The Uno Newsletter:

Rejuvenating Marxian Economics through Uno Theory

(Vol. II, No. 15)

Working Paper Series 2-15-3

20 April 2015

Globalization: Evolution of the Capitalist Market Economy Through "Internalization of the Market"

Makoto Nishibe (Hokkaido University)

(nishibe@econ.hokudai.ac.jp)

http://www.unotheory.org/news_II_15

The Uno Newsletter: Rejuvenating Marxian Economics through Uno Theory

Office: Uno Newsletter, Musashi University, Toyotama Kami 1-26-1 Nerima-ku, Tokyo 1768534 Japan

Email: contact@unotheory.org

Homepage： http://www.unotheory.org

Abstract:

The purpose of this article is to theoretically explain and understand globalization in the course of evolution of capitalist market economy through "internalization of the market."

Globalization can be visually depicted as a simultaneous process of expansion of Market and reduction of State and Community. The ultimate destination of globalization is free investment capitalism with ubiquitousness of Marx's fictitious capital and Becker's human capital. Differentiating two tendencies in globalization, "extensive expansion of market" and "intensive deepening of market", we elaborate how the latter tendency proceeds. Based on the view of exogenous market of Marx and Hicks, three modes of commodification - external (E mode), internal (I Mode) and general (G mode) - are identified with different degree of economic integration by the market. They take place successively in internalization of the market. Using the concepts, capitalist economy is defined as the combination of G mode commodification of general goods and E mode commodification of labour-power. We analyze the transition of three modes of capitalist economy by using the simple models of corn and labour-power and have found out that the real wage would tend to increase and the uniform rate of profit would tend to decrease as the capitalist economy advances its degree of commodification of labour-power from E Mode to I Mode and to G Mode. Most advanced G Mode capitalist economy can self-activate by countering the falling rate of profit by introducing products innovation either in corn or labour-power sector.

Contents

1. Extensive expansion and intensive deepening of market in a tendency of globalization
2. Free investment capitalism: ubiquitous fictitious capital
3. Market penetration into schools: the spread of a social institution of education as “human capital investment”
4. Other views on internalization of the market: Marx and Hicks
5. Three modes of commodification in internalization of the market
6. The establishment of capitalist market economy
7. The evolution of capitalist economy through change in the mode of commodification of labour-power
8. One-good models of external/internal/general commodification of labour-power
9. A capitalist economy based on general commodification of labour-power: class division and self-activation

10. The replicators of free investment capitalism and fictitious capital as the ultimate model of globalization

1. Extensive expansion and intensive deepening of market in a tendency of globalization

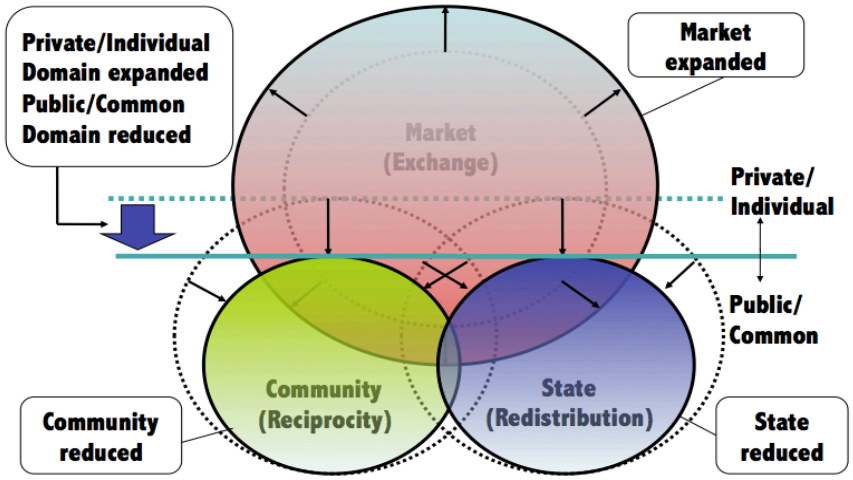
The purpose of this article is to theoretically explain and understand globalization. Economic globalization accelerated in the 1990s. Its positive and negative effects have been widely discussed. Globalization is a tendency approaching toward a single global-scale free market, which accompanies the development of transportation technology, information communication technology (ICTs) and the expansion of finance. Adding different names to K. Polanyi's (Polanyi, K. 1944) three modes of socioeconomic integration such as Market (monetary exchange), State (redistribution) and Community (reciprocity), globalization can be visually depicted as a simultaneous process of expansion of Market and reduction of State and Community (Figure 1).

In this article, geographical expansion across the globe and the market size for existing commodities is called the "extensive expansion of market," and the tendency where public or common free goods and services are somehow privatized and sold as private goods and services for the purpose of monetary interest, i.e. as commodities, is called the "intensive deepening of market." The idea of "intensive deepening of market" will be elaborated more clearly in relation to advancement of modes of commodification.

But its meaning should be understood so wide as to include not only a shift in the method of economic coordination from redistribution by a state or reciprocity in a community to monetary transaction of buying and selling in a market, but also product innovation by which new commodities are developed and sold in a market. In fact, in capitalist market economy, commodification and innovation constantly replace Community and State with Market. Although the extensive expansion and the intensive deepening of market occur simultaneously in globalization, we need to recognize them as two separate processes at different levels of abstraction. The "extensive expansion of market" is a surface and concrete tendency, which is generally easy to observe and understand. The "intensive deepening of market," on the other hand, must be so abstract and difficult to quantitatively comprehend.

Freedom in a market is divided into "freedom of trade" and "freedom of investment," though both belong to "passive freedom." The latter refers to such freedom that investors can trade any future opportunity of profit/income by using money. The latter needs to presuppose the former because investment can be only conceivable using the concept of trade. So "freedom of investment" is the freedom of a higher level of abstraction. Thus, it is one of the aspects of intensive deepening of market that freedom/liberty in the market takes it to a higher level of abstraction, from the expansion of choice in the market for consumed goods to the expansion of choice in the market for profit/income opportunity.

Figure 1: Globalization



2. Free investment capitalism: ubiquitous fictitious capital

Globalization's ultimate destination is "free investment capitalism." It has the following aspects: 1) individuals and families provide firms with human capital accumulated through education and training and receive profit for the "fictitious capital"; 2) all the goods and services including labour-power become a commodity to be created (innovated) and produced for the purpose of profit making; 3) all the profit organizations create and produce such a commodity, utilizing monetary capital, physical capital and human capital; 4) all the profit organizations, for the purpose of equity financing, sell "fictitious capital" called "financial products" as stock and bond, which are the right to claim profit/income in the future (commodification of capital); and 5) since investment in physical capital

and fictitious capital is based on profitability, human beings, goods and money move around globally, seeking higher profitability.

In Chapter 29 of *Capital* "Banking Capital's Component Parts", Marx called, on the one hand, such capital with real entities as physical means of production including machines and factories as well as labourers and functions in production "real capital" and, on the other, stocks and bonds, which are merely "accumulated claims, or legal titles, to future production," "fictitious capital." (Marx 1895=1981, p. 599) In this chapter, Marx pointed out that the value of "bonds (the state's promissory note)" as fictitious capital can be obtained by calculating the sum of the streams of discounted present value of expected future profit. Such a method is capitalization. "The formation of fictitious capital is called capitalization. Every periodic income is capitalized by calculating it on the basis of the average rate of interest, as an income which would be realized by a capital loaned at this rate of interest, as an income which would be realized by capital loaned at this rate of interest." (Marx *ibid*., p. 598)

If we define fictitious capital in a more general manner, it is a bundle of various kinds of claims. Financial derivatives like futures, options and swaps can all be considered to be "fictitious capital" as a bundle of claims. For example, an option trades a package of right to buy (call) or to sell (put) underlying an asset (stock, bond or stock index) by the expiration date and their prices constantly fluctuate. As far as fictitious capital is information as a bundle of claims, it is easy to trade the information digitalized on the Internet. Thus, free investment as the virtual destination of globalization is the world where fictitious capital is ubiquitous.

It should be noted that free investment capitalism is not the same as the "self-regulating market" suggested by Karl Polanyi in his *The Great Transformation*. Several historical conditions after the 18th century enabled labour, land and money, which were not commodities produced to be sold, to turn into objects of trade as "fictitious commodities," and a self-regulating market came into being in the industrial capitalism of 19th century (Polanyi, K. 1944). "Fictitious capital" refers to "capitalist commodities" ("the general commodification" of labour-power that we will discuss below) produced for profit, which presupposes the system of the "fictitious commodity" whereby labour-power is produced for sale.

Therefore, the problem of free investment capitalism is not with Polanyi's "fictitious commodity" but with Marx's "fictitious capital." For, in free investment capitalism, any goods and services, including labour-power once regarded as a simple commodity, come to be traded as an "income opportunity,"

that is, as "fictitious capital." If we can assume comparable alternative opportunities, the conception of "fictitious capital" has the versatility to easily expand to other categories than money. For example, when we imagine that "there should be another place or job to earn more income," we are unconsciously evaluating the current situation as having negative fictitious capital. Thus, negative fictitious capital could also exist. It's not only gold, money, machine, factory, raw material or land; any event, activity and situation can emerge in the form of fictitious capital. Ubiquitous fictitious capital as a replicator is very characteristic of free investment capitalism as the destination of globalization. This is how capitalism purifies itself.

The tendency to evaluate everything through the logic of fictitious capital has deeply penetrated our daily life. Globalization has a serious impact not only on economy but also on our society and ethics. It is because of this tendency for intensive deepening of the market that we shift from "fictitious commodity" to "fictitious capital."

3. Market penetration into schools: the spread of a social institution of education as "human capital investment"

In the first place, we will quickly review how education has turned into fictitious capital based on an idea proposed by Becker's *Human Capital* (Becker 1964). According to Becker, education is for a student to accumulate human capital by investing monetary spent as well as the opportunity cost of time and acquiring specialized knowledge or technique. Its purpose is to increase the value of his/her own human capital and income flow (income gain) expected to earn throughout the future.

Once education is considered to be "human capital" investment, whether investment on education should be made is determined by comparing the present value of education's expected income with the education cost. "The present value of education's expected income" here refers to the summation of the streams (a series of numbers earned every year) of the present value of the expected income increase discounted by a given interest rate. For example, suppose someone will work for forty years after graduating from a college and the salary for a college graduate is higher than that for a high school graduate by a million yen per year. Assuming that the long-term interest rate as a discount rate is at the super low level of 1%, the discounted present value (DPV) of the expected income from college education is calculated as follows:

$$DPV = \sum_{i=1}^{40} \frac{1,000,000}{(1+0.01)^i} = 100,000,000 - \frac{100,000,000}{(1+0.01)^{40}} \approx 32,830,000$$

Therefore, as long as the current education cost is less than 32.83 million yen, the discounted present value of the expected income exceeds the cost. Therefore, this human capital investment can expect income. It is an application of the idea of the present value of expected income for bonds or real estate to education. The present value of human capital is the capitalized expected income flow (expected income increase) by a discounted rate (interest rate). If the value of human capital calculated in such a way exceeds the sum of the education cost and the interest payment of education loan, human capital investment on the education will have a positive net present value and therefore it is feasible.

Whether or not education should be regarded as investment for more monetary earnings provokes an important social issue. There is much room for discussion over what meaning education has or should have for human beings, but, clearly, this is not a matter for individual moral or ethical judgment but a problem on institution as socially shared rules. If the view of education as "human capital investment" is socially shared, as long as we follow the social rule, we can enjoy the benefit without being blamed by others. Although the concept of human capital initially invited strong resistance, it came to be widely accepted over past decades and it is now a widely established rule. It is not only the case of an external institution such as school education, specialized education, finding a job and education loan; it is also an internal institution like people's ways of thinking or values[1].

From the perspective of human capital, a student is not a consumer of education services but an investor who invests in himself rationally considering future income[2]. Such a viewpoint of investment has become applied not only to education but also to anything from job training, information, health and domestic labour. In the cases of information search and acquisition, health promotion, reduction of domestic labour, there is a tendency to make an investment decision considering only cost and benefit. For instance, the increasing number of single-person households as well as "parasite singles," who live in their parent's house, can be explained by the idea that marriage or living alone separately from the family is not a favorable investment. Behind the declining birth rate is a change in parent's temporal world - they place higher priority on their own time and regard lost income by raising child as an opportunity cost.

Giving a birth, raising children, domestic labour and caring for old people are considered to be not only a "pain or trouble" that does not earn monetary income, but also loss of the benefits of income as

being out of the job market incurs an opportunity cost. Therefore, these are avoided. Application of fictitious capital by the theory of human capital and opportunity cost to any field makes us regard all human being's choices or actions as rational investment and eventually blurs even the distinction between production and consumption.

When the theory of human capital by Mincer (1958) and Becker (1964) came out from Chicago School several decades ago only to be harshly criticized in both the academic and real worlds, we were able to flatly decline it as a fairy tale made up by unrealistic economists. However, it is no longer the case because we see the increasing number of phenomena that the theory of human capital and opportunity cost can well explain, and that the conception of human actions as investment has deeply penetrated our society. The penetration of investors or capitalists' thoughts into markets indicates the relative decline of the opposing principles of a community or state. However absurd it may look, once people start believing, make choices and take actions following this theory, what the theory preaches will be fulfilled accordingly. If we call it "self-fulfillment of a theory," a theory of human capital is equipped with this feature.

The cultural and ethical problems that we now face are not directly caused by undermining discipline, dilution of a sense of morality and belonging, or a change in values and norms. Although they are indirectly affected, these are the effects, not the cause. The cause is the change in economic reality, which brings about a shift in a topological boundary between market and non-market – a shrinking and dilution of the non-market domain (community or state) by expansion and deepening of the market. Although the shift in the domain of market and non-market mediates individuals' sense or recognition, e.g., what should be considered to be an object of production or consumption or income opportunity, it is not a change of values and norms unrelated to economic motivation. Cultural and ethical problems are fundamentally related to economic issues through institutions as socially shared rules concerning freedom and responsibility in the market.

4. Other views on the internalization of the market: Marx and Hicks

Internalization of the market is a historical tendency whereby the market, as a network of commodity trades by way of money, initially emerges outside or between communities, then expands and deepens. At this stage, globalization can be seen as the gradual manifestation of an innate tendency for internalization of the market through commodification and capitalization

This conception leads to a position of the "exogenous theory of market" which insists that markets emerge not from within but from without communities. Marx repeats that "exchange of commodity" (commodity trades by money) take places between communities, reflectively penetrate communities and dissolve conventional community-like relations[3]. Markets takes place outside or between communities and it penetrates communities – the market is internalized. Through this process, the market dissolves an economy reproduced through the principles of economic integration suggested by K. Polanyi such as reciprocity (symmetry) or redistribution (centrality) and reorganizes itself by uncontrolled free price trade (integral exchange) using money. The process, by which money taking place between communities transforms and dissolves substantive economic processes and reorganizes them by a formal exchange relation, is nothing but a historical process that allowed capitalist economy to emerge out of market economy. However, it has been conventionally believed that such a historical process cannot be theoretically analyzed.

Hicks, although he himself was one of the founders of general equilibrium theory, questioned the very theory himself and published a book of self-criticism in his later years, *A Theory of Economic History*. In 1972, Hicks won the Nobel Prize in economics for his work on general equilibrium analysis, but he allegedly praised *A Theory of Economic History* more than *Value and Capital*, the work he won the prize for (Morishima 1994).

In Chapter 3 of *A Theory of Economic History*, Hicks mentions that "the rise of the market" or "the rise of the exchange economy" - how market has been developed - is the central issue. The reason why Hicks began his discussion not from "the rise of capitalism" but from "the rise of the market" is that he tried to grasp capitalism centrally from the aspect of circulation and commerce, not from Marx's historical materialism that explains transition of the modes of production the interplay between the relation of production and force of production (Sakai 2010). Marx surely put his emphasis on the significance of production in capitalist economy. Nevertheless, as we have seen above, he also had a clear-cut vision of the rise and penetration of a commodity economy.

A Japanese economist Kozo Uno, in order to restructure the whole system of political economy, has reinterpreted Marx's three volumes of *Capital* (Marx, 1867, 1885, 1894), taking special note of Marx's view of exogenous market and autonomous development of circulation and commerce independent of production. He thus presented the grand system of political economy with three levels that consists of 1) the pure theory of capitalist economy (Uno, 1980), 2) the theory of economic policy on the three stages of capitalist development, *viz.* mercantilism, liberalism and imperialism and 3)

analysis of present states. Such his followers as T. Sekine (Sekine, 1985) and M. Itoh (Ito, 1988) elaborated the pure theory of capitalist economy to make it more consistent and coherent from the different angles. However, modes of commodification for internalization of the market that the present article explains as the inner logic of evolution of market economy and capitalist economy, in contrast with the chronological description of capitalist development of capitalism in Uno's theory of economic policy, has never been discovered nor explored.

According to Hicks, the "primitive non-market economy" consists of a "custom economy" and an imperialistic and militaristic "command economy." This seems to be a rephrasing of Polanyi's Community (reciprocity) and State (redistribution) from a slightly different perspective. But, compared with Polanyi's, Hicks' argument from the view of an economist is unique in that he provided insight into "merchant" and "market" through the problem of "the rise of the market." For Hicks, there are two kinds of markets: a) "flexprice market" where price is determined by demand and supply; and b) "fixprice market" in which producers or bureaucrats set prices. Then a) flexprice market consists of: a.1) "organized market (auction market); and a.2) unorganized market (market mediated by merchants). "Organized market" is a market that is ruled by general equilibrium theory where auctioneers move prices so as to reach the equilibrium of supply and demand at which price is determined. On the other hand, an "unorganized market" is a market where merchants set prices that fluctuate under the influences of the interplay by demand and supply[4]. This is the dominant and realistic market throughout most of history. Thus, Hicks clearly admits that the type of market he analyzed in general equilibrium theory is neither dominant nor realistic. This is Hicks' insight as well as self-criticism of his own past work on general equilibrium theory.

Hicks, having classified markets as above, treats human history revolving around the development of a "mercantile economy" with unorganized markets where merchant mediators set prices. The development of mercantile economy or "market penetration" is divided into the following three phases.

In the first phase, a social gathering like a religious festival provides trade opportunities. Thanksgiving festival of harvest turns into market in a rural village and rich farmers who conduct multilateral exchanges as mediators become a specialized merchant who stores and supervises commodities in market. At this point, the difference is still small between handicraftsmen who resell their own products after they add some unique processes of work to what they bought and merchants who buy goods and simply resell them. On the other hand, a manufacturer was a specialized kind of merchant. A steward represented the merchant's function as a king's servant and became a patent merchant. It is

because law was not established in a traditional society to protect properties and contracts. But an Open and Mercantile Economy develops based on the system of "city states" seen as the Phoenicians, the Greeks, the Mediaeval Italians (Amalfi, Pisa, Genoa, Venice, Florence), Hansa towns of the North Sea and the Baltic, which accompanies guild and zunft as well as military power. Hicks says "mercantile communities were being built up in an environment which was substantially (or at least relatively) non-mercantile. The line between the Mercantile Economy and its environment was rather sharp."

In the Middle Phase, commercial centers are established with the protection of nation-states and "market penetration" ("the formerly non-mercantile environment is open, in a variety of ways, to penetration by the market") comes to appear in the monetary/financial system or legal system. The "limited liability company" was also established as a partnership system that goes back to Rome.

In the third Modern Phase, the development of a mercantile economy reached its peak and market economy came to be dominant. In modern times, industry has large fixed capital such as machinery, and the gap between commerce and industry became wider. Thus, as industrialization progresses through the industrial revolution, although productivity increased, increases of real wages lagged behind. This is because it was not until continuous occurrence of technological innovation lowered the production cost of fixed capital that economy growth was enabled, the industrial reserve army was absorbed so that real wages could increase.

To sum up, Hicks thinks that a mercantile economy, i.e., market, emerged and developed out of "city states," except some patent merchants, which had different and particular characteristics from traditional community societies, industry developed at the last stage of development of commercial economy, and labourers' standard of living improved thereafter. Since he also mentions that the border between "commercial economy" and its surroundings was clear, Hicks took his position from the "exogenous theory of market." Hicks, although he classified the patterns of "market penetration" or "development of a mercantile economy", only categorized them using the facts of "economic history." He did not try to abstract the logic of "penetration" or "development" out of the historical facts to develop a theory. While sharing his position on the "exogenous theory of market," I will try to abstract more and theorize it.

5. Three modes of commodification in internalization of the market

Let us now recall Polanyi's three forms of economic integration: Market (exchange), Community (reciprocity) and State (redistribution). A traditional society founded on a community or a state is reproduced by reciprocity (custom/tradition) or redistribution (command) and supported by its value norm or morality (the mutuality principle, the status principle) that makes it possible. Markets, while emerging outside or on a border of a community or state (empire), reflexively penetrate it, by replacing the norm/moral with the principle of equivalence, dissolve a traditional human association and reorganize an economic society by the rule of the market, a prohibitive rule on properties or trades that defines the market. In so doing, capital expands and deepens the market through profit-seeking activities and gradually replaces the principles of redistribution by a state and reciprocity by a community with the principle of commodity trade (monetary commodity exchange). As a result, an overall economic society is reorganized as a market economy and capitalist market economy comes into being. Thus, the process whereby markets emerging between communities or states dissolve substantive economy and reorganize it through exchange relations is nothing but a historical process where capitalist economy emerges out of the rise and development of market economy and evolves even further. In order to logically explain the intensive deepening of market, I will call the process "internalization of the market": a process in which forms of circulation or of capital deriving from commodity relations penetrate non-market societies and integrate economy in a self-organizing manner.

Table 1: Three modes of commodification in the internalization of the market

	Modes of commodification	Place of commodification	Purpose of production	Frequency of monetary exchange	Degree of economic integration by Market
Ⅰ	External commodification	Outside of Community and Sate	Consumption	Casual	Low
Ⅱ	Internal commodification	Inside of Community and State	Income	Frequent	Middle
Ⅲ	General commodification	Disappearance of Community and State	Profit	Constant	High

The process, where markets or monetary exchange relations formed as external relations of a community or state integrate the reproduction system of substantive economy through production and consumption of goods and services, progresses in the following order: I) external commodification; II) internal commodification; and III) general commodification. Table 1 shows three modes of commodification in internalization of the market. In the case where normal goods except labour-power/land as fictitious commodities-to-be (hereafter "general goods") are commodified, the

differences between the commodification modes are indicated in terms of the place and purpose for which general goods are commodified as well as the frequency of the commodity trade using money. As the mode of commodification progresses from I to II to III, the degree to which the market dominates and integrates substantive economy increases. Thus, "internalization of the market" is a model of economic evolution for coherently explaining the tendency of intensive deepening of the market.

Historically, a certain set of rules (custom, value and law) is necessary to enable rice, salt, slave or pasture to become a commodity, and those rules vary depending on time and place. These rules for commodification are "replicators (genes)" that determine the properties of the market economy. Since communities, groups and individuals interact with one another while they accept, recognize, judge and act on those rules, such agents are called "interactors". Each mode of commodification inserts unique changes to a replicator of market. Internalization of market can be interpreted as a process in which replicators of different markets successively create. Capitalist market economy is a market economy equipped with more peculiar replicators, where three replicators of internalization of the market are nested. In the following discussion, market refers to a distributed type of market according to the law of many prices, and market economy refers to a loosely connected network of those markets.

External commodification: within a community, external nature such as land and internal nature like labour are ecologically reproduced, and general goods are reproduced by mediation of internal/local reciprocal exchange and redistribution. Between communities, on the other hand, price setting markets exist to globally connect such local reciprocal exchanges and redistribution and establish approximate equivalent exchanges[5].

External commodification is a process where market relations casually and sporadically take place and expand outside a non-market society. General goods (G) initially produced for domestic or communal consumption are brought to market outside the reciprocal/ redistribution domains and sold as a commodity (C), i.e., the object of trade for money (M) (Figure 2). This is illustrated as a scheme, $G \rightarrow C - M - C'$. Here "→" refers to transformation of general goods, G, into commodity, C. Let us consider the case, as an example, where there is casual surplus of rice or spice originally produced for domestic consumption and a merchant comes to buy it. In this case, selling rice or spice is an accidental event and they were not produced for sale. Therefore, monetary income earned in this case is temporary and extra.

Figure 2: External commodification

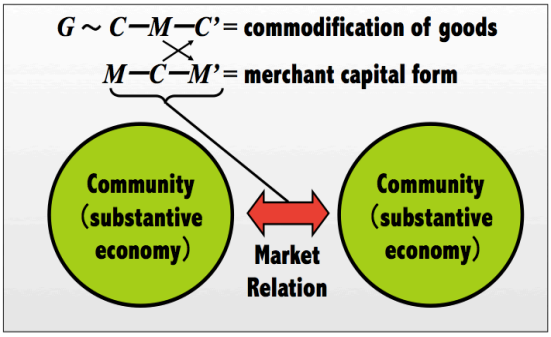
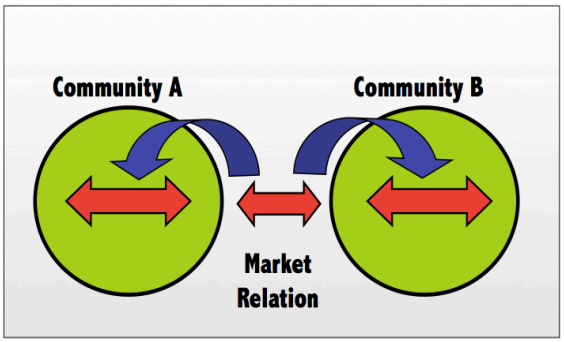


Figure 3: Internal commodification



A slave as a living commodity symbolically shows the properties of "external commodification". A Human was not produced for sale as a slave; a human was reproducing himself/herself by living within a community. Nevertheless, he/she was violently taken away from a community and sold for money as a slave. Such commodification of slave was implemented outside a community. This is an example of Polanyi's "fictitious commodity". Here, a human being, not labour, money or land, is turned into a "fictitious commodity" as slave. Although a human being is not a good to be produced or traded in a market society, a fiction was born that regards humans as tradable commodities like other goods.

Internal commodification: internal commodification is a process, in which market occurred outside a community or state reflectively penetrates the community, commodification of goods is established inside as well as outside it, a community and state collapse and the boundary between market and non-market disappears. Here, independent small producers or craftsman, even farmers need money to buy everyday goods. For this reason, their production becomes for monetary income, not for domestic consumption (Figure 3).

Through trades by merchant capital for the purpose of arbitrage, equivalence (commensurability) is brought into commodity exchange relations within a community. Money's invasion into a community is nothing but the destruction of the principle of reciprocity (the principle of non-equivalence without equivalence nor non-equivalence) by the principle of equivalence (Nishibe 1997, 2000a). Monetary equivalence in indirect exchanges is not the same as the mathematical equivalence implied in the law of one price, expressed as a binary relation with reflexivity, symmetry and transitivity (Nishibe 2000b). Even in the situation of distributed markets with the law of many prices, a commodity is commensurable in the one dimension of price with money functioning as a measure of value. This allows the agent with money to compare and choose commodities.

At this point, they still do not produce for the purpose of earning profit; they do not ask for profit as part of a price either. Even if independent small producers or craftsmen set price with a certain margin on it, it should be done so as to secure buffer to continue business in preparation for sales fluctuation in the future, which works like insurance to hedge the risk of unsold items, rather than to seek profit. Accordingly, commodity prices, through continued trades, should form a certain distribution around the mean or median. Producers calculate the production cost by adding up various necessary costs. The margin rate to be put on top of the cost is not uniform but should form a certain distribution, depending on optimism of the future expectation. Competition over price as well as other non-price factors is developed along with equivalence of money. Thus, reciprocity in communities or redistribution by the state is replaced by monetary bilateral transactions on market.

General commodification: general goods come to be produced primarily to earn as much profit as possible, which is sales amount after cost deduction. This is "general commodification" (Figure 4).

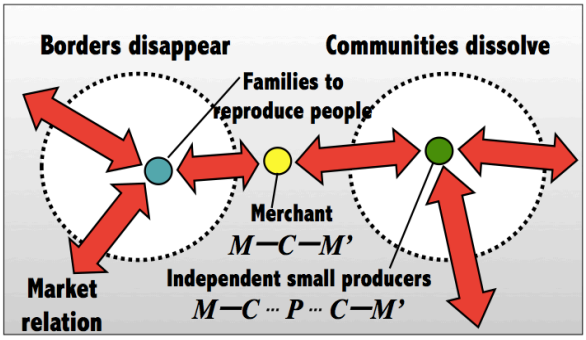
General goods are produced not for domestic consumption or consumption within a community, but to earn profit by their sale. Labor-power and land, due to its own properties, cannot move freely or be produced. Therefore, it is subject to the regulations of a community and thus more difficult to be commodified than other goods or services. Since they are not yet commodified at this point, the production of those commodities must depend on communal or domestic labour. The price of produces are calculated by adding a certain profit margin to the total of cost for the means of production such as raw materials, tools and machines and the estimated cost of the domestic labour. This phase corresponds more or less to what has traditionally been called a "simple commodity producers' economy" consisting of independent small producers.

Since agents who produce commodities to earn profit come to appear in general commodification, the production becomes organized in a concentrated manner. As long as they remain as a household-based handcraft industry and wholesale-system domestic industry (putting-out system), its scale is limited.

As seen in Table 1, internalization of the market has three different modes: external commodification, internal commodification and general commodification. The place of comodification transitions from outside a community/state to inside a community/state and to vanishing of the boundary between outside/inside, while the purpose of production of general goods transitions from consumption (domestic or communal) to income and to profit. The frequency of monetary exchanges also increases

from casual to frequent and to constant. Market economy penetrates the substantive economy and integrates an economic society to a higher degree in the above order. Although there is such a typical order with three modes of commodity in terms of degree of integration of a socioeconomy, transitions do not necessarily follow the order, as the order changes and sometimes leaps in an actual history. This also applies to the evolution of capitalist market economy that accompanies three modes of commodification of labour-power to be discussed below.

Figure 4: General commodification



6. The establishment of a capitalist market economy

Capitalist market economy is a market economy in which general goods other than labour-power/land are produced and sold for profit, presupposing the existence of labour-power market. With external commodification of labour-power added to general commodification of general goods, it diverged as a peculiar form of general commodification of general goods. In other words, capitalist market economy can be understood as a peculiar market economy combining general commodification of general goods with external commodification of labour-power. We thus have such an inclusion relation as 'economy ⊃ market economy ⊃ capitalist (market) economy'.

Capitalist economy presupposes the existence of three modes of commodification in internalization of the market: external, internal and general. The rise of capitalist economy requires the development of modes of commodification in market economy as a necessary condition. Its sufficient condition is abundance of "free" wage labourers, “free in the double sense,” who have lost the bonds with and protection of a village community and do not own the means of production for life. Only after labour-power and land, which used to be rigidly regulated by non-economic institutions like tradition, custom and law, can be traded “freely” based on a contract in an external labour markets or a real estate

market, such economic agents as industrial capital and modern family could be formed inside a capitalist economy.

Putting land aside for the time being, commodification of labour-power as a sufficient condition for establishment of capitalist economy is in fact "external commodification" for a newly established modern family in an industrial society, but is "internal commodification" in the sense that new trade of labour-power dissolves reciprocal relations within preexisting communities of tribe or village in an agricultural society. This means that the same phenomenon can be understood differently depending on whether you see it from a viewpoint of new emerging communities or from that of old collapsing communities. This happens because humans used to be connected to both communities of a tribal family and a village, but they have come to belong only to a nuclear family.

In external commodification, whether of general goods or labour-power, a community and state are still immune to infection of market in many cases because they are strongly protected by various cultural, religious and political codes and regulations. Therefore, external commodification wouldn't be easily fulfilled by the economic logic alone. It requires non-economic factors such political interventions and violent acts as war, plunder, deprivation and establishment and/or abolishment of community norms and/or state law. Once external commodification is established, however, the subsequent modes of commodification advance by gradually stretching initial rips on protection of culture and politics so that the economic factors alone can drive the process. If a community and state weaken in the process of external commodification, internal commodification and general commodification will progress relatively easily without resistance by a community or state. Polanyi's "fictitious commodity" corresponds to "external commodification" we just discussed.

Industrial capital is a business entity that connects labour-power and the means of production in order to produce products and attempt to make profit from a difference between sales of products and advanced money capital. While it is dominated by the market principle in purchasing and selling, it has some hierarchical organization with chain of command for planning, decision-making and implementation in order to efficiently control and rationalize the production process. In that respect, it is largely dominated by the planning principle. Industrial capital, with such a planning principle and a hierarchical internal organization, came to be able to conduct mass-production of inexpensive commodities in a mechanized factory, by employing a large amount of labour-power that does simple labour, for a low cost.

Since all the input factors including labour-power are commodified and the calculation of the costs of production (cost of goods purchased) and profit is precisely conducted in accordance with the bookkeeping and accounting rules, "production of commodities by means of commodities" for profit is made possible. Industrial capital is the agent in a capitalist market economy with a specific purpose of making profit as much as possible by producing and selling certain commodities using labour-power and the means of production. A modern nuclear family is a minimal community that reproduces the present and future labour-power by buying and consuming the necessary goods with wage of labour. Capitalist market economy is a particular type of market economy that derives by combining two modes of commodification: general commodification of general goods plus external commodification of labour-power. It is a socio-economic system whose production is dominated, not by modern families and independent producers, but by industrial capital in the actual form of a firm or company that employs labour-power and produces general goods for profit.

7. The evolution of capitalist economy through change in the mode of commodification of labour-power

Can we see the current globalization as manifestation of a tendency of intensive deepening of market in evolution of capitalist economy? This is the main question to be examined in this article. In order to answer to it, we would like to present the following hypothesis. Labor-power, unlike a capitalist commodity produced to seek profit just like general goods, used to be a simple commodity domestically produced within a community called family. However, there is an ongoing change in mode of commodification of labour-power in a contemporary capitalist market economy. Labor-power has been transformed from a "simple commodity" without seeking profit into a "fictitious capitalist commodity" as being produced for profit. In other words, market internalization has gone enough to involve not only general goods but also labour-power. The mode of commodification regarding labour-power has already shifted from external commodification to internal commodification, and further to general commodification. Then the market relations based on monetary exchange have replaced both the relations within a community based on reciprocity and the relations within a state based on redistribution. Consequently, family in our time, which could be called "the last community," has become a "fictitious labour-power production sector" that capitalistically produces a labour-power commodity. As Table 2 shows, capitalist market economy is assumed to evolve through shift in modes of labour-power commodification.

In this hypothesis, three modes of market internalization associated with general goods – external, internal and general commodification – repeat themselves with regard to labour-power, as if "ontogeny recapitulates phylogeny," in capitalist market economy.

As those three modes represent themselves in a self-similar manner, in capitalist market economy, there should be following three modes: external commodification of labour-power (E Mode), internal commodification of labour-power (I Mode) and general commodification of labour-power (G Mode). In a traditional language, this can be said: labour-power is likely to be transformed from a "simple commodity" which does not contain profit to a "capitalist commodity" which is produced for profit. Since each model is rather abstract, explanations with specific cases as well as models followed by formula will be presented below.

Table 2: Evolution of capitalist economy through shifts in mode of commodification of labour-power

I. External commodification of general goods
II. Internal commodification of general goods
III. General commodification of general goods
IV. General commodification of general goods + External commodification of labour-power
= Establishment of capitalist market economy
1) Capitalist market economy with external commodification of labour-power（E Mode）
2) Capitalist market economy with internal commodification of labour-power（I Mode）
3) Capitalist market economy with general commodification of labour-power（G Mode）

In order for a modern family born under established capitalism to reproduce itself, it needs to reciprocally exchange and redistribute among family members not only commodities which can be bought in a market but also goods and services not tradable as commodities. The relations among modern family members depend more on non-market reciprocal exchanges and distribution than on market-like equivalent exchanges. In reciprocal exchanges including barter, there is no conception or standard of equivalence such as price and cost. Therefore, even if a certain emotion about profit or loss occurs, it cannot have a rational supporting ground. However, if money wage only contains the price of consumption goods to be bought in a market, there should be a "hidden cost" which, according to the logic of economy, does not count monetarily. Many of the consumer goods bought in a market are raw materials or semi-finished goods, which would eventually be consumable after going through such works as sewing, laundry, cooking, setting the table, cleaning and repair. These services are usually called "domestic labour." The characteristics of capitalist economy where labour-power is

externally commodified lie in the fact that although the services called domestic labour are conducted for reproduction of labour-power, they are not recognized in a society or family as “labour” that requires monetary compensation. Ivan Illich calls it “shadow work” because “unpaid” work supports paid labour tradable in a labour-power market outside a family community (Illich 1981). Looked back from the viewpoints of subsequent types (I Mode and G Mode), therefore, in this type of labour-power commodification (E Mode), its price calculation does not seem to explicitly include all the costs and labour-power commodity is systematically underestimated.

In order for "domestic services" primarily provided by women to be recognized as "domestic labour" and also as sacrifice and cost necessary to produce labour-power, the conception of paid “labour” clarified by external commodification of labour-power and that of “wage” as its monetary compensation should reflectively penetrate a modern family and be recognized as something also applicable within a family. This is the same as internal commodification of labour-power within a family community. It is not until internal commodification of labour-power is completed that domestic labour becomes a "fictitious commodity" and is thus calculated as explicit cost in determining wage. This also includes the situation where women go beyond a range of family into a society and outsource the domestic labour with the wage they earn.

Economics has so far taken external commodification of labour-power for granted. In the tradition of classical economics, Ricardo (Ricardo 1817) and Marx (Marx 1867) assumed the so-called “iron law of wages” insisting that wage be determined at the minimum level, whether it is physiologically or culturally determined, required to reproduce labour-power[6]. This means that a wage earner and its spouse maintain life with the input of wage goods and domestic labour to physiologically or culturally reproduce the present labour-power while reproducing the future labour-power by giving birth of, support and educate children. Although real wage can be either exogenous or endogenous depending on which of those (physiology and culture) a priority should be given to, wage was generally thought to be the necessary amount to reproduce a family community of labour-power. If we put mathematically how value of labour-power is determined, it comes down to the idea, like in von Neumann’s growth model (von Neumann 1945-46), that value of labour-power (money wage) is equated to the price of a bundle of goods that a unit of labour-power consumes. This has become a common assumption followed by Neo-Ricardians and Marxists after Piero Sraffa (Sraffa 1960).

The difference in price setting mechanism for a general commodity and a labour-power commodity at the stage of external commodification of labour-power is as follows. In the case of general

commodities, after calculating the total costs by adding all the means of production multiplied by their prices and labour-power multiplied by money wage, price is set by further adding average profit by multiplying the general rate of profit to it. General profit rate is applied as a margin because a certain mechanism through capital flow to equalize profit rate is believed to exist. For example, as long as it is free for capital to enter in and exit from each sector, capital constantly moves from lower profit sectors to higher profit ones. Therefore, it is theoretically explained that profit rates over sectors will be equalized in the long-run.

On the contrary, labour-power commodity is not a commodity capital produced for profit; it is a "simple commodity" that a community called a family reproduces without being conscious of the hidden cost. If the agent of activities does not recognize domestic services as domestic labour, its real cost is not recorded as production cost of labour-power. Money wage, under the assumption that "wage bundle" (a bundle of consumer goods to be bought by wage) consisting of many kinds of consumer goods required to reproduce a unit of labour-power is exogenously given, is calculated as the total value of each consumer good multiplied by its price. In this case, wage only covers the reproduction cost of labour-power and does not receive profit margin for it. Laborers who sell their labour-power are found in an inferior position than capitalists who sell their products as general goods.

We have already said that, in modern capitalism, labour-power went beyond the mode of internal commodification and turned into that of general commodification where it has become to be recognized as a capitalistically produced commodity. In this case, when a family as a labour-power production sector sells labour-power as its commodity, it will calculate the production cost by counting not only a wage bundle but also applying the money wage to domestic labour and set money wage by marking up the total cost by the general profit rate. The structural change in wage determination occurs because a family as the last community in a market economy is being eroded by the market principle, dissolved and reorganized into a fictitious labour-power production sector.

Then, why do internal commodification and general commodification of labour-power progress? when the economic categories such as "labour-power" and "wage" are established by external commodification of labour-power, they reflectively penetrates modern families and "domestic service" has come to be considered as fictitious "paid labour." For, once family members who used to engage in "domestic service" based on reciprocity and redistribution begin to receive wage outside a family, they tend to regard it as troublesome and time-consuming "domestic labour" that burdens them with "opportunity cost." Opportunity cost does not incur actual cost, but spending time on something

decreases work hours, i.e., money wage. The decrease is regarded as a cost. By introducing the conception of opportunity cost, housekeeping and raising child to reproduce labour-power are transformed into “compensated labour.” Once the equation “opportunity cost of household chore and childcare” = “price of commodities replacing them” = “labour wage of working outside a family” is established, domestic labour and raising child labour are thought of as being able to naturally demand money compensation equivalent to money wage in labour market. This is internal commodification of labour-power.

When the conception of opportunity cost has become a commonplace assumption, the shadow work for household chore and childcare comes to be socially underestimated by insisting it be work of no value since it does not earn money income. Furthermore, the value of human activities in a community that household chore and childcare are implicit ways of expressing affection and communication for their own pleasure vanishes and, accordingly, they try to avoid conducting domestic services and raising child. Internal commodification of labour-power is more influenced and promoted by social institutional factors in a broader sense including tradition, custom, belief and law rather than economic ones.

The institutional factors here include women’s advance to a society and increase in their labour-power force rate, legal adjustments abolishing gender discrimination like Measures for Equal Employment Opportunities for Men and Women, changes in social custom and ideas in general backed by social movements calling for independent women and feminism, collapse of patriarchy in modern family and following change in attitude of family members. The social and cultural institutions and our attitude in daily and actual life are in interacting relationships; they evolve by influencing each other. This dynamically transforms the mutual relationship of market- and non-market domains, but generally, it promotes the market principle’s erosion into a socio-economic society, and there is a tendency more activities that were not conventionally converted into monetary unit have come to be tradable with money.

As a result of domestic labour being replaced by new commodities and services, on the other hand, they gradually come into a basket of wage goods. We can see numerous consumer goods have come into a market as new commodities to replace domestic labour: from consumer electronics like refrigerator, washing machine, cleaner, dish washer, water heater, such services as water, electricity, gas, telephone, food catering, raising child, cleaning, home delivery to transportations like bicycle,

automobile and train. Consequently, as domestic labour decreases and a bundle of wage goods increases, family's standard living increases in general.

So what kind of situation is general commodification of labour-power? Put it simply, it is a situation where labour-power turns into a "fictitious capital" in the name of "human capital." When people come to view, along with more wage earners in a family, outsourcing of domestic labour and more frequent dining out, their own spending on education, training, leisure, dining and sports as investment to develop human capital in terms of technique, knowledge and health, transformation of labour-power into human capital accelerates. Human capital is calculated as the present value of the flow of expected income from the future added by education and training discounted by interest rate. This kind of thought forms fictitious capital. The purpose of investment is to maximize the net present value – the difference between the expected value of capitalized human capital and the current investment amount. A family now has come to be like a labour-power production sector producing and selling labour-power commodity (human capital) in a market to earn profit (interest). The thinking of fictitious capital is applicable not only to education but to anything like culture, sociability and marriage. When the conception of education degree, license, specialized technology, knowledge, technique as "human capital" to increase the future income comes to have wider applications and people come to believe education, training, skill acquisition and better health are investment on human capital, general commodification of labour-power is accomplished. In other words, sales price of labour-power, like other production goods and consumer goods, includes not only production cost but also profit margin. Human capital investment is positioned as an investment activity to increase profit in the labour-power production sector. As a result, labour-power turns into a fictitious capitalist commodity produced and sold for profit seeking. The modifier, "fictitious," indicates a family operating the reproduction of labour-power is viewed like a profit company. Thus wage now asks for the same profit rate as with any businesses, going beyond the cost covering wage gods and domestic labour.

8. One-good models of external/internal/general commodification of labour-power[7]

Capitalist economy evolves as the mode of labour-power commodification transitions from external commodification to internal commodification and to general commodification. We will discuss how the general profit rate for capitalists and the real wage rate for labourers change during the process as well as what role innovation plays in the last general commodification of labour-power.

Here three modes of commodification of labour-power – external, internal and general commodification of labour-power (we call them E Mode, I Mode, and G Mode, respectively) – will be analyzed based on a simple model of corn economy that has a corn sector and a labour-power sector only. Corn represents a general good other than labour-power and land. But land is not taken into consideration in this model. The figures below show those three cases – E Mode in Figure 5, I Mode in Figure 6 and G Mode in Figure 7. In each figure, blue and green arrows represent the necessary inputs of corn and labour-power, respectively, to produce a unit of corn and labour-power. Red arrows represent the circulation of money in the trades of corn and labour-power. Service labour (domestic labour) does not receive any compensation in model E, thus it does not incur money circulation. In Models I and G, however, there are money circulations following the service labour. The formulas to determine price of corn and labour-power are in the squares of corn and labour-power sectors, respectively. The formula for corn price is the same across all the models while the formula for labour-power varies.

These are one-good models, in which corn is the only product and it is also a production good as well as a consumer good. A family is regarded as a (fictitious) labour-power production sector here, and we will call it a labour-power sector. Let the input coefficients of corn and labour-power in the corn (first) sector be a_1, l_1 ($0< a_1 < 1, l_1 > 0$), respectively, the wage bundle coefficient (quantity of corn as wage good to reproduce one unit of labour-power) and the input coefficient of domestic labour input (quantity of domestic labour input required to reproduce a unit of labour-power) be a_2, l_2 ($a_1 > 0$, $0< l_2 < 1$)[8], respectively, and the price of production for corn be P, money wage be W, the general rate of profit be r. Here, the formula for determining price of corn, which is the same across three models, is:

(1) $P = (a_1P + l_1W)(1 + r)$

The cost of producing a unit of corn is $a_1P + l_1W$. The price of production for corn is determined by marking up at the profit rate. The equations for money wages are shown for each mode are:

(2) $W = a_2P$ E Mode

(3) $W = a_2P + l_2W$ I Mode

(4) $W = (a_2P + l_2W)(1 + r)$ G Mode

Figure 5: Capitalist economy with external commodification (E Mode)

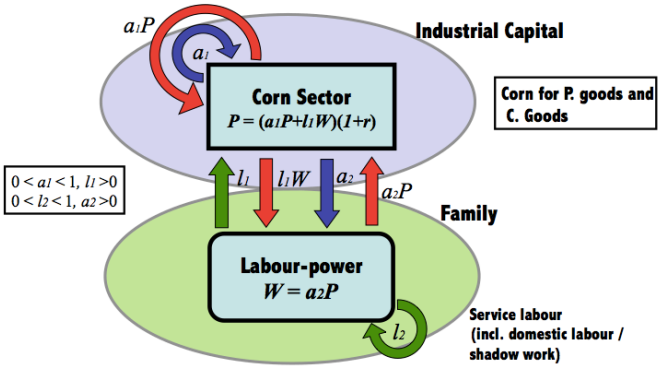


Figure 6: Capitalist economy with internal commodification (I Mode)

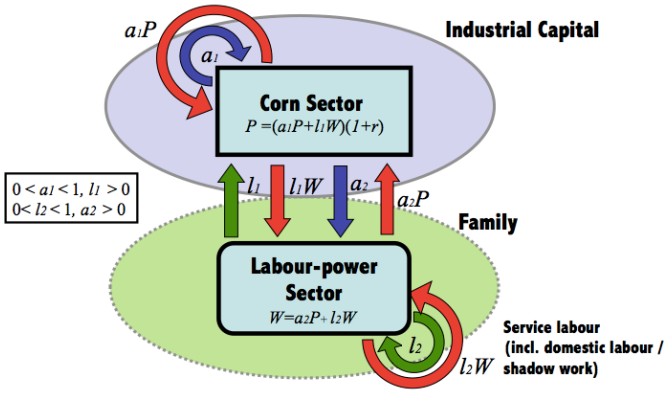
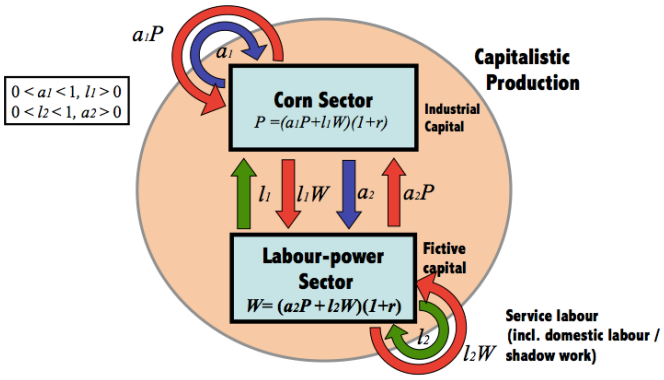


Figure 7: Capitalist economy with general commodification (G Mode)



The money wage equation for E Mode is a conventional one that represents the cost of labour-power reproduction. Money wage W is the amount of money that can buy the wage bundle a_2, exogenously given as the necessary quantity of corn to reproduce a unit of labour-power. In I Mode, l_2W, which is the wage for domestic labour to produce labour-power, is included in the money wage W. In G Mode, profit is marked up to the cost of reproduction of labour-power in I Mode. The money wages for a labourer and domestic labourer are both equal to W, which can be regarded as the money wage paid for outsourced domestic labour, because, once domestic labour is acknowledged as labour to be paid, labourers move to seek arbitrage whenever there is a gap in wages between wage labour for a general goods sector and domestic labour for labour-power sector, i.e. family. In G Mode, the markup of the general rate of profit r is applied to a unit cost $a_2P + l_2W$. If we put real wage W/P as w, from (1), we get:

(1′) $r = \frac{1}{a_1 + l_1 w} - 1$

This is a monotonic decreasing function of the real wage w. From (2), (3) and (4), we get:

(2′) $w = a_2$ E Mode

(3′) $w = \frac{a_2}{1-l_2}$ I Mode

(4′) $r = \frac{w}{a_2+l_2 w} - 1$ G Mode

Figure 8: Comparative statics of Modes E, I and G

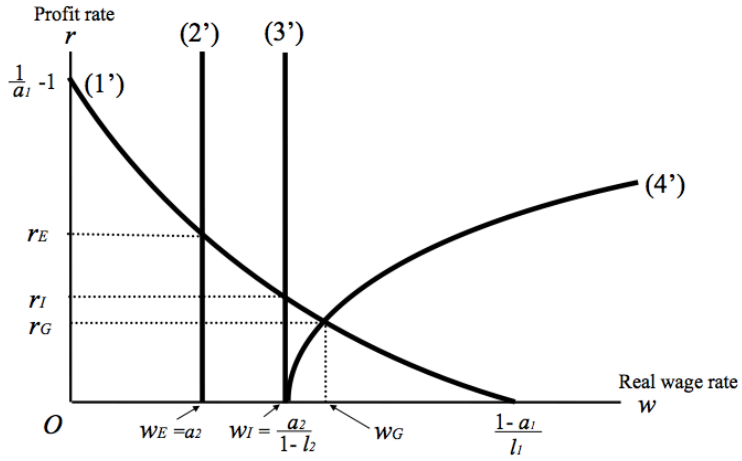


Figure 8 shows (1′), (2′), (3′) and (4′) depicted on the first quadrant of (w, r) plane. By rewriting the solutions of real wages and general rates of profit in (1′) and (2′) for E Mode, (1′) and (3′) for I Mode, and (1′) and (4′) for G Mode as (w_E, r_E), (w_I, r_I), (w_G, r_G), respectively, we can prove the following propositions:

[Proposition 1] $w_E < w_I < w_G \Leftrightarrow r_E > r_I > r_G$: If domestic labour l_2 is greater than zero, the real wage w increases and the uniform rate of profit r decreases as the capitalist economy advances its degree of commodification of labour-power from E Mode to I Mode and to G Mode.

[Proposition 2] $\frac{\partial w_E}{\partial a_2} > 0$: In external commodification of labour-power (E Mode), as the wage bundle a_2 becomes larger, the real wage rate w_E increases and the uniform rate of profit r_E decreases.

[Proposition 3] $\frac{\partial w_I}{\partial a_2} > 0$, $\frac{\partial w_I}{\partial l_2} > 0$: In internal commodification of labour-power (I Mode), as the wage bundle a_2 becomes larger, or as the domestic labour l_2 becomes larger, the real wage rate w_I increases and the uniform rate of profit r_I decreases.

[Proposition 4] $\frac{\partial w_G}{\partial a_2} > 0$, $\frac{\partial w_I}{\partial l_2} > 0$: In general commodification of labour-power (G Mode), as the wage bundle a_2 becomes larger, or as the domestic labour l_2 becomes larger, the real wage rate w_G increases and the uniform rate of profit r_G decreases.

[Proposition 5] In general commodification of labour-power (G Mode), innovation (process innovation) lowering the production cost of labour-power $(a_2P + l_2W)$ in the labour-power sector under the existing price system increases the uniform rate of profit r_G and decreases the real wage rate w_G (Figure 9).

[Proposition 6] In general commodification of labour-power (G Mode), innovation (process innovation) lowering the production cost of corn $(a_1P + l_1W)$ in the corn sector under the existing price system increases both the uniform rate of profit r_G and the real wage rate w_G (Figure 10).

Figure 9: Technological innovation in labour-power production sector

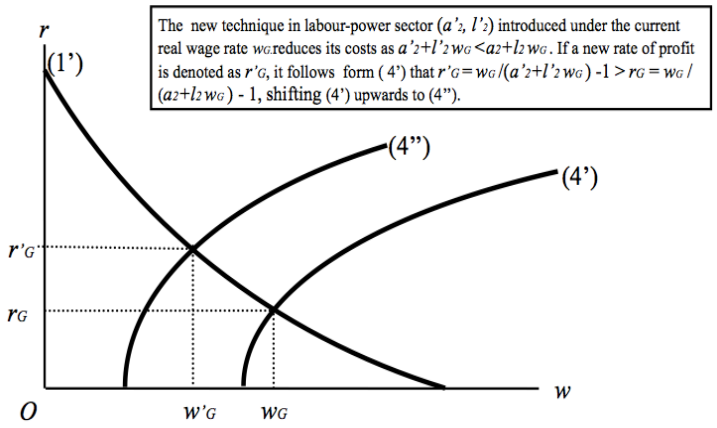
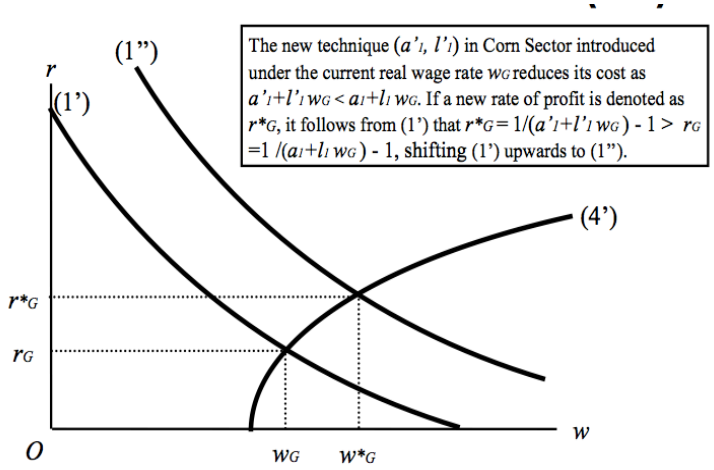


Figure 10: Technological innovation in corn production sector



Noteworthy are the propositions 1, 5 and 6. According to the propositions 2, 3 and 4, when the wage bundle (and domestic labour) increases, the real wage increases in all the models. According to the proposition 1, if the production technology and wage bundle are constant[9] and the domestic labour is greater than zero, the real wage rate increases, the profit rate decreases and the income distribution becomes favorable to labourers, following the development of market internalization in labour-power. This can be called "the law of the tendency of the rate of profit to fall following internalization of market." While Marx's law of the tendency of the rate of profit to fall is related to the properties of technological progress in capitalism brought about by increase in organic composition of capital in production technology, the law of the tendency of the rate of profit to fall in this paper explains the real wage rate increases and the profit rate decreases as the degree of internalization of market in terms of labour-power market goes to a higher degree, which fundamentally defines capitalism, and as the process about labour-power transitions from external commodification to internal commodification and to general commodification. In the external commodification where labour-power was a simple commodity, it was evaluated less favorably than general goods, but labour-power turns into a capitalist commodity that is reproduced while creating the same profit as general goods do. In general commodification, labour-power receives the equivalent evaluation as general goods and the status and standard of living of labourers increase.

This tendency emerges especially as wage labourers come to ask for the money wage of a profit sharing type tied to company's profit rate through negotiations by trade union, and as many labourers expect to receive income from investment on their own human capital as part of wage from capitalists. Since domestic labour was not evaluated as cost and the cost was not added to profit, labourers were

less favorably evaluated than general goods. As it transitions towards general commodification of labour-power (G Mode), the gap is corrected and, accordingly, the profit rate decreases and the real wage increases.

In general commodification of labour-power (G Mode), as the equation to determine the money wage includes the uniform rate of profit *r*, income distribution (net product is divided into real wage and profit) is endogenously determined together with relative price (the real wage rate in this case). Therefore, the request by labour union for increase of money wage rate comes to increase in uniform rate of profit to reproduction cost of labour-power, only leads to inflation in accordance with the rate of increase in the money wage and does not increase the real wage (wage-price spiral)[10]. Sraffa and the neo-Ricardians demonstrated that determination of income distribution (profit rate or real wage rate) logically precedes the price determination, and this was interpreted to have presented the political usefulness of wage struggle. However, if capitalism is close to G Mode, the discussion may need to be fundamentally reconsidered[11].

9. A capitalist economy based on general commodification of labour-power: class division and self-activation

What will capitalist economy with general commodification of labour-power, in which labour-power has turned into fictitious capital as human capital, bring about? First, it is necessary to attach more importance to heterogeneity of labour-power commodity since labour-power is no longer homogeneous and each has different quality such as special knowledge, technique and skill.

On one hand, labourers with abundance of human capital emerge and, on the other, labourers with no such human capital are split. In that case, the rate of profit of the labour-power sector $r = k\ (\geq 0)$ in G Mode comes to vary. If it is smaller than the rate of profit of the corn sector r $(r > k)$, then the real wage rate w_I in I Mode determines the lowest level for labourers with no human capital when $k = 0$. k increases as labourers obtain bigger human capital than that and its maximum value is $k = r$. Florida says "creative class" with technology, talent and tolerance has emerged as a group of individuals who have a variety of human capital (Florida 2002, 2005). We need to admit, in reality, such class division has already developed. If a new class division has taking place with labourers, non-"creative class" who only can offer homogeneous and unskilled labour-power, to which $k = 0$, i.e., I Mode corresponds to, has difficulty in finding a long-term jog as a fulltime worker, forms an industrial reserve army of the highest risk of losing job over economic cycle and, consequently, their income

level would be lower. On the other hand, the labourers belonging to "creative class" with $k = r$ has become labour-power of low substitution due to their own knowledge or technique, has low risk of losing job over economic cycle and is in a position to earn relatively high wage in internal labour-power market.

Since the circumstances between those with human capital and without differ, mutual cooperation and association are difficult. Evolution of capitalism brings about a class division deriving from the transformation of labour-power into human capital and fictitious capital. This explains the current reality: lifting a ban on dispatched workers created a number of working poor who cannot even earn the minimum wage; many come to stay away from work; the rate of trade union participation lowers; and the number of labour disputes decreases despite the tendency of unemployment rate to increase.

The propositions 5 and 6 are applications of Shibata=Okishio Theorem (Shibata 1935, Okishio 1965) regarding technological progress, insisting that introduction of new technology (process innovation) lowering cost in the comparative statics sense necessarily increase the rate of profit and that if that happens in the corn sector (more generally, in the sector of general goods such as production goods and consumption goods), then it increase the real wage rate and if it happens in the labour-power sector, it decrease the real wage rate. In contrast to the Models E and I where the real wage rate was assumed culturally and socially given, in G Mode where it is endogenously determined, technological innovation in the corn sector (the sector of general goods) increases the general rate of profit and the real wage rate and endogenously increases the income distribution of labourers. This indicates the process of technological progress is favorable both for capitalists and labourers and there is an incentive to promote technological innovation for both of them. In other words, since it can form a win-win relationship between capitalists and labourers, they can come to mutually cooperate for technological innovation.

The proposition 1, which states the progress of mode from external commodification of labour-power commodification to internal commodification and to general commodification increases the real wage rate and decreases the general rate of profit, indicates, as capitalism evolves, the tendency that the total of earned wages of a family increases, that the position of labourer and domestic labourer as a seller of labour-power improves, that the position of capitalist lowers in a distribution relation between capital and labour and that the potential of capital accumulation and economic growth decreases. According to the proposition 6 regarding general commodification of labour-power stating that labourer arrives at the same position as capital, however, capitalism, as it evolves to G Mode, has a built-in technological

innovation process simultaneously achieving both increase in profit rate as well as relative improvement of position of labourer. It attains to self-activation by enhancing the potential of capital accumulation and economic growth over again.

Capitalism appears to bring itself to an unfavorable situation for itself by treating labour-power as general goods and the uniform rate of profit decreases accordingly. Nevertheless, it brings out the potential growth possibilities not from exploitation of labourers and domestic labourers (by setting more unfavorable price to labour-power commodity than to general goods or not calculating domestic labour as wage) but from the increase in profit rate through technological innovation by treating labourers better as in an equivalent position as capital, thus transforming it into "fictitious capital" and eventually shift toward the free investment capitalism. This invokes Marx's mechanism of producing relative surplus value mediated by emergence and vanishing of extra surplus value. Thus, capitalism demonstrates the strength to reverse its stagnation and self-activate by transforming the rule of labour-power commodification as a replicator for its own fundamental existential conditions.

10. The replicators of free investment capitalism and fictitious capital as the ultimate model of globalization

The above theoretical model makes it clear that the ultimate model of globalization is "free investment capitalism" where all the commodities including labour-power are produced and sold for profit, people always invest to every profit/income opportunity including themselves, and the freedom it puts forth is freedom of investment. Globalization is an obsessional-neurosis tendency of driving us to transform human life itself into investment transactions and means of earning income. It is not only hedge fund managers or large-scale capitalists but also all of us including labourers that need to invest. "Everybody, be a free investor!" would be the precise slogan for globalization.

Globalization did not arise out of individual's seeking for more rationality or freedom; it came into being because a set of replicators of capital form eventually parasitized individuals and commanded them to seek infinite self-augmentation that was felt a rather irrational desire for human beings, so that "fictitious commodity" and "fictitious capital" are activated to propagate in a socioeconomy. As modes of commodification progress through internalization of the market, "fictitious commodities" and "fictitious capital" related to labour-power, land and money become ubiquitous.

Globalization indicates the change of replicators of capitalist economy, which leads to autonomous evolution into free investment liberalism and enhancement of growth potentiality of capitalist economy. Introducing new replicators so as to treat the things and events with no intrinsic affinity for commodification and capitalization brought about unpredictable side effects on such phenotype properties as morals and ethics. The most important implication of globalization can be understood in view of another trend of deindustrialization. As seen in the last section, G mode capitalist economy has come to gain profit for its growth potentiality, not from acquisition and exploitation of surplus labour-power of labourers, but from super profit by continuous innovation that keep on creating new differences, i.e. new information and knowledge. But in the age of post-industrial socioeconomy, commodification and capitalization shift towards production and creation of information and services including finance, for which it would be much easier to create "differences" than physical goods, in particular industrial products, that require a large scale of fixed capital.

What drives globalization is neither merchant capital nor industrial capital; it is fictitious capital such as financial capital and human capital. Through internalization of the market, each individual, being more engaged in comparative considerations of costs and benefits as an independent and free person with self-love and keen consciousness of equivalence, would come to be cultivated as a capitalist or investor seeking more profit and becomes a vehicle of capital. In his *Capital*, Marx says "individuals are dealt with only in so far as they are the personification of economic categories, the bearers of particular class-relations and interests" (Marx 1867=1992, 92), admitting that capital is a "meme" (cultural gene) and human beings merely a "vehicle" operated by the program of the meme. This is precisely why we need to question the rules and institutions that replicate economic society, rather than charge each person with the responsibility.

[References]

Becker, G. (1964=1993, 3rd.) *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education,* University of Chicago Press.

Florida. R. (2002) *The Rise of the Creative Class*, Basic Books

Florida. R. (2005) *The Flight of the Creative Class*, Harper Business

Hicks, J. R. (1939) *Value and Capital: An Inquiry into Some Fundamental Principles of Economic Theory*. Clarendon Press.

Hicks, J. R. (1969) *A Theory of Economic History*, Clarendon.

Illich, I. (1981) *Shadow Work*, Marion Boyars Publishers

Ito, M. (1988) *The Basic Theory of Capitalism: The Forms and Substance of the Capitalist Economy*, Macmillan.

Marx, K. (1859) *Kritik der Politischen Ökonomie*,Franz Duncker

Marx, K. (1859) Kritik der Politischen Ökonomie，Franz Duncker

Marx, K. (1867(I), 1885(II), 1894(III)=1962) *Das Kapital*, Bd. I, II, III: Marx-Engels Werke, Bd.23, Dietz Verlarg.

Marx,K. (1867=1992), *Capital:* Volume 1: A Critique of Political Economy, Penguin Classics

Marx,K. (1895=1981), *Capital:* Volume 3: A Critique of Political Economy, Pelican

Mincer, J. (1958) 'Investment in Human Capital and Personal Income Distribution,' *Journal of Political Economy,* 66(4)

Morishima, M. (1994) *Shiso to shiteno Kindai Keizaigaku* (*Moden Economics as a Thought*), Iwanami shoten

Neumann, J. von (1945-46) "A Model of General Economic Equilibrium" *The Review of Economic Studies*, 13(1): 1-9

Nishibe, M. (1996) *Sijyozou no Keifugaku* (*A Genealogy of Market Images*), Toyo-Keizai Shinpo-Sya

Nishibe, M. (1997a) "Rodoryoku no Gaibu Shohinka, Naibu Shohinka, Ippan Shohinka – Shijo no Naibuka niyoru Shihonshugi no Shinka (External Commodification, Internal Commodification and General Commodification of Labor – Evolution of Capitalism through Internalization of Market) *Keiriron Gakkai Nenpo* (Annual Buletin of Japan Society of Political Economy) 34:143-64, Aoki Shoten

Nishibe, M. (1997b) "Gosyu-teki Koukan to Touka Koukan: Saiseisan Keizai Taikei niokeru Kakaku no Hitsuyosei (Reciprocal Exchange and Equivalent Exchange: Necessity of Price in a Reproducible Economic System)",*Keizaigaku Kenkyu (Economic Studies)*, Hokkaido University, 50(3), pp.78-98

Nishibe, M. (2000a) "Ethics in Exchange and Reciprocity" in Shionoya, Y. and Yagi, K. (eds.) , Trust, Cooperation and Competition, Springer-Verlag, Chapter 4 (77-95).

Nishibe, M. (2000b) "Jiritsubunsan-teki Sijyo niokeru Kahei (Money in an Autonomous Destributed Market)",*Keizaigaku Kenkyu (Economic Studies)*, Hokkaido University, 50(3), pp.78-98

Nishibe, M. (2014) "Gurobarizesyon: 'Sijyou no Naibuka' niyoru Sihonsyugikeizai no Shinka (Globalization: Evolution of Capitalist Market Economy through 'Internalization of Market')", Japan Association for Evolutionary Economics, The 18th Annual Meeting in Kanazawa University, No.18, pp. 354-373.

Okishio, N. (1965) *Shihonsei Keizai no Kiso Riron* (*Basic Theory of Capitalist Economy*), Sobusha

Polanyi, K. (1944=1971) *The Great Transformation: The Political and Economic Origins of our Time*, Beacon Press

Ricardo, D. (1817=1951) *On the Principles of Political Economy and Taxation,* ed. P. Sraffa, Cambridge University Press

Rowthorn, B. (1980) *Capitalism, Conflict and Inflation*, Lawrence and Wishart, London.

Shibata, K. (1935) *Riron Keizaigaku Jo* (*Theoretical Economics*, 1st Volume), Kobundo shobo

Sakai, Y. (2010) 'Keizai Sisutemu no Hikaku Riron (Comparative Theory of Economic Systems)' T*he Hikone Ronso*, No. 386, pp.94-116

Sekine. T. (1985) *The Dialectic of Capital: A Study of the Inner Logic of Capitalism*, Yushindo Publishing.

Sraffa, P. (1960) *Production of Commodities by means of Commodities*, Cambridge University Press.

Uno, K. (1980) *Principles of Political Economy. Theory of a Purely Capitalist Society*. Translated from the Japanese by Sekine, The Harvester Press,

[Footnotes]

1. Becker's discussion started with the empirical fact that there are positive correlations between education and high income as well as education and low employment rate. However, it is said that he was hesitant for a while to make the book title *Human CapitaI*. For, the term was not widely used in 1960s when its first edition was published and also it faced harsh criticism claiming that he was treating human as machine or slave. But by the time its third edition was published 1990s, the term was so widely accepted it was featured on the Business Week magazine. Even more surprising was that the feature turned out to be the most popular throughout the magazine's history of the past several decades (Becker, 1993 p.16).

2. This point is valid in the case of United States, in which students pay the education cost for college by him/herself. It is not applicable to Japan where parents mostly take care of the cost. It is probably because there still remains a strong sense of reciprocal relationship and reproduction from generations to generations in a continuous succession of family community called *Ie* (house) in Japan.

3. "In fact, the exchange of commodities evolves originally not within primitive communities, but on their margins, on their borders, the few points where they come into contact with other communities. This is where barter begins and moves thence into the interior of the community, exerting a disintegrating influence upon it." (Marx 1859, S.35-36)

"it is altogether wrong to assume that exchange within the community is an original constituent element. On the contrary, in the beginning exchange tends to arise in the intercourse of different communities with one another, rather than among members of the same community. Moreover,

although money begins to play a considerable role very early and in diverse ways, it is known to have been a dominant factor in antiquity only among nations developed in a particular direction, i.e., merchant nations." (ibid. S. 94)

"Trading nations, properly so called, exist in the ancient world only in its interstices, like the gods of Epicurus in the *Intermundia*, or like Jews in the pores of Polish society." (Marx 1867 S.93, Capital Vol.1)

"The exchange of commodities, therefore, first begins on the boundaries of such communities, at their points of contact with other similar communities, or with members of the latter. So soon, however, as products once become commodities in the external relations of a community, they also, by reaction, become so in its internal intercourse." (ibid. S.102-3)

"the evolution of products into commodities arises through exchange between different communities, not between the members of the same community." (Marx 1894 S.187)

4. "Organized market" and "unorganized market" respectively correspond to "concentrated market" and "distributed market" in this paper.

5. An economic system is reproducible either by a reciprocal exchange or an equivalent exchange. An equivalent exchange is an exchange relation that satisfies transitivity among three and more economic agents. For example, suppose that we exchange a certain quantity of the good A to the good B and then exchange the good B to the good C. If the quantity of the good C thus obtained by the indirect exchange is equal to the quantity of the good C obtained by directly exchange of the good A with the good C, the exchange relation satisfies transitivity. Therefore, it is an equivalent exchange if reflexivity and symmetry are also satisfied. A reciprocal exchange is a type of exchange that emerges in the form where agents mutually give what the other needs. In the case of two agents, if each takes a good he needs from the other and as much as he needs from the other, it is a reciprocal exchange. It cannot be distinguished from barter in the form. But in the case where a single technology is given to produce each product and certain input is needed to produce any goods, the meaning of "need" becomes clear. (Nishibe 1997b)

6. Rowthorn, in his 'Marx's Theory of Wages,' (Rowthorn 1980. Ch.7), clarified that Marx's arguments on wages is closer to Ricardo than is generally thought since Ricardo acknowledge the cultural and historical character of subsistence level, and Marx drastically changed his view on wages from early writings to later writings. Marx takes over four points on wages from Ricardo: i) The distinction between the market price of labour and its natural price, ii) the natural price of labour as the subsistence wage determined by 'cost of production' to maintain the existing workforce and ensure its reproduction, iii) the importance of accumulation in the demand for labour and the movement of wages, iv) the role of machinery as a means of saving labour holding down wages. Marx believed in

the thesis of absolute impoverishment because wage gets down to their physiological minimum. Although Lassalle later called it 'iron law of wages,' Marx rejected it then. Marx define wage as the value of labour-power in three different ways: 1) the cost of production of labour-power, 2) the traditional standard of life for workers, 3) the standard of living in non-capitalist modes or forms of production. The common idea is a minimum standard of life that wages should provide.

7. This part is grounded on Nishibe (1997a). The proofs of propositions and treatment of two-sector models are omitted due to the paper's limited space.

8. The reason why $0 < l_2 < 1$ is because the domestic labour l_2 required to produce a unit of labour-power must be less than a unit in order to be productive. It indicates the proportion of how much percent of labour-power is required to produce a unit of labour-power, rather than domestic labour time. Or it can be considered to be a contribution or share (0% to 100%) in earning of money wage W of labour-power.

9. If we can consider labour-power to be a product similar to general goods, the assumption that the wage bundle and the domestic labour are constant is the same as the assumption that production technology is constant. It examines what would happen by taking implicit inputs into a calculation as explicit costs while technology is constant, and leads to the proposition 1.

10. This is similar to stagflations observed in 1970s. It suggests G Mode was established during that time.

11. These models' implications on economic cycle are as follows. Let's assume the rate of profit (markup rate) of the labour-power sector in G Mode is k (≥ 0) and it is smaller than the rate of profit r of the corn sector. It shows the degree of general commodification, i.e., fictitious capitalization, of a labour-power commodity. There is a certain level of industrial reserve army (stock of unemployment) in the labour market. When demand for labour-power increases in response to expansion of capital accumulation in an expansion period of economic cycle, wage remains at a minimum level since supply of labour provided from industrial reserve army can quickly respond to the increase of labour-power demand and quantitative adjustment works until it is exhausted. It is the case of $r = 0$, i.e., I Mode. However, labour-power is a commodity whose production cannot be increased in a short-term. Therefore, when the unemployed stock is exhausted, its supply becomes completely inelastic. Consequently, the monetary wage will increase and the profit rate k of the labour-power department will increase. If k increases, the profit rate r of the corn sector decreases. So the rates of profit in both sectors come to equalize at some point. G Mode is established in the situation of k=r. Although k may increase beyond r when the demand for labour-power is extremely strong, k has some upper limit since there is a lower limit for r ($r = 0$ or $r =$ interest rate). During economic cycle, when there is unemployed stock, it seems it comes close to I Mode and it comes close to G Mode when the

unemployed stock is exhausted. This example started from a minimum wage level of k=0. But just as the rate of profit does not come down to 0 even when there is an inventory stock in the case of general goods, it may be realistic to assume that the rate of profit of the labour-power sector to be positive when there is unemployment, even though it might be lower than that of general goods. In this case, the situation even more approximate to G Mode will emerge. But G Mode is not a phenomenon approximately established during an economic cycle. It should be thought of as theoretical extension of internalization of market in progress over a long-term and as description of an ultimate form of capitalism.