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“Studies of Economic Development” by Paul Kim: Series #2

A New Economic Growth Theory: An Obstacle to Economic Growth

By

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1. Introduction

I had written previously what a rapidly growing nation has to do to complete the transformation stage successfully. (Note that the long-run economic growth issue is divided into two stages: (1) the transformation stage, during which labors are mobilized from the rural areas to the industrial sectors; and (2) the advanced stage, in which a nation's per-capita income reaches high or wealthy level.) This paper deals with the steps what a nation must be prepared to take in order to sustain its economic growth rate when it enters the advanced stage. It is expected that a nation's growth rate will decline as it enters the advanced stage, according a theory which I will introduce in this paper. It would be effective to avoid the obstacles if they know the kind of obstacles they might face in the advanced stage. Once the obstacles that hinder economic growth are engraved in institutions, it would be difficult to change the nature of existing institutions to remove the obstacles. But if one tries to avoid the forthcoming obstacles, it would be easier to minimize the effect of the obstacles. This theory would be helpful to some of Asian nations, which are ready to enter the advanced stage or have just begun to enter the advanced stage.

Thus, the purpose of this paper is to develop a new economic theory, which shows obstacles to sustain economic growth at the advanced stage. The theory I propose in this paper is when a nation moves into the advanced stage of economic growth, there is a predictable (inverse) relation between the desire for a nation to achieve the redistribution of income and power and the intensity of the use of nation's resources and technology. I will demonstrate in this paper with a case study from Japan why the above predictable relation is real. In another words, when a nation's primarily goal changes to the redistribution of income and power (from that of economic development) as a nation entered the advanced stage, the intensity of the use of resources and technology will deteriorate, which causes the productivity

of a nation to decline. Based on this new theory, I predict the economic growth rate of a nation will decline as a nation enters the advanced stage.

Thus, this article will be devoted to explain what it means when we say “redistribution of income and power.” Based on a case study from Japan, I will explain it’s meaning with a case study from Japan to show how a nation’s goal or focus had been changed to the redistribution of power and income historically. I will also explain how such change in a nation’s goal has caused deterioration of the intensity of the use of technology and labors in Japan for the purpose of defining clearly the concept of the intensity of the use of technology and labors in Japan. (In the next series, I will present a case study from the United States how the change in a nation’s goal to redistribute income and power has caused the deterioration of the intensity of the use of technology and labor and other resources).

I will explain why it would become difficult to utilize the fullest potential of labor and technology and other resources as a nation’s goal becomes redistribution of income and power. Thus, the economic growth rate has a tendency to decline in the long run as a nation enters the advanced stage because of the deterioration of the intensity of the use of technology and labor (and other resources): This is the theory I propose in this paper. This tendency is consistent with recent history in Europe and more obviously in Japan (which had 16 years of recession, and afterward had a slow recovery process.)

The decline in the economic growth rate in an advanced stage of economic growth is discussed in two accounts in the past: The first one is called “catch up nation” theory (or convergence hypothesis), which concludes that a nation’s productivity declines, after having (imitated and) learned technology and “know how” from an advanced nation such as the United States. (Because now they have to innovate and invent by themselves which makes it difficult to keep a high growth rate)¹. My theory proposed in this paper is an alternative theory to the catch up nation theory or might replace it. The second reason why a nation’s productivity and growth rate decline as a nation enters an advanced stage is attributable to the ending of mobilization of labor from rural areas to industrial sectors (based on W.A. Lewis theory or labor force participation theory²) But those two explanations or theories make sense of why the economic growth rate of a

¹ In See U N research paper: UN paper/FRB-NY.

² See Dr. Young’s paper: Alwyn Young, “The Tyranny of Numbers: Confronting the Statistical realities of the East Asian Growth Experience,” Quarterly Journal of Economics, Vol. 110, No. 3, August 1995, pp. 641-680.

nation declines in an advanced stage, but those theories do not help a nation to reverse that trend of declining the economic growth rate of a nation. But my new theory presented in this series and next series is primarily designed to be helpful in reversing the decline of nation's productivity and my theory is designed to be practical or helpful in reversing the declining the economic growth rate of a nation, not just make sense theory but also that looks good enable a nation to sustain its growth in the advanced stage of economic growth.

The purpose of this paper is to explore a theory to prove the above inverse relationship hypothesis is real between the redistribution of income and power, and the intensity of the use of resources and technology. That is to say that the more a nation is concerned with the redistribution of income and power, the more there is deterioration of the productivity of a nation. The full-scale studies of economic development for an advanced nation will be carried out in the next series under the title of "reverse mobilization of labor," bringing a case study from the United States.

2. The Intensity of Technology and Resources Utilization.

Economic growth in an advanced nation will rely heavily on development of technology, thus relying on innovation and invention of new technology (as well as capital accumulation). But the fact we are living in a globalized society and also the fact that technology is non-rival and non-excludable and make us to believe that nation's willingness or motivation (hereafter, called "motivational elements,") of how intensively use technology (and capital and labor) become the key to the productivity growth (not always necessarily who would invent or innovate). And such intensity of the use of technology and other resources including labor and capital become one of the major factors in determining the productivity of nation in the advanced stage of economic growth.

Thus, in this article, I have introduced a new economic variable called the intensity of the use of technology and labor (and other resources) as one of the major determinants of the productivity of a nation, especially in an advanced stage of economic growth. Using case study from Japan in this article, and later in the next series from the United States, I will build this new economic variable as observable and measurable.

3. Motivational Elements

Traditionally an economic system has been defined in terms of how resources are allocated, such as a centrally planned economy or a market economy. Such a definition of an economic system has been made based on

methods of resource allocation without regarding the intensity of the use of resource and technology. Thus, we will introduce in this paper the concept of the intensity of the utilization of resources and technology to highlight how an economic system function.

The intensive utilization of resources and technology is defined in this paper as a situation where capabilities and potential of resources and technology are fully utilized in the course of economic activities. In the subject of economic growth, whether or not a nation can and will utilize its resources and technology to their fullest potential is a bit colloquial fact, especially during an advanced stage of economic growth. For example, when the fullest potential of labors are utilized, it means that productive workers are mobilized into productive sectors or productive workers are employed in the productive sectors. When the intensive use of resources is observed, workers are truly encouraged such that the fullest potential of workers is actually displayed at their work place.

Traditionally, the importance of how intensively resources are utilized has been underrated in the study of economic growth. Economists were overly concerned with the way in which how rapidly resources, especially capital and technology can be accumulated, and how efficiently resources can be utilized. They have implicitly assumed in the past that if resources and technology are accumulated abundantly and if the efficient method of combining resources is found, such accumulated capital and technology would be utilized at their fullest potential and the most efficient method of production would be actually adapted in actual production. We find such implicit assumption is not always correct, especially in the advanced stage of economic growth although such implicit assumption may be correct during a beginning stage of economic growth.

These motivational elements are hard to identify or quantify although we might observe consciously or unconsciously the difference in the motivation elements. So we might tend to conclude that the difference is a cultural factor, which means we cannot do anything about it. However, if we bring a specific example of the way in which work is carried out in the production line, we might be able to clearly identify the difference in the level of motivational elements and in the intensity of the use of technology and labor as a new economic variable. In general, we have a tendency to say that motivational elements are, for the most part, the responsibility of management or of the people who have power to control technology and resources, such as a president or CEO of a corporation. But there is more to it, which is the work of this paper, although I believe that those people, management and CEO are important and play an important role.

We should not take these motivational elements for granted but should consider them as one of the most valuable assets of a nation especially during an advanced state of economic growth. The cultivation and development of such assets will be a new frontier of the future century in the subject of economic growth, especially for a nation with an advanced stage of economic growth.

Therefore, having various kinds of advanced technology alone is not sufficient condition to be able to adapt the best possible technology available. For the same reason, in the area of labors, the potential of individual workers' talent and energy will not be full utilized or exploited unless an economic system has motivational elements that induce the utilization of maximum potential of workers.

In an era of market internationalization in a global economy and rapid growth of the information systems under which technological information are rapidly exchanged or transferred between nations and regions, the possession of advanced technology and the ownership of favorable factor endowment along no longer guarantee an edge in competition in the international market. The competitive strength of a nation today seems to depend on its ability, willingness, and motivation to seek out to adapt the best possible available technology and methods of production (as well as its motivation to develop new technology and methods of production.), thus achieving intensive use of resources and technology.

4. Japan Number 1.

In 1964, a young engineer student from Nippon University in Tokyo received a summer internship at a small sub-contacting firm, which produced small engines. This story is given here to provide deeper understanding of the motivational elements and intensive use of technology and labors (and other resources).

In this small engine-producing firm, the production of an engine began at the first station where extremely hot liquid metal poured into a engine-shaped container. Then it goes through many other stations along the assembly line; let us say 10 stations. This young engineer student was placed at the last station with a few other young people. His job was to use a hammer to chip off unwanted pieces of metal over the surface of a finished engine. Being young and energetic, yet inexperienced, he relied more on power than skill. It was a fun job for him to display his power and hammer out a few pieces of unwanted metal sticking out from the surface of the engine in order to smooth out the surface of the engine.

One day, a chief engineer, the only engineer in that small manufacturing firm, who was also only manager, showed up at the last station. With a smiling face, he talked to the young engineer student; and told him that he would tour the production assembly line. (Here we see the intensity of the motivation to utilize the fullest potential of technology as we will see the end of the story). When the chief engineer showed up on the production floor. the young man was puzzled at first wondering why an engineer was visiting him. (Because normally an engineer does not mingle with production workers.) The young man saw many workers were working hard and sweating along the assembly line and he learned that so many people were working hard to come up with a single engine, which he receive at the end station for finishing work. Amazed with the intensity of workers in their work, he felt that he had been placed in a new dimension like an out-of-space experience. He saw everybody was working so hard and intensively. At the end of the tour, the manager took him to a warehouse, where he showed the young man a good number of damaged engines that were junked. Then the manager left, but the young man were astonished to realize that just because of his careless work at the last station, all the hard work done by many people along the assembly line had bee done in vain. This realization transformed his human nature and attitude toward his work. Since then, he was driven internally to do his job the best he could do with extreme care. This is an example of how the best of labor can be utilized or how the intensity of the use of labor can be maximized. This is called human technology, which is often kept in secret. And Japan has many of those human technologies, which are kept secret (Or other nations did not pay careful attention to human technology, but pay attention to more unsophisticated ones like technology in machines and computer disk.) Japan not only developed human technology, but also sought very intensively how that human technology can be utilized to its fullest potential. That intensity is visibly manifested in this story: The chief engineer withheld from making any comments to the young man but left by saying good-bye. This is an example of the manifestation of the motivational element to seek out the best method to utilize the human technology, and that motivational element is visibly manifested.

These are some of the important reasons why Japan produces high quality products. Japan did develop its own technology very extensively. This fact repeals “catch up nation” theory, which claims that Japan copies the technology of an advanced nations or the United States at early stage or during the transformation stage in order to achieve spectacular economic growth.

However, the reason why this story was portrayed in this article is not just human technology itself. The important question we have to raise to derive a profound scholarly conclusion is to ask a question as to why such motivational elements existed at that time in Japan, which led to the development of the human technology and discovery of the method of utilizing the fullest potential of the human technology. We must look at the nature of how an economic system operated in Japan. It was out the “necessity that a corporation in Japan developed human technology, leading to an intensive use of labor or utilization of labor to the fullest potential.

Now major reason why Japan developed such an intensive human technology, thus provided the intensive use of labors and other resources, can be found in the fact that a large corporation in Japan had a dual system, in which subcontracting corporations played a critical role. Japanese corporations utilized subcontracting corporations very extensively, which are often small and vulnerable. It is often estimated that the labors employed by a major Japanese corporation in 1960s is 1/3 of the entire work force because 2/3 of labor force utilized to produce the products for the major Japanese corporation was hired by the subcontracting corporations. The workers hired by subcontracting companies earned much less wages compared with the wages of those workers directly hired by a major corporation, not to mention much unattractive benefit. So a major Japanese corporation is big in terms of scale, but they acted in substance like a small corporation, which had to operate under intense competition for survival.

The theme of a subcontracting corporation is survival or being able to keep the contract with the major corporation every year. For this purpose, they had to constantly innovate new products, improve the quality, and find ways to keep the cost down or low. This is the source of motivational elements, the concept we developed in this paper, the source of the intensity of the use of technology and labor and capital. (Consequently, the labors employed by a major corporation, even though they are comfortable for life time job security with high wages and benefits are also impacted in that innovation and invention are the impetus of the corporation’s life.) Again, Japan’s miraculous economic growth was not just the matter of the imitation of an advanced nation’s technology during the transformation stage and early stage of the advanced stage of economic growth as “catch up nation” claims, but was propelled by their own invention. That is why it is important to pay attention to the motivational elements and the intensity of the use of technology and labors, the theme of this article, in order to understand the long run economic growth of a nation.

What went wrong with Japan in its economic growth in 1990s, experiencing 16 years of recession and unconvincing recovery, still continues. What happened to Japan's dual system of corporation, in which subcontracting corporations played a major role to provide the intensive use of technology and labor and other resources? As Japan moved into the advanced stage of economic growth, Japan became wealthy. The relationship between a major corporation and the subcontracting corporation changed dramatically. (As noted earlier, the goal of a nation would involve a redistribution of income and power as a nation moves into the advanced stage of economic growth. Japan was not an exception.)

As Japan moved into a new era, many executives or upper level management of the major corporation began to retire according to our case study from one of the largest steel corporations. Subcontracting corporations began to offer to those retiring executives to work as a vice president or some kind of executive positions. When such a plan became a reality, it created security for many subcontracting corporations to keep their contract with the major corporation since those retired executives would have a close relationship with the major corporations from which they retired. This was the beginning of the deterioration of the intensive use of technology and labor, and the concept of innovation and invention and motivation, which used to be major strength of Japan began to fade away. Once, the trademarks for subcontracting corporations in the past were innovation and invention and the intensive use of technology and labor for survival under intense competition. Now they have redistributed their power and have security; thus they can take it easy. This is an example of the redistribution of power and income. The motivational elements gradually faded away as the redistribution of power and income was under way in Japan, and one of the largest corporations of our case study was one of such examples. Consequently, the decline of the economic growth rate became a fact of life in Japan.

As a note, one has to pay attention to a little thing to solve a big problem. This is my advice to Japan. Japan had been looking for a big thing and never found an answer. They paid attention to a big thing and only thing they found out is a thing which they could not do anything as a solution such as a decline in population. Such an answer might make sense or give the impression of a good answer but it would not help the nation restore its economic growth rate. My advice to Japan is to look for the one which can be actually helpful or practical, and not overly concern with a big or conclusive answer in outlook.

Again this portion of article is written in order to give an understanding of motivational elements and the intensive use of technology and labor, which is the new concept we developed in this article. It is not intended to give a simple answer to Japan's problem, although Japan was used as a case study.

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