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A Note of Philosophical Thought on Poverty Reduction through Industrialization

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Abstract

This paper aims to describe the role of industrialization in poverty reduction in any country, especially developing countries, which are mainly based on agriculture.

One of the essential purposes of economics is reducing poverty around the world, and our answer regarding the most effective way to do so is industrialization, which includes related services. Only industrialization offers a shortcut to poverty reduction. A problem left to address is how to achieve industrialization.

As Reinert (2007) pointed out, the primary sector, including agriculture, has a structural problem of decreasing returns to scale, while the other industrial sectors have the characteristics of increasing returns to scale, which is the advantage of industrialization.

The main factors of industrialization include labour mobility, the protection of infant industry, urbanization, the formation of industrial clusters and the prevention of environmental destruction.

Keywords: Industrialization, Poverty Reduction, Mobility of Labour, Protection of Infant Industry, Urbanization, Industrial Cluster

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"Economists tend to think that all societies evolve uni-linearly along the lines that Western societies have evolved, but this thought is totally wrong", M. Morishima (1982)

1.

This note may be the shortest paper we ever write in a series criticizing contemporary economics because we have already found the answer, a kind of philosophy, to the matter of poverty reduction. It's *industrialization*. Thus, the research aim of this note is to describe the important role of industrialization in poverty reduction in any country, especially developing countries.

One of the essential purposes of economics is to reduce poverty and the number of poor countries around the world. Our answer regarding the most effective way to do that is *industrialization*, including related services. Only industrialization provides a shortcut to poverty reduction. However, while we say that industrialization is a key to poverty reduction, some may say that it causes serious income inequality or destruction of the environment. These problems are, of course, noteworthy issues to avoid or solve, but it is impossible to deny that industrialization per se is able to overcome poverty situations because industrialization is an essential source of new value creation for our society, as many classical economists and social thinkers have pointed out. A problem left to address is how we can achieve industrialization. Therefore, this paper tries to show a simple outline of the process.

During the last several decades, economic models seem to have become a more powerful tool for understanding human behaviour than the thought or analysis of real economic development. As some prominent economists, such as Romer (2016) and Deaton (2013), criticized mainstream economics, especially macroeconomics, economics cannot offer a faithful analysis of the real economy and economic development. In 1988, the Nobel Prize Laureate in Economics Friedrich Hayek published a book titled *The Fatal Conceit*, which fundamentally criticized the thought of constructivism in socialism. However, currently, it seems that this term (fatal conceit) should be applied to mainstream economics because, as many have pointed out, most orthodox economists could not predict the serious economic crisis in 2008/09, and since then, they have not rethought their positions. We must currently return to a fundamental perspective of economics that focuses on the real economy.

Historically, the most important event for economic development must be the *Industrial Revolution* in the 18th and 19th centuries, which was followed by technology progress, an energy revolution and the development of many industries. According to Alvin Toffler (1980), Jared Diamond (1997) and Yuval Noah Harari (2016), the agricultural revolution, information revolution and other cultural revolutions (not the Cultural Revolution in China) are, of course, important for human beings. However, only the Industrial Revolution is

extremely significant for *creating value* in the history of our society. Thus, until the present, industry must have been a main driving force for poverty reduction in all countries. Therefore, the problem is how we can successfully introduce industrialization into our society because it is usually impossible to predict which industry will be decisive for economic development. In addition, economic growth and industrialization that are too rapid cause serious damage, such as destruction of the environment. For this reason, both the market and the government are necessary for our society; however, both of these sometimes fail or malfunction.

Industrialization had similar effects in Japan. In the late 19th century, Japan opened to the world for trade with great powers such as America and other European countries. One of the slogans of industrialization was "Shokusan Kogyo", which means encouraging new industry. The Japanese government established state-owned textile firms to attract new industries to the country.For example, Tomioka Silk Mill was established in 1872 as one of the first state-owned factories, which led to Japanese modernization, and it was privatized in 1891 through a bid. On the other hand, too rapid industrialization in the post-war period in Japan caused serious environmental pollution called "Kougai", especially from the 1950s to the 1970s, such as "Minamata disease", "Niigata Minamata disease", "itai-itai disease", and "Yokkaichi asthma disease". These incidents led to legal regulations by the Japanese government to save victims and the environment. However, Japan managed to balance economic growth and environmental prevention. This experience indicates that regulations for economic activity can generate new technology and new industry. In this sense, industrialization is a key factor for economic development.

2.

Ichihashi (2016) mentioned a basic social structure that consists of 6 pillars, the evolutionary process as historical transition and fundamental economic development principles based on 5 elements. The 6 pillars of the social structure are natural conditions/geographical environment; the original culture, such as language and religion; the general culture such as literacy, education, health care and research; the civilization for infrastructure; the political system for decision making; and the economic system, such as the tax system and financial institutes. The evolutionary process means there must be stages of economic development in any country; examples include Akamatsu's flying geese process, Petty-Clerk's law, Rostow's development stages and Vernon's product cycle. Additionally, 5 principles for economic development are international/domestic trade, production/productivity, investment/intensive monetary flow, industrialization as specialization and innovation/invention. These basic aspects are necessary for economic development in any country.

Along with these 5 principles of economic development, the concepts of *social class* or social status are useful for understanding capitalist society. As a simplification of the demand side and supply side, macro- or microeconomics textbooks usually teach that consumers and firms are social actors in a market and describe the government as a public sector. Therefore, it is assumed that there are at most 3 social classes in economic society, which is more than the Marxist assumption that there are only 2 classes, capitalists and workers. The System of National Accounts (SNA) defines classes more realistically, considering that there are 5 institutions: non-financial corporations, financial corporations, general government, non-profit institutions and households.

However, according to our opinion, the definition of households in orthodox economics is slightly ambiguous, and each institution in the SNA includes both employers and employees together, which is not useful for identifying social classes. A consideration of social classes is necessary to analyse economic societies because classes have different roles in economic systems, especially production processes, although all classes have both demand and supply sides. Categories such as demand and supply or individual institutions are not very convenient for analysing our society *vertically*.

Focusing on their roles in economic activities, there are mainly 5 social classes. These are *farmers or primary sector workers; salary workers in the secondary and tertiary sectors; executives or managers of firms; investors, including bankers; and central and local government sectors, including elites or political leaders*. However, these social classes are not fixed, different from Marx's thought that capitalists and workers were fatally fixed in the capitalist system. These classes or statuses are compatible. This is a basic characteristic of economic development.

We can add one more factor: the *spatial factor*. In economic development, the spatial factor can have different effects in society. Typically, this factor concerns global trade between advanced countries and developing countries, domestic transactions between urban areas and rural areas, regional activities within certain areas, organizational performance in companies and communities, and specific fields or specialties of individuals. From the individual to the global level, competition develops in various layers throughout the economy. In each layer, there might be different development stages, although all want to develop enough.

The 5 broad aspects of economic development are described by well-known economic scholars, such as D. Ricardo, A. Smith, Marx, Keynes, Leontief and Schumpeter. According to them, effective production, domestic and international trade, intensive investment supported by monetary institutes, industrialization through the specialization of production, and innovation and invention for new production are universally essential for economic development. However, the question is how to achieve economic development for poverty

reduction. This is a main research question in this paper.

3.

Reinert (2007) has noted the very important point that the main cause of staying poor is a focus on primary industries, such as agriculture, forestry and fisheries, in which scale economies are difficult to achieve in principle. His perception is quite simple but essential for economic development.

According to Reinert, in each industry, theoretically, we can observe an asymmetric mechanism of generating profits or costs. The increasing marginal cost or decreasing marginal productivity in agriculture or primary industry should decrease their returns to scale; moreover, the primary sector is basically land-intensive and has serious physical constraints, which should yield decreasing returns to scale. This is because natural resources, such as land, fossil fuel, forestry, lakes and seas, cannot be artificially produced by workers, so returns to scale in the primary sector face physical limitations.

The aspects commonly considered in microeconomics are cost functions or production functions. If the marginal cost increases exponentially as production increases, the return to scale must be drastically decreasing. Equivalently, if marginal productivity decreases as production increases, the return to scale inevitably decreases. This has been observed since the time of Thomas R. Malthus, Adam Smith, David Ricardo and Karl Marx, who commonly recognized decreasing returns as a law governing the tendency of the rate of profit to fall. It is obvious that the classical model of the production function in microeconomics textbooks is based on primary industries, such as agriculture. This characteristic of decreasing returns to scale is a main cause of staying poor. Therefore, the prevalence of agricultural industries, especially monoculture, in many developing countries around the world is the main reason they find it difficult to escape from poverty.

On the other hand, as mentioned above regarding the Industrial Revolution, manufacturing, including some services, is a typical industry with increasing or constant returns to scale (i.e., scale merit), which means that marginal costs are decreasing or become almost zero. For example, artificial tools, such as machinery and software, can be produced more effectively at a large scale than at a small scale. These characteristics of the secondary and tertiary sectors are key to the generation of high profits in modern society. According to Reinert (2007, 2017), Henry VII (1485) in England, Machiavelli (1532), Giovanni Botero (1588), Antonio Serra (1613) in Italy, James Stewart (1767) in England, Alexander Hamilton (1791) in the United States, etc., already recognized the possibility of increasing returns to scale and tried to facilitate industrialization to gain wealth in their time. Until the present, this advantage of scale, i.e., mass production, in the production process is a basic standard for

most industries.

4.

Now, we need to think about how to successfully introduce industrialization and what kinds of problems might then arise. Which types of activities are necessary for the market and the government?

To develop industry and achieve poverty reduction in any country and region, five activities or behaviours are essential, according to classical economic research.

1) Internationally and domestically, the *mobility of labour,* or migration, and safety nets are fundamental driving forces for development (Lewis(1954,1958), Todaro(1969), Harris and Todaro(1970)). As classical studies show, the movement of labour from rural to urban areas or from primary sectors to the manufacturing sector is a basis for economic development. This mobility of labour is a common phenomenon in capitalism, as Marx mentioned. In the dynamic capitalist system, people as labourers need to change their workplaces and social status as the economy changes. However, if such mobility of labour is necessary for economic development, some communities must be prepared to accept labourers and support or cooperate with them because firms and organizations are not necessarily community-like groups. In general, the executives and managers of firms consider labourers to be just flexible production factors and fire them to reduce costs in difficult times. Therefore, in industrial states, both labour mobility and mutual support communities are necessary.
2) History and timing, referring to the development stage, are also important for industrialization. International free trade has not always been a successful economic policy in history. Protectionism or the protection of a certain sector by tariffs in the developing stage has been evident even in the United States and the United Kingdom, as Chang (2003) mentioned. According to a classical work by F. List (1841), *protection of infant industries* in developing countries is a fundamental economic policy for growing the economy. In addition, Akamatsu (1935) and Petty-Clerk (1940) showed the economic development stages as a kind of evolutionary process, with different types of industry gaining precedence in each country. Some countries are leading and others are catching up. Any country needs to protect its infant industries until they reach a certain level of development, as economic history shows. Therefore, the benefits of introducing free trade depend on the timing or historical situation in each country's developing stage, and the protection of infant industries by tariffs is occasionally necessary for industrialization.
3) As many researchers noted mainly in 20th century, urbanization is also significant for industrialization, being both a cause and a result (Kanemoto(1980), Fujita(1988),

Krugman(1992), Porter(1990), Pack and Saggi(2006), Yamagata(2009) Altenburg(2011), Sonobe and Otsuka(2014), (2010) and Chang(2017)). Recently, urbanization has been described with various names, such as special economic zones, regional states, compact cities, smart cities, industrial clusters, and supercities. Urbanization is a fundamental source of agglomeration. As Porter (1990) and (2001) mentioned, the industrial cluster is a source for many types of innovation and invention as a result of agglomeration. Many combinations of factors concerning the division of labour, knowledge, skills, technology, etc., depend to some extent on the population size in the economic region. In addition, urbanization promotes convenience for consumers/households. Agglomeration in urban areas can raise the probability of innovation, invention and new business establishment; thus, policymakers in any country should focus on how they can improve their urban infrastructure, which attracts firms and investors from around the world. Especially in ageing societies, such as Japan, compact cities or smart cities, which attract people from rural areas, should be effective to organize urbanization and form industrial clusters. Such a compact city might also be able to effectively enhance the productivity of agricultural production in rural areas because a limited number of farmers must introduce technology to increase production.

4) Rapid economic growth sometimes leads to serious environmental destruction like pollution even though poverty reduction through industrialization can be achieved, as the experience of "Kougai" in Japan in the 1950s to 1960s showed. Moreover, we are currently facing many environmental problems, such as global warming, deforestation, desertification, ocean pollution and hazardous wastes. These problems directly result from economic activities, including industrialization; the production process can destroy the natural environment. The goal is to find a harmonious way to balance economic activities and environmental protection as sustainable development, not to completely stop or damage our economy. The Japanese experience has indicated that environmental protection can represent another industry, which is led by new technology and innovation. For example, desulfurization equipment is one example of new technology for preventing the emission of SO2 gas and promoting clean air. Another example is electric vehicles. Of course, the introduction of these pieces of equipment and products into society does not depend only on technology. The actual implementation of each type of technology can be determined by social factors, such as politics, social movements and the leadership of firm managers. However, once people recognize that a new technology or innovation might solve a current problem, its implementation may not take long because the implementation itself may enhance company value. This is a kind of Pareto improvement, as economics textbooks teach.

In the future, to solve environmental problems, we have to successively apply new technologies and innovations, which will generate new industry. We can develop our society only through industrialization, which will lead to poverty reduction.

5) It is difficult to predict which type of industry should be the leading industry in a particular region, for it depends on the characteristics, history, natural conditions and other factors. According to Akamatsu's flying geese theory and Vernon's product cycle theory, the leading industry differs across time periods and phases of development. For example, in late 19th century Japan, textile industries, such as cotton fabric and silk fabric, boomed because many European countries and the United States frequently traded for such goods. Japan established its own state firm to produce silk and cotton yarn soon after the country was opened to international trade and highly supported the textile industry. Another example concerns the IT industry. Silicon Valley in California, the U.S., has become world renowned for the IT industry. In the 1970s, many garage companies were competing in producing software, and some of them, such as Microsoft, Apple, Google and Facebook, later became new leading companies in the field. In all periods, the creation of a new leading industry plays an important role in developing the economy because such an industry might stimulate innovation or invention, as Schumpeter emphasized.

Then, in the present, what type of industry could be a new leading industry? It could be AI. It could be cryptocurrencies. It could be ecotourism or social welfare. It cannot be predicted with precision, of course. In this paper, we would like to mention the possibility of *academic enterprise* as one example. As Porter (2001) mentioned, updating intellectual institutes or organizations such as universities is essential for innovation and invention. Since the 20th century, the U.S. has been strategically developing its science and technology policy by strengthening the competition among universities across the country. As a result, many universities in the U.S. are leading in the science and technology field as well as other academic fields, including the social sciences. Many Nobel prize laureates have studied at these American universities. Additionally, the concept of intellectual property rights has developed, relating to not only academic fields but also entertainment, including movies and music. Therefore, in this century, upgrading universities as academic enterprises seems to be an important factor of innovation and further economic development.

However, this is just one example of a new industry, and it might be suitable for some countries and not others. The new leading industry should be different in each country and each phase of development, as mentioned above.

5.

Since late 2019, the world has been facing another devastating problem, the COVID-19 pandemic. COVID-19 first appeared in Wuhan, China, in November 2019, and soon spread around the world. As of September 2, 2020, the cases infected by the new coronavirus have exceeded 25,890,938. This number would be increasing for a while. Hans Rosling (2018) warned of 5 major global risks, and a global pandemic is one of them. This situation must be addressed urgently, and it might transform our society in many ways.

In addition to the severe health damage caused by COVID-19, a very serious economic crisis must afflict our society because many supply chains were interrupted as countries shut down production and trade. Not only the number of serious cases infected by the virus but also the effects of the economic shutdown, such as the lockdown of cities and isolation of individuals, will surely lead to more destructive crises in the global economy. Agglomerations, such as urbanization and industrialization, which are essential for poverty reduction, as mentioned above, are vulnerable to the spread of diseases, such as coronavirus, because the interdependence of production activities is the fundamental structure of contemporary society. Trade and supply chains, internationally and domestically, are basic economic activities. In this sense, the global pandemic poses a huge risk to our society.

To overcome this disease, we have to slow the spread of virus as long as possible while maintaining the medical capacity to take care of many infected patients. Additionally, we have to produce goods and medical equipment, such as masks, soap and mechanical ventilators, as soon as we can. Moreover, in the long run, we must develop new drugs to gain immunity against this virus and train many high-quality medical staff.

It is obvious that we have to cooperate with each other. However, we should recognize that we are also being tested by the virus regarding whether we can support the world through social and economic activities with each industry. Although this fight might take a long time to win, we will overcome with the support of industries including pharmaceuticals, medical tools and social services. In addition, we might have to transform our current society and human relationship drastically. Our working days, working hours, working shift, freely allocating holidays and introducing telework or working from home should be considered to avoid crowding, tightening and closing social relations. We now need to rebuild our resilient society to be robust against new unknown virus appearing in the future. The ongoing new coronavirus disaster is maybe imposing us to get a revolutionary change of the society. But this updating our society would be achieved through new industries by innovations and inventions after all as mentioned above.

References

Akamatsu, Kaname, 1935, "Trend of Japanese Trade in Woolen Goods" (in Japanese), *Shogyo Keizai Ronso*, Journal of Nagoya Higher Commercial School, Vol. 13, pp. 129-212.

Altenburg, Tilman, 2011, "Industrial Policy in Developing Countries," German Development Institute Discussion Paper,4, pp.1-93.

Botero, Giovanni, 1588 (2015), *Della ragion di stato libri dieci* (in translated Japanese version), Fukosha.

Chang, Ha-Joon, 2003, *Kicking Away the Ladder: Development Strategy in Historical Perspective*, Anthem Pr.

Clark, Colin, 1940, *The Conditions of Economic Progress*, Macmillan and Co. Limited.

Deaton, Angus: *The Great Escape*, Princeton: Princeton University Press, 2013.

Diamond , Jared, 1997, *Guns, Germs And Steel*, Vintage.

Galbraith, John Kenneth, 1968, *The New Industrial State*, Signet.

Graham, Frank, 1923, Some Aspects of Protection Further Considered, The Quarterly Journal of Economics, Volume 37, Issue 2, pp.199–227.

Fujita, Masahisa, 1988, *Urban Economic Theory: Land use and city size*, Cambridge University Press.

Harari, Yuval Noah, 2016, *Sapiens: A Brief History of Humankind*, Vintage.

Harris, John and Todaro, Michael, 1970, Migration, Unemployment and Development: A Two-Sector Analysis, *The American Economic Review*, Vol. 60, No. 1, pp. 126-142.

Hayek, F.A, 1988, *The Fatal Conceit: The Errors of Socialism,* The University of Chicago Press.

Ichihashi, Masaru, 2019, Notes on the Historical Approach as a Methodology of Macroeconomics: A Critique to Contemporary Macroeconomics, *IDEC Discussion Paper*, pp.1-23.

Ichihashi, Masaru, 2016, Notes on Comparative Economic Development, *IDEC DP2(Development Policy Discussion Paper) Series*, No.6-3, pp.1-67.

Kanemoto, Yoshitsugu, 1980, "City Formation and city sizes," *Theories of Urban Externalities*, Chap.2, http://www3.grips.ac.jp/~kanemoto/UrbanExt.html.

Kerr, Clark, Dunlop, John T., Harbison, Frederick H. and Myers, Charles A., 1960, *Industrialism and Industrial Man*, Harvard University Press.

Khander, Shahidur R., Koolwal, Gayatri B. and Samad, Hussain A., 2010, *Handbook on Impact Evaluation*, The World Bank.

Kimura, Fukunari and Chang, Mateus Silva, 2017, "Industrialization and poverty

reduction in East Asia: Internal labor movements matter", Journal of Asian Economics, 48, pp. 23-37.

Krugman, 1992, Paul, *Geography and Trade*, MIT Press.

Leontief, Wassily, 1986, *Input-Output Economics 2nd ed.*, Oxford University Press.

Lewis, Arthur, 1958, Unlimited Labour: Further Notes," *The Manchester School*, vol.26, issue 1, pp. 1-32.

Lewis, Arthur, 1954, Economic Development with Unlimited Supplies of Labour, *The Manchester School*, vol.22, issue 2, pp. 139-169.

List, Friedrich, 1841(1975), *Das nationale System der politischen Okonomie*, (in translated Japanese version), Iwanami Shoten.

Marx, Karl, 1867(1968), *Das Kapital* (in translated Japanese version), Otsuki Shoten.

Miller, Ronald E. and Blair, Peter D., 2009, *Input-Output Analysis*, Cambridge University Press.

Morishima, Michio, 1982, *Why Has Japan 'succeeded'?*, Cambridge University Press.

Myrdal, Gunnar, 1963, *Challenge to Affluence*, Random House.

Pack and Saggi, 2006, "The case for industrial policy: a critical survey", *World Bank Policy Research Working Paper* 3839, February, pp.1-51.

Porter, Michael, 1990, *The Competitive Advantage of Nations*, The Free Press.

Reinert, Erik et.al, 2017, *Handbook of Alternative Theories of Economic Development*, Edward Elgar Pub.

Reinert, Erik, 2007, *How Rich Countries Got Rich…and Why Poor Countries Stay Poor,* Constable.

Ridley, Matt, 2015, *The Evolution of Everything: How Ideas Emerge*, Harper.

Romer, Paul, 2016, The Trouble With Macroeconomics, *the Commons Memorial Lecture of the Omicron Delta Epsilon Society*, pp. 2–25.

Rosling, Hans, 2018, *Factfulness*, Flatiron Books.

Rostow,W.W., 1960, *The Stages of Economic Growth: A Non-Communist Manifesto*, Cambridge University Press, Chapter 2.

Schumpeter, Joseph, 1954 (1956), *History of Economic Analysis* (in translated Japanese version), Iwanami Shoten.

Serra, Antonio, 1613(2011), *A 'Short Treatise' on the Wealth and Poverty of Nations,* ed. Sophus A. Reinert, London: Anthem.

Sonobe, Tetsushi and Otsuka, Keijiro, 2014, *Cluster-Based Industrial Development:: KAIZEN Management for MSE Growth in Developing Countries*, Palgrave Macmillan.

Sonobe, Tetsushi and Otsuka, Keijiro, 2010, *Cluster-Based Industrial Development:*

A Comparative Study of Asia and Africa, Palgrave Macmillan.

Taleb, Nassim Nicholas, 2008, *The Black Swan: The Impact of the Highly Improbable*, Penguin.

Todaro, Michael, 1969, A Model of Labor Migration and Urban Unemployment in Less Developed Countries, *The American Economic Review*, vol.59, No.1, pp. 138-148.

Toffler, Alvin, 1981, *The Third Wave*, Pan Books.

Vernon, Raymond, 1966, "International Investment and International Trade in the Product Cycle," *The Quarterly Journal of Economics*, Volume 80, Issue 2, pp. 190–207.

Yamagata, Tatsufumi, 2009, "Industrialization cum Poverty Reduction: The Cases of Bangladesh and Cambodia", ed. Takashi Shiraishi , Tatsufumi Yamagata and Shahid Yusuf, *Poverty Reduction and Beyond : Development Strategies for Low-Income Countries*, Chap.3, Palgrave Macmillan.