The Suggestion of an Economic Growth Model: The Analysis of Production in Ancient Rural Settlement

Necip Ozgur Iyilikci
Lecturer, Pamukkale University/Denizli
PhD Candidate, Ege University/İzmir

Abstract

In this paper, the way to determinant of growth and development is tried to be introduced with a theoretical model that suggests growth is the result of technological development. Countries' own technological development and technology creating centre can be generated by connecting this to the model of the production, reproduction and redistribution systems of crops in an old village. This traditional way of producing crops in the past is taken as a clue to create technology centre for countries today. The point is how we can produce technology by local technological firms now based on the acceptance of certain principles as old villagers produced, reproduced and distributed in the past. Today, the state replaced the duties of chief of the village providing trust and local technological firms replaced households units of the village where each of them have certain duties like reciprocity and cooperation towards each other. 'Clustering' is an important concept in growth and development and in this paper 'social clustering' is suggested and validity and sustainability of this is searched. Free market is necessary but not sufficient condition for growth. In order to attain high growth rates, a mixture of competition and co-operation is required. Free Market gives special importance to competition that may undermine the trust in the society and may therefore lead to a weakening of consensus necessary for sustaining uninterrupted growth over time. The state can play a positive role in the development process by its organizational characteristics including the quality of its personnel, degree of its autonomy. Therefore, technology creating centers under the leadership of state could reinforce cooperation and make selective firms more competitive in international markets.

Keywords: Growth and Development, Technology centre, Free Market, Social Clustering

Introduction

Growth and development has become one of the most talked about issue in government's agenda recently. There are several reasons behind this. The first one is related with widely accepted thoughts of neoclassical paradigm. If countries sustain high growth rates they will solve other problems like high unemployment rates in the following period. We live in a materialistic world and in order to satisfy our material needs, to create new jobs, to reduce unemployment and to maintain higher standards of living countries need to grow. For these reasons growth rates and development have become one of the most important hot topics in countries and the key issue that needs to be focused on.

Growth and development processes was tried to be understood by many explanatory factors of which cultural, institutional social, political, economic and technological ones deserve special interest. Briefly, for some people monetary benefits are significant determinants of growth. For some people the culture of the society and its positive attitudes towards hard work has a great appeal. For some people maintaining macroeconomic policies of the mainstream economy and free market are the sole determinant of growth. For some people the reason is high saving rates while others think that the emergence of certain institutions is the basic explanation. For the last couple of decades endogenous growth theory and the technology play an important role in explaining the success and catch up processes and pave the way to growth and development process.

In spite of these differences they share very important thing in common. The importance of money incentives and bonus of occupations, the work ethic and the development of positive attitudes of an individual toward his/her large community could be a solution and work best under free market system in which people derive benefit from it and so does the society. But free market is necessary and but not sufficient condition for growth. Free market constitutes laboratory environment for firms and entrepreneurs where good works are rewarded and insufficient ones are punished. When people choose their job, start a new business, save and invest in financial markets, markets give signal to them. Free Market are perceived as a system of rewarding people who give at least enough labor, effort and value to market related jobs and punishing people who don't. Markets give more weight to efficiency compare to equity. Within this framework market are the test places where people complete their self actualization and improve others. On the other hand there are some prerequisites to make this system functioning well. The juridical system of a country must be fair and must treat everyone equally and not discriminate anyone. Bank credits should be open to all independent of any discrimination and open to people who have profitable

projects, for different job positions, candidates must be selected on the basis of their talents rather than their dependency to inner group relations.

Although Free Market provides a good environment for firms, people and the country in general, it sometimes fails. Firms which are exposed to intense global competition become vulnerable to external shocks. In Fukuyama's words free market is eighty percent of times correct (Fukuyama Francis, Trust; the social virtues and the creation of prosperity, p.13). There is every reason to believe that we should develop certain policies on macro level to save the future. So there is an urgent need for planning so that competitive advantage of national firms can be created, some resources could be used in favor of growth and development under the state guidance. This planning is also essential for supporting competitive private firms against intense global competition in the global market. In the second part, I offer a theoretical model that suggests growth is the result of technological development that gives an emphasis to the importance of creating countries own technological development and technology creating centre by connecting the planning, distribution, production and reproduction system of crops in an old rural settlement area as a representative model. The point is how the country can produce technology by national technological firms now with the acceptance of certain principles as old villagers produced, reproduced, distributed and redistributed in the past. Today the state replaced the duties of chief of the village providing trust and national technological firms replaced households unıts of the village where each of them have certain duties like reciprocity and cooperation.

How to become competitive under intense global competition

There are many articles in the economic literature indicating how important is the biological metaphors are in explaining economic process. In these studies, firms do not maximize their profit on the output level where MC=MR (Marginal cost is equal to marginal revenue). Since firms do not know their real cost curves they determine their profit level by mark-up. But profit maximization is seen as an ultimate aim for firms and it is these firms that maximize their profits and that will survive in natural selection process.

Firms have organizational memory. Detailed procedures of the firm about work, demand, production and investment policies, R&D, advertising and product differentiation are among this. When they make profit, they sustain their way of doing things. But if profit is under certain level they need technological improvements to stay in the business. The more difficult it becomes to survive under existing situation, the greater desire for firms required for changes that are adjusted to external environment. In case of profit, firms save their way of doing things but if not, they need some

technological improvements to survive. In this respect, technological improvement is of great significance as an engine to growth.

In real situations, the good performance of the strongest firms is attributed to their high profits. Firms that are best adjust to changing market conditions, that invest in its technology and that take necessary steps for innovation stay in the business in natural selection process. But what if there is a stiff international competition, lack of perfect information available, the existence of bounded rationality and more importantly stock of technological knowledge is not symmetrically distributed between developed and underdeveloped countries.

In order to compete with great economic powers, countries do not necessarily have specific comparative advantages like endowed with rich natural resources; rather they can determine their strategic policies in which competitive advantage of nations is dependent on. Clustering seems to be efficient by all means since exchange of ideas between firms and spread of technology through mobile skilled labor force is possible. But here in this model, one important actor (state) is added and clustering turns to social clustering because the operation of the system relies on some social virtues like trust, reciprocity and cooperation in light of national priorities, mutual benefits and common interest. It is claimed that a firm benefit derived from being a part of it is expected to be higher compare to situations in which a firm may act independently.

The scattering around these centers could be supported through taxes, through monetary and non-monetary contributions of firms and of provision of some important, competent scientists and specialists by technological firms and the state. These centers give their contribution to firms on the basis of the principle of reciprocity.

A contribution of a firm might be its organizational, managerial and technological knowledge and its tacit knowledge about how it operates; each firm transfers their knowledge to the centre and state also put reciprocity in use. Firms are connected to general technological information network. Financial funds can be channelized into these firms in line with reciprocity. State’s contribution can be different for different firms and its contribution must be no less than each firm’s contribution.

Several questions may come to mind after this. Why do national firms pass their technical, managerial, tacit knowledge to these centers even they could get financial and technical support in return in the future. Is there a mechanism to give guarantee for the operation of the system? Of course, we live under free market system and firms are borderless and belong to no nation. Equity holders of different firms can be from all over the world. But the world has been turning to neo-mercantilist system where nation state is taken as a basic unit in the analysis and where the protection of national

firms and the economy against vulgar intense international competition should be given high priority. The predictions of neoclassical theory didn't be realized up to now. According to economic theory, capital would have gone to countries where there is scarcity of capital and where the rate of return is considered to be higher. But it did not happen. Capital was concentrated in the hands of already high income countries and a few developing ones. Without adequate capital, these countries couldn't establish their own technological infrastructure. Another prediction was the convergence in growth and development of countries with a changing degree of development. According to economic theory one day less developed nations will converge developed ones with the diffusion of technology around the globe and concentration of capital will be gathered in the hands of capital scarce countries due to reasons mentioned before. High income countries did not share their technology with the rest of the world and saved their national firms against their international rivals.

Keeping these stories in mind, local technological firms can support these technological centers and as a result of common interests they can cooperate with other firms and the state on this basis. This is the mechanism keeps firms operating under the same goal. What should be done for this and for attaining socio-technological background is the next topic to be discussed.

It is necessary to have gene pool to improve technology because instead of advancing by the single process technology could advance in places where there is information flow between firms and the state. Especially on enterprise level there must be some problems about R&D expenses and the measurement of the efficiency of expenses. For example, in some empirical studies, although successful and unsuccessful firms had same amount of R&D expenses, the difference between the market successes stem from a dense network of important scientists.

There exist some externalities created in these centers. I will return to this subject after I give the production consumption and exchange relations in primitive societies of which it can be used as a representative model in favor of these technology centers.

The Production and Distribution in Ancient Rural Settlement

Production and reproduction, distribution and redistribution model is as follows. In this model households production levels differ depending on the manpower and endowment of some basic goods they have and they change from one household to another. Since there is no market even in its simplest form, families give some of their crops to the chief. In this model reciprocity is prevalent. Production is gathered in one hand. Having had some positive personality traits like generosity is the main reason why the

chief is widely accepted by the community and his belongings -most of them are consist of gifts from households- are redistributed among households independent of how much they contribute the public wealth. For this reason every crops would be consumed at different rates by households. Before adjusting this old social relations to the creation of technology centers let's focus on the social, economic relations in this ancient rural settlement and derive some conclusions for contemporary applications.

Chief or tribal leader had certain personality traits and the most important one is generosity. Economic relations are dependent on reciprocity and mutual aid in this old village. The economic relation of giver-receiver is transformed into political relation of leader-follower. This is the operative ideology in this model. A relation can't be both reciprocal and generous. Because household goods that flow to the chief question generosity of him but to stimulate production above subsistence level, chief offerings to different titles and different households should be reciprocal and different households should offer something to the chief in return. It is the way the political economy operates.

> "*The chief only returns to the community what he has received from the community. Reciprocal then? Perhaps he did not return all of that. The cycle has all the reciprocity of the Christmas present the small child gives his father, bought with money his father had given him. Still this familial exchange is effective socially and so is chiefly redistribution. Besides when the timing and diversity of the goods redistributed are taken into consideration, the people appreciate concrete benefits otherwise unobtainable. In any case the material residue that sometimes falls to the chief is not the main sense of institution the sense is the power residing with the chief from the wealth he has let fall to the people. And in a larger vantage by thus supporting communal welfare and organizing communal activities, the chief creates collective good beyond the conception and the capacity of the society's domestic groups taken separately. He institutes a public economy greater than the sum of its household parts. This collective good is also won at the expense of the households parts. Too frequently and mechanically anthropologist attribute the appearance of chieftainship to the production surplus (For example Sahlins). In the historic process, however the relation has been at least mutual and in functioning of primitive society it is rather the other way around. Leadership continually generates domestic surplus. The development of rank and chieftainship becomes development of productive forces. In brief testimony, the remarkable ability of certain political orders*

distinguished by advanced idea of chieftainship to augment and diversify production. (Marshall Sahlins, Stone Age Economics p.140)"

Indeed the chief plays an important role in some areas of which is the improvement of once marginal areas and development of some irrigation methods. The people owe their labor and their products. And with these funds of power the chief indulges gesture of generosity ranging from personal aid and massive support for economic enterprise. Another contribution of chief is his provision of surplus quantities of food, tools and weapons to household goods. But redistribution is not without material benefit to the chief. If an historical metaphor be permitted what begins with would be the headman putting his production to others benefits ends to some degree with others putting their production to the chief's benefit. This old social relation has an appeal in today's world. For the functioning of the system well, firms in technology centers today must contribute and transfer some of their managerial, technological knowledge and market experience into these centers.

In this old settlement, the chief uses all his household manpower for the benefit of others.

"To this end of accumulation and generosity, the chief typically attempts to enlarge his domestic working force perhaps by polygyny. 'Another woman go garden, another woman go take fire-wood, another woman go catch fish, another woman cook him- husband he sing out plenty people come kaikai (eat).' (Landtman, 1927, p. 168)."

Similarly, state in modern world must employ the most talented staff in these centers to help private firms in their R&D activities. State must evoke the wheels of exchanging ideas of different organizations.

According to Lewi-Strauss Chief must not merely do well: he must try and his group will expect him to try to do better than the others. How does the chief fulfill these obligations? The first and main instrument of his power is his generosity. Generosity is among most primitive peoples, and above all in America, an essential attribute of power it has a role to play even in those rudimentary cultures where the notion of property consists merely in a handful of rudely fashioned objects. Although the chief does not seem to be in a privileged position from the material point of view he must have under his control surplus quantities of food, tools, weapons and ornaments which, however trifling in themselves are or the band as a whole nonetheless considerable in relation to the prevailing poverty. When an individual, a family, or the band as a whole wishes or needs something it is to the chief that an appeal must be made. (Lewi-Strauss, 1969, p.304)

What are special about the chief are his great supports for his followers: The provision of tools, technology and other forms of aids is beneficial but one point should be reminded. The chief does not gain significant command over the output of other domestic groups and the surplus of one house put to the benefit of others. The lesson that can be drawn from these domestic modes of production is that when technological centers adopt this primitive production and distribution model, it should be accepted that cooperation between firms is possible and having endowed with technological products provided by state make it possible for them to advance in technology and this increases the chance of profitability. This is the necessary step to be taken to pursue growth and development in the country. The second reason that explains why we can use this primitive model in creating technology centers is that provision of diversity in goods by chief appears to be similar to what technological centers try to do today. Product development requires dense networks between state and firms. Having had different technological information can be a solution for this.

This model can be used to acquire knowledge in technology centers. Each household (firm) give their products to the chief (state) and the principle of reciprocity reward them in return for this. These rewards might be in the form of exchange of ideas between existing firms, the network of scientists, financial aid and technical assistance. Under the efficiency and productivity framework, these contributions would lead to positive returns and access to information system that is not known before by firms. To be accepted by these centers, firms must have comparative advantage and each firm has different levels of contribution under the belief that they will be compensated somehow.

In order to operate the system better, good education and training should be taken into account and the training of skilled labor force should be secured. Unlike in this ancient rural settlement where young and strongest people had no obligatory work until their marriage the most skilled people should be trained in each firm and take part in the meetings organized by the state in exchanging ideas today.

Conclusion

The advantage of these centers that are illustrated in figure 2 and figure 3 is ordered as following;

- They give perfect information about the market and decrease bounded rationality.
- They create positive externalities. The exchange of information and technology make exchange of ideas between skilled labors possible.
- Innovations and technological improvements can be tested in the market.

- High R&D expenses could be reduced.
- Alternative policies could be developed in global competition
- Contribution fee of firms is small as compared to their gains.
- Free-Riders problem do not take place (Because every firm contributes as every households give some gifts to the chief)
- It can be applied for selective Industries and key industries. (Even the firm who contribute less could be chosen without taken into account its real contribution.)

The countries need technological improvements to make to their competitive firms more competitive. With the adoption of the old principles existed in an old rural settlement, Firms could cope with difficulties and problems which they would experience under intense competition.

Figures

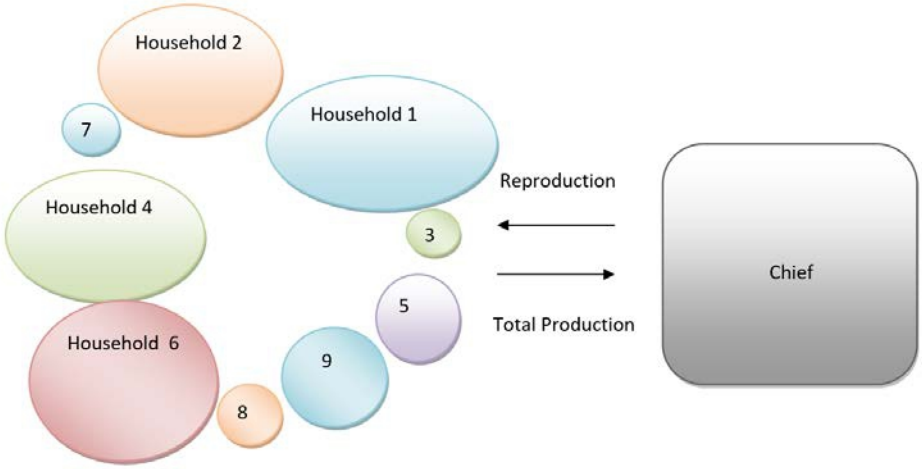

Figure 1. The Production and Redistribution in Primitive Societies

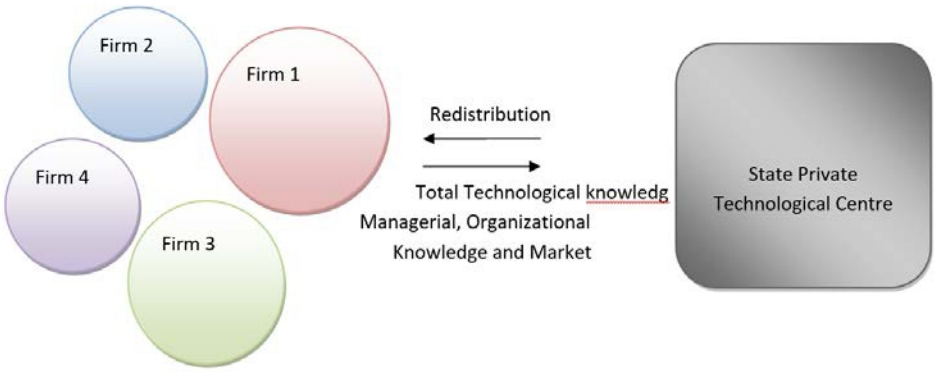

Figure 2. The Redistribution of Technology in Large Scale Enterprises

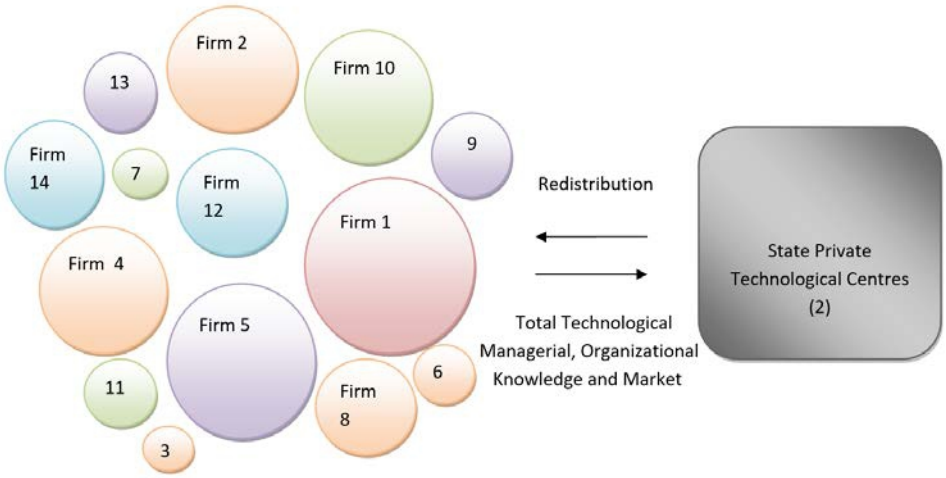

Figure 3. The Redistribution of Technology in SMEE's

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