Speeding up Industrialization in Ethiopia:

What works and what does not

Tsegaye Tegenu, June 6, 2011

Why a need for speeding Up?
Ethiopia is today on quick race track. We are racing to avoid the negative consequences of population growth and pressure in the country. Population had grown more than five times since 1900, three times since 1955 and had doubled since the early 1970s. High population growth has come silently and enormously like Tsunami wave.

By the year 2008, the total population of the country was 79 million, second most populous country in sub-Saharan Africa after Nigeria. Each year an estimated 2 million persons are added to the population. According to the projection made by CSA, the population increases at a rate reaching a minimum of 2.3% during the 2015-2020 period. If the projection is borne out, the population of the country will increase from its present level of 79 million persons to 137 million persons by the year 2030 (see figure 3).

Figure 3: Estimated and projected population growth of Ethiopia, 2005-2050
The size and speed of the population growth in a shorter time span tells us to expect certain arithmetic effects on resource availability and quality of life. Since numbers alone do not tell us the type of effects and how those effects came into being, in my previous postings I tried to address population growth effects in terms of two burden categories (pressure drivers) related to the age structure of the population. The first pressure comes from an increase in the number of high dependency ratio households that have relatively high consumption requirements. I referred to this pressure as the multiplication of child-rich households and this driving force is on the increase particularly since the land reform in 1975/76. In rural Ethiopia the child-rich households constitute at least 56% of the rural households and they are growing by a constant average growth rate of 2.6% in the period 1994-2006 (see previous postings). Increasing on the number of child-rich households means an increasing need for cropping land to ensure household food security. I put forward green revolution (i.e., industrialization of agriculture) as solution to food deficiency (see earlier posting).

The second pressure driver is an increase in the volume and growth rate of young labour force actively participating in rural labour market. I considered this labor as surplus labor; and the labor force in rural areas has shown constant average growth rate of 4.7% in the year 1999-2005 (see previous postings). Other things equal, if the labour force is growing at 4.7% per year, then just to stand still it will have to increase other parameters (education, employments, health, energy, housing, etc) at about the same rate. Since employment is a key to household well being, I suggested the expansion of manufacturing industries which have the capacity to create productive employment.

If we look at the spatial distribution of the population growth in the country, we can identify the third pressure factor, namely the speed of urbanization. Even if the level of urbanization in Ethiopia is low by African standard, the rates of urbanization in Ethiopia are exceptional. Until 1985 the growth rate was more or less the same as the whole Africa. But in
the last two decades, despite the rural bias policy, the growth rate was very fast in Ethiopia (4.3%), while the rate largely decline in other African countries, 3.3%. Rapid urbanization caused by internal migration is a source of high costs of food, housing, transport, health and other basic services in towns.

Not only that there is a speedy urbanization in Ethiopia, its regional distribution is unbalanced: urbanization in Ethiopia is uneven and there is unbalanced growth of towns. The level of urbanization varies regionally, ranging from nearly 100 per cent in Addis Ababa to 8.7 per cent in SNNPR. By default the regional pattern of urbanization in Ethiopia is already unbalanced. The urban structure has uneven character in size and amorphous in functions and it is therefore important to have an industrial policy which brings about balanced regional growth in the country. I advocated industrial decentralization (relocation of manufacturing industries to medium and small towns) to bring about balanced growth and absorb the rural surplus labor in its own proximate location (to curb long distance migration). Rural-town based small-scale manufacturing industries are generally not only more labour intensive but also more productive per unit of scarce capital than their large-scale counterparts in capital cities.

Finally there is an external factor which forces the country to speed up the industrialization process and this is related to the conflict ridden nature of the Horn of Africa. Inter-sate and intra-state conflicts as a result of demographic changes and strategic national interests is creating instability in the region and affecting the country, which is the hub of Horn of Africa. The region is characterized by desolated economy and industrialization is the means for economic integration.
Debate over how to speed up industrialization in the country

The debate over industrialization in Ethiopia has not received the attention it deserves, and, if any, there is a lack of exhaustive discussion corresponding to its urgency. In a previous posting I tried to raise the industrialization debate along three dimensions: industrialization in terms of scale, industrialization in terms of orientation, and industrialization in terms of organizational form (see previous posting). The debate over these concerns is urgent particularly at a time when globalization is brutally governed by market forces. During the 19th and early 20th centuries industrialization was achieved through the law of “infant-industry protection”. Late comers embarked on active government support, involving various forms of protection and direct and indirect subsidy. Should Ethiopia yield this power during the period globalization which started since early 1980s? In the present short note I would like to add another dimension concerning requirements necessary to speed up industrialisation: i) capital accumulation, ii) technological diffusion and iii) promotion of scientific management.

I. Allocation of more resources for industrialization

The EPRDF government has put in place an articulated industrial development strategy as explained in the 2004 policy document. But the budget allocated for the industrial sector is significantly less compared to other sectors. Since budgeting is a reflection of priorities, hopefully in the Growth and Transformation Plan, the government allocates the necessary resources to speed up industrialization in Ethiopia.

Increased household income and saving is another source of resource mobilization for industrialization. My suggestion of green revolution and industrial decentralization has the objectives of increasing household income. If we follow the operation of Engel’s law, household expenditure for food decreases as their income increases. In other words, increase
in household income leads to an increase in the demand of industrial consumption goods, thus
leading to an establishment of new more industries and technologies.

Shift in the household demand is one of the factors that shape the speed at which
industrialization evolves in the country. Policy of green revolution and industrial
decentralization are intended to bring about shift in demand. Since the very implementation of
these policies require capital accumulation, the programs cannot be achieved without mass
support. In the context of Ethiopia, the population pressure factor can be used as a powerful
tool to obtain mass support for speeding up industrialization. In Japan (Meiji period), India
(during Nehru) and Russia (during Josef Stalin), nationalism was the prime motivation for
industrialization.

II. Diffuse Technical Knowledge instead of Ideology

From a supply side, technological diffusion is another fundamental factor that shapes the
speed at which the profile of manufacturing evolves in a country. Industrialization is not only
a transition from agriculture to a manufacturing economy. It is also a mental model for
efficient utilization of resources. The mindset of individual producers is changed through the
acquisition of technical knowledge and methods of production. The existence of adequate
technological capability at the firm and local level ensures success and growth in
industrialization.

There is, however basic question of how local technological capability system can be
introduced and sustained in rural towns. Obviously, giving precedence to spread of different
forms of political ideologies (modernization ideology, class struggle ideology, liberation
ideology and ethnic ideology) as we have seen in the last forty years is not helpful for
industrialization. On the contrary the transfer of technical knowledge (provision of technical
information and facilitating solutions) improves the performance of producers in Ethiopia.
Priority given to the diffusion and adoption of technical knowledge is particularly urgent for young labour force with no manufacturing background. The higher proportion of the Ethiopian labour force, both in volume and growth rate, is coming out of the subsistence agriculture.

I think it is time now for the Ethiopian engineers to come forward and advocate on the diffusion and adoption of industrial technical knowledge in the Ethiopian context. I suggest an establishment of a website specifically devoted to the issues of development and technology transfer in Ethiopia. To design their purpose and agenda, the Ethiopian engineers can get inspiration from the website of UN Commission on Science & Technology for Development (http://www.unctad.org/Templates/Page.asp?intItemID=3402&lang=1). Much is also expected from the Science and Technology Commission of Ethiopia in identifying the type and level of technical information that can be transferred from developed countries.

**III. Promote Scientific Management instead of Personal Loyalty**

The second related supply factor which speeds up industrialization process in Ethiopia is the promotion of scientific management for modifying organizational practices and procedures. Without scientific management it is impossible for implementing complex technologies and individual learning. Technology is learned by the individual and adopted by the organization if there is a scientific management which ensures institutional stability. Scientific management uses the performance criteria of effectiveness, efficiency, equity, legitimacy and institutional complementarities for choice and adoption of technology.

In organizations based on patrimonial tradition (a type of administration which has its basis on kinship, descent, and marriage), there is a risk of excluding young talents. If the idea of personal loyalty is taken as a principle in the legal assignment of responsibilities and tasks within the bureaucracy, it leads to de-professionalization and centralization. Frequent staff
turnover to ensure personal loyalty leads to loss of particular learning experiences and routine. When a leader replaces one person with another person, the result can be a reversal of organizational learning since everyone wants to do his/her own things. The personal commitment will also be to the leader not to the learned technology. Implementing a complex new technology requires both individual and organizational learning and this achieved under conditions of institutional stability.

**Conclusion**

The current discussion on macro-economic policy should be anchored on the challenges of structural transformation facing the country. Lasting solution to the current kind of macro-economic problems is found in industrialization-led structural transformation. In a condition where industrialization needs to have the maximum down force (due to population growth and pressure in the country) what we had until now was more of political ideology and traditional working culture. Consequently, we have not showed good race pace in industrialization. My hope is that the very idea and move to the Growth and Transformation Plan, whatever its limitation, will give the country a boost to the idea of industrialization. The current debate between government and opposition over the adoption of large scale technologies in Ethiopia contributes to our understanding of the need and speed of industrialization in Ethiopia.