

Articles

From Physical Economics to Institutional Economics: What is the contemporary implication of *Institutional Economics* by J.R. Commons?

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Summary

Now day, “Institutional economics” of J.R. Commons is treated as if it were the object of vintage research and the historical monuments. In fact, His economics succeeded to tradition of classical economics and made those developed newly based on his institutional economics theory. However, such his contribution is completely ignored on the context of contemporary economic theories.

In this paper, we develop the following argument based on such problem. First we state the novel theory of economic system Commons made clear based on his institutional economics theory. Its theory consist of two concept that is *engineering economy* and *proprietary economy*. Next we elucidate how two economies is coordinated as the one economic system. In fact, Commons emphasized that institution is formed by human volition. He pointed out that institution is controlled by collective action. In other words, two economies is controlled evolutionally and regularly by institution and human volition. Finally we compare contemporary evolutionary economics with Commons’ evolutionary economics. With such comparing, we will present originality of his institutional economics as evolutionary economics.

Key words : collective action, efficiency, artificial scarcity, engineering economy, proprietary economy.

JEL : B25, B52, P16.

Point at Issue

It has been argued that the contribution of Commons to economics lies in his theories of going concern and working rule. According to the recent studies of modern institutional economics (Uni 2013, Nakahara 2014), however, his theories have a lot more implications than have been noted in conventional arguments. His concept of “banker capitalism,” for example, could be credited with providing a theoretical framework for money sovereignty

(Dutraive et Théret (2013)).

This paper revisits *Institutional Economics*, Commons' main work, and extracts its theoretical device, which is concerned with his own economic concepts of "engineering economy" and "proprietary economy," and will be essential for modern institutional economics.

These concepts, if simplified according to traditional economics, may be perceived as just sorting out the processes of producing and trading commodities in terms of institutional economics. Careful scrutiny of his arguments, however, will clearly show this perception is wrong. What he intended to demonstrate by using these concepts are as follows: First, changes in "the structure of wealth (value in use)" and changes in "the structure of asset (value in money)" should be treated as conceptually independent in analysis of capitalist economy; second, the capitalist economy which consists of the two economic structures cannot be stabilized without taking its ground on the volitional "institutional coordination" based on the institution of property created historically and institutionally by human volition (which is founded on ownership) and on the institution of money (which makes it possible to measure the value).

What is particularly important is that the social economy which consists of these institutions is at once a qualitatively recognizable "institutional structure" and a quantitatively recognizable "quantitative structure." The commonest criticism so far leveled against the school of institution is that it just describes institutional changes historically, without analyzing economic structures theoretically. The theory of Commons is not limited to describing institutional changes historically, nor is it lacking in theoretical models of the economy, which should be clarified in this paper.

The institutional economics of Commons, if understood as in this paper, might well be related to modern institutional economics and evolutionary economics. First of all, we assume that Chapter 8 "Efficiency and Scarcity" and Chapter 9 "Futurity" of *Institutional Economics* were presented in this connection, and will verify this assumption in the following.

Our verification will be carried out in the following steps: First, we will sort out his arguments in Chapter 8 "Scarcity and Efficiency" of *Institutional Economics* to verify if the above assumption is valid¹⁾. Next, we will clarify the similarities and differences between

¹⁾ On account of space consideration, detailed examination of Chapter 9 "Futurity" will be

the theories of Commons and those in evolutionary economics by weighing them. It seems that the assumption is similar to modern economic theories, particularly some theories by evolutionary economists.

1. Institutional Economic Theories of Commons and Our Perspective

Before looking into the theories by Commons, we will briefly explain why we are paying so much attention to Commons. It seems that, as the studies of Commons become “theoretical,” not just doctrinal, there have arisen different misunderstandings among theorists²⁾. We think it is necessary to revive the insights by Commons now. We will tell you why first.

How and in what way is it significant in modern economics to determine the economic society around “institution” in the first place? Does it mean giving a detailed demonstration, through modeling, that institutions influence and direct the economic causal relationship? If so, “institutional economics” is losing theoretical advantage, as such a methodology is already adopted in neoclassical economics. It is that sticking to such a methodology is tantamount to using institutions just as prior conditions in analysis of economic systems. This is not where we are heading for. We are going in the direction in which the economy and institutions are not divided. In other words, we are aiming to construct an “economic model which consists of institutions as solid theoretical frameworks,” not adding explanations of economic causal relationships through institutions, just complementarily, to models. To reach our goal, it would be necessary to give a diagram in which institutions are integrated in the economy.

Thus, to the extent that the theories of Commons analyze the social economy holistically

conducted on next chapter.

²⁾ We had a session titled “Contemporary Implication of Commons’ *Institutional Economics* at the 19th national conference of the Association for Evolutionary Economic in March 2015 (at Otaru University of Commerce). Mr. Yoshinori SHIOZAWA kindly gave critical comments to our presentation on that occasion and later detailed, long comments by private mail. Some of his criticisms may result from misunderstanding due to our incomplete explanation and development of our studies. Though we cannot answer all of his criticisms and comments, at least we will give our views here on some points which may come from “misunderstanding” and others which we could not explain enough because “they are about concepts essential but missing in conventional economics.” From this section on, we will discuss the arguments by Commons by quoting his original text wherever possible.

and causatively based on institutions, they go far beyond modern “institutional economics.” We have already found evidence for this in his theory of going concern (Nakahara, 2013). The focus of the discussion was that Commons views all the components of the social economy in the relationship of “the part and the whole,” and comprehends the whole society as a going concern, or a kind of organism.³⁾

The feature of his conception of social system lies not in distinguishing between the individual and institution (the subject / the object), but in emphasizing the “relationships” between the whole and those parts which compose the whole in complicated and stratified ways in a given period of time, space, and situation, while paying attention to “their indivisible multi-layered relationships.” Such relationships are repeated and continue in time (e.g. in economic action). “Transaction” is an abridged expression for such a relationship, and “going concern” is a collective and ontological expression for such relationships. Here, it is impossible for the individual to decide anything alone. Individuals, subjected to “institutional factors limiting and complementing” those relationships, express their own wills to each other. Moreover, because they are diverse, their wills are varied and multi-directional. Necessarily, then, there should be various conflicts and negotiations in their relationships. It is therefore necessary to have “social forces (sovereignty as social authority)” that override individual forces (political relations) to facilitate compromise.

Individuals may be part of one going concern, but when one going concern which consists of individuals is related to other going concerns, they may be part of the whole of those related going concerns. So, every entity can be perceived either as a part or the whole, depending on the perspective. Their relationships cannot be reduced simply into “isolated components of the whole”, but should be defined as complicated, multi-layered relationships in and between a plural numbers of wholes.

Naturally, therefore, Commons doesn't have any structural “microscopic/macroscopic” concepts of the economic system, which are the mainstream of modern economics. Furthermore, he does not acknowledge that the macroscopic whole is a simple sum or accumulation of individual actions as microscopic subjects. The latter conception of “accumulative whole,” in particular, lacks the factor of so-called historical time. For that matter, Commons notes the importance of historical time by presenting the concept of

³⁾ Refer to Commons (1934), *Institutional Economics*, chapter 8, “Efficiency and Futurity”, section IX, “Society”, 2. “The whole and Its Parts,”

“futurity. As will be described in the following, the future course of the whole depends on “what is expected for the future” by the individuals who think for themselves.

This does not mean that Commons ignores individuals. Rather, it could be said that Commons takes into account “individuals as social units,” not independent of each other, more than modern schools of “institutional economics.” To be more exact, he recognizes that the individual actions (and “institutionalized mind” which determines their actions) are influenced (limited or complemented) by various institutions, and concludes that the individual “actions of their own free will in relation to others.” In this regard, what he conceived may well be regarded as surpassing simple methodological individualism and structuralism,

The next important thing to note is that Commons does not regard economics as just “a science of analyzing economic phenomena.” The “political economy as an economic science” as he defines it is not about setting political and cultural phenomena as external and institutional conditions, and regarding the economy as just responding to those conditions and automatically working. “Indivisible relationships,” which we have discussed before, are also applicable to his methodology of social science. More often than not, modern economists reduce different social phenomena to economic ones. They also take into account other phenomena (as given conditions), but they do not consider them as changeable as economic phenomena. This is not the case with Commons. Of course, he focuses on the economy, but he does not acknowledge “the economy as it is separated from other domains.” He observes “how economic conditions change when conditions outside of the economy change.” When he discusses the changes in “sovereignty” and “customs” and their importance, he is always aware of the changes in conditions outside the economy of the society – changes in “political regime” and “social contexts.” Among others, the process of holistic “social evolution” is plotted in the theories of Commons, and the evolution of the conditions and that of the economy influence each other. Their evolution has been and will be “organic” through the course of historical time from the past to the future, and it is not possible to isolate and analyze parts one by one, as they are united. Compared to the cumulative causation an important concept in evolutionary economics, the theory of social economic evolution by Commons could be understood as constructed in “configuration of organic and indivisible multi-layered relationships in

terms of politics and economics.⁴⁾ Is it possible, in the first place, to construct a theory of evolutionary economics which faithfully reflects the reality, with various customs treated as just outside conditions?

It should be noted here that we are not attempting “an escape from economics into politics or sociology.” Rather, we are working to shake off excessively-specialized “parochial economic theories” and to construct “an economic theory which is properly economic, but receptive to contributions from other social sciences.”

Lastly, we discuss some bottlenecks in modern economic theories.

In *Institutional Economics*, Commons repeatedly criticizes modern economic theorists for sticking too much to the physical aspects of economic phenomena in conceptualizing their causal relationships.” Even so, he does not reject all mathematical analyses of economic phenomena. In fact, as he lived in the age when statistical methods were beginning to rise, he himself repeatedly pointed to great possibilities in them.

Still, he criticizes conventional economists for being obsessed with “physical aspects” in the economic world. What is worthy of note is that Commons clarifies that the economic structure of commodities is based on the principles of efficiency and scarcity and has two aspects: “wealth as value in use” and “asset” based on ownership, and that he treats them as distinct concepts, as will be examined later in detail. He asserts that conventional economists fail to distinguish them and thus incur a number of contradictions. Indeed, distinction between the two aspects could not be comprehended if corporeal property, incorporeal property and intangible property are distinguished, and changes of the entire economy concerned could not be observed without “money,” an institution which makes it possible to represent and measure them. However, modern neo-classical economists try to determine the distinction by one scale of measurement, — use value, or quantity visualized nominally in terms of price. Using analogies to natural phenomena, they seek *automatic stabilization and* equilibrium of quantity, and mathematical and logical sophistication of the stabilization and equilibrium configurations. Meanwhile, they do not say anything about the institutional essence of money.

More specifically, the economic world constructed on the distinction has two main

⁴⁾ Such a method of social science could be considered similar to the configuration of “Five Institutional Forms” of régulation theory. Refer to Nakahara (2013), (2017) for similarities and differences between régulation theory and Commons’ institutional economics.

processes: “physical production process” (“engineering economy” as Commons calls it) and “commodity buying/selling process” (“proprietary economy” as Commons calls it). While they are conceptualized as distinct by Commons, as mentioned before, these economies are established and manifest themselves as “one economic process” via three important institutions: “institution of property” which functions on ownership; “institution of money” which gives order in the buying/selling of commodities in the market; and “institution of law” by which to recognize these institutions.

The reason Commons criticizes previous economists as “physical economists” is this: that they ignore the institutional factors constructed by human beings of their free will; focus measurable physical things, and “single-layered, mechanical causal relationships” between them; and stick to the principle of equilibrium in which stabilization will be automatically achieved as in the natural world. Indeed, the range of property as an institution has changed in the course of history, and so has money as an institution. In *Institutional Economics*, Commons meticulously described the burgeoning drastic changes in these institutions in the capitalist economy of his times. It could thus be said that the main argument of Commons is that it is impossible to discuss changes in the capitalist economy without accounting for the existence of and volitional changes in those institutions.

However, this does not mean that Commons only considers institutional changes, and thinks it unnecessary to analyze “quantitative changes” in the so-called commodities and money markets. As far as he is concerned, while the volition of the individual under the institutional configuration serves as a driving force of structural evolution in the economic system, it is important to analyze the quantifiable configurations of autonomous relationships between commodities and money, that is, the economic structures which can be quantified in a model. At the foundation of those institutional structures is the institution of property, which started as a custom, earned approval of sovereignty and crystallized into a legal structure and which exercises physical and legal control over commodities based on ownership. This institution of property converts wealth, which merely has use value, into “asset,” which has monetary value. Besides, the monetary institution serves as intermediary for conversion, and its state effects qualitative changes in the process of conversion.

Commons theorizes the autonomous relationship subject to the institutional structure by

introducing the “input-outgo” model in the commodities market; and the “outgo-income” model in the monetary/debt market. In the models, money is not a veil nor separated from the commodities market. Rather, it mediates both and serves as an important “institution” to settle the instability of the respective structures. Depending on how the communal “coordination” by money (collective “concerted action” as termed by Commons) is applied, the economic structure may be stabilized or destabilized. In Commons’ *Institutional Economics*, therefore, it is extremely important to analyze how the monetary institution influences the economic structure and effects its quantitative changes.

In the following, we will follow Commons’ line of argument and verify these propositions in detail.

2. Concepts of “Engineering Economy” and “Proprietary Economy”

This chapter begins by defining the concept of wealth by Commons. He gives wealth a double definition: “wealth as physical matter” and “wealth as ownership” (Commons, 1934 p. 251). To put it simply, wealth shows the use value of a thing which is representable and measurable in terms of quantity, as well as the monetary value of a thing which is representable and measurable in ownership.

Commons says, “The first essential ownership is scarcity; the collective action of society constructs the rules of exchange of ownership.” (ibid, p. 253) This means that where there is no scarcity, there is no ownership; that transfer of ownership is the basic pattern of acquiring wealth as an asset, represented in terms of monetary value; and that the transfer of the value is coordinated “institutionally” by the collective action of society. He says:

“We identify property-value with scarcity-value, which we name assets, not wealth; but wealth we identify with use-value which has no scarcity dimensions of supply and demand.” (ibid, p. 252)

By “giving a double meaning to wealth,” Commons identifies two aspects there are to wealth, which has been assumed to be “one thing” or “something that has one value.” Its property-value or asset is assessed according to “the principle of scarcity,” while its use-value or wealth is assessed according to “the principle of efficiency,” not the principle of scarcity. The most important perspective to understand Commons is that those two

principles combine to “constitute one economic state”⁵⁾. What is his idea about use-value and scarcity-value then? He says:

“Use-value is wealth produced by labor (manual, mental, and managerial), which, as such, **does not diminish** with a fall in prices, nor increase with a rise in prices. Its variability is its wear and tear, depletion, depreciation, obsolescence, and invention. But *scarcity-value* is prices paid for legal control measured in terms of money. Value itself is *assets*, or the value of ownership; a dollar multiple of the quantity of use-value times the dollar price.” (ibid, pp. 265–66. boldface and italics are given by Commons)

Commons does not intend to find something tangible which support the term of value⁶⁾. Instead, he intends to define it as an artificial, “institutional unit” which is quantitatively measurable and variable.

Take a software program for reading PDF files for example. It has the use-value of “reading digitized text.” The more labor (intellectual labor) is “put in,” the better the software program may become and the more efficiently it may be produced (outputted) in larger quantities, depending on the way the managerial transaction (command in the process of production) is carried out in putting in labor. However, Commons considers that improved efficiency is not directly related to the monetary (scarcity) value of commodities as asset, though it may greatly increase “the output of wealth as use value.” So, labor contributes remarkably to increasing the use value, but it is not directly related to increasing the monetary value. The value is changed by the proprietary economy based

⁵⁾ It seems that Commons assumed that the principles of “futurity,” “custom,” and “sovereignty” in addition to these two principles work restrictively and complementally. Though it is necessary to closely examine if they were fully reflected in his theory, we do not examine it here.

⁶⁾ Commons said: “This compound meaning of Value is neither nominal nor real. It is statistics and accountancy. It does not answer the question, what is really or truly valuable according to our notions of ultimate reality. It is only a customary formula of two highly variable magnitudes, use-value and scarcity-value, combined in another highly variable magnitude, Value. This meaning of Value therefore turns only on the practice of measurement, and measurement is not ultimate—it does not tell what is really true—it is only the language of number in terms of artificial units not found in nature but put there by collective action to facilitate transactions.” (ibid, p. 266) This definition could be understood to be really reflective of Commons’ “pragmatic” view of institution.

on scarcity value, as will be discussed later.

What does Common think is the significance of price, under the concept in which to separate use value and monetary value?

Price is the monetary value determined by the outgo of money for commodities as asset, not the outgo of money for the use value of physical commodities. In other words, even if commodities as wealth has socially important use value, it is not directly to its monetary value. Of course, the total amount of production cost in terms of money (price for the total amount of labor put into production) is an important factor, but the wage is determined by the way the profit is shared in the cooperation concerned and by the profit margin left from the difference between the total outgo and the total income. The way of sharing is determined mainly by the principle of “scarcity,” and the power of institutionally structured “negotiation,” not by the principle of “efficiency.”

In a nutshell, what the price of a given item of commodities represents is the value of its ownership assessed in terms of money, which depends on how scarce the item of commodities is. It should be noted that the scarcity here involves not only the scarcity due to physical limitations (which does not mean the scarcity due to natural limitations as with natural resources, but is closely related to the abundance due to artificial limitations on commodities), but also the scarcity due to artificial control.

In the above-mentioned example of PDF software, the cooperation concerned controls the demand artificially by “refraining or not refraining from supplying” its commodities. In modern times, its sale seldom involves physical transfer, even if it completes the software by large amounts of labor and production costs. Its sale is just “transfer of ownership” (sale of the right of use).

Large amounts of labor and production costs may have been put in, and its value in use may be high. But, without any scarcity, no one would want transfer of its ownership. So, the corporation may well distribute the software program with its function limited (with its value in use limited) free, and later, after it spreads enough to create a market for it, the corporation put its “new” version (with new value in use added) on the market for a charge. What it does is exactly to cause scarcity artificially. This is a good example of legal control of ownership transfer, or creation of margin by refraining from supplying and transferring ownership (and by forging relationships between outgo and income of monetary value in the market).

Next, suppose the price of the software is determined by the corporation which controls its supply, within “the limitations of price” which will be approved by prospective buyers. Even if the software does not sell well at the determined price, it is not necessary for the corporation, which has a large amount of assets, or things of monetary value, to lower the price. The corporation does not need to change the price until its assets run out, as it can afford to endure until buyers come to need the software. There will arise problems of inventory costs with tangible commodities, but hardly with electronic software. In modern times, incorporeal and intangible property (commodities) can be found all around, while it could be grasped only conceptually in the age when Commons lived. The scarcity value (price) of asset due to ownership transfer as Commons defines it changes according to the scarcity caused artificially by institutional coordination, especially in the modern capitalist economy. Such changes in price will occur regardless of the amount of wealth (use value) brought about by various types of input and output in the process of production.

This may well invite criticism that it is nothing but an example of “monopoly price” / “oligopoly price.” Indeed, the theory of Commons may be regarded as an oligopoly-price theory which reflected the economic conditions of his times. In the first place, however, is there anything like a “market” that gives perfect elasticity to the price? When we closely observe the real economy, there is hardly any market where autonomous price changes instantaneously regulate the supply and demand (price adjustment), though such a market may be assumed theoretically. Rather, in practice, any type of commodities is put on the market at a price determined by the corporation based mainly on production costs, according to the markup pricing system. If the price is not accepted in the market, the corporation will respond by controlling the production; or reducing production costs to lower the selling price. It has been a “practice” in corporate management that corporations decides selling prices on productions costs and demand forecasts; sellers and buyers conflict and negotiate to balance the supply and demand (proportion process); and the corporation regulate the production (withholding the supply)⁷⁾. If we are allowed to call this the law of supply and demand in the market, the principle of market coordination through simultaneous equilibrium between price and quantity as it is defined in the

⁷⁾ The analysis in Chapter 4 of Shiozawa (2014A) seems to have some similarity to that of Commons in theoretical structure as described later. For the similarities and differences between Commons and Shiozawa, refer to Uni (2015), which compares and analyzes them very clearly.

neoclassical school is not based on the law of supply and demand in the true sense of the term. Their principle lacks the concept of historical time necessary in the process of consecutive coordination of quantity and price in the market. According to Commons, the process is made up of infinite cycles and “turnover,” with no balance point. A price set for a given transaction is propagated to the next transaction, and to other ensuing transactions indefinitely. What changes in historical time is the “dimensions” of that cycle or turnover, and the institutional configuration on which it is based. This will be discussed in another section.

After describing the double meaning of wealth, Commons states as follows:

“... the advantage of the engineering terms input and output, contrasted with the business terms outgo and income, which would have made the distinction clear. Taking society as a whole, but omitting property rights and the proprietary outgo or income, this is the social organization of production, whose behavioristic language is the managerial transactions of command and obedience; whose measurement is man-hours input and use-value output; whose economics is efficiency and whose human beings are power machines.

(ibid, p. 255)

That economy which consists of “social organization of production,” Commons calls the “engineering economy.” He derives this definition from a metaphoric comparison to engineers operating machines. In the engineering economy, labor is put in to produce use value (wealth) in the institutional configuration based on the principle of efficiency (conducting managerial transactions). However, the economy concerned does not function only in the form of engineering economy. For the economy concerned to function will need another form of economy, which sells commodities produced through input and output in it, and secure profits. It is “the proprietary economy” administered by “businessmen.” Commons says, “... the proprietary economy ... is the historical and institutional economy of the evolution of rights, duties, liberties and exposures” (ibid, p. 256). In other words, the proprietary economy is that which artificially controls the monetary outgo and income through “institutions” emerging in historical evolution.

Commons asserts that former economists were mired in a number of contradictions because they put too much emphasis on either of them, or tacitly accepting but formally ignoring the other. The problem is that the scales of these economies are measured in different units. For the engineering economy, which consists of input of labor and output of use value from it, the main measurement unit is the (total amount of) use value as wealth. For the proprietary economy, which consists of the acquisition and use of wealth based on ownership — that is to say, the total monetary outgo and income —, the measurement unit is the (total amount of) monetary value. The former economy reflects the way transactions are conducted and repeated, and money and commodities are circulating in the institutional configuration based on the principle of efficiency, while the latter economy does in the institutional configuration based on the principle of scarcity. Commons says:

“From the standpoint of engineering, as such, all human relations take on the single aspect of managerial transactions where there is no freedom for the worker, and the relation, for the time being, is only command and obedience. The total man-power of the nation is the total input, and the total physical control over nature’s forces is the total output. But the institutional aspect is the **sharing** of that output and the **inducements** that keep the concern agoing. Two systems of measurement are used, the engineer’s man-hour and the business man’s dollar.

With this double meaning of wealth — the engineering meaning of output of materials (use-value) and the business meaning of income from ownership (scarcity-value), we are confronted by the very situation that reveals the conflict between business economy [proprietary economy] and engineering economy.” (ibid, p. 256. [] is given by the quoter.)

Probably, Commons implies by “the very situation that reveals the conflict ...” that the quantitative changes of wealth as use-value and those as monetary (scarcity) value do not always go on in the same direction; and that there may be conflicts between those economies. Considering that he attached importance to collective negotiation in wage labor relations and proposed the necessity of monetary policy in the macro-economy⁸⁾,

⁸⁾ Commons advanced his view in Section 8, Chapter 9 “A World Pay Community” of *Institutional Economics* that the debt market with the central bank at the top should be regulated by “concerted actions among banks” (e.g. interest rates). This is a matter of course today, but it should be noted that Commons recognized the importance of collective and institutional coordination under the economic circumstances of his times.

Commons thought that those two “economies,” which were unstable in themselves, should be stabilized through institutional coordination, and that, on that level, the institutions of “custom” and “sovereignty” should be acting as limiting factors, instead of efficiency and scarcity. He continues to state:

“The sagacious business man, or proprietor, is “productive” in the sense of regulating production proportionate to supply and demand, as evidenced mainly by **changes in prices**. But the scientist, or engineer, is productive in the sense of enlarging man’s control of the forces of nature, **regardless of prices**.

... By efficiency is meant, in terms of managerial transactions, **the rate of output per unit of input**, the man-hour, thus increasing the power over nature but regardless of the total quantity produced. By scarcity is meant, in terms of bargaining transactions, **the rate of proprietary income** from other persons relative to **the rate of proprietary outgo**, measured by the dollar. Inefficiency means a **slower rate** of output per unit of input, but weak bargaining power means a **lesser rate** of income per unit of outgo.

It is the changes in terminology from production to efficiency, from supply and demand to scarcity, that have been brought about by introducing the **time concepts** of velocity, rate of turnover, visible and invisible supply, etc. The introduction of this time factor makes clearer difference between the two kinds of service rendered to society. Efficiency tends to increase the abundance of goods, or to reduce the man-hour costs, or to reduce the hours of labor. Scarcity distributes the output to those who can pay and withholds it from those who cannot pay, or increases the hours of labor, or reduces the pay to laborers who do not have equal bargaining power.”

(ibid, p. 258. Boldface is given by Commons.)

By introducing the principle of “futurity” (“time factor” as a preliminary step) in addition to the principles of efficiency and scarcity, Commons presents a theoretical model in which to trace the historical changes in structures of the engineering economy and the proprietary economy, and analyze their causal relationships. In the model, the economies, which are separated conceptually, are coordinated artificially by various institutional factors as already described, according to the respective principles. For example, the introduction of Taylorism drastically improved the labor productivity, as many people know. This event could be explained according to the theory of Commons as follows: The

introduction of a new production management system (institution) into the engineering economy, which was constituted essentially on the principle of efficiency, effected qualitative transformation in the production model made of the “input-outgo” relations, and improved the efficiency with which the use value therein was increased.

On the other hand, the proprietary economy, based on the principle of scarcity, basically does not allow for the total input of labor or the amount of use value produced. The largest question is at what monetary value “the asset” which has an aspect of use value could be sold. Imagine a business man as a buyer hopes to lower the purchase price of raw material through negotiation⁹⁾, while another business man as a seller hopes to sell at the highest price possible. The issue in negotiation is not “the total use value produced” nor “the total labor” put in. Rather, it is the highest limit of price the buyer could pay, and the lowest limit the seller could bring the price down to. The negotiation largely reflects their relative political power (for example, in the wage-labor relations), but there should be a “reasonable range of value” determined socially. Besides, there should be some room for coordination under “sovereignty.”

Apart from the two institutional factors mentioned above, the value of commodities in terms of money acts as a limiting factor in the economy. The amount of use value is just a complementary factor.

According to Commons, who defines as “transaction” the process including the transfer of ownership (monetary outgo and income) as well as the delivery of physical service, the price is determined in this process. Since the process proceeds by various customs and working rules in the economy concerned, the proprietary economy is that in which the proportion of total outgo to total income of monetary value based on the volition of the business man is determined (distributed) institutionally. What is important in institutional economics is the configuration of various institutions involved in “the collective negotiation power” which causes changes in the distribution of monetary value in the relationship between outgo and income¹⁰⁾.

To repeat the point, let me quote him once again as saying:

⁹⁾ For the details of the negotiation, refer to Commons, chap.8, “Efficiency and Scarcity”, Section XI. 3. (6) Limit of Coercion, and to Nakahara (2013) for its explanation.

¹⁰⁾ The explanation of the distribution mechanism in terms of the institutional configuration clearly has a lot in common with that in terms of *régulation* theory. Refer to Nakahara (2013), (2017) for the details.

“Input-output signifies man’s power over nature. Outgo-income signifies power over other persons. It is this that makes the distinction between engineering economy and proprietary economy. (ibid, p. 280)

“Power over other persons” means nothing less than institutional compelling or convincing force. He also says:

“Engineering economy increases output regardless of its money value on the markets. Business economy restricts and regulates the quantity produced in order to maintain or augment its money value.” (ibid, p. 286)

In the proprietary economy, monetary value is the important unit that represents the expansion or contraction of the economy. In fact, Commons explains that “money” as the measurement unit is “an institution as collective power,” as follows:

... the one [= physical use-values] proceeding from collective labor-power, the other [= proprietary scarcity-values] from that *collective power* over individuals which we name institutions. One of these institutions is money, in the sense of a collective instrument for the creation, negotiability, and release of debt by individuals. (ibid, p. 278.)

He continues:

“Thus, again, use-value is social wealth, scarcity-value is prices, and the economist’s *Value* is the business man’s *Assets*, a multiple of use-value and scarcity-value. ... This double meaning of wealth is distinguished when we measure wealth by the social man-power required to produce it, and measure assets by money. Assets are scarcity, wealth is abundance.

This is what we mean by Capitalism, the double process of creating use-value for others and restricting its supply so as to create scarcity-value. Hence capitalism, unlike the Marxian Communism, requires two units of measurement, the man-hour and the dollar. The one measures the quantity of use-value created, the other measures its scarcity-value. The one measures wealth, the other measures assets. Capitalism is both a producing society and an acquisitive society. It is not merely acquisitive as it seems to be when dollars are used as the unit of measurement. It is

productive when man-hours are used, and acquisitive when dollars are used.” (ibid, pp. 283-284. *Italicized by Commons.*)

Commons admired the analysis by Marx, who followed in the footsteps of Ricard, as the first study based on “the principle of efficiency.” Though Marxian theorists overlooked the aspect of monetary value which wealth has, Commons himself succeeded in rediscovering that aspect in light of classical economic theories. In addition, he aimed for a convergence between Marx and classical economists. He thought that the capitalist economy should be analyzed after divided into two concepts (the engineering economy and the proprietary economy), and tried to describe the state of “the economy” in a double process controlled by two different principles. Relatively independent of each other, the two economies evolve in the course of time, induced by the factor of expectation. The process of evolution is not stable at all, because they driven by essentially different principles, evolve to the respective purposes, and the principle of futurity diversifies according to the volition involved. What “coordinates” the imbalances attendant there is “custom” established and inherited historically by collective action of the society, and “sovereignty” which politically controls custom. Such custom and sovereignty tend to keep coordinating the conflicts between the two economies by changing “the institutions of assets” or “the institution of money” for example. As far as they go, custom and sovereignty function in other dimensions than efficiency and scarcity. They define the title and range of coordination of the whole (social going concern). The capitalist economy has so multi-layered and complicated causal relationships. We think this is the conclusion that Commons reached through his analysis.

His theory is an attempt to solve the issue of “value and price,” an aporia well-known in the history of economic theories.

“Consequently when economists reduce all inputs to money inputs they reach the confused conclusion that the least cost, or greatest efficiency, is the least money cost of the several factors of interest, labor, depreciation, taxes, repairs, materials, etc. This confusion is the everyday confusion of common sense which measures everything by money, and is excusable on the plea that economic science has not yet taken over into its theories the man-hour measurements used

by Karl Marx and scientific management, and has not had time enough to grasp the engineer's concept of input and output in contrast to the proprietary and business concepts of outgo and income, and therefore has not fully distinguished wealth from assets. The distinction was clearly pointed out by Ricardo more than a hundred years ago, but when economists, following John Stuart Mill after 1845, quietly dropped Ricardo's labor-power measure of value and substituted the monetary measure of value, the orthodox economists, distinguished from the communist economists, have accepted the popular delusion of defining the greatest efficiency as the least money-cost of production, whereas the greatest efficiency is the least man-hour cost. The least money cost is the least outgo per unit of income; the least man-hour cost is the least input of labor per unit of output." (ibid, p. 288)

Supposition of those two economies (the engineering economy and the proprietary economy) has brought an important device of analysis to institutional economics. It could be argued that Commons' *Institutional Economics* gives a lot of theoretical insights for modern institutional economics, not only by incorporating two important value standards of labor and money evenly into his own theoretical framework, but also by clarifying that those two economies constitute the capitalist economy while noting the functional importance of institutions in the theoretical configuration. Besides, this theoretical configuration may not only give an alternative theory which can compete with neo-classical economics in which money functions as a veil, but also contribute to constructing a type of institutional economics which theorizes prices.

It should be noted that the theory of "money as an institution" by Commons, in which money is regarded as "a collective tool for individuals' creating, transferring and dissolving debts," is strikingly similar to the theory of "sovereign money" by Aglietta and Orléan (Aglietta et Orléan, 1998) and the monetary theory by Bruno Théret, who all belong to the *régulation* school¹¹⁾.

In view of the above considerations, the following will clarify the similarities and differences between modern evolutionary economics and Commons' institutional theory.

¹¹⁾ Here we review Chapter 8 "Efficiency and Scarcity" of *Institutional Economics*. In the following Chapter 9 "Futurity," Commons fully discusses the institutional role of money in the proprietary economy and its model of turning, which will be reviewed in the next chapter of this book.

3. From Equilibrium to Process: Comparison between Modern Evolutionary Economics and Commons' *Institutional Economics*

First of all, we will clarify why we should compare modern evolutionary economics and Commons' theory of institutional economics.

We already made it clear previously that the economics of Commons is "institutional evolutionary economics," which focused on his theory of institutional evolution (Nakahara, 2017). In this paper, we have discussed how the "structures" involved in evolving the economy itself is analyzed by Commons.

We have so far shown, only suggestively, that the "engineering economy" as Commons conceptualizes it owes much to the theoretical systems by Ricardo and Marx. We understand that a contemporary interpretation of their theoretical systems is given in Chapters 2 and 3 of Shiozawa (2014 a, b). Our assumption is that his theory follows the theoretical systems by Ricardo and Sraffa, and so does not contradict the Commons' concept of the engineering economy consisting of "input – output." To begin from the conclusion, there are significant differences between Shiozawa's theory and Commons'. In the theory of Commons is the proprietary economy, a concept that cannot be analyzed only in the input-output model. Specific institutions composed of the principles of efficiency, scarcity, custom and sovereignty serve as medium in its dual economy. In the theory of Shiozawa, on the other hand, those analytical devices are nothing more than prerequisite conditions. Their theories will be compared and examined in broad perspective below.

Shiozawa (2014a) argues that "the theories of value of classical economics", particularly the theory of value in terms of "production costs," play an important part in his theory. He concurs with Sraffa and gives the following statements about the full-cost principle and Sraffa's principle.

"The full cost principle is not just about pricing by adding a margin to the going costs. Recently, the method of cost planning has developed. Enterprises anticipate at what price and how well a given product will sell, and refer to them for carrying out specifications design, function design, and cost planning. So, the principle is about minimizing the costs through various efforts and pricing by adding a decent margin to the costs. (Shiozawa, 2014, p. 90)

"If an entrepreneur cannot achieve enough sales for a production increase by lowering the price or increasing selling expenditure, all he or she can do is adjust the production quantity to demands.

This is the principle of behavior which I called “Sraffa’s principle” before, and the principle of effective demand on the corporate level.” (ibid, p. 101)

The gist of Shiozawa’s theory, which is based on production costs, is that costs are calculated according to the effective demands predicted by the entrepreneur, and the quantity of production is adjusted according to the actual demands¹²⁾. His theory is definitely similar to Commons’ theory about the “engineering economy”. It is true that Commons does not refer to the full-cost principle or Sraffa’s principle. However, when Shiozawa regards the production process of physical commodities¹³⁾ (which are different from the assets as Commons defines them), as the process of “production of commodities by commodities” according to Sraffa’s principle, it could well be understood to be similar to Commons’ theoretical model of “production of commodities (use value). Still, in Commons’ theory, prices are not coordinated inside the engineering economy, but in the proprietary economy, and determined through the negotiations between business men and their custom. This also bears a similarity to Shiozawa’s theory, in which prices should be coordinated mainly by entrepreneurs who refer to production costs, not through “market equilibrium” based on the complete elasticity of prices. In fact, he asserts that the discretion of entrepreneurs is the main factor in setting prices, saying, “It is impossible in the real world that enterprises are not capable of setting prices, but purely price takers.” It could be concluded that his theory does not contradict Commons’ theory as Shiozawa considers the main factor in setting prices is not in the price adjustment by the market, but in the interaction between the discretion of producers and that of consumers over the prices, which are quantitative manifestation of the discretion of producers.

However, Commons assumes that the issue of pricing lies exclusively in “the business man’s economy” or “the proprietary economy.” So, it should be noted that he considers that business men have the initiative in pricing and that entrepreneurs who have “the

¹²⁾ In relation to the following discussions, it should be noted that commodities here mean “physical commodities” and so things which belong to “the engineering economy” as Commons defines it. Ricardo, Sraffa and Shiozawa theoretically do not have “the asset” which wealth has in Commons’ sense of ownership transfer, that is, the price as monetary value.

¹³⁾ Shiozawa (2014a) radically criticizes the production in which the price and the marginal cost are equal in the neoclassical production function. This is very important, but omitted as we should limit ourselves to the points at issue in this paper. Still, we are very aware that his criticism against the equilibrium theory provides insights for our line of criticism.

institutional mind” decide prices through conflict and compromise in bargaining. The pricing theory by Commons is not just a theory of production costs. He assumes that prices are decided by the collective power of society. In the actual world of business, it is quite impossible that the discretion of entrepreneurs may not be influenced by the custom of the industry or by the power relations between the parties concerned.

For that matter, as he does not adopt the hypothesis of rational Homo-economics, Commons does not have such a view of human beings as neo-classical economists entertain. However, if we are allowed to explain figuratively for modern economists, who are accustomed to the terms of neo-classical economics, to understand Commons’ view of human beings, the human beings as Commons sees them are those who internalizes the principles of “efficiency, scarcity, futurity, custom and sovereignty” in their respective minds. They are not mechanical beings that are just calculating. The human mind manifests itself in so many complicated ways that it is necessary to use multi-layered analytical perspectives and examine carefully the form of thought manifested variously depending on the occasion or situation. Presumably, this is Commons’ view of human beings based on pragmatism.

We could say that Shiozawa’s theory has something in common with Commons’ view of human beings. The “pricing process based on production costs” he has arrived at by analyzing the real economy sharply runs counter to the theory of supply-demand equilibrium through timeless price adjustment. This is because he flatly rejects the economic coordination by “the physical, automatic and natural mechanisms of the market,” which is an illusion neo-classical economists cherish. Shiozawa’s argument that “the discretion of entrepreneurs” as producers is crucial in pricing could be understood to imply that “the price as a value system” and “the amount as a quantitative system” are decided at the discretion of human beings and that that dual process is “consecutive” in historical time. If so, there would be no reason Shiozawa should refuse to introduce the institutional factor of “custom” into his theory.

The analysis of Yoshii (2014) is especially useful for elucidating “the consecutive coordination process” mentioned above. The timeless “adjustment” model based on the supply-demand principle of price equilibrium in the market is considered self-evident in modern macro-economics. His analysis is an attempt to put together and set up a

theoretical foundation, in terms of theoretical history, for transforming that model into a model of “adjustment based on mutual/consecutive process” with historical “time.” Referring to economic reports by Oxford in 1951 and the Bank of Japan in 2000, and the case of Toyota Motor Corporation, which he takes for his empirical research, Yoshii confirms that prices are set, in practice, doubly by the full-cost principle and the “supply-demand principle” in the market. Besides, the reason why those principles are converged into the supply-demand principle in modern micro-economics is explored by scrutinizing the theories of Adam Smith, Ricardo, Malthus, J.S. Mill and other so-called classical economists, and the argument by Alfred Marshall, who relates their theories to modern micro-economics.

For Ricardo and J.S. Mill, “the law of supply and demand” is not the antithesis to the principle of production costs, but a law essential for the principle of production costs, according to Yoshii. What Mill focuses on is an equation in which the supply meets the demand, not an “equation” set up to reach an equilibrium in which price determination and stability are important factors. He theorizes on “prices” which are decided in practice by the supply-demand principle in the market in a historical time, and brings out a consecutive, historical-time model in which the prices decided in one quarter decides production costs, depending on the respective social circumstances of buyers and sellers, and those production costs influence price fluctuations in supply and demand in the next quarter. Yoshii says it is Jenkin, who expresses graphically and mathematically the supply-demand principle, and Marshall, devoted to constructing a “pure-theory” model, that exclude the perspective of “consecutive and process” adjustment in the market, and contribute to a total changeover to the “timeless adjustment model” in which price and quantity are decided simultaneously. Marshall regards, as “given,” the issue of decision making by individual buyers and sellers, and other socially-conditioned issues, that are determined before prices are set in the market. He thus excludes discussions on those issues conducted by Mill. Since Marshall, therefore, Mill’s important perspectives on those issues were lost, and a great switch in economics resulted: logical and formal sophistication observed modern micro-economics.

The above-mentioned conclusion is a frame of reference which has something in common with our “process coordination.” In the analyses by Shiozawa and Yoshii, economic systems are treated as quantitative systems in the foreground, and various institutions are

presumed implicitly. They never ignore institutions. All they lack is a perspective from which to regard institutions as functional and regulatory medium between quantitative systems and value systems.

By way of Conclusion

We are not institutional fundamentalists who keep crying the “importance of institution” in economic analysis. We are well aware that what institutional economics critically lacks is a model for describing actual quantitative changes. The *régulation* theory, for example, has constructed a model of regime of accumulation based on post-Keynesian theory. Similarly, via the theory of Commons, we would be able to use the theoretical system of Ricardo, Marx and Sraffa as an input-output model and the model of Keynes as an outgo-income model. Still, as far as the latter model, it is necessary to analyze the theory of Commons on “money,” which will be covered in the following.

As shown in the brief analysis here, Commons’ theory of money as institution is remarkably similar to the modern institutional theory of money in theoretical structure.

They are similar in that money is regarded as an institution which represents the structural relationship between credit and debt; that the relationship is regarded as the political as well as the economical, which means that without the authority of sovereignty, the institution of money could not function; and that the institutional control by money based on sovereignty is recognized as important.

In the theories by Aglietta and Théret, is deeply rooted structuralism, which has survived since Althusser, but not in Commons’ theory, naturally. In addition, the former theories adopt the post-modern methodology: the political and the economical; while in Commons’ theory, the political is discussed essentially in relation to sovereignty. Besides, Commons was preoccupied with the theory of “discount value,” which delineated the limits of economic theories, presumed to be “innovative” in his times. This theory, however, does not find its place in the modern theory of institutional money.

With all those differences, Commons’ theory of money is still a basic theory that contemporary monetary institutionalists should always refer to. The reason, in our humble opinion, is that Commons was the first economist to construct “Institutional Economics” which does not exclude politics and money, but integrate them with institutions as pillars, and so his ideas should be inherited in different theories of institutional money in our

times.

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