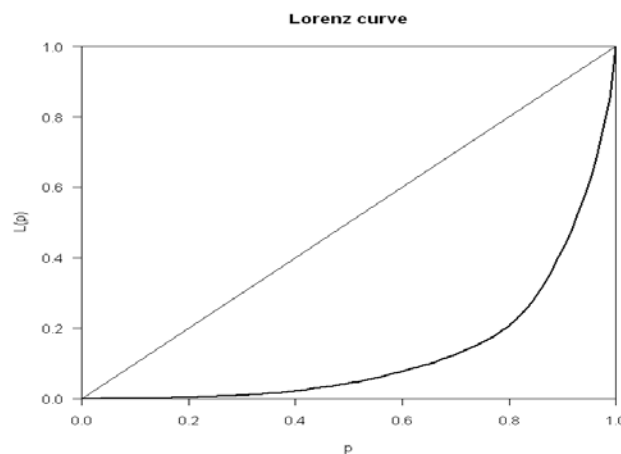


Figure 2, (internet source): *The Lorenz curve*

However, let’s focus more deeply on the main reasons explaining this inequalities even if generally the main factors affecting real income are a lot and sometimes difficult to observe, on which each economist can have a different belief. The first simple explanation that comes in my mind firstly is that income differ across people since there is a spread disparity in education, namely in abilities. Moreover, a deeper argument is the different individual propensity to accumulate wealth than others, thus a personal element (Thirlwall<sup>5</sup>). At the same time another question arises about how it is possible to reduce this inequalities and, in this sense, a strong redistributive taxation of the

<sup>3</sup> Assuming income, as variable measuring economic growth that (as it will be explained) it’s the generally accepted view.

<sup>4</sup> Or in other terms one (the total area) minus the part of the area below the Lorenz curve. For the results, see table 1 at the end of the chapter.

<sup>5</sup> A.P.Thirlwall (1978/2003), “*Growth and development with special reference to developing countries*”

(LDCs) governments could be an effective tool. But other problems also exist: for example if the economy presents a “dual economy” nature, the perpetuation of rural sector dominance and the lack of policies devoted to diffuse knowledge (education and technology), reduce underemployment and exploit resources (or as I say a potential comparative advantage). However, the idea that world income equality is just an “idealistic” idea, is supported by several scholars which raise the matter to define a certain level of income enough to guarantee a reasonable living standards. Obviously, there is no common agreement about the quantification of reasonable as we will see later.

Amartya Sen, in his book<sup>6</sup>, expressed his idea, complaining against income inequalities and supporting the idea that development was a more integrated and expanded process of several freedoms. In this sense, the most important freedoms are freedom from famine and malnutrition, freedom from poverty, access to health care and freedom from premature mortality that, for the author, are strongly interconnected and reinforce each other. In his perspective, economic growth remains important, but not as a goal in itself. Sen, indeed dismissed GDP or GNP figures that were regarded as totally insufficient because they fail to capture income distribution issues from one hand and, also lack to capture many other non income influences of the individual’s freedom, such as disability, exposure to diseases, and the absence of schools.

### *The theory of trickle-down economy*

The P. Aghion and P Bolton paper (1997)<sup>7</sup> formalizes an important mechanism accepted also by World Bank, through which wealth may trickle down from the rich to the poor. This mechanism concern with the possibility of borrowing and lending in the capital market: in particular they assumed that once capital is accumulated in the economy then more funds are available for investment purposes of the poor and this enable the poor to grow richer. Another hypothesis is that wealth inequalities however persist because investment projects raise random returns and the lenders do not ensure themselves perfectly against this income risk. In this context they also assumed that interest rate is endogenously generated by the interaction among supply and demand for investment fund rather to be exogenous as literature, concerning credit market

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<sup>6</sup> A.Sen (1999), “*Development as freedom*”;

A. Szirmai (2005), “*The Dynamics of Socio-Economic Development: An Introduction*” Cambridge University Press.

<sup>7</sup> P. Aghion and P. Bolton (1997), “*A theory of trickle-down growth and development*” The Review of Economic Studies.

allocation, suppose. The relevance of this latter condition, implies that the wealth of one single individual can no more be isolated from the rest of the economy; in other words his/her own wealth depend on the evolution of the state of the economy through the equilibrium interest rate schedule, thus the dynamic of an individual's wealth are non linear.

The model concerns with the fact that one individual lives for one period and he/she can be defined as poor, middle class man or very rich man on the basis on his initial endowment (wealth). Since the cost for investing is supposed to be equal to one, than the initial wealth determines the state of the individual as in the following figure:

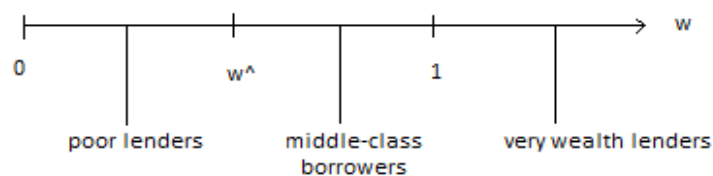


Figure 3, P. Aghion and P Bolton paper (1997)<sup>7</sup>

Then each individual can:

- a) Use his unit of labor to work on routine activities which require no capital investment; thus the return is assumed to be deterministic and small;
- b) Invest the unit of labor in a entrepreneurial activity and which requires as explained before a cost  $K=1$  with a probability of success equal to  $p$  and get  $r$  or to fail and get  $0$ ;
- c) Decide to invest in an economy-wide mutual fund.

To complete the presumptions each individual follows the following timing-path:

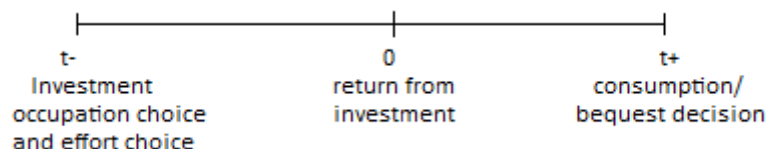


Figure 4, P. Aghion and P Bolton paper (1997)<sup>7</sup>

namely, agents are risk-neutral and their utility function depends on the decision to allocate the return (once they invest and get right) among consumption or bequest.

*How does the model work?*

In practice what happens it's that the very wealthy people decide to invest in other agents' project via capital markets; the middle class components borrow the  $(1-w_t)$  sum to cover the set-up cost  $K=1$  and the poor do not invest in their own projects. Moreover, in this model the equilibrium rate of return comes out endogenously<sup>8</sup>, and it implies that the choice to borrow or lend depends on initial inheritance as well as on the equilibrium rate of demand (determined by supply and demand of funds) as figure out in the graph below. In this framework when the cost of capital (called  $A_t$ ) is high, the poor prefer to lend money, by contrast when it is low but close to 1, the same poor prefer to borrow but (very important constraint) may be denied access to credit since moral hazard effect exists.

$$\alpha\rho(w) * [1- (1-w) * \rho(w) / r] = A_t$$

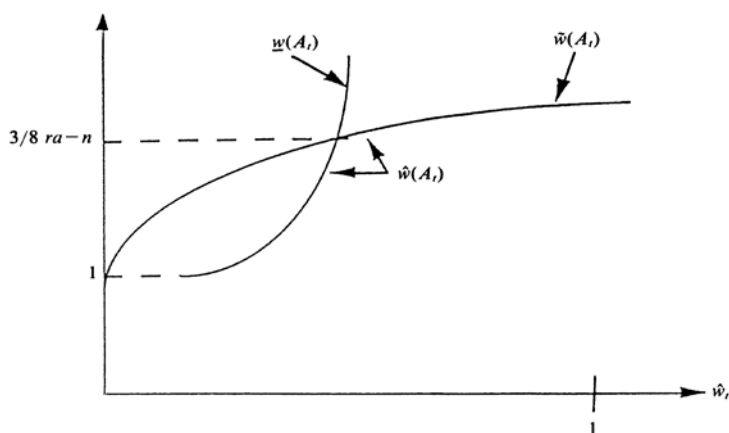


Figure 5, P. Aghion and P Bolton paper (1997)<sup>7</sup>: *the credit rationing in equilibrium*

In conclusion, however, it is important to underline that the single trickle-down process is not sufficient eventually to reach an efficient distribution of resources. This because, in order to improve the lung-run efficiency of economy permanent wealth redistribution policies are required. Namely, these policies would be able to increase the production efficiency since would allow the poor to invest by borrowing less, accelerating in this way the trickle down process! At the same time, moreover, some efforts should be spent in reducing the cost of acquiring

<sup>8</sup> For a deep analysis, the paper provides the analytical process of determination.

information in order to reduce the moral hazard effect; and in this sense financial intermediation as later explained can provide a key contribution.

### ***1. Industry base and agricultural dominance***

As said before, the simplest definition of developing country can be found in those countries which don't have an industry approach to the economy. Namely, the economic system is characterized by the prevalence of agriculture productions which basically it is used for the self-sustainment of the population. The proof of that can be found in the World Bank indicators<sup>9</sup> that show a 45-70% of labour force of developing countries working in agriculture, fishing, forestry and hunting sector. Thus, the largest part of total output is provided by the first sector, and in order to move labour force into industry and services sector which by definition have higher productivity for the use of advanced technology and greater capital intensity, several efforts need to come from political institutions.

#### *The concept of dual economy (Lewis 1954)*

With regard to WB data, the economist Lewis<sup>10</sup> for first, focused on the concept of dual economies; in particular he believed that most developing countries contain within them multiple economies operating in distinctly different manners and typically with distinctly different levels of productivity. He assumed the presence of a *traditional* sector that typically refers to a sector of production that is predominantly rural, with non-commercial activities, and the one of a *modern* (or manufacturing) sector, which refers to the sector that is generally urban and commercially oriented.

Assumptions:

- 1)  $L_t$  people at time  $t$ ;
- 2) Each person has a share  $a \in (0; 1)$  if work in the agricultural sector while the remaining  $(1-a)$  if work in manufacturing;

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<sup>9</sup> See table 2 in the annex at the end of the chapter.

<sup>10</sup> Lewis (1954) "*Economic Development with Unlimited Supplies of Labour*".



- 3) Each individual has a unit of time, with the share  $s$  (0; 1) allocated to productive work, and the remaining  $1-s$  time spent raising children;
- 4) Individuals must consume a fixed amount of agricultural goods  $\bar{a}$ , at a relative price  $p^A$ .
- 5) They receive utility from the amount of manufacturing goods they consume as well as from the number of children they have.

According to these assumptions than the agricultural production function is equal to:

$$Y^A_t = A^A_t * F(R; E^A_t)$$

where  $A^A_t$  is total factor productivity in the agricultural sector,  $R$  is the total amount of land (resources) in the sector, and  $E^A_t = s_t * a_t * L_t$  is the total labor effort expended.  $F$  is constant returns to scale, and has typical concave properties.

Once defined the equilibrium as a set of prices and allocations  $(p^A, \alpha^A, s_t^A, s_t^M)$ , given the state of the economy  $(A^A_t; w^M_t; R; L_t)$ , a dual economy exists when the following four conditions hold:

- Manufacturing workers allocate more time to productive work than agricultural workers ( $s_t^M > s_t^A$ );
- Manufacturing workers have lower fertility than agricultural workers ( $n_t^M < n_t^A$ );
- Output per worker is higher in the manufacturing sector;
- The marginal product of labor effort is higher in the manufacturing sector.

Graphically:

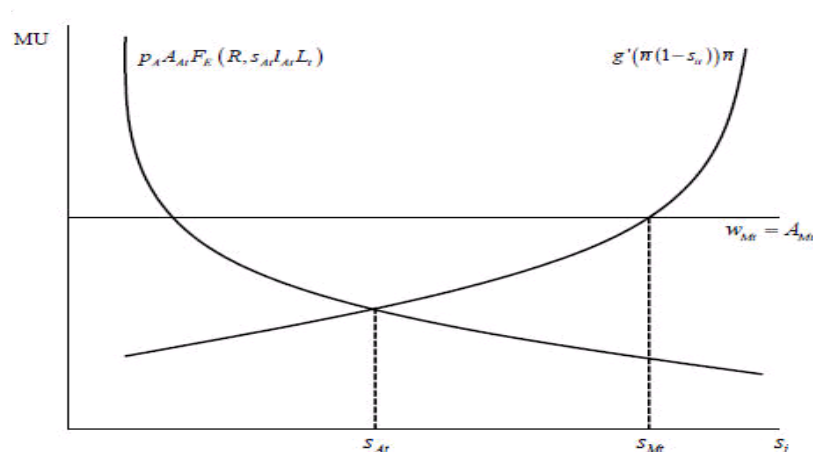


Figure 6, Lewis 1954<sup>10</sup>: the dual economy

In the manufacturing sector, individuals take the wage as a given, and so the marginal utility is flat. In contrast, the marginal utility of productive work declines with  $s_t^A$  because agricultural workers

are internalizing the effect of their own time. Moreover, productivity discrepancy allows to the main conclusion of the model that output per worker can be increased by a transfer of labor from agriculture to manufacturing (as explained below), but it does not increase welfare. This explains why a dual economy situation may persist, that is agricultural workers are paid their average product, while manufacturing workers are paid their marginal product that namely is bigger than the average product of agricultural labor.

On the basis of dual economy assumption, Lewis built up a model that explains how an economic growth process can start in a developing country through the increase of the size of the industrial sector, with the assumption of an unlimited supply of labour from traditional agriculture. Since the marginal productivity of agriculture labour is assumed by Lewis to be equal to zero for the lack of technological progress and capital, people are attracted to migrate to urban areas (under the free mobility assumption), where wages ( $w_k$ ) are higher than agricultural ones ( $w_s$ ). Moreover, Lewis in order to show how the economy can expand, assumes that the surplus earned by the capitalists, explained as the difference between revenues (profits, interests, rents) and cost (labour wages), is totally saved by themselves and reinvested so that the capital per worker increases. This implies an increase of the marginal productivity of labour (MRP), leading to an increase in labour quantity. The process continues up when all labour supply is absorbed into the industrial sector and at this point only a higher wage is able to attract additional workers (hence the supply curve is upward-sloping). However, you have to note that increasing labour force, sometimes requires financial support that can be come from credit market, thus a well-organized financial system can contribute very much to the economic development process by allocating resources efficiently.

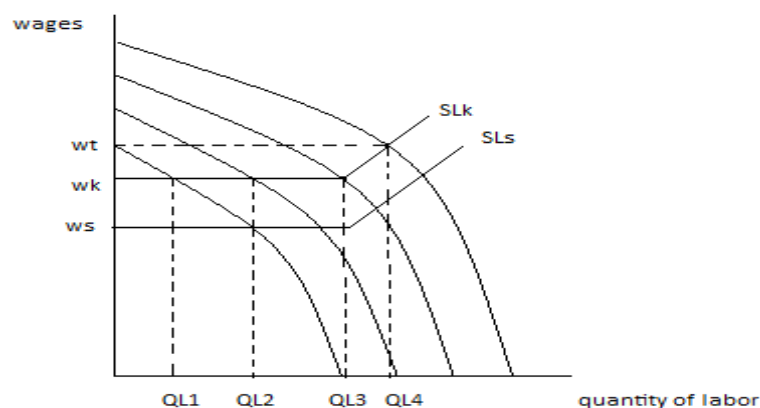


Figure 7, my elaboration from the paper<sup>10</sup>: The *Lewis model*

However, at the same time critics didn't come in late, in particular the two weak points of the

model, concern with the unlimited supply of labour that is absorbed by the industry sector and productivity. Indeed, even if it can just theoretically hypothesize, Lewis didn't capture the fact that a greater labour force implies a higher food demand. In this sense, since the production of food remains unchanged, the price will tend to increase, and wages necessarily have to rise too to compensate this increase in food price. At the same time, an increase in productivity can have a perverse effect on development since it may lower the time spent working, raising fertility (a problem of less-developed countries as we will see in discussing population issues), and reducing output per capita in the future. Another matter can be related to the fact that population is assumed to be constant, thus increasing population may decrease the productivity since of its decreasing marginal returns. Finally, while the agricultural productivity increase has no effects on the dual economy because agricultural productivity changes do not induce higher work efforts, the industrial productivity puts the economy on a permanently higher level of output per capita, while the growth rates remain identical and so the dual economy endogenously disappears (driven by the increasing productivity growth of the manufacturing sector).

In conclusion, Lewis in his paper has show how it is possible to make disappear this status of dual branches within the same economy and start a process of expansion, namely economic growth. However, broadly speaking, the dual economy situation can be seen as a natural stage of the process of development as an integral part of the long-run growth of economies. In particular, on the basis of this model, one can explain as an "Industrial Revolution" can induce a greater structural transformation in the dual economy than a similar "Agricultural Revolution" is capable of. This suggests that one should not always interpret differences in output per worker as indicative of differences in welfare between sectors, but as something "natural". At the same time, implicitly, the idea of a positive correlation between (manufacturing) industry and economic growth is assumed in the model and broadly accepted in literature. Indeed, usually, a spread of industry leads to gains in terms of productivity and output as well as the diffusion of knowledge, namely technology and learning by doing. However, the relevant and unresolved problem about how to promote an industrial development still persists, but we will see which contribution can be provided in financial terms.

## ***II. Political framework***

Another characteristic concerning developing countries is that political control tends to be held by

a specific small political “elite”, which can vary from military officers to political leaders and traditional royal families. Specifically the IMF has developed a measure of institutional development, that is regarded as the basic framework in order to apply the right efforts and efficient policies and indeed the book<sup>11</sup> provide the empirical test that show this positive relationship between income and institutions. Basically, this IMF measure focuses on institution development by looking at the level of corruption, public sector efficiency, regulatory schemes, political and property rights enforcement and so on. These are all factor extremely important for achieve economic development. LDCs needs to develop a legal system, combat corruption and promote transparency as well as develop an exchange good market based on the enforcement of contracts. Without these elements nobody will try to invest in those countries, since the lack of trust (moral hazard problems), while by contrast LDCs need to increase productivity through domestic and foreign private investment. Obviously this includes investment in infrastructure (transport, communication, education and other) but all the possible aid and investment would be not effective if the political institutions are poorly developed. Thus, what does renewal process imply? Basically, efforts can firstly dedicated to acquire the trust of people and in this sense the first goal seems to be represented by setting up democratic regimes based on transparency. In this regard, an important role is that one addressed to the development of free (in political terms) social media, strictly correlated with the process of democratization. With this latter term I want to call for a more active population, namely the development of religious organization (with the presumption of free religious choice), trade unions, educational and scientific communities and once again media). At the same time, compatibly with this, other efforts should be spent in reducing rent-seeking activities (as form of corruption), defined as those attempts to obtain private benefit from public action and resources and clientelism, especially in political parties. Thus, in conclusion without any provision in this sense, the governments fail to provide public goods and right services to people, facilitating corruption, poverty and criminal actions that contribute the country to remains in a less-developed state, namely economic stagnation.

### *The role of the state*

One of the main economists of the last century, Kalecki<sup>12</sup> believed that the state has to play a very

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<sup>11</sup> IMF (2000) “*Poverty Reduction Strategy Paper*”.

<sup>12</sup> M. Kalecki (1976), *Essays on Developing Economies*;

D. Sanchez-Ancochea (2006), “*Are Developed and Developing Countries Structurally Different?*” Oxford University.

different role in developing countries than in advanced economies. Since developing countries face structural problems that private agents and the market cannot solve by themselves, Kalecki and others supported state intervention in these countries. Generally, the state has to intervene when there is a market failure, that is the free market is not efficient (ex. monopoly); then a government has to provide public goods that private sector cannot guarantee; the role of the state becomes also relevant when the economy is affected by any kind of externalities; and finally another possible reason requiring state intervention is due to the redistribution of income through appropriate fiscal policies. In this regard, in particular, about the objectives of governments in LDCs, Kalecki identified as main goal, the one to improve the productive capacity of the country and to eliminate bottlenecks that affect key sectors of the economy (above all the primary sector) so that to bring about an acceleration of the rate of growth without a reduction in the standard of living of the poor. The set of policies is required to achieve these central objectives are recognized in:

1. The expansion of agricultural output requires a raise in productivity through different technical measures supported by the state (such as “small scale irrigation, improved seeds etc.);
2. Increase investment in the economy; since low capital equipment affects negatively unemployment (and living) as Kalecki pointed out. In this sense, an increase in public investment, however, is not enough. The “effectiveness of investment” is much more important in developing than in developed countries;
3. Increasing public investment by levying taxes on rich groups. Moreover, higher taxes are also needed to reduce consumption and raise aggregate savings and private investment.

By contrast the opposites of state intervention sustain more the liberalization and privatization policies with regard to transports, communications, and other main services as well as industrialization. In particular, Stiglitz<sup>13</sup> shows in his paper how it is possible to achieve economic efficiency and social objectives by private production and without state intervention. At the same time, some problems due to the “State Planning” in developing countries exist and concern with

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<sup>13</sup> J. Stiglitz (1992), “*Il ruolo economico dello stato*”.

institutional constraints in certain sectors of the economy such the primary sector, where the expansion of the supply will not be possible unless there is a radical reform in the property structure of the rural areas and this cannot be done without a minimum collaboration from capitalists. In this sense, for Kalecki all these social and institutional obstacles will make state intervention in general, and planning in particular very difficult. However, an intermediate State in the public sector is likely to play a decisive role in the process of development. Specifically, States have to plan decisions about trade dynamics, public enterprises, attracting foreign investment and so on. Stiglitz in this sense pointed out that the State is the main actor affecting private sector through the fiscal system, subsidies and incentives and public goods. Instead, in practice, sometimes public actions are focused on something else; for example the main goal is to spend money to support military actions, protectionism, and other programs not strictly connected to economic growth. Moreover, as touched before, another problem in LDCs due to efficient institution is that one of corruption, which often diverts the state to pursue right objectives and its role, is becoming more relevant today. Another possible deterring element for which government doesn't concentrate very much on growth is the so called self-preservation. Namely, the state's attitude is to act as an obstacle for any kind of innovation, with particular emphasis on technological progress. Indeed, a more educated society is seen as a threat from the politicians who want continue to have the political power, since new destabilizing ideas could start to circulate. At the same time, new technologies diffusion are not accepted because a process of economic power redistribution could start. In this sense, as Stiglitz stated, government doesn't focus on increasing competition which, would be an incentive to spread knowledge and increase efficiency. In this regard, some economists that have focused on corruption variable argue that poorer countries show high corruption level thus bad government that impedes growth; and one reason of low quality governments is due to colonialism. In this regard, I personally believe that these countries have to be helped in facing a democratization phase otherwise they will continue to lay in this deficit situation, and an incentive in this sense, would be relating international aid to the effectiveness of policies in order to reward the well administrated and more democratic countries.

### ***III. Population issues***

As explained in the Lewis model before, basically it has been proved that low income countries

show higher fertility rates. In this sense there is a generally accepted view that focuses on the so-called demographic transition. According to this concept, population follows the process of development divided in some phases. First of all, when a country is in a pre-industrial stage, it experiences high fertility rates, maybe due to religious factors and other traditional belief but, at the same, also high mortality rate since the lack of adequate sanitation, industry, transportation and communication. The second step of an economy is characterized by a progressively modernization that make increase food production (by increasing agricultural techniques), improvements in health and industry, which reduce mortality rates. The final stage of the development process according to population dynamics is the modern phase, where the fertility also starts to reduce since the family-planning efforts in promoting the reduction of births, as well as other factors due to education, urbanization and industrialization. In other ways as experimented by World Bank<sup>14</sup>, fertility rates are negatively related with income (the main example is that provided by advanced countries, in particular by Europe). The final stage of this process is the presence of a more or less stationary population, namely the difference among fertility rates and mortality one lies around zero.

Now, after this overview about population issue, let's see how population dynamics are correlated with economic development, and in this regard I will show in the next part an important consideration supported by Malthus. Assuming population growth to be bigger than food production, he reached the fundamental point that (as also explained before) a population increase has to be associated with food increase, otherwise malnutrition and related problems due to food distribution become an obstacle to economic growth because would put pressure on economic resources (which are scarce or undeveloped by definition). By contrast, other economists as Thirlwall and Simon<sup>5</sup>, underlined the positive aspect of population, namely assuming that the stock of knowledge through additional learning is diffused among a growing number of people, it would be a stimulus for increasing the total output, thus growth. In particular, he found that if the short-run relationship with income is negative, in the long-run positive outcome results from the spread of technological progress and other factors which improve productivity. At the same time, other two facts related to population are urbanization and employment. Indeed, it can be argued that an increase of population will affect mainly the

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<sup>14</sup> See table 3 in the annex at the end of the chapter.

largest poor countries cities, so that some of them are overpopulated and become an obstacle to the increase of the poor's living standards as well as affect negatively low-paid workers. In other words, over-urbanization is key cause to increase unemployment if the demand supply doesn't expand; but in this latter case with regards to Lewis model an increase of labour force fostered by an expansion from the capitalists should imply an economic growth effect. In conclusion, a population growth has to be considered as a negative factors, if there is no efforts in accompanying that with right policies in terms of knowledge diffusion (education) and more job opportunities (stimulating the demand of labour). Any State has to put in practice those manoeuvres, namely family programs have to be sustained in order to reduce fertility rates! Conversely, population also is assumed to affect the saving rate. Traditionally indeed, it is argued that its growth is due to a fall in savings (since the number of children, who doesn't save anything but instead consume, increases); however, the argument still remains complex and unresolved. In conclusion I support more the Simon's view, indeed regarding the negative effect on living standards at the beginning, in future an increased educated (!) population can be an important input for growth and at the same time, it can be a stimulus for building infrastructure, manufacturing sector, communication and transport facilities that are functional to the development of a country.

#### ***IV. Health Problems***

Strictly correlated to low economic development, health is an important issue and generally speaking all less developing countries face those kinds of problems. In particular, malnutrition is quite spread in those countries which have low GDP levels, mainly because people don't have money to afford the cost of food. Moreover, malnutrition is also caused by the lack of access to food, thus improving communication and transports would be a tool to alleviate the emergency of hunger. In this regard, health problems arise and are correlated to productivity level and efficiency; since people don't eat enough, future labour productivity will tend to be low. Also connected to the malnutrition with reference to health, those countries usually experiment also higher mortality rates accelerated by the spread of illness such as HIV/AIDS, malaria and so on<sup>15</sup>. A

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<sup>15</sup> See table 4 in the annex at the end of the chapter.



controversial example in this case that I want to replace from Nafziger<sup>16</sup>, is that one of Botswana which had an economic boom due to the expansion of diamonds industry, but after that HIV started to spread in the country its economic success was destroyed. Thus, in this sense it is necessary a more comprehensive attention of the countries (ex Brazil implemented a free access HIV care) that has to be fostered by UN agencies, in order to allocate efficiently international aids in order to guarantee prevention from disease and a better distribution of food (namely food security).

#### **V. Education matters**

As we will see in future, one of the main element on which literature is arguing about with different perspectives and models is human capital accumulation. Even if later we will see how education enters in economic growth, I would like to introduce other interesting aspects aspect due to its relevance. Indeed a positive relationship among education and income is largely verified by several scholars (but education has a cost<sup>17</sup>). However, education still persists to be under developed in LDCs, which dedicate low resources to that. In particular, efforts should be allocated in providing primary education in order to spread knowledge and increase literacy rate, that in this sense as Nafziger<sup>16</sup> suggests, is the most effective tool<sup>18</sup> in reducing poverty and income inequality. In this sense, once again, education is fundamental since it also improves health and nutrition, increasing productivity and reducing population growth as well as expanding educational opportunities can reduce social tensions and political instability. However, there are some problems that impede education to be fully developed around those countries. As said before, from one hand, since political class fear an educated population they devote less money and efforts. On the other hand, education is costly in terms of teaching people and structures; in particular some economic fields require specific skills and competencies, whose costs are unsustainable for LDCs. Finally, there is also a psychological factor, namely poor people are not motivated by economic incentives to study that reflect also in the level of commitment which generates productivity differences. Thus, one solution in this way can be represented by reducing

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<sup>16</sup> From Wayne E. Nafziger (2006), *"Economic development"* Cambridge university press.

<sup>17</sup> See Galor and Zeira model in the next chapter.

<sup>18</sup> In particular primary education.

the cost of education, and help countries in subsizing at least primary education<sup>19</sup>. It implies a strong effort of governments but also a great impact from international agencies for example in providing adequate structures and instruments (old books, computers and so on), because as Mandela stated out: "Education is the most powerful weapon which you can use to change the world".

#### ***VI. Development of international trade***

Rather than a common characteristic, international trade in particular the increase of export, is another important mean through which increase the flow of capital from outside, that in other words, acts as leverage for the economic growth of a country. Generally, LDCs balance of payments is mainly composed by primary commodities; however, by contrast, usually barriers, quotas and other instruments impede to increase the number of transactions. In this regard, trading among LDCs would be very important and growth-stimulating to intensify the export/import activities among those countries. Indeed, as Chenery and Strout<sup>20</sup> pointed out, trade is the engine of growth! At the same time, trade in manufactured goods is not so developed, and in world terms, LDCs represents just a small part of the trade in industrial commodities. Thirlwall<sup>12</sup>, reports some key factors that have retarded the development of trade and of growth in those countries. In particular, he addresses importance to the lack of a demand containing primary commodities, to the lack of technological development (i.e. in the substitution of raw materials with synthetic ones), and finally to the implementation of protectionist policies. All these conditions can be replaced by "simply" starting an industrialization process. However, generally speaking, one can list the advantages of trade in those that are static gains and those that are dynamic gains. While the static gains from trade are based on the law of comparative advantage, on the other side, the dynamic ones are those that results from the growth of production possibilities (namely total domestic market) for a country. In particular, static gains from trade refer to the increase in welfare as a result of the international division (specialization) of labour that makes foreign products cheaply and increase the world production. Instead, dynamic gains

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<sup>19</sup> See table 5 in the annex at the end of the chapter.

<sup>20</sup> B. Chenery and Strout (1966), "Foreign Assistance and Economic Development" American Economic Review.

result form a more efficient resource allocation, that is a more integrated trade with the rest of the market makes move outwards the production-possibility curve of the countries (involved) leading to a higher level of welfare for both. In this sense, example of dynamic gains are the economies of scale, international investments increase, the acquisition of new knowledge, possible changes in attitudes of institutions and also increased stimulus to competition. By contrast, critics argue that some disadvantages exist. In this regard, they state that comparative advantage is more a view for explaining a typical trade pattern rather than a possible vehicle leading to development. As well, sometimes protectionism is tested to be better for small countries; indeed larger markets are able to exploit easier the gain from trade, just if they show increasing return to scale. However, in conclusion, we can see that generally trade is broadly recognized having positive effects, or better having potential positive effects, even if I mean the country is able to exploit its comparative advantage and apply correct policies to really exploit these advantages. Obviously industrialization process in this sense, provide the right way to proceed, and technological progress acquires more relevance.

### ***VII. Technological progress***

Robert Solow as we will see later regards technical progress as the key to achieve growth. From a mathematical point of view technology is assumed to be constant namely exogenous since it is conceived as stock of skills, knowledge and so on. In this sense, technology comes out from the combination of research, invention which creates knowledge and development, and innovation which instead apply knowledge in a new way due to the production task. Thus, from one side the improvements in technology derive from the inventive and innovative activity of the native population, that is related to the level of instruction. From another perspective, the rate of adaption and diffusion represents another factor helping technology to be spread within the country, and in this regard personal motivation and cultural aspect are the main factors affecting these variables. At the same time, however, just to come back to some rows before, trade can be a fundamental tool for helping technology, innovative idea, knowledge to spread out within the economy. Obviously, the countries` exposure to new goods and knowledge may be a powerful factor in economic development since it may act as an incentive for producers and workers to

increase the production for trade activity, thus in practical terms, stimulating competition<sup>21</sup>. Even if it has been demonstrated that technology is important to achieve a positive outcome in economic growth terms for the future, several LDCs haven't exploited it yet. In part, economists claim for cultural traditions and aversive approach to risk-taking and information diffusion (as explained before, governments fear the diffusion of innovations as a whole). But the main thing they lost, is the link between technology and manufacturing industry expansion (in terms of services and production), which would imply a relevant leverage effect for growth. At the same time, the local adaptation of technologies would also lead to a greater income quality. However, let's continue to think about technology not as factor input but rather as a tool for exploiting inputs' advantages (with particular reference to labour) and thus achieve higher growth. In particular, other economists suggest another approach to technical development which concerns with the learning by doing. Namely, unskilled people could become an important input of growth by improving their skills on the jobs; but, this advantage is more related to the previous discussion (efficiency), as a way to increase productivity for the future.

After having seen all the characteristics that are common for LDCs and which are whose interaction cause finally low level of income, let's see the Kalecki's intuition and the related common financial features and finally a possible ideal pattern of development (Rostow's stages), starting from the above explained lacking elements.

#### ❖ **The Kalecki's point of view**

The Post-Keynesian Kalecki's thought focused not only on economic factors but even on political ones and, reached a relevant conclusion by comparing developed and developing countries, that is the belief of the presence of substantial structural differences between them, that are also present in the pattern of long run growth. Indeed, while in developed countries the level of effective demand (and excess capacity) is crucial, in developing countries a general shortage of capital and bottlenecks in key sectors make supply factors much more important. Namely, developing countries, distinguish from developed ones, since when capital is fully utilized, they are

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<sup>21</sup> India and China cases are the best example in this way, even if they still have some problems due to development as we will see later.

no more capable of absorbing all the excess available labor as (Kalecki<sup>12</sup>) observed. Thus, demand alone does not determine output in the short run by confirming the Kalecki's reject to the neoclassical assumption that capital and labor are perfect substitutes. In particular, assuming over-capacity either in the primary sector or in the industrial sector, an exogenous increase in aggregate demand will result in an increase in real production in both sectors without affecting relative prices or income distribution. Conversely, an exogenous increase in demand will affect negatively relative prices (that increase) and the distribution of income, when there are bottlenecks in the agricultural sector. In other words, summing up, Kalecki argued that in advanced economies, economic growth is driven by the evolution of effective demand, in particular investment demand; by contrast, in developing countries the sustainability of the rates of growth in the long-run, depends on the elimination of all bottlenecks in the economy. However, the elimination of these bottlenecks is not possible unless there is a radical social, economic and institutional change in developing countries; all structural problems seen before. Moreover, Kalecki in his model (1991)<sup>22</sup>, believes that new investment, within the fundamental role of the state for the interaction between the different social classes, is mainly determined by the level of gross savings out of profits (S). Indeed, it becomes the main resource to finance capital expansion given by the desire to get a "standard rate of profit' out of new investment", which determines the duration of the investment and, by the presence of technical improvements that raise (expected) profitability so that stimulate investment. In other words, the output growth of any economy is strictly based on capital accumulation, which requires a specific amount of investment as well as an equivalent amount of saving to match it. In this sense, one of the most important issues for developing countries is how it is possible to stimulate investment. Namely, because investing in capital goods means that a considerable portion of the national income has to be saved, in poor countries, it would imply that people living at subsistence levels have to reduce present consumption for sustaining investment that are supposed to provide a higher future production. But, in LDCs countries that experiment low income per capita, this kind of principle is not easy to apply. In this regard, we will see how finance can provide its contribution to these dynamics. Dynamics that present similar figures as explained below.

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<sup>22</sup> M. Kalecki (1991), *"Collected Works of Michał Kalecki"* Oxford University Press.

### *Common financial features*

To replace the passage above and just to introduce the argument which would be deeply faced in the financial part concerning the role of the finance in economic development (or growth), LDCs seems to have similar financial system and problems also in this view. To be more precise, three are the main matters characterizing LDCs. First of all, they use to show low level of savings, and since real capital formation from domestic resources strictly depends on savings, some form of credit mechanism and other policies are required to redistribute resources from savers to investors, thus finance's role is highly important in this sense (as we will see later in the next part, sometimes there are obstacles that don't allow to increase savings). Another falling elements easily to understand, is the development of a banking system, which is the primary condition for having efficient resource allocation. In particular in these countries a responsible central bank is requested as well and commercial banks which are able to provide the means through which growth are financed. Finally, in financial terms, also a correct fiscal policy is another prerequisite to solve the problem of the redistribution of income and to apply fairly monetary policies that prevent hyperinflation, foster a raise in savings (namely reduce private consumption), and, maintain the economy at full employment. However, even in this case there are some obstacles about the choice of the tax system: even if the most effective tax policy would mean imposing taxes on people that have higher propensity to consume (namely the poor), someone else, as Kaldor<sup>12</sup>, support a system proportional (namely progressive) to the level of the income.

### ❖ THE ROSTOW'S INTUITION

Until now we have seen those common elements for all the LDCs, however just before focusing specifically on the relevant factor of the development, that as you can understand from the previous discussion is economic growth, I want to face briefly some development patterns. In this sense, many economists have tried to derive specific model for explaining the development cycle (where it exists). Within these models, we can recall the Kondratiev's cycles and the Rostow's stages of development. In particular, the first concern more the stages through which an economy may pass, that specifically are distinguished in periods of expansion and declining period with intermediate phases in the middle<sup>23</sup>. Moreover, he explained the reasons of these passage

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<sup>23</sup> Generally he assumed that both expansion and repression last in average about 50-60 years.

transition to, that are due to technological progress (innovation, invention and knowledge), investments and monetary policies about the expansion; while wars, famines and innovation exhaustion are the reason that cause the starting of a difficult period, namely repression. On the other side, Rostow<sup>24</sup> tried to explain the possible steps that a country has to cover in order to achieve economic growth, and he distinguished five different stages:

- *Traditional*: it is characterized by a dominance of the rural (agricultural) sector which covers almost all of the working force, lack of technological progress (thus productivity limitations), bad income redistribution and little social mobility;
- *Transitional*: the level of investment starts to increase at least at 10% level of national income, in order to have a sustainable growth over the time, with particular reference to transport and infrastructure as a whole. In this regards assume relevant consideration the precondition of a rise in people`s willingness to afford more risk and deal more with innovation, and thus finance acquire the role of key tool to allow to set up an entrepreneurship activity spread over the country.
- *Take-off*: after a transitional period which length depends on energies, resource employed as well as talent and new political elite, Rostow introduces the take-off stage, which is regarded as the most important in his theory. In this phase indeed, investment has to rise above 10% of national income. Namely, this is the phase where market has to expand, industries start to export permitting capital to inflows within domestic market. The main sector recall by the author are the raw materials industry and the engineering one; obviously it is a presumption to have good communication means (as required by second phase);
- *Maturity*: in this stage economic growth sustainability is achieved also by the application of right political choices, namely supervised population and urbanization growth, concentrated distribution of work-force and a consolidated industrial leadership;
- *Mass consumption*: the final stage assumes a well developed country, present in the global market with consistency and devoted to welfare politics.

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<sup>24</sup> W. Rostow (1960), *"The stages of economic Growth"*; replaced also in D. Sanchez-Ancochea (2006), *"Are Developed and Developing Countries Structurally Different?"* Oxford University.

Basically, this is the scheme hypothesized by Rostow in 1960, however many scholars moved some critics. In particular, if from one side the empirical tests doesn't support the theory, on the other side main problems still are due to take-off stage which is the most tricky since it is the passage to a future consolidated development. Indeed, Rostow just provides the variable needed for the economic growth process (basically investment), but doesn't explain the dynamics through which analytically they are stimulated, namely the cause of as sudden increase investment or about political and sociological evolution. However, nevertheless I think that as a general overview of a growth pattern for LDCs can be assumed to be absolutely right, and can be used as a base for developing something more deeply; indeed like we will see in next part, economic growth models started to be developed from 1960s on with Robert Solow.

In this regard, on the basis on what explained until now, we can reach the conclusion that development involves more than economic aspect but also several "social indicators" as life expectancy, levels of education, child mortality and so on. Moreover, as Thirlwall<sup>5</sup> suggests, some dimensions of reducing poverty, due to the reduction of the inequalities in income distribution and efficiency (as a whole) should be incorporated in the definition of development. Namely, one can define growth as a prerequisite for development, while development involves more than just (economic) growth. By the way, always Thirlwall, proposed that a country's economy may not be considered to be developing unless the benefits of that growth were widely shared across the population (namely population has to experience an improvement in its level of economic welfare), and China it is a perfect (bad) example of that. However, it is commonly spread the idea that for simplicity, the main variable expressing development is economic growth, and on this, literature developed several different theories and models, more elaborated than the Rostow's pattern of growth, which we will see in detail in next part. Indeed, as Thirlwall reports, the challenge of development economics is strictly dependent on the formulation of economic theory and in the application of best policies in respect of different development pattern (based on different traditions, cultures, and all other non-income factors), that each country has.

#### ❖ A BRIEF FOCUS ON THE AFRICAN COUNTRIES

Basically three are the growth inputs that haven't been exploited up to now. These are:



### ➤ Savings

Basically, many African economies show a situation of stagnant savings, that means that not enough savings are been generated to facilitate the required investment, indeed the majority of countries have domestic saving rates of under 15% of GDP and sometimes negative savings. Moreover, interestingly savings rates in Africa have been largely driven by the public sector (UNECA<sup>25</sup>) while, in contrast private saving in Africa dropped very much (about 11%). The basic reasons behind this lack are due to the fact that a large majority of the African population is engaged in the agricultural sector getting low income. Thus, in this regard one solution in order to increasing savings could be an increase in household incomes, since basically, the propensity to save depends directly on the level of income. Moreover, as suggested by the UNECA, sustainable increases in household incomes can be achieved by transforming the current subsistence agriculture to a market based commercial activity. Following this line, agricultural modernization becomes an effective tool for reducing the high risks associated with rural production since it could improve irrigation systems and could favorite the adoption of appropriate technologies and high-yielding varieties. However, there is also a need of policies able to stimulate private savings and investment including those that keep the rate of inflation low, reduce macroeconomic uncertainty, promote financial deepening, and lower the external debt burden. Moreover, in financial terms, African countries need to strengthen the reliability and efficiency of financial systems in order to evaluate correctly available entrepreneurs and mobilize savings so to finance the most promising productivity activities, and diversify the risks associated with the most innovative ones. In this way an effective financial system becomes a powerful instrument to improve the probability of successful innovation and thereby accelerating economic growth. In this context, the role of the microfinance institutions acting as links among financial institutions and local authorities, assumes greater relevance.

### ➤ Exports

As said before, African people have a certain income threshold level (poverty line) that has to be crossed so that households can afford the cost of holding financial assets required for increasing

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<sup>25</sup> 8<sup>th</sup> Session of the ECA Conference of Ministers of Finance (2000): *"Finance for Development in Africa"*.

investment. In this regard, an input to generate resources, could come from external trade. As shown by IMF database, basically Africa's competitiveness in world markets decreased in the area of manufactured exports<sup>26</sup>, and also lost ground with the export of primary commodities such as cocoa, coffee, rubber, spices, tin and tropical vegetable oils. This leads to the conclusion that undoubtedly, one of the critical factors responsible for that, is the scarce approach of economic policies devoted to market openness. Besides, Africa has lost its share of world trade in primary commodities also because of civil wars, inefficient agricultural instruments and technologies, poor infrastructure and increased competition from the introduction of new producers in the primary commodity market. At the same time, African countries could move to industries able to provide higher value products by developing industrialization strategies based on vertical diversification for the processing of primary commodities. Such strategies indeed, would promote exports of labor-intensive manufactured exports even if at the same, it is complementary important to raise the competitiveness and technological capability of industrial firms. Finally, regional integration also would provides access to a wider trading and investment environment, encouraging foreign direct investment and so to be more competitive in the global economy.

➤ Foreign Direct Investment (FDI)

The first relevant consideration due to FDI is that it has been proved that usually move towards countries that are experiencing growth. Moreover, it represents a strong way to raise the productivity levels necessary for sustained increases in living standard. However, African countries have not been able to offset the large negative current account balances with significant growth in capital flows. Thus, more needs to be done to attract FDI, indeed, in the general investor mind Africa is too risky. The main concerns due to that is the presence of high volatility in the financial markets since there is a high macroeconomic instability in terms of high inflation, and fiscal deficit. For this reason, it is crucial that governments seek to improve the supervision and regulation of their banking sector by considering the appropriateness of such instruments. Another point is that FDI can be used to access technology. In this regard, FDI plays an important role contributing to

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<sup>26</sup> By contrast, a large number of Asian countries is moving from being primary export producers to becoming the main exporters of manufactured goods.

technology spillovers leading to improvements in productivity and facilitating the transfer of human capital skills.

At the same time, Fry<sup>27</sup> add something else to this discussion and specifically he concluded that a greater openness induces greater positive effects of FDI on both domestic investment and national saving ratios. Moreover, he showed that FDI rises the rate of economic growth in the absence of financial repression (measured by real deposit rate) and trade distortions (measured by black-market exchange rate premium). Indeed, when interest rates are positive, FDI can accelerate the rate of economic growth more when restrictions on the sectoral location of this investment are relaxed. Conversely, when a domestic economy is distorted, FDI inflows are associated with a low or negative growth rate (see in the figure below).

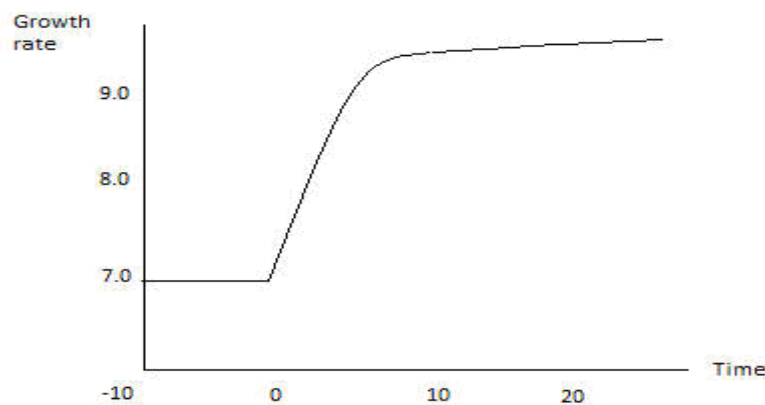


Figure 8<sup>16</sup>: Growth effect of ten percentage point increase in foreign direct investment.

Finally, I want to address now the critics moved in this sense, namely opening a point of possible discussion. In particular is not deeply discussed about the relation that an increase of FDI can have with the contemporary realization of multinational enterprises (Manes). Indeed, while in economic terms, there is a strictly association among MNEs and GDP increase, in “development” ones it can be argued that if the birth of these entities is not controlled they can lead to increase the income disparity (and one example in this sense is represented by the Chinese case). Thus, all instruments that could favorite FDI are accepted but under the condition of the safeguard of the social and economical condition of the local people, namely by avoiding facts as resource depletion, child labor, gender discrimination and so on.

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<sup>27</sup> M. Fry (1978), “Financial repression and economic growth”.

## ANNEX: TABLES

1) The Gini Index			
Country	age	Country	Age
<i>Afghanistan</i>	<i>0.29</i> <sup>31</sup>	<i>Korea Dem. Rep.</i>	<i>n.a</i>
<i>Bangladesh</i>	<i>n.a</i>	<i>Kyrgyz Rep</i>	<i>0.33</i> <sup>30</sup>
<i>Benin</i>	<i>n.a</i>	<i>Liberia</i>	<i>0.38</i> <sup>30</sup>
<i>Burkina Faso</i>	<i>n.a</i>	<i>Malawi</i>	<i>n.a</i>
<i>Burundi</i>	<i>0.33</i> <sup>29</sup>	<i>Mali</i>	<i>0.39</i> <sup>29</sup>
<i>Cambodia</i>	<i>0.44</i> <sup>30</sup>	<i>Mozambique</i>	<i>0.46</i> <sup>29</sup>
<i>Central African Republic</i>	<i>n.a</i>	<i>Myanmar</i>	<i>n.a</i>
<i>Chad</i>	<i>n.a</i>	<i>Nepal</i>	<i>n.a</i>
<i>Comoros</i>	<i>n.a</i>	<i>Niger</i>	<i>0.34</i> <sup>30</sup>
<i>Congo Dem. Rep.</i>	<i>0.44</i> <sup>29</sup>	<i>Rwanda</i>	<i>0.53</i> <sup>29</sup>
<i>Eritrea</i>	<i>n.a</i>	<i>Sierra Leone</i>	<i>n.a</i>
<i>Ethiopia</i>	<i>n.a</i>	<i>Somalia</i>	<i>n.a</i>
<i>Gambia</i>	<i>n.a</i>	<i>Tajikistan</i>	<i>n.a</i>
<i>Guinea</i>	<i>0.39</i> <sup>30</sup>	<i>Tanzania</i>	<i>0.38</i> <sup>30</sup>
<i>Guinea-Biseu</i>	<i>n.a</i>	<i>Togo</i>	<i>0.34</i> <sup>29</sup>
<i>Haiti</i>	<i>n.a</i>	<i>Uganda</i>	<i>0.44</i>
<i>Kenia</i>	<i>n.a</i>	<i>Zimbabwe</i>	<i>n.a</i>

Table 1, source from: *World Bank Indicators 2009*<sup>28</sup>.

<sup>28</sup> The table shows the data of the Low Income Countries defined by WB as those having GDP per capita < 1000\$.

2) Agriculture Value Added (% of GDP)			
Country	% of GDP	Country	% of GDP
Afghanistan	33	Kyrgyz Rep.	29 <sup>29</sup>
Bangladesh	19	Liberia	61 <sup>29</sup>
Burkina Faso	33 <sup>29</sup>	Madagascar	29
Cambodia	35	Malawi	31
Central African Republic	56	Mali	37 <sup>30</sup>
Chad	14 <sup>31</sup>	Mozambique	31
Comoros	46	Nepal	34
Congo Dem. Rep.	43	Rwanda	34
Eritrea	14	Sierra Leone	51
Ethiopia	51	Tajikistan	22
Gambia	27	Tanzania	29
Guinea	17	Uganda	25
Kenya	23	Zimbabwe	18
Benin , Burundi, Guinea-Biseu, Haiti, Korea Dem Rep, Myanmar, Niger, Somalia and Togo			<i>n.a</i>

Table 2, *World Bank Indicators 2009*<sup>28</sup>.

<sup>29</sup> 2006 last available data.

<sup>30</sup> 2007 last available data.

<sup>31</sup> 2008 last available data.

<b>3) Life Expectancy (at birth)</b>			
<b>Country</b>	<b>age</b>	<b>Country</b>	<b>Age</b>
<i>Afghanistan</i>	44	<i>Korea Dem. Rep.</i>	67
<i>Bangladesh</i>	67	<i>Kyrgyz Rep</i>	67
<i>Benin</i>	62	<i>Liberia</i>	59
<i>Burkina Faso</i>	53	<i>Malawi</i>	54
<i>Burundi</i>	51	<i>Mali</i>	49
<i>Cambodia</i>	62	<i>Mozambique</i>	48
<i>Central African Republic</i>	47	<i>Myanmar</i>	62
<i>Chad</i>	49	<i>Nepal</i>	67
<i>Comoros</i>	66	<i>Niger</i>	52
<i>Congo Dem. Rep.</i>	48	<i>Rwanda</i>	51
<i>Eritrea</i>	60	<i>Sierra Leone</i>	48
<i>Ethiopia</i>	56	<i>Somalia</i>	50
<i>Gambia</i>	56	<i>Tajikistan</i>	67
<i>Guinea</i>	58	<i>Tanzania</i>	56
<i>Guinea-Biseu</i>	48	<i>Togo</i>	63
<i>Haiti</i>	61	<i>Uganda</i>	53
<i>Kenia</i>	55	<i>Zimbabwe</i>	45

Table 3, source from: *World Bank Indicators 2009*<sup>28</sup>.

<b>4) Infant Mortality Rates (per 1000 live births)</b>			
<b>Country</b>	<b>N°</b>	<b>Country</b>	<b>N°</b>
<i>Afghanistan</i>	134	<i>Korea Dem. Rep.</i>	26
<i>Bangladesh</i>	41	<i>Kyrgyz Rep</i>	32
<i>Benin</i>	75	<i>Liberia</i>	80
<i>Burkina Faso</i>	91	<i>Malawi</i>	69
<i>Burundi</i>	101	<i>Mali</i>	101
<i>Cambodia</i>	68	<i>Myanmar</i>	54
<i>Central African Republic</i>	112	<i>Mozambique</i>	96
<i>Chad</i>	124	<i>Nepal</i>	39
<i>Comoros</i>	75	<i>Niger</i>	76
<i>Congo Dem. Rep.</i>	126	<i>Rwanda</i>	70
<i>Eritrea</i>	39	<i>Sierra Leone</i>	123
<i>Ethiopia</i>	67	<i>Somalia</i>	109
<i>Gambia</i>	78	<i>Tajikistan</i>	52
<i>Guinea</i>	88	<i>Tanzania</i>	68
<i>Guinea-Biseu</i>	115	<i>Togo</i>	64
<i>Haiti</i>	64	<i>Uganda</i>	79
<i>Kenya</i>	55	<i>Zimbabwe</i>	56

Table 4, source from: *World Bank Indicators 2009*<sup>28</sup>.

5) Education Expenditures as % of GDP			
Country	% of GDP	Country	% of GDP
Bangladesh	2.4 <sup>31</sup>	Kyrgyz Rep.	5.9 <sup>31</sup>
Benin	3.5 <sup>30</sup>	Liberia	2.8 <sup>29</sup>
Burkina Faso	4.6	Madagascar	3
Burundi	8.3	Niger	4.5
Cambodia	2.1	Mali	4.4
Central African Republic	1.3	Mozambique	5 <sup>29</sup>
Chad	3.2	Nepal	4.6
Comoros	7.6 <sup>31</sup>	Rwanda	4.1 <sup>29</sup>
Eritrea	2 <sup>29</sup>	Sierra Leone	4.3
Ethiopia	5.5 <sup>30</sup>	Tajikistan	3.5 <sup>29</sup>
Guinea	2.4 <sup>31</sup>	Tanzania	6.8 <sup>29</sup>
Kenya	7 <sup>29</sup>	Uganda	3.2
Afghanistan, Congo Dem. Rep, Gambia, Guinea-Biseu, Haiti, Korea Dem Rep, Malawi, Myanmar, Somalia and Zimbabwe.		Togo	4.6
			<i>n.a.</i>

Table 5, source from: *World Bank Indicators 2009*<sup>28</sup>.



## CHAPTER II.

### ECONOMIC GROWTH THEORY

This chapter is entirely dedicated to the most relevant and smart models that literature has provided. Models evolve over time and we will see that two are the main theories that is classical theory and the endogenous theory are just model trying to express a standard path of economic growth. Conversely actually economists and scholars focus more on explaining differences among countries. In this respect, I support the view that a single model for each country doesn't exist, but as better explained later each have a model that can be pursued after exploiting its potentialities and reducing its difficulties and social impediments.

#### ❖ MODELS OF ECONOMIC GROWTH

##### *THE MALTHUS MODEL*

The first theory of economic growth we look at is the one developed by the classical economists Thomas Malthus (and David Ricardo). Basically, this theory is based on three assumptions. The first is a fixed land area that is not able to feed a constantly increasing population, thus population growth would then result in starvation. The second one, is the Law of Diminishing Returns, namely *ceteris paribus*, an increase of one input of production, will have a decreasing marginal impact on output. The last assumption is a positive effect of the living standards on the population size, in other words a higher income is translated into more fertility, thus population. The main implication of these assumptions is that with no presence of technological progress, the Law of Diminishing Returns implies that a growing labor force will lead to a more intensive use of land and thereby to a decline in labor productivity and wages. As consequence of the wages fall, population expansion decelerates and the process will go on up to a "subsistence level", where both population and output stop expanding. Malthus represented the relation between inputs and output by using the following production function:

$$Y_t = B T_t^\beta N_t^{1-\beta}$$

where  $t$  is the time index,  $B$  measures the level of technology that is assumed to be exogenous. In particular, considering fixed land ( $T$ ) and given technology, the only way to raise production is by expanding the labor force; thus the formula above can be re-written as:

$$Y_t = A N_t^{1-\beta} \text{ where } A = B T_t^{-\beta}$$

However, since the Law of Diminishing Returns as labor force expand, output will grow less than proportionally<sup>32</sup>, dividing the both sides of the equation above for the numbers of workers one gets:

$$y = A/N^\beta$$

where as you can see there is a negative relationship among  $y$  and  $N$ . Graphically:

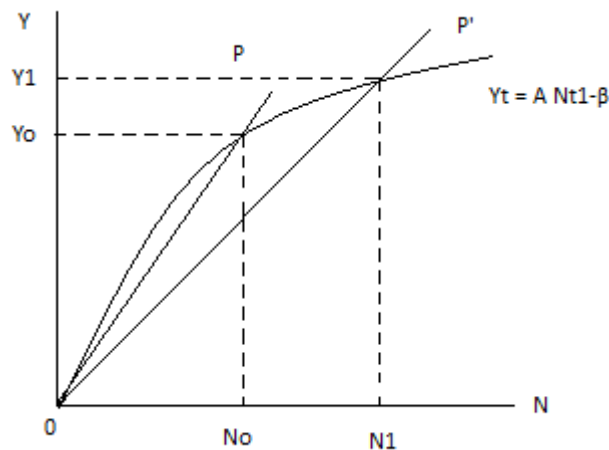


Figure 9, my elaboration from personal notes: *Output and employment in the Classical Malthus model*

the horizontal axis measures the workforce ( $N$ ) and the vertical axis measure the level of output ( $Y$ ); moreover the slope of the line that crosses the production function and starts from the origin represents the average productivity of labor. Thus to an increase in population corresponds a less proportional increase in output so that the average productivity declines (namely from  $OP$  to  $OP'$ ). As explained before, Malthus describes the population dynamics in this way: whenever wages rises above a “subsistence level” ( $\omega^*$ ), defined as the minimum wage necessary for workers to

<sup>32</sup> Namely we have a negative relationship between the employment level  $N$  and average productivity, indeed  $y = Y/N$ .

survive, population will expand; conversely when wages fall below  $\omega^*$ , population will reduce<sup>33</sup>. Integrating Malthus' view with the Ricardian theory of labor market, one gets that considering a fixed workforce at each moment over the time, wages will rise until the landlord's surplus (defined as the difference among the production revenues and wage cost) is completely eroded. At this point, wages will be equal to the average productivity of labor.

Graphically:

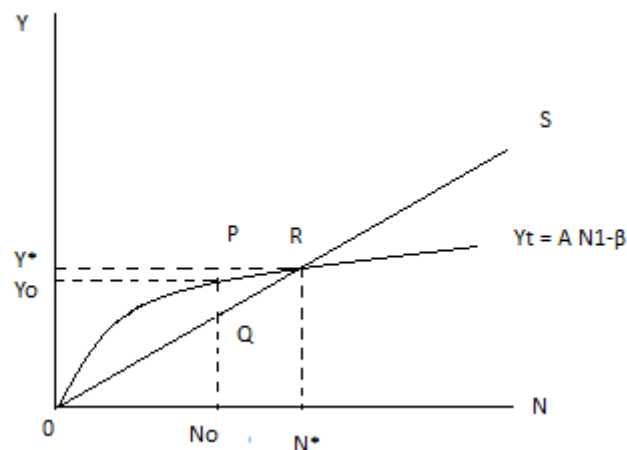


Figure 10, my elaboration from personal notes: *Dynamics and equilibrium in the Classical Model*

the subsistence wage ( $\omega^*$ ) is represented by the slope of the line OS, and supposing an initial level of worker equal to  $N_0$ , the total wage will be equal to  $N_0Q$  while  $QP$  is the landlords' surplus that makes increase the demand for labor, forcing wages to rise. Moreover, as wages rise above the subsistence level there will be a tendency for population to expand that will be turned into an increase of intensity of land and so a lower level of output per capita. The mechanism ends in R where the average productivity of labor equals again the subsistence wage. Finally, let's focus for a bit on the technology role, in particular if an improvement translates into higher standards of living. The main conclusion that be derived is that assuming a temporary technological improvement, it creates a temporary gain in per capita income and wages but, as time goes on, extra population growth pushes per capita income and wages back to the subsistence level. Vice-versa in the case of long-run period, the gains of technological progress

<sup>33</sup> In this sense, Malthus stated that the main causes for which population reduces can be a deliberate reduction of fertility and/or other factors as mal-nutrition, disease and famine.

would be offset by the increase in the size of the population and as result living standards do not increase.

Empirically, the Malthus model's predictions are consistent with the dynamics of technology, population and output per capita just until the Industrial Revolution. Since this point to forward, the evidence show that Malthusian theory of population no longer applies; in particular faster growth in standards of living doesn't translate into faster population and, on the other hand, rising population doesn't translate into a decline in the standards of living. Thus a window for new models and theories was still open.

### *THE SOLOW MODEL*

Robert Solow can be regarded as the father of Neo-classical theory of economic growth, for his work in 1956. He was particular interested in explaining the long-run tendency for output and capital to both grow at the same rates. In this sense, the main innovation of the Solow model in respect to the Classical Model is the introduction of capital in the production function that contrary to land or labor can be produced and accumulated. At the same time, the key assumption in the model is that of constant returns to scale (CRS) that implies if capital is set to grow at the same rate as labor, then output will grow at the same rate too<sup>34</sup>. Considering a closed economy, the production function of each firm  $i$  will be:

$$Y_{it} = A_t K_{it}^\beta L_{it}^{1-\beta} \quad \text{with } 0 < \beta < 1$$

$$Y_{it}/L_t = A_t K_{it}^\beta L_{it}^{1-\beta}/L_t$$

$$y_t = A k_t^\beta \quad \text{with } y = Y/L \text{ and } k = K/L$$

$$y_t = A f(K)_t$$

with  $K$  that is capital and can be accumulated, the  $L$  rate that is labor is exogenous and  $A$  stands for the level of technology and it is also assumed exogenous. Moreover, Solow identified the variable  $s$  defined as fraction of households' income that people save (thus reduced from consumption) to

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<sup>34</sup> While in Classical theory the per capita output declines since the Law of Diminishing Returns.

buy new capital. In this regard, given the individual budget constraint  $Y_t = C_t + S_t$  (thus people or consume income for expenditures or save it), the consumption  $c = (1-s) y$  and the exogenous saving rate  $s$ , the equilibrium in the economy can be described as:

$$Y_t = C_t + S_t \text{ with } S_t = sY_t$$

$$Y_t = (1-s) Y_t + sY_t$$

Dividing both terms for the workforce and remembering that  $sY_t = I_t$  you get:

$$i_t = sf(k)_t$$

Where  $i_t$  denotes the per capita gross investment. Starting from this, Solow assumes that capital depreciates as time goes on, thus additional investment is needed each period to replace the depreciated one, and calculated the overall depreciation as:

$$dK_t = i_t - \delta k_t$$

namely, the change in capital stock is equal to gross investment minus depreciation, where  $\delta$  is the depreciation rate of the capital stock and it is constant. Moreover, what is important to underline is that in this model the capital accumulation (through savings), prevents output per capita from declining when population rises. Thus:

$$dK_t = sf(k)_t - \delta k_t$$

The formula above represents the Fundamental Dynamics Equation of the Solow model and states that the capital-labor ratio increases with per capita savings and decreases with the depreciation rate ( $\delta$ ).

Graphically:

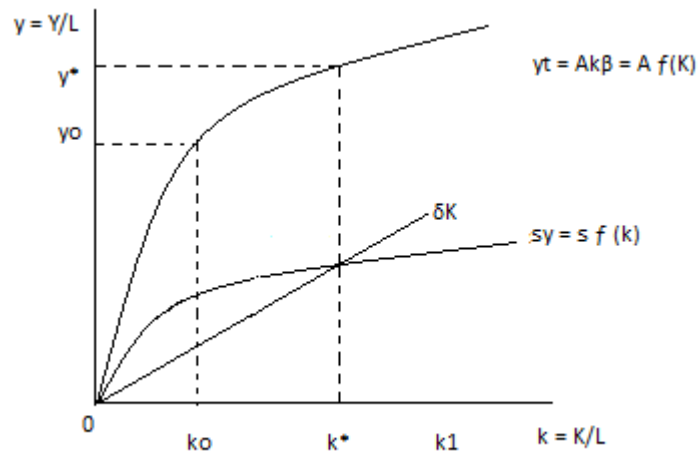


Figure 11, my elaboration from personal notes: *The Solow Model*

Thus each time that  $sf(k)_t > \delta K_t$ , the capital stock increase its value; by contrast when  $sf(k)_t < \delta K_t$  the capital stock depreciates. However, at the point where depreciation catches up with savings, the capital stock stops rising (namely when  $k = k^*$ ); this point is called *steady state* and the average productivity of capital is equal to:

$$(Y/K) = f(K^*)/ K^* = \delta/s$$

Note that the ratio is constant because all the parameters on the right hand are constant, so as I mention before, Solow and Kuznets in related studies, have demonstrated the long run tendency for capital (K) and output (Y) to grow at the same rate.

*First change: saving rate (s) no more constant*

Let's now assume that saving rate are no more constant over the time. Looking the figure below, and considering a shift in saving rate for example from  $s_0$  to  $s_1$  what happens is that the increase produces a level effect in the sense that a new steady state with a higher level of output per worker is achieved. However because of diminishing returns<sup>35</sup>, the consequent rise in output per capita is no more than a temporary phenomenon. One important effect due to this, is that the interest rate also has declined, and because constant return to scale, more capital per worker available that capital becomes relatively cheaper<sup>36</sup>.

<sup>35</sup> This implies that in the new steady state the average productivity of capital (Y/K) is lower than the old one.

<sup>36</sup> The capital income share is constant and equal to:  $k/y * (\delta+r) = \beta$ .

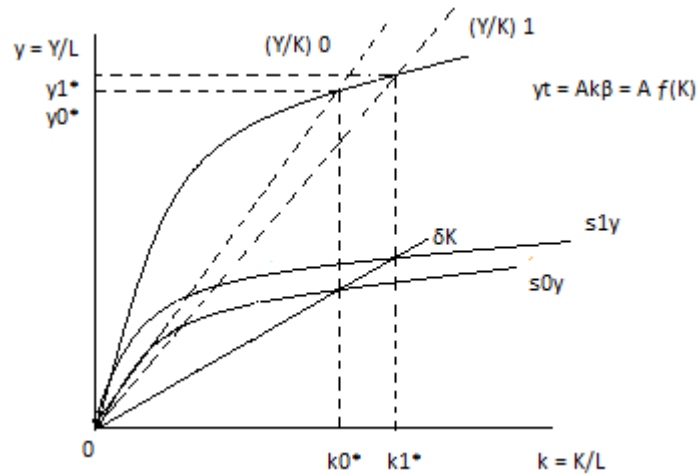


Figure 12, my elaboration from personal notes: *A saving rate increase in Solow model*

As one can see, the per capita consumption falls initially, but since per capita income starts rising, then a proportional recovery will happen. Finally just to conclude, analytically we can derive the marginal productivity of capital that is:

$$MPK = dy/dk = \delta$$

Similarly, if we assume that the depreciation rate declines, the immediate consequence will be that any given saving rate would be consistent with a higher ratio of capital per worker in the steady state so that the equilibrium would move rightwards (with a higher level of per capita income).

*Second change: population (n) no more constant*

The second variable supposed to be constant at the beginning is the population. Assuming a population increase the change capital stock will be equal to:

$$dK_t = i_t - \delta k_t - nk_t$$

namely:

$$dK_t = sf(k)_t - (\delta+n)k_t$$

Let's now assume a movement in population, what can be perceived is that to a lower population growth (for example), the output per capita will respond positively but only in the transition from one steady state to the other<sup>36</sup>. Indeed, once the new steady state is achieved, output per capita will be constant again but with an average productivity of capital lower than initial steady state. Finally, the resulting MPK now would be equal to:

$$MPK = dy/dk = \delta + n$$

*Third change: technological change (g)*

The last variable that has to make flexible, is the technological progress represented by term A in the equations before at aggregate level, or at per capita level by term E in the following equation:

$$Y = f(K, L * E)$$

Again the variation of the capital stock will be equal to:

$$dK_t = i_t - \delta k_t - nk_t - gk_t$$

namely:

$$dK_t = sf(k)_t - (\delta + n + g)k_t$$

An improvement in technology practically allows the economy to move from one steady state to another with a higher level of capital per worker (thus towards a new steady state), without a decline in the average productivity of capital. In other words, technological progress by overcoming the diminishing return of capital is the strongest factor affecting growth!

Graphically:

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<sup>36</sup> Thus a lower population results in similar effect as in a rise of saving rate.



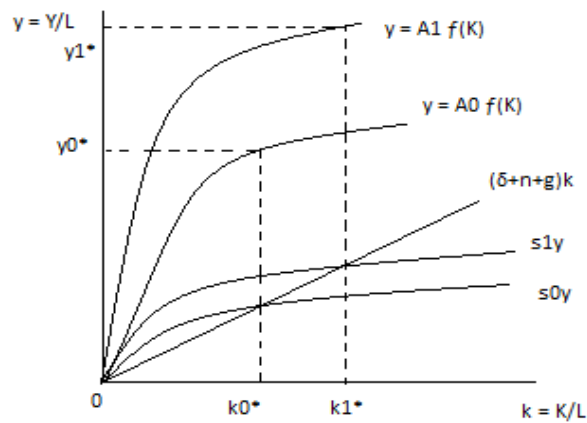


Figure 13, my elaboration from personal notes: *an improvement in technology*

Thus the resulting MPK now would be equal to:

$$\text{MPK} = dy/dk = \delta + n + g$$

### *The golden rule*

Before I've shown through the Solow model that when saving rate rises, the steady state level of per capita income rises but a lower proportion of income is devoted to consumption. A question, then arises, on how is possible to maximize the steady state level of per capita consumption. Analytically we have to found that a  $k$  value that maximizes per capita consumption exists; thus let's start from this:

$$\max_k c = y_t - sy_t$$

within the condition that  $dK = 0$  namely  $sy = (\delta+n+g)k$  then:

$$\max_k c = Ak_t^\beta - (\delta+n+g)k$$

so by calculating the first order condition you get:

$$dy/dk = n + \delta + g$$

This equation is called the "*Golden Rule of Capital Accumulation*" and states that the steady state

level of per capita consumption is maximized when the slope of the production function (namely the marginal productivity of capital), is equal to the sum of the growth rate of the labor force plus depreciation plus technology).

Mathematically, the optimal level of  $k^*$  is given by:

$$K^G = (\beta A / n + \delta + g)^{1/1-\beta}$$

and the golden rule saving rate is  $s^G = \beta$  (the share of capital in total income).

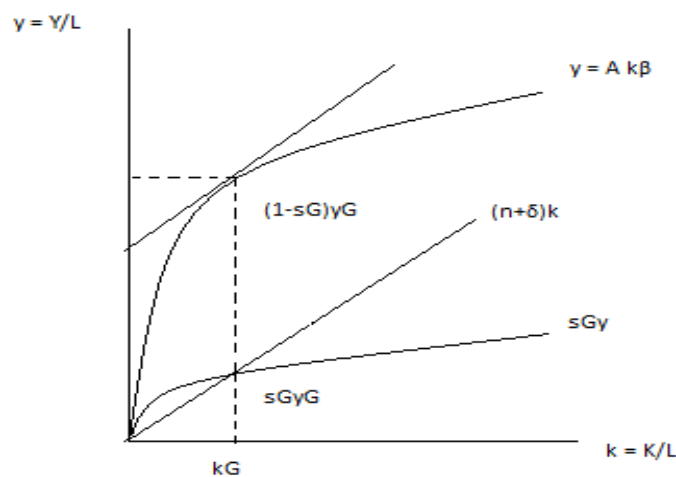


Figure 14, my elaboration from personal notes: *The Golden Rule*

### *A deep examination: Population dynamics and poverty traps*

In the Solow model it is assumed that population growth rates are moderate both under extreme poverty and when living standards are high, because in these cases birth rates and death rates are similar. However, when an economy moves from extreme poverty to higher incomes, an intermediate situation of population growth appears. The reason is that improving living conditions (due to better nutrition and health care) leads to a fall in mortality rate associated by a not immediately decline in birth rate. Thus, it implies that a (positive) gap in population growth. By contrast, at later stages of development, the fertility rate declines, because the cost of raising children and providing the relevant education increases. Graphically, this non linear relationship between population growth and per capita income is given by a line with many bends, that implies that there are many possible equilibrium points each different in terms of per capita income [ $k = k/N$ ] and population growth [ $n(y)$ ].

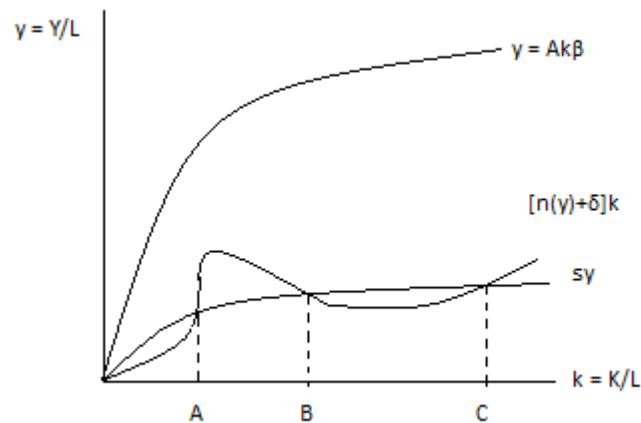


Figure 15, my elaboration from personal notes: *The Poverty Trap*

In particular, in order to see the effects of an economy that falls in poverty trap let's suppose that the economy of a hypothetical country receives external aids that makes improve the capital stock. As seen before the increase in output per capita is temporary and implies an increase in population growth as well as a proportional increase of the saving rate (until new equilibrium). However, with a constant saving rate, the capital-labor ratio will fall back, driving the economy again in the poverty trap. Namely, the demographic transition has not sufficiently stimulated since the savings rate is too low to induce an increase in the capital-labor ratio during the transition stage period to other equilibrium. Thus, because the equilibrium A is stable in the sense that conversely to point B, it provides a per capita savings that exceed the break even investment (hence the capita labor ratio increases until when the steady state is reached) and, dominated by another possible outcome (equilibrium C), it is called "poverty trap". The main conclusion we can take out due to the argument I want to express in this work, is that external aid (on which I will dedicate deeply later) doesn't need to be permanent, but the critical point is that it has to be enough large to allow the economy to escape from the poverty trap and reach a higher income steady state. However, we will deeply face the main drivers through which aid could be really effective.

#### *The main critics to Solow model*

From one side the Solow model was the first attempt in explaining growth through the use of capital and it is generally well regarded among the literature. However, the model had some

“imperfections” as Solow himself said in his paper, due to the fact that the model is incapable of explaining why most countries in the real world show rising living standards over time. In particular, following the scheme above some scholars criticized the steady state as a convergence point. Indeed, what was argued indeed also on the basis of empirical evidences, was the fact the Solow hypothesized that farer from  $k^*$  is the capital per worker of countries, and more they will grow fast, and vice-versa. Namely this implies that poor countries grow faster than rich one is called “absolute converge<sup>37</sup>” and as said before it is just a hypothesis not empirically verified. However, in this paper, I want to address my opinion about this conclusion that rose up the first time I coped with Solow model. According my point of view indeed, I would like to look at the Solow model, no more as a vehicle to predict growth, I mean, the starting presumption that poor capital are those with low level of capital per worker is verified and consistent over the time, but rather than to say that poor countries growth faster, I would say, that poor countries have higher potentialities to growth fast. In other words, my intuition (if it can be so called) is that, assuming a steady state for all economies in the word that not necessarily has to correspond to a real economy across the world, but rather to a level on which all countries tends to move to, a “final value” where the countries has exploited all the possible (comparative) advantages it has. In this sense, if poor countries in which education is not supported, technology rarely diffused, which are affected also by geographical elements as well as famine, disease, corruption (government instability) and civil wars, would exploit these factors, than I believe that they can grow faster (than advanced countries)to their steady state!<sup>38</sup> Even Romer (1986)<sup>39</sup> in his paper, reported a study of Baunlol of 1985 that reaches similar results. The author indeed, divided countries into industrialized, intermediate, centrally planned, and less developed economies, and shower a tendency toward convergence in the level of productivity within groups, even though there was no tendency toward overall convergence. However, let’s continue on the critic against the model by examining the thought of other authors due to the assumption of population grow within a

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<sup>37</sup> This implies that assuming some shock that destroys part of the capital stock, per capita GDP will fall initially, but it will recover until once again it reaches the steady state.

<sup>38</sup> In this sense, I believe that each country has an own steady state that it merely divided in poor and rich in literature just for making the matter easier.

<sup>39</sup> P. Romer 1986, "Increasing Returns and Long-run Growth" (Journal of Political Economy)

constant rate of capital per worker. Indeed, as the model is organized it seems to predict that all individuals must get the same level of capital so that in aggregate terms the overall income will increase with the population, thus in long run the government has to increase investment to keep this level, and the situation becomes obviously unsustainable. Finally let's move on the technological change assumption, that represents the key matter for growth. All the literature (Solow as well) critic the assumption of constant technological progress (with no difference among the economies in which it is experimented) that moreover is exogenous. As can be understood from the model, technological progress is important because it is able to neutralize, to avoid the problem of diminishing return. Indeed, technological improvements means more effective number of workers that grow with the number of machines and hence diminishing return never sets in. Because of this assumption of exogeneity of the process of labor productivity the model is regarded a model of exogenous growth in technological terms. In conclusion, this last critic I believe it is the most important since gave space for economists to develop other models focusing on why such technological progress takes place.

#### *THE ENDOGENOUS GROWTH MODEL*

Since the 1980s, many critics were moved to the neoclassical theory due to its inability to explain long-term growth. In particular it was empirically tested that many LDCs experienced little or no growth despite the financial reforms suggested by the main international institutions (International Monetary Fund (IMF) as well as by World Bank above all). Thus, in those years a new concept of growth started to circulate leading to the introduction of Endogenous theory. In particular, the literature started to focus on the technological matter to be regarded as an endogenous variable since the difficulties we have seen in the Solow model due to diminishing return that implied technical progress had to be assumed exogenous. Starting from this presumption and following a logic of capital accumulation, the basic model due to this passage, it is the so-called AK model of Rebelo (1991), who regarded a production function linear in capital stock (K):

$$Y_t = AK_t \quad \text{with } A > 0$$

As in Solow model, A represents the technology (or efficiency), and is assumed constant, K is the capital stock and is not affected by diminishing return. In this regard, one important prediction of the model concerns the relationship between investment rate and TFP, since it predicts that a rise of the first and in TFP has a proportional effect on the growth rate of per capita output. Let's consider now the production function per worker, thus dividing both the side for work force you get:

$$Y_t = Ak_t$$

And the change in capital stock is equal to:

$$dk_t = sy_t - (n+\delta)k_t \rightarrow dk_t = sAk_t - (n+\delta)k_t^{40}$$

Moreover integrating the Harrod-Domar intuition that means dividing the equation by k one obtains:

$$dkt/k = \gamma = s*Y/K - (n+\delta) \quad (\text{Harrod-Domar equation})$$

where the Y/K ratio (namely, the average productivity of capital) is constant; hence the growth rate of per capita output is also constant and equal to:

$$\gamma = sA - (n+\delta) \quad \text{with } Y/K = A$$

As expressed in the formula above, the growth rate of per capita income depends positively on the efficiency level expressed by the term A and on the saving rate (s) and negatively on the depreciation of the capital-ratio (n and  $\delta$ ). The model is regarded as a model of endogenous growth, because conversely to Solow model, the parameter s and A are determined internally by the economic agents!

Graphically:

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<sup>40</sup> It is similar to the one in Solow model with the important difference that here  $\beta$  is equal to 1.

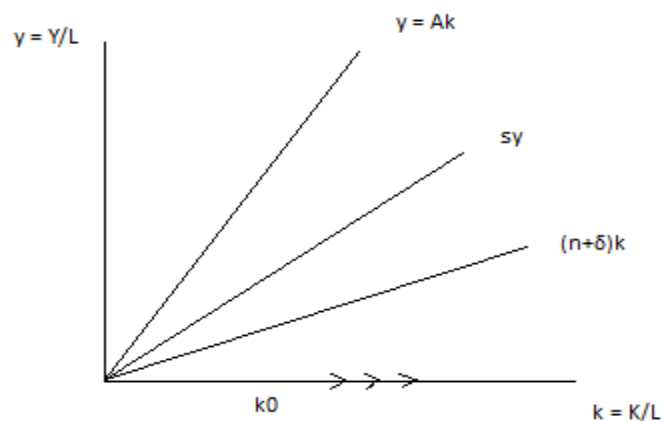


Figure 16, my elaboration from personal notes: *The Ak model*

Two implications rise automatically from this graph:

1. The first is that, an increase of the saving rate with other factors remaining constant, make raises the growth rate of per capita income proportionally and permanently. Moreover there is no tendency for the growth of per capita income to decline as time goes on as in Solow model;
2. The second instead is that, since the production function is linear in  $k$ , the line representing gross savings never crosses the break-even investment line. This means that the AK model doesn't predict a steady state; in other words, it doesn't predict convergence of per capita income, even among similar economies. Indeed as long as  $sA > n + \delta$ , per capita income will grow forever.

Moreover, AK model was further developed by the same author who introduced a variable concerning human capital in the production function. The main conclusion that can be derived from the paper of Rebelo is that in a AK model with human capital, firms chose an optimal quantity of human capital and physical capital that is constant, thus the main explanation in differences among firms (or economies in general) is that one uses more human capital implying a higher average productivity of physical capital. For a deeply analysis see Rebelo (1991)<sup>41</sup>. Finally I want to mention another contribution in the endogenous growth theory, provided in

<sup>41</sup> S. Rebelo 1991, "Long-Run Policy Analysis and Long-Run Growth" (Journal of Political Economy).

1990 by Romer<sup>42</sup>, who in line with the role represented by technology in the economic growth, developed an interesting idea according to which R&D can be regarded as an activity characterized by increasing return to scale. The reason behind this intuition is that, because the cost of invention is fixed, than more people will use that invention and more productivity will increase. As a result, it might raise the rate of economic growth if a larger scale of production increases incentives to inventions and to technical progress. This idea was further developed by the literature that, on the basis of the time-life of innovation, applied different concepts and variables reaching different conclusions, that unfortunately I will not report here.

#### *FOCUS 1: THE ROMER MODEL 1986*

The presumption of the Romer's thought deals with the general belief that theoretically all technical change is endogenous, as it was the result of deliberate actions taken by economic agents. Moreover, all models concerning endogenous growth assume that different level of per capita output between countries needn't to converge, since growth doesn't depend on any kind of exogenous technical change or different preferences, (even the size of the population can be held constant), but what is crucial is the no more departure from the usual assumption of diminishing returns. Romer in particular, starting from the intuition that production of physical capital leads to technical progress because of the accumulation of experience through learning by doing, addressed strong importance to knowledge that it defined having two key characteristics. They are: firstly it is assumed to have diminishing returns; secondly the creation of new knowledge by one firm is assumed to have a positive external effect on the production possibilities of other firms, because knowledge cannot be perfectly patented or kept secret; namely it has increasing marginal product. Thus, a growth path with knowledge will grow without bounds. Even if all other inputs are held constant, the economy is assumed to not achieve a some steady state where knowledge is constant and no new research is undertaken. This because knowledge is regarded to be accumulated by devoting constantly resources to research. In this regards, Romer demonstrated that it is possible to construct a consistent, general equilibrium. The model is

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<sup>42</sup> P. Romer 1990, "Endogenous Technological Change" Journal of Political Economy.



represented below:

$$Y = A(R) * F (R_j, K_j, L_j)$$

where  $R_j$ ,  $K_j$  and  $L_j$  are, respectively, stock results from research and development expenditure by firm  $j$ , physical capital of firm  $j$  and labor of firm  $j$ ;  $R$  is the aggregate stock of knowledge. At the same time, any (private) research effort produces spillover effects for the public stock of knowledge  $A(R)$ . In conclusion, Romer model can explain why countries experience different growth rates. Indeed, countries that will invest more in research and will get more experience through learning by doing (higher  $K$ ), are those that will experiment higher level of growth, namely higher level of  $y$  (income per capita). Thus, in other word, knowledge acting an external effect, is able to prevent diminishing returns.

#### *FOCUS 2: A BRIEF VIEW OF THE LUCAS MODEL 1988*

Another popular model is that of Lucas (1988)<sup>43</sup> which although similar to that of Romer includes human capital which is taken as the general level of skill embodied in workers in the form of formal education or on-the-job training. Lucas assumes that each worker allocates  $u$  fraction of his time to producing goods and  $(1-u)$  fraction to producing human capital; the consequent production function in per capita terms is:

$$y = K^\beta * (uh)^{1-\beta} * h_a^\gamma$$

and in growth rate terms:

$$y/y = \beta k/k + (1 - \beta)(u/u + h/h) + \gamma (h_a/h_a)$$

where  $y/y$ = growth of per capita income;  $k/k$ = growth of physical capital;  $h/h$ = rate of growth of human capital;  $h_a/h_a$ = rate of growth of average human capital; and  $\beta$ ,  $1-\beta$  and  $\gamma$  are the shares of each factor in output. Moreover, Lucas conversely assumed the convergence to a steady state

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<sup>43</sup> R. Lucas 1988, "On the mechanics of economic development" (Journal of Monetary Economics).

so that since  $u/u = 0$ ,  $y/y = k/k$ ,  $h_a = h$  and  $h/h = \delta(1 - u)$ , namely  $h_a/h_a = h/h = \delta(1 - u)$  in the steady state the rate of growth of per capita income is:

$$y/y = [1 - \beta + \gamma] * \delta(1 - u)$$

Hence the fraction of time spent on production of human capital directly affects the increase in human capital production ( $h$ ) and indirectly affects the increase in average human capital production ( $h_a$ ). In this regard if a country has a higher initial level of human capital, per capita income will always be higher. Assuming two countries, one rich (called R) with higher level of human capital and another poor (called P) with lower level of human capital, then:

$$y_P = K^\beta (uh_P)^{1-\beta} h_{aP}^\gamma \quad \text{and} \quad y_R = K^\beta (uh_R)^{1-\beta} h_{aR}^\gamma$$

thus if  $h_r > h_p$  and  $h_{aR} > h_{aP}$  then:  $y_R > y_P$  !

#### ❖ MODELS EXPLAINING DIFFERENCES AMONG COUNTRIES

Generally speaking, technology but more education (namely human capital), are the variables on which the literature focus to explain the differences among countries. Thus, in the following lines, I will start from this presumption to look at theoretical reasons which can explain different results among rich and poor countries. Let's start with the human capital, to which I want to address a particular important role, since as I believe education is the primary condition for reaching a comprehensive development of the society as a whole.

#### *HUMAN CAPITAL WITHIN THE SOLOW MODEL*

Broadly speaking the term capital can be split in human and physical capital. Human capital, in particular, wants to represent the stock of skills, abilities and education that are embodied in labor and as physical capital can be deliberately accumulated, namely it is no exogenous but driven by private decisions. Introducing human capital in Solow model means that the aggregate production functions becomes:

$$Y = A_t K_t^\beta H_t^\alpha L_t^{1-\alpha-\beta} \quad \text{with } \alpha + \beta < 1$$

and it implies that the law of diminishing returns on both physical and human capital are now less restrictive than the general Solow model. At the same time, assuming human capital is accumulated in the same manner as physical capital and both are characterized by the same depreciation rate (namely a reduction of knowledge), then the resource constraint can be written as:

$$Y_t = C_t + I_t + I_t^h$$

and changes in both capitals are equal to:

$$dK_t = sy_t - \delta k_t$$

$$dH_t = s_h y_t - \delta h_t$$

Thus, one derives that the ratio of human capital to physical capital in the steady state is proportional to the corresponding investment rate<sup>44</sup> that is:

$$H/K = s_h/s$$

Skipping some analytical passages, the final equation reporting the level of income in the steady state is equal to :

$$Y_t^* = [ A s_h^\alpha s^\beta / (\delta+n+\gamma)^{\alpha+\beta} ]^{1/(1-\alpha-\beta)} * e^\eta$$

As it can see, the level of income in the steady state depends positively on the savings rate and negatively on the rate of population growth as in the general model, what is new concerns with that it also depends on how much income is spent in human capital accumulation ( $s_h$ ). Moreover, the two investment rates are very interdependent in particular, an increase of physical capital will lead to an increase of income maintaining the human capital constant and it can be regarded as one reason in explaining why large differences in per capita income exist between countries.

### *THE CASELLI MODEL*

Another author that focuses on the role of human capital within the production function is Caselli. It is important to mention this author for his particular study which will provide us an interesting conclusion. Caselli (2005)<sup>45</sup> started from a generic Cobb-Douglas production function as:

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<sup>44</sup>  $s$  states for the portion of income spent for physical capital and  $s_h$  stands for the portion of income spent in human capital.

$$Y = AK^\alpha(Lh)^{1-\alpha}$$

And dividing by the workforce one gets the output per worker which is equal to:

$$y = Ak^\alpha h^{1-\alpha}$$

On the assumption that each year of schooling implies a higher wages (even if diminishes with education) and, the variable  $h$  is equal to  $e^{(\phi s)}$ , where  $s$  express the average years of schooling, Caselli came to the final formula:

$$Y = Ay_{kh} \quad \text{with } y_{kh} = k^\alpha h^{1-\alpha}$$

From this, it is possible derive the factors affecting output as expresses in the model before that is:

$$\text{Var}[\log y] = \text{Var}[\log y_{kh}] + \text{Var}[\log A] + 2\text{cov}[\log y_{kh}, A]$$

This equation enabled Caselli to define the variable Success as:

$$\text{Success} = \text{Var}[\log y_{kh}] / \text{Var}[\log y]$$

and by using data from different 94 countries, he reached the conclusion that almost 40% of the differences in  $y$  (income per worker) across countries is explained by differences in human capital. What about the rest? As I will show later, there are factors hypothesized to be reasons of development differences. Let's now finish the discussion upon the role human capital by looking at the model of Galor and Zeira (1993).

### *THE GALOR ZEIRA MODEL*

The presumption in the following model is that education is beneficial for all the individuals (also in terms of higher wages) but because the cost of borrowing money is high, just some people are able to access to high levels of education. The two authors started from an economy which population is fixed within an overlapping generation framework, where one good is produced by labor in two different alternative technologies, namely two different productivity levels: one due

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<sup>45</sup> Caselli, F. (2005): "Accounting for Cross-Country Income Differences" (Handbook of Economic Growth).

to the skilled workers ( $w_s$ ) and the other due to non-skilled workers ( $w_n$ )<sup>46</sup>. This implies that it will be two different production functions:

$$Y_t^s = F(K_t, L_t^s)$$

$$Y_t^n = w^n * L_t^n$$

Individuals are assumed to live two periods and have one child. It is assumed also that each individual can decide if invest a quantity of money ( $h$ ) in human capital and work the second period as skilled worker or, start to work in the first period up to the end of his life as unskilled worker. Moreover, people's utility is given from consumption ( $c$ ) as well as from the bequest to child ( $b$ ), that is:

$$u = \alpha * \log(c) + (1-\alpha) * \log(b) \quad \text{with } 0 < \alpha < 1$$

Assuming that  $x$  is the quantity of their inheritance, if  $x > h$  the individuals invest in human capital and lend a quantity of money  $x-h$ ; vice-versa individuals whose  $x$  is lower than  $h$ , will be borrow  $q$  a quantity of money  $h-x$  at interest rate  $i$ , if they want to invest in education or start to work and have an utility function as:

$$U_n(x) = \log [(x + w_n) * (1+r) + w_n] + \varepsilon$$

If individuals decide to invest in education in the case  $x > h$  the utility function will be:

$$U_s(x) = \log [w_s + (x-h) * (1+r)] + \varepsilon$$

while if  $x < h$ :

$$U_s(x) = \log [w_s + (x-h) * (1+i)] + \varepsilon$$

Let's look the capital markets that as it is easy to understand are imperfect. The basic assumption is that borrowers can take an amount of money ( $d$ ) and pay  $i_d$ ; however since any borrowing

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<sup>46</sup> Note that the level of wages is proportional to the level of productivity!

individual can evade debt payments, lenders responds by keeping track of borrowers (i.e. monitoring activities), at cost  $z$ , in order to avoid such defaults. Since borrowers also sustain a cost in terms of reputation/immobility ( $\beta$ ), hence at the end borrowers can pay back the loan paying  $d*(1+i_d)$  or avoid it and bear the cost  $\beta z$ . This implies to introduce the so called by the authors “incentive compatibility constraint” for which, the tracking cost in order to be effective has to satisfy the equation below:

$$\beta z = d(1+i_d)$$

Combining it with the so-called “zero profit condition” (that is financial intermediation, namely banks operates at zero profit) so that:

$$d(1+i_d) = d(1+r)+z$$

where  $r$  is the world interest rate and it is bigger than zero, one gets:

$$i_d = i = (1 + \beta r) / (\beta - 1) > r$$

that means that as borrowed money increases, the incentive to default rises, so tracking costs rise as well. In other words, individuals will have to sustain a borrowing cost higher than the global averaged one.

Thus the final situation can be represented graphically:

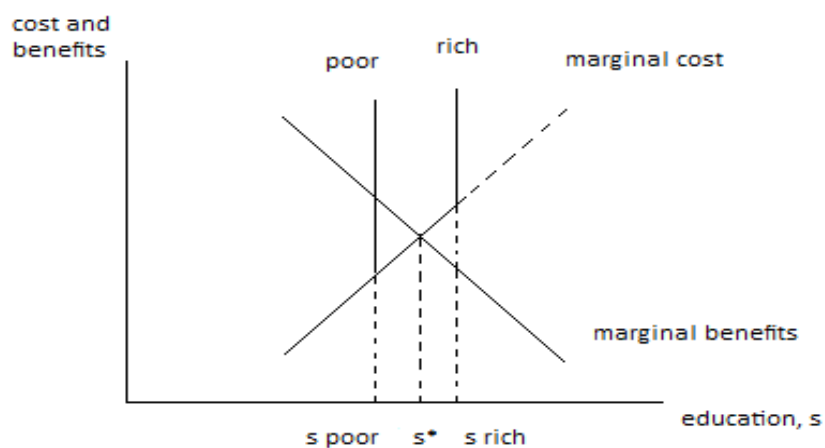


Figure 17, my elaboration from personal notes: *cost and benefit of education*

Now, let’s see how introducing the inter-temporal line, generations are affected by the initial level of inheritance. Namely the critical levels are two. The parameter  $f$  indicated if people are able to invest in education or not. This means that if the level of inheritance and so of the bequest is

bigger than  $f$  people will invest and get education; by contrast if it is lower than  $f$ <sup>47</sup> people don't invest and start to work.

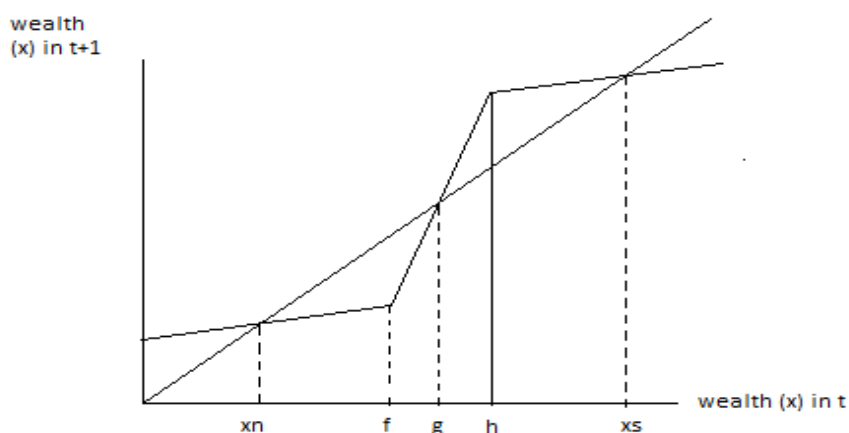


Figure 18, my elaboration<sup>48</sup>: *the long run dynamics of the economy due to education investment*

At the same time, the parameter  $g$  is determinant too. Indeed, in long-run, the wealth equilibrium point of poor (unskilled) people that are not able to invest in education will be  $x_n$ , while people able to invest in education at level bigger than  $g$ , will get a wealth equilibrium point  $x_s$ , and people who invest more than  $f$ , but since the level of bequest is below  $g$  and borrowing cost is too high as well, they will invest in education but after some generations their descendants become unskilled workers and their inheritances will converge again to  $x_n$ !

#### OTHER FACTORS AND SACHS' INTUITION

Until now, we have reach the point that behind the classical production function with capital and labor, there is space for explaining differences among countries in terms of growth. If Caselli (2005) model found that the 40% can be due to educational reasons, the rest can be explained as broadly argued by the literature, through a mix of at least three factors that are: geography (Sachs 2001<sup>49</sup>), institutions (Acemoglu 2005<sup>50</sup>) and cost technology (Prescott, Parente 1994<sup>51</sup>).

The most important study in this sense is the Sachs one, who addresses a relevant role to

<sup>47</sup> With  $f = w_n^*(1+r) + h^*(1+i) - w_s / (i-r)$ .

<sup>48</sup> From O. Galor and J. Zeira "Income Distribution and Macroeconomics". Review of economic studies (1993)

<sup>49</sup> J. Sachs (2001), "Tropical underdevelopment".

<sup>50</sup> D. Acemoglu (2005), "Politics and Economics in Weak and Strong States".

<sup>51</sup> S. Parente & E. Prescott 1994, "Barriers to Technology Adoption and Development", Journal of Political Economy.

geography, as a reason to explain the differences among countries in terms of economic growth. He started his analysis on the basis that less developing countries, namely tropical ones are more disadvantaged than tempered countries. Moreover, it is also true that generally speaking, geography has three direct effect form which several applications derive. The direct effects are the one on agriculture, that one on health since both are affected by the temperature and that one on trade with specific regard to the distance among the countries and the distance from sea and rivers (called by the author land-locked). The following applications that lead to amplify GDP divergences are due to technology, urbanization, demography and colonialism differences. In particular, regarding technology Sachs has found that in critical areas technology is not easily diffused and moreover where exists, technologies are less productive than in tempered (advanced) countries. Also the different process of urbanization and demographic transition are two aspects that amplify this gap. Finally, the author underlines geopolitical factors, namely the colonial domination, as another reason that contributes to explain the different levels of economic growth.

Thus, general results are represented by the following figures:

Climate zone	GNP per capita
<i>Tropical</i>	0.43
<i>Non-temperate</i>	0.50
<i>Temperate</i>	1.94

Table 1, Sachs<sup>49</sup>: 1995 GNP per capita

As you can see in the table, it is estimated that temperate zones have about 6.3 times the capita income of the far tropical zone, moreover in the figures in the annex at the end of the chapter, using World Bank data, the author shows how the level of per capita GNP differs from one climate area to the other.

Next, I will continue the discussion analyzing a bit deeply the main causes that make geography an explanatory variable of this GNP and GDP differences. As said before, the direct effect of geographical location and so of the different level of temperature are related to agriculture and



health. Sachs developed a Barro's cross-country growth regression and studied the production of cereals for agriculture, infant mortality and life expectancy for health conclusions. Due to agriculture differences, Sachs found that the productivity per hectare of temperate climate zone was on average, 51 % higher than in non-temperate ones<sup>52</sup>. Sachs gave several explanation to that, with particular reference to the fragility of tropical soil, water availability and control, parasites and so on. At the same time, due to health effect of geography he found that the infant mortality rate in temperate climate zones is 51% lower than tropical one<sup>53</sup> as well as these zones show a life expectancy rate higher of 8%<sup>54</sup>. However, there is no one only explanation of that, since health outcomes are affected by several ecological, economic, social, historical and genetic characteristics of local population. For example historical factors as well as medical treatment access, nutrition, food production, women status, water quality are all crucial factors that lead to consider geography as a cause of GDP differences through its effect on the variables above explained.

#### *THE ENDOGENOUS "SAVINGS" MODEL*

In order to finish this part dedicated to a specific focus on the evolution of literature with particular regard to the overview of the main models and theories, I want to highlight specific concepts due to savings rate variable. As it will be exposed, concerning to saving, economists split among those that considerer it as exogenous and who sustain it is endogenous. Let's see now the two important studies which represent the main ideas concerning the saving rate as an "internal" variable.

#### THE THIRLWALL'S APPROACH AND MODEL

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<sup>52</sup>  $\ln(\text{cereal yield per hectare}) = 7.2 + 0.31 \ln(\text{GDP}) + 0.41 (\text{Share of population in temperate climate zones})$

<sup>53</sup>  $\ln(\text{infant mortality}) = 8.6 - 0.61 \ln(\text{GDP}) - 0.74 (\% \text{ population in temperate climate zones})$

<sup>54</sup>  $\ln(\text{life expectancy}) = 3.2 + 0.11 \ln(\text{GDP}) + 0.08 (\% \text{ population in temperate climate zones})$

Thirlwall in his paper<sup>5</sup>, started from the presumption that the growth of output of any economy strictly depends on capital accumulation, which is connected to the level of investment (and to an equivalent amount of saving that match it). On this basis he argued that the main issue of developing countries concerns with how is possible to stimulate investment, and maintain a same level of saving allowing funding this investment.

Just to introduce the argument, from a mathematical point of view the growth of output ( $\Delta Y/Y$ ) can be expressed as the ratio of investment to national output ( $I/Y$ ) multiplied by the productivity of investment ( $\Delta Y/I$ ), that is:

$$\Delta Y/Y = I/Y * \Delta Y/I$$

This equation is true by definition, and at the same time can be analyzed with respect to the famous Harrod's growth formula ( $g = s/c$ ), where  $g$  is the growth rate ( $\Delta Y/Y$ );  $s$  is the savings ratio ( $S/Y$ ), and  $c$  is the incremental capital-output ratio ( $I/\Delta Y$ ) for example the amount of investment or increase in the capital stock required to increase the flow of output by one unit. Moreover, in this sense, it is useful for the purposes of planning and forecasting, for example given the capital-output ratio for a country, than the two ratio saving over income and investment over income, can be calculated for any desirable target rate of growth.

Indeed supposing that a country wants to grow at 5% per annum, and the capital-output ratio is 3, it can be seen from equation above that it must save and invest 15 percent of its national income. By contrast, if the country will save less, growth will be slower, unless the country will be able to reduce the incremental capital-output ratio or raise the productivity of investment. In other words, if there is a difference between the actual savings ratio and that required to achieve a target rate of growth, than is said to exist a savings-investment (S-I) gap that needs to be filled. Efforts in this regard can be focus by either attempting to raise the domestic savings ratio or by borrowing from abroad, namely foreign saving (even if I think that if borrowing means that a country has to pay interests so it reach a higher growth rate now but in future it will be probably reduced because the repayment of debt!).

This is a very simple framework for analyzing the relation between savings and growth in a closed economy. In the case of an open economy with foreign trade, we have to considerer the eventual export-import (X-M) gap which would need to be financed by foreign capital inflows of various types, even if sometimes foreign borrowing may be not enough if the difference between the

import requirements for growth and export earnings is more than the “5%” of output hypothesized above. This leads to the concept of dual-gap analysis, originally pioneered by Chenery and collaborators in his paper in 1966<sup>20</sup>, which argues that foreign borrowing, are necessary to fill whatever is the largest of the two gaps, if the final goal is to achieve the target rate of growth.

Within this framework, Thirlwall recognized that basically private domestic saving can derive from three different ways: voluntary saving, involuntary saving, and forced saving. Specifically he identified that voluntary saving are those related to the voluntary renunciation from consumption by private individuals out of personal disposable income and by companies out of profits. Involuntary saving consists for example, of all forms of taxation and schemes for compulsory lending to governments (including national insurance contributions). Forced saving is saving that comes from inflation, namely higher price and the following reduction in real consumption<sup>55</sup>.

Let’s focus more on this distinction by defining first of all voluntary savings that depends on the capacity to save, that namely is mainly due to the available income and, on the willingness to save and thus merely due to the interest rate and inflation, to the effectiveness of financial institutions, and to the supply of financial assets. In particular, concerning capacity to save, Thirlwall makes a mention to the Keynes paper “*General Theory of Employment, Interest and Money*” (1936) which for the first time, consumption (and therefore saving) variable was innovatively linked to the level of income through the suggestion that consumption-savings function is non-proportional to income; namely, what happens is that rich people/countries (in aggregate terms) consume proportionately less, and save proportionately more, of their disposable income than the poor. In this regard, apart from the level of per capita income, domestic savings ratio is likely to be linked with the growth of income, since countries with higher growth rates might be expected to have at least higher personal savings ratios than countries with lower income growth rates<sup>56</sup>.

Following the discussion, another possible relevant factor that affecting the capacity to save is represented by the distribution of income, if we assume that the propensity to save of the rich is bigger than that of the poor, and positively related to the degree of inequality in the individual

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<sup>55</sup> Real consumption is negatively affected by an increase in price for several causes: one is that people in order to maintain the same real value of their money, starts to accumulate more money and to reduce expenses as well.

<sup>56</sup> However since some countries’ population is not in balanced growth, the growth of income is typically split into the growth of per capita income and the growth of population.

distribution of income. In this sense, changes in the income distribution, may be a relevant explanation of why savings ratio first rises with the level of per capita income and then stops. From my point of view a curve like the figure below can represents the fact that savings increase proportional with income increase up a point in which the propensity to consume prevails upon the saving one. Thus:

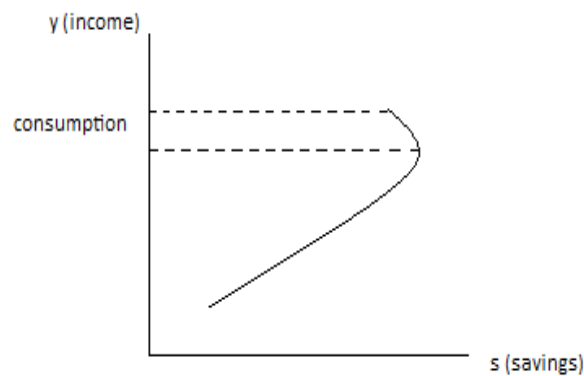


Figure 19, my elaboration, a possible savings - income relationship

On the other part as said before, willingness to save is believed as a second major factor affecting voluntary savings and it might be expected that is positively affected by the real rate of interest. At the same time, another relevant element affecting willingness to save is the presence of effective financial institutions, and the supply of financial assets that allow savers to satisfy their different needs. Even if there is no single measure to capture institutional goodness, many authors (as Thirlwall<sup>5</sup>) suggest several indicators due to financial deepening. In this sense, we can include the ratio of money to GDP; the growth of money and the quasi-liquid liabilities as a percentage of GDP and so on. A final consideration, deals with willingness to save, on which the rate of inflation can have an ambiguous effect. Indeed, from one side, inflation acts as a tax on real money holdings, that makes fall voluntary saving, and on the other, individuals will defense themselves in order to avoid the effects of this tax. Thus, as we will see later the most likely empirically recognized relation between inflation and the savings ratio, is the inverted U shaped one, that shows how saving rises with mild inflation and then falls as inflation becomes excessive.

Moreover, Thirlwall developed a simple model with the contribution of other economists which is represented by the following regression:

$$S/Y = \alpha - \beta PCY - 1 + \gamma GPCY + \delta POPG + \epsilon QLL + \lambda \pi - \mu \pi^2$$

where PCY reflects the per capita income and captures the effect of several monetary and fiscal variables (i.e. macroeconomic stabilization), and political variables as well; GPCY is the growth of PCY; POPG represents the growth of population and QLL is the ratio of quasi-liquid assets to GDP, plus the inflation rate ( $\pi$  and  $\pi^2$ ).

The main conclusions they reached are that, first of all, since PCY depends on the productivity of labor (namely on investment per capita and technical progress), the big question in this regard facing all developing countries, is how to raise the level of investment and to enhance technology improvements. The growth of income and the growth of PCY are also important determinants of saving, and it is a function of investment and technical progress as well. Indeed, investment will be promoted by a stable macroeconomic environment, and through the creation of efficient financial institutions willing to lend. The study shows that the degree of financial deepening clearly affects saving, and in this sense governments have a key role in providing adequate regulatory and legal framework in which a banking system can operate efficiently. This leads us to focus on to the topic of financial liberalization later in the financial section.

As reported before, the second type of savings addressed by Thirlwall is the involuntary saving that as already said, is affected mainly by taxation policies. At the same time, the tax revenue (as a whole) a country is able to raise, depends both on the taxable capacity of the country, and on the tax effort made by the country.

Finally, forced saving is that required to fill the gap upon saving and investment, namely the most effective tool is represented by foreign saving. Indeed, foreign resource inflows allows investment to exceed domestic saving by allowing imports to exceed exports. In other words, foreign saving raises unambiguously the growth rate of a country, if we ignore debt servicing, and assuming that domestic saving and the productivity of capital are not adversely affected.

#### THE HARROD OPTIMAL SAVING REQUIREMENT AND...

Harrod on the similar thought line of Thirlwall believed that the aggregate level of income of a country is the most important determinant of its saving and in particular the income's rate of growth was an irrelevant factor affecting the saving demand. With these assumption and regarding demand equal to supply, he developed a basic formula due to the rate of growth based on savings rate; in particular

$$sx_0 = C_p(x_1 - x_0) \rightarrow s/C_p = (x_1 - x_0)/x_0 = G$$

where total saving is equal to  $sx_0$ , the capital stock is equal to  $C_p(x_1 - x_0)$  and  $G$  is the rate measuring the increase in total output. Moreover, Harrod in his work<sup>57</sup> emphasized the specification that with capital increment, one has to take in account both the capital goods and consumption goods<sup>58</sup>; thus in order to have a balanced production, the propensity to save and the quantity of capital (as a whole) have to be neither too much or too less but have to be assumed equal<sup>59</sup>. Namely the equation becomes:

$$G_w = (s - k - K/x_0) / C$$

where  $C$  represents the total (desired) increase of capital per unit increment of output (and  $C_p$  represents the actual increase). However, several other factors related to output increase needed to be introduced (like the increase of foreign trade). In this regard  $E$  stands for exports while the Imports ( $i$ ), on the other hand, are assumed to be a fraction of the current level of income, where  $i$  doesn't need to be equal to  $E$ , and if a difference exists, it represents an international movement of capital.

Thus:

$$Sx_0 + ix_0 = C_p(x_1 - x_0) + Kx_0 + K + E$$

From this formula<sup>60</sup> it easily understable that each time the amount of saving exceeds the capital outlay, output will tend to decline, and conversely there will be an output growth. So eventually, you have zero growth only when the amount of saving is equal to this amount of capital outflow. Finally, in this framework the author introduced the concept of natural rate of growth regarded as the maximum rate of growth allowed by the increase of population, accumulation of capital, technological improvement and the work/leisure preference schedule, supposing full employment state. However, he concluded that there is no inherent tendency for these two rates to coincide.

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<sup>57</sup> R. F. Harrod (1939) *An Essay in Dynamic Theory*, (The Economic Journal) Vol. 49, No. 193.

<sup>58</sup> Namely, the increment consists of total production less total consumption ( $C_p$ ).

<sup>59</sup> In this sense, GDP is a "ambiguous" measure since overproduction (thus too much GDP) can lead to crisis (i.e. that one in US in 1929)!

<sup>60</sup> Note that  $C_p$  now stand not for the total increase of capital and can be negative.

In particular in order to cope with the dynamics of the formula, a low interest rate would encourage high values of  $K$  and  $C$  and, by having a depressing influence on  $s$  and probably would lead to a low rate of growth. By contrast, this effect can be combated with the permanently implementation of public working activities.

### ...THE HARROD-DOMAR MODEL

The Harrod–Domar model was a model developed independently by the two authors and in particular Domar’s intuition<sup>61</sup> started from the belief that present investment play a double role; from one side it contributes to aggregate demand increase today, and on the other, it provides new productive capacity for the future. Thus, an increase of investment is extremely important for the economy otherwise the aggregate demand will be discouraged and the future investment may fall. In particular Domar hypothesized the optimal rate of growth of investment as equal to:

$$dI / I = (1/ICOR) * (s)$$

whit  $ICOR$  and  $s$  (propensity to save) assumed constant. Harrod<sup>62</sup> at the same time, started from Domar’s idea but regarding the difference among present income and income of the previous period, as the variable from which investment is dependent and derived the following equation:

$$G_w = dY/Y = s_d/C_r$$

where  $G_w$  is the rate of growth of output that depends on  $s_d$ , the savings as part of income, and on  $C_r$ , that is the incremental capital–output ratio ( $ICOR$ )<sup>63</sup>, namely the incremental capital due to available technology that facilitates output increases.

As it can be seen by looking at Harrod formula, in order to achieve a specific level of growth, a particular level of savings (capital) is required, namely, for a target rate of growth  $g^*$  there is a unique savings rate  $s^*$  that allow to reach it.

Thus, the key to growth in the Harrod-Domar model lays in a country’s savings ratio ( $s$ ) and in  $ICOR$  that reflects the incremental capital-output relationship. In other words, the proportion of

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<sup>61</sup> E. Domar (1946), “*Capital Expansion, Rate of Growth and Employment*” *Econometrica*.

<sup>62</sup> R. F. Harrod (1939), “*An Essay in Dynamic Theory*” *The Economic Journal*.

<sup>63</sup> With  $ICOR = dK / dY$  or  $I / dY$ , since  $I = dK$ .

national income saved determines a country's flow of funds into investment and the incremental capital-output ratio determines how much output will grow from this given increase in capital stock<sup>64</sup>. However, Harrod hypothesizes that if domestic resources are insufficient to yield the target rate of growth, then it can be achieved with the help of an amount of foreign aids equal to the difference between the required savings and the current one, that is  $s^* - s = a$ . At the same time however many criticisms were raised up by the several authors. If from one side Domar himself specified that the model was intended to provide an explanation to the business cycles, rather to derive an empirically meaningful rate of growth, on the other hand several critics are linked to the assumptions of no labor in the production function, constant capital-output ratio as well as the assumed fact that required capital goods are produced simultaneously with an increase in output (thus no lag possibilities exist).

In conclusion, until now I have coped with the main theoretical models dealing with economic growth, and in this regard it is important to underline that economic growth is has always been associated with capital accumulation that derives basically from exogenous technical progress. By contrast, actually, there is a constant increasing interest about a possible financial development contribution; in particular, financial intermediation is conceived to have several growth effects. In this context, professor Pagano in a paper<sup>65</sup>, in order to explain how financial development can affect economic growth, derived a steady-state growth rate that is equal to:

$$g = (A * \phi * s) - \delta$$

where A is the marginal productivity of capital,  $\phi$  stands for the proportion of saving funnelled to investment, s represents the private saving rate, and  $\delta$  stands for the depreciation of capital. From this equation is easily understandable that these three variables are the key determinants of growth. In particular, let's see deeply the dynamics for each one. About the process of funneling savings to firm, namely to transform private savings into investment, professor Pagano pointed out that this is a costly activity, thus a part of  $\phi$  is absorbed by the bank as commission, and higher it is and less is the contribution of the variable to growth. At the same time, the variable A

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<sup>64</sup> For example a country whose saving rate is 12% (of its income) and ICOR is 3% should have a rate of economic growth of  $12\% / 3\% = 4\%$ .

<sup>65</sup> M. Pagano (1993), *"Financial markets and growth"*.



expressing the productivity of the capital is the most important in this model, and is affected by the financial intermediaries basically on two ways: one deals with the collection of information that allow to evaluate correctly the different investment projects, and the other due to the possibility for the investors to share risks. If the first way implies a better screening leading to an efficient saving allocation, thus higher productivity and so higher growth (also supported by Greenwood and Jovanovic as we will see later), in the second case the presence of intermediaries as banks, implying a risk sharing among the investors in particular with reference to liquidity risk. Thus, in both ways a financial system based on such type of financial institution works as a vehicle to achieve higher efficiency. Finally, another contribution to growth can come from private saving rate even if this relationship is not well defined; namely financial development can also affect negatively savings, and thus the growth rate. In this regard, there is no one single shared idea, since the effect of financial intermediation on savings through the risk sharing depends mainly on the risk-aversion utility of the investors. Anyway, at this stage, becomes important to introduce what determines financial development and I want to represent the argument briefly, since it will be deeply faced in the next part. In this regard, firstly we have to start from the general presumption that many models assume financial development as an exogenous variable. By contrast, Greenwood and Jovanovic (1990)<sup>66</sup> are the first authors that link endogenously financial development to growth, since they believe that a well developed financial system, attract people to participate in financial markets leading to an overall growth of the economy. At the same time, Pagano reports in the same paper the Roubini and Sala-i-Martin's idea, according to which, financial development depends also on the several policies which governments put in practice, with particular regard to fiscal ones. In this context, as I will show later, if one would like to test the relationship among financial development and growth and how it comes up, specific evidences are provided by the model of McKinnon and Shaw of 1973 as well as King and Levine in 1992. In particular, we will see that, generally, it is assumed a positive correlation between financial development and growth, even if, by contrast, other authors critic financial development and argue that financial repression can work as an input to sustain higher savings and thus growth. Maybe, as Pagano reported in his work, one need to specify better the concept of financial

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<sup>66</sup> Greenwood & Jovanovic, *Financial Development, Growth, and the Distribution of Income* (The journal of political economy Oct. 1990).

development, and how it affects the economic growth by interacting with different sectors of the economy. Let's see it in the following part.

❖ ANNEX: FIGURES

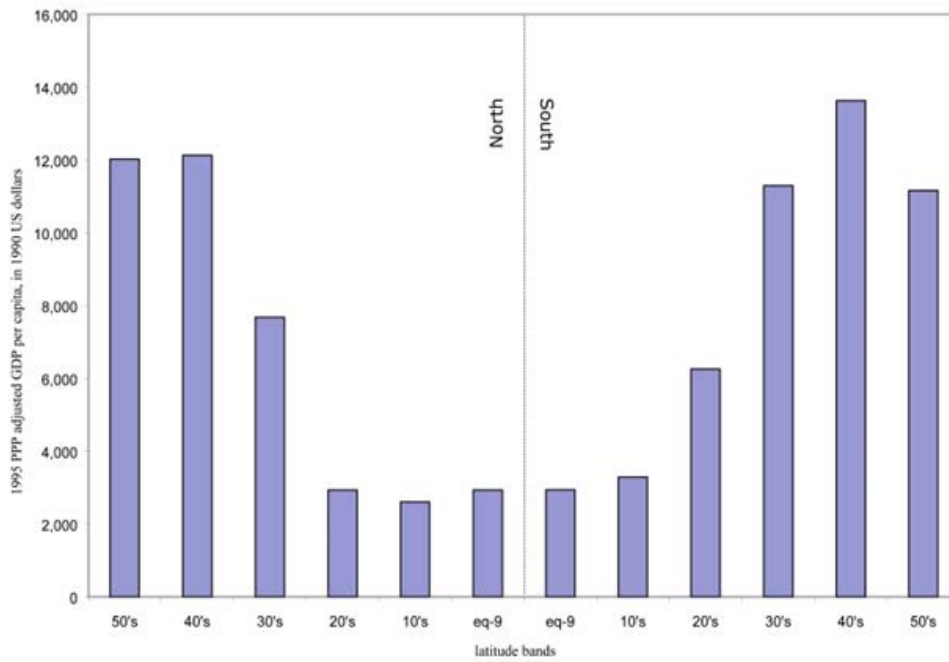


Figure 1, World bank 1997 from Sachs<sup>49</sup>: *GDP per capita by latitude*

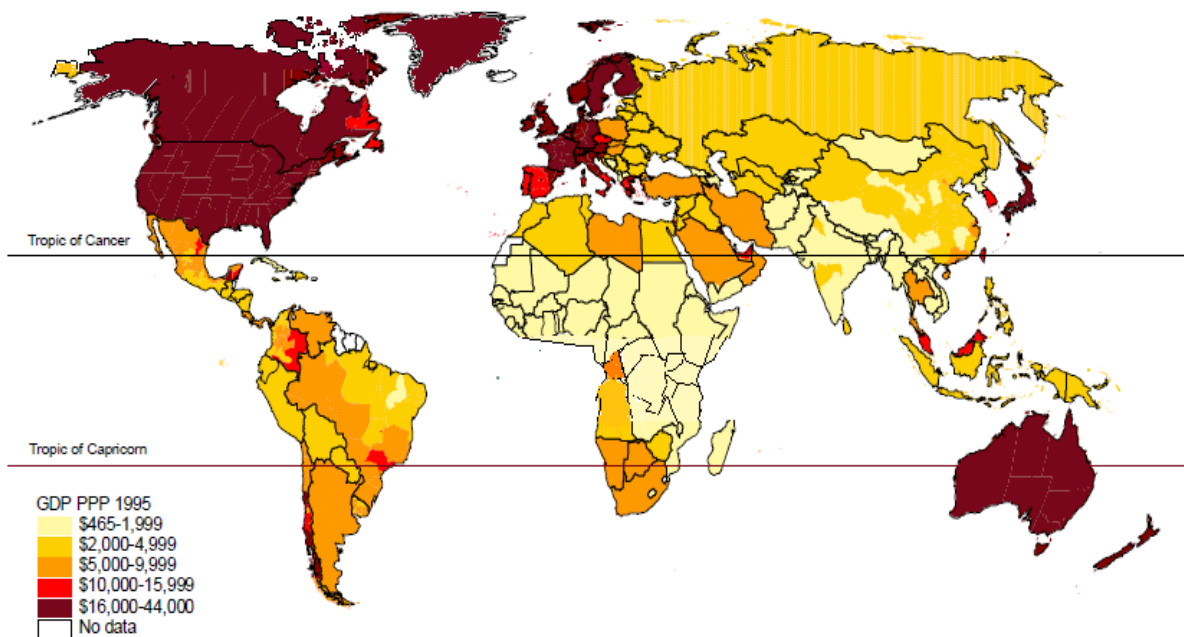


Figure 2, Sachs<sup>49</sup>: 1995 GDP per person in PPP international dollars

## CHAPTER III.

### FINANCE'S ROLE IN THE GROWTH PROCESS

#### ❖ BRIEF OVERVIEW

Resuming the sections before, we can define economic development as a comprehensive process that includes improvement in all sectors of the society and the well-being of the total population on sustainable basis. This definition intrinsically recalls the need for infrastructural aspects as the development of legal infrastructure, goods and services by public institutions, human capital development, competitive markets and environmental protection. In particular, when we talk about competitive markets we also refer to the need to improve their efficiency. Basically indeed, LDC's markets are characterized by distortions, with a wrong resource (capital) allocation. In this sense, the promotion of capital inflows, the strengthening of capital markets, financial deregulation and liberalization are often considered macroeconomic feature of an economy devoted to growth through efficient financial markets. Foreign capital inflows indeed, can enhance economic growth and World Bank specifically reported in its empirical studies that private capital flows are associated with acceleration of growth, namely, 1% increase in capital inflow as

percentage of GDP leads to about 0.25% increase in the GDP growth. Thus the positive correlation we can see from this study, is something important that proves the real linkage between open financial markets and growth, even under the condition that country provides complementary macroeconomic policies, efficient resource use and the adoption of sustainable and credible financial policies at government level as underlined before. At the same time, when we talk about financial markets, we have to remember the correlated necessary establishment of financial institutions/intermediaries. Most studies in the 90s have shown that these have played a significant role in economic growth and development for several decades. The role of financial institutions indeed, is not only to reduce information costs and transaction costs but is also to create *new products with value added* characteristics. In this view efficient institutions have to provide specific functions as mobilizing savings, managing risks, monitoring and evaluating financial transactions and facilitating transactions among parties. Financial institutions moreover can contribute to favorite technical progress by altering the saving rate in favor of capital accumulation for producing technologies (Romer in particular is a strong supporter of that). By contrast King and Levine's study<sup>67</sup> in 1993, stated that the channel by which finance must have its dominant effect, is due to the central role that financial institutions play in evaluating, managing, and funding the most productive entrepreneurial activity that leads to growth and not only through their influence via the rate of physical capital accumulation. However, the literature is generally divided about the role of monetary and financial policies to be set up, substantially in financial liberalization reform supporters and those that instead support the financial repression. We will see deeply the matter and in particular, what are the key determinants through which finance can be a development channel or at least can be used to alleviate poverty.

#### ❖ **FINANCIAL ASPECTS IN DEVELOPING COUNTRIES**

Several economists (Fry and Friedman in particular) found that financial system in LDCs have basically four distinctive elements comparing with financial system in advanced (industrial) economies. First of all, financial systems in industrial countries are dominated by the presence of commercial banks, rather in LDCs countries just few agricultural and development banks exist but

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<sup>67</sup> R. King & R. Levine (1993), "*Financial Intermediation and Economic Development*".  
R. King, & R. Levine (1993), "*Finance, entrepreneurship and growth: Theory and evidence*".

small if compared with commercial banks. Moreover, the role of equity markets in developing countries as mechanism of intermediation among households and business sector remains small. Second, financial system in many developing countries tend to be heavily taxed, where tax rate is the inflation rate that governments collect as a source of revenues (but how it is spend is unknown). Third, banking system in developing countries face high-required reserve ratios, (often accompanied by high inflation), almost three times higher than developed countries, favoring monetary expansion as Fry<sup>68</sup> himself show by finding a positive correlation between inflation (or monetary growth) and the ratio of bank reserves to deposits. Moreover, financial markets in LDCs are characterized by reluctance to rely on market determination of interest rate since there is an administrative controls on interest rates such as ceilings on deposit and loan interest rate; in other words financial repression. Finally, LDCs financial markets also differ in terms of small size, absence of debt instrument and presence of capital control, namely all factors that affect another characteristic of these systems: the lack of competition among the banks. However, let's try to answer to the following dilemma: what are the financial determinants of economic growth? Basically, as suggested by Levine<sup>69</sup> the costs of acquiring information, enforcing contracts, and making transactions create incentives for the emergence of particular types of financial contracts, markets and intermediaries with the role to reduce their effects. Moreover, the author highlighted five basic functions about how financial systems influence savings and investment decisions and hence growth. Indeed, in particular, financial development involves improvements in the (i) production of ex ante information about possible investments, (ii) monitoring of investments and implementation of corporate governance, (iii) trading, diversification, and management of risk, (iv) mobilization and pooling of savings, and (v) exchange of goods and services. However, at the same time, market frictions that motivate the emergence of financial systems generates two instabilities, that are from one side the fact that saving rates are ambiguously affected by having higher return due to well-known income and substitutions effects; and on the other one, similarly, savings rates (once again) can may be ambiguously affected by the reduction of risk. Thus, what's happen is that financial arrangements allowing to improve resource allocation and reduce risk, at the end may be a cause of saving rate reduction.

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<sup>68</sup> M. Fry (1978), *"Financial repression and economic growth"*.

<sup>69</sup> R. Levine (2004), *"Finance and growth: theory and evidence"*.

*a) Producing information and allocating capital*

The first obvious consideration underlined by Levine is that, since savers are reluctant to invest in activities about which there is little reliable information, high information costs may affect negatively capital that will not flow to its highest value use. In this sense, financial intermediaries' main role is that one of reducing these costs due to the acquisition and information processing, so that resource will be allocated in the best way and at the same time, each investor will be able to face those large fixed cost. One example in this sense, is the large information asymmetries that generally exist between small shareholders and managers who have enormous discretion over the flow of information. Furthermore, small shareholders frequently lack the expertise and incentives to monitor managers. Thus, by producing better information on firms financial intermediaries can accelerate economic growth, by inducing a more efficient allocation of capital (Greenwood & Jovanovic<sup>67</sup>).

*b) Risk amelioration*

Another element with implications for resource allocation and growth is the risk amelioration. Indeed, intuitively, while savers generally do not like risk, high-return projects tend to be riskier than low-return projects. Thus, efficient financial markets would make easier for people the possibility to diversify risk pushing them to invest toward projects with higher expected returns. By contrast, in the absence of financial arrangements that allow agents to hold diversified portfolios, agents will avoid the high-return, risky projects. In this sense, an implication in terms of technological change, is suggested by King and Levine<sup>68</sup> and reported by Levine himself<sup>70</sup> is that, since engaging in innovation is risky, holding a diversified portfolio of innovative projects may reduce risk and promote investment in growth-enhancing innovative activities; in other words financial systems may also ease risk diversification that implies to accelerate technological change and so economic growth.

Moreover, another type of risk presents in the market is the liquidity risk. Basically the standard link between liquidity and economic development arises because some projects that could provide high-interest return, at the same time require a long-run commitment of capital and if the financial system is not able to provide needed liquidity, less positive for growth investment will be less likely to occur. Thus, with liquid and frictionless capital markets, savers can hold liquid assets

as like equity, bonds, or demand deposits, which they can quickly and easily sell if they seek access to their savings.

*c) Pooling of savings*

Generally, mobilization (*pooling*) is the costly process of agglomerating capital from disparate savers and as Levine underlined it involves high transaction costs due to the collection of savings from different individuals together with the informational asymmetries. In this regard, the pooling mechanism also occurs within financial intermediaries, where thousands of investors entrust their wealth to intermediaries that will be allocated among the firms. In order to have an effective mobilization, intermediaries have to be able to convince savers of the soundness of the investments devoting those savings toward the most productive ends. Indeed, besides the direct effect of better savings mobilization on capital accumulation, better savings mobilization can improve resource allocation (for example it can be used to favorite technological innovation as highlighted before).

❖ **HOW FINANCE CAN AFFECT ECONOMIC GROWTH**

Economists disagree sharply about the role of the financial sector in economic growth; although the first generation of neoclassical growth models attributed economic growth to exogenous technical change and population expansion (for example Solow, 1956, 1957), recent literature has emphasized the key role played by finance in achieving economic growth especially in developing countries. Indeed, many economists (Levine, Shaw, McKinnon and Goldsmith) sustained the idea that a developed financial structure with a rigorous control of governments over interest rates and other asset prices can lead to the long-run economic growth. However, at the same time, until the 60-70's there was a failure to establish the direction of the causality between finance and economic development; it was just in the 90's that the first financial economists started to develop some models on the basis of the assumption that finance causes growth and started to identify the channels through it happens. Lewis<sup>70</sup> in this sense, suggested that the causality between finance and growth was a two-way relationship, since the establishment of financial

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<sup>70</sup> A. Lewis (1955), *"The Theory of Economic Growth"*.

markets and institutions are a consequence of economic growth; however at the same time, it also acts as an input to growth by stimulating the savings mobilization, capital funds allocation, the monitoring of funds implementation and risk management.

Besides, several scholars suggest that financial development is at least as important as human capital in the growth process. Namely, the theory of intermediation was born on the hypothesis that intermediation itself is a veil of growth since it is a fundamental tool for facing the problem of asymmetric information and the transaction cost one. In particular, financial intermediation through the banking system played a key role in economic development by affecting the allocation of savings, thereby improving productivity, and finally the rate of economic growth (Murinde<sup>71</sup>); but also by collecting and processing investment information and by monitoring the behavior of borrowing individuals and/or firms as recall by Jovanovic and Greenwood<sup>67</sup>.

Indeed, financial intermediaries are the right institutions that have the cost advantage in monitoring and acquiring information. On this view, however, it will be important to stress the role of government in fostering and developing appropriate institutions in the financial sector.

Finally, one more basic link among finance and growth is represented by the channel each government has in financing its deficits by borrowing from central bank at zero cost. However, as saw earlier there is not a single linear relationship among inflation and economic growth, but something else that affect in opposite way the two exists and it is recognized in fiscal variables (Fry)<sup>72</sup>. Thus, what's happen is that countries with good fiscal characteristics perform better economically with higher growth and lower inflation than those with poor fiscal features. Namely, small deficits are good for growth.

#### *Empirical cross-country studies on the finance and growth bond*

Levine in his paper<sup>70</sup> reported one of the first attempts to assess whether finance exerts a causal influence on growth that is the one of Goldsmith, who started from the assumption that financial intermediary size relative to the size of the economy, rises as countries develop, and graphically documented a positive correlation between financial development and the level of economic

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<sup>71</sup> V. Murinde, J. Green & H. Kirkpatrick (2005), " *How does the finance contribute to the development process and poverty reduction*".

<sup>72</sup> M. Fry (1978), " *The permanent income hypothesis in underdeveloped economies: additional evidence*".



activity. However since the lack of data on securities market development for a broad range of countries, Goldsmith was unable to provide strong cross-country evidences.

At the same time, in the early 1990s, King and Levine (KL)<sup>68</sup> started from Goldsmith's work and developed other factors affecting long-run growth as the capital accumulation and productivity channels. The cross-country econometric results suggested that financial services are importantly linked to economic growth and productivity improvements; since financial intermediaries can evaluate prospective entrepreneurs, fund projects with relatively good chances of success, diversify risk, and value activities. Moreover, in order to measure these financial services, they used four indicators: in terms of measures of financial development, K&L firstly examine DEPTH, which is simply a measure of the size of financial intermediaries. It equals liquid liabilities of the financial system (currency plus demand and interest-bearing liabilities of banks and non-bank financial intermediaries) divided by GDP. They also construct the variable BANK that measures the relative degree to which the central bank and commercial banks allocate credit. BANK equals the ratio of bank credit divided by bank credit plus central bank domestic assets. Then, to measure to who the financial system is allocating credit they use the variable PRIVATE<sup>73</sup> that equals credit issued to private enterprises divided by credit issued to central and local governments plus credit issued to public and private enterprises. Finally, K&L also examine PRI V/Y<sup>74</sup>, which equals credit to private enterprises divided by GDP. The assumption underlying this measure is that financial systems, that allocate more credit to private companies, are more engaged in researching firms, exerting corporate control, providing risk management services, mobilizing savings, and facilitating transactions. Even if, these measures still do not directly act as proxies for the financial functions stressed in theoretical models, K&L found very consistent results across the different financial development indicators. At the same time they supposed three growth indicators; first of all they decomposed real per capita GDP growth into two components: GYP is the real per capita GDP growth rate, GK is the real per capita capital stock growth rate, INV is the ratio of investment to GDP and PROD is the growth rate of everything else. Thus, they studied the relationship between the four financial development indicators (DEPTH, BANK, PRIVATE, PRI V/Y) and the four growth indicators (GYP, GK, INV, PROD) by using cross-country regressions, namely, evaluating the

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<sup>73</sup> Higher values of PRIVATE reflect a redistribution of credit from public enterprises and government to private firms.

<sup>74</sup> Higher values of PRI V/Y indicate more credit to the private sector as a share of GDP.

correlation between each growth indicator and each financial indicator using the average reported values for several countries over the same time period, 1960-1989.

$$G(j) = \alpha + \beta F(i) + \gamma X + \varepsilon.$$

In other words, if  $F(i)$  represents the value of the indicator  $i$  of financial development averaged over the period 1960-1989,  $G(j)$  represents the value of the growth indicator  $j$  averaged over the period 1960-1989, and  $X$  represents a matrix of conditioning information to control for other factors associated with economic growth (e.g., income per capita, education, political stability, indicators of exchange rate, trade, fiscal, and monetary policy).

The results of the estimation of above regression on a cross-section of 77 countries are reported in Table 1 below:

Table 1  
Properties of growth and financial indicators.\*

(A) Summary statistics: 1960-1989				
Variable	Mean	Std. dev.	Minimum	Maximum
<i>GYP</i>	0.019	0.016	-0.012	0.066
<i>GK</i>	-0.003	0.014	-0.032	0.028
<i>INV</i>	0.203	0.052	-0.092	0.318
<i>PROD</i>	0.020	0.013	-0.007	0.059
<i>DEPTH</i>	0.364	0.217	0.106	1.132
<i>BANK</i>	0.715	0.172	0.235	0.979
<i>PRIVATE</i>	0.598	0.172	0.176	0.920
<i>PRIV/Y</i>	0.256	0.185	0.037	1.119

(B) Contemporaneous correlations: 1960-1989 <sup>b</sup>							
	<i>GK</i>	<i>INV</i>	<i>PROD</i>	<i>DEPTH</i>	<i>BANK</i>	<i>PRIVATE</i>	<i>PRIV/Y</i>
<i>GYP</i>	0.77 [0.001]	0.58 [0.001]	0.98 [0.001]	0.56 [0.001]	0.44 [0.001]	0.37 [0.001]	0.50 [0.001]
<i>GK</i>		0.65 [0.001]	0.64 [0.001]	0.69 [0.001]	0.56 [0.001]	0.49 [0.001]	0.65 [0.001]
<i>INV</i>			0.50 [0.001]	0.54 [0.001]	0.59 [0.001]	0.49 [0.001]	0.48 [0.001]
<i>PROD</i>				0.47 [0.001]	0.36 [0.002]	0.30 [0.008]	0.41 [0.001]
<i>DEPTH</i>					0.59 [0.001]	0.45 [0.001]	0.82 [0.001]
<i>BANK</i>						0.79 [0.001]	0.63 [0.001]
<i>PRIVATE</i>							0.68 [0.001]

\* *GYP* = Real per capita GDP growth rate,  
*GK* = Real per capita capital stock growth rate,  
*INV* = Ratio of investment to GDP,  
*PROD* =  $GYP - (0.3) * GK$ ,  
*DEPTH* = Ratio of liquid liabilities to GDP,  
*BANK* = Deposit bank domestic credit divided by deposit bank domestic credit plus central bank domestic credit,  
*PRIVATE* = Ratio of claims on nonfinancial private sector to domestic credit,  
*PRIV/Y* = Gross claims on the private sector to GDP.

<sup>b</sup>P-values in brackets.

Figure 20, King and Levine 1993: *Properties of growth and financial indicators*

With these obtained results, King & Levine<sup>75</sup> were able to demonstrate that there is a strong positive relationship between them since financial indicators are significantly related to the economic growth indicators and, secondly, they find that countries with well developed financial systems enjoy faster rates of productivity growth. Namely, they show that countries which had high values of DEPTH over the 1960-1989 period, grew faster with high rates of physical capital accumulation, investment rates, and more rapid rates of technological advancement than countries with less developed financial systems after controlling for many factors<sup>76</sup>. And finally, the regressions indicate that financial DEPTH is a good predictor since the relationship between the initial level of financial development and growth is economically large. Thus resuming, the idea that better financial systems stimulate faster productivity growth and growth in per capita output seems really able to work. However, by contrast, the authors (K&L) also suggested that government policies toward financial systems may have important causal effects on long-run growth; but this matter will be better covered later.

Another important study (highlighted by Levine<sup>70</sup>), supporting the role of financial institutions in development finance, is provided by Odedokun (1996), who used the following regression :  $(d/d_t)(Y) = k + a(d/d_t)(L) + b(d/d_t)(I/Y) + c(d/d_t)(F) + e(d/d_t)(X) + u$  ; where Y is Real GDP, F measures the level of financial development, I is the real gross investment, L labor force, u the error term and the a,b,c,e are the numerical coefficients. Basically, he found that in most of analyzed countries (especially in LDCs) financial institutions contribute to economic growth proportionally to the level of expanded exports and/or to the growth of capital formation.

Finally, recently other economists, also gave an interpretation, using alternative indicators of financial development, and providing direct evidences on connection between economic growth and the services provided by financial intermediaries, on the presumption that publicly-owned banks are less effective (at acquiring information about firms, exerting corporate governance,

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<sup>75</sup> Results replaced in the work of R.Levine (1996): *"Financial Development and economic growth"*.

<sup>76</sup> In this regard, since the difference between the slowest growing countries and the fastest growing ones is about five percent per annum over this 30-year period, Levine reached the conclusion that a rise in DEPTH variable, alone eliminates 20 percent of this growth difference!

[Asli Demirgüç-Kunt & Ross Levine (2008): *"Finance, Financial Sector Policies, and Long-Run Growth"*.]

mobilizing savings, managing risk, and facilitating transactions). In this regard, Levine and Zervos<sup>77</sup> found that the initial level of stock market liquidity and the initial level of banking development (bank credit<sup>78</sup>) are positively and significantly correlated with future rates of economic growth, capital accumulation, and productivity growth. In other words, these results are consistent with the view that stock market liquidity facilitates long-run growth.

In conclusion, the role of financial institutions can be summarized as those entities that have to favorite the mobilization and channeling of savings/investment and allocation of capital for projects with the higher expected return (with regard to risk), namely support higher efficiency (productivity). However, as Levine added, intermediaries will operate effectively only if, a legal system that enforces contractual agreements rigorously (thus protect the rights of external investors) and have accounting standards that provide comprehensiveness and transparency, exist. The World Bank itself one decade ago in its 2001 report stressed the importance of legal institutions for promoting economic growth: "Building financial institutions requires policymakers to focus on the security property rights for outside investors and efficient contract enforcement mechanism".

## ❖ **ISSUES ON FINANCIAL LIBERALIZATION REFORM**

### INTRODUCTORY CONCEPTS

The overall discussion on how the financial framework can affect growth, leads to an important dilemma: financial liberalization or financial repression? King and Levine in their paper<sup>1</sup> found two relevant stylized facts: countries with faster growth rates tend to have larger financial systems, and countries which initially larger financial systems enjoy faster subsequent growth. Thus from these two conclusions we can derive that the absence of a developed financial sector is an impediment to growth. Indeed, financial repression is considered having a high number of growth-inhibiting impacts. The main recognized by the economists are that: first of all it encourages people to spend their savings in unproductive real assets; secondly the non-market allocation of

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<sup>77</sup> R.Levine & S. Zervos (1998): "Stock Markets, Banks and Economic Growth" .

<sup>78</sup> Bank credit equals bank credit to the private sector as a share of GDP.

funds favorites rent-seeking; thirdly low interest rates encourage potential investors to be indulgent. Thus, at the end the result is that investment is led to be inefficient. However, the supporters of the financial repression exist (Keynes, Stiglitz) and argue that, considering the capital scarcity of the LDCs, a high interest rate discourage investment affecting negatively economic growth. As a result, they suggest the most countries should impose ceilings on interest rate (below market-clearing levels). In this context, the match is open, but it has to consider that there is a fairly widely view that financial liberalization enhances economic development by facilitating capital accumulation and its efficient use. Indeed one example of that is World Bank, which believes that financial liberalization has to be pursued by less developing countries in order to develop a market-oriented integrated financial system for the mobilization of savings, for an efficient allocation of available resources (domestic and foreign) and for an acceleration of economic growth. By contrast, the implementation of such reforms was supposed to be against the background of different degrees of economic stress. Indeed the impediments affecting the several countries are different, as the lack of adequate regulation and prudential supervision in Asian developing countries, or high inflation as well as the directed credit programs and the existing controls over interest rates in African ones. However, even if about the relationship among financial liberalization and economic growth there is no a unique broadly accepted view, by contrast it is broadly shared the idea according to which financial liberalization needs to be preceded by some pre-conditions that are: the macroeconomic stabilization accompanied by a prudential and supervisory body (i.e. World Bank) to contrast any moral hazard possibility, effective government policies to establish credibility on financial reform, price stability and a taxes system which doesn't impose taxes on intermediation. In particular:

- a) First stabilise, then liberalise: basically macroeconomic stabilization is important because any reform which is carried out against an unstable macroeconomic background may make that instability worse. Indeed, macroeconomic stability implies a reasonable domestic relative price structure. Conversely, high and unstable inflation, balance of payments crises, external debt are all symptoms of macroeconomic instability and they increase the real interest rate. In particular, high inflation implies distortion on prices information making the resource allocation difficult and, a current account deficit with a sharp rise of exchange rate, lowers the credibility of liberalization. In order to provide a solution to this problem World Bank itself suggests the liberalization of the domestic financial sector form

one side, and the opening of the current account in the balance of payments on the other one. By contrast, the major criticism of these programs have come from the new structuralist economists, who suggest the application of stabilization measures to developing economies retards economic growth and income inequality. Indeed they state that inflation in these kinds of economies is inevitable since the presence of structural bottlenecks or constraints. For example, in the foreign trade sector, it is suggested that the growth of imports exceeds the growth of exports because at the early stage of development the developing countries need to import capital goods (namely technology!) to develop an industrial base. Thus, they claim that this deficit has to be financed rather than to be eliminated.

*A deep examination: the instability in the less developed economies*

In many developing economies, instability is so persistent that it is difficult to identify the dynamics precisely. However, for many countries one explanation is that the instability of the advanced countries is transmitted through the movements of capital and other transactions, that so pushes developing countries to set up restrictions on the international free-trade in favour of central directed control (by the State) over the overall economy. Another cause of instability comes from the lack of sufficient diversification of the domestic output; indeed an economy which depend on just one or few product (as oil, sugar, cattle, cotton etc) is subject to internal pressures and also from abroad demand trend (in the case of open economies). In conclusion, less developed economies can gain from stabilization if it is associated with liberalization of the financial system. The cyclical excess of demand or supply in the other markets can be alleviated only through financial deepening, but prerequisite for its establishment are adequate fiscal policies as well as a no more deficit of the balance of payments. The contemporary application of the all these economical reforms seems to be the optimal strategy for a more stable and rapid growth.

- b) Moral hazard and prudential regulation: regarding the interest rate as an important relative price, when it is allowed to rise to a very high level, it will discourage safe borrowers and encourage risky ones. This phenomenon was called “adverse risk selection” by Stiglitz and Weiss in their model, who moreover suggested that the rise of this event

implies that banks put voluntarily a limit on loan rates so that they can maximize their expected profit. At the same time in a situation of macroeconomic instability, what happens is that, whereas the bank receives back loans at high interest rate (and it is an advantage for itself), conversely in all the cases that borrowers fail to repay, this “financial hole” will be fit by the government so that effectively banks are the beneficiary of the overall situation. Thus, in order to avoid that government will suffer from moral hazard, macroeconomic stability has to be supported. In this regard, besides, the success of financial reforms is partly dependent on the establishment of a sound structure of prudential regulation and supervision, to set up bodies able to manage directly the credit system, but also an authority that control the quality of loan portfolio, address the adequacy of capital and the soundness of bank management.

#### *FINANCIAL LIBERALIZATION EMPIRICAL SUPPORT: THE MCKINNON AND SHAW MODEL*

The two economists in 1973<sup>79</sup> developed a model against financial repression since they believed that it retards economic development (reducing the rate of growth), by increasing distortions on interest rates (and foreign exchange rates). Basically, the model regards a saving function positively correlated with interest rate on deposits, and investment function that lies opposite to savings (negatively correlated to interest rate), but also an administratively fixed nominal rate which holds real rate below its equilibrium level and inefficient non-price rationing of loan-able funds. The figure below shows the inefficiencies created through interest rate set below free-market equilibrium. Indeed the authors examining the negative effects of interest rates ceilings that distort the economy, pointed out that low interest rate favorites current consumption against future consumption thus reducing savings below optimum level and at the same time, potential lenders might engage in low-yielding investment and bank may do not allocate credit according to expected productivity<sup>80</sup> of the investment but their decisions can be affect by other collateral

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<sup>79</sup> R. McKinnon along with B. Shaw (1973): “*Money and capital in economic development*”.

<sup>80</sup> It is not used profitability because to higher return is associated higher risk!

factors as political pressures. In other words, adverse selection occurs when interest rates are set too low and so produce disequilibrium in credit rationing.

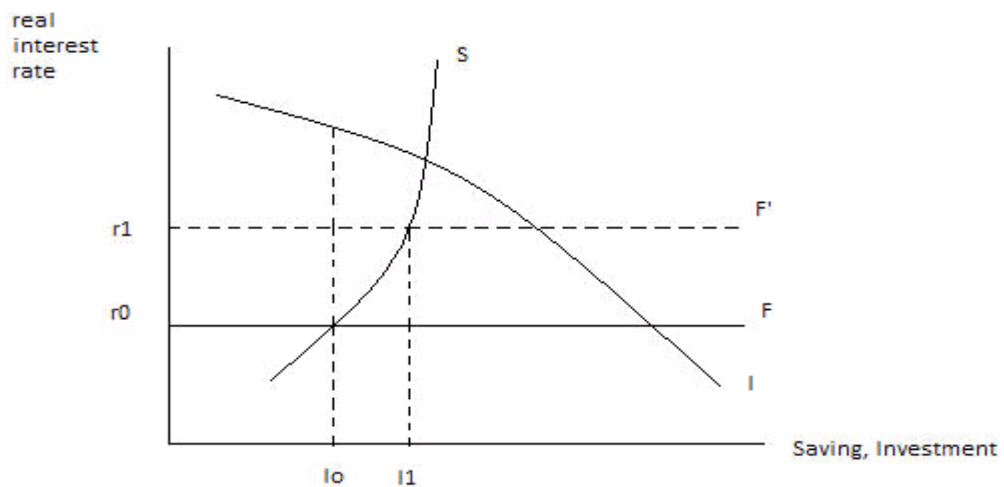


Figure 21, my elaboration taken from McKinnon and Shaw<sup>80</sup>: *Saving and investment under interest rate ceilings*

The line  $FF'$  represents financial repression, that consists of an administratively fixed nominal interest rate that holds the real rate  $r$  below its equilibrium rate and, actual investment is limited to  $I_0$ . Moreover, when interest rate are low (or negative), all the entrepreneurs who were previously deterred from requesting bank loans, now enter the market implying adverse selection situations. In this sense, McKinnon and Shaw policy against financial repression is to raise institutional interest rates or to reduce the rate of inflation in order to increase (maximize) investment and increase also their efficiency (regarding higher interest rates as a rationing device). Namely, increasing the interest rate deters all “low-yielding” entrepreneurs, raising the average return of the aggregate investment. In this way, also the rate of economic growth rises.

#### *THE MAIN CRITIQUE TO FINANCIAL LIBERLIZATION REFORM (STIGLITZ)*

A stronger critique of the financial system liberalization was pointed out by Stiglitz<sup>13</sup> who outlined basically three reasons through which financial repression policy (low interest rate) instead, could enhance economic growth. First of all a low interest rate acts as a mechanism of resource transfer from household to corporate sector where such transfers are costly. Secondly, lower interest rates may increase the expected quality of borrowers by minimizing the adverse selection and incentive problems and also may reduce the cost of capital increasing namely firms' equity (and reduce the



prospect of bankruptcy). Thirdly, a lower interest rate creates excess demand and directed credit policy can be used as an incentive scheme. Fourthly, directed credit programs encourage lending to sectors with high technological spillovers. In these terms, government can set up a context such that who performs better in terms of measurable targets will get more access to capital<sup>81</sup>. However, the importance of information imperfection and the role of government intervention in the area of prudential regulation and supervision can be accepted without accepting Stiglitz's case for financial repression.

In conclusion, the experience of developing countries with financial reform suggests that it is more complex than it could be theoretically thought. Indeed, some scholars claim for liberalization since its direct market-based techniques increase efficiency, while by contrast, others follow the Stiglitz's view which supports restrictions involving protection for commercial banks and discouragement of the direct market. Empirically, in some cases it has led to success episodes, in other examples financial liberalization reform has led to an increase in the degree of fragility of financial institutions since as we saw earlier other conditions are required for the successful implementation of the reform, in particular due to macroeconomic factors. Thus even if it doesn't guarantee competition in the financial sector because of the oligopolistic nature of the financial system in many developing countries, the introduction of financial reform associated with other reforms may lead to a gradual process of development<sup>82</sup>.

#### *A CONCEPT DUE TO FINANCIAL LIBERALIZATION REFORM: FINANCIAL DEEPENING*

One presumption for the settlement of financial deepening is financial liberalization. From a theoretical point of view, financial liberalization tends to affect positively the link between domestic private savings and income<sup>83</sup>. In other words, financial liberalization opens the frontiers to a better capital accumulation offering several investment opportunities. While in repressed

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<sup>81</sup> This latter point is thus in common with the financial liberalization reform supporters; thus the need of a central body (i.e. World Bank) is broadly requested and sustained!

<sup>82</sup> A World Bank study in 1989, found that economic growth in countries with strongly negative deposit rates was substantially lower than growth in countries with positive interest rates! (taken from E.S.Shaw<sup>20</sup>)

<sup>83</sup> Indeed, financial repression and the lack of an adequate fiscal system are identified as the main elements that impede savings growth.

financial markets self-financing prevails, in liberalised developed-market economies, savers have more choice for allocating resources, thus financial markets generates competitive proposals of investment for savers and individuals that, expecting higher future income, tend to reduce consumption and so increase savings. In this context financial deepening increase the real dimension of the monetary system and allow to other institutions to enter in the market as insurance companies, institutions that deal with stock and bond at both short and long-term. Indeed, due to the fact of increasing competition through the establishment of other financial institution, financial deepening sets interest rate at market level so that the difference among deposit interest rate and lending interest rate tends to be lower. Namely, financial growth, provides more accurate investment choices, and higher are private savings and more consistent investment projects can be realized. A comprehensive financial system increases also the efficiency of information and the technology diffusion leading to increase the complementarity among the investment. Moreover, one of the key elements for the financial intensification is a call for the organization of bond market for the investors that are risk-averse. The hope behind this idea is that it could act as an incentive for new investment opportunities with the consequent increase of the efficiency of the used resources. Some developing countries reach the financial innovation in the long term since the income growth in a context of relatively liberalization has generated a potential demand for bond, that offer adequate conditions in terms of price for investors. By contrast, the repressed (or in retard) economies experiments persistent interest rate stagnation, high level of inflation and complex financial structure that discourages the demand in real terms of long-term activities. In this case a positive answer can derive from reform of the fiscal system that would lead to convenient price of the equity of the public firms and also to an increase of capital inflow from abroad. Thus, Shaw<sup>84</sup> suggests that the liberalization of the financial system opens the banks<sup>85</sup> the possibility to become universal with the possibility to take

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<sup>84</sup> E.S. Shaw (1973), "*Financial deepening in economic development*".

<sup>85</sup> Financial economists have debated about the comparative importance of bank-based and market-based financial systems for over a century (i.e. Goldsmith, Levine<sup>70</sup>). From a theoretical point of view, *bank-based* systems may involve intermediaries with a huge influence over firms; by contrast *market-based* system is essentially a counterattack that focuses on the problems created by powerful banks, that are those which are able to acquire substantial, inside information about firms, enabling the banks to extract more of the expected future profits!

part in the allocation of resources coming from abroad or from the central bank. Finally, Shaw also sustains the idea that foreign aid to the low-income economies tends to postpone the financial deepening and the consequent development, because this capital lowers the pressures that would lead to increase the efficiency of public firms' performance and/or to put in practice the right financial policies.

#### ❖ **WHAT ARE THE MONETARY AND FINANCIAL POLICIES IN LDCs?**

##### MONETARY AND FINANCIAL POLICIES IN SHORT RUN AND LONG RUN

Theoretically, monetary and financial policies play an essential role in developing countries since they provide stable macroeconomic environment leading to economic growth, because if monetary policies and financial policies fail their short term roles, the resulting inflation and balance of payments problems will adversely affect the long-run objective of raising savings and investment rate. What's happen is that saving rate will tend to be low, and the economy will have perpetual and unsustainable external imbalance. Indeed, in practice, a central determinant is represented by the interest rate. In this sense, the most important achieved conclusion, supported by World Bank in several studies, is that there is no or little relation between deposit interest rate and private savings so that, this not strong relationship leads to focus on another perspective, that is real interest rate can be low or high depending on inflation rates. In other words, basically, what affects household savings behavior more than real deposit rate, can be the inflation rate so that when it is high, the private sector responds by adjusting its savings behavior. At the same time, one of the main focuses of World Bank is on how the real interest rate affects TFP or technical progress. The result of this search shows that all the observed countries with strongly or mildly negative interest rates, have above average level of investment's productivity. This conclusion leads us to solve the following dilemma: does the financial system size (namely financial liberalization reform) is relevant for growth as suggested King and Levine<sup>1</sup> or no relationship is involved as claimed by Dornbusch & Reynoso<sup>86</sup>? In other words, since no strong correlation has been found among interest rate and growth, those economists argue about the idea if interest rates remain a channel for development or not. In this sense, the only contribution it is a study of

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<sup>86</sup> R. Dornbush & A. Reynoso (1989), *"Financial factors in Economic development"*.

World Bank in 1993 that suggested that lower real interest rates, associated with low inflation rates, may have a positive impact on economic growth. Thus is the presumption that the two variables have to be taken independently that will allow us to reach some interesting conclusions later. Within this framework, now becomes important identify what are the possible monetary policies to implement and, basically, they can be divided in those applying in the short-run and those applying in the long-run.

*Promoting growth in short run...*

In the short run, interest rate and inflation rate are influenced by business cycles. Basically, they represent fluctuation of the real output from the natural output. In particular, many factors affect these cycle; indeed they can be generated by demand-side disturbances such as private demand shocks, private consumption or investment changes as well as government spending and net export, or by supply-side in the case of crop failures, technological innovations and change in trade terms. A positive demand or supply shock will create a positive real output gap and vice-versa.

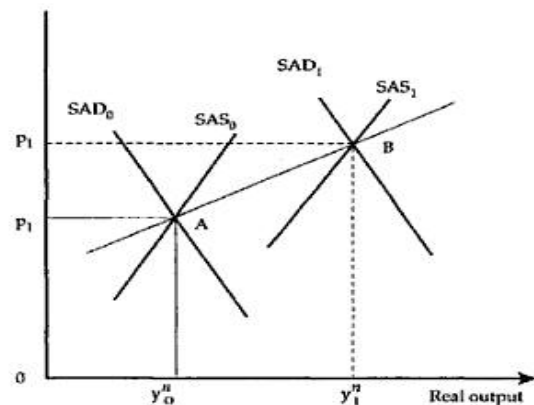
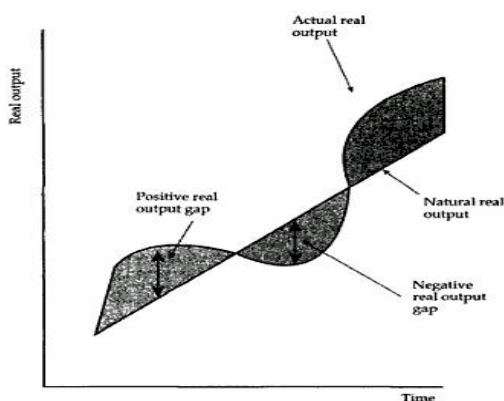


Figure 22.1: Hypothetical business cycles and output gaps<sup>88</sup> Figure 22.2: Movement of the real economy over time<sup>87</sup>

Economists argue among themselves on what should be done about business cycle, since they can generate problems as unemployment or inflation that impose social costs; in other word economic policies have to be set up effectively in order to stabilize these cycles.

*...and in long run*

<sup>87</sup> Hossain and Chowdhury (1996), "Monetary and Financial policies in LDC's".

In the long-run the situation is not so different. How monetary and financial policies can accelerate growth is matter of debate too (for example reducing deviations of actual output from the potential one, that means flatter aggregate demand and supply curve). Indeed economic growth, expressed as increase in output both in aggregate and per capita terms, is a prerequisite for an improvement in the economic condition of the poor in developing countries. However, let's consider a Solow production function as  $y = f(k; T)$ , where  $y$  is per capita output,  $k$  is the capital-labor ratio, and  $T$  is the state of technology. Assuming decreasing returns, then the growth rate of the capita output that derives from the production function is  $g_t = t + \varepsilon_k g_k$ ; with  $g_t$  represents the technical progress,  $\varepsilon_k$  the elasticity of output with respect to capital input and  $g_k$  is the growth rate of the capital-labor ratio also called "capital deepening". Thus, the natural question is if and eventually how, financial and monetary policies can affect the economic growth by acting on its key variables: technical progress and capital deepening. Generally speaking, literature has examined the role of these policies in raising savings and capital accumulation (technical change too) and the main thoughts are basically two: from one side the Keynesian supporters show how repressive financial policies promote growth by inducing shifts in individuals' portfolios from financial assets to real capital; and on the other side the McKinnon and Shaw idea is that inflationary monetary policies and financial pressure are causes of savings discouragement and efficiency reduction of the financial intermediation, thus retard growth. However, Solow himself, claimed that monetary policies have limited effects on growth since they are aimed at raising savings and thus cannot affect technical progress (which is regarded by himself the main contributor to growth), since by assumption, technical progress is assumed to be exogenous. By contrast, the new endogenous growth theory considers human capital (along with physical capital) as a major source of growth since regards human productivity strictly correlated with physical capital<sup>88</sup>. Thus, there is potential for a substantial monetary and financial policies effect on growth, provided by the fact that they influence capital accumulation and induce technical progress by education, training and research. However, how do they affect capital accumulation? Basically by the fact that savings (rather than in Solow model) play the crucial role in this growth path, since they are necessary for investment in human capital formation. In other words, financial and monetary policies through this new model, contribute to long term growth by providing more

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<sup>88</sup> Human capital is assumed to be due to education, training, innovation, research and ideas.

capital but also through better and newer capital! The consequently implication of the endogenous theory is that if large capital investment (both physical and human) is not made in LDCs, the economic convergence between poor and rich countries as predicted by Solow will not occur. Moreover, in this framework, macroeconomic policies have a crucial part in maintaining stability necessary to attract capital investment and technical progress from abroad.

### THE INFLATION-GROWTH LINKAGE

In practice, the channel through which money and inflation may affect economic growth is represented by its impact on the real interest rate, that in practice affects capital accumulation. In this regard, in literature the most comprehensive views are the Mundell<sup>89</sup> one and the Tobin<sup>90</sup> effect. Mundell used the Metzler model to show that advanced inflation lowers the real rate of interest and gives an input to investment thus to economic growth. At the same time the “Tobin effect” consists of an acceleration of inflation associated with an acceleration of money growth that would lower the real return on money encouraging a portfolio shift from money itself into capital, thus increasing output through capital deepening. In other words, the monetary expansion that leads to inflation and decline the value of money-income ratio, will raise the capital-labor ratio and so per capita output.

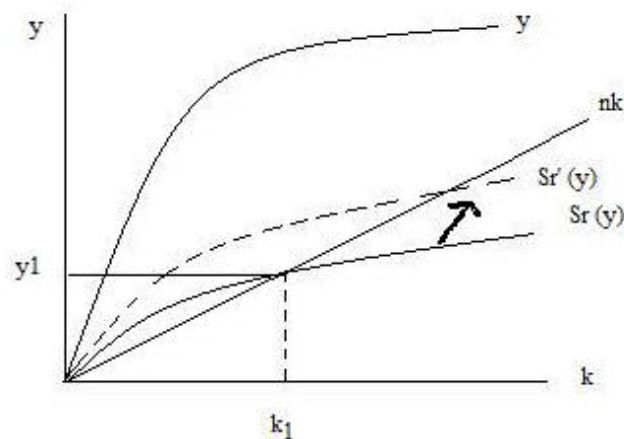


Figure 23, my elaboration: *The neoclassical monetary growth model*; a monetary expansion may shift the  $S_r(y)$  curve upwards and therefore raise the capital-labor ratio and per capita output.

<sup>89</sup> R.Mundell (1963), “*Inflation and Real interest*”.

<sup>90</sup> J.Tobin(1965), “*Money and economic growth*”.

Solow that strongly critiqued the Tobin effect, argued that since the individual stock of wealth is linked to change with inflation, when the real value of the stock declines because inflation increases, this implies that inflation itself may not raise capital-labor ratio and therefore the super-neutrality condition of money may prevail. Another perspective was offered by Sidrauski's model<sup>88</sup> which assumed that capital depends on the level of capital stock so that money enters in the production function as a complementary factor to capital (thus different for the Tobin's view where capital and money are substitutable assets).

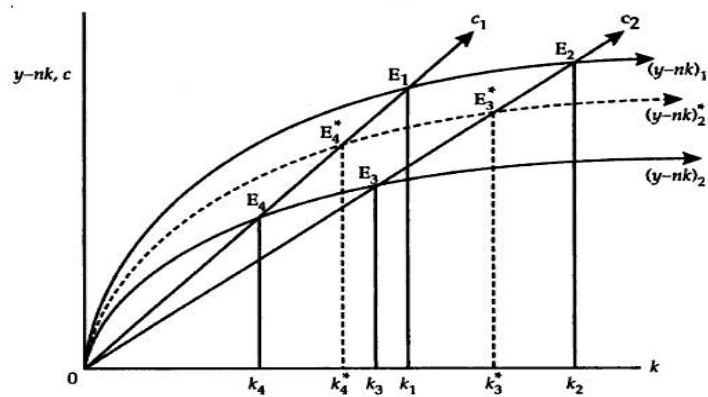
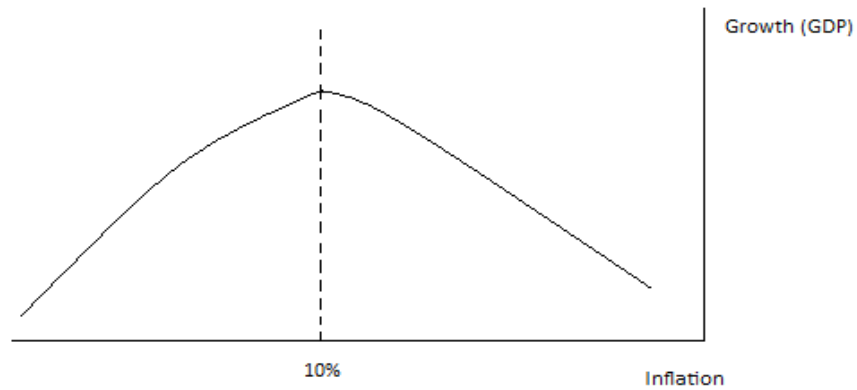


Figure 24, Hossain & Chowdhury<sup>88</sup>: Sidrauski's model

Indeed, what's happen is that, inflation lowers productivity of the return of input capital by lowering real balances in the steady state, producing so a real negative effect. Finally, empirically a close association between money growth and inflation is positively tested even if in the long-run it is quite weak. This implies that monetary policy can be used for price stabilization with the constraint that the effectiveness of the monetary policies depends on the controllability of money supply (and how much is strength the bond with inflation)!

Empirically several studies have focused on this matter and what results is that inflation seems to have an inverted U shaped relationship, namely the optimal inflation rate should lie around 10% where the curve becomes a bit flat (thus levels of inflation lead more or less to the same effect on growth). Higher level would indeed creates imbalances and so lower growth, while at the same time for lower level the relationship seems to be quite proportional, thus to inflation and growth increase together



My elaboration from D.Weil<sup>1</sup>: *the inflation-growth linkages*

### THE FINANCE-GROWTH LINK AT INDUSTRY AND FIRM LEVEL

In order to better understand the relationship between financial development and economic growth, I would like to report an interesting study provided by Rajan and Zingales (RZ) and replaced by Levine<sup>3</sup>, which focuses on the issue if industries that are naturally heavy users of external finance grow faster in economies with better developed financial systems. Indeed, if they do, this supports the view that financial development spurs growth by facilitating the flow of external finance<sup>91</sup>. In particular, in a frictionless financial system, technological factors affect the degree to which an industry uses external finance. In this regard, they then analyze whether industries that are technologically more dependent on external finance grow comparatively faster. This approach allows to study the mechanism through which finance operates rather than simply assessing links between finance and growth and to exploit country differences concerning industries!

R&Z develop a new methodology to examine the finance-growth relationship. Considering their formulation:

$$Growth_{i,k} = \sum \alpha_j Country_j + \sum \beta_l Industry_l + \gamma Share_{i,k} + \delta External_k FD_i + \varepsilon_{i,k}$$

<sup>91</sup> The presumption is that lower costs of external finance facilitate firm growth and new firm formation.



$Growth_{i,k}$  is the average annual growth rate of value added or the growth in the number of establishments, in industry  $k$  and country  $i$ , over the period 1980-90;  $Share_{i,k}$  is the share of industry  $k$  in manufacturing in country  $i$  in 1980;  $External_k$  is the fraction of capital expenditures not financed with internal funds for U.S. firms in the industry  $k$  between 1980-90;  $FD_i$  is an indicator of financial development for country  $i$ . The authors examine the external dependence of an industry ( $External$ ) with financial development ( $FD$ ), where the estimated coefficient on the interaction,  $\delta_1$ , is the focus of their analysis and found that when  $\delta$  is significantly positive, the increase in financial development ( $FD_i$ ) will induce a bigger impact on industrial growth ( $Growth_{i,k}$ ) under the condition that this industry relies heavily on external finance ( $External_k$ ). Moreover they suggest a convergence effect, that is industries with a large share might grow more slowly, suggesting a negative sign on  $\gamma$ .

Besides, they also find that the coefficient estimate for the interaction between external dependence and total capitalization measure ( $External_k * Total\ Capitalization_i$ ) is positive and statistically significant at the one-percent level. This implies that any improvement of the financial system (namely enhanced financial development) disproportionately leads to the growth of industries that are naturally heavy users of external finance. In conclusion, R&Z show that bank concentration promotes growth of industries that are naturally heavy users of external finance, but at the same time, have recognized that bank concentration has a depressing effect on overall economic growth!

## ❖ **FINANCE AS A TOOL FOR PREVAILING POVERTY**

### *THE THEORETICAL APPROACH*

Theoretically, there are different views and predictions concerning the relationship between financial development and both income distribution and poverty alleviation. For example, Stiglitz<sup>92</sup> pointed out that market failure is a fundamental cause of poverty, and financial market failures, which mainly arise from market imperfections, asymmetric information and the high fixed costs of small-scale lending, limit the access of the poor to formal finance, pushing them to the informal

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<sup>92</sup>J. E. Stiglitz, A. Weiss. (1981), "Credit Rationing in Markets with Imperfect Information".

financial sector or to the extreme case of financial exclusion. In addition, World Bank study<sup>93</sup> argued that improving the access of the poor to financial services helps these agents to enhance their productivity and potential for sustainable livelihoods. Hence they reach the conclusion that improving the supply of financial services to the poor can directly contribute to poverty reduction. However, there are several important dimensions for extending existing studies on the impact of financial development upon poverty reduction in LDCs. Some authors as Galor & Zeira<sup>48</sup> and Levine<sup>3</sup>, show that informational asymmetries restrict the poor from exploiting investment opportunities in a context where the poor do not have the resources to fund their own projects, nor the collateral to access bank credit. Thus, these credit constraints may slow aggregate growth by keeping capital from flowing to its highest value use. In this regard, ameliorating information and transactions costs would therefore allow more entrepreneurs to obtain external finance. In other words, a financial development could have a particularly large impact on the poor since it may sustain new firm formations especially at early stages of economic development that allow to improve the overall allocation of capital. At the same time, other models focus on a non-linear relationship between finance and income distribution. Greenwood and Jovanovic<sup>67</sup> (reported also by Levine<sup>70</sup>) show how the interaction among financial deepening and economic development can be expressed through an inverted U-shaped curve of income inequality (replaced by Kuznets) and financial intermediary development. At early stages of financial development, just only few rich individuals have access to financial markets and hence are able to engage higher-return projects. However, with the specialization of services provided by financial institutions, more people becomes able to join the formal financial system and handle different financial products and services, with final positive ramifications for economic growth as a whole. The distributional effect of financial deepening is thus adverse for the poor at early stages, but positive after a turning point. However, a critic can be moved in terms of what makes turn the economy to a higher “state”? As suggested by Greenwood and Jovanovic, a positive aggregate growth itself doesn’t lead to a more developed financial system (namely more people enter to it) but at the same time a combination of policies have to be implemented, otherwise the growth stage achieved would be

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<sup>93</sup> V. Murinde, C.Green, C. Kirkpatrick (2006), *“Finance for small enterprise, growth and poverty reduction in developing countries”*.

not sustainable in the long-run<sup>94</sup>. In particular, recognizing that growth and financial structure are inextricably linked, in the growth phase, financial system provides complex financial instruments leading to the development of the financial structure as a whole that becomes more extensive. Thus, what happens is that if also income levels rise, financial structure upgrades, economic growth becomes more rapid, and income inequality across the rich and poor widens. Moreover, in the final phase (maturity), an economy that has a fully developed financial structure, attains a stable distribution of income across people, and has a higher growth rate than in its infancy since basically investment could be more efficiently undertaken.

By summing up, we can say that financial development potentially has two poverty impacts, firstly indirectly through the rate of average income growth, and secondly, directly through improved supply of, and access to, financial services to the poor. Empirically, one important finding of the study reported by Hulme & Mosley<sup>95</sup> is that a unit change in financial development improves the growth prospects of income of the poor in developing countries by almost 0.4 per cent. Thus the general results are consistent with the common shared view that financial development does contribute to poverty reduction and in particular the liberalization of the financial system is a prerequisite of that. However, financial system is vital for economic growth and poverty reduction strategies just only if it is stable and effective over the time. Indeed, weak financial regulation, often as a consequence of over-hasty financial liberalization, has contributed directly to economic instability and decline. In this regard, an effective financial reform is important, since financial liberalization in an uncontrolled financial sector results in misallocation of funds leading to financial crises and bank- runs that imply that economic growth falls dramatically, affecting mainly poorest people. Therefore, stability of the financial system in general, and the performance of banks in particular, have strongly to be pursued as presumptions of poverty reduction, since on the basis of what said about financial liberalization before and the text of Murinde<sup>94</sup>, we can derive that the financial sector should play an important role in reducing poverty by promoting the growth of enterprises in poor countries, by setting an appropriate positive real interest rate, by reducing unnecessary government intervention (thus reducing opportunities for corruption) and finally by reducing financial exclusion and other problems that arise from market failures.

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<sup>94</sup> In this regard, severe capital adequacy requirements can serve as “early warning” indicators of bank failure and act as a constraint for managers activity in order to avoid bank-run that in a globalized financial world can have dangerous contagion effects.

<sup>95</sup> D. Hulme & P. Mosley (1996), *“Finance against poverty”*.

### *SPECIFIC FOCUS: THE IMPACT OF CREDIT ON PRODUCTION AND TECHNOLOGY*

Even if later I will present the Hulme and Mosley model that examines the interlinkage between credit market and choice of technology, the two authors and other scholars confirmed through empirical researches the idea that credit has a very strong influence on production that other conventional factors of production doesn't show. However, since there are credit imperfections in the capital market, they are not able to explain why this impact varies so widely between different countries. Let's look at the tables below:

Country	N° of borrowers	Rate of growth of personal incomes	Possible causes: % borrowers investing in new technology
<b>Bolivia</b>	193	5.2	26
<b>Indonesia</b>	760	3.1	30
<b>Bangladesh</b>	169	2.7	9
<b>Sri Lanka</b>	157	2.1	11
<b>India</b>	200	N.A.	12
<b>Kenya</b>	158	2.2	5
<b>Malawi</b>	192	2.1	71

Table 3, Hulme and Mosley<sup>95</sup>: *Average increase in borrower family income, 1988-1992*

Hulme and Mosley then set up the risk-yield relationship for potential borrowers starting on the presumption that higher returns can only be bought in return for the acceptance of higher risks. In the figure the poor are those that have more to lose in the event of a disaster, while the second group is the richer one<sup>96</sup>. They then assume that very level of technology exists and that to move towards a technology which offer a higher income, implies an increase in the standard deviation (risk), therefore the relation among expected yield and risk is upward sloping. Given the technology and poor/rich constraints, than the optimum technology is that which provide the highest level of income and satisfies the risk aversion constraint, graphically:

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<sup>96</sup> Southeast an individual moves the more vulnerable becomes.

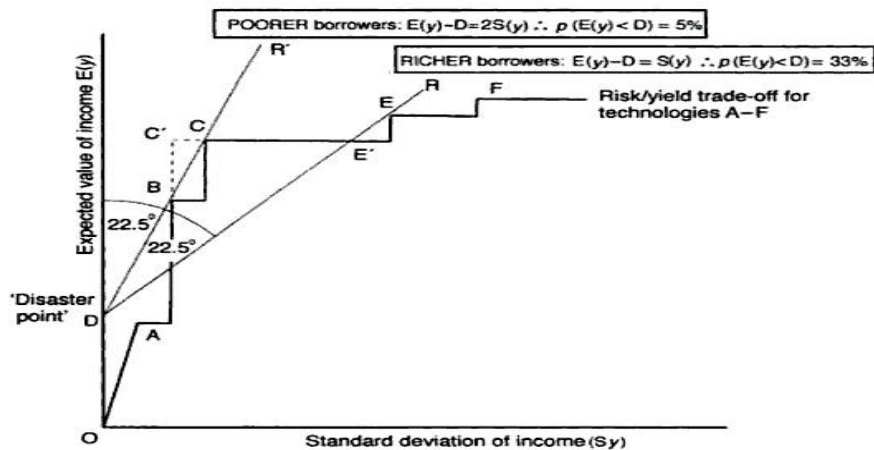


Figure 25, Hulme and Mosley<sup>95</sup>: Risk/yield relationship for potential borrowers

Besides, the two authors hypothesized that if the poor income is successfully increased through a series of loan operations, this may itself influence their attitude to risk and it implies that the risk-aversion constraint rotates clockwise. In this case the borrower are successful (repay the loan) may borrow again for the purpose of capital deepening increasing so their expected income and moving for example from point B to E. However, at the same time also their vulnerability will increase. This type of credit operation is called by the two authors as “promotional” effect. Vice-versa in the case the borrowed loan is used to improve technology namely to achieve a higher (expected) income, the lending is called “protectional” (for example if the individual moves from point B to C), namely move along the risk-aversion constraint without rising vulnerability. Similarly, considering an individual that sets in point A which lies below the disaster level D, the primary purpose in lending money is obviously to arise his income (namely consumption) at least above point D<sup>97</sup>. If the individual is able to repay the loan, he will get at a position in B (i.e.), where there is a balance between income and uncertainty that individual wants to face. The key problem is that borrowing for consumption that is what starts the entire process off, since it is regarded by institutions as unproductive lending! Finally, let’s considerer again the employment effect due to technological improvements. As shown in table above, in several cases the relationship is strongly positive and in particular, Hulme and Mosley showed that the propensity of borrowers to take labor tends to increase as the wage falls in relation to the cost of capital; in other words lower real wages are more favorable for poverty reduction on such scheme! In conclusion, however, it is unusual (empirically) that credit to the poor is able to achieve a continuous increase in technical

<sup>97</sup> For example as H&M suggested: by buying some materials or investing in new technologies as new seeds or equipment, or by financing the search for work and so on.

sophistication, output or employment; but is more common that the level for each variable increase slowly up to reach a steady state (thus the overall increase would be limited)!

#### *WHY CREDIT MARKETS FAIL THE POOR*

Until now, we have seen the positive effects that financial development can have on poverty but let's deeply face the issue about why poor fail to access to credit market. In this regard, are Hulme and Mosley<sup>95</sup> (strong supporters of microcredit activity), hypothesized that in general credit market are unable to borrow for socially beneficial projects mainly because lenders are no willing lend money to unknown customers and because the estimated benefits are lower than possible losses (thus projects are social beneficial but no privately profitable). In practice the break-even condition for any financial institution over a period of time is that the net income must be at least equal to total expenditure:

*[income from loan portfolio + other income] ≥ [cost of borrowing (principal and interest) + other expenditure]*

In symbols:

$$(A_j + r) \sum (1-p_j) X_j + Y \geq \sum (\beta_j + i + a_j) X_j + Z$$

From this equation the equilibrium interest rate can be derived and it is equal to:

$$r^* = (i + a + \alpha\rho) / 1 - \rho \quad \text{with:}$$

$i$  = interest rate paid per unit of principal on borrowing and saving deposits;

$a$  = administrative cost per unit of principal;

$\alpha$  = is assumed to be equal to 1;

$\rho$  = is the default probability

From World Bank's empirical papers the interest rate typically in LDCs is equal to 10 % with administrative cost of 5% and a default probability of 83%. Using these parameters the break-even interest rate should be equal to about 85%! At this high level it is hard for poor to repay, instead it may exacerbate the rate of default (Stiglitz and Weiss<sup>93</sup>). Moreover, since demand for loans will be restricted (and due to the restricted possibility for the poor to offer some collaterals), the

institution's hope of survival depends on the fact that other moneylenders charge similar rates, thereby allowing to new institutions to compete in the market. In concrete terms one solution is the reduction in  $a$  and  $p$ . Parameter  $a$  in the case, is made imperfect by the presence of externalities of risk, therefore namely, providing better information on borrowers would enable to increase efficiency (as improvements of screening activity). Thus, this externality can be regarded as cause of market failure<sup>98</sup>(!); indeed the demand curve for productive investment will be downward-sloping since the lower is the interest rate (and the lower the rate of return that is required to realize a profit) and the larger is the number of undertaken investments. Graphically:

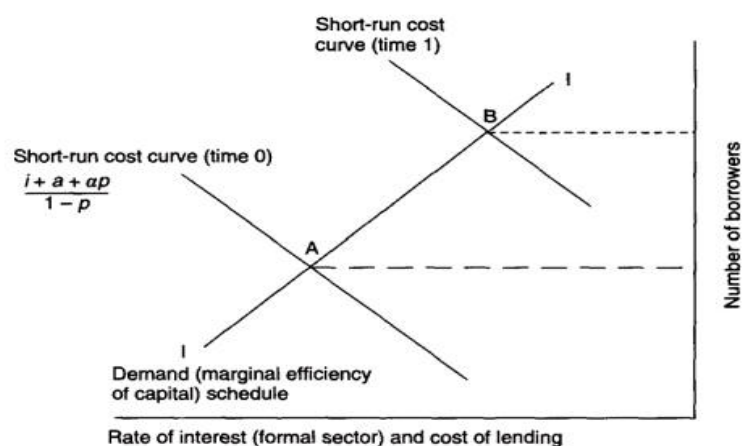


Figure 26, Hulme and Mosley<sup>95</sup>: Demand for credit in relation to the break-even interest rate

As explained before, initially we can assume high-cost due to screening activity, however as time goes on, the lender move from point A to point B if the administration and default cost's reduction is successful. Another figure is the "income creation" function to explain the effects of financing new investments. Namely lending money implies new income-earning opportunities and what has to be evaluated is the investment's ability to generate new employment<sup>99</sup> that is the output resulting from the social and physical infrastructural projects. More deeply, the faster the growth of output and the more labor-intensive the production technique, the greater will be the number

<sup>98</sup>Examples of how risk can be reduced could be represented by two techniques used for avoiding the information asymmetry in labor market; namely the *signaling activity* and the *screening activity*. While the first concerns with the borrowers' will to show its repayment ability (for example based on his/her historical payments), the other concerns with the supply effort in select the best one through a test whose cost is supported by borrowers themselves.

<sup>99</sup> Calculated as net employment creation since new employment in one sector can reduce the employment in other one especially with regard to technological changes. Thus, net employment can sometimes be negative.

of new income-earning (employment) opportunity that can be created. Thus is possible to link the choice of higher level of technology with the poor's ability to finance by borrowing money and, financial institutions in these sense have a crucial role due to increasing the overall capital-intensity! Indeed as Hulme and Mosley remark in the paper: "the more that credit is subsidized, the more likely is the outcome to occur". Graphically another part can be added:

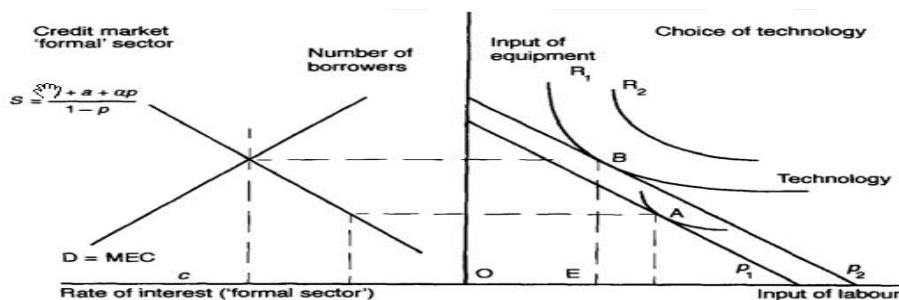


Figure 27, Hulme and Mosley<sup>95</sup>: *Interlinkage between credit market and choice of technology*

However some problems arise. First of all there is an administrative problem due to the fact that targeting the poor of credit implies relevant research and monitoring costs. Another problematic is that the beneficiaries of credit projects may spend their income on consumption goods or production inputs rather than the poor. In this sense arises a need to set up a regulatory and supervisory authority that continuously makes a control over the borrowers even if it implies relevant additional costs<sup>100</sup>. In conclusion, to the extent that as a direct consequence of new investment, new employment is created and so poverty may fall (assuming people initially lie below the poverty line, as hypothesized by H&M). However, this happens under the condition that there are no political and economic obstacles. Graphically, at the end, the two authors derived the following scheme:

<sup>100</sup> Moreover, another problem is related to the failure of credit programs due to political reasons; namely as empirically tested by the two authors, what can happen is that non-poor borrowers may push poor borrowers out of group schemes designed for the poor.



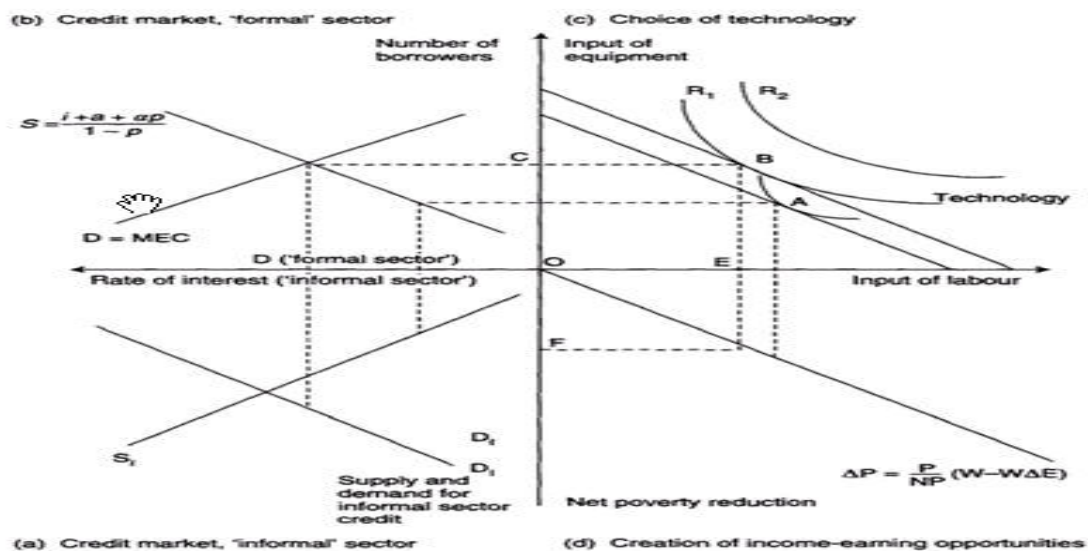


Figure 28, H&M<sup>95</sup>: Inter-linkage between credit market, choice of technology and income-earning opportunities

#### HOW TO IMPROVE CREDIT FINANCIAL PERFORMANCE AND SUSTAINABILITY

Generally speaking, the performance of credit institutions is profitability related and any institution is able to improve profitability by several devices as enhancing screening activity, incentives to repay, use of insurance/equity participation or by gradually enlarging the average loan size. In particular, incentives to repay are supposed to be able to reduce the financial cost of default by charging higher interest rate or offering a discount for consistent on-time repayment. Another way that is spread over several developing countries as Thailand, Kenya and Indonesia, is the possibility to increase the credit limit of borrowers by a proportion dependent on their previous payment record (called “progressive lending” by H&M<sup>95</sup>). In the case of no repayment or partial repayment it becomes discretionary to the lenders refinancing the borrower or not. However in the model developed by the two economists, a partial or no repayment is strictly dependent on the trade-off among the financial gain default and the financial loss from the loss of reputation, where reputation is influenced by the frequency (and publicity) of loan-collection and repayment. Thus the donor can foresee the equilibrium point up which it can bet again on the refinance strategy. In these circumstances the incentives should work and allow a stable refinancing or repayment equilibrium. In this regard, the optimum incentive to repay is calculated by the two authors and it is equal to:

$$\beta^* = \left[ \frac{2rx + \Pi}{\Pi r \gamma x} \right] + \frac{\left[ \frac{2rx + \Pi}{\Pi r \gamma x} \right]}{\Pi r}$$

With:

$r$  = interest rate;  $x$  = the loan size;

$\Pi$  = the donor's expectation to claw back overdues (likelihood of refinance);

$\gamma$  = the coefficient of "progressive lending".

Within this framework Hulme & Mosley identified three different models:

- *Solidarity groups* where self-selected groups of borrowers take responsibility for the loans of all group members and the payments insurance is specifically addressed upon borrowers;
- *Co-operative groups* that in practice are just for middle- and upper income individuals that satisfy certain conditions (i.e. the knowledge of rules and procedure, bookkeeping skills); moreover, a common feature of financial co-operatives is that members interact within the organization (i.e., by depositing a specific proportion of the loan they wish to borrow in a saving account) and must have two existing members of the organization that guarantee the repayment of their loan. Thus, this form ensures high repayment rates and facilitates the access of co-operatives to funds.
- *Individual approach*: where loans take savings from individuals; it leads to charge high interest rates even if at the same time, they have relatively low transaction costs in terms of borrower time commitments. Loan eligibility is based on repayment performance.

However, there is something that may make work not correctly these tools. In this sense, one is represented by negative externalities such as drought, floods or other type or such events. Indeed becomes very difficult for money-lenders to give money to unsecured farmers in semi-arid areas for example, or in all those situation where environmental conditions may became the lending activity too risky, resulting so in a market failure. In this case monitoring and research activities are necessarily required, leading to an increase in the overall cost of borrowing, namely transaction

costs. In this context, I want to underline the potential influence that financial institutions as World Bank would have upon the (financial) relationship moneylenders-borrowers, that could attenuate the portion of these costs by re-allocating risk (from borrowers to itself), also with the help of local NGOs that offer their expertise to the local people in terms of specific knowledge for the repayment of the loan (i.e. by helping to fulfill accounting and reporting requirements) or acting as an intermediate that facilitate the meeting among the secure borrowers and the available lenders!

By summing up, the key variable, due to the incentives clients have in order to repay on-time for the savings mobilization, is the interest rate. In this regard, World Bank, concerning how to improve the impact of borrower level, suggested that high real interest and intensive loan collection procedures play a role in screening out good project from bad ones, and it concluded that the role of saving mobilization in improving loan performance would be more subtle. Moreover, in this context practical evidences verify that small loans are more effective since less risk would be taken by the poor and save the lender the administrative cost of targeting. At the same time the World Bank and subsequently other many other financial agencies and aid donors should support financial liberalization in order to combat the deterioration of the quality of the projects. In other words, it implies the removal of controls upon the interest rate with the hope that this reform would act as a stimulus to increase final output and would provide a better screening on project as well as favoring saving mobilization and exercise financial discipline. Hulme and Mosley that analyzed several countries on this point, found that, interest rate deregulation occurred in many countries, has been entirely helpful to the cause of enabling microcredit institutions to achieve financial sustainability. But, as reported before (and empirically tested), financial liberalization is not enough alone, other reforms need to be implemented even if in some case financial liberalization could have negative impacts. Next, I will provide a brief look to the World Bank's role due to the promotion of aid within the need of a new financial global system. Credit, indeed, can be regarded as a form of aid and in this sense it is recognized as the most important single weapon against rural poverty even if it is not the only way; indeed combating rural poverty also requires investment in health and education, employment programs, and so on.

## **CHAPTER IV.**

## **AID'S DYNAMICS, THE WORLD BANK AND FUTURE PERSPECTIVES**

First of all, I am going to cover the issue of international aid that finally as an important part for the development process of a country under the condition that it is real efficient. In this framework, the first element due to aid as a whole, is aid effectiveness, that may be supported with a new financial strategy (globally speaking), namely, a new international financial architecture. In this sense, the Eighth Session of the ECA Conference of Ministers of Finance in 2000, claimed for the need of enhancing international co-operation and collaboration by evaluating and defining more clearly the roles of the most important financial institutions: the World Bank and the IMF, including the need of a greater transparency in their functions. In this regard, it is required the fulfillment of many activities provided by these financial institutions as: strengthening financial regulation and supervision; assisting countries to overcome the difficulties in the implementation of international standards and regulations through capacity building; improving liability management on the part of borrowers; sharing responsibility between private creditors, the international community and debtor countries in crises resolution. In conclusion, in this framework, the 4th high level Forum in Busan (Rep. of Korea) on Aid Effectiveness that will take place at the end of 2011, offers for the international community a unique opportunity to identify actions to heighten the role and impact of aid in the broader development, namely how to assess aid effectiveness in the future by implementing a set of aid effectiveness principles (Groof<sup>101</sup>).

### **❖ EXTERNAL AID AS AN ELEMENT SUPPORTING ECONOMIC GROWTH**

One basic interpretation of foreign aid is that it acts as an income transfer which can be invested so that it may generate growth or by contrast it can be simply consumed. In this sense, to the extent that international capital markets are imperfect, foreign aid could provide an important impact on poor countries for example by financing productive public investments that allow local people to facilitate the child access to education; or aids may improve the environment for private investments. Moreover, foreign aids may represent a potential leverage of inflation; indeed a

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<sup>101</sup> S.P. Groof (2011): *“Getting value for money: effective aid, effective development”*.

government can use that as monetary expansion by transferring this money to the central banks even if the resulting excess of demand leads to inflationary pressures since the lack of an adequate financial system. As a consequence, the economic

growth process could be negatively affected. Within this framework, one of the main contributions is given by Chenery<sup>20</sup> with the so called financing gap or two-gap model that today is also used by IFIs like the World Bank and IMF. Theoretically, the model has two relevant characteristics: the first is that required investment to achieve a target growth rate is proportional by a constant, which is the Incremental Capital Output Ratio (ICOR). The other one, concerns aid requirements provided as “Financing Gap” between the investment requirements and the financing available from both private financing and domestic saving. These two characteristics basically imply that aid will go into investment one for one, and there will be a fixed linear relationship between growth and investment in the short run where the constant of proportionality is one over the ICOR (W. Easterly<sup>102</sup>). The fundamental idea behind this is that basically aid and investment were necessary but not sufficient conditions for growth.

The formula replying the Harrod-Domar’s one, is the following:

$$s/(\text{ICOR}) = g$$

where  $g$  is the target growth rate and  $s$  the savings rate. ICOR, the productivity of capital is assumed to be at such significant levels as to contribute to economic growth.

Let’s see now how the model interacts with the main economic growth theories. Basically, as suggested by W. Easterly<sup>104</sup> in the short run there is no theoretical reason in standard neoclassical and endogenous growth models to expect ICOR to be a measure of investment quality or the derivative of growth with respect to investment, because basically, ICOR is constant both in the steady state of the endogenous growth model, and in the Solow model. In particular, in the latter model, both output per worker and capital per worker will increase at the rate of technical progress. Therefore, constant ICOR in the Solow steady state doesn’t imply a causal, proportional relationship between investment and growth, indeed, at the same time, the relationship among

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<sup>102</sup> W. Easterly (1999): “*The Ghost of Financing Gap: Testing the Growth Model Used in the International Financial Institutions*”.

output and physical capital is not linear, since any increase in physical capital with constant human capital will run into diminishing returns. Thus, this implies that ICOR also is supposed to not be fixed during the transition to a new steady state after such an increase in physical investment and, empirically, Chenery proved a small positive relationship in this sense:

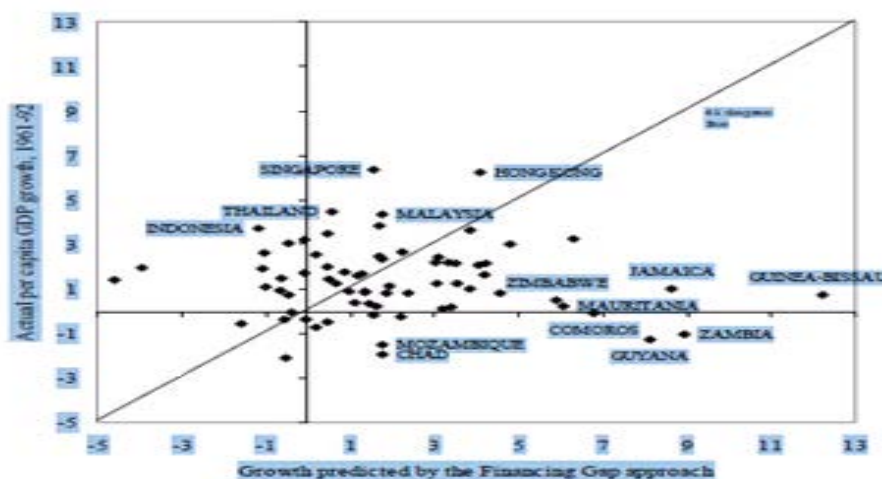


Figure 29, Chenery<sup>20</sup>: Actual per capita growth versus that predicted by the Financing gap approach

From the figure above indeed, one can derive that a small positive relationship exists, implying a confirmation to the Chenery’s idea.

#### ❖ AID EFFECTIVENESS: THEORETICAL CONCEPTS AND PRATICAL EVIDENCES

The effectiveness or development impact of external aid has remained a complex issue over past few decades. However, the determinants of aid effectiveness, in large part, are regarded to be socio-political factors, stability of institutions and the existence of effective legal (or quasi-legal) mechanism for the resolution of social and political conflicts. In this sense, the main empirical contribution was given by Burnside and Dollar<sup>103</sup>, who noted that when good economic and institutional governance policies are in place, the role of aid enhances economic growth, namely produce a positive effect on real GDP per capita growth. Besides, the graph below shows that aid growth are low correlated even if the relation seems to become strong when aid is used to finance public investment or for human capital development.

<sup>103</sup> C. Burnside & D. Dollar (2000): “Aid, Policies and Growth” The American Economic Review.

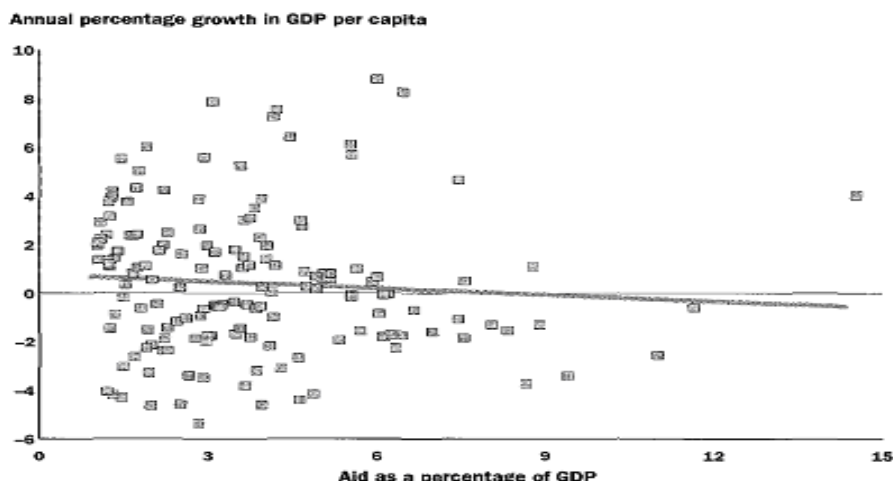


Figure 30, Burnside and Dollar (1998): "Aid and Growth in Selected Developing Countries 1970-93".

Generally, several studies found that some countries receive a lot of assistance and incomes fell while, conversely, some countries received little aid and incomes rose. In this sense, some countries such Bangladesh, Malawi and Ethiopia are defined as hampered by a high dependence on aid, where aid (in particular the ODA one) doesn't contribute to self-sustained development because of the internal conflicts, and moreover, this dependency increase the competition with the domestic products (food and commodities). Thus, the main issue is due to aid efficiency again, namely on how the aid is distributed that is, how much efficient are the involved activities. In this sense, basically, the first factor affecting aid effectiveness is the choice (so- called fungibility) of the receipt government to use aid for public spending, for tax cutting or for fiscal deficit reduction. However, just to call back what said before, World Bank<sup>104</sup>, for instance, reported that aids have more success in a good institutional and policy environment (86%) compared with weak institutional and policy environment (48%). In this regard, aids are obviously more effective in those countries which have not high debt. More than half of the report<sup>5</sup> focuses on this key point and the figure below shows the positive effect of aid in % of GDP divided for policy quality:

Poor policy (index = 0)	Mediocre policy (1.1)	Good policy (2.7)
-0.3	0	0.5

Figure 31, World Bank<sup>104</sup>: "Marginal effect of growth of 1% of GDP in aid (% points)"

Thus, the aid potentialities for achieve the goals are highly dependent upon the efforts of the government and its policies. Furthermore, at the same time, the effectiveness of finance depends

<sup>104</sup> World Bank (2009): "Assessing Aid (World Bank Policy Research Report)".

on the quality of all public investments and expenditures, as can be easily presumed. In other words, effectiveness of aid is strictly related to the management of aid itself, and thus to all the activities implemented with the use of the provided money. In this sense, aid effectiveness can be just valued ex-post.

At this point of the discussion, a concept strictly related to aid effectiveness can be introduced, that is the so-called conditionality. Generally, conditionality is regarded as a mean to guarantee efficiency, since any (borrowing) government after having obtained a loan, may not have adequate incentives to abandon those policies that initially have caused imbalances. Conversely, by imposing conditionality, lender (i.e. World Bank) is acting as an external agent of restraint on the policy action of governments themselves. However, even if sometimes several academics critic ex ante conditionality as corrosive and ineffective, most academics still regard it as a necessity. Indeed, conditional loans can indicate to the private sector that government is serious about reform and the new policy regime is likely to persist. Besides in good-policy countries, aid is associated with higher private investment, thus the combination of reform and foreign assistance can boost investor confidence. In this sense, World Bank works harder or puts more resources into an adjustment loan in order to transform a failed reformer into a successful one.

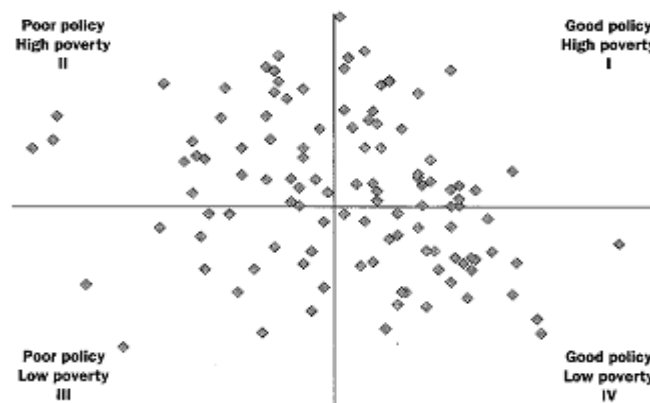


Figure 32, Assessing Aid (World Bank Policy Research Report) from Collier and Dollar<sup>105</sup>: "Poverty and Policy in 113 Developing Countries in 1996"

<sup>105</sup> P Collier and D. Dollar (1998): "Aid Allocation and Poverty Reduction" World Bank, Development Research Group.



As You can see good policy and poverty reduction seems to be correlated but in a small way. However it represents a meaningful proof within the previous discussion.

Finally, I would like to mention the article by Groof<sup>101</sup> which reports some interesting considerations due to how improve aid effectiveness. In simple words, the author states that the only way that donors can ensure that their funding is well used, is if governments and donors work together to monitor the implementation of the country's development strategy as well as its domestic budget. In this sense, the author calls for making aid more predictable. This means being transparent and ensuring that developing countries' governments receive timely information on how much they will receive from donors and over what period. A second claimed challenge is related to reduce aid fragmentation, to which a lot of costs are associated since the many programs implemented in different countries.

In conclusion positive results will be achieved only if (as reported before) there is a strong commitment of the developing countries governments in clearly defining their objectives and enhancing that all actors and all resources contribute to support their development strategies.

#### *THE BURNSIDE-DOLLAR'S STUDY*

On the view of what said before, basically, Burnside and Dollar tried to investigate empirically those hypothesis regarding countries with good policies and significant amount of aid that are able to perform well. In particular, in their work Burnside and Dollar<sup>103</sup> attempted to estimate the variables of two equations below due to aid and policies and their interaction that specifically are:

$$g_{it} = \gamma_{it}\beta_{\gamma} + \alpha_{it}\beta_{\alpha} + \rho_{it}\theta_p + \alpha_{it}\rho_{it}\theta_1 + z'_{it}\beta_{\zeta} + g_t + \varepsilon^g_{it} \quad (\text{growth equation})$$

$$\alpha_{it} = \gamma_{it}\gamma_{\alpha} + \rho_{it}\phi_p + z'_{it}\gamma_{\zeta} + a_t + \varepsilon^a_{it} \quad (\text{aid equation})$$

thus:

$$g_{it} = \gamma_{it}\beta_{\gamma} + \alpha_{it}\beta_{\alpha} + \rho'_{it}\beta_p + \alpha_{it}(\rho'_{it}\beta_p)\theta_1 + z'_{it}\beta_x + \varepsilon^g_{it}$$

In the growth equation Burnside used a dummy variable for trade openness (taken from Sachs and Warner) namely when tariff is below 40%, one variable for inflation (taken from Fisher) as measure of monetary policy and two fiscal variables (taken from Rebelo and Easterly) that are the

budget surplus and government consumption both relative to GDP. Here, there are two main “innovatively intuitive” variables that are the  $K \times 1$  exogenous variables  $z_{it}$ , that is a measure of institutional quality that captures security of property rights and efficiency of government bureaucracy; and the  $p_{it}$  that is the (exogenous) policy index<sup>106</sup>

The latter it is interesting and it is calculated as:

$$Policy = 1.28 + 6.85 * Budget\ Surplus - 1.40 * Inflation + 2.16 * Openness$$

Thus if the index can be negative if inflation is high or the budget deficit is very large!

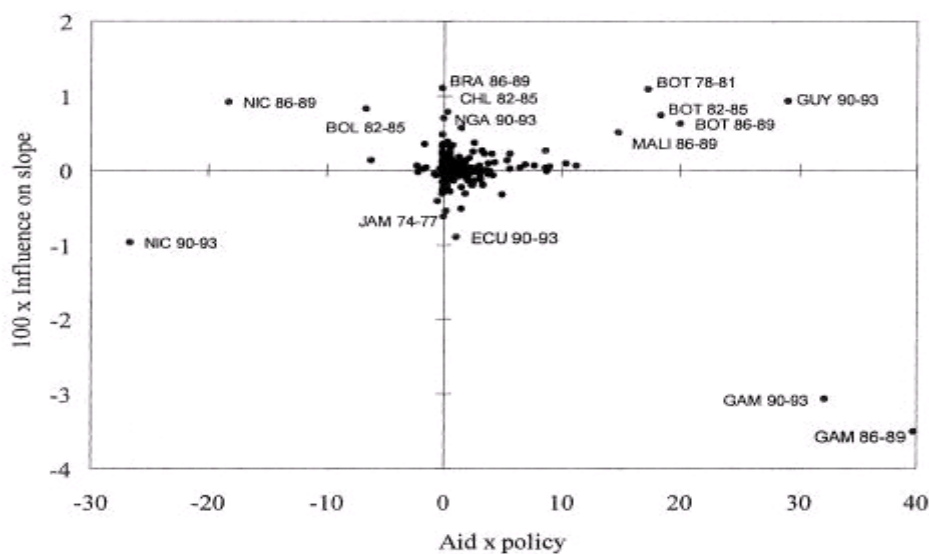


Figure 33, Burnside: *Outliers in the aid x policy dimension*

The main conclusion of the work (figure above) suggests that aid appears to have no significant impact on growth (almost zero), unless the interaction of aid and policies is introduced (in particular it is enhanced if outliers are dropped). In other words, the derivative of growth with respect to aid is significantly higher in a good policy environment than in an average one. Empirically, if we consider a production function like  $Y = AK^\theta$ , aid can affect output only through its effect on stock of capital:

$$dY = \theta AK^{(\theta-1)} * \delta K / \delta F dF$$

where  $dY$  represents the increase in output induced by the injection of aid,  $\delta K / \delta F$  is the fraction of an additional unit of aid that is invested and  $dF$  is the size of aid injection. However B&D suggested

<sup>106</sup> Burnside & Dollar use M2/GDP variable as proxy of development of financial system because of GDP endogeneity.

to write the equation as:

$$dY/Y = (r + \delta) * \delta K/\delta F dF/Y$$

with  $(r + \delta)$  as the marginal product of capital and  $r$  the rate of return to capital.

Therefore in LDCs aid is a necessary condition for growth but not sufficient, indeed its effectiveness can be

increased only if aid is associated with price stabilization, good governance, specific planning and adequate

structural support! In other words, aid can be used as an instrument for achieve sustainable higher growth only if such assistance will play within an effective necessary policy and institutional environment. In this sense, governments should provide enhance effective strategic frameworks for achieving these longer-term objectives and reduce aid dependence in the future.

#### ❖ **THE WORLD BANK GROUP**

##### *THE ESTABLISHMENT OF FINANCIAL INSTITUTIONS (IFIs)*

After the Second World War, the Allied countries reached the so-called Bretton Woods agreement in 1944, which had the goal to set up a new international monetary system and the establishment of a “new” League of Nations. On the belief that cooperation will have allowed countries to move towards a Pareto superior outcome, two international organizations were created: the International Bank for Reconstruction and Development and the International Monetary Fund. The role of these Institutes was that of facilitating cooperation by serving as commitment mechanisms among two or more involved States. In this sense, mainly, the set up of these organizations could have helped to solve all the problems due to incomplete information and asymmetry among countries (i.e. by establishing a centralized information system), and providing and enforcing common accepted rules (i.e. through the organization of a forum for further negotiations). In particular, IMF’s task included promoting currency stability, encouraging capital flows, facilitating international settlements and most important, the Fund had veto power over a country’s decision to change its exchange rate. Instead, World Bank was designed primary to supply the capital

needed for post-war reconstruction and long-term development projects<sup>107</sup> and specific technical assistance. At the same time, it was also designed for the promotion of private foreign investment so that the Bank assumed an intermediary role, initially borrowing funds from private investors and lending them to developing countries, and later helping private investors by providing loans and guarantees.

Finally another question can be: actually how does it work? The answer it is easy since basically each World Bank member country gets a quota which consists of shares of capital stock that are paid in the form of gold or U.S. dollars (for 2%) and by member's domestic currency (for 18%). At the same time, the remaining 80% of the World Bank's subscribed capital is subject to call by the W.B. only when required to meet its own obligations on its borrowings or guarantees (K.M. Dominguez<sup>108</sup>). Thus, at the end, from one side the IMF aim was to provide short-term balance of payments assistance, and on the other, World Bank one was to provide longer-term project assistance.

#### *WB's GOAL and AID ELIGIBILITY*

First of all, let's figure out what the priorities of WB are along these years and in this sense the major focus of the Institution after its born was due to the financing of infrastructure projects (ports, transportations, telecommunications etc). As time passed, it started to concern more on rural and urban poor, by providing assistance to agriculture sector in order to increase productivity and labour opportunities. Finally, at the beginning of the 80s the Bank started to supply the so-called Structural Adjustment Lending in order to support the balance of payments of the developing countries. The first question that can arise on behalf of what explained above is that, since IMF's role deals with balance of payments recoveries, is there an operational conflict among the two Institutions? Basically the answer is negative, indeed from one side the IMF supports the balance of payments management, the Bank on the other side, is more concerned with promoting policies to increase efficiency and incentives to reduce import payments and increase export earnings, thus to denote programs of policy reforms necessary to modify the structure of an

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<sup>107</sup> Note that, although the two institutions are explicitly distinct, membership in the IMF is a prerequisite in order to be member in the World Bank too.

<sup>108</sup> K. M. Dominguez (1993): *"The Role of International Organizations in the Bretton Woods System"*.

economy. In this regard, Structural Adjustment Programs (SAPs) normally consist of two components: one due to the macroeconomic stabilization and one to supply-side reforms; indeed, many developing countries also have fiscal deficits often associated with high inflation. Thus, in this sense, WB focuses on those adjustments for the macroeconomic stabilization of a country, in order to reduce domestic demand to a level that is consistent with the level of external resources, available for the country itself. Nevertheless, macroeconomic stabilization alone as said in the latter section, may not give rise to faster growth in the future. By contrast, examples of supply-side manoeuvres are: market liberalization (i.e. capital market, trade regime), removal of price controls, deregulation of the domestic goods-market (i.e. labour market) and financial market, and finally the removal of barriers to foreign direct investment.

However, actually, the main general WB's goal still deals with the achievement of the Millennium Development Goals (MDGs) with specific reference to MDG1 that is due to the eradication of poverty. In particular, the financial institution itself defines poverty as the inability of people to attain a minimum standard of living, where with the word "living standard", that generally is not well defined, one indicates something due to a specific subsistence level of income<sup>5</sup>. In other words, it can be calculated measuring an individual's real income associated with consumption, and thus with levels of nutrition, life expectancy, infant mortality years of schooling and so on. In this sense, one can explain the difference among countries in terms of different living standards<sup>109</sup>, namely living in U.S. is much more costly than living in one of the LDCs<sup>110</sup> and, as it is possible to derive easily, difference in living standards implies a difference in the level of income. This is the main evident reason explaining why GDP per capita is the most used index in explaining differences in development among countries, but bearing in mind the arbitrariness and the deficiencies of this measure. Indeed, if from one side it doesn't capture the social-economical<sup>111</sup> structure of a society, on the other it is an unstable index since dividing countries in low middle-

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<sup>109</sup> After calculating the difference level of living standards, it is possible to derive the so-called Poverty Line.

<sup>110</sup> In this sense as reported in the first part, the difference among rich and poor countries is called "development gap".

<sup>111</sup> In this regard, we have seen in the first part a set of social and economical characteristics that are common for LDCs.

high income or in industrialized and not-industrialized is completely arbitrary (Thirlwall)<sup>5</sup>. After this brief introduction, let's see now something more about WB eligibility.

Generally, there is an increasing attention to another element due to resource lending that is the performance of the fund. In particular, the idea of a Comprehensive Development Framework (CDF)<sup>11</sup> was proposed by the World Bank (in early 1999) as a means by which countries can manage knowledge and resources to design and implement effective strategies for economic development and poverty reduction. Basically, each country could voluntarily and independently decide about what own priorities and programs it wants to implement. Moreover, in order to effectively and coherently use of the human and financial resources and to take advantage of synergies among development partners, the CDF encourages partnerships between governments and civil societies, the private sector as well as external assistance agencies. Maybe it can be considered as the starting point for a future new concern about eligibility. However generally, the World Bank classifies a country according to the wealth of its population, namely IBRD clients are middle-income and credit-worthy lower income countries (IBRD<sup>112</sup>). Namely, the fundamental requirements of a country's eligibility for access to EBRD/IDA resources are its poverty and its lack of creditworthiness for market-based borrowing, even if for the majority of IDA countries, these two criteria coincide.

#### *a) Per capita income*

Basically per capita income is the IDA's basic indicator or proxy for poverty (as seen at the beginning of this part) and in this regard the first cut off due to IDA eligibility was initially set in 1964 at \$250 per capita, and

later revised to account for inflation, reaching \$1,445 in 2000<sup>113</sup>. Thus, by definition, middle-income countries are those whose per capita income lies between around US\$1,000 and US\$10,000, and they have access to borrow from IBRD. Low-income countries instead, are those whose per capita income is less than \$1,000 and usually do not qualify for IBRD loans unless they are creditworthy (IDA<sup>115</sup>) and it will be further explained below. Moreover, attempts to use the

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<sup>112</sup> IBRD website.

<sup>113</sup> World Bank "IDA eligibility, terms and graduation policies" International Development Association January 2001.

purchasing power parity (PPP) income estimates for a better cross-country comparison failed, since the lack of timely and reliable price data. The problem was overcome by starting to design an appropriate and comparable social index to be used in conjunction with the per capita income criterion that allowed also identifying the most social vulnerable countries, and accurately adapting them the relative IDA's responses. Basically the *social index* is the outcome of the combination of a set of 8 indicators that are: the primary school net enrolment; ratio of girls to boys in primary school gross enrolments; infant mortality rate; under-age-5 mortality rate; illiteracy rate of adults; contraceptive prevalence rate; births attended by health personnel; and under-age-5 malnutrition<sup>114</sup>.

Finally, it should be noted, that this set of indicators is far from being comprehensive because some of the indicators necessary to measure progress toward the goals are not available: for example, there is considerable debate over how to measure maternal mortality rates, or there is no direct information on access to reproductive health services.

#### *b) Creditworthiness*

In general, creditworthiness is defined as “the ability to service new external debt at market interest rates over the long term”. Creditworthiness considerations have always guided lending policies. Some countries, with incomes below the operational income (1000 \$), do not receive IDA funds but have access to commercial credits of IBRD if they are creditworthy. Conversely, there are some countries, the so called “gap countries”, with incomes above the operational level, but which are not creditworthy for IBRD lending, and might therefore find themselves without money from IBRD but with IDA resources for their development.

However, the eligibility of a country to access to the different forms of WB lending has always been a key point of discussion. Indeed, from one side scholars, on the basic assumption that countries face problems if the interest rate of loans exceeds the productivity of capital, support the idea that one possible criterion to adopt might be due to productivity level, as an indication of a country's capacity to pay back the loan with interest. On the other one, critics claim for an economical index due to a social perspective since productivity alone would imply a not optimized

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<sup>114</sup> Each indicator was standardized by taking the natural logarithm, subtracting its mean, and dividing by its standard error. The overall social index is the sum of the 8 standardized indicators, re-scaled to a range from 0 to 100.

distribution according to countries' needs. In this regard, the need for more transparent criteria is broadly sustained, at least to avoid some sceptical critics that argue for dangerous resource allocation based on military, political and historical considerations and ask for a stronger commitment. This dilemma leads me to focus on the distinction between growth and development, that is, while growth deals more with economical aspects of a country, (thus GDP index), by contrast development implies more than just a rise in the real domestic income. However, as Thirlwall pointed out<sup>5</sup>, growth is possible without development (and vice-versa)? The answer seems to be simple to figure out; indeed income growth without broader social changes is (unfortunately) achievable as happened in India and China, which experienced a rapid industrialization process, but contemporary also a lack of public fundamental facilities (or more broadly of a full operative democracy). By contrast, development itself, is hardly possible without growth, but it still possible without increase of income, indeed the latter doesn't necessarily imply an increase in welfare by alone, even if increasing income is one possible driver for adjusting standard of living too (and thus per capita GDP assumes critical importance, in the selection process as best index). At this stage of our discussion it is required to introduce a specific concept that can be useful to define development. Namely, one alternative view is the concept of basic needs, which is defined as the provision of health services, education, housing, sanitation, water supply and adequate nutrition. It acquires relevance because in general poor people don't spend their income on schooling or sanitation, which can be only accessible just if they are provided as public goods and are strictly connected to the productivity level of the local people. In this sense, Sen<sup>6</sup> suggested that poverty can be reduced and basic needs met is by increasing the availability of productive employment. Thus, he stated that growth of employment opportunities or a reduction in the under-utilisation of labour is another possible dimension. At the same time, following this line, UNDP also provide the Human Development Index<sup>115</sup> year by year, which represent alternative measures of the economic well-being or progress of nations<sup>116</sup>.

To conclude, as we have seen until now, the discussion doesn't provide a unique definition of development, and in this sense, even if many development indexes are calculated and reported by

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<sup>115</sup> See annex 3 at the end of the chapter.

<sup>116</sup> Basically, it is the result of the combination of three parts: life expectancy, adult literacy and per capita income.



World Bank itself<sup>117</sup>, per capita income is the most used criterion for classifying countries, since it is firstly readily available, easy to understand and due to the economical dynamics (most important) of growth.

#### *WB's ACTUAL FINANCIAL PRODUCTS*

As we have seen, WB focuses mainly on financial aspects due to the development of a country and, in this regard, basically WB products divide in:

- Financing & Risk Management products
- Bonds & Investment products

First category is split in financing (loans), credit enhancement (guaranties), hedging products (swaps) and catastrophe risk financing for extreme dangerous situations. At the same time the second category contains debt products that can be global bonds; non-core currencies; structured notes; discounts notes; or sustainable investment products (ex due to social development, environmental protection). On the basis on what I will explain later, my personal idea concerns more with the second type of financial instruments, that is debt products. Generally, the WB operates as a financial intermediate since it issues bonds through the help of commercial banks to interested countries, and lends the collected money to specific developing countries. Thus, in other words, it hasn't a specific relationship with the private sector, namely, it lacks the link among investors and lenders. By contrast, I suggest an organism more devoted to "real" capital market; I mean a possibility where investors may decide to invest, by buying debt products and developing countries could be the final beneficiaries of that amount of money.

However, the opportunities offered by WB are very large in order to satisfy the different needs of the (institutional) investors follow the scheme below:

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<sup>117</sup> See annex 2 at the end of the chapter.



Figure 34, World Bank's website: "How a transaction works"

In this framework, one view can be the Mr. Lerrick's one<sup>118</sup>, who claims for external performance audit organism. In particular, he focused on the fact that the World Bank's Operations Evaluation Department (OED) is a department of the Bank itself, and thus claims for the condition of an independent external performance audit which would denote more freedom from control or influence<sup>119</sup> and could exploit transparent methodologies and enhance the quality of the procedures. Moreover, many (Lerrick in particular), support the idea that a World Bank under serious and continuous external review would become an example of standards accountability and transparency that would encourage its borrowers too. By contrast, World Bank objections to external examination concentrate on damage to the institution's morale by a questioning of its integrity. Thus, progress in this sense can be achieved in future meetings and forum (ex. the Busan one). Conversely, the other part of the story concerns with the development of new financial products within the view of facing poverty.

#### ❖ A NEW PATH OF DEVELOPMENT FINANCE

From the above discussion, it comes up that poverty reduction in developing countries is closely related to per capita income growth. Moreover, several studies<sup>120</sup> examining recent per capita growth and poverty reduction in several countries, found that per capita income and social indicators tend to improve (or deteriorate) together because social indexes (i.e. life expectancy, school enrolment, infant mortality, and child malnutrition) are all closely related to per capita income. Basically, this is because GDP is broadly shared as an indicator expressing growth.

<sup>118</sup> A. Lerrick (2002), "Are World Bank claims of success credible? It is time for an external performance audit" Quarterly International Economics Report.

<sup>119</sup> For example, he arises doubts concerning the adjustment programs, which constantly receive the most elevated marks.

<sup>120</sup> as J. K. Sundaram (2010): "Rethinking poverty reduction" Project Syndicate.

Nevertheless, although there have been great improvements in living standards globally, the huge differences across countries show the importance of development matters! In this regard, at the same time, in order to reach a rapid growth and structural economic transformation (namely a full and productive employment as well as sustainable/decent jobs), we have seen that governments need to play a development supporting role that allow to reduce inequality (i.e. through fiscal policies) and promote social justice and protection. However, this approach needs to be complemented by appropriate industrial development and by inclusive facilities (financial and infrastructural) designed to support it. Conversely, the scarce efforts of the governments and reliance on the market led to a rapid decline in public infrastructures investment (ex agriculture) that not only impairs long-term growth, but also increase for example problems due to food security, thus a strong commitment is usually requested (and expected) to the biggest International Institutions (UN agencies). In this sense, it is possible to derive that the flow of infrastructure services is strictly important for economic growth, even if empirically it is harder to show that infrastructure expenditure is a key vehicle for development. Nevertheless, I want to specifically focus on this delicate issue. Indeed, the development of solid infrastructures in a country or, better in an economy, often represents the input, the starting point around which a development path can start its way. It is the basic element recognized by the classical economic theory; in this sense I strongly support the idea that country's growth (economic but not only) depend upon two key elements: infrastructures and industrialization. From one side the latter is broadly discussed in literature about its positive relationship with economic dynamics and it is also empirically and historically tested (see Industrial Revolutions), namely, it is recognized as a key driver for growth, while on the other side, less emphasis has been given to the role of the infrastructures. Let me focus on these two points a bit more. About industrialization, as we have seen in the first chapter, because developing countries are basically agricultural based, the passage towards an industrial based economy is obviously required, and consequently it would imply an increase in per capita income (or livings standards generally speaking). However, at the same time, skill labour is required, thus education improvements become a key issue to be faced for the well functioning of the industrialization process as a whole. In other words, I want to underline the need of infrastructures (that is the second engine) in terms of schools for guarantying at least education at primary level. But a well implemented education system requires also skilled teachers, facilities, efficient transport system, materials and so on. How to provide or

finance all these elements that characterize the overall education systems? Basically it is possible if governments itself could spend part of their income (i.e. taxes) or with the help of foreign donors/volunteers such as NGOs, foundations, religious (i.e. Catholic) centres and so on. However, since from one side it not conceivable that those organizations can alone provide the entire system, on the other it is difficult for LDCs governments invest such amount of money and organize all that, it indeed require to increase the sovereign debt. Thus, I see the point that more efforts have to spend at local, national and international level! What I mean, is that interventions like that, require a strong commitment of international agencies as UN's ones, and specifically I want to call for World Bank, as the main financial entity whose main purpose is alleviating poverty. In this regard, generally, people perceive World Bank as a common financial bank which operates at an international level which basically has as "clients" the governments of the States joining the United Nations Organization. In real terms, is not very known, but it provide funds and technical assistance as well as, cooperate with other agencies like a common financial intermediary; indeed, as we have briefly seen before, one of its branches (IBRD) really operates with debt products. However, I also have always thought to WB as a more financial market based entity, an International Central Bank which works for the achievement of successful matching among different countries which could issue domestic bonds (or any other financial product) and those interested in buy them. On this idea, I would like to spend more efforts upon the possibility to introduce new financial instruments to satisfy those needs, emerged in the financial part of this work that developing countries have to cope with. Basically, financial cost due to education can be supported with the help of World Bank, which acting as an international recognized entity (or trader), collects funds to be invested from private sector and allocate it to LDC's governments (according specific criteria that can be found in political efforts, namely corruption level and democracy diffusion). What I am trying to say is that, basically the idea would be that of facilitating the link investors-LDCs with a return for the first, and this can happen by specific private agreements with the local governments as well as firms through joint ventures, partnerships or any other type of collaboration or by specific financial products with WB intermediation. In particular such products should be established by taking investors' money and moved to LDCs for the set up of infrastructures. Then, it would be task of the WB, to give money back to such investors according to a specific time table as well as a small interest rate. Obviously, time becomes a relevant variable determinant for the well functioning of the process. Similarly,

facilities as book, old computers and other things no more used by advanced countries can be given to LDCs in exchange of agricultural products, that exploiting all the available land, would be in excess (after satisfying domestic demand). However, it has to be underlined that all the work made by non profit organization would be extremely important for the coordination of the overall system.

An industrialization process also need of adequate communications that can be mainly roads, fats railways that can help the distribution of the goods for domestic purposes reducing the gap between the rural and urban people, as well as an important mean of exports and in this sense I refer to ports, airports and so on. Foreign direct investment can be attracted not only through monetary and financial incentives but also offering the possibility to establish efficient production outsourcing and also using local labour force.

I want to replace the previous idea about schools, by applying it with regard to health services, that represents a main need in the poorest LDCs. Providing money for building hospitals for example, would imply to support problems due to employment (as before a lot of workers can be locally applied), increase in overall productivity since labour force can receive adequate medical treatment as well as rising overall income due to the payment of local people! At the same time it not to be undervalued that increasing the overall sanitation would be also affect tourism. Indeed, it is recognized that scarce health conditions in LDCs act as a deterrent for tourism, that could be another (important) source of income. What private investors can receive as return? Once the system takes its natural course, a possible solution can be that to establish a small ticket for each medical treatment received or WB itself could provide money back to investors (so acting as a promoter of call of proposal/tenders). Moreover, thanks to low costs in terms of wages and local resources, and by providing incentives, foreign investors can have access to these markets that can be a further opportunity to diversify investment increasing overall profits. In other words, a system like that, is likely to incentive FDI in those under-exploited (as I say) markets, allowing stimulating the economy and guarantying social services for local populations even if within a long run perspective. Moreover, at the same time, can be also a proof of the work exercised by UN, and a specific proof of its aid effectiveness, since they could provide real (tangible) facts making it proud of that. Moreover, on the basis of what explained in the financial part before, with infrastructure one can refers also to the establishment of an efficient financial system, that as has

been showed in the previous chapters, it is necessary for the well functioning of the economy as a whole. It is indeed, the basic engine for the implementation of maybe “idealistic” system like the one expressed above. What could be the possible critics of it? For example, one can claim for the privatization of basic services of what should be public, that is foreign investor became real owner of the key points of the social life. What I can say it is that, with a strong commitment and supervision of international agencies as WB, I think that it can be a sustainable situation and that it is better to have something private that to have no education no health facilities and so on. At the same time another issue would be faced, that is that of avoiding two specific possible events. Firstly, also with the help of FDI each country could experiment economic growth, but in a more comprehensive ways, that means involving a great part of the population (conversely to Chinese or Indian cases). Secondly, another fact I want to mention is that of avoiding the experience of actual emerging countries as Brazil, Russia, India, China and South Africa (namely BRICS) which after having exploited their capabilities now lies in an important economic position at global level, that also leads to affect the political power internationally speaking (within ONU itself). However, without entering in political matters, I want to conclude by postponing the discussion of such financial instruments in a future specific paper.

Finally, at the same time efforts should be spent in favouring the expansion and diffusion of another instrument mention in my thesis that is microfinance. Since the matter has been already discussed before, I want just to mention again this instrument since it can be very useful for the future of development economics. Within this framework, Italy in particular, has specifically recognized it through the establishment of the Permanent National Italian Committee for Microcredit as a public entity. The main goal of the organism is due to the promotion of ethical investment that are regarded as high profitable especially in situation of crisis like that it currently affecting the global world. In this regard, Italy represent the will to make changes in this direction, hoping that other national committees can be established in next future to lead the spread of this topic up to reach international organisms if possible.

## ❖ THE REPUBLIC OF CAMEROON's CASE

### MACROECONOMIC SITUATION AND PRIORITIES

Basically I've specifically chosen Cameroon's case since it is a reality which concerns with what I've explained before. Namely, Cameroon even if is a developing country, it is not among the poorest countries of Africa and of the world as a whole but, its government understood through the Growth and Employment Strategy Paper (GESP)<sup>121</sup> that in order to push the economy on higher level something as to be done. Cameroon indeed is a pacific country with a stable government characterized by strong differences among north and south (in terms of living conditions) as well as strong differences among rural (just farmers) and urban areas (which are overpopulated). Moreover this difference is highlighted by the fact that a lot of food is produced in the rural areas but there are weak or no means of transport as well as it lack of machineries to process food effectively. Thus basically, agricultural products are destroyed, causing a rise of the prices that people cannot buy since their poor income<sup>122</sup>. Indeed, it has been estimated that the average income per capita is almost a bit more than one thousand dollar per year, while the national GDP after negative variations up to 2002 increased just of 3.32% in the 2007. Hence, economic growth in Cameroon continues to be fragile since it continues to face a number of challenges likely to hamper achieving the desired results. Example of that are structural weaknesses, relating to low competitiveness of the productive sector and deficiencies in key factors of production such as infrastructure and energy. In this context, the GESP born to provide a framework to ensure conformity among the Government's financial and budgetary policies with the goals of supporting the most productive and social sectors. Thus, many actions have to be taken and the Cameroon government strongly believes that the main challenge faced in the rural sector is the transition to a semi-intensive and industrial rural production sector that will help:

- ✓ to ensure security and sufficiency in domestic consumption, (north-south cooperation)
- ✓ to provide raw material to the processing industry and create a domestic market and consumption for open industries
- ✓ to increase exports, thus improve on the trade balance and regional integration. The trade development policy could then be extended to the West, South, East and North African sub-regions.
- ✓ to trade with emerging countries as South American and Asian markets.

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<sup>121</sup> Republic of Cameroon (2009), "Growth and Employment Strategy Paper" (GESP) reference Framework for Government Action over the period 2010-2020".

<sup>122</sup> note that up to now, prices have relatively been under control with an average inflation rate of about 1.9%.

THE GROWTH AND EMPLOYMENT STRATEGY PAPER (GESP) - INFRASTRUCTURE DEVELOPMENT -

Infrastructure development is the first point of the growth strategy paper which witnessed that the government of Cameroon firmly believes in its advantages to be exploited. Indeed, infrastructure was partly responsible for the low performance of Cameroon's economy during this period. This fact makes aware the government of Cameroon of the key role infrastructure plays in facilitating exchange and promoting significant and sustainable growth through the competitiveness generated by its good quality so it can meet economic and social demand as well achieving economic and social development objectives. For these main reasons it intends to invest massively in infrastructure during the implementation period of the strategy. In particular, it wants to promote “building construction and public works” implying road maintenance activities aimed at improving the service quality; the rehabilitation of the road network (2000 km of tarred roads to be rehabilitated by 2020), and increasing the tarring of earth roads (more than 3500 km by 2020), as well as increasing the overall system of “transports”.

State\Year	2010	2015	2020
Good	12%	26%	55%
Average	23%	32%	19%
Bad	65%	52%	26%

Table 1, GESP from MINTP: “Expansion of the road network”

In the rural roads sector and regarding road servicing, rehabilitation efforts will aim particularly to: (i) exploit domestic production; (ii) establish tourist sites; (iii) rehabilitate semi urban and rural roads; (iv) ensure access to risk zones and; (v) ensure the presence of the country in all its area.

Year	2007	2010	2015	2020
Length	4918	5250	6300	8500

Table 2, GESP from MINT: “Expansion of tarred roads (in km)”

The proportion of tarred road network should stand at 17 per cent by 2020: the idea will be to tar an average of 350 km of roads per annum.

Year	2006	2015	2020
Length	0	65	480



Table 3, GESP from MINTP: “Extension of roads to 2x2 (in km)”

Thus, the transport system will effectively contribute to economic growth and alleviate poverty by covering the entire nation and effectively open to neighboring countries, as a way to facilitate economic activity as a whole.

As I mention before, intervention also concerns with “transport” in order to contribute properly to economic growth and poverty alleviation. In particular the government of Cameroon puts in the report much emphasis on the development of new ports and railway facilities. (example of that are the construction of a deep seaport in Kribi to the extend the aluminum production and programmed mining as well as increased sea traffic; a deep seaport in Limbe; an Oil Yard in Limbe to provide countries in the Gulf of Guinea as well as businesses (especially oil) companies operating in the area, a modern and competitive shipyard; new railway for plus of 1000 km. Pursuing these activities implies specifically implies supporting well chosen partnerships, that should help attract private funding for major projects. Thus basically, it is the beginning of a new economic phase, which recognized the role of the private sector as I suggest before! It is hence necessary to substantially increase the rate of access to infrastructure through supplying more than current demand. Specifically, it will be achieved by increasing the following items (indicators):

Indicator	Average 2000-2003	2010	2015	2020
<b>Energy consumption per unit GDP (%)</b>	27.7	30.0	33.5	37
<b>Access to safe drinking water</b>	-	-	70	75
<b>Number of km of tarred roads for 1000 inhabitants</b>	-	0.27	0.29	0.34
<b>Number of km of railways for 1000 inhabitants</b>	-	0.06	0.07	0.10
<b>Number of telephone lines for 1000 inhabitants</b>	6,7	10.0	12.0	15
<b>Urbanization rate</b>	501	-	55	57
<b>Number of km of urban roads constructed as from 2010</b>	-	-	63	150

Table 4, GESP from MINETAP: “Some targets in the area of infrastructure”

Finally it is also important to underline the possible creation of employment opportunities which can result from these activities. Indeed, it has been estimated that, during the period of implementation of the strategy, a net creation of about 495,000 employment opportunities on annual average could occur. It is basically one characteristic of public goods, that makes spread

over a quite large part of population those investments coming from foreign private sector.

#### FINANCING PLAN: HOW FUND THE ECONOMY & THE MONETARY SITUATION

The main resources of the Cameroon`s government are been identified in:

- *Fiscal policy – taxation*: that attracts both savings and cost cuts in acquiring funding, namely the local authorities will ensure those advantages accruing from provisions of the Investment Code and of the free trade zone, will be taken into account, easing access to credit necessary for wealth creation. The method adopted by the authorities is that one to incite individuals and any economic agent with surplus liquidity to make deposits in lending institutions. It consisted in exempting taxes on income from such deposits which will be moved to sustain investments.
- *Banking system*: basically the financial sector is still characterized by the low access to banking services, banking surplus liquidity, predominance of short-term loans mainly aimed at financing the day-to-day needs of enterprises and household consumption. In this regard, the main goal of the strategy paper is the promotion of many measures and actions that have been taken in order to increase banking competition and financial intermediation efficiency by easing access to bank loans.
- *Micro finance*: for the first time its role has been recognized by LDC authorities in Cameroon. Specifically the program is focused on increasing and expanding basic financial services as well as to improving the quality of services provided by Micro Finance Establishments (MFEs) fostered by the introduction of a first-level supervisory and monitoring organism.
- *Reinforcing mobilization of domestic savings*: strictly connected to the item before, the government plan to develop Micro Finance institutions into commercial banks-status of proximity banks that would lead to the access of small savers to the structured financial sector. At the same time it could be a leverage for revitalizing local financial markets since national stock exchange market is vital for attracting private capital (especially foreign capital) and also could help to collect long-term savings for the funding of medium and long-term investments. Moreover, resource mobilization would also mean increasing

resources from the Diaspora, namely to encourage Cameroonians to invest back home by offering several types of incentives or other mechanisms. Finally, in order to deal all these financial policies, the government also supposes to establish specialized financial institutions as a National Credit responsible for managing State foreign loans and granting loans on behalf of the State at the local level, a State National Market Fund whose role will be funding public investment and a Deposit Fund already under implementation.

- *Debt contracting strategy*: one of the key points of the strategy paper which can be appreciated, concerns with the efforts that the Cameroonian government wants to put in place. In particular the final purpose deals with pursuing a prudent debt contraction policy for a sustainable management in the long run that will allow restoring the confidence of businesses and partners. In this regard, it can be noted that the national debt dropped down by 59.% from 2005 to 2006, reaching the lowest face value of almost 1.5 billion CFAF in 2008. This trend was basically due to debt relief agreements signed with the private sectors, a prudent and coherent foreign debt policy as well as respect of the deadlines set for repayment of foreign public debts. The implementation of these activities should enable Cameroon to strengthen its position within a period of 15 years.

Regarding *monetary policy*, the Cameroon`s government has planned to reduce its deposits in the banking system, or possibly resort to statutory advanced payments, as well as increasing net foreign assets fostered by a continuous increase in the credits of the economy which will move from 12.2 per cent of the GDP in 2009 to 14.6 per cent in 2020. At the same time, the ratio often money supply to the GDP will record an increase of 2.7 points, keeping under control inflation in sustainable basis.

#### FINAL REMARKS

Without taking into account the overall expected results I want just show the estimates to the efforts spent in promoting infrastructure. In particular, the table below shows the annual rate of variation in terms of growth and in term of investment (and expenditures) which is supposed to increase constantly during the strategy`s implementation and specifically it should reach a rate of growth of up 23.4 % in 2020.

	<b>2008</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
<b>Investment rate</b>	17,5%	19%	20.3%	23,4%
<b>Total expenditures</b>	18,5%	17,5%	17,6%	16,9%

Table 5, GESP from MINEPAT: “Investment rate and total national expenditures”

At the same time in the next table I show how thus capital investment is supposed to generate a progressively increases in the growth of public building:

	<b>2008</b>	<b>`09</b>	<b>`10</b>	<b>`11</b>	<b>`12</b>	<b>`13-`15</b>	<b>`16-`20</b>
<b>Total GDP growth</b>	3.1%	2.5%	3.0%	4.8%	5.3%	6.0%	5.9%
<b>Building construction (growth rate)</b>	-6.2%	11.3%	6.5%	7.5%	7.6%	7.8%	8.0%

Table 6, GESP from MINETAP: “Sector growth trends”

By contrast, within a scenario analysis has, it has been estimated that reducing by half the building construction and public works growth rate over the 2009-2020 period (delays pertaining to the deep seaport and road projects) is holding down GDP growth by about 0.4 point on average per annum, being a growth loss of 4 points in 10 years. Moreover, concerning public finances, it would also imply losses for an annual average of 50 billion CFAF between 2010 and 2020!

In conclusion, we have to wait if this program will be put in place through fair economical policies and with high motivation as well, in order to reach the expected results. If this will happen, it could be an answer on what I claimed, that is namely, the strong potentialities to be exploited through investment in infrastructure, and at the same time even other countries could do the same! Moreover, following the pattern I explained before, it will be interesting to see how all maneuvers will be funded. In this sense, GESP seems analyze this aspect by covering a great number of different possibilities<sup>123</sup>. However, I believe that there is also space for developing new financial instruments and agreements, especially (as I suggested and partly replaced by GESP) with the foreign private sector, within the general belief to support economic and social development of local people.

<sup>123</sup> See Annex 4 at the end of the chapter.

❖ ANNEX 1: STATISTICS ABOUT WORLD BANK

Net disbursement by major Multilateral Agencies (\$ million)							
year	Concessional <sup>124</sup>				Non-concessional		
	1989	1996-1997 average	2007		1989	1996-1997 average	2007
<b>IBRD</b>	\	\	\		<i>n.a.</i>	1454	72
<b>EBRD</b>	<i>n.a.</i>	18	8		<i>n.a.</i>	310	1408
<b>IDA</b>	3589	5488	7463		\	\	\
<b>IFC</b>	\	\	\		886	574	1990
<b>Inter-American Dev. Bank</b>	150	0	41		1159	18	46
<b>African Dev. Fund</b>	548	590	1209		908	129	286
<b>Asian Dev. Fund</b>	1010	1056	1182		933	2095	3798
<b>IFAD</b>	118	131	322		\	4	7
<b>UN Agencies</b>	3900	2739	3838		\	<i>n.a.</i>	<i>n.a.</i>

Table 1, source from OECD, Thirwall (2003)<sup>5</sup> and *Development Cooperation Reports (1991 & 2009)*<sup>125</sup>.

**Estimates of additional annual costs for achieving the 2015 International Development Goals**

	<i>Billions of dollars</i>
Halving poverty and hunger	20
Halving population without access to safe drinking water	0
Achieving universal primary education	9
Achieving gender equality in primary education	3
Achieving three-fourths decline in maternal mortality	No estimate
Achieving two-thirds decline in under-five mortality	No estimate
Halting and reversing HIV/AIDS	7-10
Providing special assistance to AIDS orphans	No estimate
Improving lives of 100 million slum-dwellers	4
<b>Total (approximate)</b>	<b>50</b>

Table 2, source from Zedillo Report (2001).

<sup>124</sup> Lending money (known as credits) on concessional terms means that credits have no interest charge and repayments are stretched over 35 to 40 years, including a 10-year grace period.

<sup>125</sup> [http://www.keepeek.com/Digital-Asset-Management/oecd/development/development-co-operation-report-2009\\_dcr-2009-en](http://www.keepeek.com/Digital-Asset-Management/oecd/development/development-co-operation-report-2009_dcr-2009-en)

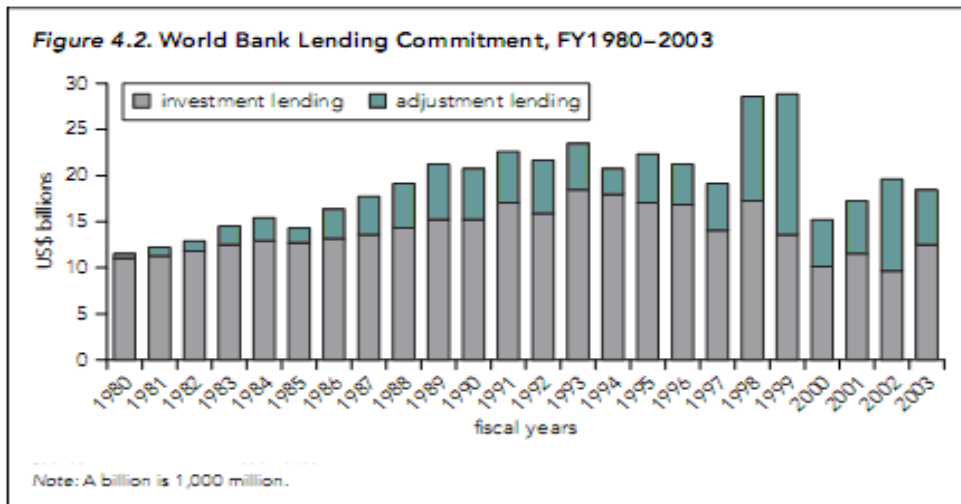


Figure 1, WB staff estimates from “*Conditionality Revisited Concepts, Experiences, and Lessons*”

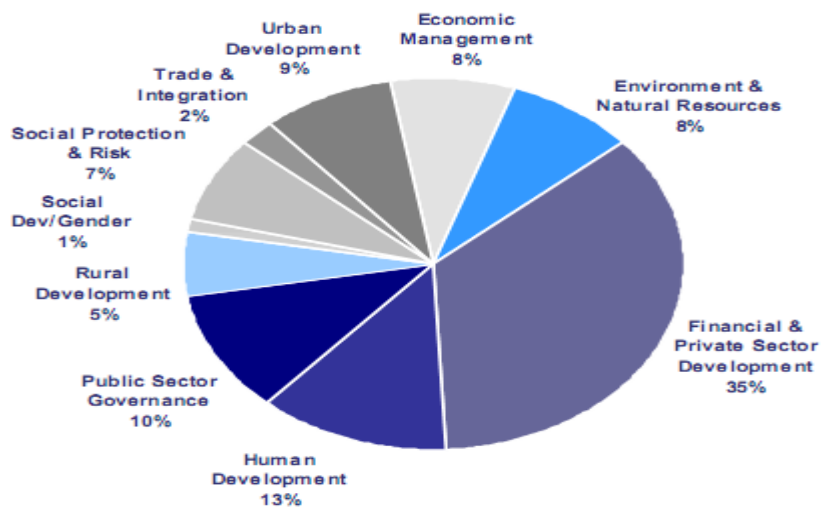


Figure 2, World Bank: “*IBRD lending distribution by theme*<sup>126</sup>”

<sup>126</sup> in 2010, for a total amount of US\$44 billions.

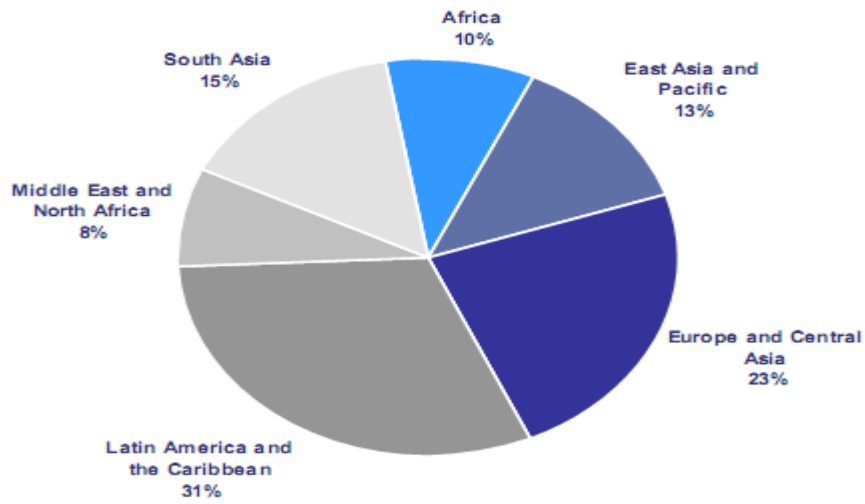


Figure 3, World Bank: "IBRD lending distribution by region"

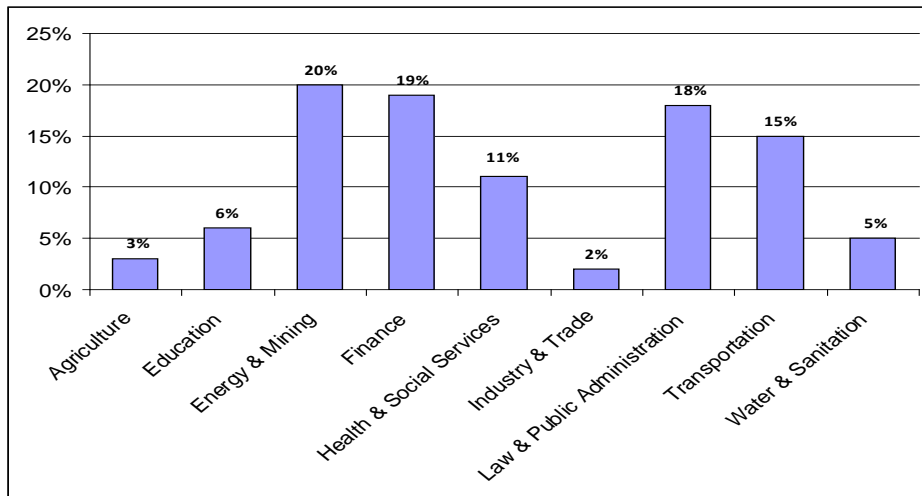


Figure 4, my elaboration on the basis of WB data: "IBRD lending distribution by sector"

❖ ANNEX 2: THE SOCIAL INDEX

Social Index Rank: the first and the last 30 countries			
Country	Ranking	Country	Ranking
Argentina	1	....	....
Chile	2	Cameroon	82
Croatia	3	Cambodia	83
Brazil	4	Gambia	84
Costa Rica	5	Haiti	85
Bahrain	6	Zambia	86
Colombia	7	Togo	87
Russian Federation	8	Uganda	88
Venezuela R.B.	9	Mauritania	89
Korea Rep.	10	Tanzania	90
Kazakhstan	11	Madagascar	91
Hungary	12	Malawi	92
Kyrgyz Republic	13	Pakistan	93
Dominican Republic	14	Congo Dem. Rep.	94
Poland	15	Bangladesh	95
Malaysia	16	Senegal	96
Jamaica	17	Central African Rep.	97
Moldova	18	Guinea	98
Lithuania	19	Cote d'Ivoire	99
Bulgaria	20	Lao	100
Romania	21	Burundi	101
Mauritius	22	Benin	102
Trinidad & Tobago	23	Yemen Rep.	103
Albania	24	Nepal	104
Uruguay	25	Eritrea	105
Czech Republic	26	Guinea Bissau	106
Latvia	27	Ethiopia	107
Thailand	28	Mozambique	108
Azerbaijan	29	Burkina Faso	109
South Africa	30	Mali	110
Mexico	31	Chad	111
....	....	Niger	112

Table 2, source from "IDA eligibility, terms and graduation policies" International Development Association Jan. 2001



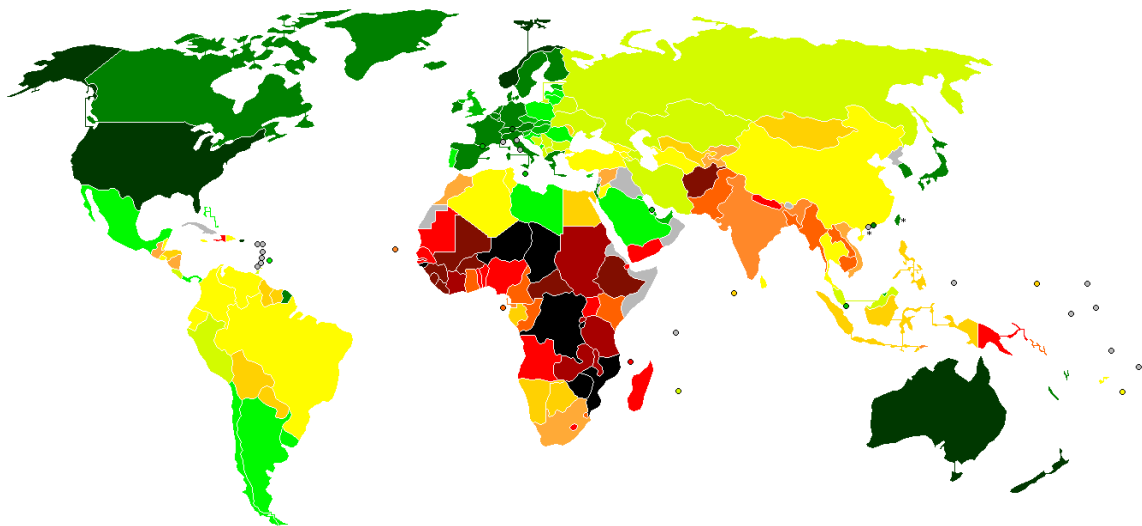
❖ ANNEX 3: THE HUMAN DEVELOPMENT INDEX

The Human Development Index is the result of the combination of three variables and it is:

$$HDI = \sqrt[3]{LEI * EI * II}$$

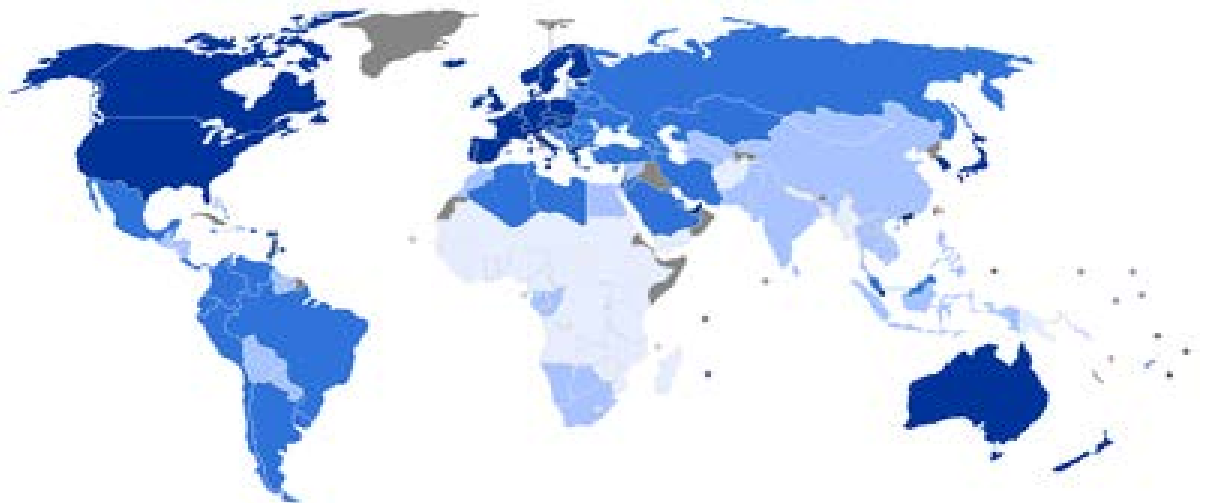
where LEI stands for life expectancy index; EI stands for educational index and II stands for income index.

Here the graph with the value scales:



0.900 and over	0.650–0.699	0.400–0.449
0.850–0.899	0.600–0.649	0.350–0.399
0.800–0.849	0.550–0.599	0.300–0.349
0.750–0.799	0.500–0.549	under 0.300
0.700–0.749	0.450–0.499	Data unavailable

Figure 5, my elaboration on the basis of WB data: "World Map about Human Development Index"



- Very High (Developed Country)
- High (Developing country)
- Medium (Developing country)
- Low (Developing country)
- Data unavailable

Figure 6, UNDP: "World Map about Human Development Index by category"

❖ ANNEXES 4 : FIGURES ABOUT GESP

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>Total revenue</b>	19.4	16.5	15.2	15.8	16.2	16.3	16.5	16.5	16.7	15.9	15.5	15.3	15.2
<b>Oil revenue</b>	7.4	4.1	2.8	3.5	3.9	3.9	3.8	3.6	3.9	3.0	2.7	2.4	2.1
<b>Nonoil revenue</b>	12.0	12.4	12.4	12.3	12.3	12.5	12.6	12.8	12.9	12.9	12.8	13.0	13.1
<b>Tax revenue</b>	11.3	11.1	11.0	11.0	11.0	11.2	11.4	11.6	11.7	11.7	11.6	11.8	11.9
<b>Imports on inte. Exch.</b>	2.0	1.8	1.8	1.7	1.7	1.7	1.7	1.7	1.6	1.4	1.2	1.1	1.1
<b>non tax revenue</b>	0.7	1.3	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2
<b>Total expenditure</b>	18.0	17.7	17.9	17.7	17.4	17.4	17.4	17.9	17.2	16.7	16.2	15.9	15.7
<b>Current expenses</b>	12.8	12.4	12.3	11.8	11.3	10.9	10.6	10.7	10.0	9.6	9.3	9.0	8.9
<b>Salaries</b>	5.1	5.8	5.8	5.7	5.6	5.6	5.5	5.4	5.0	4.7	4.6	4.3	4.0
<b>Other goods and services</b>	4.7	4.5	4.4	4.1	3.8	3.6	3.5	3.7	3.6	3.5	3.5	3.6	3.9
<b>Transfers and subventions</b>	2.6	1.7	1.8	1.7	1.6	1.5	1.5	1.4	1.3	1.2	1.1	1.0	1.0
<b>Payment of interests</b>	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
<b>Capital expenditure</b>	5.4	5.3	5.6	5.9	6.2	6.4	6.8	7.2	7.2	7.1	6.9	6.9	6.8
<b>Internal funding</b>	-1.9	0.7	1.7	0.6	-0.7	-0.7	-0.6	-0.5	-0.4	-0.3	-0.2	-0.1	-0.1
<b>External funding</b>	-0.1	0.1	0.4	0.3	0.3	0.3	0.3	0.4	0.3	0.2	0.2	0.2	0.2
<b>Primary total amount</b>	1.8	-0.8	-2.3	-1.6	-0.9	-0.8	-0.8	-1.2	-0.3	-0.7	-0.6	-0.5	-0.4
		-4.9	-5.2	-5.1	-4.9	-4.7	-4.6	-4.9	-4.1	-3.7	-3.2	-2.9	-2.5
<b>Primary non petroleum amount</b>	-5.7	0.0	0.2	0.5	1.3	1.1	1.0	1.2	0.4	0.7	0.5	0.4	0.3

Table 1, GESP from MINEPAT: "Trends of public finance (% of GDP)" .

<b>Distribution of allocation according to sector (in billions of CFAF)</b>				
<b>Sector</b>	<b>2009</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
Education	18.4	18.6	19.6	19.8
Health	5.2	6.3	8.2	8.3
Social Development and Employment	1.1	1.2	1.6	1.7
Culture, sports and leisure	1.9	1.9	1.9	2.0
Production and trade including	6.0	7.1	8.2	8.2
The rural sector	5.1	5.6	6.6	6.6
Productive Infrastructure	14.8	18.4	18.3	18.4
General Administration and finance	6.4	6.5	6.6	6.6
Defense and Security	9.9	9.9	10.1	10.3
Sovereignty and Governance	6.3	6.3	6.6	6.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Table 2, GESP from MINEPAT

<b>Building and public work key figures</b>				
<b>GDP TREND IN BUILDINGS AND PUBLIC WORK</b>	<b>2008</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
	196.9	253.1	364.2	711.6
<b>GDP PERIODICAL VARIATION (past period based)</b>	<b>2008</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
	/	28.5%	43.9%	95.4%
<b>GDP PERIODICAL VARIATION (2008 based)</b>	<b>2008</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
	/	28.5%	85%	261%
<b>GROWTH (%)BUILDINGS AND PUBLIC WORK</b>	<b>2008</b>	<b>2011</b>	<b>2015</b>	<b>2020</b>
	-6.2%	8.5%	11%	17%

Table 3, GESP from MINEPAT

<b>Matrix of some priority actions</b>					
<b>AREA</b>	<b>INDICATORS</b>	<b>BASELINE</b>	<b>2012</b>	<b>2015</b>	<b>2020</b>
<b>Intensification of road terring</b>	<i>Total linear of coated roads</i>	4,918 km (2009)	5,800 km	6,500 km	8,500 km
<b>Road maintenance and rehabilitation</b>	<i>Percentage of road network in good conditions</i>	14% (2005)	20%	26%	55%
	<i>Linear of rehabilitated tarred roads</i>	257 km (2010)	544 km	1,100	2,000km
<b>Urban road construction/maintenance</b>	<i>Linear of urban roads constructed</i>		40 km	100 km	200 km
<b>Population access to basic urban amenities</b>	<i>Rate of Population access to basic urban amenities</i>		20%	50%	80%
<b>Construction of sanitation infrastructure</b>	<i>Rate of access to sanitation infrastructure</i>			35%	60%
<b>Potable water supply</b>	<i>Rate of access to potable water in rural areas</i>			50%	75%

Table 4, GESP from MINEPAT

## CONCLUSION

The first concluding remark I want to mention is that any efforts has to be spent to make this work clear to the reader by covering the development matter as a whole facing everything concerns to. Indeed, as I've shown development doesn't mean only economic growth, but mainly it regards also poverty reduction or at least guaranteeing basic living standards. In this regard, food security, easy access to education, improving health conditions, solid and efficient political framework are all elements that needs to be exploited in order to make these countries able to reduce their gap from developed countries. I've shown indeed, that LDCs mainly lack of basic facilities in terms of access to primary education as well as health services. Economic growth is just one aspect of the overall development process, and, as has been reported, several empirical tests demonstrate that correlation with income exist and its positive, but efforts are encouraged. What I mean is that welfare means also income-economic growth, but income growth alone doesn't imply welfare, this is the way. Countries like BRICS, show all great GDP increases, but in fact thousand of inhabitants are still living below poverty line. At the same time, a more comprehensive development process is something not easy to obtain, which in particular requires the supervision of specific authorities, national or international where political instabilities exist. Indeed, as we have seen, the success of intervention policies depends largely on a strong institutional framework. Thus, basically these are the links that affect all developing countries and on this basis I started to focus deeply on what are the key drivers to improve their living standards and/or income. This variable indeed, is usually associated with output (GDP) and for its simplicity as been chosen as the main indicator expressing economic growth. Assuming that an increase on the overall income is spread across many people as possible (namely effective income redistribution system has to exist thus effective tax system), it can be recognized as the tool for improving poor people conditions by acting on specific elements reported by academics (i.e. Kalecki) and organizations (i.e. World Bank, 8<sup>th</sup> ECA Conference) that are: saving rate and investment. These two are one complementary to the other, strictly correlated often are represented as two faces of the same medal. Intuitively more income leads to more consumption and saving rate as well (depending on individual preferences), higher saving rate leads to more investment in the future, even if savings are also correlated to specific monetary policies as we have seen in third chapter (namely financial liberalization reform). So, how increase overall income? This has been the main

focus of the chapter one, and thousands and thousands of words are been written from different scholars recognizing mainly interest rate as the key driver of such linkages. Contemporary in literature, if the symbol of the classical economic theory still is Solow model with his presumption of two basic inputs of growth that are capital and labour, new intuitions are been inputs for developing new theories and models. Indeed in recent times, academics instead of focusing in absolute terms, namely developing models of economic growth that should be applied for each economy, started to analyze what are the basic relevant differences among countries and how explain those. In this sense, original are the theories expressed by Caselli, Galor & Zeira, Sachs and others who together with capital, identified in particular education (again), geography, cost technology and institutions as elements expressing different patterns of growth. Others authors at the same time, focused instead on the financial drivers, namely on the achievement of specific saving rate (i.e. Harrod, Domar). Along this discussion it possible to derive out the following conclusion, economic (income) growth is strictly dependent on capital (thus investment) and savings, that can be stimulated with the presence of well established and efficient financial system. Here lies the core point of my thesis, here I wanted to spend more efforts in deriving out all the macroeconomic and monetary policies to guarantee successful growth. Financial system indeed, is the engine of the overall economy, a tool to reach positive achievements in the future. I started to cover this matter in the third chapter, starting from an article of professor Pagano, who identified with a mathematical equation this bond among financial system and the economic growth parameter. Others studies have also tested empirically this relationship, for example the King & Levine one. From their paper indeed results that bigger is the size of financial intermediaries and faster physical accumulation-investment rate these countries achieve. Moreover, another study of Odedokun tested the positive relationship among financial system and exports. After having recognized the positive contribution a well established financial system has, I analyzed where on what variables it acts and on what are the characteristics of an efficient financial system and its implication (FDI). Due to the first concern what results is that financial system produce positive implications on the credit market; namely it encourages capital allocation through a better risk amelioration and saving pooling, contributes to monitor the fund implementation and to manage several risks (Lewis). It is the main purpose of non distort financial system. Credit is important to sustain investment in the future, and to attract foreign investors; however it is not easy to make the system acting correctly. In this regard, focusing on the impact

of credit in a developing countries, Hulme and Mosley identified the main problems making fails credit for poor people, that basically is the lack of trust and information. Moreover, we have seen the positive remarks it can lead, in terms of poverty reduction and cost technology reduction, but also possible ways to improve performance and sustainability.

On the other side, a great part of the chapter was focused on those manoeuvres favouring a successful financial systems. On the basis of works of King & Levine, Stiglitz, Shaw and on research reports of World Bank two are the important presumptions to be pursued that are macroeconomic stabilization and economic liberalization/repression. The first concerns with reducing high inflation, excess in debt, avoiding balance of payments crisis, all thing on which World Bank is focusing from several years through Structural Adjustment Lending (SAL). Macroeconomic stabilization is the main requirement for the implementation of macroeconomic and monetary policies and for avoiding interest rate increases which would imply less investment! The second concern instead deals with the discussion upon economic liberalization reform (supported mainly by McKinnon & Shaw and World Bank) or repression (supported by Stiglitz). Basically the since externalities and other market failures, saving rate is low and doesn't lead to accumulate enough capital, namely underinvestment. In this framework, while the first support the idea of raising savings (leading to growth) through financial liberalization that would imply acting on both quantity and quality (increasing investment's efficiency, namely capital allocation), the opponents support policies of interest rate ceilings below the equilibrium rate using monetary expansion (thus inflation) to promote capital formation. In other words, liberalization means favouring competition within financial supply allowing to reduce average interest rate, with the final goal of promoting capital accumulation and its efficient use. The argument sustained by McKinnon with empirical tests showing the positive implications for economic growth is enhanced by the Shaw's paper upon financial deepening (strictly correlated with financial liberalization), which is important to achieve a specific level of information efficiency, technology diffusion and the development of new financial instruments to satisfy the different needs and I strongly support it. Another issue due to liberalization of the market is privatization, emphasized by World Bank as well. It means open the market to foreign direct investment (FDI) that however, can be attracted by fostering it with a good regulatory framework, both political and financial (i.e. due to the contract enforcement), but also with specific fiscal and economic incentives within a context of well establish infrastructures (roads, ports and so on). These are the correct presumptions for a

well working of foreign privatization within a comprehensive process of development, otherwise countries risk to experiment strong income and social imbalances as the Chinese and Indian cases. However the debate form liberalization supporters and other authors claiming for financial repression, as a device to avoid problems of moral hazard and adverse selection is still open, focused on the (key) variable that is interest rate, around which a country establishes its monetary and financial decisions. In this regard, it is important to recall the suggestions of Dornbush & Reynoso as well as those of Houssain & Chowdhury which enlightens the role of the variable inflation. In particular, I deepened the matter analyzing through empirical proves, the link among inflation rate and its influence on “real” interest rate and economic growth (i.e. Tobin effect). As it has been showed inflation can be a variable leading to growth by inducing portfolio shifts from financial assets (whose value declines because of inflation) to real investment even if just within a specific interval, thus it can be a positive but also a dangerous variable.

Finally, I’ve analyzed another variable both linked to developing countries and economic growth, that is aid. Indeed, from one side it is linked to developing countries since it is a tool experiments by many international organizations and World Bank in particular, to devote funds to these regions; and on the other side, it is also correlated to economic growth because once having tested its effectiveness (i.e. Burnside and Dollar study), it can become a specific driver of growth, since it can be used as a source to make investment (i.e. Chenery model). In this framework, after surveying briefly the criteria eligibility fostered by some key statistics, I decided to spend many efforts on highlighting the contribute of aid in term of economic growth, that however lies on the belief that right polices are carried on (conversely budget deficit or high inflation for example make it ineffective). On this basis, I developed the final pages that analyze possible innovative instruments to make more effective aid and satisfy the needs of local rural populations. A new path of development finance is generally claimed at international level as expressed by the UN Preparatory Committee for the Monterrey International Conference on Financing for Development; and it is also claimed by me, since I think there is space for that. I want just mention my idea upon possible alternative investment for private sectors, who through an international organization as World Bank or correlated agencies can transfer such funds for the specific purpose of building infrastructures! Finance can contribute to development through correct financial monetary and financial policies that we have seen (namely saving rate), but also in these terms (infrastructures terms), that is making closer social needs with the private investor needs of taking



return from investment. In particular, what I wanted to underline at the end of chapter four, is that from one side, the activity of selecting destinations countries has to be deepened and made on the basis of domestic needs measured by indicators as Human Development index or Social index and so on, but also make aid dependent to efforts spent by local governments, namely corruption level and democracy diffusion. After it, the intermediary role of an international agency would be to find the appropriate investors who decide to invest their money aware that they will get a low (but positive) return along many years. Moreover, the role of the agency is also that of to make control and supervise the fund implementation with the help of local financial institutions. Here, as I recall in third chapter enters all the benefits seen of having a well established, efficient financial system. The achievements of MDGs and in particular eradication of poverty and provision of infrastructure capacities to sustain economic and social development both on sustainable basis are some of the objectives of the development finance (Rao). However, since still doesn't exist on the market a demand and a supply of these kind of financial instruments, institutional interventions are essential for the fulfilment of the aspirations of poor societies. Actually, a branch of World Bank group, the Multilateral Investment Guarantee Agency (MIGA) is providing risk coverage for eligible investments in its member countries, but these operations since are not so expanded provide a small contribution, thus significant progress has to be made in this way. In this framework, I want to mention the case of Cameroon as perfect practical idea of my theoretical idea. Cameroon is not among the poorest countries in the world even if people average income per year is a bit more than one thousand dollar. Moreover the country is strongly affected by a lack of regional interaction since urban areas where most of the population lives, and rural areas, where people (namely farmers) produce food, are not linked each other. This implies that a lot of food is destroyed since the lack of transportations as well as of machineries to process it. Starting from this figure, the local government decide to put as first point of its Growth and Employment Strategy Paper 2010-2020, the development of adequate infrastructure and renewable energy plants, that moreover provide an essential way to increase local employment! As the same time, much emphasis has been given to the financial instruments used, that mainly are a new fiscal policy, an effort to reduce domestic debt, microfinance and the banking system (more effective). Thus, it can be derived how the conclusion derived in the different chapters come together in the presentation of Cameroon's case, where strong efforts come from institutions, which derived a plan that recognized the important role stressed by financial system through efficient

intermediaries and micro-finance products (to cover the different needs). They also recognized the role of private sector, with particular reference to foreign direct investors, the role of new monetary and fiscal policies within a context of more efficient use of international aid, with the hope of future innovative financial instruments to facilitate its transactions and negotiations. In this sense, Cameroon represents a good changing example, with the will of moving toward a future better perspective for the country in a sustainable way over the time. World is changing and changes are required. All people have to spent efforts for doing this! Each child when start its life has the right to have an happy infancy and same conditions for an adequate future life (in terms of food access, primary education, health services) as well. I will always regard it as a key priority for the humanity, hoping it will make reliable in the next future, even later MDGs deadline.

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## **OTHERS**

My personal notes taken from courses attended during past years (Labor Economics, Storia Economica, Global Macroeconomics, Macroeconomic Policies).