

# Role of Education, Media and Expenditures in inclusive growth<sup>1</sup>

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## Abstract

We study an economy with weak justice and security systems and with weak public policy and regulation or little capacity to implement them, and with high barriers to profitable sectors. Such an economy has then very few incentives to pursue key sectors reforms. It has neither appropriate incentive mechanisms to force leaders to provide public services nor adequate leverage to citizens to claim their rights. We look at growth and development opportunities based on the derived demand. We show that there is hope for such an economy to grow up and to generate a win-win situation for all stakeholders if the derived demand is supplied. We then investigate conditions that could stimulate the derived demand supply. We show that little knowledge of public, private and international expenditures in the economy and academic tools are enough, like the informal sector, to trigger the derived demand supply. Our model can serve as guidance to donor and NGO working in developing countries, and media. It shows that the best way to help is to share information about existing and accessible opportunities. It can also provide benchmark to vocational schools and universities that should focus more on providing tools (adapted training and interaction ability) to seize existing opportunities.

*Keywords:* growth, development, monopoly, oligopoly, inequality, poverty

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## **I. Introduction**

Developing countries have been the centre of interest of several well documented studies that successfully put emphasis on the complex environment and propose many key recommendations.

Singh and Barton-Dock (2015) propose policy packages rather than independent activities in sectors. The Systematic Country Diagnostic points out five themes around which activities need to be organized in order to ignite a new development path in Haiti: (i) balancing macroeconomic stability with developmental needs; (ii) improving statistics and analytics; (iii) creating greater economic opportunities and better jobs, including through infrastructure and human capital; (iv) (re)building the social contract; and (v) reducing vulnerabilities and building resilience. Progress on all these themes is needed simultaneously.

Singh (2015) suggests collecting timely data to track public spending appropriately and making it more efficient in different sectors, improving donor coordination to make the most of allocated resources and refining the composition of public spending to enable better service delivery. It also recommends to balance fiscal sustainability and development needs and to having a greater growth dividend: The overall public investment management needs to be improved through a strengthening of project selection, programming, execution, control and evaluation.

Alexandre et al (2013) show that building social cohesion and putting it at the centre of development efforts is crucial for reducing fragility. They point out that social cohesion embodies a convergence across groups who offer the incentive for groups to coexist. As the degree of convergence builds, and groups see their interests mesh with those of others, they become more connected to other groups and ultimately have more incentive to collaborate. Convergence across groups thus serves as an essential element for collective action. For groups to converge, they need to believe that it is better to collaborate than to compete. They need to trust in the fundamentals of the system in which they operate, even if they still distrust the motivations of other groups.

They recommend placing social cohesion as a clear objective of development policies. Resumption of growth and reducing poverty are important but not sufficient, and policies to support growth and poverty reduction will not succeed if they do not also contribute to improved cohesion. Many governments and donor still do not articulate social cohesion in their strategies to deal with fragility. Working toward improved social cohesion requires a good understanding of societal dynamics, as well as adaptability in policies and programs, as societal dynamics evolve and change rapidly.

Those papers are among the best to provide an excellent diagnostic of key issues faced by developing countries and the way to address them as well. They represent a good sampling of many reports and papers financed by external aid and produced annually to help understand developing countries and to provide appropriate solutions.

Our paper is related to those seminal papers but departs from them in two ways.

First, all those papers take good decision-making and implementation associated with leadership and political stability as given. However, they do not show who will certainly take the decision to implement key recommendations. They are also silent on the minimal and necessary implementation conditions. In fact, all the proposed solutions are based on either sound governance or good public policies, or better institutions.

All the recipes automatically fail if none of those conditions is satisfied. But, the reality of developing countries shows that it is hardly difficult to perform and rely on economic and institutional reforms. Can a developing country start to grow and reduce inequality with little reforms? To the best of our knowledge, we are the first to investigate growth possibility and inequality reduction under such conditions.

Second, all those papers use the traditional top down development approach where they investigate key public policy decisions that can help improve the economy. However, such decisions and actions will not likely happen in the short and medium term.

We here take the opposite bottom-up approach, where we investigate key actions educated citizen (middle class) can take to create individual and collective wealth independently of policy and decisions makers. We then seek to provide purchasing and bargaining power to citizens who then can better select leaders or better control leader's actions ex-post.

We study an economy with high barriers to entry in key sectors, with fragile justice and security systems, with lack of coherent public policy and regulation or little capacity to implement them and with inexistence of incentive mechanisms. We investigate growth and development opportunities based on a derived demand.

The paper is organized as follow. Section II presents the model. Section III analyses the results of the model and its impact on the economy. Section IV concludes with avenues for future research.

## II. The Model

We consider an economy with  $Q_1$  the total production (GDP) but with a total estimated demand  $P(Q) = a - bQ$  with  $a, b > 0$  and  $Q = Q_1 + Q_2$ .  $Q_1$  represents the direct production and  $Q_2$  represents the potential production that could derive from the direct production. The total cost to produce  $Q_1$  and  $Q_2$  is respectively  $CT(Q_1) = cQ_1$  and  $CT(Q_2) = cQ_2$  with  $a > c > 0$  and  $c$  the marginal cost of production.

Generally, the production of a good implies the production or consumption of another good. Firms do not often do vertical integration. Those two key assumptions open possibility to supply a derived good.

Let us suppose that such a derived demand noted here  $Q_2$  do not use a hyper sophisticated technology, like conceive and build a supersonic airplane. The production of  $Q_2$  (*What to produce*) only needs two key ingredients: a stock of specific knowledge  $A$  (*How to produire*) and a stock of human resources  $H$  (*whom to produire*) following a simple technology related to the production function  $Q_2 = f(A, H) = \mu A^\alpha H^\beta$  with  $\mu > 0$ ,  $0 < \alpha \leq 1$  and  $0 < \beta \leq 1$  where  $\alpha$  is the rate of knowledge adaptability to production and  $\beta$  is the rate of interaction within the society.  $\alpha, \beta$  are higher in developed countries than in developing countries.

Let us first consider the case where, because of barriers to entry and other constraints only monopoly firms 1 are able to produce  $Q_1$  by maximizing  $\pi_1 = P(Q)Q_1 - cQ_1$  which lead to  $Q_1^m = \frac{a-c}{2b}$  and  $\pi_1^m = \frac{(a-c)^2}{9b}$

Let us now suppose that, because of dynamic effects, new firms 2 can produce the derived good  $Q_2$ . Two groups of firms compete a la Stackelberg. Firms 1 are leaders and produce  $Q_1$  while maximizing  $\pi_1 = P(Q)Q_1 - cQ_1$  and new emerging Firms 2 are followers and produce  $Q_2$  while maximizing  $\pi_2 = P(Q)Q_2 - cQ_2$

At the new Stackelberg equilibrium, we have  $Q_1^s = \frac{a-c}{2b}$  and  $Q_2^s = \frac{a-c}{4b}$ , that is,

$$Q = Q_1^s + Q_2^s = \frac{3(a-c)}{4b} \text{ and } \pi = \pi_1 + \pi_2 = \frac{(a-c)^2}{8b} + \frac{(a-c)^2}{16b} = 3(a-c)^2/16b$$

Since  $Q_2 = Q_2^s = \mu A^\alpha H^\beta$ , we have :  $\mu A^\alpha H^\beta = \frac{a-c}{4b}$

A simple algebra shows:  $\alpha^* = \frac{1}{\ln A} \ln \left( \frac{1}{\mu} \frac{1}{H^\beta} \frac{a-c}{4b} \right)$  and  $\beta^* = \frac{1}{\ln H} \ln \left( \frac{1}{\mu} \frac{1}{A^\alpha} \frac{a-c}{4b} \right)$ , the respective adaptability and interaction rates necessary to produce the derived demand  $Q_2$

Comparing equilibria under the monopoly situation and the Stackelberg situation

Under the monopoly situation where only firms 1 produce  $Q_1^m$ , we have:

$$Q_1^m = \frac{a-c}{2b} \text{ and } \pi_1^m = \frac{(a-c)^2}{9b}$$

Under the Stackelberg situation where firms 1 and firms 2 produce  $Q_1^s$  and  $Q_2^s$ , we have:

$$Q_1^s = (a - c)/2b \text{ and } Q_2^s = (a - c)/4b$$

$$\pi_1^s = (a - c)^2/8b \text{ and } \pi_2^s = (a - c)^2/16b$$

$$Q = \frac{3(a - c)}{4b} > \frac{a - c}{2b} = Q_1^m = Q_1^s$$

$$\pi = \pi_1^s + \pi_2^s = \frac{3(a - c)^2}{16b} > \frac{(a - c)^2}{9b} = \pi_1^m < \pi_1^s = (a - c)^2/8b$$

When the total estimated demand is satisfied, that is, when  $Q_1^s$  and  $Q_2^s$  are produced, the total production (GDP) increases and the economy is better off.

Firms 1 still produce the same quantity but make more profit and are better off under the stackelberg situation than under the monopoly situation. Firms 2 now are in the market, produce and make profit.

Consumers are also better off since prices are lower under the Stackelberg situation than under the monopoly.

It turns out that the entire economy (firms 1, firms 2, consumers) are in a win-win situation under the Stackelberg but not in the monopoly situation.

### III. Implication of the results and impact on the economy

Our result shows that it is possible to enter the market without worsening the current status quo equilibria. Several political economy analysts always refer to the trend to maintain the status quo at any price as the main cause of bad performance in key sector reforms. Au contraire, our results show that it is even possible to improve the ex-ante situation for all, making the rich more rich and the poor less poor.

Our model takes the resource allocation as given, as a constraint beyond control and shows that only two key ingredients matter: the ability to perceive an additional (non-supplied) derived demand ( $Q_2$ ) and the ability to supply it ( $Q_2$ ). The first ability can be sustained by massive media campaign on donor and government projects and on the economy consumption expenditures. Having a decentralised access web platform that provides professionals, enterprises and universities with all the information on opportunities in terms of Government public procurement, donor and NGO purchases is a good start<sup>3</sup>. The second ability refers to vocational and university (with donor support) curricula orientation whose first task should be to train professionals and graduates to supply the market with any derived demand, through a training  $A$  with a level of adaptability  $\alpha^*$  and the ability of interaction  $\beta^*$  to hunt and coordinate human resources  $H$ . By doing so we create a win-win situation among businesses, universities and professionals as illustrated in Fig. 1 borrowed from Waddle (2012). We connect production with

<sup>3</sup> The reader can check <http://www.jobpaw.com> as example of a web platform that connects enterprises, universities and professionals and create interactions between them.

consumption and training, the critical missing gap in developing countries. We also create the conditions for individuals to collaborate and automatically address the issues of mistrust and indifference within the society.

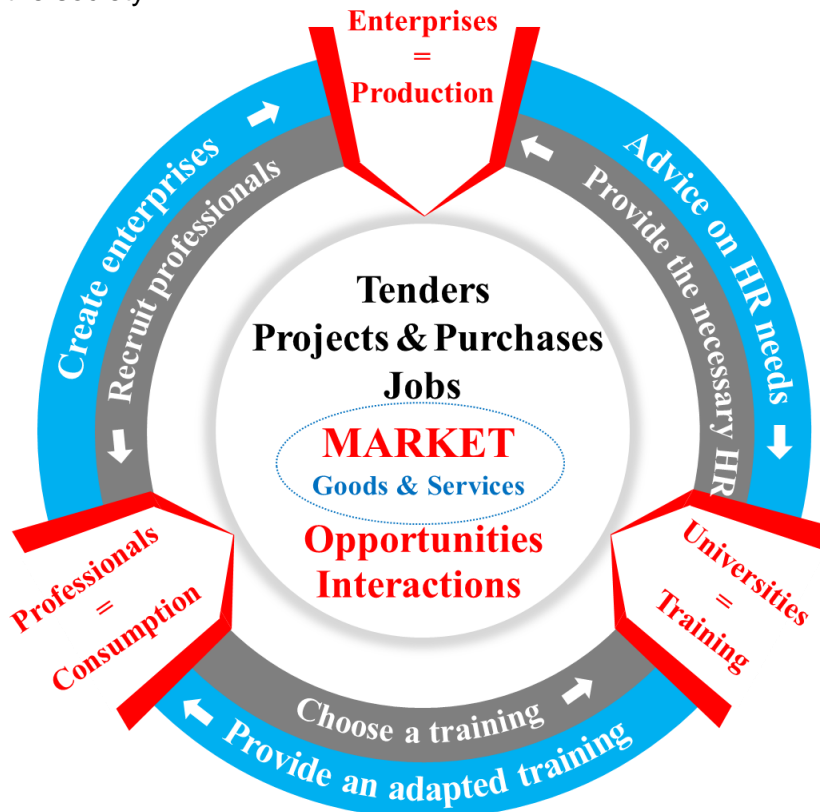


Fig 1: Collective wealth creation process

#### IV. Conclusion

We have studied a typical developing country with dysfunctional justice and security systems, incoherent public policy and regulation or little capacity to implement them, and high barriers to profitable sectors, with lack of appropriate incentive mechanisms to force leaders to provide public services. We have first shown the existence of unexplored opportunities based on the derived demand. We then point out the inclusive growth opportunities and a win-win situation if the derived demand is supplied. We have finally shown that little knowledge of public, private and international expenditures in the economy and academic background are enough to trigger the derived demand supply.

A number of successful initiatives ([Geninov.ht](http://Geninov.ht), [JobPaw.com](http://JobPaw.com), [Solutions.ht](http://Solutions.ht), [Transversal.ht](http://Transversal.ht), etc.) have been set up based on the derived demand and the combination of different knowledge of their Board members. The non-formal sector is totally based on supplying goods and services generated by the dynamic of the economy. Several potential areas (cafeteria, photocopy in schools and universities, school or university tutorials or support, school orientations, professional development, cell phone repair, etc.) should be explored to supply a derived demand.

The model also shows that there exists an intermediary equilibrium between the current unacceptable ones (the status quo characterized by little growth and high inequality) and the long term ones (the idealistic characterized by quest for good governance and institutional reforms). Such a middle and more realistic equilibrium as demonstrated by our model is a lobby to create opportunities and interactions for middle class, which can, in turn, have a greater impact on the mass well-being. This would help create inclusive growth and then reduce poverty.

The most immediate consequence of the model is to show that there are opportunities in areas other than politics and it is possible to create a win-win strategy between stakeholders to create growth and reduce poverty, the necessary incentives to perform ex-post institutional reforms.

It shows that the best way to help is to share information about existing and accessible opportunities. It can also provide benchmark to vocational schools and universities that should focus more on providing tools (adapted training and interaction ability) to seize existing opportunities.

Our model can serve as reference to donor and NGO, and media and show that the best way to help is to share information about current opportunities. It can also guide vocational schools and universities that should focus more on providing tools (adapted training and interaction ability) to grasp such options. It also gives hope to professionals living in a developing country that leaving the country is not the only option to succeed and supplying the derived demand is still an unchartered path.

How can one use such a generated growth and such an inequality reduction to encourage economic and institutional reforms is an interesting topic that should be investigated. We leave this deserving area for future research.

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