HUMAN CAPITAL, ENVIRONMENT AND ECONOMIC DEVELOPMENT

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ABSTRACT

We propose a generalized economic growth model that incorporates endogenous human capital in terms of education and health as well as environment in terms of population growth and income inequalities. Since the equilibrium is not pareto efficient, the government taxes households to finance healthcare and education i.e human capital in order to boost development highlights by economic growth i.e welfare and environment. The results find leave emerge the fact that, environment and inequalities on the one hand as well as human capital on the other hand, are crucial linkages explaining poverty and economic retard, thus necessitate economic policy to be conducted by the social planner in order to render the market equilibrium pareto optimal in developing countries

Keywords**:** education, healthcare, sustainable growth, inequality, environment
JEL Classification**:** D31, D63, H41, O31, 032, 041

INTRODUCTION

Environmental degradation caused by population growth and inequalities on the one hand, have emerged a long time ago since the roots of economics (Malthus, Thomas, 1766-1834) and Luther, Tweeten,(1989) The problem continues in this twenty first century despite of the fact that, sustainable development was introduced in the years 90. Therefore, the problem needs to be understood more, specifically in the concern of its nature, causes and consequences as well as the linkages of economic inequalities (Anand and Seagal, 2008 ; Johnson and Papageorgiou, 2020) and environmental degradation (Dasgupta, 2021 ; Nordhaus, 2019 ; Stern, 2007). Because when studied separately, environment and inequality leave emerge missed links, thus must be studied together (Douenne and Fabre, 2022), the same thing is viewed according to China latest Five-Year Plan on

Economic Research. Indeed, there is a growing literature on the interactions between inequality and the environment (Fullerton, 2011 ; Bento, 2013 ; Banzhaf, Ma and Timmins, 2019 ; Hsiang, Oliva and Walker, 2019 ; Cain et al, 2024) who bring research on different channels of links between the two evocated components in the economic literature. This article is based partly on Moritz et al (2025) on the one hand where environmental degradation and economic inequality are challenges to work with through the cost of the policy generated among households, environmental quality benefits and outcomes explaining the need for this topic to continue in future research. On the other hand, human capital in term of education or R&D is recognized to be a crucial mechanics of economic growth (Romer, 1986, 1990 ; Lucas, 1988 ; Azariadis Drazen, 1990, Kuhn and Prettner, 2016, Baldanzi et al, 2019, 2021) and it also keeps playing as an economic booster when the quality of children is taken account in its accumulation process (Galor and Weil, 2000, 2011 ; Loubaki, 2017), thus through the time health is also introduced inside the economic growth models (Baldanzi et al, 2021) and specifically in Low income countries (Loubaki and al, 2015). Finally, the article uses also the results find by Parui and Prettner (2025) to conduct the analysis which shows that, private market equilibrium the one which leave parents finance alone both medical care and education for their children, has a negative impact on the environment which are endowed of inequalities, leading to poverty and economic retard. We display environment and inequalities linkages provided by Parui and Prettner (2025) as a sign of the need of public intervention for regulation in developing countries where inequality and environment linkages give bad results and we show that, sustainable development is a Pareto optimal equilibrium leading to growth and development since the private equilibrium is controlled by the social planner

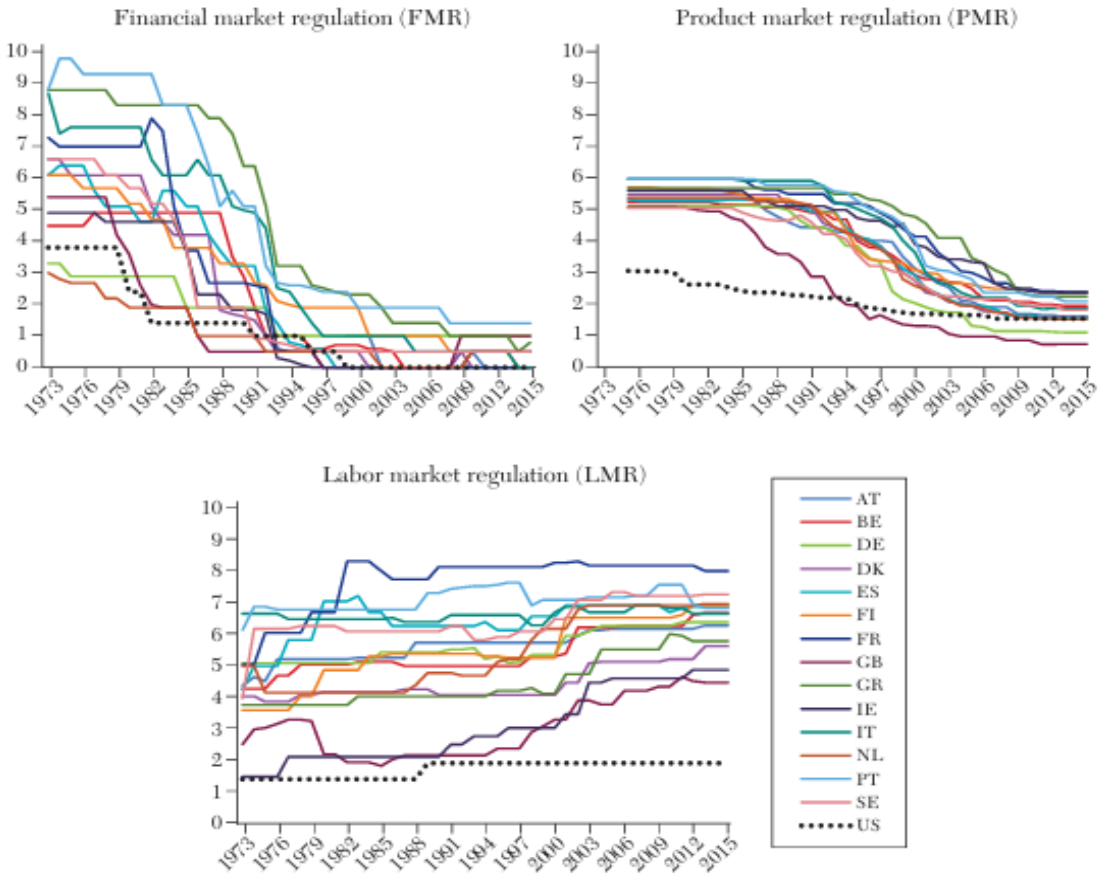


Figure 1. Indices of Regulation in United States and European Union (1973–2015)

Source : Parui and Prettner (2025)

Human capital in the forms of education, experience, goods (Lucas, 1988; Stockey, 1988; Rebelo, 1991; Caballe and Santos, 1993; Mulligan and Sala-i-Martin, 1993; Barro and Sala-i-Martin, 1995a.) received attention in the recent literature on growth theory but the relationship between health and economic growth received less attention in the literature of economic growth[1].. Recent work on endogenous growth

[1] Two preliminary efforts in this direction are Ehrlich and Lui (1991) and Meltzer (1995). Also, the empirical work of Barro (1996) and others suggests that health status, as measured by life expectancy or analogous aggregate indicators, is an important contributor to subsequent growth. In fact, initial health seems to be

theory applies, in particular, to discoveries of medicines or medical procedures (Romer, 1986; Lucas, 1988; Rebelo, 1991)4. The Barro (2013) describes a framework as an extension of the neoclassical growth model to incorporate a concept of health as a capital. The results found are: better health tends to enhance economic growth. At the same time, advances in economic performance encourage further accumulation of health capital. The model includes a direct impact of health on productivity. That is, for given quantities of labor hours, physical capital, and worker schooling and experience, an improvement in health raises according to the growth literature presented, health plays a crucial role in that purpose.

In this article, we want to understand development through growth and welfare in regard to human capital accumulation on the one hand such that, its components are education and health, whereas, environment is concerned by income inequalities and population growth like stipulates the literature. Environment is endowed of social inequalities among population of the country which leave emerge the need of the social planner intervention to regulate the market through the finance of environmental quality and human capital in order to achieve the pareto optimal equilibrium. To succeed to do that, we need to find an equilibrium between cost and benefit since education and health are costly due to population growth reducing the economic growth and welfare (see China and the Denmark programs on the reduction of population growth), labor productivity increase does the same thing for profit maximization firms which reaches the economy at the whole with taxed levy by the social planner. In contrast to the basic models used to carry the study i.e Pintu and Prettner, (2025) and Moritz et al (2025), this article is a theory of economic development which uses modern growth theory to conduct the study of developing countries issues like Sub-Saharan Africa and focuses on the environment problem in regard to population growth and inequality generated to yields development or economic growth and welfare, the market efficient leave emerge disorders ruling out growth sustainability, therefore, to supplement the missing component we address the issue of the social planner for

a better predictor than initial education of subsequent economic growth

economic equity. Our model is structured as follows, in section2 we develop the generalized growth model with endogenous fertility, in section 3 we introduce the social planner intervention, in section4 we conclude.

THE MODEL

We consider an economy with three overlapping generations model where we can find children, adults and retirees. Adults decide the consumption level, c_t , the saving, s_t the number of children, n_t , the investment on education for their children, e_t and the investment on health for their children, m_t

The time supplied in the labor market, is the one not spent by adults raising their children, educating them and carrying their health. Finally, children don't make any decision, instead, they are fed, educated and cared by their parents. The retirees consume their saving which represents their resting income once old.

Utility Optimization

Following Prettner and Werner (2016) as well as Prettner and Parui (2025), the preferences of a single parent household are captured by the following utility function :

$$u_t = \ln(c_t) + \beta \ln\big((R_t - 1)s_t\big) + \varepsilon \ln(n_t) + \theta \ln(e_t) + \sigma \ln(m_t) \quad (1)$$

Where $\beta, \varepsilon, \theta, \sigma \epsilon (0,1)$ are respectively the intergenerational discount factor, the utility weight of the number of children, the utility weight of the number of children education and the utility weight of children health, $R_t = 1 + r_t$ is the gross interest rate

That function is also used in Galor and Weil (2000) and Galor (2011) leading to a trade-off between child quantity (the number of children) and child quality (the education)

We assume $\varepsilon > \theta + \sigma$ so that, each parent always has children, thus always invest in education and in healthcare

Adults already pay income taxes $\tau \epsilon (0,1)$ to the government for healthcare and human capital finance as we'll see it later on after have shown that the equilibrium is not pareto efficient and introduce the social planner with the tax

rate, therefore, the remaining is their disposal income and their budget constraint can be written such that

$$(1-\tau)(1-\varphi n_t - \pi e_t n_t - \Delta m_t n_t) w_t h_t = c_t + s_t \quad (2)$$

Where φ, π, Δ are positive parameters expressing respectively the opportunity cost in terms of child rearing, in terms of education per-child and in terms of health investment per-child, w_t is the wage rate income and h_t is the effective labor endowed of human capital or not depending on its level between 0 and 1

In conformity to the optimization problem of Prettner and Parui (2025) consisting on maximizing the utility function (1) within the budget constraint (2), yields the first order conditions which are

$$c_t = \frac{1-\tau}{1+\beta+\varepsilon} w_t h_t \quad (3)$$

$$s_t = \frac{\beta(1-\tau)}{1+\beta+\varepsilon} w_t h_t \quad (4)$$

$$n_t = \frac{\varepsilon-\theta-\sigma}{\varphi(1+\beta+\varepsilon)} \quad (5)$$

$$e_t = \frac{\theta\varphi}{\pi(\varepsilon-\theta-\sigma)} \quad (6)$$

$$m_t = \frac{\sigma\varphi}{\Delta(\varepsilon-\theta-\sigma)} \quad (7)$$

Equation (3) is per-family consumption which depends on income, (4) is the saving also function of income whereas, the number of children is highlights by equation (5), per-child education is represented by equation (6) and finally, equation (7) is per-capita healthcare.

The Production Sector

The production function follows Romer (1990) and Jones (1995) like in Prettnet and Parui (2025) such as

$$Y_t = (H_{t,M}^{\varepsilon(y)})^{\alpha(y)} (H_{t,y})^{\beta(y)} \left[\int_0^{At} x_{t,idi}^{\gamma(y)}\right] \quad (8)$$

Where, $\alpha(y) + \beta(y) + \gamma(y) = 1$ which respectively are the elasticities of the healthcare sector impact on human capital or labor, since $H_{t,y} = h_t L_t$, where h_t is labor productivity or human capital when positive otherwise, it is a routine task the good production and intermediate goods, ε_y measures the strength of the healthcare effect on labor productivity, $H_{t,y}$ is the composite of human capital mixed with routine task of the

production sector and $H_{t,M}$ is health sector impact on workers endowed of human capital or not

Following Romer (1986), we assume all the intermediate goods to be the same i.e $x_{t,i} = \bar{x}$ indeed the function (8) becomes such that, (9) i.e $Y_t = (H_{t,M}^{\varepsilon(y)})^{\alpha(y)}(H_{t,y})^{\beta(y)}A_t\bar{x}^{\gamma(y)}$

$$Y_t = (H_{t,M}^{\varepsilon(y)})^{\alpha(y)}(H_{t,y})^{\beta(y)}K_t \quad (9)$$

Where, $A_t\bar{x}^{\gamma(y)} = K_t$ is the stock of capital used in good production

Optimization yields the wage rate income of the production function and the interest rate i.e

$$w_{t,y} = \beta_y \frac{Y_t}{H_{t,M}^{\varepsilon(y)}} \quad (10)$$

The wage rate is the fraction of human capital part in production

$$R_t = (H_{t,M}^{\varepsilon(y)})^{\alpha(y)}(H_{t,y})^{\beta(y)} \quad (11)$$

The interest rate is the composite of human capital used in production under healthcare action

The Environment Sector

Environment evolution is expressed such that,

$$E_{t+1} - E_t = \delta_E(E_t^{-\mu(E)})^{\alpha(E)}(L_{t,E}^{-\gamma(L)})^{\beta(E)}(H_{t,M}^{\varepsilon(E)})^{\gamma(E)} \quad (12)$$

Where ; $\alpha(E), \mu(E), \beta(E)$ are the respective elasticities of the environment degradation of the society, the impact of social inequalities in the society and of human capital in terms of population size, $\gamma(L)$ is the impact of population size on the environment endowed of inequalities and poverty which when too high, brings disorders in the whole society and raises criminal actions ruling out population security even at home ;

Like before, we have, $\alpha(E) + \beta(E) + \gamma(E) = 1$ where, δ_E is the environment productivity and $\mu(E)$ is the impact of social inequalities in the society which represents the space or the environment alone, $L_{t,E}$ is population size in the environment i.e the whole society, $H_{t,M}^{\varepsilon(E)}$ is the medical care impact on the environment i.e on population size where $\varepsilon(E)$ measures the impact of health in the society and that component is quite low but should be high enough to allow development

Lemma1: *inequality,* $-\gamma(L)$ *and social disorders,* $-\mu(E)$ *impact negatively the environment quality evolution expressed by equation (12)*

Proof: taking the derivative of equation (12) in respect to those parameters, yield a negative solution. Therefore, the country must fight against those two components to establish sustainability, see definition1

Definition1 : Sustainable Development, g^E is defined by the environment growth rate such that, $g^E = \frac{E_{t+1}-E_t}{E_t}$

Proposition1 : *Development Sustainability is expressed such that following,*

$$g^E = \delta_E (E_t^{-\mu(E)})^{\alpha(E)-1} (L_{t,E}^{-\gamma(L)})^{\beta(E)} (H_{t,M}^{\varepsilon(E)})^{\gamma(E)} \qquad (13)$$

Equation (13) highlights healthcare as a mechanics of economic development i.e growth as we'll show later on and welfare. We ensure the equilibrium to exist if, $\varepsilon(E)\gamma(E)$ equal to $(-\mu(E))(-\gamma(L))(\beta(E)(\alpha(E)-1) < 0$ thus needs other economic policy tools to enter in the system and we'll arrange it later in the article. Moreover, applying equation (12) to definition1 yields the result i.e equation (13). Since, we've seen that environment evolution in term of parameters is represented by $-\mu(E)(\alpha(E)-1)(-\gamma(L)\beta(E)) < 0$ and healthcare by, $\varepsilon(E)\gamma(E) > 0$ that we are trying to make equal, therefore *first* healthcare is an economic component booster but development sustainability remained blocked in that way since the environment growth can't display development, thus as already said, it must be corrected with another mechanism to ensure an equality because it is difficult to establish it that way i.e between environment and healthcare alone in growth rate terms, we need to consider another component which will allow the equilibrium first and ensure that optimality can be reached. According to the literature, human capital and no more education alone[2], can be introduced to make a trade-off needed between different components for equilibrium and optimality to hold.

Human Capital Accumulation

Human capital also accumulates depending on the environment endowed of inequalities and social disorders in a laissez-faire system as just viewed before and instead of being

[2] See Loubaki (2017), The Theory of Investment in Schooling

only costly, it brings peacefully evolution of the environment inside the society because of the knowledge transmission making people less violent and less poor since it leads to a job, thus income which is needed to live everywhere in the world. Therefore, the aim is to find through healthcare and human capital accumulation, a way trade-off can be established between quality and quantity for demographic transition to ensure economic growth and welfare characterizing development as in Galor and Weil (2000), Galor (2011), the human capital accumulation function containing health and environment impact can be written such that (14) i.e

$$h_{t+1} - h_t = \delta_h (H_{t,M}^{\varepsilon(E)} E_t^h e_t h_t)^{\alpha(h)} (H_{t,M}^{\varepsilon(L)} E_t^L n_t L_t^h)^{1-\alpha(h)} \quad (14)$$

Where $\delta_h > 0$ is the productivity of human capital sector, the quality elasticity is, $\alpha(h)$ and the quantity elasticity is, $1 - \alpha(h)$, indeed function (14) captures the trade-off between quantity and quality in the society according to healthcare existence. Unfortunately, social regression in the environment highlights by, E_t^L is a retarding component of human capital accumulation[3] in the society whereas the enhancing human capital accumulation in the environment is E_t^h coupled with education may leave emerge demographic transition[4] thus the idea is to equilibrate the human capital and environment evolutions for optimal growth to settle. Whereas, $H_{t,M}^i$ is the impact of healthcare on human capital accumulation when $j = \varepsilon(E)$ and the impact on population size endowed of unskilled labor, $L_{t=n_{t-1}}^h L_{t-1}^h$ when $j = \varepsilon(L)$. Therefore, rich and poor healthcare and human capital accumulation are not the same there are inequalities in health care access since $\varepsilon(E) > \varepsilon(L)$ and in human capital accumulation since the poor are less willing to pay for education of their children then the rich people who choose quality rather than quantity.

Definition2 : human capital growth rate is expressed by $g^h = \frac{h_{t+1} - h_t}{h_t}$

Proposition2 : *human capital growth rate is expressed such that,*

[3] It can be early fecundity for example in low-income countries

[4] low fecundity, a stable population growth

$$g^h = \delta_h (H_{t,M}^{\varepsilon(E)} E_t^h e_t)^{\alpha(h)} h_t{}^{\alpha(h)-1} (H_{t,M}^{\varepsilon(L)} E_t^L n_t L_t^h)^{1-\alpha(h)} \quad (15)$$

Proof : applying definition2 to the equation (14) brings the result highlights by equation (15). Such growth rate is stable when spillovers are at least equal to disorders or retard i.e $H_{t,M}^{\varepsilon(E)} E_t^h = H_{t,M}^{\varepsilon(L)} E_t^L$ and $\alpha(h)\varepsilon(E) = (1 - \alpha(h))\varepsilon(L)$. Equation (15) leaves emerge the fact that human capital is not sufficient compare to population growth since the comparative elasticities are : $\alpha(h)(\alpha(h) - 1)$ versus $1 - \alpha(h)$ where the first is lower than the second since $0< \alpha(h) <1$ making the necessity for the social planner to establish the optimality specifically in order to increase development which is a composite of human capital growth rate and the environment and also the welfare gain in social terms. Moreover, when per-capita human capital increases, it doesn't allow the accumulation to reach a good level because it remains far from the equilibrium. Therefore, the equilibrium looked for, must be properly studied in order to reach development, now we compute factors together, then optimality of the equilibrium can be looked for to ensure growth and welfare.

Definition3 : the economic development is composed of the economic growth and welfare such that, the first is highlights by the environment since population size is inside and human capital accumulation as well as the good production growth rates too

The Equilibrium Growth Rates

Since we have proved that total growth is highlights by healthcare and human capital, we announce the market growth equilibrium, $g = g^h + g^E$ to be the sum of the environmental and human capital growth rate which can lower devastating development factors making disorders in the environment, caused by too low human capital accumulation and bad health because of poverty, accusing economic retard in the whole country.

Proposition3 *: the growth rate is expressed by equation (16) i.e*

$$g = H_{t,M}^{\gamma} \left(n_t L_t^h\right)^{1-\alpha(h)} \left(L_t^{-\gamma(L)}\right)^{\beta(E)} E_t(\delta_h + \delta_E (E_t^{-\mu(E)})^{\alpha(E)-1} \quad (16)$$

Proof : applying the sum of equations (15) and (13) leads to

$$g = \delta_E (E_t^{-\mu(E)})^{\alpha(E)-1} (L_{t,E}^{-\gamma(L)})^{\beta(E)} (H_{t,M}^{\varepsilon(E)})^{\gamma(E)}$$
$$+\delta_h (H_{t,M}^{\varepsilon(E)} E_t^h e_t)^{\alpha(h)} {h_t}^{\alpha(h)-1} (H_{t,M}^{\varepsilon(L)} E_t^L n_t L_t^h)^{1-\alpha(h)}$$

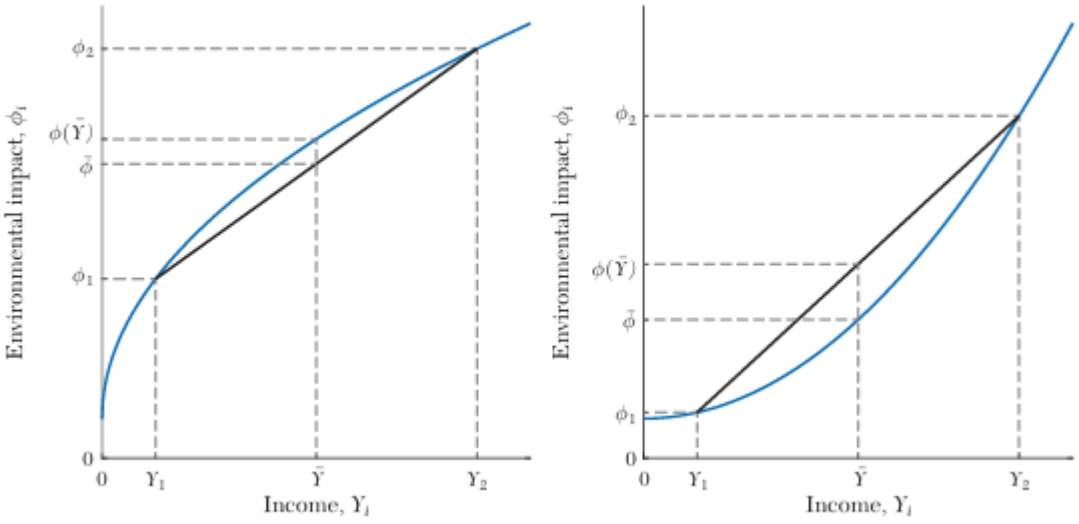
Assuming $\gamma(E) = \alpha(h) = \gamma$ i.e medical care and environment investment are the same as well as, $E_t^h = E_t^L = E_t$ i.e environment effects are the same, yields the following growth rate expression above in proposition3,

$$g = H_{t,M}^{\gamma} \left(n_t L_t^h\right)^{1-\alpha(h)} \left(L_t^{-\gamma(L)}\right)^{\beta(E)} E_t(\delta_h +$$
$$\delta_E (E_t^{-\mu(E)})^{\alpha(E)-1}$$

When human capital accumulation and healthcare are gathered with environment, we find that, it acts positively in the society since, $1 - \mu(E)(\alpha(E) - 1) > 0$, in contrast population growth decreases development since, $-(1 - \alpha(h))\gamma(L)\beta(E) < 0$ but healthcare improves development highlighted by $H_{t,M}^{\gamma}$, the inequality and poverty parameter is, $-\gamma(L)\beta(E)$ acts negatively, thus an equal and poor society raise social problems like non security, crimes and finally, we can see that productivity without human capital and healthcare actions, are negative for both the rich and the poor because it remains far from the middle.

This experience had shown the necessity to conjugate human capital accumulation and healthcare but the economic policy is not conducted yet, so now we introduce the social planner who taxes household to establish the optimal equilibrium.

Figure1 highlights the environment Engel Curves for development purpose (Source : Moritz and al (2025))



THE SOCIAL PLANNER INTERVENTION

To close the model, we need to do two things, compute the capital stock as a debt contracted by the government and to highlight the income fraction taxed by the government where the sum of the both is the public income to use for healthcare and human capital finance to support environment quality.

First, capital is expressed such that, $K_t = s_t R_t$ where $w_{t,y} = \beta_y \frac{Y_t}{H_{t,M}^{\varepsilon(y)}} = w_t$ and

$s_t = \frac{\beta(1-\tau)}{1+\beta+\varepsilon} w_t h_t$ it is hired by the government to finance healthcare and human capital, and after computation, it can be expressed such that

$$k_t = \beta(y)\frac{\beta(1-\tau)}{1+\beta+\gamma} \qquad (17)$$

Is public debt to finance human capital accumulation and healthcare

Where, $H_{t,y} = H_{t,M} = H_t$, $k_t = \frac{H_t}{h_t}$ and $\varepsilon(y)(\alpha(y) + \beta(y) - 1) = 1$

Second, since children cost is, $\rho^e e_t n_t + \rho^m m_t n_t$ where ρ^e, ρ^m are the respective per-capita fraction cost of rearing the child through time included inside education and healthcare. The fraction cost in income is $\rho^e e_t n_t + \rho^m m_t n_t = \rho^e e_t n_t +$

$\rho^m m_t n_t = n_t(\rho^e e_t + \rho^m m_t)$ therefore the cost fraction of income assuming, $\rho^e = \rho^m = \rho$ is given by,

$$\theta^{M,h} = \frac{\theta(1+\varphi^{\varepsilon})\beta_y}{\pi(1+\beta+\varepsilon)} \qquad (18)$$

The government income tax which represents the economic policy can be written such that

$\tau(1-\theta^{M,h})$ =*Taxes*

Total government income rate is expressed such that following, $G = k_t + \tau(1-\theta^{M,h})$

$$G = \beta(y)\frac{\beta(1-\tau)}{1+\beta+\gamma} + \tau(1 - \frac{\theta(1+\varphi^{\varepsilon})\beta_y}{\pi(1+\beta+\varepsilon)}) \qquad (17)$$

Where $\tau > 0$ is the tax rate on income

Income distribution for population can be written such that a function, in order to express the fact that public income is devoted to health and population size composed of skilled and unskilled labor is hL endowed of inequalities, γ and poverty, μ we can write income of public sector such that spendings i.e, $G = n_t((hL)_t^{\mu} + m_t(hL)_t^{\gamma-\mu})$ and yields the economic growth rate expressing welfare as improvements in the environment such that equation (19) i.e,

$$g^D = \frac{G}{(hL)_t n_t} = (hL)_t^{\mu-1} + ((hL)_t m_t)^{\gamma-\mu-1} \qquad (19)$$

Equation (19) expresses human capital and population size, hL i.e routine tasks conjugate to specialized tasks linked to inequality and poverty, γ as well as the impact of inequality in the environment, μ

Proposition4*: public economic policy improves health and decrease both inequalities and its impact on the environment caused by human capital*

Proof: differentiating the function in respect to the concerned parameters yields to the result found.

Definition4: an equilibrium, g^D is Pareto optimal or is an optimum of Pareto if there doesn't exist another feasible allocation, h^D such that, $u_t(h_i^D) > u_t(g_i^D)\ \forall i \in \{1,2,\dots,N\}$ i.e the set of feasible allocations is compact which means that, suitable continuity assumptions on preferences lies and when production is possible.

Proposition5: *the social growth equilibrium described by equation (19) is pareto optimal since it belongs to a compact set*

To show that, g^D is a Pareto optimal equilibrium, we define, $V(g^D)$ such that

$V(g^D) = Max\{\sum_{i=1}^{N} b_{i,}(g_i^D,\ u_t(g_i^D)\}$ where $g_i^D \in IR$
Since IR is a compact valued and continuous correspondence, then $V(g_i^D)$ is continuous, thus $V(g_i^D) \to V(g^D)\ \ \forall i \in \{1,2,\dots,N\}$
By definition, $b_i\left(g_i^D, u_t\left(g_i^D\right)\right) = 0\ \ \forall i \in \{1,2,\dots,N\}$ then $V\left(g_i^D\right) = 0$ therefore, the problem is solved i.e $g_i^D \to g^D$ for all $i \in \{1,2,\dots,N\}$. Moreover it is finally closed and bounded i.e belongs to a compact set when letting the equilibrium growth rate, g^E admits a sequence of growth rates, $(g_1^D, g_2^D, \dots, g_N^D)$ such that $g_i^D = \frac{G_i}{(hL)_i n_i}$ where *i=1,2,…,N* then we can see that, there exist $\vartheta > 0$ such that $g_i^D = \frac{G_i}{(hL)_i n_i}$ is includes inside the closed ball of center, $\vartheta > 0$ and of radius *1* thus is closed and bounded which means is compact, therefore the equilibrium is pareto optimal since each component of the vector converges toward $g^D < 1$. Otherwise, since utility functions are strictly increasing, it is possible to choose $h_i^D \forall i \in \{1,2,\dots,N\}$, then we have, $\sum_{i=1}^{N} b_i\left(h_i^D, u_t(h_i^D)\right) = 0$ is a contradiction.

CONCLUSION

We have shown that, in a given country where prevail inequality in human capital and in healthcare inside the environment leading to poverty and economic retard, growth can be rendered optimal in the Pareto sense since some conditions are filled i.e a link is made between environment and inequality followed by public human capital finance such as education and healthcare. The result is useful for public policy advices to policy makers specifically in low-income countries where crimes are raising because of globalization and the need for new technology of communications claimed by the youth of poor families.

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