Evol. Inst. Econ. Rev. 9(Suppl.): 113–133 (2012)

ARTICLE

The Present Problem of the Hokkaido Regional Economy and a Remedy: A Reform Plan of the Institution of Money and Finance by Using Hokkaido Community Currency

Makoto NISHIBE

Graduate School of Economics, Hokkaido University, Nishi 7, Kita 9, Kita, Sapporo 060–0809, Japan. E-mail: nishibe@econ.hokudai.ac.jp

Abstract

Hokkaido as a regional economy outside metropolitan areas in Japan has suffered many serious economic problems in the 'two lost decades' caused by the current trend of globalization of capitalistic market economies. For instance, prolonged depression, decline of local economies, disparity between urban and rural regions in term of the rate of bankruptcies and the rate of unemployment, and persistent interregional balance of payments were observed. Hokkaido is frequently advised to strengthen its secondary industries to lessen its big interregional deficit of payments, however, it seems to be out of date in our post-industrial age and irrelevant to the region whose major sectors are agriculture and tourism. The implicit assumptions of theory of comparative advantage that back up such a remedy are also examined. In order to give a theoretically possible answer to such problems, the present paper, based on evolutionist institutional design in terms of money and finance, proposes a new reform plan for creating Hokkaido Community Currency (HCC) for enhancing local production for local consumption and forming a more sustainable and ethical socioeconomy.

Keywords: Hokkaido regional economy, comparative advantage, local production for local consumption, evolutionist institutional design, Community Currency.

1. Introduction

In this article, we examine the problems that the current trend of globalization has caused to such regional economies as Hokkaido, Japan and, in order to give a possible answer to them, present a new reform plan for creating Hokkaido Community Currency (HCC) for the purpose of enhancing local production for local consumption.

It has often been advised that Hokkaido should strengthen its secondary industries to lessen its big interregional deficit of payments, but we argue that the remedy is out of date in our post-industrial age and irrelevant to Hokkaido whose major sectors are

JEL: B52, E02, R11.

agriculture and tourism. Such an idea presupposes the conventional view based on the theory of international trade in economics, which suggests that a regional economy should transform its present industrial structure so that it can specialize in comparative advantageous industries to correct interregional imbalance of payments. We critically examine the implicit assumptions included in the view and suggest that we should rather transform the monetary and financial institutions, not the industrial structures themselves, into new ones that are more suitable for developing recycling-oriented economies from present industrial structures.

HCC is one of the possible reform plans based on evolutionist institutional design in terms of money and finance and its aims are to strengthen the comparative advantage of Hokkaido in agriculture and tourism and to form a more stable and autonomous socioeconomy without dependence on financial aids of the central government and without experiencing the effects of frequent international financial turmoil.

2. Conventional Diagnosis and Prescription for Hokkaido's Economy and Its Problems

We first review what the usual diagnosis and prescription on Hokkaido's economy are, and question the conventional ways of thinking contained in the points at issue.

Hokkaido's gross regional production in 2004 is 20.2 trillion yen of which the rate of primary industries is 3.7% (1.7%), that of secondary industries is 18.2% (27.5%) and that of tertiary industries is 81.7% (74.6%).[1)] The rate of the construction sector is 8.5% (6.4%). The main features of Hokkaido's industrial structure are seen from the data as: 1) higher rates of primary and tertiary industries and a lower rate of secondary industries, and 2) a higher rate of the construction sector and a lower rate of the manufacturing sector in secondary industries.

The ratio of imports and exports to Gross Regional Production of Hokkaido in 2005 was 64.7% while the national average was 132.6%. The ratio of Hokkaido is the least among the 47 prefectures in Japan. This indicates that the degree of trade openness of Hokkaido is the lowest in Japan and its industrial structure is the type of 'local production for local consumption' that depends on extra-area trades the least of all prefectures. The food self-sufficiency ratio (based on calorie) of Hokkaido in 2007 was 197%, the highest in Japan.

The average self-sufficiency ratio in all industries of Hokkaido in 2005 was 71.1% and

[1)] The numbers in parenthesis indicate the same numbers nationwide.

those of primary industries, secondary industries and tertiary industries in that year were 74.4%, 46.8%, 84.3%, respectively.[2)] Primary and tertiary industries had higher ratios than the average, and secondary industries had a lower ratio than the average. We would like to say such characteristics of the self-sufficiency ratios of Hokkaido have a 'twin peaks shape.' In 2005, the ratio of medical and health care, social security and nursing care was the highest of all sectors (100.0%), construction was second (99.6%), finance, insurance, and real estate were third (96.8%), public utilities were fourth (96.2%), and civil services, education and research were fifth (95.3%). All but the construction sector belong to tertiary industries. Local production for local consumption is observed in the twin peaks of primary and tertiary industries because Hokkaido has been a food supplier and development investment has continued to depend on tax redistribution as financial transfer from the central government, leading to expanding construction (Hokkaido Bureau of Economy, Trade and Industry 2010, Ch.3)

Hokkaido's interregional balance of payments (=international and interregional exports — international and interregional imports) has been constantly in the red as seen in the following data being, for instance, −2.55 trillion yen in 1997, −3.43 trillion yen in 2005 and −1.52 trillion yen in 2007. To turn our attention to industries and sectors, it has been in the black in primary industries and the food-manufacturing sector, but it has been deeply in the red in machinery and other manufacturing sectors. While recent growth of manufacturing sectors such as auto parts has increased international and interregional exports, continuous decline of purchasing power of residents in Hokkaido caused by a prolonged depression has decreased international and interregional imports. As a result, the deficit in its balance of payments had temporarily been reduced to some extent. However, it has remained almost constant since the Lehman shock of 2008.

Interregional balance of payments is equal to net private saving (=private saving−private investments) plus public financial balance (=tax−public spending). Hokkaido's deficit of interregional balance of payments amounts to excess private saving plus substantial public financial deficit (=excess public spending). If we use the notations S: private saving, I: private investments, T: Tax, G: government public spending, X: international and interregional exports, M: international and interregional imports, the macro identical equation is $(X-M)=(S-I)+(T-G)$. Since public financial deficit $(G-T)$ is bigger than excess private saving $(S-I)$, then the interregional balance

[2)] Self-sufficiency ratio is expressed as the ratio of regional production (=production−exports) to regional demand (=production+imports−exports), i.e. self-sufficiency ratio=(production−exports)/(production+imports−exports)=1−(imports/(production+imports−exports))

of payments ($X-M$) can be negative. Constant deficit in the interregional balance of payments can result in accumulated external debts without such substantial public financial deficit.

But in the case of Hokkaido, its deficit is covered by the central government. That is why Hokkaido has been long regarded as a central-dependent economy. The central government of Japan has provided local allocation tax grants for redistribution policy that financially transfers the central government's tax to rural local governments such as Hokkaido. Moreover, as explained below, there has been large public spending for the construction sector that has been conducted by the Hokkaido Development Agency until recently. This tendency has lately weakened due to pursuing reforms in public finance of the central government.

The income distribution policy in the form of tax transfer from urban areas has contributed to the increase of income in rural areas such as Hokkaido, and it undoubtedly helped to narrow economic disparities between both areas. However, outflow of private funds from rural areas to urban areas and inflow of tax transfer from urban areas to rural areas eventually bring about a negative effect on economic welfare in terms of income and employment because public spending for infrastructure construction compared with private investment for manufacturing plant and equipment has much smaller ripple effects to create employment. That is why it is significant to create investment opportunities in rural areas in order to create employment and income (Kobayashi, 1997). This might be true of the comparison between public spending in construction and private investment in manufacturing in secondary industries, but we show a counter example later on. More importantly, we must remember that the argument has only dealt with secondary industries and neglected important roles of primary and tertiary industries in Hokkaido's economy. The characteristic of Hokkaido's industrial structure is that, as we have seen, primary and tertiary industries play a greater role than in the rest of Japan while secondary industries play a smaller role and both primary and tertiary industries have higher self-sufficiency ratios.

3. Critical Reexamination of Basic Presuppositions and Problem-Setting of Conventional Prescriptions

Given the understanding on Hokkaido's balance of payments structure put forward, Hokkaido has been often advised that it is necessary, in order for its regional economy to be more independent and healthy, to redress interregional balance of payments and that, to be more specific, it should develop its secondary industries, especially manufacturing

sectors to accomplish this purpose (Hara, 1999; Horikoshi, 2008). Such arguments seem to deduce the consequences from the law of comparative advantage in international trade theory. The law of comparative advantage states that two countries can mutually benefit from specializing in producing the product with the most comparative advantage i.e. having the cheapest production costs in different industries of each country and trading those products between the two countries. Then it must be a logical consequence from the law to infer that it is necessary to specialize in some particular industries or sectors in order to expand exports and gain a surplus in balance of payments. In this paper, we are not yet prepared to give a full-fledged discussion on the validity of the widely accepted theory first shown by David Ricardo.[3)] Rather here we pose some questions on its application and presuppositions.

From the law of comparative advantage, we can say that Hokkaido should specialize in some industries or sectors with comparative advantage, but we cannot tell that such industries are secondary and such sectors are manufacturing. Rather we can draw a completely different conclusion that because Hokkaido has a comparative advantage in primary and tertiary industries such as agriculture and tourism, it should strengthen those industries and sectors. The only plausible reason why secondary industries should be reinforced is because those industries have higher multiplier effects on other industries and sectors. But we cannot affirm that private investments in manufacturing industry necessarily have bigger multipliers than public investments in construction or tourism industry.

We can show counterevidence examples of multipliers that Musha (2010) calculated by using Kansai regional input-output table. The multiplier of Kansai International Airport-related public investments that amounted to 1.44 trillion yen was the largest, 1.6945. That of the 1300th anniversary festival for the capital relocation to Nara as a tourism project that amounted to 0.1 trillion yen was second, 1.5642. Finally, that of four private investments for equipment in Osaka coastal areas that amounted to 1.32 trillion yen was the least, 1.0522. Thus the argument that secondary industries or manufacturing sectors have high potential to create income and employment is found to be ungrounded.

Furthermore, we observe a tendency that, while the rate of secondary industries in Hokkaido economy has been constantly falling, that of tertiary industries, particularly of the private service and government service sectors have shown a tendency to rise. As a

[3)] The first argument on the law is found in Ricardo's primary work (Ricardo, 1817). The most recent noteworthy contribution to a new development of Ricardian trade theory has been offered by Shiozawa (2007).

matter of fact, such a tendency is common in many developed countries just because we are passing through a period of deindustrialization and informationization in the post-industrial socioeconomy (Drucker, 1993; Toffler, 1980). Most advice given to Hokkaido wants to reverse the long-term trend of industrial structure as deindustrialization. However, such an attempt is neither necessary in a post-industrial socioeconomy nor feasible in global competition not only with other regions in Japan but also with BRICS that have already been recognized as newly developing manufacturing centers.

We would like to examine the presuppositions of the law of comparative advantage here. The theoretical hypotheses that are necessary for constructing the model of economic theory in which the law of comparative advantage can be derived are: a) intra-national, not international, mobility of factors of production (labor and capital), b) full employment of factors of production, c) perfect competition in all markets. The assumption of perfect competition is a set of many semi-assumptions such as a perfectly elastic price, infinite number of agents as maximizers and price takers, zero entry/ exit barriers, zero transaction costs, perfect information and homogeneous goods. These hypotheses determine how we describe institutions as money, market, transactions and competition. It was once insisted that evolutionary economics should reject such hypotheses as b) and c) (Nishibe, 2006b). That is because the market institution in reality cannot be depicted just as the centralized price mechanism determined by the equilibrium between demand and supply shown by agents as maximizers and price takers, but as dispersive networks of transactions of buying and selling of differential goods utilizing buffers such as money and credit as well as inventory of goods and labor. Accordingly, we cannot straightforwardly agree with the trade theory with the law of comparative advantage underpinned by these unacceptable assumptions. But we have proceeded with our argument up to here as if we once accepted the theory as a genuine model. Here we would like to only suggest two problems regarding the theory of trade theory based on comparative advantage.

The first problem is on reality and complexity. It is apparent that real competition is dynamic as in differentiation, quality competition and innovation with regard to products and processes, not static as depicted in the theory with price competition of homogenous goods without any technical change. We need to consider many other factors in evolutionary complex systems. Even though it cannot be denied that interregional balance of payments and comparative advantage matter in the static setting, it cannot be the only factor that we must take into consideration in evolutionary and dynamic reality. When the enormous trade surplus of Japan with the US was criticized by the US in the

1980s, the reason why Japanese cars attracted more US customers than US cars was that Japanese cars are not just economical but of better quality than US cars. Hokkaido had depended on the coal mining industry until the 1960s and exported coal to other regions in Japan so that it gained a large surplus in its interregional balance of payments. But the Hokkaido economy was too vulnerable to the postwar transformation of energy resources from coal to oil. We should learn from the cases that sustainability and diversity of industries, products and institutions are quite important factors when considering independent development of the regional socioeconomy.

The second problem is that the theory based on the law of comparative advantage only considers prices and initial endowment of factors of production but totally neglects the institution of money and credit etc. The theory starts from the basic assumptions that institutions are given without any change or modification. So we only have to endeavor to change the current industrial structures in order to improve interregional balance of payments *ceteris paribus*. It sounds as if we should try to change the contents to conform to the given containers. But we can take the opposite side and seek to change the containers to conform to the given contents. The significant point that cannot be ignored here is that interregional balance of payments and industrial structure of regional economy must depend on the differences of various kinds of institutions of tax and policy as well as money and finance built in national and regional economies, and that if we can change the institutions somehow, the performances expressed as interregional balance of payments and industrial structures will become different or even more desirable due to their alternations. It is at least necessary to reconsider what is given and what is variable without sticking to conventional ways of thinking.

In order to clarify the point in question, we may refer to Hayek's argument on denationalization of money (Hayek, 1990), rather than Keynes's argument on effective demand and macroeconomic policies. Hayek proposed to allow private enterprises to provide the public with free choices of multiple concurrent currencies for the sake of getting rid of harmful effects of inflation and deflation or severe business cycles that he thought are mainly caused by the government monopoly of the issue of money. He therefore argued that competition among private banks in terms of quality, not quantity, of money, i.e. stability of money value will prevent governments from overissuing notes and deteriorating them in value and, if so, that naturally leads to stabilized money value.

We must understand why Hayek dared to assume a seemingly unfeasible and impracticable reform plan where money and credit institutions are not given but variable in order for the market economy to become more stable. Hayek wanted to prevent the

institution of the market from contracting due to the expansion of the institution of the state. He remarked on the issue: "I strongly feel that the chief task of the economic theorist or political philosopher should be to operate on public opinion to make politically possible what today may be politically impossible, and that in consequence the objection that my proposals are at present impracticable does not in the least deter me from developing them."(*ibid*., p. 17) Then he attempted to give a theoretical solution to difficult situations at the time by introducing politically impossible but theoretically feasible and practicable institutional redesign and, by doing so, persuade the public that such institutional design not only is theoretically feasible, but also becomes politically possible once they agree on the point.

In the same spirit of Hayek as an economic theorist or political philosopher, we will pursue what is theoretically possible, but is impracticable at present, and we should not avoid proposing a new institutional design at present so that it can operate on public opinion to make the design politically possible. But, in order to do so, we must be aware of reality. For instance, the astonishing advancement of information and communication technology such as the Internet and electronic money which Hayek was not yet aware of in his time enable us to deal with money as pure information in real/virtual space and time, so that a much wider diversity of multiple currencies including corporate, community and local currencies have become possible at present than a few decades ago. It would be desirable to recognize the current trend of technological and industrial structural change and make a suitable design for platform institution of money and finance to fit the trend of technology and industrial structure.

4. 'Two Lost Decades' since the 1990s in Japan and Hokkaido: Ineffectiveness of Conventional Economic Policies

Some might think it wiser to consider the possibility of alternation of institutions only after we tried as much as we can within the current institutions. Then, we had better make certain in the first place that conventional fiscal and monetary policies as well as liberalization and deregulation of various markets had been seriously attempted as means to recover from several recessions during the 1990s and the 2000s after the collapse of bubble in the stock and real estate markets.

Japan has experienced a prolonged depression period since the asset price bubble started to collapse in 1990. Even though Japan as a whole suffered from several recessions, there was a great disparity between metropolitan areas and other regions in term of the rate of bankruptcies and the rate of unemployment depending on the

interregional balance of payments and the industrial structure. On the whole, rural areas were much more severely affected. During the 1990s, the Japanese central government implemented enormous amounts of public spending and tax transfer to local governments in order to boost the national economy as a whole, especially so after 1997–98 when the Japanese economy had experienced severe financial crises caused by the failures or bankruptcies of several major private banks (The Hokkaido Takushoku Bank, Long-term Credit Bank of Japan, The Nippon Credit Bank) and security companies (Sanyo Securities Company, Yamaichi Securities). Additionally, we must not forget that it was during the 1990s and 2000s when deregulation in finance, food, information and aviation markets and privatization of postal and electric services advanced rapidly, and antimonopoly policies for enhancing competition were expanded widely. Nevertheless, such various government policies that were implemented on a large scale during the period could have almost no significant positive effects to bring the Japanese stagnant economy back onto a growth path. The well-used phrase “two lost decades” indicates the ineffectiveness of those policies.

In addition to such domestic issues, there were international economic problems for Japan as well. Until the 1990s, an enormous export surplus with the US had caused much trade friction. Foreign exchange market equipped with a floating exchange rate system is quite volatile and the tendency of appreciation of Japanese yen to other foreign currencies, especially to the US dollar, has been observed since then. Global markets of industrial products and services, energy, raw materials and foods are quite unstable and even more volatile than stock markets. This propensity of money and the commodities market also makes it difficult for many citizens to lead stable lives because of high and volatile prices of necessities such as oil, electricity and foods.

Here let us take a closer look at economic development in Hokkaido as it was supported by large-scale economic aids of the national government. The government of Japan created the Hokkaido Development Agency (HDA) in 1950 and established the Hokkaido Regional Development Bureau (HRDB) in 1951 as a local branch to implement public work projects initiated by the national government. Since 1952, such infrastructure improvements as dams, roads, ports and rivers have been promoted based on the Hokkaido Comprehensive Development Plan. HDA was a major source of money for public investment in Hokkaido until it was abolished in 2001. In that year, the HRDB was reorganized as an affiliate department of the Ministry of Land, Infrastructure, Transport and Tourism that was created by integration of four ministries in an administrative reform carried out by the national government. Hokkaido development

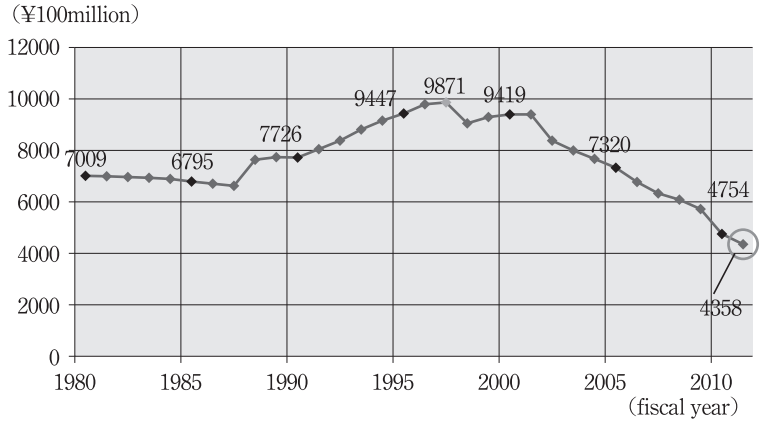

Fig. 1. Changes in Hokkaido Development Budget Expenses.

(Source: Hokkaido Regional Development Bureau Website, http://www.hkd.mlit.go.jp/eng/08.html)

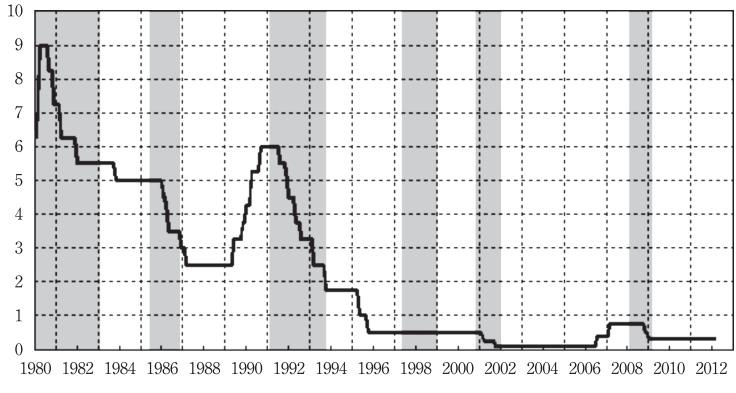

Fig. 2. Historical change of discount rate by the Bank of Japan.

(Source: Bank of Japan, BOJ Time-Series Data Search, Key Figures at a Glance, Interest Rates (http://www.stat-serach.boj.or.jp/index_en.html))

budget expenses increased to stimulate depressive regional economy from 1990, and reached their peak, 987.1 billion yen, in 1997; thereafter they have fallen and in 2011 were less than half their peak amount (Fig. 1). It is evident that even such massive injection of public spending in the 1990s had no drastic impacts on restoring Hokkaido economy.

With respect to monetary policy, the Bank of Japan (BOJ) once exercised a tight

money policy by pulling discount rates up until the 1990s for fear of inflation and the strong yen, however, BOJ thereafter continued an eased money policy until the late 1990s. Zero interest rate policy has been kept from 1999 to the present with two interruptions and quantitative easing policy has been kept from 2001 to 2006 (Fig. 2). The zero interest rate and quantitative easing policy have not had any significant impacts on successfully reviving the half dead Japanese economy.

The Japanese government thus could not bail out the country in the two lost decades even though it has spent considerable efforts on fiscal and monetary policies. It seems necessary to seek other methods of policymaking than what has been done so far in order to tackle such an essentially structured problem caused by globalization at the present.

5. Evolutionist Institutional Design as an Alternative Policymaking Method

In order to find a way out of the policymaking impasse of the past twenty years in Japan, we have proposed an evolutionary institutional design to which basic ideas and concepts of evolutionary economics apply as a new way of bottom-up policymaking from participants; it differs from conventional institutional designs based on constructivist or operationalist ways of top-down policymaking from central authorities (Nishibe, 2002, 2007).

Evolutionary economics has two basic concepts: 'replicators' and 'interactors.' On the one hand, replicators in the socioeconomic evolution that correspond to genes or DNA in biological evolution are institutions that consist of a bundle of "if~then…" rules shared by a relatively large number of agents. Such institutions constituted as rules are classified from the viewpoint of agents into 'internal rules' (game strategies, frames of cognition, psychological biases and behavioral routines) and 'external rules' (game rules, laws, conventions, social norms and morals). On the other hand, interactors — causal agents that correspond to organisms and groups or populations in biological evolution — are individuals or groups of individuals who execute rules (that is, they act according to both internal and external rules) and interact with themselves and others as well as external environments. Then we can visualize our socioeconomy as the coexistence of a diverse array of rules and institutions that form mutually complementary and substitutive relations. We call such a dynamic system the 'institutional ecology.'

Here we introduce the micro-meso-macro loop model to describe dynamic characters of an evolutionary system of institutional ecology (Fig. 3). Individuals as interactors on the micro level have their own replicators composed of internal rules such as instincts,

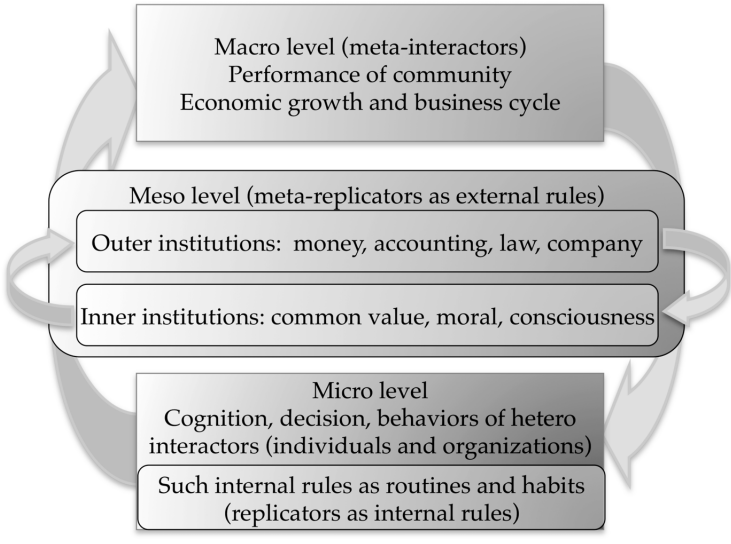

Fig. 3. Micro-meso-macro loop.

characters, habits, routines, motives and value. Such platform institutions as money, accounting, company and laws are regarded as basic replicators (rules) located on the meso level because, as outer institutions, they affect such inner institutions as common value, moral and consciousness shared by a certain number of micro agents on the meso level, and, on the other hand, determine such internal rules within micro agents as the routinized frames of cognition and habitual rules of decision/action on the micro level so that agents can behave based on such frames and rules. In short, platform media as outer institutions on the meso level basically regulate how agents share their morals, values and beliefs on the meso level and behave and interact with one another on the micro level. Platform media mediate dual directional causal relations between socioeconomic performances and patterns on the macro level and behavior of agents based on internal rules on the micro level.

Conventional approaches for institutional design such as mechanism design or market socialism presume that internal rules of agents on the micro level are all fixed because the internal rules are only understood as optimality principles. So those approaches only focus on any adaptational and unambiguous changes in behaviors of individuals or firms based on the maximization of utility or profits in response to the change of institutions as external rules. In contrast to such mechanical understanding of agent behaviors in conventional views, evolutionist institutional design thinks of internal rules on the micro

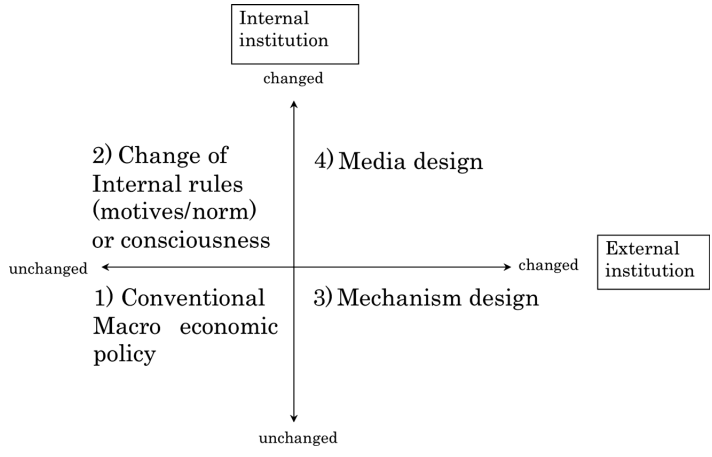

Fig. 4. Classification of four types of socioeconomic policies.

level as variable, and tries to consider the effects both on performance and patterns overall at the macro level and on internal rules at the micro level; these effects arise simultaneously from changes in the policymaking regarding external rules embodied in platform institutions (e.g., media such as money) and from changes in accounting rules commonly held at the meso level.

Figure 4 classifies socioeconomic policies into four categories along two axes of changed/unchanged for internal or external institutions. Here, evolutionist institutional design corresponds to 4) media design where both external and internal institutions are changed. In contrast, constructivist institutional design is understood as 3) mechanism design in which only external rules are changed, and operationalist institutional design is depicted in 1) conventional macroeconomic monetary and fiscal policies where neither rule is changed. We can see 2) change of internal rules or consciousness in ethical consumption, social investment and corporate social responsibility. These are all socioeconomic policies, but the focus of evolutionist institutional design is especially on media design based on evolutionist institutional design (Nishibe, 2010).

Platform media are strategic targets for evolutionary institutional design since any change of rules in platform media can simultaneously affect both micro behaviors of agents and macro performance-patterns of socioeconomy. If we alter platform media as external institutions on the meso level, that can affect agents on the micro level in two ways, viz. it can change agents' behaviors as output in response to alternation of external rules based on the same internal rules, and it can change agents' ways of behaviors as

internal rules such as routines, habits, motives and value.

6. Proposal of a Remedy to Create Hokkaido Community Currency: LETS DO Scheme

Community currencies (CCs) as unique integrative communication media with both properties of money and language have the capability of simultaneously changing both behaviors as output and internal rules of agents in order to countervail the effect of existing national currency and banking institutions as the basic replicators for propagating global capitalism (Nishibe, 2012).

Globalization can be interpreted as the historical tendency for Market to expand, and for Community and State to shrink qualitatively and quantitatively over the last several decades. Many visible phenomena have verified the existence of the trend. For example, most towns and villages have the same problem of declining shopping streets in addition to the problems of depopulation and population aging caused by the falling birthrate and migration of young people to urban areas where they find more job opportunities. Although motorization facilitated the ability of rural and small-town residents to go shopping in supermarkets or shopping malls in larger towns, it also gave rise to 'shopping refugees,' the elderly who do not drive cars and cannot go shopping far from home. When local shopping streets disappear, so do many invisible community functions that they serve, such as street cleaning, security, mutual aid, childcare and local festivals. As a result of the prosperity of global economies, the decline of local economies has accelerated and the living environments of all residents have deteriorated as well.

If the people under such circumstances can create their own local money that stays in the community and circulates there, local economies could become more active and relatively independent of the influence of national and global economies. This would encourage forming sustainable and recycling-oriented local economies of 'local production for local consumption,' which is the ultimate aim of CCs introduced as 'economic media.'

We have already seen that the usual advice for Hokkaido is to reduce deficits in interregional balance of payments by encouraging more industrialization in order to seek macro economic growth and increase GDP per capita, although the present industrial structure indicates that primary and tertiary industries are main and more self-sufficient than secondary industries. Then we believe that it would be wiser to expand primary and tertiary industries than to nurture secondary industries. To put this more concretely, we should bolster industries of agriculture, forestry, fisheries, food processing, information,

tourism and environment and break the previous dependence on the central government in terms of finance and social security so that we can create a truly independent economy that puts greater importance on mutual help and self-help than public aid.

But if the deficits of interregional balance of payments remain the same, it will result in a spillover of currencies out of the region. Hokkaido has kept a high level of private net savings since the 1980s, but they went to such metropolitan areas as Tokyo and Osaka, and were not used for private investments in Hokkaido. We should utilize private net savings within the region but it is difficult under the current institutions because there is no obligation for banks to lend money locally.

If we set up a new institutional design of money and introduce a CC only for use within Hokkaido, rather than just impose some regulations for local loan on banks, and we all make efforts to circulate it mainly within primary and tertiary industries that have already kept high self-sufficiency ratios, it would enhance the inner circulation of currencies and heighten the economic multiplier effect of investment that would make it

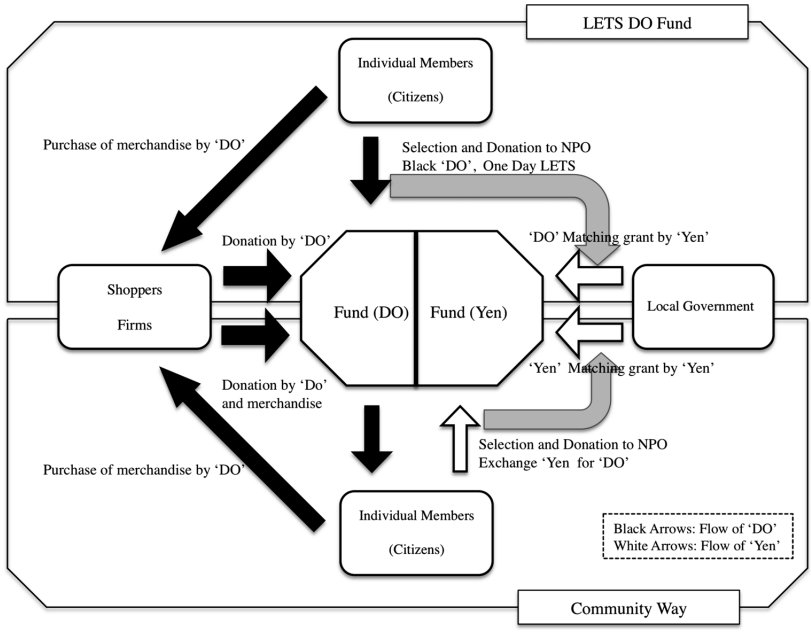

Fig. 5. LETS DO Scheme for Hokkaido Community Currency.

[4] This plan was initially proposed (Nishibe, 2001) and improved through discussion with a project team composed by local government officials of Hokkaido.

possible to create an environmentally sustainable and recycling-oriented scioeconomy. It would also induce local residents and tourists to participate more in building independent local economies with local production for local consumption as well as social capitals and communities in Hokkaido.

Here we propose a comprehensive plan for Hokkaido Community Currency (HCC) based on the aforementioned evolutionist institutional design.[4)] The plan does not seek Hokkaido's political independence as a nation-state from Japan, nor establishment of a single exclusive currency by the local government of Hokkaido. It only requires as a necessary condition legitimate free issue of various types of currencies. Accordingly, we assume coexistence of such multiple concurrent currencies as community, electronic, corporate and national currencies. The aim of the plan is to vitalize regional economies and communities in Hokkaido by growing regional intra-circulation of currencies. In order to accomplish the goal, only several percent of its gross regional production (about 20 trillion Japanese yen) needs to be circulated by CCs.

A more practical plan that we present here is called the LETS DO Scheme (Fig. 5). The system adopts the LETS (Local Exchange Trading System), which is the most frequently used account-type CC in developed countries. The issuing body does not issue any paper currencies or notes in LETS. Participants open their accounts with an initial balance of zero. Once a participant offers any goods or services, for example, old books or babysitting, to another participant with a certain agreed price, such as, 10 green dollars, the transaction value is written as credit (plus 10 green dollars) on the seller's account and written as debit (minus 10 green dollars) on the buyer's account. This means that buyers can create a necessary amount of money whenever they make transactions unless they exceed the debit limit that is usually set up in order to prevent each participant from accumulating too many debits. At any point, some participants have a certain amount of credits in their accounts and others have a certain amount of debits, but the summation of all participants' accounts equals zero. This zero sum principle clearly expresses the reciprocal relations of participants within the community that all participants form.

The name of HCC and its value unit is taken as 'DO', from the last syllable of 'Hokkaido.' LETS DO means "Let's do something together" to potential participants. The CC is expected to create a new community of Hokkaido by conveying such messages with ethics and value to people. It is crucial to understand that 'Hokkaido' implies not only a geographical region and administrative district but also a community of interest concerning 'Hokkaido.' Then residents or citizens of Hokkaido as well as

those who are interested in Hokkaido in some respects can be participants of the project. For example, tourists who visit Hokkaido, gourmets who want to buy certain agricultural products of Hokkaido, and those who are originally from Hokkaido and live away in metropolitan cities are all conceived as supporters of Hokkaido and eligible participants. Participants are not only individuals but also groups and organizations such as companies, cooperatives, trade unions, chambers of commerce, and governments as long as they open accounts and trade any of their goods and services by CC. Some parastatal organization is engaged in such administrative work as membership, registry and policy making in a neutral and fair manner.

The exchange rate between DO and yen is basically fixed as 1 : 1. But a certain discount for DO is available to encourage people to exchange yen and use DO. For example, the exchange rate would be 1.1 : 1, that is, there is a 10% discount rate for the first year. But if the policymaking body keeps such a discounted rate fixed for a considerably long time, it would have a positive impact on Hokkaido economy by stimulating exports from and investments to Hokkaido. Adopting a variable or floating rate system would be another option.

The present plan sets conditions that nonprofit organizations (NPOs) are only permitted to exchange DO for yen and individuals and private enterprises are both prohibited from doing it. This is because in doing so we can prevent DO from flowing out of Hokkaido so that its economy can be stabilized to some extent due to its detachment from global economies frequently stuck with turbulences of foreign exchange rates and other necessary commodity prices caused by speculative trading in financial and derivative markets. Another reason for the condition is that it also provides NPOs with fund raising capacity in yen. This is an embodiment of the idea of supporting NPOs that always run short of operating funds.

Figure 5 shows that LETS DO Scheme is composed of two different schemes: the ‘LETS DO fund’ and the ‘Community Way.’ The LETS DO fund is a scheme for supporting NPOs in which participants select an NPO that they would like to donate their yen to. The NPOs issue DO equivalent to their received yen donation and pass it to the participants. Each NPO takes the role of being moneychanger between yen and DO or, expressed differently, a money supplier of DO. In order to become receivers of such donations, NPOs must become highly acclaimed for socially significant but nonprofitable jobs. Accordingly, NPOs from various themes in welfare, environments and cultures would compete with each other for such funds.

The Community Way is a scheme for forming smooth currency circulation among

individuals, private firms, NPOs and governments, without hoarding, by connecting non-commercial transactions (donations, volunteer work and mutual aids) and commercial transactions (shopping by local shoppers and stores). Individual participants conduct volunteer work so as to receive DO or they donate yen to any NPO they choose and receive DO. They use received DO for purchasing merchandise from shops and firms. Local shops and firms receive DO from their customers as part of the sales, and use the received DO for their purchase from other local shops and firms, or for donations or activities for corporate social responsibility. We expect from Community Way that turnovers of currency circulation will increase and Hokkaido's regional economy can expand faster by multiplier effects.[5)]

The LETS DO Scheme is not just an economic system using CCs to vitalize the regional economy. It has the possibility of being a social and political system using CCs to get individuals to participate in the voting process of assessing activities of NPOs, to make NPOs become more economically feasible and sustainable, to make local shops and private firms become more socially responsible, and lead the government to become a more bottom-up coordinator rather than a top-down policymaker. In short, the LETS DO Scheme as platform media aims at being basic replicators as an external institution on the meso level from which both associative agents at the micro level and a 'coopetitive' — cooperative and competitive — market socioeconomy on the macro level can simultaneously emerge and self-organize themselves as phonotype manifestation of LETS DO genes.

This is the evolutionist institutional design for a socioeconomy for promoting industrial diversity and local production for local consumption. We think highly of food sufficiency, nature conservation and social security services for aging population with fewer children that can be provided mainly by primary and tertiary industries. We may say that the LETS DO Scheme attempts to not only accomplish economic growth and development in terms of the GDP and interregional balance of payments evaluated in Japanese yen, but also to improve alternative affluence indexes such as the GPI (Genuine

[5)] In an experiment on a CC in Tomamae Town, Hokkaido, the velocity of the community currency with the 'Double-Triangle Method' (where commercial transactions and non-commercial transactions become mutually complementary in successive circulation of money) was found to reach 5.1 (first experiment, Oct. 2004 to Feb. 2005) and 3.5 (second experiment, Aug. 2005 to Jan. 2006) turnovers per year, which respectively correspond to about 6–7 and 4–5 times that of the legal tender at the time. These data support our claim that the CCs have significant economic effects in vitalizing local economies (Nishibe, 2004, 2006a; Kichiji and Nishibe, 2008).

Progress Index), HDI (Human Development Index), GNH (Gross National Happiness) or other subjective satisfaction and creativity indexes such as RCDI (Regional Creative Development Index).[6)]

It would be desirable here to add a few words with regard to feasibility of LETS DO Scheme. It does not aim at a complete self-sufficient economy with exclusive local production for local consumption within Hokkaido. It is absurd to imagine that a completely self-sufficient economy is feasible in a highly developed international division of labour and knowledge in today's age. But we cannot confirm according to the law of comparative advantage that the regional economy that specializes only in a particular sector such as automobile production or nuclear power generation with a large surplus in the interregional balance of payments but low self-sufficiency ratios of primary and tertiary industries is most desirable. Such an economy has plenty of monetary wealth, but lacks necessities and diversity. Such an economy must be fragile once it is hit by a major natural disaster or a catastrophic man-made accident. We cannot neglect such kind of risk in a world full of radical uncertainty, that is, the real evolutionary and complex world.

"Local production for local consumption" is nowadays a very popular slogan for ethical consumers who are strongly conscious of their health care and natural environments, but it is completely contradictory to what standard economics equipped with the law of comparative advantage tells us. We have not so far seen any strong theory for desirability of local production for local consumption, but evolutionary ways of thinking have a comparative advantage to answer the question because they enable our thinking depart from the rationality and equilibrium of standard economics. In evolutionary economics, the economy with self-sufficiency ratios in many industries is interpreted as a system with loose connections to each other as well as external environments and the whole set of economies as such can be depicted as an autonomous and dispersive network just like an ecological network. The merits of those systems and networks lie in their capability for evolution, viz. self-organization, emergence, robustness, flexibility and diversity that evolving systems and networks show (Nishibe, 2006b). There is much left to be considered on the issue, but we can still appreciate local production for local consumption.

[6)] We as a team of the Hokkaido Institute for Future Advancement invented the RCDI as a new index for indicating regional creativity (Hara and Nishibe, 2007). It is a sort of satisfaction index calculated as weighted averages of accumulated points classified for human capital, social capital and environmental capital with regard to each city or region.

Hokkaido has higher self-sufficiency ratios in primary and tertiary industries and lower self-sufficiency ratio in secondary industries, the earlier mention twin peaks shape. Because automobiles, computers and many other electrical appliances are global trade products of an international division of labor, they cannot be bought by HCC, but there are not necessities but rather luxury items. Since primary industries for food and tertiary industries for basic services are already highly self-sufficient, it would be possible to maintain daily life with DO in Hokkaido. If participants can trade with each other or sell to the electric company surplus electricity that is self-generated locally by renewable solar, wind and water energies, self-sufficiency and sustainability of the Hokkaido economy would be improved and their daily lives would become more tolerant to external shocks such as rapid appreciation of oil process. Construction projects of local electric generators would be good opportunities for private investment where net private saving in Hokkaido should be utilized so that it can bring about endogenous development by its ripple effects. If such projects can also come to be dealt with using DO, commercial transactions using DO might greatly expand. Creation of HCC and use of the LETS DO Scheme is thus a feasible and practicable plan to improve sustainability and realize autonomy of the Hokkaido socioeconomy.

References

Drucker, P. F. (1993) *Post-Capitalist Society,* Harper Business, New York.

Hara, I. (1999) "A Study on Interregional Payment Balances (in Japanese)," *Studies in Regional Science* 30.3: 147–158.

——— and M. Nishibe (eds) (2007) *The Way to Revitalization Aiming at Improving Regional "Creativity"* (in Japanese), Hokkaido Institute for Future Advancement, Sapporo.

Hayek, F. (1990) *Denationalisation of Money — The Argument Refined*, 3rd ed., The Institute of Economic Affairs, London.

Hokkaido Bureau of Economy, Trade and Industry (2010) *Interindustry Relations Analysis of Hokkaido Regional Economy in Heisei Year 17 (2005)*. http://www.hkd.meti.go.jp/hoksr/h17renkan/index.htm

Hokkaido Regional Development Bureau Website. http://www.hkd.mlit.go.jp/eng/08.html

Horikoshi, Y. (2008) "The Study on Balance of Regional Payments in Japan (in Japanese)," *The Journal of Social Science, Yamanashi Gakuin University* 28: 5–41.

Kichiji, N. and M. Nishibe (2008) "Network Analyses of the Circulation Flow of Community Currency," *Evolutionary and Institutional Economics Review* 4.2: 267–300.

Kobayashi, Y. (1997) "Macroeconomic Balance from the Viewpoint of Money Flow and Economic Welfare (in Japanese)," *Economic Studies, Hokkaido University* 46.4: 76–81.

Musha, K. (2010) “Interindustry Relations Analysis of the Tourist Industry in Regional Economy (in Japanese),” *Industrial Studies Bulletin, Kansai Gakuin University* 37: 113–124.

Nishibe, M. (2002) “Evolutionist Institutional Design (in Japanese),” *Social and Economic Systems Studies, Japan Association for Social and Economic Systems Studies* 23: 66–72.

——— (2004) “Evolutionist Institutional Design (in Japanese),” in M. Nishibe (ed) *Frontier of Evolutionary Economics* (in Japanese), Nippon Hyoron Sha, Tokyo, pp. 3–34.

——— (2006a) “Local Currency and Community Dock: The Report of the Experiment of Circulation of Community Currency in Tomamae Town (in Japanese),” *Studies on Local Policy, Research Institute for Local Government* 34: 40–56.

——— (2006b) “Redefining Evolutionary Economics,” *Evolutionary and Institutional Economics Review* 3.1: 3–26.

——— (2007) “Local Currencies as Integrative Communication Media and Evolutionist Institutional Design (in Japanese),” *The Annual of Society of Economic Sociology* 28: 6–20.

——— (2010) “Four Policies: Classification by Inner Institutions and Outer Institutions (in Japanese),” in S. Egashira, N. Sawabe, T. Hashimoto, M. Nishibe and M. Yoshida (eds) *Evolutionary Economics: The Foundation*, Nihon Keizai Hyoron Sha, Tokyo, 7.2: 244–250.

——— (2012) “Community Currencies as Integrative Communication Media for Evolutionist Institutional Design,” *The International Journal for Community Currency Research* 20 (forthcoming).

——— (ed) (2001) *The Possibility of Local Currencies for Aiming at Building Affluent Communities* (in Japanese), Hokkaido Municipal Training Center, Ebetsu.

——— (ed) (2005) *The Report on the Experiment of Circulation of CC in Tomamae Town* (in Japanese), Hokkaido Federation of Societies of Commerce and Industry, Sapporo.

Ricardo, D. (1817) *On the Principles of Political Economy and Taxation*, John Murray, London.

Shiozawa, Y. (2007) “A New Construction of Ricardian Trade Theory — A Many-country, Many-commodity Case with Intermediate Goods and Choice of Production Techniques —,” *Evolutionary and Institutional Economics Review* 3.2: 141–187.

Toffler, A. (1980) *The Third Wave*, Morrow, New York.