Makoto Nishibe

Whither Capitalism?

Internalizing the Market and Free Investment

Springer

Whither Capitalism?

Makoto Nishibe

Whither Capitalism?

Internalizing the Market and Free Investment

Springer

Makoto Nishibe
School of Economics
Senshu University
Kawasaki, Kanagawa, Japan

This is the English translation from the Japanese language edition: Whither Capitalism?: Internalizing the Market and Free Investment by Makoto Nishibe. Copyright © 2011 Nishibe Makoto. All rights reserved. First published 2011 by NHK Publishing, Inc., Tokyo, Japan.

ISBN 978-981-13-0703-4 ISBN 978-981-13-0704-1 (eBook)
https://doi.org/10.1007/978-981-13-0704-1

This Springer imprint is published by the registered company Springer Nature Singapore Pte Ltd.
The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

Preface

While I write this, I keep drinking plastic bottled green tea or water. When did I start drinking it with those plastic bottles? When I was in elementary school, I remember drinking glass bottles of orange and purple-colored carbonated water in front of a mom-and-pop candy store on my way home from school. Moreover, when I was in high school, I often drank canned coffee at a kiosk on the platform of JNR. However, I have no memory of drinking green tea or water with a plastic bottle then. I am not sure, but I probably started buying it as a commodity when I was a university student in the 1980s. When I drank with my friends in my apartment, empty 2-liter plastic bottles of green tea and water I bought at a convenience store were lying along with empty glass bottles of beer and sake on tatami mats.

I once felt something strange suddenly when I stood in a convenience store, taking a look at a large number of 500 ml plastic bottles of water lining up in a refrigerated showcase. At first, I thought its price of 100 yen was too high. But soon, I realized I felt so because they sell even water essential for our life as a commodity, but I have kept paying for it without a doubt. In Japan, we can drink soft water with tap water, but a bottle of water has become a full-fledged commodity. Such a business is well established as a matter of course, because there are enough consumers, including myself, buying it. I had an ill feeling against making the basis of life a big business, rather than the high price of water. Nevertheless, I forgot that before long, and, without my noticing it, I started to buy a convenient plastic bottle of water at a convenience store and carry it in my bag. My senses seem to have been paralyzed so that I could not feel such strangeness anymore.

Now, it is not only water. Even the right to emit carbon dioxide that we always breathe out is traded as a commodity. The right to name parks and facilities managed by local governments is sold. We are forced to call them by the names of owner companies, and our personal information is often traded in large quantities unknowingly. On the other hand, people unemployed who cannot sell their labor-powers were driven to suicide or starvation. An infant who cannot receive a mother's affection is abused and abandoned to death. All these things are caused by a big wave of commodification surging with globalization that is approaching to the depths of our life and living. If we can think of it, we cannot help feeling horrified about it.

Globalization is by no means a new phenomenon. It is merely a visible manifestation of the tendency of "internalization of the market" that has long been shown by capitalist economies. It is my first point of this book. I suppose the "globalization of capital" is another similar tendency. However, it arouses the image that the market domain spreads sideways, such as the extensive expansion of the market. On the other hand, by the "internalization of the market," we pay attention to the intensive deepening of the market, the tendency that the market permeates deeper in our bodies and minds. The profit principle is now dealing with the world as a whole, including all of our lives and environments. It is not until we realize it as deepening the market domain that we can manage to express how horrifying we sometimes feel about it.

If globalization is a postmodern manifestation of the tendency of "internalization of the market" inherent in capitalism, then what is capitalism? It should be instead called a capitalist market economy, and it is a particular type of market economy that belongs to a set of market economies. It is not particularly new to define the capitalist market economy as a kind of market economy based on the commodification of labor-power. The originality of this book is to explain the evolution of the capitalist economy as the presently progressing invisible process of the "internalization of the market," which takes three modes of commodification, external commodification (E mode), internal commodification (I mode), and general commodification (G mode), with respect to commodification of labor-power of ourselves. The form of the capitalist economy is thus grasped as a distinctive pattern of a combination of G mode commodification of general goods and E mode commodification of labor-power. The evolution of capitalism is recognized as a succession of three modes (E, I, G) in terms of labor-power. To understand the implication of the mode making such a form, we have to take notice of the difference of rules making those patterns. If you look at it that way, you will notice that all institutions of money and market are made up of rules. Accordingly, this book attempts to view the evolution of capitalism, which appears as the tendency of globalization, as a transition of socio-economic rules that manifest three patterns regarding the commodification of labor-power. The rules are the replicators (genes) of capitalist economies that determine the way they are.

Perhaps, such an explanation of capitalism is rather new and involves controversial issues. I arrived at this idea about 15 years ago and published an academic paper (Nishibe 1997) that introduced a simple mathematical model. There were some reactions to it, but not so much. Besides, as I was not entirely confident about this argument, I did not intend to make it accessible to the general public. After then, I became to have a theoretical interest in the issue of local currency (referred to as "community currency" in this book) and became involved even in some researches and practices. I did so because I was already keenly aware of the relation of globalization and the evolution of capitalism and gained the conclusions on the issues in the 1997 paper. I was therefore fairly clear about where the potential of local currency lies based on these theoretical considerations. However, as my articles and books on local currencies did not sufficiently account for this point, the reason why I find the possibility of local currencies in the future remained unexplained. While I

always felt necessary to fill this gap, I could not accomplish it quickly. As a result, I left the discussion on this problem to "criticism by mice." As I can see afterward, the progressive tendency of the commodification of labor-power seems not to be weakened but to appear more and more clearly. Accordingly, to raise a question to the general public is getting more significant, and I also wanted to fill the gap mentioned earlier.

The market economy is a socio-economic system in which the coordinating institution of "market", which is different from "community" and "state", is dominant. But we should recognize such a market as a distributed network formed as a chain of trades of commodity exchange using money as a medium of exchange, i.e., the buying and selling. It is significantly different from the view of a concentrated market without money in Neoclassical school. In this way, when we inquire into the questions of what globalization is and what capitalism is, we finally reach the fundamental questions of what the market is and what money and capital are.

Money is a form of "possibility" which has emerged out from self-organization to enable an exchange of goods to take place widely in a big economy where many people and products exist. Money is viable only when outer and inner institutions mutually support like both wheels of a car. While the outer institutions are visible rules such as the Bank of Japan notes and deposit currencies, the inner institutions are invisible rules as motives and value consciousness in which people consider money as valuable, receive it as compensation for commodities, and pursue its acquisition and proliferation. It is conventionally explained that money is a device or tool which solves the difficulty of barter exchange and has the functions of measure of value, medium of exchange, and store of value. However, money is a medium that provides the "possibility" of fulfilling such functions, not a system that necessarily actualizes such features in reality.

Indeed, as long as the macroscopic situations of the economy are going well and the human psychology and motives influenced by them are right, the money will become the engine that promotes division of labor and advances technological innovation by enabling a smooth exchange of goods. However, when such external situations and the corresponding internal situations of the people change, it shows completely different behaviors. If these conditions worsened, money could be a source of a disaster such as crisis, depression, and hyperinflation. In this way, money not only helps the operation of the market but also sometimes demonstrates dysfunction that hinders it. In other words, money is a soft and flexible medium to enable various forms and a bundle of possibilities as a double-edged sword with good and evil. There is no problem as long as both sides can be well coordinated and controlled. But as globalization proceeds, monetary and fiscal policies at a single country level lose their effectiveness. It seems to be a current problem Japan faces.

Thus, money is not just an institution outside of us. As we will see in the theory of the emergence of money in Chap. 3, the necessary condition for money to emerge is that the desires for exchange with other goods become intensified as people have to observe and imitate the desires of others to consume. In that sense, the inner institutions sustain money. We need to understand that money consists of both outer and inner institutions, and, in recognition of it, we should regard the future of money

as our problem. Money can change if its inner institutions, as well as outer institutions, turn at the same time.

It is also correct for globalization. We tend to see it as an objective trend occurring outside of us, and sometimes, we even talk about it as if it is none of our business. Indeed, globalization must be phenomena occurring outside of us. We can observe plastic bottles of water displayed as commodities with price tags in the showcase of convenience stores. But at the same time, globalization involves the transformation of values, norms, and thought habits at the unconscious level within ourselves. It was as if I felt a slight sense of incongruity with water in a plastic bottle but eventually forgot about it and continued to buy the commodity of water every day. It is difficult to become fully aware of such a transformation in consciousness and unconscious submergence.

That's not all. We are now forced to think, judge, and act as if we were capitalists to save money and invest in newer technologies, products, and promising revenue opportunities to make profits, aren't we? People invest daily in futures and FX and their human capital. It might not necessarily be what you want. It is something like an obsession imposed by something outside. We can say that our consciousness is manipulated by it. That is indeed the very inner institution. We are the existence which is easy to be influenced by our emotions and holds the limit in rationality. Nevertheless, we are forced to calculate, predict, and judge as rationally as possible, like capital in globalization. Raise and accumulate profits. Will globalization force us to replace our internal rules with those of capital and follow the programs of capital form?

The title of this book, *Whither Capitalism?: Internalizing the Market and Free Investment*, is not an exogenous question that predicts the future of outer institutions of capitalism as a fate. It is rather an endogenous question of our hope and possibilities in the future as to where we want to and where we can direct the programs of capitalism, which are being embedded as our inner institutions.

The twentieth century was the era when the state confronted capitalism. Up until the 1960s, the two ways had been groped as to whether the state should control capitalism from the center in aggregate demand management as the welfare state or the state should replace capitalism by central planning in a socialist planned economy. After the 1970s, neoliberalism or market fundamentalism emerged as a reaction to the previously revised capitalism, and they insisted that capitalism should be entrusted to a free competitive market. The trend observed as globalization has arisen in this context. The twenty-first century will be the time in which free investment capitalism thoroughly pursues how much capital can ingest human beings and nature, and its problem will be highlighted. It is no longer a nation-state that can hold back such a tendency. Therefore, it will be either a union of states or a world government, on the one hand, or multilayered and pluralistic communities, on the other hand, or both of them. It is the latter that I want to find more hope.

Then, is my position community-based communitarianism? Communitarians regard a rational and atomistic individual as an "unencumbered self" and point out its unreality. For example, Michael Sandel not only explains a "situated self" by the culture and tradition of a single country or community as the ideal of conventional

communitarians but also actively advocates "multiply situated self" by considering the self on various levels in a society in which communities are multilayered and pluralistic (Sandel 1996). It is very similar to my problem setting in that I attach importance to the coordination of the conflicts in "multilayered pluralistic self."

Sandel is apparently critical of libertarians who regard the free market as absolute; however, it is unclear how he recognizes defects of the capitalist market economy and the tendency of globalization, how he focuses on the issue of money, and to what extent he is aware that the "one-dimensional self" situated by the one-dimensional medium of money is expanding and deepening. We should go beyond Sandel's political and philosophical discussion and take a look more at the actual problems occurring in this socio-economy. We treat community currencies as critical current issues, not because we value a community itself. We should not aim at a community without a market, but a market mediated by a community and a non-capitalistic market economy. There are both elements of liberalism and communitarianism in such a market economy, but the aspects of capitalism and socialism may also be found more or less. We want to emphasize such institutional diversity.

In this book, the advantages of the market economy are understood based on Hayek's views, but as far as its defects due to money, capital, capitalism, and globalization are concerned, Marx's concepts and ideas are still effective. In these theoretical considerations, it does not matter whether they are liberalists or communists. At present, I have no interest in how to define such positions in a political sense. Instead, I would like only to evoke that it is especially essential and necessary to pay attention to the meanings of economic as well as social and cultural media of money to consider the issues of capitalism and globalization. Globalization, based on a national currency, especially the key currency of the US dollar, seems to be too homogenized and monotonous to make us happy.

Non-face-to-face economic relations through the Internet strengthen in the modern way of the market, and the pluralistic and dense social and cultural ties, including face-to-face relations, should be recovered. However, this must be through money and language as communication media, not an unmediated relation. I believe that the limits of the possibilities of such communication require us to pay more attention to community currencies integrating both language and money.

This book has been restructured so that it becomes one discussion as a whole by carrying out necessary correction and supplement to articles listed in the bibliography. This book was published with the active encouragement and excellent cooperation of Shuichiro Ito, editor of the editorial department of NHK Publishing. I want to take this opportunity to express my gratitude. Finally, I would like to dedicate this book to my wife, Chika, who supported me patiently with shadow work during this period, and my daughter, Yui, who is exhibiting the ontogenetic evolution from monkey to human right before my eyes.

Kawasaki, Japan Makoto Nishibe
February 6, 2011

Contents

Chapter 1
Globalization and the Intensive Deepening of the Market

Richness of Mind and Richness of Things

It has been more than 10 years since the twenty-first century began, and we face several serious issues. There is a dark, heavy cloud of concern. Companies have gone bankrupt, and laborers have lost their jobs due to depression and restructuring after the global financial crisis in 2008. This has resulted in a widening gap between the rich and the poor, as well as increased rates of unemployment, suicide, death in isolation, and child abuse. Additionally, the presence of an aging society has created a strain on pension systems and care services. Cohesiveness within families, schools, and local districts is breaking down, while politicians, bureaucrats, and large companies continue to lower their standards of behavior in sense of responsibility and morality. Most of these lament things are rooted in economic affairs. They widely and deeply eroded our internal values and ethics.

In fact, there is interesting data that speaks of our changing values. In Japan the Cabinet Office (formerly the Prime Minister's Office) has conducted a survey called the National Survey on Lifestyle Preferences, every 3 years since 1972. Researchers interview people to ask questions about their family, current daily life, and projected future life. In Fig. 1.1, we compare the life satisfaction with the real GDP per capita. Overall, life satisfaction increased steadily from 1972, but peaked in 1984, and since then has been decreasing till 2005. During this time, the GDP per capita continued to grow, with the exception of a temporary downturn in a financial crisis after the collapse of the bubble economy.

As far as income grows to a certain level, life satisfaction increases; however, as income continue to further increase, happiness appears to stabilize. In fact, happiness may stay fixed at the same level or even decrease. This is what is called *the paradox of happiness* or *Easterlin Paradox* named after the discoverer. Then why does this happen?

The Public Opinion Survey on the Life of the People conducted by the Cabinet Office in 2015 shows the percentage of people who preferred spiritual wealth

M. Nishibe, *Whither Capitalism?*, https://doi.org/10.1007/978-981-13-0704-1_1

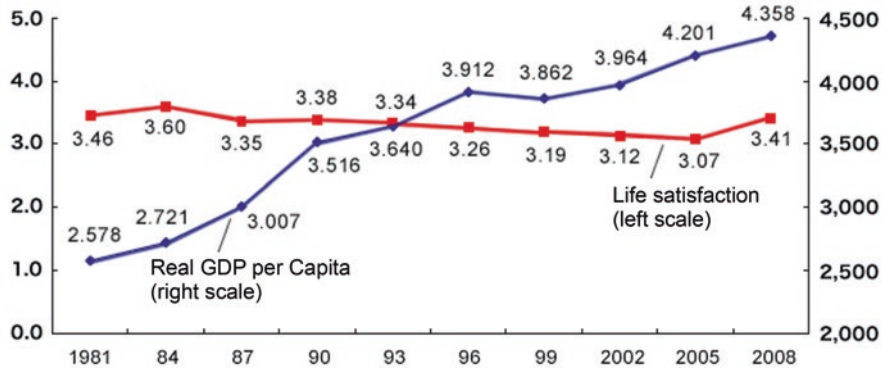

Fig. 1.1 Transition of life satisfaction and the real GDP per capita

(richness of mind) in future lifestyle was 62.0%, two times the material wealth (richness of things), which was 31.9% (Fig. 1.2).

The first time the former surpassed the latter was in the late 1970s. Material wealth refers to the quality and quantity of various products and services that we consume. We might be becoming to prefer spiritual wealth to material wealth in our consumption. But what does *spiritual wealth* mean?

According to psychologist Maslow's "hierarchy of needs," human desire consists of five levels, which begin with one's immediate physical needs and grow to include social and emotional needs. The first level consists of *physiological* needs (food,

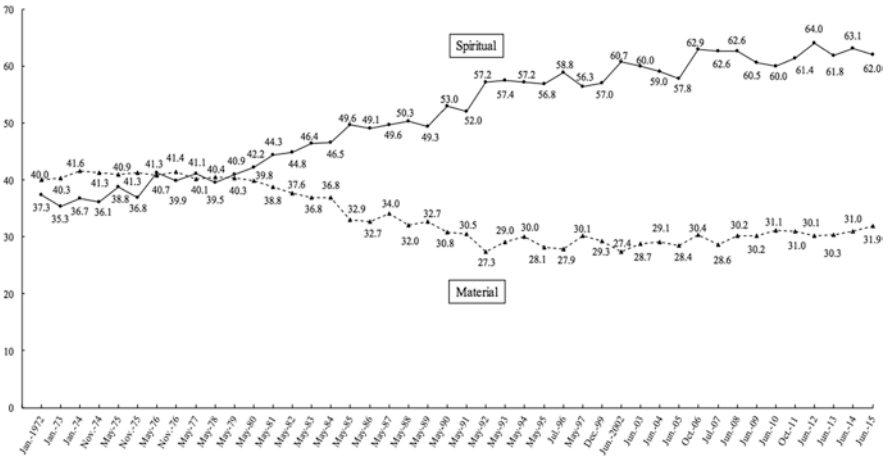

Fig. 1.2 Which is preferred, spiritual wealth or material wealth in future lifestyle?
Note:
Spiritual: "Since I have attained a degree of material wealth, I would like to focus on spiritual wealth and relaxed lifestyle from now on."
Material: "I would still like to continue placing the focus on attaining material wealth in my life."

sleep, and sex), followed by *safety* (health, well-being, security, work, and income), then *love* or *belonging* (intimacy, friendships, family, community, and group), next is *esteem* (social recognition, acceptance, respect, status, fame, and self-esteem), and, finally, *self-actualization*—the need to realize one's potential and creativity and to accomplish one's own goals.

Physiological and safety needs are basic needs that are indispensable for humans to live, such as shelter, clothing, and food. Such needs are satisfied by material wealth. On the other hand, a sense of belonging, respect, and self-actualization are higher spiritual needs, which are satisfied by spiritual wealth. It is important to realize that these are also concerned about others and oneself. Another question we should consider is what one actually needs in order to satisfy spiritual wealth.

Community Decline and Globalization

In Japan the Economic Planning Agencies lasted until 2001 and publicized PLI (People's Life Indicators) until 2000. The Comprehensive Planning Committee of the National Life Council published the Living Indices Review Committee Report in December 2002. The report created the composite index of affluence to comprehensively evaluate wealth of life based on PLI. Though this report is rather dated, it can provide important and relevant data for our purposes. Using the data, let's take a look into how people felt about wealth, from 1980 to 2001.

According to this data, what people believe to be wealth is different from standard monetary indicators such as GDP or income. In order to comprehensively evaluate wealth from different angles, PLI considers eight types of activities. These include basic activities of all people, as well as advanced living activities, categorized as housing, consuming, working, raising, healing, playing, learning, and socializing. Also, in order to see each activity in a multilayered fashion, PLI sets four dimensions to evaluate life: safety and security, fairness, freedom, and comfort.

During the economic downturn in the 1990s, housing, healing, and learning rapidly increased in comparison to the 1980s; however, the growth rate of consuming and playing has decreased. Healing, learning, and playing generally continued to rise until 2001, while housing and consuming went down in 1999. On the other hand, raising grew while decelerating until the first half of the 1990s. After this it began to decline in 1997 and 1998 and did not increase again. Working increased until 1992, after which it leveled off, and then began to decrease until 2001. Socializing decreased from 1992 to 1996 and, from there, increased until 2001 (Figs. 1.3 and 1.4).

The reason working, consuming, and playing did not grow from 1996 to 1999 reflects the economic downturn and the recession after 1997. On the other hand, the reason raising did not grow after 1996 reflects the increase in children's lifestyle-related diseases, long-term absenteeism rates in schools, and delinquency. The decline in socializing after 1992 is due to less time spent on social activities and fewer people joining volunteer efforts, leading to an overall decrease in social

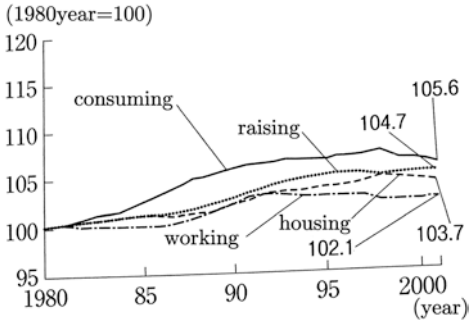

Fig. 1.3 Activity domains of PLI (housing, consuming, working, and raising)

relations. The former two started to increase from 1996, which pushed socializing upward. Raising and socializing are both linked more to social and cultural factors than economic.

If we look into the four dimensions used to evaluate life in Fig. 1.5, we find it is only comfort related to individual happiness that keeps growing fast throughout the analyzed time period. Freedom increases drastically from the latter half of 1980s to the first half of 1990s, but grows only slightly from 1996. Fairness, which reflects social norms, stayed at the same level throughout the 1980s but increased rapidly in the 1990s. In this time period one could observe greater equality between women and men, increases in welfare of the elderly, and less disparity between owners of real estate. The reason fairness does not grow after 1998 would be due to increasing welfare families and unemployment of women caused by the economic downturn. Additionally, safety and security has been gradually declining since the 1990s. This stems from worsening employer-employee relations, rises in traffic accidents, increases of perceived crime offenses, and long-term absenteeism of students.

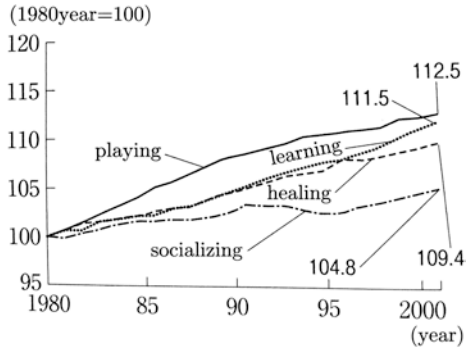

Fig. 1.4 Activity domains of PLI (healing, playing, learning, and socializing)

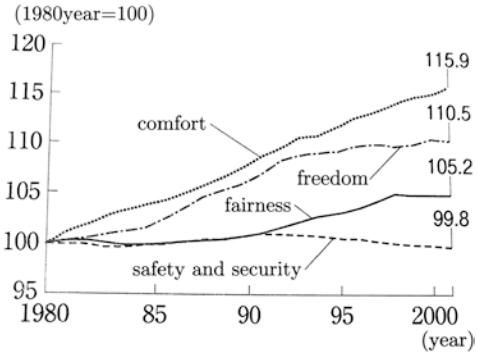

Fig. 1.5 PLI to evaluate life (comfort, freedom, fairness, and safety and security)

As such, activities related to health, spirit, and leisure time, such as healing, learning, and playing, increased in the 1990s, while economic activities such as consuming and working are decreased. This reflects the economic downturn after the bubble burst. Leisure time and volunteer activity can offer people care and opportunities to learn and gain knowledge, which are not part of the market economy, but are important for one's spiritual wealth. It was prioritized in this time period and took over the place once occupied by material wealth.

Nevertheless, raising and socializing found in community activities and human communication for family, school, and regional community declined. Besides, safety and security that ought to be given within such communities also tended to decrease. This cannot be explained exclusively by the long economic downturn after the bubble burst. Even though the economy is in turmoil temporarily, if the communities to which people can go back remain healthy, then raising, socializing, and safety and security should not decline. Accordingly, this did not arise from the middle-term business cycles involving depression and unemployment; it did happen because of the long-term trend of economic globalization.

In other words, mega-competition became intense, monetary evaluation centralized, and individualism spread, deteriorating the community. Community value comes from people's desire for safety, belonging, and mutual respect, basic elements in spiritual wealth. In the 1990s, safety and security declined, reflecting the tendency of globalization. But, in this analysis, the desire to belong and to be respected is not evaluated. If trust, reciprocity, and cooperation had been evaluated, it would be quite possible we could also see those falling as communities deteriorated in the 1990s.

The Exhausted Heart Phenomenon

The spiritual wealth reflects our states of mind and inner desires, as well as how we relate with others and our community. Since the 1970s, the number of people who prefer spiritual wealth over material wealth has continued to increase. As against the recent growth of demand for spiritual wealth, its supply is increasing through personal nonmarket spiritual activities such as healing, learning, and playing, while it is decreasing through raising, socializing, and safety and security in terms of activity relating with others and evaluation of lifestyle under community. This latter element has been expanding the gap between demand for and supply of spiritual wealth. And it resulted in the exhausted heart phenomenon, which is made apparent by the increasing number of people committing suicide.

Community disintegration, which advanced rapidly in the 1990s and continued to rise thereafter, was surely impacted by cyclical factors such as bankruptcy and unemployment in an economic depression, but mainly caused by the durable effect of globalization in the long run. Speculative short-term capital investment by investment banks and hedge funds using newly innovated financial products repetitively created financial crises and sovereign crises. Deregulation, privatization, administrative and fiscal reform, and BIS requirements of capital adequacy ratio for international banks all effectively worsened economic depressions. Transnational corporations furthered destruction of natural environment on the Earth. It is now clear that community crisis and ethical decay are the consequences, not the causes, of economic devastation due to liberalization and deregulation of the market. Therefore, we must first turn our attention to the issue of globalization.

What Is Globalization?

The twentieth century was the era when nation-states attempted to abolish or manage currency, but failed one after another. Soviet Union and Eastern European socialism was unsuccessful and proved that a nation cannot control and plan the economy, nor demolish currency. The collapse of post-WWII Bretton Woods system—the gold and dollar standard and the fixed exchange rate system—and the transition to the floating exchange rate system in 1973 resulted in an end to the independent control of international currency by the United States. This also means no nation can no longer autonomously manage monetary stock and gross domestic demand through Keynesian policies.

If one historically looks at a timeline of the twentieth century, the organized and planned economy was widely observed; however, in the first half of the 1970s, we saw a drastic turn to the liberalized market-driven economy. The abolishment and management of currency started to fail then, and globalization continued to progress in the 1990s.

Globalization is not just a trend that we can directly observe in the world and clearly define in a few words. It rather manifested itself as a tendency underling a following series of events and phenomena that took place since the first half of the 1970s and especially since the 1990s.

First, there occurred universalization of the market economy.

All former socialist countries such as the Soviet Union and Eastern European countries shifted to the market economy and the existing socialist countries such as China and Vietnam also introduced the market to a considerable extent in the first half of 1990s. As a result, the whole world joined the market economy and together created the global capitalist economy as one world. All national economies have become interdependent and open to the extent that no one can be self-sufficient without participating in the global market. They have lost discreteness and autonomy in fiscal and monetary policies.

Secondly, liberalization and deregulation of the market spread globally.

Within countries, protection elimination and deregulations were implemented in industries such as finance, communication, and aviation. Administrative and fiscal reform was introduced to aim for "cheap government." On the other hand, internationally, free trade and investment was promoted. The World Trade Organization was established in 1994, and it formed global standard rules for international trade to deal with intellectual property rights, liberalization of agriculture and finance, and penalties and dispute resolution. In 1997, post-bubble financial crisis occurred in Japan, and just over a decade later in 2008, subprime financial crisis shook up the world. This crisis engendered a worldwide anti-globalization movement, in which financial derivatives, hedge funds, and the free market were widely criticized. Despite growing calls to regulate free markets, the momentum toward liberalization remains strong.

Thirdly, Americanization as universalization of the US standard prevailed.

It is often pointed out that globalization is just another name of Americanization as the expansion of the American standard market economy, with the dollar as well as information and communication technology (ICT). Even forming international rules for free trade and investment was a part of the American economic global strategy. It is symbolic that companies such as Microsoft, Google, Apple, Facebook, and Amazon made use of "network externality effect"—in which users of any product, and the frequency of their use, enhance the product's reach—and succeeded in making the OS and application of the company a global de facto standard, thereby allowing these companies to keep reaping the benefits of their monopolistic status. Under "network externality effect," globalization and liberalization of the market economy and monopoly are compatible. The dollar must have established its monopolistic status through a similar process to this.

Fourth, emerging transnational corporations and declining nation-states are remarkable.

Transnational corporations are expanding their global trade and investment, but they increasingly avoid taxes and engage in money laundering. This weakens a nation-state' sovereignty and ability to collect taxes. As a result, the impact of economic policies by the nation-state is severely reduced. It is true the size of the national budget tended to expand since the 1970s even under neoliberalism that was supposed to aim at small government. However, if the source of tax decreases, the national government cannot help but shrink sooner or later. On the other hand, as the economic interdependence between countries in terms of trade and investment deepened, the need for policy coordination and economic partnership created regional economic integration as in European Union.

Fifth, experiences in our daily life indicate the ever-shrinking world through developments in transport and communication technology.

The aerial network moves people and things internationally, with speed and ease. Cable TV and the Internet make information and international news available in an instant. The Internet is more accessible than ever, and its impact is far-reaching. After the late 1990s, the number of Internet users increased exponentially in developed countries. Email made the exchange of the global communication, in a short amount of time, possible. Also, in e-commerce, credit card, e-money, and online payment system enabled worldwide online trade to expand. The global companies as Amazon and Google emerged, who became suddenly able to sell goods and provide services to international consumers. Even banks and security firms could sell their financial services all on line. Internet based on TCP/IP has become the basis of information and communication technology for globalization.

Sixth, we have learned painfully from repeated financial crises on risks of rapid expansion of global financial markets and speculative gamble.

In 1971, US President Nixon declared to stop the exchange of the US dollar to gold, and in 1973, the international currency system changed to a floating exchange rate system. Since then, the euro currency markets expanded and offshore trade increased. Since the late 1980s, derivatives such as futures, options, and swaps grew rapidly, in the form of foreign exchange and interest rate transactions. At present, in international financial markets such as foreign exchange markets, stock markets, bond markets, and financial future markets, short-term capitals are swiftly moving free of borders, seeking for higher profits. The total volume of daily foreign exchange transactions in the whole world amounted to 3.2 trillion dollars in April 2007 (BIS 2007). The volume for merely 4 days is equal to the annual world trade transactions in 2009, which amounts 12.5 trillion dollars in export base (IMF 2010).

Derivatives, once introduced as risk hedges, have provided opportunities for large-scale international investment to take place. In the 1990s, Europe, Mexico, East Asia, Russia, and Brazil all experienced currency crises. Hedge funds invested enormous amount of floating, short-term capital in the financial markets of those countries, and unexpected instant capital flight inflicted serious damage to the real economy. The liberalization and deregulation of the international financial markets had globalized speculative activities and economic bubbles. Susan Strange critically

calls such highly speculative modern capitalism *Casino Capitalism* (Strange 1986), and George Soros sees such globally interconnected and unstable financial market economy as *Global Capitalism* (Soros 1998).

To sum up, such concurrently happening compound phenomena as universalization of the market economy, liberalization and deregulation of the market, Americanization in global free trade and investment, emerging transnational corporations, the declining nation-states and such emergence of regional economic integration as EU, the development of transportation and telecommunication, and the expansion of global financial markets and speculative gamble are key elemental trends of globalization. Globalization itself is a higher level of abstract "tendency" of these trends and explains them as a unified and cohesive concept.

In the background of this globalization, there are two major tendencies occurring since the 1970s: deindustrialization as a transition from an industrialized economy to a post-industrialized, service, and information economy and informatization of money shown as dematerialization of money form in the process in which money shifted from gold-dollar standard to floating exchange rate system as pure informational money. The Internet and development of transportation and communication technology serve as the basis of globalization.

Globalization literally involves the concept of the earth as a sphere. It indicates such a "tendency" that borders, such as those that divide nation-states, are gradually losing their meaning and the spherical surface of the earth is approaching a single closed market economy. Globalization, in a word, is the tendency of approaching a single free market aided by development of information technology and expansion of finance.

Extensive Expansion and Intensive Deepening of the Market

Next, let's consider globalization a little more theoretically. It is generally thought that liberalization and deregulation of the market as the second element of globalization is nationally the elimination of government permission or licensing systems and legal regulation or protection and is internationally the realization of free trade through elimination of tariffs and non-tariff barriers.

Legal regulation or protection and non-tariff barriers include not only national laws and policies but also various implicit values and norms within the community, including customs, conventions, culture, tradition, and ethics. Therefore, liberalization of the market indicates that the expansion and integration of the market domain will come to finally form a single global market.

The abolition of regulation and liberalization of the market will lead to the spatial expansion of the market where current products are purchased and sold. This can be termed *extensive expansion* of the market. For example, McDonald's hamburgers, Starbucks coffee, and Toyota cars can now be purchased in former socialist countries as well as in developing counties. This means that developed countries such as Japan and the United States can expand their consumer goods market. This enables

former socialist countries to import such foreign products as cars and smartphones that are more expensive and higher performing than domestic ones. The market area has thus extended spatially and the kinds of trade items have expanded.

In such a view, globalization is nothing but the expansion of the market. If so, it is a very simple phenomenon that is easy to understand. However, it is more profound and difficult. Let's consider that freedom in the market has two different meanings. First, capital goods and consumer goods are free to buy and sell. This is equivalent to freedom of trade. Secondly, stocks and claims, as well as currencies and derivatives, are now free to buy and sell. This is equivalent to freedom of investment.

It is important to point out that freedom of investment is a more elevated level of freedom than freedom of trade. The goal of buying and selling of consumer goods and capital goods is to benefit from their function and usefulness, as well as from their satisfaction or utility: to consume them or produce something else from using them. But that of "earning opportunity" is not any function or utility of financial document itself as a physical object, but rather, it is the return as the fruit of the earning opportunity that it secures or the amount of profit as augmented value for capital, invested money fund.

The former is subject to a direct desire for specific consumption and production, and the latter is rather an indirect desire for investment in expected profits. Since the latter assumes money as abstraction of concrete goods and services, the level of freedom associated with it is also elevated.

As discussed above, liberalization of the market results in not only expansion of freedom of trade, or the market of consumer goods and capital goods but also expansion of freedom of investment, or the market of earning opportunity. Such an elevation of liberalization of the market to a higher level can be described as *intensive deepening* of the market.

The serious damage inflicting our economy, society, culture, and ethics through globalization is coming from intensive deepening of the market, rather than extensive expansion of it. It is crucial to understand this point when considering the problems caused by globalization.

Intensive deepening of the market is penetrating into the depths of socioeconomy, the most common elements of our daily life. The intensive deepening of the market is now containing the buying and selling of things such as human trafficking and selling of organs that had previously been prohibited or limited for ethical and moral reasons. These widely range from personal information and DNA data, carbon dioxide emission rights, and naming rights. Not only goods and services but also information and rights can now be traded as a "commodity" in exchange for "money."

The concept of "commodification" has shifted from external material objects to our own body—our brain, organ, and DNA—and even to necessities for life such as water and carbon dioxide emission. This means that the market is not only expanding; it is also "internalizing" into a direction that was more difficult to commodify through the entire history of human beings.

Through this tendency of "internalization of the market," the dynamic structural change of socioeconomy proceeds. Communities such as families, villages, schools, regional societies, companies, and nations have the reciprocity principle different than the exchange principle in the market. The intensive deepening of the market at first resolves a community into individuals and reorganizes individuals mainly by the exchange principle. Needless to say, there will always be some areas in every community that cannot be completely dissolved by the market; however, the undissolved parts in communities such as modern families and schools will be reorganized under the influence of the market principle on buying and selling of commodity in exchange for money. As a result, even if they are called as the same names, their internal characters change drastically. When such communities change so drastically that they can no longer keep their names, the end result is collapse or dissolution.

Selection on the Menu

As discussed earlier, the intensive deepening of the market extends to furthering the process of commodification in which new kinds of goods and services are commodified so that they can be purchased by money in the market. In the process, people are reduced to individuals as buyers and sellers, and, as a result, the community will gradually collapse. In other words, all activities by people are also reduced to "selections" of goods and service presented as commodities for purchase or sale. We can select any commodity freely from the menu list. But, the menu itself has been given to us, and we cannot be involved in arrangement of contents on the menu. In this respect, the selection itself is passive and heteronomous.

Just imagine we sit in a restaurant and look inside our wallet. On the menu, we find many courses and dishes. As consumers, we casually select what we want to eat. If we assume that all possible goods and services are commodified for sale and purchase in the market, what we can do is only to select options that appear on the menu.

Ostensibly, one could argue against this by saying, "No, I can buy food at the grocery store and cook what I like. Couldn't there be, in this case, other options outside the menu?"

But that menu must also include all other possible options such as self-cooking using ingredients and cookware. You have to decide whether you go to a restaurant to select what you want to eat or you cook your dishes by yourself, considering your budget, your total available time, and your self-cook time and hourly pay. Don't forget that, before you decide it, you must have already decided your time allocation between labor and leisure by using such information on the menu.

Let's assume the person's hourly wage is 5000 yen. In such a case, if that person spends 1 h at leisure, he or she is supposed to lose the opportunity to earn 5000 yen. Then the opportunity loss can be regarded as the cost of leisure. Accordingly, if that person spends an hour for shopping and cooking, the price of his or her food needs

to include not only 2000 yen for ingredients, cookware, light, and heat but also additional 5000 yen as the opportunity cost. If you spend 7000 yen for a meal, it must be a luxurious dinner.

If one spends 2000 yen in ingredients, cookware, light, and heat and hires outsourced cooking service at 1000 yen per hour, the very same meal could cost only 3000 yen—a saving of 4000 yen. That would be a more "rational" option. In this case, the meals by outsourced cooking services should be included on the menu. After all, the menu would contain not only all possible goods and services but also all his or her activities registered as commodities attached with their prices.

This story may sound extreme. First of all, the 1000 yen per hour cooking service would need to be found in the market. Also, this scenario is based on the assumption that the individual will make a rational choice when selecting from the menu. However extreme this story sounds, we cannot say it is just a fantasy because it is becoming a reality.

For example, such domestic labor as housekeeping and child-rearing is not actually paid by money at home so that they are called "shadow work" (Illich 1981), but the current trend under globalization is as follows. Family members in charge of domestic labor calculate their opportunity costs as the actual hourly salary they are earning outside home, and they decide whether to replace those with outsourced services as commodities. If their hourly wage as an opportunity cost is higher than the hourly payment of outsourced services for housekeeping and child-rearing, they economically had better hire outsourcing services and work during these hours to earn salary. Such "rational" choice has gradually spread over as common sense among younger generations. The service industry in activities such as eating out, cleaning, child-rearing, and elderly care has grown exponentially as a result of this social background.

If new products and services are introduced at home, they will replace various kinds of domestic labor. Thanks to the steady growth of income and the successive product innovations in capitalist economies after WWII, housework time itself has been drastically shortened by being replaced with electronic appliances such as washing machines, refrigerators and cars, and services such as cleaning and eating out. This is the result of the intensive deepening of the market.

To conclude, if we were all completely informed and perfectly rational and all possible goods and services were dealt with as commodities in the market, there would remain no purely invaluable free time that is different from monetary valuable leisure and no purely enjoyable human activity outside the market. Free time can always be calculated and applied a monetary value. All human activity and leisurely pursuits exist within the market. The story of selection on the menu with extreme assumptions visualizes a simple picture of ultimate goal of globalization.

For a Free Investment World

As we have seen, the intensive deepening of the market reduces us to atomistic individual sellers and buyers of goods. Eventually, all our activities will be reduced to the sole "choice" of commodities as goods and services on the menu.

Next, we will see that the intensive deepening of the market further reduces us to independent investors or capitalists. All individuals are urged to invest as much as money they earn in order to increase their capital as fast as possible. Let's look at this in more detail.

As illustrated in the subprime mortgage crisis, diversification of financial products has played a very important role in the midst of expanding globalization. Various financial products were created and traded for sale and purchase through securitization and downsizing of bonds, loans, and mortgages so they are transferable and accessible to everyone.

For instance, downsized equity investment via the Internet makes it easier for individuals to act as investors. In this way, the menu for selection would include not only products such as consumer goods and services but also diverse opportunities to invest. People can watch a security company's homepage on the Internet to check changing prices of stocks they own, and they can do this daily or even hourly. They might spend more time to visit a variety of websites to analyze different financial and economic data and then use this information to make careful decisions on what to invest in. Of course, if they thought the time and effort put into such research activities is better to be put into other activities, or if they are not confident in their decisions, they can pay some fees and commission a specialist, like a financial planner or fund manager, to invest and manage their financial assets.

Certainly, capitalism is heading for a "free investment" world where everyone is encouraged to become an investor or at least to think and act like an investor. This scenario may sound inhumanly extreme; nevertheless, if the present trend of affairs continues, then this is the very direction we are proceeding.

The ultimate state of globalization is the hypothetical situation where not only investment trusts or pension fund managers but all individuals on the earth independently participate in global investment; they could compare and consider all existing opportunities and make decisions on investment, which corresponds to the principle of free investment.

Everyone Should Be an Investor

If all actions are assumed to be investments aiming for profit, and individuals behave as if they were investors, then even consumptions of individuals can be regarded as investments. If this is the case, it would become no longer possible to simply produce or consume goods or services.

Industrial capitalists purchase mechanical equipment and raw materials and employ laborers to produce certain products. Its purpose is to earn profit, and production is only a means to this end. For capitalists, the consumption of raw materials and the use of fixed equipment for production are means to make profit. The logic of capitalists can be applied to today's individuals.

In the past, Marx observed that laborers sell their labor power in exchange for wages for survival. They spend all the wages to buy the necessary means of living for their families. While consuming, they repetitively reproduce labor power of themselves and their children. According to Marx, laborers are *free* in the double sense. Firstly, they are assumed to be individual persons with free will, selling their labor power freely. Second, from the viewpoint of the financial status, they are free from materials or machine equipment to produce and thus cannot be producers. Laborers cannot produce anything they need on their own, so they sell their labor power in order to make a living. Marx used the German words *Frei von*, meaning *free from* in English, in his books *Capital* to represent the situation of laborers. He saw that workers actually do not sell their labor power at free will, so they are not free because they are forced to do so. In fact, the first meaning of free is positive, but the second meaning is a negative connotation. Marx said so to liberalists with a bitter irony.

Nonetheless, most laborers today are no longer just reproducing their labor power. Far from "having nothing to lose but their chains," they currently possess lots to lose including savings and wealth, and the necessary conditions that they are allowed to act like investors aiming for profit are satisfied. Consequently, laborers may begin to act quite differently. They do not sell their labor power to earn wages only for life necessities, such as clothing, food, housing, and medicine. They are now investing into education and training, using their money and time to increase the value of their labor power. They are also receiving salaries to gain the return from investment put into their human capital. If we might think so, then we can say that labor power has become a commodity that is not substantially different from the products that capitalists produce and sell for profit.

Therefore, in such a situation, the money used as a means of exchange to sell and buy commodities account for a fairly small percentage of the total amount of money. It is because money has now become "capital" used to make money rather a means of circulation. During a long economic recession, people stop using money because it becomes a store of value to be used as capital.

Of course, people have to purchase daily necessities. However, there are many things they do not have to buy or consume in order to live. A large part of houses and cars should be considered as luxury goods or investment rather than necessary goods. People would not buy these commodities if they predict those prices will fall in the future. They would not even invest in assets with income gain, such as stocks and real estate, if they expect a large capital loss. Human beings are unique in that they are able to both reflect on the past and project into the future. Having this ability generally causes most individuals to worry about, or at least carefully consider, future financial outcomes. Therefore, they are likely to stop spending money and save it instead if they feel uneasy in the future and they believe it is necessary for

their financial well-being. Eventually, apart from those who cannot get out of debt, people expect that the value of money will be stable or even get increased during depression, not decrease as it would during inflation.

If laborers have a certain amount of financial assets, they do not lose their daily lives soon, even if they suffer from a decrease in salary or loss of their jobs in a recession. When the Lehman shock took place, the unemployment rate rose up to 5.5%, the highest after the collapse of bubble economy in Japan, and many contract workers and dispatched worker lost their jobs. Some of them had difficulty in sustaining their lives, causing suicide and starvation, as was often mentioned in the media as a big social problem. The household financial assets in Japan temporarily declined after the Lehman shock, but it recovered to 1717 trillion at the end of June 2015. The average per capita was 12.50 million yen and the mode per capita. Of the total financial assets in Japan, 52.0% is safe assets such as cash and deposits, and 16.3% is risk assets such as stocks, investments, and mutual funds, and the same ratios in the United States are 13.2% and 46.5%, respectively. Japanese seem to be more safety-conscious and risk averse than Americans, though considering the ratio of mortgage to total debts and that of real estates to total assets are much higher in Japan can explain the gap between them to some extent.

Although the disparities in financial assets are fairly large and their breakdowns vary from country to country, modern laborers now have more assets, on average, than ever before.

Increasing Awareness of Investment

Not only the increase of financial assets but the expansion of hoard money makes the consciousness of laborers become very close to that of capitalists. Even with quite low interest rates, companies are not willing to invest, and, on the other hand, laborers are not willing to consume. We can no longer find any substantial difference between these.

As previously explained, with globalization and the intensive deepening of the market, people are coerced to keep investment activities and seek out ways to make profit, even in their day-to-day lives. Under such circumstances, we are urged, as investors, to collect and analyze information and to alertly make decisions on how best to seize the opportunity of profit.

Individuals who have become investors have to take on additional responsibilities. At the same time, information for investment opportunities must be publicly open. When this is achieved, investors are free to gather investment information to understand various opportunities and assess the levels of risk of them. On the one hand, the term *self-responsibility* widely used in recent years clearly indicates the responsibility that investors need to take in terms of risk when assessing opportunities for profit. On the other hand, the term *accountability* means another responsibility that companies or projects being invested and financial agents or policy-makers must completely disclose information.

Here freedom and responsibility are only a matter of *free investment* in the sense that "everybody should be an investor."

Becker's Human Capital Theory

Until now we have seen the basic mechanism in which all goods and services, especially the prime factors of production such as land, machines and labor, as well as money have become the means of investment. Nowadays, this symptom can be seen in our society in several different ways. One way we see this is in education and how pursuing an education is considered to be an investment.

In his book *Human Capital Theory*, an American economist, Gary Becker, discusses education as an investment that students make in order to obtain special knowledge and skills, spending money and using their time as opportunity costs to accumulate human capital. The goal is to increase human capital value in the present so as to increase expected income gain in the future.

In this regard, students are no longer even "consumers" of educational services. They are "investors" for themselves, considering future profit of their educational investment. Of course, more or less, students have always tended to consider the practical use of their education and the return of their investment when selecting the university, department, and course. However, today the expected benefit of selecting a specific department or seminar is much more universal. Additionally, there is a tacit acceptance of the view among teachers and instructors that education is a human capital investment. Academic institutions such as colleges and universities and national educational policies positively support "rational" choices of students as investors.

The view or logic of investment is also applied to the vocational training, job search, license course, English conversation school, information gathering, health management, housework, etc. For example, single households and "parasite singles"[1] are increasing because marriage and independent living are not deemed to be beneficial investment. People tend to evade marriage, childbirth and child-rearing, and taking care of the elderly just because they are not profitable investment. In the bottom of the phenomenon of declining birthrate, there should be parental time world transformation in which they attach great importance to their own time and see childcare or domestic labor as labor income lost as opportunity cost. Additionally, elderly care is also avoided because not only is it "toil and trouble" that produces no money income but also the period of unemployment accompanying it brings opportunity costs and loses the profit of human capital investment. From such a viewpoint, the tendency that we have become more and more to think

[1] "Parasite single" is termed in Japan for a single person who economically depends on and/or lives with their parents even after graduation or finding a job to enjoy a careless and comfortable life.

and act as investors seems to be the cause of rising rates of single households and divorce, decreasing birthrate, and evasion of elderly care.

The more generally the theories of human capital and opportunity cost are applied to all areas, the more possible options and activities we regard as investments. As a result, the distinction between investment and consumption, and even production and consumption, will gradually disappear. Eventually, our entire life would be used up by the endless pursuit of profit as investment.

The recent significant social issues such as juvenile crime, child abuse, parenting neglect, lonely death, organ trafficking, and germ cell trade are all connected with decline or shrinkage of the communities such as families, schools, neighborhood, as well as the nation-states. However, the decline of the principles of community and state should be explained as the result caused by globalization that is a long-term tendency of the intensive deepening of the market especially after the 1990s. This broke mutual ties between people, reduced various cohesive groups into isolated individuals, and forced them to select all activities as consumers and even investors.

Theory as Self-Fulfilling Ideas

Explaining almost all phenomena as investments may be criticized as an unrealistic economic theory based on imaginative fairy tales. But we have to acknowledge that there is an increasing tendency that more phenomena can be explained by the *human capital* and *opportunity cost* theories, i.e., such theories have actually increased their power of explanation, and that the ways of thinking in which we recognize all activities as investments have already penetrated into ourselves and are now being institutionalized as our habits of thought, regardless of whether you like it or not.

Accordingly, the positivist criticism that the theory does not describe the reality is no longer valid. Rather, the theory depicts the reality of the future, not our present reality. When people accept such a theory as it is and tacitly incorporate it as a habit into their own thought, they will behave in accordance with the theory. As a result, such envisioned ideas of the world in the theory will be thus self-fulfilled.

However strange such a story of the theory may seem, if people act and make choices based on the theory, what the theory tells us happens will be realized as an end result. The alarming aspect of the theory or thought lies in such self-fulfillment of ideas. By just believing in the theory or thought, what was a mere prediction or prospect before can become truth, even if it may not be scientifically objective or sound.

In the closing of his book *The General Theory of Employment, Interest, and Money*, a famous British economist of twentieth century, J. M. Keynes, describes the self-fulfilling power of the ideas as follows: “(T)he ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. (…) Not, indeed, immediately, but after a certain interval; for in the field of economic and political philosophy there are not many who are influenced by new theories

after they are twenty-five or thirty years of age, so that the ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest. But, soon or late, it is ideas, not vested interests, which are dangerous for good or evil" (Keynes 1936, 383–84).

People can accept new theories with relative ease until the age of thirty, and it takes time for them to attain a formidable amount of power and influence after the age. Therefore, when the next generation takes over, some concepts and ideas will persist, even though they were formed during the previous generation's reign of power. It takes time for ideas to gain support and spread, but they finally do. This inevitable outcome with a time lag is perhaps more dangerous than our current reality because sheer thought has the power to self-realize an envisioned future.

Investment Theory Applied to Culture: Can We Trade Anything If It Causes No Trouble to Others?

Today, we almost fully accept the pervasiveness of freedom of trade and freedom of investment in our daily lives. Then it would be hard to argue against someone who insists that buying and selling anything is free and is not unethical if it causes no trouble to others. For example, the commodification of sex is often discussed as a social problem, but it can only be decried within very limited ethical and moral reasoning from a particular position, such as immorality of contents and its social impact to children. This is only possible as long as the moral and ethical code of a community is strong enough to withstand the intensive deepening of the market. But the precondition is now losing its grounds.

While the commodification of sex has been a controversial topic of discussion, the commodification of education as human capital accumulation has not been debated so much. Unlike sex, education seemingly has no ethical or moral issues with respect to its content and impact it has on society. Such a tolerant attitude would allow human capital theory to self-fulfill. The transformation begins from the demanders of education. At first, those who buy educational services have strong motives to invest in human capital for the purpose of increase of future income. As a result, educational services that are not invested in by students because they are not financially beneficial for future income of investors will no longer be supplied. As this change becomes so large that it cannot be ignored, instructors and professors as suppliers of education cannot help but to make a reactionary change with respect to the ways and contents of education and attitude toward students as investors and their own viewpoints of education. If teachers try to keep their views and ways of education, they would lose their popularity and educational posts in schools in the future. Therefore, the academic research fields that are not taught nor invested in will inevitably become extinct. The view of education as human capital investment thus prevails all over the world so that it can even decide the overall direction of development of education and scientific research.

The central point here is that, if we approve boundless expansion of all forms of free investment in line with globalization, it will be applied not only to the economic realm but also to all social and cultural realms including education and research.

Such social problems we face today as sex, education, marriage, housework, child raising, and elderly care are certainly all related to ethical and moral aspects. Consequently, we are frequently apt to attribute such problems to failure in home training by parents and families and discipline by schools, or to moral decay, decreasing feelings of belonging and the shift in values. However, as is clear from what we discussed above, this argument is not right to the point because these problems are the consequences of socioeconomic issues related to the development of their commodification in the expansion and deepening of the market that occurs as globalization proceeds. In fact, the fundamental causes of these social problems lie in the socioeconomic phenomena of the expansion and deepening of the market domain and the shrinkage and shallowing of nonmarket domain and the shifts of borders between two domains.

The changes of market and nonmarket domains take place in our consciousness and cognition that determine what the objects of production and consumption are and what return opportunities and their costs are. This is not just a natural change of our values and norms themselves. Cultural and ethical problems are not independent of but deeply intertwined in such socioeconomic problems as freedom and responsibility in the market. In globalization as the intensive deepening of the market combined with deindustrialization, economic issues of the market and money determine cultural, ethical, and moral issues. We are now arriving at the point where we cannot seek solutions to moral and ethical problems within the community, without considering the boundaries of trade and investment.

Freedom Gained and Freedom Lost

Let us take a deeper look at the diversification of the "menu" for trading and investment in "free investment" from the perspective of "liberty." At first glance, the diversification of "menu" in the age of free investment may be considered to be the expansion of Isaiah Berlin's "passive liberty" (Berlin 1969). However, it should not be overlooked that the expansion of the "menu" for consumers and investors is achieved only by eliminating the lifestyle and existence of people who are neither consumers nor investors. In fact, the increase in the number of explicit options on the "menu" is only possible at the expense of potential liberty in various areas of communication that are neither explicit nor quantified. In other words, the diversification of "menu" has been obtained by reducing all sorts of qualities found in everything to one-dimensional quantity in terms of money, that is, price.[2]

[2] I understand that two concepts of economic freedom, freedom of trade and freedom of investment, that I have introduced in this book both belong to Berlin's negative liberty and that the distinction between two concepts of economic freedom is fundamentally different from his distinction

As a general propensity, consumers and investors tend not to think too much about the distant future or the past, to have a short-term or short-sighted view, and to think that there is nothing that is not listed in the "menu." Furthermore, the traditions and heritages that have been handed down from the past, consideration for future generations, and goods and things that are not commodities may not necessarily appear on the "menu."

In connection with this "menu," TV commercials for MasterCard were once aired in various versions around the world. The prices of various goods and services are listed, and finally, there is a narration about family bonds, friendship, precious experience, and discovery of oneself, etc. "Priceless. There are some things money can't buy. For everything else there's MasterCard." The contents varied from country to country due to differences in culture and customs about what was regarded as "priceless." Many of them are stories that touch on the value of the irreplaceable nature of the community such as family and friends. They are impressive at a glance. However, when the place to talk is a commercial for a credit card that is almost equivalent to a "money" and the customers are asked to buy everything else with their own card, they are inevitably made to realize that there is a risk that things that cannot be converted into money and that have been described as "priceless" will eventually be reduced to the commodities with "price" one day.

The market liberates people from fixed roles and regulations in a closed community and makes them self-reliant as "individuals." However, the freedom gained as an individual actually means only the monetary freedom to trade and invest in the market. If freedom is extended only in that direction, the area of true freedom cannot be covered. This is because the extensive expansion and intensive deepening of the market themselves prohibit the possibility of nonmarket ways in which they are connected with "others" although they keep being "individuals." The universal commodification of goods and services fundamentally blocks human from having positive liberty of action and communication other than buying and selling of commodities or proliferation of money.

Globalization as a Global Crisis

It has been generally said that although market liberalization and deregulation are accompanied by temporary pain, they will make the economy more efficient by increasing the self-responsibility of companies and individuals and by lessening their dependence to the government. However, after passing through a series of

---

between two political and philosophical concepts of liberty, negative and positive liberty. However, freedom of investment is close to positive liberty in the sense that abstraction from concrete things and proximity to infinity found in freedom of investment might be similar to aspiration toward something positive found in positive liberty. To add one point, it is well known that Berlin used the terms liberty and freedom interchangeably (McBride 1990). Here I also make no distinction between freedom and liberty.

realities from the 1990s to the present, financial crises, currency crises, and sovereign crises, it cannot be denied that they actually destabilize the economy and seriously damage the lives of citizens in recession, bankruptcy, and unemployment.

As we have seen, globalization, while broadening individual freedom and self-responsibility as consumers and investors, reduces freedom in areas outside the market, widens income and asset gaps, makes the world homogenized, and erases the uniqueness of regions and cultures. This inevitably leads to a decline in such communities as families, schools, and neighborhoods and a lack of communication and morals. In addition, global environmental problems also overlap with these. It is now obvious to anyone that the problems created by globalization are the holistic ones, not just economic but also social, political, cultural, and ethical, and therefore must be considered as a global crisis.

Then what is the actor that actively generates this trend of globalization? It is not the market itself, people, or even nature. It is capital that demonstrates such independent initiative.

Capital is not a commodity such as production equipment, fixed capital, intermediate products, or final products, nor is it merely money. Capital is a moving agency (in the form of circulation) that transforms itself by taking the form of commodities and money successively in order to achieve the purpose of self-propagation and constantly transforms goods and services into commodities as the objects for trade and investment. It is an agent with an internal motive to keep creating new differences though innovation and erasing them through competition.

Capital gradually dissolves communities and regions, which have been reproduced mainly by reciprocity and redistribution, and transforms them into the market economy. At the same time, capital gradually converts the goods and services that have not been subject to monetary transactions—organs, genetic information, personal information, domestic labor, nursing care services, carbon emission credits, etc.—into commodities. Of course, nonmarket domains of communities and regions, organizations, and industries and non-commodified goods and services remain, but this tendency does not seem to have stopped by now.

The countermovement against the expansion of the market system had already continued since the Industrial Revolution. But as long as it remains the kind of the counteractive "self-protection of society" that Karl Polanyi calls (K. Polanyi 1944), it cannot, and will not, stop the movement of capital. Moreover, if reactionary rejections of capital were consolidated and carried out by the state, they would create more misery than capital does, such as the suppression of freedom and the violent exclusion of alien races, religions, and ideas.

Many people vaguely feel that the global nature of markets and money is the source of the homogenization and fragmentation of life and the instability of society. The growing trend of anti-globalism around the world may also be a manifestation of doubts about globalizing markets and money. Of course, this involves emotional backlash and anxiety. However, as in the 1930s, there must be a big risk that this emotional repulsion based on anxiety may suddenly lead to nationalism and protectionism and fall into national socialism (Bolshevism) and fascism

(Bonapartism), which try to control markets and abolish money. What is important here is that we must not forget the lessons of history.

As the twentieth century is said to be a century of war and revolution, it was the time when nation-states armed with modern violence were hardly crashed or coldly confronted each other over economic interests and ideological hegemony. People's antagonism and anxiety, or religion and ideology, were often utilized as the fuel to drive history.

Where Are We Heading?

We must not be driven by anxiety and swept away by emotions. We must keep a cool eye on the future of globalism. The twentieth century, which was the century of war and revolution, was also "The Age of Extremes" (Hobsbawm 1994) in that it widely wavered between the two extremes: capitalism, which universally approves markets and money, and socialism, which absolutely denies them.

The flow of history once headed for planned or managed economy, including the welfare state, but in the latter half of the 1970s, it shifted its focus to the market. The collapse of the Soviet Union and Eastern Europe in the early 1990s clearly indicated the failure of centralized socialism, but the subsequent global development of capitalism is creating problems as we have already seen.

Then where are we heading from here? Is it market or planning, or is it not in the two extremes but rather in the middle?

Since the latter half of the 1990s, Europe reevaluated social democracy as the negative impacts of globalization became more evident. But is the welfare state that mixes markets as a private sector with planning in the state or government as a public sector as viable as it used to be? In addition to "government failure" such as defending vested interests and rent-seeking, Keynesian fiscal policy (public investment) itself has performed poorly, and the budget deficit continues to expand. Under the current situation of an aging society, a declining birthrate, saturated demand, and an emphasis on the environment, the ideal of the welfare state, which presupposes both economic growth and equal income distribution, is being questioned.

In retrospect, the welfare-state mixed system based on effective demand management by Keynesian public investment was established as a compromise between capitalism and socialism. And this century has brought the historical judgment on that. The rise of the small government and the neoconservatism after the late 1970s must have been caused by the deterioration in the effectiveness of Keynesian fiscal and monetary policies and the swelling of the national budget deficit. In other words, we have already finished experimenting with various combinations of the extremes, including social democracy, on the straight line from capitalism to socialism in the twentieth century.

In the first place, in a globalized open economy, the managed currency system can no longer function as before. Of course, the attempt to rebuild the nations as "imagined communities" as Benedict Anderson describes (Anderson 1983) is

nothing more than an ideological attempt to gloss over the collapse of communities at the family and regional levels and cannot be a fundamental solution to the problem of globalization.

The current crisis cannot be solved by central planning, market fundamentalism, or social democracy. So how should we cope with this trilemma?

Overcoming the Dichotomous Way of Thinking

In this situation, what we need to reconsider is the very dichotomous way of thinking: "market vs. planning/government" or "freedom vs. regulation/discretion." According to it, on the one hand, there is market fundamentalism that exalts freedom and efficiency in the market, and on the other hand, there is planning fundamentalism that firmly believes in regulation and rationality of the central government. Then social democracy can be positioned somewhere in a number line with these two extremes. If so, this trilemma means that no solution can be found anywhere on this number line.

The dichotomous way of thinking is not established at once, but is formed through a series of thoughts as follows. First of all, conceptualize *laissez-faire* market free from government regulation as a "perfectly competitive" market. Such a market model is regarded as an ideal type to measure the distance to realities. Next, assume monopoly as a special case of imperfect competition and then to derive the corresponding model of national planning without the market. It should be noted here that the general equilibrium view of the market based on the "perfect competition" can be formed only by regarding the market economy as the same as the barter economy, from which the planning model is derived. Of course, seeking the best mix of market and planning cannot be a fundamental solution so long as it is based on such a dichotomous way of thinking.

What we need to get out of the trilemma is neither simply negating nor affirming market or planning. Rather, we must first clarify the theoretical basis on which the dichotomy in "market vs. planning" is established and pass through abandoning the composition of this conflict. It is crucial to reexamine the very origin of the dichotomy between market and planning itself, to shed light on community as another concept that has long been suppressed, and to acknowledge reciprocity or mutual help in community as an indispensable principle of socioeconomic coordination.

In the current global capitalist economy, an expanding market is eroding the domains of state in charge of planning and community in charge of reciprocity, but in fact something is suppressed there. It is money. The market is much talked about, but the money is little talked about. The cause lies in economics. A market theory is essential in microeconomics of modern economics, but it is almost impossible to find money theory in it. Therefore, modern economists for market fundamentalism talk a lot about markets but nothing about money. It is also related to people's awareness of money. People are very much interested and discuss the problem of global warming, but they have little interests in money. To be more accurate, people are

very interested in how they earn money, but they are not interested in what money is and what desirable modern monetary system should be. Money may be mistaken for a firm framework like a solid rock and not something we can change.

Only by reexamining the meaning of money and considering the possibility of designing a new system for money can we be free from the curse of the dichotomy of "market vs. planning." In other words, we must reexamine the traditional theories of markets and money, recognize both the positive and negative sides of markets, and redesign new currencies and markets that preserve the positive and overcome the negative. A market economy is a monetary economy, and a market cannot exist without money. Moreover, the monetary economy in which we live is a capitalist market economy that is self-organized by the program of capital ordering that capital should seek indefinite self-propagation of money. The program is replicated as a socially shared bundle of rules and embedded in people's minds.

Globalization promotes the free trade and investment of goods, services, and information beyond all boundaries and constraints and is therefore both a globalization of markets and a globalization of capital. Therefore, globalization can be said to be a movement to seek "liberty" in which capital expands infinitely. If capital moves freely in search of profits and interest, the market will become unstable, revealing the Earth's finite nature. Our current crisis has its roots in the pursuit of unethical freedom by capital, not in the utilitarianism or the selfishness of the individuals who support the market. In other words, it does not make sense to ask the ethical and moral responsibility of the speculators and capitalists who pursue profits on a daily basis. We should reconsider the system that enables anti-ethics and anti-morality.

Chapter 2
Why Socialism Is Impossible, and Why Capitalism Is Strong

How We Understand Capitalism and the Market

There is a characteristic idea that has been made to be a dominant premise throughout the twentieth century when socio-economy is examined. Even today, in the twenty-first century, there is no end to arguments based on such preconceptions. This is the dichotomous way of thinking: "freedom vs. regulation/discretion" and "market vs. planning/state." But did such a way of thinking have a solid foundation?

The largest socio-economic event that happened in the twentieth century was the establishment and collapse of a socialist economic bloc in the Soviet Union and Eastern Europe. When these socialist nations collapsed in the 1990s, it was obvious to everybody that the experiment of socialism had failed. The major opinion was that there was no efficient and feasible economic system other than capitalism and that liberal capitalism with deregulation, privatization, market opening, and small government was desirable.

Francis Fukuyama represented the political philosophical side of that opinion. He viewed the twentieth century as a history in which freedom and democracy confronted fascism and communism and predicted that the collapse of communism would ultimately lead to the triumph of freedom and democracy and that history would end. According to him, in the world after "the end of history," a peaceful era without war would come, in which a free economic system would flourish (Fukuyama 1992). However, it is clear from the history thereafter that "the end of history" was wrong.

The Gulf War broke out in 1991, and civil wars were repeated in former socialist countries and Africa due to ethnic and religious conflicts. On September 11, 2001, the United States experienced massive aircraft-based terrorist attacks in New York and Washington. The incident of the first year of the twenty-first century implied that this century was not a peaceful era but a turbulent era full of violence. The United States subsequently determined that Al Qaeda was the culprit, invading Afghanistan, the alleged stronghold, and occupying Iraq for possession of weapons

M. Nishibe, *Whither Capitalism?*, https://doi.org/10.1007/978-981-13-0704-1_2

of mass destruction. It was not an ideological confrontation, but it seemed as if Huntington's anticipated "clash of civilizations" had come true in the context of Christianity vs. Islam. We should not overlook that the socio-economic issues related to globalization underlie the "clash of civilizations."

The outbreak of the global financial crisis triggered by Lehman shock in 2008 unavoidably taught us a valuable lesson. The twenty-first century is not only a politically volatile and fluid world filled with endless wars and conflicts but also an economically vulnerable and unstable world relying heavily on newly "invented" financial derivatives.

As is evident in the case of this global financial crisis, we cannot fully explain the causes of the violent economic fluctuations that real capitalist market economies are exhibiting and the implications of the diverse and complex nature of their economic systems. Also, with regard to the aforementioned view that "there is no efficient and feasible economic system other than capitalism," the question is how we should understand capitalism. The advocates of this view believe capitalism is synonymous with market economy and don't even distinguish between them. And this view appears to be based on the following set of perceptions of the market:

1. The market is a mechanism for efficiently allocating scarce goods to economic agents on the premise that initial endowments of goods are given as private property as long as there is no paradise where goods exist indefinitely and all people's needs are satisfied.
2. For it to function well, we must endeavor to satisfy the condition of "perfect competition" by eliminating regulations, clarifying ownership, minimizing the government, and increasing the number and reducing the scale of economic agents.
3. If such conditions are met, the efficient market mechanism can be used universally and completely for socio-economic order and coordination.

For the sake of the following discussion, we call the definition of market in (1) "the scarcity definition of the market," the conditions for efficient market in (2) "the conditions of perfectly competitive market," and the idea that social order can be formed only in the market in (3) "the proposition of market universality."

In short, this view defines and explains the market in the same way as microeconomics in the mainstream modern economics does. The so-called market fundamentalists who loudly advocate deregulation and liberalization of the market, whether they are aware or not, often argue what our socio-economy should be based on such microeconomic understanding of the market. But it does not seem to me that they are running on solid ground. It looks they can move forward as long as they run at a certain speed, but if they once stop to consider it, they will soon notice that their feet are sinking in a muddy ground. Such a view of the market cannot truly understand important characteristics and significance of the real market.

The Market-Image of General Equilibrium Theory

So how do we understand the market? In the beginning, we have to admit that human beings are limited in their ability and rationality in many respects. Firstly, it stems from the fact that the universe keeps evolving as one-off history in an unrepeatable and irreversible time. Secondly, it is because this economy is too big for anyone to know everything. As a result, anyone can neither know everything about the economy nor predict future events accurately from the information obtained and formulate best strategies. The market is the socially necessary "institution" that enables incomplete human beings to repeatedly produce, consume, and distribute goods and reproduce sustainable socio-economic order under these realistic conditions. Let's call this "the reproduction definition of the market." For the time being, an institution can be thought as a bundle of various social rules, such as laws and customs, accepted and shared by many individuals and companies. Such individuals and firms as economic agents on a micro level do not necessarily have to recognize and understand the significance and consequences of the institution.

In this way, as long as we stand on "the reproduction definition of the market" which is different from "the scarcity definition of the market," we can say that the market is indispensable for the economic system. Of course, the market of this definition must be considered more theoretically, but at least (2) the conditions of perfectly competitive market will not be satisfied, and (3) the proposition of market universality will not generally hold.

In fact, it is the model of the ideal market mechanism called "general equilibrium theory" that underpins the definition, condition, and proposition of (1) to (3) regarding the market. The general equilibrium theory was founded in the 1870s by Leon Walras of the Lausanne School and flourished from the 1930s to the 1940s. From the 1950s to the 1970s, Kenneth Arrow and others had refined it as an abstract mathematical model, proving the existence and stability of general equilibrium.

Therefore, we must first consider whether such a model is realistic and theoretically valid and whether the proposition of market universality can be justified on the basis of efficient resource allocation and communication in such a model.

Since the collapse of the Soviet Union, many academic discussions on socialism have focused on market socialism, not centrally planned economy. In most cases, market socialism presupposes the market model of general equilibrium theory and has rarely questioned it. This also suggests that neoclassical school of thought has great influence over a wide range of thought trends.

Since the 1990s, the collapse of the socialist economy has taken a certain roundabout way to generate a critical view on the vision of the market of general equilibrium theory. The reason why we say "roundabout way" is that the market-image of the general equilibrium theory was not considered to be a problem in the beginning, but it gradually came to be questioned in the process of criticism of market socialism that the market-image of general equilibrium assumed in the model of market socialism is problematic.

The methodological framework of general equilibrium theory is characterized by the following two fundamental axioms:

(A) Optimality principle: omniscient economic agents with unlimited capacity for cognition, rationality, and execution maximize its objectives.
(B) Price equilibrium principle: there exists at least one stable price vector for general equilibrium where supply and demand in all markets simultaneously balance.

These clearly view an economic agent as overly rational and regard a market economy as an excessively simple and operable system.

Our reality is quite different from what such a general equilibrium theory portrays. Economic actors are limited in capacity. Market economies are uncertain, complex, and unmanageable. And various institutions and customs complement markets. They are not restrictions on or obstacles to free markets, but are essential in order to reduce the computational complexity of each agent and to make actions of other agents predictable. In other words, the market is not an independent, self-contained price mechanism that can be abstracted as the parametric function of price to adjust demand and supply but can exist only as a social institution that is integrated with various other institutions and behavior patterns such as legal systems, customs, standardization, and stylization.

Austrian economists take the most critical opinions on the market vision expressed in general equilibrium theory. Let us examine the views of the Austrian School, led by Friedrich von Hayek. The pros and cons of Hayek's argument will become clear.

Reconsidering Hayek

The most notable thinker since the collapse of the Soviet Union in 1991 was Hayek, who was among the first to point out the impossibility of a socialist planned economy. He has been frequently referred to even while neoliberalism and market fundamentalism have since gained momentum. Neoclassical economics, which theoretically supports market fundamentalism, assumes that "man is rational" and it is possible to design and construct a more efficient competitive market from a top-down perspective. According to Hayek, such rationalistic individualism represents an intellectual arrogance of overconfidence in reason, which is fundamentally different from Hayek's view on human beings and knowledge presupposed by freedom and markets.

His philosophy is reminiscent of Socrates, a kind of "knowledge of ignorance." Hayek believes that the market is a system of rules that should be accepted based on the humble self-reflection of the "ignorance" that human intelligence has fundamental limitations. It is a "result of human action but not of human design" social system. It is not something that the government can create all at once through financial or structural reforms, but it is the product of the gradual evolution of the

economy and society as a result of unintended voluntary and cooperative actions by individuals.

In the rest of this chapter, we review the fundamental tenets of Hayek's argument, namely, the criticism of the socialist economy, criticism of general equilibrium theory, and limitations of human reason, in order to uncover the pitfalls of the "free vs. regulatory/discretionary" and "market vs. plan/state" mindsets that we are still trapped in.

Point of View of Ignorance

Hayek, who was born in 1899 to a family of scholars in Vienna, Austria, spent his youth in the early twentieth-century Vienna, one of the most intellectually diverse, free, and open places in the world. At that time, Vienna was the place where academic, philosophical, ideological, and artistic currents crowded together, and it was like "a melting pot of cultures." Hayek's idea also arose from the "arena of knowledge" in which different factions influenced each other and sometimes argued. Both debates in the fields of thought, philosophy, and science and competition in markets are parallel in the sense that people can only understand the significance of freedom from the perspective of "ignorance" from which they cannot escape.

The core of Hayek's thought formation was his criticism of the socialist economy, which he did in a famous debate. This is the "Socialist Economic Calculation Debate" that began in 1920 when Hayek's teacher of economics, Ludwig von Mises, severely criticized the socialist planned economy in his German paper (Mises 1920) after the Soviet Union was established. In 1935, Hayek published his edited book *Collectivist Economic Planning* (Hayek 1935) in which he translated Mises's paper into English one "Economic Calculation in the Socialist Commonwealth" and wrote two survey papers, "The Nature and History of the Problem" and "The Present State of the Debate," in which he explained the history and current situation of the debate and presented his new criticism of socialist economy.

In 1927, Hayek became the first director of the Austrian Institute for Economic Research, founded by Mises, and from that time onward, he became known as a promising and spirited economist who studied the theory of monetary business cycles. In recognition of his achievements, he was invited to the London School of Economics in 1931. At the time, LSE gathered many socialists such as Laski, Lerner, and Sweezy, and Hayek gradually deepened his economic ideas as he proceeded to criticize socialism to persuade them.

It culminated in *The Road to Serfdom* published in 1944 during World War II (Hayek 1944). Its subtitle is "totalitarianism and freedom" where Hayek presents the following basic thesis of totalitarianism. It says, "the rise of fascism and Nazism was not a reaction against the socialist trends of the preceding period but a necessary outcome of those tendencies" because the fascism of Japan, Germany, and Italy and the socialism of the Soviet Union are derivatives of totalitarianism arising from central control and planning of the economy by the state, so they necessarily suppress freedom and promote human subordination. It is not difficult to imagine that

Hayek's opinion was controversial at the time when socialism was accepted by many intellectuals and the Soviet Union was an ally of Britain and the United States.

Hayek himself thought of the book as nothing more than a pamphlet intended to convey to the public what was needed in a pressing situation. However, he was dissatisfied with the fact that he was no longer regarded as a proper scholar because of both extreme evaluations, such as the explosive popularity and harsh criticism close to hatred. At the same time, he strongly felt the need to prove academically the correctness of this basic thesis and to ensure it. The basic thesis is supported behind the scenes by another thesis called "a well-run free system and market order are desirable," and Hayek continues to make his case. As a result, Hayek's research after 1960 shifted from economics to social philosophy, including law and politics. In his famous books *The Constitution of Liberty* (Hayek 1960) and *Law, Legislation and Liberty* (Hayek 1973, 76, 79) on spontaneous order and liberalism, he presented his argument as follows. Human beings must obey law as *nomos* which is a "social rule of conduct" because human reason is limited, and spontaneous order in the market society is self-organized as a result of the free activities within the social rules.

However, in order to understand Hayek as a liberalist thinker after 1960, we must first understand the criticism of the socialist economic planning by Hayek as an economist in the 1930s. This is because Hayek's argument in the socialist economic calculation debate is the starting point and foundation of his liberalism.

Socialist Economic Calculation Debate

There might be no more important controversy on economic theory of the twentieth century than socialist economic calculation debate. In its importance, it can be compared to the most important historic event in the twentieth century, the rise and fall of socialist economies. The debate was directly on the feasibility and practicability of a socialist economy, but, even more importantly, because the vision of market eventually became the main topic of controversy, it indirectly led to a better understanding of the market economy. I once published my book *A Genealogy of Market-Images: Visions in the Economic Calculation Debate* (Nishibe 1996) on the subject of this debate. In the process of writing it, I always had in mind the question "What is the secret of the vitality of a capitalist economy?" behind such questions as "Why did the socialist economy fail?" and "Why was socialism weak?"

Because of the wide range of fields related to this debate, including market theory, knowledge theory, economic policy theory, and comparative economic system theory, the debate occupies a special position to view over a whole field of economics. We cannot avoid the debate if we are to look back on the course of economics in the twentieth century and look at the new challenges that economics must tackle in the twenty-first century.

In 1919 after the Russian Revolution, Austrian Marxist economists such as Otto Neurath and Otto Bauer proposed the idea that all economic calculations can be

done in kind without a common unit of value. On the other hand, Ludwig von Mises of the Austrian School criticized such a view thoroughly in his thesis "Die Wirtschaftsrechnung im sozialistischen Gemeinwesen (Economic Calculation in the Socialist Commonwealth)." The socialist economic calculation debate thus started.

Before examining the contents of the debate, we make a brief account on its background. While the Soviet Union was established in 1922 and a new economic policy (NEP) was in place from the previous year to introduce markets, Stalin implemented the first Five-Year Plan in 1928 to promote industrialization with a focus on heavy industries and collectivization of agriculture. In the 1930s, a Soviet-style socialist system characterized by nationalization of means of production and centralized planning was established. This was a typical image of socialism that Marxists of the time thought and was the object of criticism by Mises and Hayek.

Mises begins his argument by asking whether or not it is possible for a socialist economy to carry out economic calculation and maintains that markets are absolutely necessary for rational economic calculation. The premise of this argument is that economies are large scale and complex. Aside from communal tribal societies, in a market society with a highly developed division of labor in which various production goods must be used to produce one production good, it is impossible to calculate costs and profits without a uniform price evaluation using money, and it is difficult to allocate resources and choose techniques under dynamic conditions. Mises argued that because the values of various production goods must be measured through the market, planning in kind without money is impossible.

Hayek basically inherits this Mises's idea. This is also true of the view of Hayek, who later stated that the market society is "the big society." But their points of criticisms are somewhat different. Mises explained the logical impossibility of socialism from the viewpoint that money evaluation is indispensable in a society of large-scale division of labor. On the other hand, Hayek, taking seriously the discussion by Barone in Italy, focused his discussion on whether it is possible to obtain a collectivist equilibrium price that equalizes supply and demand for all goods by applying general equilibrium theory without using an actual market. The problem is not the logical impossibility of a planned economy, but the practical feasibility of it.

What was important to Hayek was what the basic human conditions were. Humans have much higher intelligence than monkeys, but the question is how much. If man is as all powerful as God and his reason is unlimited, socialist economic central planning would be possible. In reality, however, this is not the case. In fact we all know that there are crucial limits to human reason. The "knowledge of ignorance" is a fundamental fact that we must consider when organizing society. As long as this doesn't change, we cannot help using the market. Nonetheless, if one does not recognize the limits of reason and conceitedly pretends to be omnipotent, the illusion that one can dispose of money and plan the economy in kind arises. This is the outline of Hayek's criticism of socialism. To add it lastly, "socialism" here refers to the Soviet-type state socialism with the public ownership of means of production and the central planning of the economy.

The Limits of Human Reason

Then what does the limits of reason as the fundamental conditions of man mean? This question relates to how to understand individualism. Hayek divides individualism into true one and false one in his essay *Individualism: True and False* (Hayek 1946a). First, let's look at it.

Hayek's true individualism is "a view which in general rates rather low the place which reason plays in human affairs, which contends that man has achieved what he has in spite of the fact that he is only partly guided by reason, and that his individual reason is very limited and imperfect" (Hayek 1948, 8). It is the antirationalistic individualism that arises from "an acute consciousness of the limitations of the individual mind which induces an attitude of humility toward the impersonal and anonymous social processes by which individuals help to create things greater than they know" (ibid.). It was initiated by the British thinker John Locke and advocated by the Enlightenment Scottish thinkers including Bernard Mandeville, David Hume, and Adam Smith, the Anglo-Irish political thinker Edmund Burke, a French political thinker of the nineteenth century De Tocqueville, and a British historian Lord Acton.

False individualism, on the other hand, is "a view which assumes that Reason, with a capital *R*, is always fully and equally available to all humans and that everything which man achieves is the direct result of, and therefore subject to, the control of individual reason" and "the product of an exaggerated belief in the powers of individual reason and of a consequent contempt for anything which has not been consciously designed by it or is not fully intelligible to it" (ibid.). Then the false, rationalistic individualism regards a society as composed through conscious contracts between all individuals. It is advocated by French and other Continental writers including the founder of modern rationalism René Descartes and an enlightened thinker Jean-Jacques Rousseau and the Encyclopedists and the Physiocrats.

Hayek departs from "an indisputable intellectual fact" (Hayek 1948, 14) that is "the constitutional limitation of man's knowledge and interests, the fact that he *cannot* know more than a tiny part of the whole of society and that therefore all that can enter into his motives are the immediate effects which his actions will have in the sphere he knows" and "the human needs for which he *can* effectively care are an almost negligible fraction of the needs of all members of society" (ibid.). It does not matter whether each individual is selfish or altruistic. Because of the infinite variety of human knowledge and interests, every single individual is consequently ignorant of most of the knowledge of other members of a society. Therefore, "Reason, with a capital *R*, (…) must be conceived as an interpersonal process in which anyone's contribution is tested and corrected by others" (Hayek 1948, 15). Thus, liberalism based on true individualism sees social orders as spontaneous social products of individual unintended actions and conducts, not a product of conscious, deliberate design.

Limitations of Recognition, Calculation, and Execution

Let us return to Hayek's idea of the limits of human reason to the socialist economic calculation debate. Here, the limits of human reason appear more concretely at the three levels of cognition, computation, and execution.

In a planned economy, the central planning authority establishes a production plan that can meet the needs of all people and then instructs each industry or factory on what and how much to produce. For example, if the central planner can know the overall demand for a T-shirt as a whole in society, it will assign the necessary quantity of production to each factory that produces the T-shirt so that the total supply can meet the total demand. To do that, though, the central planner has to regularly collect and aggregate orders for the T-shirt from all consumers. Of course, it has to consider there are many different kinds of T-shirts with different kinds of material and design. Of course, there are millions of goods and services in society, not just T-shirts. According to Barone's article (Barone 1908), which Hayek referred to in his editing book (Hayek 1935), given the full range of relevant data, such as production techniques, consumer preferences, and initial endowments, it is possible to find price-quantity pairs that equate supply and demand for each good. If we set up an equation that equalizes supply and demand for each good, we can obtain a system of simultaneous equations of the number of goods. If the simultaneous equations are solved by mathematical calculation when a certain condition is satisfied, a relative price system using a certain commodity as measure of value will be obtained as a general equilibrium solution. Hayek argued, however, that such mathematical solutions are logically possible but "humanly impracticable" (Hayek 1935, 208). Why did Hayek think so? Let's think about it in place of our current society.

At present, a convenience store is said to handle about 3000 kinds of products. The product has a bar code with product information. The Japanese Article Numbering (JAN) code standardized in Japan is 13 digits, of which 7 digits are the company's product code and 3 digits are the company's product code. Therefore, a total of ten digits represent the type of domestic product. If you use all of them, there are up to ten billion kinds. Of course, it should be much less in reality. Assuming that there are 100 million types of goods and the total number of producers and consumers is 100 million as the approximate population of Japan, it is necessary to know the supply and demand for 100 million kinds of goods from 100 million agents in order to formulate economic plans by calculation.

Is it possible to collect such a large amount of data and put them together in one place? Since 100 million kinds of goods and 100 million agents exist scattered in Japan, knowledge about them also exists in a dispersive way. If it is not impossible to gather all of them into the Central Planning Office, you can imagine the effort would be tremendous. This means that in a large, highly specialized economy, the information needed to run the economy is widely scattered.

Workers and managers on the spot know what technology is used in a production process, but not even the president or shareholders of the same company. Consequently, it is impossible to gather all such knowledge in the Central Planning Office. Since information is spatially dispersed, even if it exists somewhere, any single person or organization can only know a small portion of it because of limitations in its ability to collect and recognize information. When viewed from the perspective of an individual or an organization, it takes the form of "ignorance" in which human beings can know in principle but not in practice. Let's call this "ignorance based on the spatial dispersiveness of knowledge."

But the problem is more fundamental. Can consumers know now what kinds of and how many shirts they will need next month? They won't even know about their own needs in the future. If you fall down and rip a T-shirt, you may suddenly need a new one. There is always the possibility of this kind of unforeseen event happening. It is not possible to accurately predict the occurrence of future need of each agent at present. However, if we could assume that randomness is found in occurrence of the events, such a stochastic process will have probability distribution and can be predicted through statistical approaches. If the probability distribution of occurrence of the same accidental events can be statistically estimated from observed sample data, such "ignorance of future risks" can be adequately coped with by insurance policies.

Furthermore, do you know what you want to eat for dinner a week from now? You don't know. In the first place, isn't it clear what you want to eat now? Human desires are not always fixed or obvious, but rather fluid and latent. At supermarkets, the freshness and cheapness of the ingredients often determine the dinner menu. Also, the skill and proficiency, including intuitions and knacks, that workers have developed during their long experience contribute to production activities and improve production techniques on a daily basis. Many such skills and proficiency exist only as "tacit knowledge" because workers know how to do them but cannot communicate them well to others in words.

Michael Polanyi, a Hungarian philosopher, explains that while "the tacit dimension" of knowledge is prevalent among human cognition and actions, such as driving a car or bicycle, swimming, playing musical instruments, remembering features of faces, reading facial expressions, and maneuvering such tools as canes and sticks, it cannot be expressed verbally (M. Polanyi 1966). Also, Gilbert Ryle, a British philosopher, distinguished between the knowledge about content of statements ("knowing that") and that about the method of performance ("knowing how") (Ryle 1946). The latter of two corresponds to M. Polanyi's tacit knowing. Therefore, there must be certainly the tacit dimension to the seemingly objective information of technology and taste. Besides, information on technologies and preferences dynamically changes every moment. In principle, it is difficult for us to obtain such information a priori as "given data." We are thus faced with the fundamental question of "ignorance of latent or tacit knowledge."

Additionally, there are various kinds of ignorance, some of which cannot be said to be "ignorant." We basically cannot define the probability of the occurrence of new technologies or products that have not existed at present and will emerge from

innovation as "novelty" because there is no certain knowledge of when and what kind of new technologies or products will appear. This nonstochastic situation is called "radical uncertainty" in contrast to the aforementioned "probabilistic risk" and is also called "Knight's uncertainty" because the founder of the Chicago school, the American economist Frank Knight, emphasized its existence from early on. It would be more appropriate to call such fundamentally insurmountable ignorance "unknown."

Let us now consider whether neoclassical theory of optimization, in which firms maximize profits and consumers maximize utility, actually holds. If we were to spend 1000 yen at a convenience store, would it be possible to select and buy the most satisfying combination out of 3000 different products? If we made such calculations for optimization in our minds at convenience stores, we might have to spend hours thinking about them. Rather, if you choose a combination that exceeds a certain level of satisfaction, you may stop searching further. If that is the case, we are pursuing "satisficing" rather than "optimizing" in consumption as Simon (1956) explained.

Finally, suppose all the information is gathered. The Central Planning Office must calculate the equilibrium price based on it. Mathematical calculations are logically possible, but the sheer number of goods will make computational complexity prohibitively high for practical use. And even if the price is calculated by a supercomputer, a command must be issued based on the calculation, and production must be executed at each factory unit or at each production process unit.

There are also several incentive problems for people in organizations as to whether to try to show initiatives and innovate, or what are the conditions for people not to lie or deceive in a way that suits them best. There are also such issues as maintaining discipline in order for people to act according to orders and the corruption of authoritarianism and bureaucracy in hierarchical organizations.

It is clear from these various thought experiments that humans have limitations at three levels: cognitive, computational, and practical. Hayek centered his criticism of socialism on the first cognitive limitation, which he called "ignorance." And by emphasizing the ubiquity of ignorance, he questions the assumption of omniscience of divine individuals. He sharply criticized socialist planning, similar to rationalism and the Enlightenment, for making the mistake of presupposing human omniscience sooner or later and thinking that economic planning is possible based on it.

Lange's Market Socialism

The criticism of a planned economy in Hayek's book in 1935 was refuted by the socialist camp. The socialist economy advocated by the opponents gradually changed from a centrally planned economy to a decentralized market socialism. However, the "decentralized" market is not an actual market but an artificially constructed quasi-market as a simulation model, in which the central planner can be substituted by the trial and error method utilized.

Oscar Lange, a Polish economist, and Abba P. Lerner, a Russian-born colleague of Hayek's at the LSE are the well-known theorists for "Lange-Lerner model" of market socialism. Lange and Lerner, though well versed in Marx and socialism, were also neoclassical economists who studied general equilibrium theory and used a very clever strategy of defending socialist economies by using the general equilibrium theory, the latest theory of economics at the time. In this way, neoclassical school became an advocate of socialism.

They seemingly accepted Mises and Hayek's vision of market with the assumption that markets are the systems for allocating scarce goods and resources. Then they argued that the planning allocation of resources could be artificially achieved by imitating markets. What is interesting here is that not only Marxist economists, but also neoclassical economists such as them, stood for socialism. This shows that socialism was quite widespread in those days and such critics of socialism as Mises and Hayek were rather in the minority. In fact, it has been said until recently that Lange and Lerner refuted Mises and Hayek in this debate. But this was overturned by the arguments of modern Austrians. In particular, Don Lavoie in his book *Rivalry and Central Planning: The Socialist Calculation Debate Reconsidered* (Lavoie 1985) defended Mises and Hayek through a clear explanation on the difference between the two market visions in which he showed how Austrian concept of competition as "rivalry" differed from neoclassical one as "perfect competition."

Lange wrote a paper entitled "On the Economic Theory of Socialism" (Lange 1936–37) in which the central planning authority set shadow prices on publicly owned production goods and kept changing shadow prices by a trial and error method, i.e., raising the prices of goods in excess demand and lowering the prices of goods in excess supply, until the demand for and the supply of all goods matched so that the general equilibrium prices could be finally reached. In other words, he showed, by actualizing an auctioneer, which is just an imaginary entity in the general equilibrium theory, as an existing entity in a real world, and having the Central Planning Bureau play as a key role of such an auctioneer, that market socialism can imitate the auction type of market in the general equilibrium theory.

In the pre-Lange model, the central planner had to collect all the necessary information and, based on it, calculated the general equilibrium prices on paper to formulate a central plan. This information gathering and calculation placed considerable burdens on the central planner. However, the Lange model showed that if the central planner can move prices of goods and imitate the market as an auctioneer, it could overcome the limitations of human reason, which have been serious problems in implementing economic plans.

Lange believed that the general equilibrium theory portrays an ideal of socialist market economy rather than a competitive capitalist market economy. He stated that market socialism is superior to capitalism because it can determine the income distribution so as to maximize the social welfare as well as overcome "market failure" in externalities, economies of scale, and public goods.

Another important point of Lange's argument relates to high-speed electronic computers, what we now call just computers. Humans cannot find answers by coping with huge amounts of information, but computers could. As you can see, humans

cannot fly, but they have the ability to see birds and make planes, so it is like flying if you make a plane and fly it. Similarly, even if there were limits to human cognitive and computational abilities, it would be possible to carry out rational economic calculations if human made computers to overcome these limits. But since there were no human-made digital computers at the time, Lange's market socialism claims that the central planner could simply imitate the calculation of the market mechanism that they had been forced to use as a natural analog computer.

Lange later published a chapter entitled "The Computer and the Market" when the computer already existed. Then Lange only had to say, "Let us put the simultaneous equations on an electronic computer and we shall obtain the solution in less than a second. The market process with its cumbersome *tâtonnements* appears old-fashioned. Indeed, it may be considered as a computing device of the pre-electronic age" (Lange 1967: 191–92).

There are various theories about what the world's first practical computer is. The most influential among them is the United States' ENIAC developed in 1946 after World War II. Thus, there was no working computer when Lange wrote his paper in 1936. Nevertheless, there was already a debate on whether the market would be unnecessary if computers were used for large-scale economic operations. Today, with point-of-sale systems and the Internet, computer networks, rather than single computers, are much more likely than ever to replace market mechanisms. The question of whether the technological use of these computer networks will make it possible to overcome Hayek's "ignorance" is closely related to the viability of a socialist economy. In this sense, this debate still continues even today.

"Ignorance" Stemming from "Dispersiveness" and "Tacitness" of Knowledge

The crux of the problem, however, is not simple enough to be solved by technology. If the "ignorance" can be overcome only by increasing information transmission volume and computation speedup, the solution of the problem will depend on the technical progress of the computer. But, as mentioned above, the question was how to collect the information on technology and preference before transferring and calculating it. "Collection" meant gathering existent information, but the more fundamental question was whether information could be called "already existent" and whether information such as tacit knowledge could be written in language. Human desire is not "existent" in the mind beforehand. We tend to want things only after we see them with our own eyes. In this sense, human desires themselves are very vague and inarticulate and are formed by external stimuli and social relations.

This problem is also related to innovation. In today's capitalist economy, what consumers want is not invented as a new product, but a new product developed by a supplier is abruptly put on the market, which arouses people's desire, and whether or not it is accepted is often judged from how much they purchase the product.

Suppliers thus create demand in the market by anticipating and developing new products through marketing activities and stimulating the desire for new products through advertisements and commercials. As a result, innovation cannot explicitly state desires and demands of people from the outset.

As such, it is not correct to think naively that there are data as given on technologies in the production function and preferences in the demand function as presumptions for economic calculation problems. Human knowledge truly exists in society, but it is difficult to "collect" it because it dispersively exists in different places and people. There is a problem of "dispersiveness" or "locality" of knowledge. And, more fundamentally, there is the "inarticulate" or "tacit" problem of knowledge, such as that knowledge itself is inarticulate and vague and that it is tacit and nonverbal. Hayek often states that "the *knowledge* of the *particular circumstances* of time and place" is important. It is used to contrast clearly organized and systematized scientific and technical knowledge, and it reflects not only the dispersal of knowledge but also the tacit nature of knowledge as we have seen.

Hayek's argument against the planned economy took the form of criticism of overconfidence in human reason and raised the question of how to recognize human "ignorance" and how to deal with it. Lange's theory of market socialism, on the other hand, was a strong counterargument from the standpoint of Cartesian rationalism and Hayek's false individualism because it makes use of the general equilibrium theory that logically constituted the optimal allocation mechanism of scarce goods based on the optimization principle of economic agents, and it regards the actual market as a computing machine that performs such allocation function. Hayek had to change the emphasis of his criticism in the process of rebutting it. As a result, the rationale for ignorance shifted from "dispersiveness of knowledge" to "tacitness of knowledge," and the market function shifted from "information transmission system" to "competition as a discovery process." It is not clear to what extent Hayek himself was aware of this, but from the perspective of the market, it must be said that Hayek's market-image gradually "evolved" as an unintended consequence.

From Market Socialism to General Equilibrium Theory

The rationale for the feasibility of market socialism advocated by Lange and Lerner existed in the mainstream theory of economics at that time. It is general equilibrium theory founded in the nineteenth century by Leon Walras and flourished from the 1930s to the 1940s when market socialism emerged. Since the 1950s, general equilibrium theory has been refined as an abstract mathematical model by Kenneth Arrow and others, proving the existence and stability of general equilibria (Arrow, Hahn 1971). General equilibrium theory and market socialism thus developed in parallel while supporting each other. In other words, the two "coevolved" in the first half of the twentieth century.

The basic premises of the general equilibrium theory are the market-image as a price mechanism for the efficient allocation of scarce goods and the availability of data given as information on technology and preferences and initial endowments of resources ("scarcity definition of the market"). Assuming that the demand and supply functions meet certain conditions related to scarcity, there exists a set of prices that enables efficient resource allocation that will improve or not deteriorate at best the welfare of all economic agents, and the equilibrium is stable.

In short, the efficiency of the market mechanism has been demonstrated in the sense that if price adjustments in the market were flexible, all economic agents would be able to achieve the same or greater satisfaction as they did at the beginning. This is called "Pareto efficiency" after the Italian economist Pareto, the proponent of the concept and a student of Walras.

In the case of market socialism, the most problematic issue in terms of implementation is the aforementioned "tacit knowledge" problem and the issue of incentive compatibility. The issue of incentive compatibility, according to a Polish-American mathematical economist Hurwicz (1960), is that Lange's trial and error simulation, which lacks the incentive of profit, may distort price information by allowing producers to falsely declare prices. This is the similar kind of problem as "soft budget constraints" in a socialist planned economy pointed out by a famous Hungarian economist Kornai (1980). In the case of state enterprises, even if they are inefficiently managed and have a large debt surplus, they can survive by means of state paternalistic remedies. As a result, they lose a sense of cost and competition, and as a result, inefficiency becomes widespread. This phenomenon was quite widely observed in the former socialist countries and is regarded as one of the shortcomings of market socialism.

Another issue concerns what the market is in the first place. According to the market-image of general equilibrium theory, the market is depicted as an equilibrium price calculator that enables efficient resource allocation. This is a mechanistic view of the market from a utilitarian perspective, but Hayek views the market from a broader perspective. Hayek, on the one hand, sees the market as an efficient telecommunication system. On the other hand, when he is keenly aware of the problem of ignorance behind knowledge, he regards the market as a necessary institution to socially overcome individual ignorance. In other words, according to Hayek, the market is not a price calculator aimed at achieving efficiency, but a social institution for information transmission based on rules. However, when "communication of information" means "overcoming ignorance," the meaning of "efficiency" of information transmission is not included. In this respect, Hayek has shifted from "scarcity definition of the market" to "reproduction definition of the market" although not perfect. The market as such a social institution fundamentally defines the way the economy and society should be.

Hayek explained in his seminal papers "Economics and Knowledge" (Hayek 1937) and "The Use of Knowledge in Society" (Hayek 1945) that the division of knowledge was achieved through the use of the market information system. While Adam Smith suggested in his book *The Wealth of Nations* that markets promote

division of labor in society, Hayek viewed markets as a mechanism for skillfully collecting and conveying dispersive knowledge in society.

Although the market-image of goods allocation system in the general equilibrium theory and the market-image of information transmission system by Hayek regard the functions of the market differently as goods allocation or information transmission, they are similar because they both evaluate the functions of such markets from the perspective of "efficiency." In other words, there is no fundamental conflict between the two in that they view the market as an efficient tool for a particular purpose. In fact, such a view of Hayek does not theoretically refute the general equilibrium theory. This is evident from the fact that information economics, which followed the stream of general equilibrium theory, basically inherited Hayek's view of the telecommunication system of information that includes the market-image for overcoming ignorance based on "dispersiveness of knowledge." However, it does not shed light on the market-image for overcoming ignorance based on "tacitness of knowledge" that, as Hayek later examined, indicates the process of innovation in which new knowledge that does not exist before is discovered. Therefore, Hayek's view of the market as a telecommunication system does not constitute a fundamental criticism of Lange's theory of market socialism. This is a delicate but theoretically very important issue.

Hayek's Criticism of General Equilibrium Theory

After joining the socialist calculation debate, Hayek, in order to criticize market socialism further, went on to criticize the general equilibrium theory itself that underpins it. Criticizing the general equilibrium theory means criticizing the mainstream economics at that time. We do not know to what extent Hayek himself was aware of this, but he shifted from criticizing socialist planned economy to criticizing neoclassical economics. It is similar to Marx's shift from criticizing capitalist economy to criticizing classical economics, albeit in the opposite direction.

Hayek's criticism of constructivism is against the centralized concept of construction of society as a whole. Hayek truly negates artificial design, but he never completely abandoned the concept of design and thought that laissez-faire was most desirable. It is to be noted that Hayek's theory of commodity reserve currency and denationalization of money is in fact his proposal for institutional design, which is different from mechanism design similar to constructivism, aimed at expanding freedom and promoting competition to find out a better money. Hayek once said "The attitude of the liberal towards society is like that of the gardener who tends a plant and, in order to create the conditions most favorable to its growth, must know as much as possible about its structure and the way it functions" (Hayek 1944, 18). The "gardener" must carry out "many obvious tasks, such as our handling of the monetary system, and the prevention or control of monopoly" (ibid. 19) to prevent inflation and monopoly, and they are equivalent to artificial selections to "create the

conditions most favorable to its growth." In short, Hayek endorses the evolutionary design of institutions.

Hayek blames the constructivism found in social contract theory and enlightenment thought for encouraging to destroy the current society and institution and build a new society and institution from scratch according to some specific standards. The problem here is not design, but construction. For example, Hayek criticizes that the revolutionary idea of turning them over at once and realizing them through a planned economy, in order to eliminate the inefficiency and instability seen in the real market, arises from this constructivism. Therefore, we now understand that the concept of structural reform, which advocates breaking down everything once and remaking it, is based entirely on the anti-Hayek constructivism.

Hayek's Concept of "Competition"

From the present point of view, there are two issues that criticize the general equilibrium theory. One is related to how to look at the market, and the other is related to how to look at money. It can be said that these are problems of how to understand and criticize the hardcore of neoclassical economics in the modern age.

In reality, there is no market without money. So, the market and money will have to be an issue at the same time. Nevertheless, the general equilibrium theory only considers that arbitrary goods can be a measure of value, and does not consider the role of money as a means of exchange used in trade. It deals with a market without money. Although Hayek dealt with money in his earlier monetary business cycle theory and in his later theories of the denationalization of money, in his criticism of socialist economy and general equilibrium theory, he did not treat money explicitly, but mainly considered the market. It should be noted that Hayek criticized the general equilibrium theory within the framework of market theory and tried to surpass it.

Hayek delivered the lecture "The Meaning of Competition" (Hayek 1946b) in 1946 and elaborated on that in another lecture entitled "Competition as a Discovery Procedure" (Hayek 1968) in 1968. What is stated in this series of discussions is that competition is the procedure for discovering new tacit and unknown knowledge, and therefore the market is the entire process by which knowledge is discovered and transmitted among economic agents.

Hayek argues that the market in the general equilibrium theory is very static and does not include dynamic processes. Such a narrow view leads to market socialism as if it were possible to replace the market with a planned economy. However, if we broaden our view of the market, we should be able to recognize that what might be replaced in a planned economy is only a part of the market and there will remain many parts that cannot be replaced. One of the most important issues is the aforementioned "tacitness of knowledge."

How does the market overcome ignorance based on the "tacitness of knowledge"? Since the general equilibrium theory does not recognize the existence of "tacit knowledge" from the beginning, it should be assumed that there is no such

problem, or if there is one, it is not important. Hayek, on the other hand, sees competition as the process of uncovering "tacit knowledge" and discovering it as knowledge. Note that "competition" here has a completely different meaning from "perfect competition" in the general equilibrium theory. According to Hayek, "perfect competition" means, despite the word, the absence of competition because it represents a static situation in which economic activity is fully coordinated and nothing happens if external disturbances occur.

Hayek's "competition" is a dynamic process that Don Lavoie tried to describe by the term "rivalry." This is the situation in which a large number of actors are at odds with each other in their objectives and motives, competing for certain resources in order to realize them, and in which rivalry or hostility arises from mutually incompatible decision-making.

The general equilibrium theory assumes the centralized market in which the auctioneer adjusts all prices so that supply and demand are in equilibrium in all goods and services markets, and then all economic agents conduct all exchange transactions simultaneously. Thus, in the end, all transactions are done in one place at the same time as if they were bartering, without any conflict or rivalry. Consequently, in such a situation setting market, what Hayek calls "competition" or what Lavoie calls "rivalry" does not occur.

Then, if the market that the general equilibrium theory assumes is not acceptable, we have to consider in detail what kind of market such competition will occur. For example, should we assume a situation where perfect competition is imperfect competition, such as supply oligopoly with a small number of suppliers or monopolistic competition to supply close substitutes? Hayek argued in his paper "The Meaning of Competition" that it was close to monopolistic competition, but rather only engaged in abstract discussions on the role and functions of the market, and it is not clear what kind of market he envisages.

The Market with "Rivalry"

Then, we must consider specifically what kind of market such competition will occur in, even if it is not in the market assumed by the general equilibrium theory. For example, against perfect competition, should we assume a situation of imperfect competition, such as a supply oligopoly with a small number of suppliers or monopolistic competition to supply close substitutes? Hayek, in "The Meaning of Competition," has developed a discussion that is close to monopolistic competition, but it is not clear what kind of market he is considering, as it is rather limited to an abstract discussion on the role and function of the market.

Therefore, it is necessary to supplement the argument of Hayek. Monopolistic competition, in which multiple firms offer similar alternatives through product differentiation, is a very common situation. However, such an imperfect competition market which is not an auction type is not a market without money. Money exists, and the market is divided into sellers with goods and buyers with money.

Let us consider the market in which a buying and selling transaction is repeated along with the circulation of money, starting from a situation in which two or more agents have not only goods but also money as stock, and the money holder pays money as a buyer and receives goods of the seller. If many agents had money, such bilateral transactions could be made separately at different places and times. Markets can be understood only as a chain or network of such money trading transactions. Let's call this network-type market "distributed market." In these decentralized markets, competition as rivalry is understood as a process of knowledge discovery, and the result of competition is not static equilibrium but a spontaneous order.

All information and knowledge that are "given" in the general equilibrium theory, such as scarcity and type of goods, technology, and preference, must be "discovered" in the rivalrous process. Only in this market process does the tacitness and inarticulateness of knowledge become a subject in its entirety. In this way, rivalry has the meaning of a discovery process or procedure of knowledge in which they are specified and clarified.

There are, however, many possible interpretations of competition as a process of knowledge discovery. The Austrian economist Israel Kirzner interprets the concept of "alertness" in which entrepreneurs should seek to equalize the market by promptly finding opportunities for profit margins and engaging in arbitrage transactions based on "to buy cheaply and sell dearly" (Kirzner 1985, 1989, 1992). However, this leads us to understand the process of knowledge discovery as a temporary, transitional imbalance until it converges to a general equilibrium. Also, the "ignorance" itself is limited to explicit knowledge that can be removed immediately with such alertness. Hayek, however, emphasized "order" and "process" instead of "equilibrium" and "state" and envisioned a dynamic process in which the constant discovery process of knowledge would continue to move permanently in a certain region without divergence or convergence.

Hayek's discovery process in the market is to consecutively create novelty and diversity while constantly expanding the collection of explicit information about technology and preference. For example, the discovery of recyclable waste that was previously thought to be of no use and the recovery of it at a certain price, the discovery of small new technologies from the knacks and skills of the "man on the spot," and the process of creating new products through R&D and bringing it to the market are all included in the discovery process of knowledge. It can be understood as innovation that creates new technologies or products, whether large or small.

Just in parallel with Hayek, the Austrian economist Schumpeter played an active role. Hayek's theory of the discovery process of knowledge is closely related to Schumpeter's economics, which revolves around innovation. Schumpeter characterized innovation "creative destruction" or "new combination," and it characterized the intrinsic dynamics of capitalism. Schumpeter focused on the mechanism by which large clusters of innovations form super long-run waves, whereas Hayek focused on the formation of a dynamic order by a myriad of much smaller and more localized array of innovations. In contrast with Schumpeter, Hayek emphasizes market force that can elicit small daily skills and quality improvements.

This suggests that markets should be understood as institutions with diverse meanings and functions. As Hayek and Schumpeter put it, the market is "a generator of novel and diverse knowledge" from unknown and tacit knowledge that creates a wide variety of explicit new knowledge that can be recognized and imitated. At the same time, as Kirzner put it, the market is "a convertor from ignorance into knowledge" in which the usefulness and scarcity of diverse knowledge is discovered and transmitted by competition.

The Meaning of Liberty

Since Caldwell's paper on "Hayek's Transformation" (Caldwell 1988), it has been argued that Hayek has marked a major shift in his ideas at significant milestones. According to Caldwell, the paper "Economics and Knowledge" published in 1936 is a major turning point toward an approach that focuses on knowledge in economics. According to Fleetwood, there is yet another turning point in 1960. Fleetwood argues that Hayek at the time, in order to consider the socio-economic order that overcomes ignorance and uncertainty, became to recognize the reality of the deep structure as "social rules of construct," which complements the market as "the telecommunication system of information," and he shifted to a philosophical position that could target it in economics. In fact, Hayek published his three-volume book *The Constitution of Liberty* (Hayek 1960) in 1960, but it is generally believed that this is not a book of economics and that since then Hayek has turned to political philosophy. Thus, Hayek is divided into three phases, called Hayek I, II, and III.

But at the root of Hayek's thinking was a consistent awareness of economic problems that had existed before then. Rather, he thought that the framework of economics in the 1950s and the 1960s, when the general equilibrium theory has become the mainstream, was too narrow. That is why Hayek began to expand the domain of economics and to develop a new field of socio-economics.

Amid the growing awareness of these issues, the question of how to consider Hayek's "liberty" becomes important. The economic agent considered by the general equilibrium theory is *homo economicus*. As we have already seen, it is assumed to be a rational agent that maximizes utility under budget constraints, provided prices are given, no matter how many goods there are. And it is considered to be freedom to make the best choices. In practice, however, such freedom is only fictitious because if the number of goods exceeds only 80, let alone 3000, the number of goods at convenience stores, the time required for maximization calculation exceeds the time since the beginning of the big bang in the space.

If optimization calculations are virtually impossible, the question is how to model the decisions and actions of economic agents with limited rationality. Evolutionary economics and complex systems economics, which have developed in recent years, assume more realistic, bounded rational economic agents who follow rules and conventions and perform certain routines and patterned behaviors. It is

similar to Hayek's idea in that it attempts to consider how such economic agents interact to form a certain order in a self-organized manner.

Negative Liberty

In order to think about the meaning of "liberty," we need to go back to Hayek's viewpoints of "ignorance" and "antirationality." It was Hayek III since 1960 that began to discuss "social rules of conduct" by focusing on how to behave if we are "ignorant." Hayek thought as follows.

Human beings are ignorant, so it is not good to think only with their own heads and take rational actions. By obeying the rules of social conduct, therefore, they can avoid the various misfortunes caused by ignorance and maintain order through the mutual adjustment of the acts of many individuals, without conflicting motives or interests. As a result of the creation of such a stable spontaneous order, human beings secure a certain degree of liberty that the rules allow within them. Human beings are given the freedom to act in accordance with the rules. Rules define the limits of our conduct in the form of prohibitions, but conversely, they can be seen as defining the realm of liberty by rules. In other words, the argument is that ignorance requires rules, and liberty arises within them. This is another core of Hayek's argument.

As already mentioned, Hayek believes that human liberty lies in the domain defined by the social rules of conduct, which are necessary to overcome individual ignorance. Accordingly, liberty does not mean a state of anarchy without rules, but a state of order formed by rules and not subject to any enforcement other than those rules. Therefore, it is not a "positive liberty" that aims to realize something, but a "negative liberty" that escapes from authority and oppression other than rules.

As we have seen, the greatest problem with socialism for Hayek is the suppression of human freedom as a subspecies of totalitarianism while upholding positive liberty based on constructivism. A one-party dictatorship that advocates positive liberty and a society in which a dictator wields malicious power are the most abominable.

Reality of the Rule

But social rules of behavior include everything from traditions and customs to manners, morals, organizations, and institutions to law. This will provide the foundation for cross-disciplinary discussions on politics, ethics, morality, and philosophy, as well as economics. Since 1960, Hayek's arguments have grown wider.

So where in the world are these rules? In other words, the ontological status of the rule becomes an issue. Even if there are rules, they are not all written in the article. Even if such rules are written as laws, they can form the rules and patterns

of actual behavior only when people understand it and internalize it as their moral values. Social rules do exist, but they do not exist outside of the subject like objects. Before the 1960s, Hayek II recognized only empirical events and acts as real, but in time, Hayek III recognized the reality of conceptions, including ideas, attitudes, meanings, descriptions, beliefs, and views, especially social rules. Rules may or may not lead to regular patterns, but regardless of their consequences, they continue to exist as abstract, general, and prescriptive, that is, transfactual. In short, there is a big difference in whether or not social rules and institutions, in general, are accepted as real.

Is the Market a Brain or an Artifact?

In response to these changes in Hayek's perception, recent research has sought to apply his market-image to human cognitive mechanisms. Just as the human brain is a neuronal network, markets are human networks mediated by money. The brain performs extremely complex information processing and recognizes external events based on the firing patterns of the entire neural network, not just a neuron. Because individuals are the equivalent of neurons in the market, what an individual alone cannot recognize can be recognized by society as a whole through a network of markets. Hayek himself likened "sensory order" and "market order" (*catallaxy*) to "spontaneous order." In other words, the market is compared to the human brain.

On the other hand, the general equilibrium theory and neoclassical economics compare the market to a computer that is a product of artificial design. Hayek believed that the market order could not be replaced by computers, as the theory of market socialism argued. A computer is far from a human brain. Even current modern computers have not been able to perform the same functions as human brains. Artificial brain construction requires a complete understanding of brain function. Similarly, it is necessary to fully understand the function of the market in order to build a market artificially.

Behind Hayek's theory of freedom and political philosophy lies his view of the market, society, and humanity as metaphors for such networks. In this sense, Hayek's freedom means freedom of networks and links rather than inner freedom. Hayek believes that although human beings are ignorant and make many mistakes in perception and practice, abstract order can be spontaneously formed and maintained only through trial and error in networks.

In fact, Hayek introduced the theory of evolution into his thinking after the 1960s. He had three times of conversations in the 1970s (1978, 1981, 1983) with Kinji Imanishi, the Japanese theorist of evolution famous for his study on habitat segregation. Hayek adopted the group selection theory when he considered the cultural evolution in the economy and society. The idea that a group is a unit of selection is similar to Imanishi's theory of habitat segregation. In gene reductionism such as neo-Darwinism, the only unit of selection is the gene, but if we move it to the social and cultural level, the individual becomes the unit of selection. However,

because Hayek was strongly opposed to "social Darwinism," he adopted the idea that abstract orders such as populations, rules, and social systems, rather than individuals, would be eliminated. He believes that capitalism has survived and socialism has been weeded out as a result of the group selection between socialist and capitalist regimes.

Two Aspects of Strength of Capitalism

So far, from a review of Hayek's ideas, we have examined the impossibility of a socialist economy, including the general equilibrium theory and market socialism. Then what are the characteristics and advantages of capitalism, which survived as a result of Hayek's "group selection" and is driving our society today?

Here are two contrasting explanations for the strength of capitalism. In a real capitalist economy, not only one or the other exists, but both always exist, and the fact that both exist is the very strength of a capitalist economy. Thus, to be precise, they represent two opposing "forces" that shape the dynamics of a capitalist economy rather than two "explanations."

According to the first explanation, capitalism is strong because high efficiency and growth are achieved as a result of removing inefficiencies through competition. Call it "elimination of inefficiencies with stick." Since the capitalist economy is based on the principle of private ownership and economic self-responsibility, inefficient companies and individuals that have excessive liabilities in their financial statements and become insolvent or defaulted on debt will go bankrupt and be forcibly excluded out of the market game. As a result of competition involving the movement of players making these economic decisions, resource allocation becomes more efficient.

In a socialist planned economy in which the means of production are nationalized, it is difficult to forcibly eliminate large losses that result from a failure of an enterprise to adapt to unexpected changes. This is because as long as a state enterprise is owned by the state itself, the destruction of it will not result in any reallocation of resources among the owners. For this reason, state-owned enterprises that operate inefficiently and suffer from a large excess of liabilities can in many cases survive through the paternalistic management prices, tax exemptions, subsidies, and credit extended by the state. If private property rights do not clearly define who is responsible for economic decision-making and the scope of responsibility, the mechanisms for eliminating economic inefficiencies such as losses and default will disappear.

The prototype of this claim can be found in the Austrian School economist Joseph von Mises. As mentioned earlier, in his thesis "Economic Calculation in the Socialist Commonwealth" (Mises 1920), he asserted the impossibility of a socialist economy. The rationale behind this argument was that a socialist economy would not be able to carry out rational economic calculation and efficient resource allocation because market prices would not exist without a market for production goods.

Mises' argument that in a complex and uncertain economy, predictable decisions must be made at market prices is also paraphrased as follows. In a socialist planned economy in which the means of production are nationalized, even if a state-owned enterprise suffers large loss as a result of its failure to adapt to unexpected changes, it would be difficult to forcibly eliminate the enterprise. This is because as long as state enterprises are the property of the state itself, the bankruptcy of those enterprises will not lead to any redistribution of resources among the owners. As a result, state-owned enterprises that are inefficiently managed and have large debts in excess of their assets in balance-sheet insolvency can often survive on the basis of the state's paternalistic management prices, tax exemptions, and provision of subsidies and credit. This is because if private property rights do not clearly define who is responsible for economic decision-making and to what extent, the mechanisms to eliminate economic inefficiencies such as losses and defaults will disappear.

The Hungarian economist Kornai also argued that companies in a socialist economy were not efficient because of a lack of cost-consciousness and competitiveness, which he explained with the concept of "soft budget constraints." According to Kornai, budget constraints were considered to be much harder in a wide domain of a capitalist economy (especially in the nineteenth century) than in a socialist economy. Capitalism is a world in which companies that operate inefficiently and cause losses immediately go bankrupt so that "elimination of inefficiencies with stick" is thoroughly practiced.

However, the first explanation for the strength of capitalism of "elimination of inefficiencies with stick" is basically describing the same world as the general equilibrium theory, which assumes that the process of natural selection occurs instantaneously and that only the most efficient technologies survive. Conversely, the idea of perfect competition in the general equilibrium theory is, so to speak, the purest abstraction of "elimination of inefficiencies with stick."

Carrot and Stick

In contrast to the explanation "elimination of inefficiencies with stick," there is another view regarding the strength of a capitalist economy that can be called "creation of diversity by carrot." According to this explanation, the reason why capitalist economies are strong is that economic agents can discover new knowledge; develop new technologies, products, and services; and disseminate them through market games defined by such rules as provisions on private property rights and contracts, negative provisions on free economic activities through the designation of prohibited activities, etc. This view points to the source of the robust vitality of the capitalist economy, which constantly generates variations and novelties in technology, goods, and knowledge and reproduces their diversity. This is Hayek's concept discussed earlier.

Hayek described competition between "close substitutes" as an important characteristic of a market economy. This is the so-called non-price competition seen in product differentiation. If we take Hayek's idea one step further, based on

Schumpeter's theory of technological innovation (Schumpeter 1912) and the French sociologist Baudrillard's theory of the consumer society (Baudrillard 1970), we can explain it as follows.

In a capitalist economy, there exists a wide variety of technologies, products, and knowledge and "close substitutes" because technological innovation has led to the continuous development of new products and technologies and the quality has improved through daily incremental improvements. On the other hand, the desires of consumers are not necessarily fixed from the beginning, but are fluid and amorphous, and the advertisement by the media create new desires on a daily basis by drawing up and rectifying the latent desires of consumers or actively create the desire seeking only the difference.

A centrally planned economy in a socialist system is likely to achieve high productivity and growth in sectors where heavy and large industries such as railways, dams, military weapons, and space rockets are at the core. Also, the fact that there are not many kinds of the same product for such production goods or special applications such as military and space is not a big problem. However, with regard to general consumer goods and services such as cars, electric appliances, information equipment, and clothes, as living standards improve, consumers come to regard the diversity and selectivity of consumer goods as their own value, and the uniformity of products with fewer varieties becomes a serious problem. It is well known that in the former Soviet Union and Eastern Europe, there were not so many types of consumer goods and their quality was low. The reason for this is that the Soviet-style planned economy did not have any incentives for the creation of diversity and novelty that the market economy had, and thus did not have a mechanism of "creation of diversity by carrot."

Two Concepts of Competition in Capitalism

Now let's look at how these two aspects of the strength of a capitalist economy correspond to two different concepts of competition in the market.

The first view, which explains the strength of capitalism in terms of "elimination of inefficiencies with stick," emphasizes the "environment-adaptive" competition for efficiency in resource allocation and communication under a given preference or technology. In other words, competition focuses on the adaptation of individual economic agents to external environmental changes. Also, in explaining the general equilibrium theory, each actor adapts quickly to changes in prices as "public information" and changes the demand and supply of goods and services to maximize its objectives. Inefficient technologies are instantly eliminated as a result that each firm selects a combination of technology and output that maximizes profit from the production possibility set.

Thus, in the general equilibrium theory, the "environment-adaptive" competition eliminates inefficiencies and statically describes the completed state of natural selection. Advocates of the free market economy who encouraged privatization and

deregulations are based on the principle of this type of competition. Privatization and deregulation will intensify "environment-adaptive" competition, and pressure from natural selection will make the economy more efficient.

On the other hand, the second view, which finds the strength of capitalism in "creation of diversity by carrot," focuses on the "environment-creative" competition which forms a new economic environment by expanding information on technologies and tastes through innovation. I believe that the existence of "environment-creative" competition is the main source of the relative resilience of a capitalist economy to a socialist economy.

Soft Budget Constraints Under Capitalism

Let's take a closer look at the "elimination of inefficiencies with stick" explanation of the strength of capitalism. In this explanation, it is argued that resource allocation can be made more efficient by, for example, imposing self-responsibility on a company that has defaulted on its obligations and excluding it from the market game due to bankruptcy. To this end, private ownership, the source of the principle of self-responsibility, is indispensable for this mechanism. It can be regarded as the bedrock on which budget constraints become hard. However, even capitalism based on private ownership is not always under hard budget constraint. In a capitalist economy, although explicit or implicit rules, such as laws and customs, define the conditions under which a business enterprise or an individual is socially recognized as bankrupt and must leave the market game, the hardness of budget constraints varies by era, country, and industry.

According to business practices, for example, it is said that if a corporation draw a dishonored bill twice, it is recognized as a state of cash-flow insolvency and the corporation will be suspended from doing business with the bank, which will de facto result in bankruptcy. However, the actual risk of bankruptcy of the corporation is often averted by emergency loans from the main banks. In addition, in the event of a financial institution crisis, the Bank of Japan's special loans and the Ministry of Finance's merger mediation may help prevent the institution from collapsing. The pros and cons of bailouts are left to the discretion of financial institutions, the government, and central banks. Such decisions depend on a variety of subjective factors, such as a firm's credit and expectations about its potential for restructuring, based on the firm's and its bank's individual commercial transactions.

During the 2008 financial crisis, the US government and the Federal Reserve Bank (FRB) bailed out Bear Stearns, the fifth largest investment bank and security firm, the Federal National Mortgage Association (Fannie Mae), and the Federal Home Loan Mortgage Corporation (Freddie Mac), but failed to bail out Lehman Brothers, the fourth largest. Many critics say that the decisions of the US government and FRB are extremely arbitrary and dangerous because they triggered the global financial crisis.

Furthermore, in the case of large Japanese companies, it used to be common for the main banks and member companies to form corporate groups and share risk by building stronger cooperative relations through cross-shareholdings and eliminating external interventions such as mergers and acquisitions. Since the main banks monitor corporate management through personnel exchanges with member companies and are jointly responsible for the results of corporate management, the main banks will do their best to rescue member companies in danger of going bankrupt. In the event of the collapse of a bank or other financial institutions, the Ministry of Finance and the Bank of Japan would decide to implement a bailout plan, giving priority to maintaining the nation's financial system and stable financial order.

In this way, the bankruptcy rules are not necessarily strictly applied, and in reality, they are very flexible. If we look at the cases of the injection of public funds for the disposal of non-performing loans in Japan and the injection of public funds in the financial crisis in the United States, we understand that "soft budget constraints" are widespread even under capitalism.

From the beginning of the twentieth century to the 1980s, corporate budget constraints tended to soften in general due to such phenomena as the increasing size of enterprises, the oligopoly and monopoly of industries, the progress of "separation of ownership and management" and "managerial control" in corporate governance of joint-stock companies, and the tendency toward a national budget deficit caused by an increase in fiscal policy and social security costs. From the end of World War II to the bubble economy in the late 1980s, major Japanese companies were characterized by their Japanese-style management, which consisted of three pillars: lifetime employment, seniority-based wages, and corporate unions. Japanese companies were sometimes seen as "corporate communities" to maintain employment and secure livelihoods for its employees and their families, and managers became the governing body of the company. On the other hand, shareholders who were owners of companies gave up control over almost all companies (to the right to dismiss management) and became speculators who sought capital gains from stock investment. The post-World War II formation of corporate groups, as mentioned earlier, led to the establishment of the "corporate capitalism" in which corporations themselves own and control corporations, by further accelerating the trend of separation of ownership and management to eliminate the control of outside shareholders through cross-shareholding within corporate groups, credit granting by main banks, low dividend payout and high retained earnings, and an increase in unrealized profits on stocks and land. As a result, budget constraints for large Japanese companies have become extremely soft.

However, the various events that have taken place in Japan during the prolonged depression known as "the lost two decades" since the 1990s, such as the stagnation of stock and real estate prices due to the collapse of the bubble economy, the massive non-performing loans held by financial institutions, the reluctance of banks to lend money, the resulting bankruptcies of financial institutions, the decline in confidence in the financial system, the elimination of cross-shareholding, and the tightening of the national budget and administrative and fiscal reforms, show that budget

constraints have become hard again. In this way, budgetary constraints in capitalism also fluctuate considerably between hard and soft.

In any case, what we would like to confirm here is that soft budget constraints are not necessarily peculiar to socialist economies, but exist to varying degrees in capitalism as well and that Japan in fact has achieved high growth until the oil shock in 1973 and stable growth with technological innovation until the 1980s even under soft budget constraints. In this regard, private ownership is unlikely to be an essential condition for efficient resource allocation and economic growth. In the first place, ownership can be divided into the right to dispose of the property, the right to use the property, the right to earn profits, etc., and in reality, this divided right tends to be socially distributed. Again, private ownership cannot be seen as the ultimate and sole determinant of corporate control or decision-making.

Dynamic Evolution with Innovation and Imitation

On the other hand, in the "creation of diversity by carrot" explanation of the strength of a capitalist economy, private ownership is relatively less important than in "elimination of inefficiencies with stick" because such ownership as in the former is not permanent. Founder's profits and super profit arise for a certain period of time as a result of economic agents that invent and develop new technologies and products, excluding imitations by other economic agents and securing a monopolistic position. In other words, it is nothing but the establishment of a temporary ownership in the "information" on new products or new technologies. Knowledge of new products and technologies is often kept secret (if there are network externalities, it is possible to try to monopolize the market at an early stage by actively disclosing them.) and will be difficult or, if possible, time-consuming for other competitors to imitate. But sooner or later, they will be passed on to consumers and competing producers.

In reality, ownership of information on new products and technologies is legally protected for a limited period of time as prescribed by the patent and licensing systems. The owner has an exclusive right to use the patented product, and the user cannot use or convert the patented product without permission from the owner and must obtain permission to use it by paying a patent fee. In other words, economic agents benefit from the "information" on new products and technologies that is exclusively and provisionally owned. However, after a certain period of time, the patent rights expire, and new products and new technologies are imitated by all economic agents, and finally information on new products and new technologies becomes a common property of society.

In short, in order to improve the interests of the economy as a whole, "intellectual property rights" such as patents and licenses for "information" such as new products and new technologies must be temporary and transitional, not absolute nor

permanent as in the case of ownership of physical objects. Although ownership of such "information" acts as a "carrot" and gives incentives for the creation of diversity and novelty, they are limited to temporary ones, so that after a certain period of time, the "elimination of inefficiencies with the stick" is activated and many other economic agents who have adopted old products and technologies are forced to abandon them and imitate new products and technologies in order to survive. As a result, information on new products and technologies is rapidly disseminated throughout the economy.

Thus, coexistence of the carrot and the stick aspects in a capitalist economy creates a dynamic evolutionary process with innovation and imitation. The strength of capitalism lies in this evolutionary process.

The strength of capitalism is not necessarily due to the realization of the efficiency of resource allocation due to hard budget constraints. Conversely, the socialist economy should not have died out because of the inefficient allocation of resources caused by the "soft budget constraints." Instead, the root cause of the collapse of the socialist economy was the lack of diversification in consumer goods such as home appliances and automobiles and technological innovation in the information technology field. Therefore, although the capitalist economy is institutionally based on natural selection according to private ownership and bankruptcy rules, its relative strength in comparison with the socialist economy should be seen as the clarification of tacit knowledge through incentives such as super profits and the diversification of goods and knowledge through innovation.

Roemer's "Coupon Market Socialism"

John Roemer, an American economist, shared a similar view to mine on the causes of the collapse of the Soviet-style economy. In his book *A Future for Socialism* (Roemer 1994), Roemer stated that although he had previously focused on "soft budget constraints" as the cause of the demise of the Soviet-style centrally planned economy, he now believed that the absence of technological innovation was the greatest cause of the collapse of the Soviet Union.

Roemer introduced stock companies and the stock market into his model of market socialism, believing that a direct financial capital market, or stock market, in which private companies can freely raise the necessary funds is essential for continuing to drive technological innovation. However, special rules will be introduced to maintain equal opportunities at the initial stage and to ensure that the capital gains do not create too large an asset gap.

First, inheritance is prohibited. Next, by making it impossible to buy general goods (especially consumer goods) with the funds from the sale of stocks, the effect of the so-called asset effect on the real economy is reduced, and the economic cycle caused by the outbreak or collapse of bubbles is removed. Thus, citizens received

coupons when they were at a certain age, so they could invest in stocks with such coupons. If some citizens invest in a company with good performance, they can receive a high dividend, which increases their income in cash. Companies can cash out the coupons they raise. But when citizens sell their stock at a high price and get capital gains, they cannot cash out the coupons, but retain them. Then they can reinvest them in the stock market, but cannot use them in the goods market. And if a citizen dies, all coupons will be returned to the state. Aside from the problem that Roemer's "coupon market socialism" proposal is based on the same market-image as the general equilibrium theory, it is noteworthy that it emphasizes innovation and involves monetary reform.

Roemer explained that he changed the cause of the collapse of the Soviet-style centrally planned economy from the moral hazard as "soft budget constraints" to the absence of technological innovation because he got to recognize the following three points. (1) The Soviet-style economy had achieved economic growth rates similar to those of the Western countries during the 20 years from 1950 to 1970, aside from that fact such economic growth surely depends heavily on investment for military purposes and has been achieved by a high investment rate. (2) Therefore, the collapse of the Soviet-style economy of the 1980s cannot be attributed solely to "soft budget constraints." (3) The growth of economic welfare in the 1980s has greatly depended on the capacity for technological innovation of the national economy.

It is reported that the government statistics published in the former Soviet Union have been considerably inflated, including the nominal effects of inflation. Therefore, it is difficult to accept the claim of (1) concerning the real economic growth rate, but the recognition found in (2) and (3) is reasonable. Roemer also said, stressing the importance of "competition" in technological innovation, that "without the competition that is provided by markets – both domestic and international – no business enterprise is forced to innovate, and without the motivation of competition, innovation, at least at the rate that a market economy engender, does not occur" (Ibid. p. 44). But for us, the question is what "competition" means here.

It is very much to the point to recognize that the collapse of the Soviet centralized economy was caused by the absence of technological innovation. But a capitalist economy incorporates economic incentives such as super profit to encourage firms and managers to carry out process and product innovation. There are also legal systems such as intellectual property rights including patent rights, trademarks, and copyright that protect the economic benefits of inventions, discoveries, and creations for a certain period of time. In this respect, the kinds of goods, services, and production technologies in capitalist economies are overwhelmingly larger than in socialist economies.

However, in the framework of the general equilibrium theory, which consists of companies and consumers who make the most rational choices instantaneously, "disequilibrium" such as super profit or quasi-rent and the institutions that legally assure it cannot exist anywhere. Therefore, the general equilibrium theory cannot explain the market function of "creation of diversity by carrot."

From this point of view, the problem with Roemer's theory of coupon market socialism is as follows. First, there is a contradiction in his model that does not

presuppose a distributed market, which provides incentives for endogenous innovation, but a centralized market as in the general equilibrium theory, which only assumes exogenous technological change and no product differentiation. Moreover, it is inconsistent to propose the introduction of coupon as a substitute currency in the framework of general equilibrium theory that does not emphasize the role of money.

Chapter 3
Money and the Autonomous Distributed Market

Reexamining Money

Neoclassical economics constructs a perfectly competitive market in the framework of general equilibrium and regards it as an ideal. Then what has been excluded from the model? It is money. In the general equilibrium model based on the "perfect competition," the existence of money is eliminated from the market in advance, and a market economy is considered as if it were a barter economy. In other words, by forgetting the origin of the "money" that spins out the market economy, a pure theoretical model of the market is conceptualized, and all models of planned economies are derived from it.

If so, the next step we should take is to reexamine the meaning of money, which has been suppressed by the conventional vision of market. A market economy is a monetary economy, and our monetary economy is a capitalist monetary economy in which money indefinitely seeks its self-expansion. Here is a contradiction: money that should make man an autonomous and free subject actually makes capital, not man, an autonomous and free agent. The current crisis stems from the pursuit of unethical freedom by capital, not from the individual utilitarianism or selfishness that supports the market. Therefore, in order to make capital ethical, we need to render money ethical in the first place. The root of the current critical conditions should be found in the very monetary system, which turns a global market economy into a global capitalist economy.

If this is the case, the key to solving the problems of the twenty-first century should be money reform, not market reform. It is only after the redefinition of money from a new perspective that we could overcome the dichotomy often presented as "market or state" or "liberty or regulation" and that we could have a prospect into a new theory on market and money.

M. Nishibe, *Whither Capitalism?*, https://doi.org/10.1007/978-981-13-0704-1_3

What Is Money?

What is money? It has often been stressed that we must not take the question at its face value. It's because the question itself, by its structure, already forces us to explain money, a subject of the interrogative sentence, by something other than money.

However, as the sentence like "money is money because it is used as money" goes, it is difficult to define money by other things because money has to be self-referential. Money does not have a substantive basis for existence in itself, and it continues to circulate in the market by being accepted by others as money. And it is this ontological character of circular logic and self-fulfillment of the being that distinguishes money. If we could speak figuratively, money is quite a strange "social being" (Iwai 1996) just like lifting himself by lifting his own bootstraps. Here lie the mystery and enigma of money.

But when money is said to be empty, it is neither a mere phantom nor a sign. It allows us to buy various commodities daily in the market, and it is a real existence that never disappears when we think of it as an idealistic illusion. On the other hand, it is not a sign in the normal sense to represent something else. From a structuralist viewpoint, money is nothing more than a "zero signifier" that enables the existence of a structure even though it does not represent any elements within its structure.

In short, money is a form of "possibility" which is real but not actual, and in which we can simultaneously say "money is *X*" and "money is not *X*." Therefore, if a "definition" was to describe one concept or word by other concepts or words, or to represent some sign by other signs, we could not define money properly in that sense. The question, then, is how to "solve" the difficulty inherent in the definition of money deriving from its peculiar existential character.

Typically, money is considered to be "lubricant" or a "means of exchange" to resolve the difficulties of barter and to allow smooth commodity exchanges. In this view, money is nothing but a means to make exchanges take place effortlessly. This answer presupposes that we can spell out money "is always *X*." However, money is a being to be described only as a form of "possibility," which "enables *X*, but it is not always the case." Money does not always create a condition like barter exchanges, enabling smooth indirect exchanges between one commodity and another. Money has merely created a form of "possibility" in which an exchange between a commodity and money, i.e., "buying and selling," could go smoothly by creating two forms of money exchanges anew: "selling of a commodity to money" and "buying of a commodity by money." Although it has successfully replaced the impossibility of barter with the possibility of buying and selling, now it is also the possibility to create the good and evil of an economic cycle followed by boom and recession. Money is a "possibility" of a double-edged sword.

During a recession period of an economic cycle, people tend to store money while avoiding buying commodities. Here, the difficulty of barter is simply replaced by whether or not commodities are going to be sold to money, or commodities are going to be bought by money, in an asymmetric relation of commodity and money

positions. In other words, the asymmetric relation of money and commodity, in which all the commodities are sold against money and the money can now, in turn, buy other necessary commodities, has opened a good "possibility" of buying and selling of commodities, but at the same time, it also has opened another evil "possibility" of creating a problem of a crisis as a panic caused by people not handing out money and not buying commodities or a resulting recession followed by unemployment and bankruptcies. In the following section, we will see how the structure of money and commodity has emerged and how the "possibility" of the good and evil has been created.

The Generative Logic of Money

Chimpanzees, among other primates, are known to be the most closely related to us Homo sapiens, and we share 98.5% of genes. Nevertheless, there is no observational fact that chimpanzees use money extensively. Humans would have begun to use money at some point of their evolutional path. The possibility of money emergence must lie in the 1.5% of genetic difference.

In order for barter exchange (direct exchange) to be accomplished between a good *x* and another good *y*, the "double coincidence of wants" needs to be satisfied, where the owner *X* of *x* wants *y*, while the owner *Y* of *y* wants *x*. If we express the state, in which "the owner *X* of *x* wants *y* and offers *x* in return," by using an arrow (➔) from *x* to *y*, the "double coincidence of wants" is a state where two arrows in opposite directions are drawn between *x* and *y*, as shown in Fig. 3.1.

For barter to be realized in a real world, there must be an agreement over an exchange ratio through negotiations and compromises between two parties, but let's forget about it for now. In cases of the small number of goods, there may be a chance for barter to be established. However, the chance gets slimmer in an accelerating manner, as the number of goods involved increases. With thousands or millions of goods, it's practically impossible for the "double coincidence of wants" to accidentally occur.

But, what would happen if we had money here? I this case, we can always buy commodities if we have money, since all the goods are now commodities. Then, as long as we obtain money by selling our commodities, we can always buy commodities we want with the money we have acquired. If so, all we need to care now is

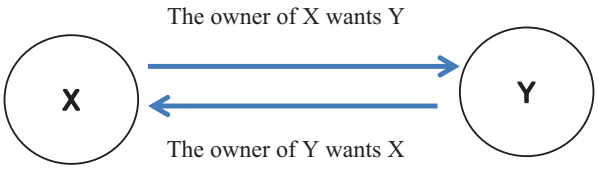

Fig. 3.1 "Double coincidence of wants" in direct exchange

whether someone with money will happen to want our commodities and our commodities will sell. Thus, with a presence of money, the chance of getting commodities we want will be dramatically bigger than the chance of barter to take place. Now we know we could satisfy our wants much more easily with a presence of money than in absence of money. Then, how could such money emerge?

Now let us consider a case *a* through *e* of five goods (Fig. 3.2). Like the previous example, let us suppose an owner of each good wants another good as an object to be consumed. This is described by an arrow (➔) going from each good to another good each owner wants. In the case of (1), there are no two mutually opposite directional arrows flowing between any two goods. So, no one can get any goods they want via barter.

If we look more closely, however, we will realize that there is a good attracting more arrows (➔) than others, that is, a good wanted by more people. In the case of (1), it is the good *e*, attracting two arrows (➔) coming from two goods, *a* and *c*. As barter exchange refers to a state where people directly exchange goods between themselves, we can call it a "direct exchange." As in this case, when many owners want a certain good, we say the good's "direct exchangeability" is high. For, the good can be directly exchanged with another good owned by those who want it. The more those who want the good, the higher its direct exchangeability becomes.

Actually, we can consider such direct exchangeability regarding all goods. The direct exchangeability of a specific good can be defined as "the number of owners of goods who want a specific good" divided by "the number of all owners of goods but himself." It indicates the probability of a certain good being exchanged directly. In the case of (1), the direct exchangeability of the good *e* is 2/4 = 0.5, which is the highest of all five goods. What this means is if you have the good *e*, you could directly exchange it with either of other goods at the probability of 50%. Thus, the good *e* would now bear a new property of direct exchangeability with other goods, different from its natural usefulness for humans – e.g., nutritious (when eaten) or warm (when worn) – derived from its physical or chemical properties. Then, there could be a newly emerging desire: someone might want the good *e* although he

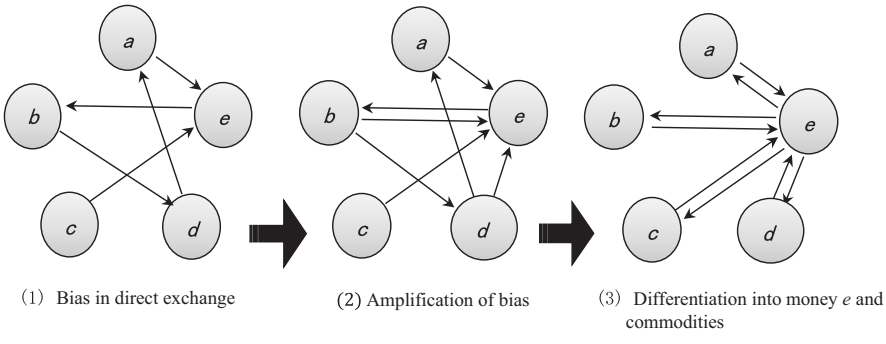

Fig. 3.2 The generation of money

doesn't really need it, because he wants it as a means of exchange, seeking the good's high direct exchangeability with the good he really wants.

As a matter of fact, in the case of (1), the owner of the good *d* wants the good *a*, but the owner of the good *a* wants the good *e*, not the good *d*. So the direct exchange cannot be established between the goods *d* and *a*. But from this experience, the owner of the good *d* would learn the following: if he has the good *e*, he could directly exchange it with the good *a*. Then he could eventually get the good *a* he wants, by first directly exchanging his good *d* with the good *e* and then by directly exchanging his good *e* with the good *a*. The successive direct exchanges are called an "indirect exchange." Here, the good *e* is used as a means to mediate the indirect exchange of *d* ➔ *e* ➔ *a*. Through such a process of learning, each owner's desire would change.

This is how we would come to have an "indirect desire" for a certain good, as opposed to a "direct desire" for the usefulness or utility obtained by consuming goods. It is a desire for a possibility of acquiring another good by holding a certain good and then eventually of enjoying the usefulness and utility of the acquired good, namely, a desire for the direct exchangeability.

For example, if owners of each good came to not only "want a specific good he wants to consume," but also "want the good whose p direct exchangeability is the highest among goods around him," then the arrow (➔) between each good would change as in (2). In this case, the good *e* is wanted by all other owners of goods, making its direct exchangeability 4/4 = 1.0. This direct exchangeability is the maximum, unless the owner wants his own good. This is how the good *e*, which has acquired the highest direct exchangeability, turns into the general equivalent form, the only form allowing for direct exchanges with all other goods.

Now, the owner of the good *e* is in a position to be able to directly exchange with any other goods. The position, however, is not a property given by birth like throne. In the beginning, there is a network like (1), which has occurred by people seeking direct exchanges each other. Then the rule in people's desire would change, transitioning to (2). It is an acquired property that has occurred from within the system a posteriori.

There is a chance, however, that a certain good has acquired higher direct exchangeability than other goods because the usefulness or utility of the good may have attracted more desire at the initial stage of (1), rather than by a mere accident. For instance, there is a good chance that rice has acquired higher direct exchangeability than other goods, since rice has been a staple food in Japan. On the contrary, gold must have acquired its extraordinarily high direct exchangeability, because it is not only a highly scarce and beautiful luxury good, but also has superior physical properties for money such as corrosion resistance and malleability. In this sense, we cannot say the generative process of money has nothing to do with the physical and chemical properties originally provided with goods and their accompanying usefulness and utility.

Eventually, other owners than the owner of the good *e* would come to only seek "selling," direct exchange of their goods with money *e*, and "buying," direct exchange of money *e* with other goods they want. Then the desire for other types of

direct exchanges would eventually vanish and get extinct, transitioning (2) to (3). It is at this time that goods differentiate into money and commodities. Thus, all other goods than the good *e* would become commodities as objects of buying and selling through money. Only two types of trades have survived here: "sale" as exchange of commodities with money and "purchase" as exchange of money with commodities. The structure of a single money and commodities as described in (3) is stable under the inner rules of owners of goods we have discussed above.

This generative theory of money is called the "commodity theory of money" because it presupposes that money is originally a "commodity." However, it should be more precise to put this way: when a specific good turns into money, other goods will become commodities at the same time or that money and commodities simultaneously differentiate. Since commodities cannot exist unless money emerges, this discussion should rather be called the "goods theory of money" or the "realist theory of money."

In this example, we have shown as if a single money came out, and it was established in a stable manner, but it shouldn't always be the case. The example presumed that each owner would come to "desire one good whose possibility of direct exchange is the highest among the goods around him." Let us now suppose that each owner would "desire goods whose possibility of direct exchange is higher than a certain threshold." In this case, no money would emerge if the "certain threshold" was too high. If the threshold was too low, on the contrary, a process of many goods seeking to increase or decrease their direct exchangeability would reiterate, as if some goods were emerging as money and then vanishing for a short period of time. If the threshold was within a certain range, a single good or a very few goods would be wanted by more owners of goods, gradually increasing their direct exchangeability and eventually stabilizing at its maximum value. As a result, the structure of a single money and other commodities indicated in (3) will emerge. Even in this case, however, the direct exchangeability could be fluctuated by accident, and when the fluctuations grow to a certain degree, such money could collapse. In other words, money could emerge out of certain accidental conditions, and once established, it has its own property to sustain itself by incessantly reinforcing its own structure. Nevertheless, even such stabilized money through its self-reinforcing process has a danger of collapse one day by an accidental fluctuation or holistic change in people's desire.

It should be underlined here that, in either case, people's pursuit of fulfilling exchanges drives us to imitate others' desire such as "we want what others want" or to learn about desire dependent on others, and it is this very change in people's desire that allows money to emerge as an unintended consequence. Therefore, the fact that humans have such learning capability is the necessary condition for money to emerge. There is not only a causality from (1) to (2) in Fig. 3.2 where change in agents' desire through leaning brings about emergence of money, but also a reverse causality from (2) to (3) where emergence of money makes agents' desire dependent on others. In this sense, people's desire and preference as an inner institution and money as an outer institution form a mutually determining circular relation.

And this loop is the source of the self-referentiality found in "money is money because it is used as money" and what the enigma of money is.

In a market economy, the logic and structure similar to this keeps coming up in many different guises at various phases. Such phenomena as boom and bust of stock prices, expansion and collapse of bubbles, and emergence and decline of brands can all be comprehended in the same manner. Therefore, such a model of money is what characterizes the aspects of self-referentiality and self-fulfillment observed in a market economy.

The generative logic of money we have so far discussed reveals that money is necessary and indispensable as something "already and always" existing in a large-scale economy, but it neither predicts some particular money will endure persistently nor justifies the current money institution. Rather, it is through understanding the generative logic of money that we can recognize the possibilities of changes and diversifications of money, and it also provides us with a possibility of redesigning money as an institution.

And the logic also allows us to logically realize how the vision of market in Neoclassical economics, which preaches the market comes to a stable equilibrium where resource allocation and information utilization be efficient, could develop the logic far from a reality by ignoring the presence of money.

Next, we will overview the functional theory of money, the most familiar theory in the traditional economics. However, we need to keep in mind how accidentally money has emerged, how it could change over time, and there's a possibility it could collapse all of a sudden.

Money as Medium of Exchange

Here, we start by looking into the functions of money, which have been previously pointed out. Roughly speaking, money has three functions. In the conventional understanding, it is explained that money has the following functions and can command those functions at any given time. But it should be noted here in advance that those functions are merely "possibilities" which could be commanded as long as a distributed market as a network of bilateral transactions is functioning quite well, as we will discuss later. There is a chance they actually don't work well.

The first function is "money as medium of exchange." When barter or direct exchange cannot be established between the good x and the good y, it is possible to gain the good y in return for giving up the good x by an indirect exchange by way of money. An indirect exchange refers to an exchange where the commodity Cx is exchanged with money M (selling of Cx as in $Cx \rightarrow M$) and then money M, which he has been acquired, is exchanged with the commodity y (buying of Cy as in $M \rightarrow Cy$). Those two transactions of selling and buying can be described as $Cx \rightarrow M \rightarrow Cy$. As such, when money is used as a medium of an indirect exchange (selling and buying) for the purpose of obtaining a desired commodity, money works as a medium of exchange. When money keeps mediating indirect exchanges succes-

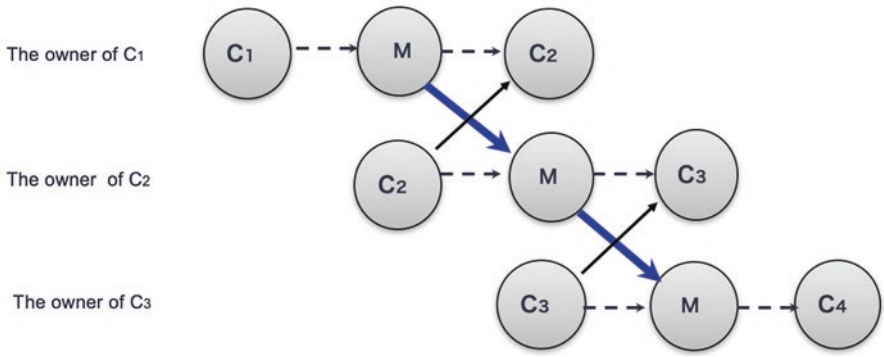

Fig. 3.3 Money as means of circulation or currency

sively between commodities, money will go on to circulate. In this sense, money is a means of circulation and is currency. An indirect exchange as selling and buying is thus called as "simple commodity circulation" in Marx's terminology.

Figure 3.3 indicates the process of money *M* circulating from upper left to lower right like streaming down in a river while mediating indirect exchanges of three commodities C_1, C_2, and C_3. *M*, repeatedly mobilized to purchase, weaves together a number of indirect exchanges like fabric while changing its owners. In an indirect exchange made of selling and buying, each agent's property metamorphoses as follows: "the original commodity" ➔ "money" ➔ "another commodity." For example, the property of the owner of C_2 shifts from left to right: $C_2 \rightarrow M \rightarrow C_3$. Although unseen from this exchange processes, there should be economic activities or human life behind it – e.g., the owner of C_2 who produces it acquires C_3, the original object of his desire, with money *M* gained by selling C_2, and consumes *C3*, which supports his family.

Money as Measure of Value

The second function of money is "measure of value." Money provides a "unit of account" that enables to uniformly express all the commodities' prices as single dimensional quantity. Such a function of money is called "measure of value." If money is gold, for example, a price can be shown as "an apple = 10 mg of gold" or "1 kg of beef = 1 gm of gold."

Under the gold standard, a unit of a state currency is expressed in terms of a certain amount of gold. In Japan, the law used to stipulate 1 Japanese yen equaled 750 mg of gold, but the currency unit of yen at present is not determined against the standard measurement of gold. Moreover, under the floating exchange rate since 1973, a state currency is indicated by certain volumes of other state currencies such as "1 Japanese yen = 1/100 US dollar = 1/150 euro." And those volumes determined in the foreign currency markets thus fluctuate in real time.

Yet it is still true that money expresses prices of commodities by multiple units of a currency. The expression of a commodity price is not "1 yen = 1/100 of an apple" but "an apple = 100 yen." In general, the price *pi* of the product *i* in terms of the money *j* is the quantity of money *j*, *Mj* received as the consideration for one unit of the product *i* and is displayed as *pi* = *Mj*. Money as a general equivalent form, whose direct exchangeability is the highest of all, is wanted to be exchanged with by all commodities. As a result, unit prices of commodities are expressed by an amount of money. "You can buy an apple for 100 yen, but you cannot buy 100 yen for an apple" because money is a measure of value but a commodity is not. Such an asymmetric relation lies between money and commodities.

Any good used to define a unit of value is called a *numéraire* (a basic good for standard of value). When three goods *a*, *b*, and *c* are exchanged at a ratio of 1:2:3, the *numéraire* is selected as *c*, and its price is set to 1 (*pc* = 1), so that *pa* = 3 and *pb* = 2 can be expressed. In this case, if the *numeraire* is changed to *a* or *b*, the expression of absolute value changes, but the relative price (relative exchange ratio) does not change (*pa*: *pb*: *pc* = 3:2:1), so there is no substantial influence. Here, the relation between goods is symmetrical. Although money is such a *numéraire*, it also has more special characteristics.

Assuming that there is always only one price for the same commodity, the relative price vector for goods is uniquely determined, as in the previous example. However, in a distributed market in which many sellers and buyers made bilateral transactions sequentially, even the same commodity is usually priced differently in each transaction at different times and places. In such cases, the relative price structure is not uniquely determined. Depending on choice of *numéraire*, the relative pricing structure will be different.

Neoclassical theory often assumes the "neutrality of money" in which money does not affect real prices (relative price), although it does affect nominal prices such as inflation. However, the arbitrariness of the *numéraire* cannot be established in a distributed market with "multi-prices to one good" because money can have a substantial effect on the production and consumption of goods. Money is not one of the neutral, arbitrary *numéraire*, but a nonneutral, monopolistic *numéraire* that affects the real economy. Money is the only measure of the value of all commodities.

The asymmetry appears as an asymmetry between selling and buying. Money can buy a commodity, but a commodity cannot buy money. The owner of money has freedom to choose which commodities to buy and decides whether he/she will buy specific commodities at certain prices. That is to say, the decision-making power to buy and sell commodities belongs to an owner of money as a buyer, rather than to an owner of commodities as a seller. If it is money that obtains the initiative for individual bilateral transactions, it is also money that forms the market as a network of bilateral transactions. It is money that forms the market.

On the other hand, a commodity is a good and/or service to be sold against and to be bought by money. When an owner of a good and/or service accepts to transfer his/her property to an owner of money in return for a certain amount of money as its compensation, it turns into a commodity. This is how money as measure of value

transforms a good and/or service into a commodity. The process is called "commodification."

Water, carbon emission rights, personal information, naming rights, honor, social status, voting rights, and organs – anything could be commodified and become a commodity which money buys and sells for. It was only until 150 years ago that slaves were bought and sold as a legal commodity in the United States. Whether a certain commodity is legal or not depends on the morality, ethics, and values in those countries or regions, and they change over time. Different kinds of money can only buy different commodities. *Oban* and *koban* (large- and small-sized oval gold coin formerly used in Japan) could not buy daily necessaries, and gold and US dollars cannot buy commodities in Japan. When we say "money forms the market," it also implies the commodification of goods and services by money.

Money as Store of Value

Money functions as a "store of value" if its real value is stable. This is the third function of money. Such money is called *hoard money*. The purposes of storing value are to save money for commodity purchases in the future, to prepare for fluctuations of general prices and unanticipated accidental damages, and to secure liquidity in anticipation of decline in prices of assets such as stocks and real estate. Just as the inventory of goods acts as a buffer to respond to uncertainties in the future and ignorance of humans, so does the inventory of money as hoarding.

In the case of commodity money with physical usefulness and material value like gold, it becomes a means of preserving value as an independent bearer of wealth by itself. Even if it has little usefulness or value in itself, such as an inconvertible note or an electric currency, it could be a store of value as long as it is widely accepted as a means of exchange and has a certain degree of purchasing power as measure of value. Such currency, however, has often suffered hyperinflation – a rapid decline of money value – throughout history, for reasons such as its quality degradation, excessive issuance, fiscal bankruptcy, or credit damage. Because of the risk, the value storing function of such money is not reliable over a long term.

While money as a means of circulation and of a measure of value is a means of purchasing commodities, money as a store of value is sought after for itself, that is, as a general wealth. A miserly desire to indefinitely store money as hoarding could occur here. For modern capitalism to take off, primitive accumulation of capital was indispensable, and saving has also played an important role in the contemporary economic growth. These were made possible by money's function of a store of value.

Money as hoarding also functions as a means of payment. A seller of a commodity could "sell on credit" to a buyer, where its payment could be postponed for a certain period of time. When it's due, the buyer must pay money as promised. In this case, money mobilized to settle on the promise or credit is a means of payment.

Credit, while presupposing a presence of money, was derived as a social device, allowing to sell and buy commodities in advance by lending and borrowing money

or to save money by mutually offsetting debit and credit on the books. In the previous example, if the buyer was a company, they could pay in a form of promissory note or bill of exchange they themselves have issued. A promissory note refers to an instrument of obligation (IOU), by which the issuer (the payer) promises to pay a specific amount of money on a maturity date to the receiver (the payee) or someone who carries it (the bearer). A seller of a commodity (a creditor) can realize sale of a commodity for a specified amount whereby he/she can avoid a risk of carrying dead stock and price change. A seller also can benefit by acquiring interest as a compensation of providing credit. On the other hand, a buyer (a debtor) can purchase and consume a commodity at present by deferring its money payment to the future with credit granted. Money as a means of payment plays a role of credit settlement, repaying debt and clearing its credit-debt relation. Credit money like banknote and deposit money develops on the basis of money as a means of payment.

The development of credit as such has paved a way for new opportunities to conduct selling and buying of commodities in a wider and larger scale than in the case with money alone. However, just like in the emergence of a form called money, the emergence of a form called credit has only amplified those two possibilities of the good and evil. It has created the possibility of making changes at a macro level of boom and recession even bigger over an economic cycle, the possibility of reiterating a tragedy of creating a bubble and bust. Thus, the problem with the impossibility of barter at its origin can never be solved; it merely postpones from one possibility to another.

Historically, money has evolved in two directions. The first is the dematerialization or informatization of money. Money tends to dilute materiality – from corn and livestock to precious metals, coins, and notes, deposit account, plastic card, and electronic money – approaching pure signs and symbols that have no tangible support. Money is becoming an "event" just like a concept or an idea. The second is the credit monetization of money. As observed in historical trend from the coinage as standard money to bill payable, convertible banknotes and deposit money to inconvertible banknotes, the credit information of money shifted from "standard" in which the material itself had value to "certificate" of debt in which redemption or refund is guaranteed, and finally the debt itself became nominal IOU without claims. Money was thus divided into a central banknote as cash and a bank deposit currency as a debt instrument of private banks.

The Market as an Ideal Type: Heteronomous Concentrated Market

We have attempted to explain three functions of money in principle. And a market is a chain or network of numerous trades of commodities (indirect exchange) fulfilled by money as a means of circulation. The economy of a whole society is being reproduced by production and consumption through such a network of commodity

trades. But, in some situations, there is also a possibility of recession where commodity trades could not form a chain and remain separated, and the reproduction of economy could be obstructed. Next, we will discuss how market can be described by the functions of money.

In Neoclassical economics, a common sense not only in the current economics but also among people nowadays, the market, in a word, is "heteronomous concentrated." Neoclassical economics not only overlooks the presence of money but also has failed to properly conceptualize it. Its theoretical hardcore, the general equilibrium theory, has built a model of market as a bourse, in which trials and errors through auctioning will discover an equilibrium price where demand and supply could meet in markets of all the goods, and all the goods will be exchanged all at once for the price.

According to its textbook explanation, the typical market is an auction-type "well-organized market," in which, under the assumption of the law of one price, producers and consumers as price takers are maximizing their profits and utility under budget constraints while looking at prices of goods and services shouted by the auctioneer. The demand and supply for goods and services are aggregated and pronounced. And the auctioneer would reiterate the trials and errors – i.e., increase prices of the goods and services whose demand exceeds their supply and decrease prices of the goods and services whose demand falls short of their supply – and would eventually determine its price, at which the demand and supply of all the goods and services are in equilibrium. Corporations as producers and households as consumers would conduct their transactions all at once at the competitive equilibrium price at general equilibrium. At this point, it is said that goods and services are efficiently (Pareto efficiently) allocated in the sense that any agents could not increase their satisfactions without making others less satisfactory, as produces and consumers are optimized. Neoclassical economics insists that it is the superior property of market that the efficient allocation of scarce resources can be achieved by the "invisible hand."

In this model of the concentrated market where the law of one price is presupposed, a price vector indicative of relative prices between a good or service and another is the only variable to determine demand and supply, and money is just the numéraire as a basic standard to determine their nominal prices. However, because the supply and demand of all goods are closely linked without any slackness, any one-time attempt to mutually coordinate them would impose an enormous information burden on the center. Given its realistic feasibility, therefore, a concentrated market cannot operate a large-scale and complex economy with enormously various kinds of goods in the real world. Also, producers and consumers lack the capacity to collect the necessary information and calculate solutions for the maximization of their profits and utility. It is thus impossible to run an entire economy in such a concentrated market, just as in a collective planned economy.

It is often said the general equilibrium theory is a model built by simplifying the mechanism of a stock exchange. However, real markets do not necessarily resemble it. Stock exchanges employ the trade rule called "*Zaraba* (a continuous session)" during their trading time except at the beginning and the end. It is a method where

if sellers' lowest price agrees with buyers' highest price, the orders at the price will be executed on the first-come-first-served basis. Because each time the price of a seller wishing to sell at the highest and the price of a buyer wishing to buy the dearest match, the ordered quantities at the price are successively executed as the price changes. Therefore, once the quantities of any orders are transacted, they cannot be canceled, and the price continuously fluctuates.

Another method for bidding is called "*Itayose* (opening and closing sessions)," which adopts the following manner: the quantities of selling market order and selling limit order aggregated from the lowest price and the quantities of buying market order and buying limit order aggregated from the highest price are firstly collected at a given point in time and then the quantities of the orders are traded at the same price in which both parties' orders match. So this is a double auction for each stock somewhat similar to the market rule suggested by the general equilibrium theory. But this method is only for opening and closing, and pricing is fixed by each individual ticker symbol. The market model of the general equilibrium theory, a model where all the commodities' prices would be simultaneously determined, is a practically impossible one, having little to do with a real world.

In a real-world economy, agents with bounded rationality do not perform optimization calculation, but follow the satisficing principle. For example, businesses respond to such uncertainties as unexpected demand fluctuations by keeping an inventory of goods and money as a buffer and autonomously make adjustments in terms of quantity and price following certain rules using the change in inventory of goods and money as the information to monitor the external environments. In a various time and space, buyers and sellers bilaterally trade goods setting the conditions on price and quantity on the one-to-one basis. The entire bilateral transactions form a "distributed market" of a network without centers. It is a loosely coupled system with slack due to various buffers. Neither the law of one price nor an equilibrium of demand and supply could be presupposed there, and the idea that all goods are efficiently allocated through price mechanisms does not work, as in the general equilibrium theory.

It is not entirely wrong to argue that money is a means of exchange to minimize a transaction cost to search and discover exchangeable commodities and to promote efficient indirect exchanges between goods or to view money as a mere means of measurement to determine a nominal value. But the problem is that those arguments only abstract partial aspects of money and they are far from sufficient to comprehend what a real-world market is as we have discussed above.

In heteronomous concentrated market, an individual agent does not have any autonomy or freedom of decision-making but only passively responds to information called price. Such a market theory is nothing but a construction built on a reductionist worldview by importing the concept of Newtonian mechanics (analytical mechanics) into economics. It is hard to believe that it can describe the reality of our market economy. It is particularly problematic that because the theory of heteronomous concentrated market considers economic transactions are possible to be carried out just like barter without money, it does not explain at all the significance

of our real-world market where trades are conducted by using money not only as a medium of exchange and a measure of value but also a store of value.

There are not a few things to be recognized as functions of money. But economics has never mentioned thus far what the most important positive function of money is. If we mention the conclusion in this regard in advance, money is the very device to enable us humans make autonomous decisions by diminishing the complexity of economic circumstances. In other words, money is an independent information medium, which can create a network called a market only by uniformly expressing economic values of any commodities. Yet, we need to be aware this is also what has been provided only as a "possibility."

The Real Market: Autonomous Distributed Market

Most of real market transactions are bilateral, a form of selling and buying mediated by money. It is hardly the case where an auctioneer standing in the center determines all the prices. If there was an auctioneer, the demand and supply information of all commodities need be concentrated in the head of an auctioneer, who would then need to process it single handedly, which must require excessive load and cost. It would be impossible in a large-scale economy of millions with tens of millions of commodities (see Chap. 2).

In reality, therefore, sellers and buyers have no way but to come to agree on transactions independently on a one-by-one basis, while the either side sets prices referring to past and local market prices and waits for the other side to come. In barter, an exchange cannot be realized unless the "double coincidence of wants" in which two people would want each other's goods and services accidentally takes place. Fortunately, with the presence of money, people can buy any commodities, provided they have money, so it is relatively easy to solve the problem of "double coincidence of wants." Furthermore, they can independently sell or buy at their adequate prices, without considering any global equilibrium conditions that would match the demand and supply of all commodities at a single point in time.

In this way, each buyer or seller determines the prices based on local information and judgment and buys and sells separately and sequentially. This is the reality of the market. In this autonomous distributed market, prices follow the law of many prices rather than the law of one price, since individual transactions by way of money are separated out as independent processes to a certain degree while they are loosely associated. Accordingly, the macroeconomic nature of the interactions of such processes as a whole is extremely complex.

Unfortunately, because of the high degree of freedom of such a loosely coupled complex systems, it is difficult to give an analytic conclusion on how it may behave as a whole in general. We could only write a program that realizes a model of an autonomous distributed market and then analyze its computer simulations. If you change various parameters with degrees of freedom, a specific macroaggregate value could turn out to be various cases: it could converge into a certain point and

turn out to be a periodic solution, even a chaos of infinite period, or divergence. The system may lock in and enter a stable phase and may evolve cumulatively with bifurcation and entrapment caused by a small change in parameters or slight fluctuations. In any case, the system could behave in an extremely complex manner, emerging an unpredictable macro behavior from the aggregation of micro behaviors.

Micro and Macro Behaviors

In such micro and macro behaviors, money creates an autonomous distributed market while driving the flow of production, distribution, and consumption of goods and services in an entire society. An autonomous distributed market is inextricably linked to the process of reproduction, which consists of production, distribution, and consumption of goods and services, and what combines them is money as a means of circulation. Accordingly, it should be more accurate to say the circulation of money incessantly forms a "network" called market, rather than money circulates in the "place" of market. A network called market cannot be formed unless money circulates well.

As long as money is functioning as a means of circulation, money (M) is merely a means to mediate my own commodity (Cx) and another's commodity (Cy) in the sale and purchase ($Cx \rightarrow M \rightarrow Cy$), and it does not matter whether money (M) itself is a good with its own value. As long as it is widely recognized and accepted as money, it does not have to have its own value in it. It can be convertible notes, which is guaranteed to be converted into gold by the issuer, or inconvertible fiat money, which cannot be converted into gold. Coins that are symbols of representing the nominal value and bills or electronic money that are nominal calculation units should also be fine.

When money circulation is smooth, commodities sell well and purchased commodities are consumed. At this time, a network called market is in a good shape. If money circulation stagnates, however, commodities will remain unsold, and inventory will pile up. A network as market does not form itself well in this case. It is not certain whether a market could shape itself; it is a "network of possibilities" dependent on a possibility of money functioning. Since Neoclassical economics regards money as lubricant helping to make indirect exchanges between commodities smooth, it insists "Say's law" in which selling (supply) creates its own purchase (demand). If this is held true, there should be no imbalance between the aggregate demand and aggregate supply at the macro level, and, therefore, all disequilibria between demand and supply in each good's market at the micro level will be resolved through price adjustments, and all markets will be on equilibrium.

However, this argument does not take account of the possibility that money may not circulate smoothly in the situation where people store money and then money stays within a market. If we recognized the market as such a place as an auctioning price mechanism, we would have an illusion that it always exists and continues to exist. But the market is a network emerging only as a consequence when money

circulation goes smoothly, and then, there is always a possibility that the market might not be formed well as a network of bilateral transactions.

Modularization and Hierarchization

After critically reviewing three functions of money, we have examined the market in our real world is not a heteronomous concentrated mechanism as Neoclassical economics describes, but rather an autonomous distributed network. Let us now look into the characteristics of this autonomous distributed market by drawing an analogy of the Internet.

As we have already discussed above, behind globalization is the development of information and communication technology as well as informatization of economy. The dramatic development of information and communication technology is also called the "information and communication revolution." The significance of the information and communication revolution should be found in the fact that information network was transformed from telephone network to the Internet.

A telephone network is a "concentrated network," where terminals are indirectly connected via a telephone switchboard. It is called an "intelligent network" because a super-large computer at the switching point automatically sorts out enormous amount of phone requests and allocates them to lines in order to guarantee good-quality sound for speakers. But the excessive load of information could fall on the switchboard, and if it goes down, the entire network will be paralyzed. Also, it is quite a complicated network, making it impossible to adopt a partial technological innovation. This is similar to a large bureaucratic organization or a state organization with administrative functions below it.

On the other hand, the Internet is a "distributed network," where computers controlling each site's router (path) are directly interconnected and data divided in a smaller unit called "packet" based on the protocol (rule) of TCP/IP is transferred in a "bucket brigade manner." This is also called a "stupid network" (Isenberg 1997) because it is quite a dumb system in the sense that it tries to relay data with an address to each neighboring site and eventually get it to a destination. This very expression shows a distributed network is not something guaranteed to work at any given time, but is only a possibility of working out. Since TCP/IP is an open standard "platform layer" independent of any particular physical structures, any networks could be interconnected as long as they follow the specifications of the Internet, and any applications could run on the network insofar as they support the protocol. This has drastically decreased the communication cost.

The fact that communication structure is independent by each hierarchy also makes technological innovation a lot easier. And even if some sites go dark, an entire network won't go down as long as other sites are up and running. The Internet is equipped with such robustness as well.

In the case of personal computers, component technology has been modularized for each part by shifting to a system configuration based on a model-independent

standard. In the information and communication industry including finance, after all, standardization of all information has enabled universal circulation, as in DOS or TCP/IP, which, in turn, has pushed modularization and hierarchization (three layers of the structure: an application layer, a platform layer, and a physical layer), eventually making a rapid technological innovation happen.

Standardization of codes separated the content and the medium of information and created hierarchical differentiation of technology. It is based on the essential nature of information: value of information is independent of the medium. Looking back in history, it is thus evident that modularization and hierarchization had already been established prior to the advent of computers or telecommunications.

The development of the letterpress printing technology invented by Gutenberg in 1455 has established the three-layered structure of printing, editing/publishing, and authoring. The printed version of the Bible opened the knowledge of the Holy Scriptures that had been in the Catholic Church's exclusive manuscripts to the public. As a result, individuals became subjects of faith and study, depriving the Church of their absolute authority.

In short, it is modularization and hierarchization that enabled the Internet of a flat and distributed network to emerge. And it was made possible by utilizing the "medium independency," an inherent nature of information, which had been established since the advent of the oldest information industry, the publishing industry. Information and communication technology has merely purified and accelerated it. However, the origin of modularization and hierarchization based on this media independency of information can be traced back even further in time. For, it is precisely what money made possible in the market.

Isomorphism Between the Internet and the Market

On the Internet, in order to transmit a large amount of information at high speed, data is divided into small units of packets based on a protocol and then transferred from various paths to a destination in a bucket brigade manner. It is money that plays a role of those packets in the market.

Money is an information medium to forward economic value from a seller to a buyer in a form of small packet so that selling and buying can be transacted separately. And it is also a buffer device to absorb a gap between expectation and reality. In short, money is not a convenient means of exchange, but an actual builder of the market as a "space" for the sale and purchase of commodities.

From this perspective, it is no wonder the Internet and the market share the same structure. The Internet, as the letterpress printing paved a way for modern individual and dissolved the authority of the Catholic Church, would expand individuals' capability of expression to a global level, dissolve even the communal unity of states or corporations, and transform capitalism into a global economic system based only on informational differences. But, from this point of view, the Internet merely pro-

motes to liberate "individual" and expand "freedom" in the same way that market economy based on money has dissolved feudalistic communities.

At the same time, the Internet is also creating new values based on unconventional communities and gift exchange principles. Let us now point to "free software" ("open-source software" could be more or less the same, but has somewhat different implications) as such an example.

"Free software" refers to software, which allows everyone to use, copy, and distribute it with or without modification or compensation, and it especially means that the source code is available and modifiable. So, "free" in free software does not mean it's free of charge, but means it's "free" to distribute and improve its copy. Free software is not a complete denial of the market. It certainly resists to monopolistic corporations like Microsoft, but it accepts the presence of distributor companies building free software systems and selling them to users.

The free software movement is rather based on the liberal thought against exclusive copyright. This is why the idea of free software is also called "copyleft." The copyleft is fully guaranteed under the "General Public License (GPL)." GPL is a recursively ruling free software license in the sense that when an original program bound by GPL is modified, the modified version must also be bound by GPL. Hackers participate in projects not for profit, but for reputation, respect, and joy of creation, and they keep improving and innovating free software cooperatively. They are forming, in a self-organizing manner, a community based on the ideas of freedom, sharing, cooperation, and information disclosure while working autonomously and collaboratively. Unlike passive and closed communities tied by blood or locality, it emerges based on individuals' conscious will and choices. We could say a free software community is a movement to expand the scope of freedom. This kind of community concept based on such freedom can be found in community currencies we will discuss later.

It should be clear by now that the Internet and the market are quite similar. The medium-independent modularization and hierarchization, evident with the Internet, are exactly what money makes possible in the market. Money, by becoming a bearer of value by itself, decouples the sale from the purchase of commodities as mutually independent processes and transmits information in a capsule, like a packet on the Internet in a bucket brigade manner. This provides buyers with money with both of two possibilities: freedom to buy any commodities in any place at any time and freedom to hoard money without buying any commodity. Sellers of commodities, on the other hand, have freedom to sell at a price they set by themselves based on their own information and judgment. Here, money establishes, as a possibility, autonomy and freedom in economic agents' decision-making. Thus, economic agents would go on selling and buying separately and successively through money. Market is nothing but a network emerged as a macroscopic aggregation of those individual bilateral transactions.

In such an autonomous distributed market, individual transactions are separate and independent, but are loosely coupled. Money is not a convenient means for indirect exchanges between goods, but it is what shapes the market as a "space" for buying and selling transactions of commodities. Money has enabled the market to become an autonomous distributed network similar to the Internet.

The Role of Money with Bounded Rationality

Money enables the market to be formed as a distributed network like the Internet. Although it is flexible and robust, it is not necessarily efficient. The network could show an unexpected upheaval unless money works well.

In the market, money decouples selling and buying of commodities as mutually independent processes in time and space. Selling or buying is an elementary process and a module that is indivisible any further. During the buying and selling process, money circulations are successively established as money consecutively forwards capsules of value information from a buyer to a seller one after another. As we have just discussed, a "packet" as a capsule of information is forwarded in a bucket brigade manner on the Internet. The market can become a network without a center like the Internet when money plays the similar role to a packet. It is during this process that a distributed market emerges as an aggregate whole of bilateral transactions. Thus, money is a platform medium to generate a distributed market through decoupling of indirect exchanges and encapsulation of information.

Furthermore, money gives the following solution to the problem of bounded rationality in information collection, calculation, and implementation that arises in a concentrated market.

First, autonomous agents at the micro level can make distributed decisions and transactions based on certain routines and rules by presuming money as a platform medium. In a large-scale and complex economy, a feasible method is to decompose to a unit transaction of selling and buying so that economic agents determine prices and quantities on bilateral transactions, whereby buying and selling are carried out sequentially in a distributed manner.

Next, interactions among agents at the micro level mediated by money as a platform medium generates meso institutions (e.g., stock markets, credit and bank institutions) and macro orders and patterns (e.g., economic growth, business cycle, financial bubbles) in a self-organizing manner, which in turn feeds back to autonomous agents at the micro level. The entire economic society operates through dual directed cause-and-effect relations among micro, meso, and macro levels.

In barter, the "double coincidence of wants" is necessary in order to accomplish direct exchange one good with another good. Indirect exchanges by way of money, that is, commodity trades in a market, can get rid of this severe condition. But that's not all. Indirect exchanges also get away with another severe condition inevitable in a direct exchange: a simultaneous exchange of one good with another good. This is because it is not necessary, in an indirect exchange involving money, to spend all the money obtained by selling one commodity for buying another commodity, and money can be carried over to the future. In this case, the budget constraint does not have to be satisfied by an equal sign as in "income = expenditure," and such a strict inequality as "income > expenditure" may be just fine. Furthermore, given lending and borrowing of money by credit institution, a strict inequality could also be reversed temporarily as in "income < expenditure."

In this way, since an agent holds money as stock at each point in time, budget constraints get slackened. Money is a medium that provides each agent with freedom to choose and buy any commodities in any place at any time as well as freedom to keep holding money without buying any commodity. This allows economic agents to make highly flexible and autonomous decisions.

When economic agents fix prices on their own judgments and then sell or buy a commodity successively in a distributed manner, rather than trading for a single price that matches the demand for and the supply of a commodity, the same commodity may have many different prices at a certain point in time. Now, if we consider a firm as a seller, many firms could face sold-out or unsold situations in this case, and things would not be necessarily fully coordinated as a whole. Some firms' sales would not hit their forecast for some fiscal year, leading them to record loss. But as long as the loss is within a certain amount of their cash on hand, they can purchase necessary raw materials and machines and continue production for the time being. They can make up by boosting income in the future and do not have to be weeded out by facing a bankruptcy.

Economic agents, in general, can continue to operate a series of economic activities such as production, distribution, and consumption without interruptions by hoarding a certain amount of money. This is because money as stock works as a buffer to absorb the gap between expectations and reality in uncertain situations. Individual trades conducted by economic agents storing money stock as a buffer, who use money flow as a medium, form a market in a bottom-up manner. Therefore, a market economy is a distributed system where agents are loosely interconnected and a complex system composed of nonlinear relations of many-to-many, not one-to-one. The market economy with such properties as flexibility, robustness, and emergence like the Internet has no reason to be expected to be stable and efficient in a static sense. Due to the inherent nonlinearity and network externalities, fluctuations are amplified in the self-reinforcing process, and chaotic fluctuations and phase transitions are likely to occur.

In a distributed market, there is no such Say's law that ensures demand and supply to coincide for all goods, claiming "supply creates its own demand." Say's law only holds in a situation of barter or in the case where each individual's sale (income) and purchase (expenditure) always coincide and money stock does not exist. Given the existence of the money stock and the freedom of individual agents to determine the money balance, because the demand and supply of commodities are independent variables, the aggregate demand and supply at the macro level do not coincide in general. For this reason, market's automatic adjustment mechanism does not work effectively, which could result in a macroeconomic cycle accompanied by unemployment and recessions in many cases.

Furthermore, under such a market, the fundamental proposition of welfare economics that a perfectly competitive market is Pareto-efficient, based on the argument about the existence and stability of static competitive equilibrium, cannot be established. Thus, in a distributed market, the stability and efficiency of the price mechanism cannot be guaranteed at all. Rather, it also could semi-cyclically

generate such phenomena as drastic price changes by speculation and bubbles and bust and create a trend of price changes by positive feedback.

A distributed market is highly dynamic and unstable, but, at the same time, it is equipped with capacity to create diversity or novelty. Furthermore, money plays an informational role in a distributed market. Money reduces complexity of large-scale external circumstances by its function of measure of value and expresses any values (not only economic, but cultural and ethical) in one-dimensional quantities (scalar). While the one-dimensionalization of diverse value information cannot evade over-simplification, it avoids the problem of excessive information load by reducing the world's complexity and creates feasible information flow for decision-makings and implementations. In this sense, money is a value information medium to help humans make quick and autonomous decisions.

Informational Function of Money

Let us examine more specifically how, with an example of a firm, money reduces the complexity of situations and helps humans with their autonomous judgments. An increase or a decrease in inventory balance of products, raw materials, or work in process is a signal to communicate to a firm how large its supply is relative to the demand in the market.

An increase in inventory informs that sales are slow and its supply is high relative to its demand. Once its inventory level goes above a threshold volume, the firm would lower the utilization rate of production facility and cut back raw material orders and employment in order to reduce output. If sales do not improve and its inventory level gets even higher after that, the firm would be forced to make even more drastic adjustments, such as shutting down production facilities or closing plants.

Thus, inventory plays an informational role of telling a firm how the sales of its products are going in the market. Although those adjustment processes are routinized, there can be wide variety of adjustment rules with respect to how and how much production should be reduced in response to what level of inventory. The diversity and heterogeneity of adjustment behaviors for firms can be observed in the characteristics of those adjustment rules.

Money has the same informational function as inventory. Money here refers to firms' assets that can be liquidated in a short term such as cash and cash equivalents (cash deposits, notes receivables, account receivables, and marketable securities). Fixed assets such as facilities and land have extremely low liquidity. Current assets include inventories (e.g., products, raw materials, and work in process) besides cash and cash equivalents, but those assets have lower liquidity than cash and cash equivalents because they cannot change to money unless commodities as finished goods are sold.

If we assume fixed assets, deferred assets, current liabilities, fixed liabilities, and capital stock are constant and there is no profit or loss carried forward from the

previous period, money (cash and cash equivalents) will increase when this period's net profit increase and will decrease when net loss is recorded this year. When sales pick up, inventories will lower, and money (cash and cash equivalents) will increase by a reduction of inventory and net profit, and current assets will increase by the amount of net profit. Conversely, if sales go down, its inventories will increase, and money (cash and cash equivalents) will decrease by an increase of inventory increase and net loss; thereby current assets will decrease by the amount of net loss. Current liabilities being constant, when there is net profit and then money (cash and cash equivalents) increases, the quick ratio (cash and cash equivalents/current liabilities), an index of a firm's capability to repay its short-term debt in cash, will be bigger. And vice versa. As such, the change in money (cash and cash equivalents) is one of important signals to measure firm's sales situation and profit/loss.

The accounting information has a crucial meaning not only for a firm itself but also for their business partners, financial institutions, and investors. For, increase or decrease in money (cash and cash equivalents) or a quick ratio is an easy but useful information to judge whether a firm's management strategy is appropriate for profitability. If it brings in profit and increases the firm's assets, the firm could confirm that its current management policy was a "correct" decision in the sense that it corresponded to market trends, so it can accept to maintain or expand further in current policy direction. If it suffers loss and its assets decrease, on the other hand, the firm must reexamine its current decision-making process. Therefore, money stock provides useful information to influence the actions and decision-making of its owners.

Various Rules of Money

As we will examine in details in the following chapter, there are three socio-economic coordination institutions to mutually arrange production, distribution, and consumption of goods and to enable reproduction of a socio-economy: exchange in market, reciprocity in community, and redistribution in state.

Money can be used and has been used in history in any of exchange, reciprocity, and redistribution. Before metallic money made of precious metal became dominant, such material money as cattle or grains had been used.

In gift-giving and return in reciprocity, and taxation and distribution in redistribution, it is possible to allocate goods and services without using money. As a matter of fact, before market economy was fully developed, gift-giving, treat, and labor offer in reciprocity and grains, specialties, crafts, arms, and labor military offer in redistribution, rather than money, had been more common. In other words, in socio-economic coordination institutions of reciprocity and redistribution, use of money is possible but not necessarily inevitable.

In contrast to it, use of money is inevitable in market. In other words, money can be used for reciprocity in community and redistribution in state, but money used for reciprocity and redistribution has different rules than money used in market. Let us now inquire into the rules of money.

Market has been established based on the presupposition of commodity trades by way of money, with its distinctive characteristics in massive and constant trades of a wide variety of goods. Market is a network formed by an enormous number of transactions mediated by money.

In some cases, a market means a specialized exchange operating for large-scale trades of particular commodities, such as fish market, fruit and vegetable market, commodity exchange, or stock exchange, following its particular trade agreements and price fixing methods (the principle of price and time priority and the principle of individual auction (e.g., *Itayose* and *Zaraba* methods)). However, such an organized and concentrated market is only a special type of market. A more general type of market is a distributed market formed as a collection of bilateral transactions in which a seller and a buyer make a transaction one by one. Individual bilateral transactions are executed if a seller and a buyer both agree over a particular commodity's quantity and price on the premise of money compensation.

Money is a means of exchange that enables the buying and selling of commodities in the market, but it is not an institution-neutral medium of exchange performing the same economic and social functions under any coordination institutions. Even if their physical properties or their functions are the same, they are different money institutions if their rules vary with respect to agents of issuance and management, types of tradable commodities, or scopes of their circulations.

For example, in reciprocity, shell bracelets and necklaces or large Rai stones are used as money, which bears cultural values such as beauty, intimacy, or fraternity and social values such as honor or social status. In redistribution, degraded coins or inconvertible paper currencies issued to pay public officials' salaries or to collect taxes backed by state power may be used, but, in a world market where state power cannot reach, gold bullion is used as money. Thus, various rules of money, including its materials or physical properties, can be viewed as replicators (genes) to define the natures of socio-economic coordination institutions such as exchange in market, reciprocity in community, and redistribution in state.

Money as an Event

In this way, it is now clear that the essence of money is not in a thing with physical properties like a precious metal or a good, but is in an event as social rules. Money as an event is a replicator of socio-economic coordination institutions, and it determines the nature of such a specific institution as exchange, redistribution, or reciprocity. Conventionally, there has been a tendency to think of money as an efficient means of exchange independent of market as an economic institution, which does not affect the property of market in any way. It may be because money has been consistently considered as a commodity as a physical thing. Money, like commodities or capital, is rather a circulation forms of market, but without money, no market can exist. In that sense, money is the platform institution of market.

Market also has diversity. The institutional properties of different types of markets are determined by the properties of money as a replicator. Material money forms regional or domestic markets, while gold money creates interregional or world markets. Cash currency forms markets for transactions in smaller amounts, while deposit money creates markets for transactions in larger amounts. Although the gold standard system brings about stabilization of the exchange rates by the price-specie flow mechanism, the floating exchange rate system is driven by speculation and competition of investors or speculators who buy and sell in order to obtain as much profit as possible, and does not have such a mechanism to stabilize the exchange rate. Of course, money does not necessarily determine every aspect of the properties of markets. All of such various institutions and laws as accounting systems, business practices, civil law, commercial law, or antitrust law are replicators that determine the properties of markets.

If money is a replicator of a socio-economic coordination institution, then its corresponding interactor is a community or a socio-economy, not an individual person or corporation, that adopts those socio-economic institutions. The socio-economic effectiveness of money is determined by whether individuals or corporations accept external rules of money as their internal rules, that is, by internalization of external rules. Money that a majority of individuals or corporations accept will continue to circulate with its credit and value stabilized, while money that many individuals or firms are not willing to accept will reduce its value. On the other hand, the fitness of individuals and firms in the socio-economy is determined by how well individuals and firms adapt to the money institution and they use it. If they fail to adapt well, they will lose their income or assets and eventually go bankrupt. Although there still remains a path for turnaround and rebirth, they will be subject to economic selection or social punishment.

In this way, selection takes place not only at the micro level of economic agents such as individuals and firms but also at the meso level of money and other institutions, through which the dynamics of the macroeconomic society is determined. Through the multilayered selections, economic agents or money will not converge into a single entity as unification, but will continue to change while showing diverse variations.

For example, if we call the way how individuals perceive, accept, and value money in the evolutionary process "money consciousness," we have found that it varies depending on acquired factors such as occupation, education, and experience, rather than innate factors such as gender, age, or nationality. The fact that money consciousness is different among individuals means various internal rules are widely distributed for the same external rules of money. What implication such diversity has for a socio-economy remains to be studied.

Advantages and Disadvantages of Autonomous Distributed Market

Finally, let's organize our thoughts, from the perspective of autonomous distributed market, on how we can comprehend merits and demerits of market. Under certain conditions, there are three advantages of the market as follows:

1. If firms freely compete in a market, the price of the same commodities will decrease as a consequence of price competition. Then, people's standard of living is supposed to improve.
2. As a result of innovation and diffusion through the introduction of new technologies and new products by firms, price reduction and quality improvement of the same products, as well as diversification of technologies and products, will be achieved. Accordingly, the freedom of choice as the potential for realizing human happiness expands, and people's life satisfaction is supposed to rise.
3. The market based on freedom of contract is also an important political framework to support freedom. The market establishes the autonomy of free individuals. If the market was abolished, enormous political power would be concentrated in certain political parties or states backed by the economic authority for planning, which would eventually suppress individuals' freedom as in the former Soviet Union. The market also serves as a bulwark against nationalism and dictatorship in that it precludes governments' overall economic planning and intervention. However, such problems as what private property rights should be granted and then what needs to be excluded from objects of trade or investment are not determined by the market itself but are left to be settled to laws based on morals and customs. It is highly influenced not only by changes in people's values or norms but by lobby activities by corporations and economic organizations.

An autonomous distributed market is obviously imperfect. When selling and buying take place separately, it leads to a situation where there are many prices to one commodity, and some commodities may be sold out, while others remain unsold here and there, and the whole market will not necessarily adjust itself. The market economy, like the Internet, is flexible, robust, and emergent. It's not necessarily stable and efficient, however. Because of its nonlinearity inherent in itself, fluctuations may amplify themselves in a self-reinforcing process, and it is highly likely that unanticipated drastic changes may occur. Thus, three shortcomings of the market are as follows:

1. If markets are liberalized, economic and financial instability will increase, and economic fluctuations will also amplify. During a booming period, banks increase lending through credit creation, and the money thus created is directed to various investments. If the money is directed to meet such actual demands as investments in factory and equipment, the prosperity may continue, and the economy grows for a certain period in time. However, the opportunity for the

profit obtained from real economic growth will diminish sooner or later, and speculative funds will flow into stocks and real estate, causing the bubble to expand. However, if the interest rate gets rising, the bubble will burst at a certain point in time, and bad debt will accumulate, and a financial crisis causes economic recession. Such an economic cycle increases inequality through bankruptcies and unemployment. Accordingly, it is not correct to say the freer the market becomes, the more efficient it is. The problem with deregulation and liberalization lies in here.

2. Although diversification of technology or commodities is fulfilled through competition in a market, it also accompanies pollution or environmental destruction. It is also often the case unnecessarily diverse commodities are supplied. Companies would drive consumers' desires with excessive advertising or promotion. Market, while looking to fulfill diversification, would actually standardize people's life and make it impossible for them to choose from diverse lifestyles. It should be noted here that firms do not necessarily consider its influences on the natural environment, human body, or a socio-economy because they seek price competition or innovation for the purpose of profit. The diversity of technology and commodities is highly skewed. Therefore, it should be better to say that the market fulfills its diversity in a limited manner.
3. Trades through money in the market disconnect human relations and make humans' communication quality poor. Also, the logic of survival of the fittest leaves behind the weak and losers, eventually lowering morals in an entire society.

Various problems take place following globalization because these shortcomings of the market are increasingly more noticeable. To solve these problems, we need to come up with an idea of the market society, in which positives with the market are inherited and the negatives are overcome. If money is to create a market, as we have discussed in this chapter, what prospective could we have? If we can alter the property of money, the property of the market as a network formed by it may also change. It is when viewed this way that a big possibility will emerge to design a new type of money different from a conventional legal tender as well as an institution of a new market society based on a new type of money.

Although we will discuss in details in Chap. 5, we can put a conclusion now: to redefine the nature/state of money as a communication medium for that matter in the first place and to change the current nature/state of money would become the breakthrough to overcome various crises the current globalization has brought about.

Chapter 4
Internalization of the Market and the Evolution of Capitalist Economy

How Are Economic Theories Evaluated?

Various economic theories coexist in modern economics and present different views and analyses on markets, money, and capitalism. Some theories focus on only a market economy as an analysis target and argue that there is no such thing as a capitalist economy. At first sight, regardless of the pros and cons of such ideas, it seems that we only have to simply appreciate the theory that can make the most appropriate description, most convincing explanation, and most objective analysis.

However, in practice, theories are not evaluated only from such viewpoints. Each theory has axioms at its center whose correctness is a priori assumed. They were originally intended to hypothesize for describing and explaining "how is modern socio-economy?" in a proper and appropriate manner, but at the same time, they often indirectly show the value judgment on "how should modern socio-economy be?" from the viewpoint of norms such as growth, freedom, equality, and fairness.

This is because, in order to form a theory based on some axioms and postulates, it is necessary for a theorist to first decide in advance which sides of reality are emphasized based on his own values and interests and to form a certain vision on reality based on such judgments. If it is a theoretical exercise to create a coherent model and explain reality by choosing the elements and factors that make up the extracted vision while abandoning the other elements and factors, then it is an implicit choice to describe reality as "how it is" and a certain normative judgment to do so. In this respect, the theory does not describe the reality as it is but describes the reality that is cut out and constructed from a certain viewpoint, and the way of cutting it out implies the cognitive interests of the theorist. This means that we cannot judge a theory simply by the standard of whether the theory describes reality objectively.

Let's explain this with a photographic metaphor. Photography is often believed to be a technique to describe a scene very objectively in comparison with paintings. But are photos really "objective"? In order for a photographer to take a photograph,

M. Nishibe, *Whither Capitalism?*, https://doi.org/10.1007/978-981-13-0704-1_4

it is necessary to select what kind of object at what kind of moment, with what kind of camera and film, what kind of frame and angle, and what shutter speed and exposure. These choices are determined by the value and interest of the photographer. Consider a single photo taken by a military cameraman. His interest or motive could be in capturing the bravery and superiority of his own military. It could also be in portraying the enemy to be evil and inferior, appeal to the public the inhumane atrocities of war, or it may even show empathy toward the soldiers who are weary of war and want to go back to their motherland. Whatever they decide to capture, the moment, object, frame, angle, and everything will be selected. Taking a picture also means discarding the scene outside the frame at the moment. As a result, even if the photos are taken at the same moment of the same war, they would reflect completely different scenes. In this way, a single photo that in first sight seems to reflect objective reality is actually a product of so many selections of the photographer, depending on his interests and values. Furthermore, those who see his same photo would also have completely different impressions and sensations depending on the interests and values of their own.

Therefore, the evaluation of various theories is divided according to what kind of visions people hold about real economic society and what kind of value judgments they carry out on it. For example, those who appreciate the modern market economy since it encourages freedom and promotes growth will highly rate the theory that turns the spotlight on those aspects and factors, believing that the theory "objectively" describes the reality. On the other hand, those who observe that the modern market society excessively lacks equality and fairness will be dissatisfied with the fact that the same theory does not describe the reality "objectively" and estimate it low. Rather, they would praise another theory that they think can "objectively" explain reality in terms of unfairness and inequality. Thus, economists and the general public must inevitably evaluate economic theories concerning the norms and values contained in their core hypotheses.

Furthermore, since economic policies are formulated and implemented based on a particular economic theory, the economic theory is evaluated by the effectiveness of such policies. If economic stimulus measures based on a macroeconomic theory recover the economy and improve people's lives, such a theory will be appreciated. On the contrary, if the economy does not get better at all, people evaluate such policies and theories badly.

However, apart from the evaluation of the pros and cons of the consequences of policies, whether or not such policies are realized will be another criterion for evaluation. The very fact that economic policy is implemented indicates that there are relatively more people who support the theory behind the policy and the value that the theory implies. Because the distribution of people's values and interests has a strong impact on policy evaluation, the execution of policy itself, whether the policy is effective and the theory is true or not, represents the evaluation of theory and values that support the policy. Even if such supported policy was implemented and found ineffective, the theory's fundamental assumptions would not be instantly denied because the values and norms contained in the theory have received much support from many people. In that case, the analysis would be reworked, the

outcome of the theory would be changed, and a new policy prescription would be rewritten, or the analysis would be left as it is and the prescription that seems to be more effective would be reintroduced.

Thus, economic theories are not simply evaluated by objectivity or validity itself, but in reality, they are always evaluated by the implementation and effectiveness of their applied policies. Such evaluation depends largely on the environment of the economic society where the theories are placed and the distribution of people's values and interests, rather than on the contents of the theories themselves. This means that the same economic theory may quite possibly be evaluated completely differently depending on historical contexts and political situations. Whether it is applied as a policy or not, and if it is implemented as a policy, whether it is effective or not is also affected by such factors. If economic theories are to include self-referential descriptions of their evaluation of theories and effectiveness of applied policies, they must be faced with the "reality" composed of not only the historical and environmental socio-economic situations but also people's value and opinions as well as their distributions. This shows the fundamental difference between natural science and social science.

Three Socio-economic Principles

In this chapter, I will try to make a detailed discussion from the view of the theoretical concept of "internalization of the market" that I advocate for understanding capitalism. It is merely repositioning the "extensive expansion" and "intensive deepening" of the market proceeding as globalization, discussed in Chap. 1, into a larger historical perspective and theoretically reconstructing the process of the emergence and evolution of capitalism. The first purpose is to explain what capitalism is, and the second purpose is to show that capitalism is not a complete system but is still evolving. Here, we ask whether capitalism ever exists, how it can be viable, what strengths and weaknesses of capitalism are, and how it evolves.

As a consequence of the earlier discussion on economic theories, I would like to point out that the question of what capitalism is depends on the vision of capitalism, which is how one visualizes it. Capitalism, on the one hand, is often considered to mean an economic system, which is an object with specific characteristics. On the other hand, it also indicates the special ideal way of purpose, motive, and desire in which the agent of enterprise and human being tends to pursue profit and storage infinitely like a miser. All of these contain partial truths. We think that capitalism must be explained from both objective and subjective sides. Capitalism refers to a complete economic system with certain characteristics, and at the same time, it refers to a system that is a set of rules that create and change such a system. Corporate objectives and people's motivations are programmed by incorporating those rules into themselves.

From an evolutionary viewpoint, economics should focus on the economy in general, not just the market economy. Although we tend to think only of the market

economy and in particular the modern market economy, the market economy is not necessarily inevitable, and it may have just been born by a little chance and spread all over the world. The universality of the market economy might not be as absolute as we feel.

People once believed in the geocentric theory that they live at the center of the universe and the universe revolves around the earth. However, at present, we all know that this is not the case and that the heliocentric theory in which the earth moves around the sun is correct. Thus, just as the medieval people who believed in the geocentric theory, those who take the market economy for granted should first suspect that they may not know the right perspective of their positions because they believe that they are always at the center of the world. Then you can imagine that there could be an economy different from the market economy.

Besides the market, there are also the state and the community in the socio-economic institutions that enable economies in general to be sustainable. In addition to the market economy, there exist non-market economies such as planned economies by the state and reciprocal economies by the community.

Animals need minimum food and water to survive. This may require eating plants such as grass and nuts or preying on other animals. In order to survive, human beings must consume basic goods and services such as food, clothing, and shelter. As long as humans obtained food from gathering and hunting, their harvest was uncertain and life was not stabilized. However, life is stabilized for the first time when plants such as cereals and fruit trees are grown in accordance with the climate on the earth and harvested periodically. Even in agriculture, if productivity is improved by the development of tools such as plows and hoes, surplus parts that are not consumed at present can be stored in stock in preparation for weather uncertainties such as drought and bad harvest.

As the division of labor advances and the center of industrial structure becomes the secondary industry such as manufacturing and machinery industry and all goods and services are bought and sold by money, producers cannot continue to exist unless they purchase raw materials, machines, and labor power to produce and sell products for profit or at least not to continue to lose money. Repeated economic activities, such as consumption, production, and distribution, reproduce the economic system as a whole (Fig. 4.1). For this purpose, economic adjustment methods are essential to coordinate the production and consumption of goods and services and to distribute goods and services from producers to consumers.

What are institutions for socio-economic coordination and where are they implemented? According to Karl Polanyi, there are three organizing principles: (1) exchange, (2) reciprocity, and (3) redistribution.[1] They are not mutually exclusive

[1] Karl Polanyi explained that householding in a family unit is the fourth socio-economic coordination principle (Polanyi 1944). In agriculture, each family depends on autarky where it produces such necessary goods as food, textiles, and foods for its consumption. Householding is a form of economic integration that functions within "families" which include undifferentiated coexistence between self and others. Self-sufficiency in domestic administration is the principle of the life that people reproduce themselves or their families within family units. But, later on, Polanyi included

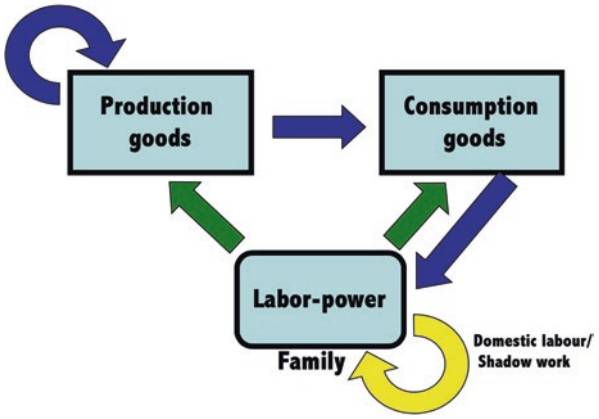

Fig. 4.1 Production process

and the socio-economy has been operated by partially combining these three. Of these, reciprocity and redistribution are formed from symmetric and centric patterns of social relations. We shall represent the institutional structures or domains that respond to the socio-economic coordination principles of exchange, reciprocity, and redistribution by "markets," "community," and "states." The integrated institutions or domains of each principle overlap with each other, and this set of institutions or domains represents a non-market economic society.

These features can be summarized as follows:

(1) Exchange is the alternating replacement of equivalent goods or services by two private owners of their own free will, whereas market exchange mediated by money based on a free contract is the alternation of ownerships between a commodity with a fixed price and the money equivalent to the price, that is, sale or purchase.

(2) Reciprocity refers to mutual help through gifts and reciprocation (contrary gift) between two parties, or in the case of three or more parties, mutual benefit is realized by closing the chain of gifts in a circular fashion. The rules for this purpose are inherited as community customs and traditions. It functions within "communities" which consist of horizontal and symmetric relations such as a kinship system. Communities, different from markets and states, are social structures based on the third socio-economic coordination principle, reciprocity.

(3) Redistribution refers to the systematic collection and redistribution of goods, services, or money through the collection institutions of taxes in a centralized and compulsory manner based on laws enacted by states or governments. The

---

self-sufficient householding in a family in reciprocity in communities, establishing three socio-economic coordination principles probably because he had come to recognize that the former is not independent of and cannot be separated from the latter (Polanyi 1977).

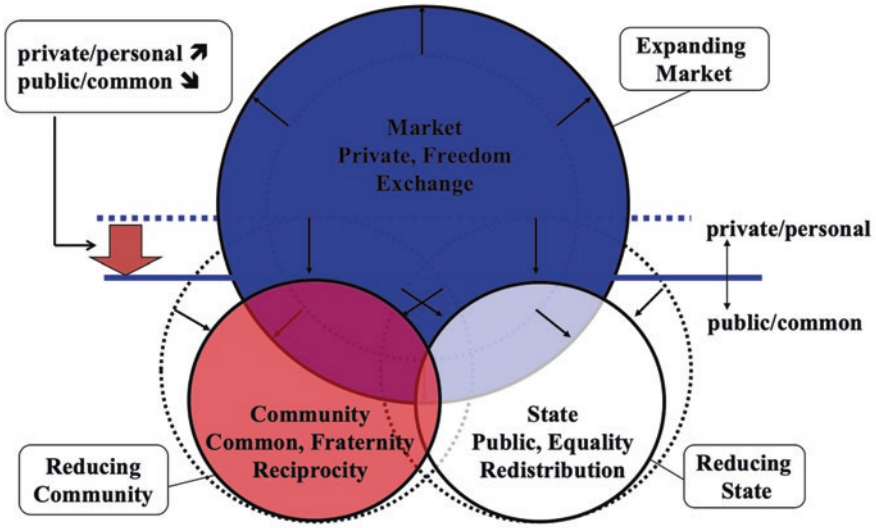

Fig. 4.2 Globalization: the tendency of market to expand and of community and state to reduce

states or governments are such agents as huge ancient empires or modern nation-states that collect taxes from the people and redistribute them to the people in the background of the existence of centralized military, political, and economic authorities. This principle functions within such empires and states based on power relations in a pyramid-shaped hierarchy with a center, such as a king, an emperor, and a president.

Here we would like to confirm that the three principles of socio-economic coordination, namely, exchange, redistribution, and exchange, originated in the French Revolution and represent values equivalent to each of the three political ideals of the French Republic, freedom, equality, and fraternity, and correspond to the private, public, and common socio-economic spheres (Fig. 4.2).

Capitalist Market Economy as a Special Form of Market Economies

Then, what are market economies that correspond to "exchange" and capitalist economies?

A market economy is an economic system in which economic activities such as production, distribution, and consumption are conducted mainly through the free trade of goods through money. A capitalist economy is a special form of market economies in which Marx's "industrial capital" as a profit-pursuing agent plays a prime role in commodity production under the precondition that labor-power has

already been commodified (Marx 1867). Industrial capital is a manufacturing firm in the form of a joint-stock corporation that produces its products by utilizing means of production (raw materials, machinery, factories, and land) and employing labor-powers and sells them in the market to pursue profit.

The form in which the relations between economic agents appear as commodity and money relations is called "circulation form" (Uno 1980). Commodities (C), money (M), or capital (K) is the basic circulation form. In almost all markets, the combination of these basic forms constitutes a market relation.

Here, there are three types of capital forms (K):

First, interest-bearing capital is a form of capital in which money is lent at a certain rate of interest for a certain period and the principal and interest are repaid by the promised date. This can be written as M...M' (=M + ΔM) where "..." represents the outside (for industrial capital, the production process) of the circulation process. For this capital form to be established, there must be another capital form in which the money borrowed can be increased and repaid. They are merchants' capital and industrial capital. Interest-bearing capital cannot exist independently unless it is parasitic on another capital.

Merchants' capital is a capital form that pursues the trading profit of goods. "Buy any product cheaper with accumulated money as a store of value, and sell it dearer to earn profits" is the prime rule of merchants' capital, and if individuals or organizations internalize such a rule, they become merchants or speculators. This form can be written as M-C-M' (=M + ΔM) where "-" represents the circulation process.

Merchants' capital is also called "the general formula for capital" because it is the most universal form of capital that can exist in the market. Although this form derives from C-M-C′, the simple circulation of commodities in which one sells one's goods to obtain money to buy other goods, the rules and purposes are quite different. Since merchants' capital does not seek for particular commodities to deal with, but a trading profit from the buying and the selling, this form can be iterated repeatedly for profit. Thus, capital forms have the potential to perpetuate value augmentation infinitely in their forms. On the other hand, the purpose of the simple circulation of commodities is the desire of the commodity owner for the function and usefulness of another commodity, and if the other commodity is consumed, this desire will be satisfied, and this form is completed there.

Commodities C traded for the purpose of profit ΔM does not necessarily have to be general goods and services for consumption. At present, not only financial institutions and business enterprises but also many self-employed and individuals trade various financial instruments such as stocks, bonds, foreign exchange, and other derivatives, as well as various merchandise such as real estate, precious metals, and grains. They can be all regarded as merchants' capital at this end because all of these transactions are for the profit from sales.

However, in these financial commodities, there is not only an order of buying products cheaply and then selling them at a higher price but also a form of buying them back at a lower price after selling them at a higher price. Short selling in stock margin trading involves borrowing the shares to be sold from a third party at interest and selling them first, then later repurchasing the shares when they become cheaper

and paying them back. FX and derivatives, which are settlement transactions, are sold, and the difference can be settled when they are repurchased. It is the same as in the case of spot transactions that the difference between the purchase and sale becomes a profit. But it should be noted that the form, in this case, is C-M'/M-C, which is obtained by reversing the order of buying and selling of M-C-M', and is similar to but completely different from the simple circulation of commodities, C-M-C′.

Industrial capital appears as the third capital form. Industrial capital is a circulation form that repeatedly seeks for earning and accumulation of profits (ΔM) while it purchases (M-C) the production inputs of the means of production (MP) such as machinery and raw materials, as well as labor-power commodity (L), produces the products by utilizing such inputs (C...P...C′), and sells them (C′-M'). Therefore, the scheme is written as M-C...P...C′-M' (=M + ΔM), in which the production process is enclosed in the circulation processes on both sides. Its actual economic agents are business enterprises that manufacture and sell some products by employing the labor-power in the market. Craftsmen or sole proprietors can produce in their factories and sell their products to earn profits, but if the labor-power employed in there are only themselves and their families and relatives, such self-employed labor-power is not a commodity for sale and they cannot be seen as industrial capital.

Generally, it is said that the capitalist economy is established by the appearance of the industrial capital, but the labor-power must become a commodity in the labor market for the industrial capital to come into being. A Japanese Marxian economist, Kozo Uno thought that the existence of the labor-power commodity was the fundamental condition for the establishment of the capitalist market economy (Uno 1980). In recognition of Uno's ideas, we shall see later how the capitalist economy evolves as the commodification of labor-power becomes more advanced.

The resource allocation within industrial capital is entrusted to the direction and supervision of the capitalist or the manager who is the representative agent of capitalist as the principal and is carried out based on the planning principle. Though the conditions and contents of the labor are determined by the labor contract, the worker belongs to the command system of the enterprise in working hours. In addition, as production is carried out in a large scale, manufacturing cost per unit of product tends to decrease, and the size of enterprise generally becomes large due to the effect of economies of scale. Therefore, the management department which specialized in the management supervision is separated from the worker, and the manager appears. At the same time, a company became a joint-stock company, and when its securities were bought and sold on the stock market, shareholders invest in shares of a company. This is the separation of management and ownership. As a result, the principal-agent problem that the asymmetry of information existing between the principal and the agent causes moral hazard and inducement incompatibility has become serious. Even today, however, the tendency to separate management and ownership is becoming stronger not only in large companies but also in start-up ventures.

In modern times, the subject of economics must focus on capitalism because the capitalist market economy is dominant, but Neoclassical economics always refers to

the subject of its analysis as "market economy" and implicitly ignores the difference between "market economy" and "capitalist economy" or denies its existence. Some economists might think that the "capitalist economy" is a colloquial term given to the "market economy" by those who criticize it from various perspectives such as poverty, exploitation, inequality, and instability and that such a concept cannot exist academically. In any case, Neoclassical school does not explain the capitalist economy at all.

On the other hand, an Italian famous economist, Piero Sraffa never used the word "capital" or "capitalism" in his book entitled *Production of Commodities by Means of Commodities: Prelude to a Critique of Economic Theory* (Sraffa 1960). In the book, he accurately criticized Neoclassical price theory based on scarcity and the marginal approach and modernly restored the classical price theory based on the reproduction approach. He declared that he will not use the term "capital" in a quantitative connotation in his book since it would lead to the supposition that capital in terms of quantity can be measured independently of, and prior to, the determination of the prices of the products (*ibid*, pp. 9–10). This is an important issue that subsequently leads to the "capital controversy" that the prices of commodities (consumer goods and capital goods) cannot be determined independently of the ratio of distribution (rate of profit), so his decision is quite understandable.

However, that does not mean that he used the terms "capital" and "capitalism" in a qualitative sense. This is probably because Sraffa, as if he were a structuralist, statically understood the economy as the "process without subjects" that repeatedly reproduces itself and did not consider capital forms as agents (subjects and agency) that dynamically drive the economy, as we do here. Actually, in Sraffa's economic system, money as a means of exchange is not given an important role, and a kind of concentrated market that achieves the equalization of profit rate and the law of one price is assumed instead of supply and demand balance like the general equilibrium theory. In this book, the concept of capital is completely different from that of Sraffa because the real image of the market is the distributed market that money creates as a network of bilateral transactions by Chap. 3.

A capitalist economy is, strictly speaking, a "capitalist market economy" which is a special form of a market economy. Therefore, the relations among an economy, a market economy, and a capitalist market economy are shown in Fig. 4.3.

This figure shows that non-market economies such as reciprocating economies, redistributive economies, and self-sufficient economies exist outside the market economy. Whether such a non-market economy can continue to exist in relation to the market economy and the capitalist market economy is examined in the discussion on globalization. At the very least, the same market economy can be considered as not only a capitalist market economy in which the producers are mainly commercial enterprises but also a non-capitalist market economy in which the producers are mainly individuals, self-employed, cooperative enterprises, and local and central governments. Of course, whether a non-capitalist market economy can survive with a capitalist market economy is another matter. Besides, the actual capitalist system always includes not only profit-making enterprises but also agents such as nonprofit organizations (NPO), families, and governments, and it is a complex

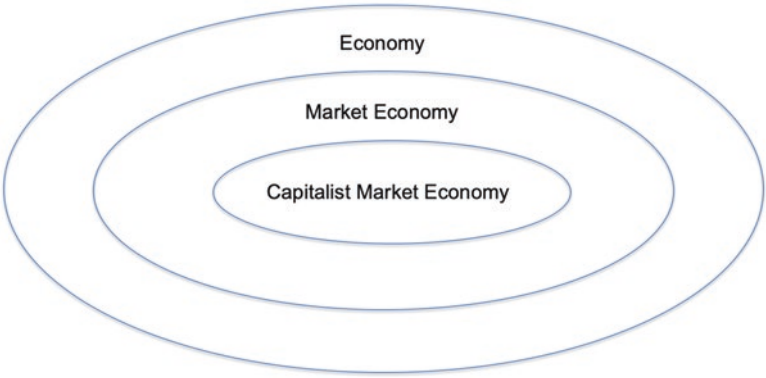

Fig. 4.3 The relations among an economy, a market economy, and a capitalist market economy

including markets, states, and communities as a socio-economic coordination institution.

Commodity Exchange Between Communities

How do markets arise and expand, and how do capitalist market economies, which are special forms of market economies, form and evolve? First of all, the image of the expansion of the market is that it expands spatially and globalizes, but the market does not only expand in size and scope. Markets will infiltrate more fundamental parts of the socio-economy, such as human life, information, and the natural environment.

The market domain of commodities that can be bought and sold in money occurs outside the community or among multiple communities, and it expands and deepens. Marx reiterates at various points in this historical trend that exchanges of goods occur between communities, which then reflexively penetrate the communities' interior, breaking down traditional communal relations.

"In fact, the exchange of commodities evolves originally not within primitive communities, but on their margins, on their borders, the few points where they come into contact with other communities. This is where barter begins and moves thence into the interior of the community, exerting a disintegrating influence upon it." (Marx 1970, 50).

"it is altogether wrong to assume that exchange within the community is an original constituent element. On the contrary, in the beginning exchange tends to arise in the intercourse of different communities with one another, rather than among members of the same community. Moreover, although money begins to play a considerable role very early and in diverse ways, it is known to have been a dominant

factor in antiquity only among nations developed in a particular direction, i.e., merchant nations." (Marx 1970, 208).

"Trading nations, properly so-called, exist only in the interstices of the ancient world, like the gods of Epicurus in the intermundia, or Jews in the pores of Polish society." (Marx 1976, 172).

"The exchange of commodities begins where communities have their boundaries, at their points of contact with other communities, or with members of the latter. However, as soon as products have become commodities in the external relations of a community, they also, by reaction, become commodities in the internal life of the communities." (Marx 1976, 182).

"The development of products into commodities arises by exchange between separate communities, not between members of the same community." (Marx 1981, 278).

The process in which the markets that arise between communities and states dissolve the substantive economy and transform and reorganize it through the exchange principle is nothing but the historical process in which a capitalist economy emerges from a market economy. In order to explain the image of market expansion and deepening in a logical way, let us define "internalization of the market" as the process in which money and capital forms in the market emerge by self-organization from socio-economic relation of goods and wants of people, infiltrate the inside of a non-market society, and integrate the society into the market economy.

This can be considered in the relation between the aforementioned three socio-economic coordination principles: market, community, and state. Namely, the market arises outside or around state and community, but capital forms expand and deepen markets through profit-seeking activities, and gradually break down the principles of redistribution of state and reciprocity of community, and replace them with the principles of money and commodities exchange of the market. As a result, the socio-economy as a whole is transformed into a market economy, and a capitalist market economy is established, which further evolved.

Internalization of the market is the process of changing the pattern of the replicators (social rules) of three types of commodification: (1) external commodification, (2) internal commodification, and (3) general commodification. In this process, the market is formed and expanded while selecting out non-market institutions. As we will see later, as (1), (2) and (3) proceed, the degree to which markets control and integrate a substantive economy increases. Such differences in replicator patterns can be described in different socio-economies as differences in the rules of ownership, contracts, transactions, etc. when ordinary "general goods" excluding labor and land are treated as commodities.

A Variety of Exchanges

In retrospect, rice, salt, slaves, and pastures are commodities at one time and place, but not at another time and place, so certain rules (customs, values, and laws) must be in place for them to become commodities. The rules for commodification are the replicators (genes) of the market economy, and communities, organizations, and individuals that accept these rules are mutual operators. Thus, we can think of a capitalist market economy as a market economy with more specialized replicators that combine the three replicators of market internalization.

Although we have so far explained as if there was only one kind of exchange, according to the taxonomy by Karl Polanyi (Polanyi 1957), there are three kinds of exchanges. At first, the "operational" exchange that moves one good and another in opposite directions is a so-called barter exchange (direct exchange). In this case, even if the two exchanged goods satisfy each other's needs, "equivalence" in the sense of having "price" expressed by a fixed amount of money does not necessarily hold, and therefore, comparative evaluation cannot be made.

The second one is the "decisional" exchange that is the exchange at the regulated fixed price. It corresponds to the exchange of goods and services at a fixed price by two private owners alternately. The price cannot be freely determined and changed since it is regulated by customs, culture, laws, etc. Accordingly, while the exchanges are equivalent in terms of having the same price, there is no competition. This kind of exchange without competition does not constitute a free market, either.

Market exchange, in its original sense, indicates trade at a floating price in a free market. It is called "integrative" exchange. The equivalence is given by a certain amount of money that intermediate the indirect exchange of two commodities in C-M-C′. But the price is not fixed and fluctuates as in the case of decisional exchange. The integrative exchange takes the form of selling or buying in a market, in which commodities with a price and the money equivalent to the price alternately change the hands of owners based on a free contract. Both parties to the sale and purchase are free to set prices through auctions or face-to-face negotiations. So the prices can fluctuate depending on various conditions, including costs and expected sales or demand and supply, and sellers endeavor to improve the quality of their products to attract more buyers. Thus, goods become commodities only when there is competition in terms of both price and non-price. However, such competition does not occur when only particular goods are sold at fixed prices determined by the rules of communities or states. In this way, goods do not become commodities without an element of competition in exchange.

Merchants' capitals aim to profit by "buying cheaper and selling dearer" by money. The more frequently many of them conduct such arbitrage transactions, the more various goods become commodities all over the world. As a result, the kinds and quantities of commodities increase, and the scope of markets expands. Accordingly, the division of labor as the differentiation of industries and specialization of occupations and the division of knowledge as the development of skills and

experts will extend. In this way, merchants bring foreign civilizations and cultures along with various commodities.

Merchants' capitals repeat such transactions with the competition, but "the law of one price" under which merchant capitals cannot exist without doing arbitrage transactions never holds. Since the asymmetry between commodities and money exists and human rationality is limited, we cannot escape from the multi-prices' situation where there are many prices to one commodity.

If a binomial relation R between two elements of three elements a, b, c on a set S satisfies all the following three conditions, (1) reflectivity (aRa), (2) symmetry ($aRb \rightarrow bRa$), and (3) transitivity (aRb, $bRc \rightarrow aRc$), then the binomial relation R is an equivalence relation. For example, an equal sign (=) is an equivalence relation since it satisfies the three conditions, whereas a less-than sign (<) is not.

In the buying and selling relation via money, that is, an indirect exchange relation (C-M-C′), if the purchase price and the sale price of a commodity by money are not equal, reflectivity does not hold. For example, if the purchase price of an apple is 70 yen and the selling price is 90 yen so that they do not match, a merchant can gain a profit of 20 yen. The price equivalence expressed in the same quantity of money mediated by two commodities is not an equivalence relation in the mathematical sense, because not only reflectivity but also symmetry and transitivity are unsatisfied in the buying and selling transactions by money.

Here, symmetry means that if one apple is sold for 70 yen and the 70 yen buy two mandarin oranges, then, conversely, two mandarin oranges are sold for 70 yen, and the 70 yen buy one apple. Transitivity means that if one apple is sold for 70 yen and the 70 yen buy two mandarin oranges and, at the same time, two mandarin oranges can be sold for 70 yen and the 70 yen buy five strawberries, then one apple is sold for 70 yen and for 70 yen buy five strawberries. In order for all of these conditions to be satisfied, it is necessary that the law of one price is always held, such as in "1 apple = 2 mandarin oranges = 5 strawberries = 70 yen." In general, however, this does not hold in money transactions.

Merchants can always make profits by arbitrage as long as the buying and selling relation by money does not satisfy reflectivity, symmetry, and transitivity, namely, the law of one price, and it is not an equivalence relation. If the competition among merchants' capitals gets intensified, the profit might be smaller, but not become zero so that no merchant can exist. As long as the profit is not zero, merchant capital can continue to exist for long, not just temporally. The distributed market is such a market that merchants' capitals survive forever.

External Commodification

"Internalization of the market" is a model of historical trends in the market based on the "intensive deepening of the market" through globalization described in Chap. 1. It can be divided into the following four phases, depending on the money exchange relations formed between communities or the degree to which the market integrates

the system of reproduction of the substantive economy. These are (1) external commodification (E mode), (2) internal commodification (I mode), (3) general commodification (G mode), and (4) capitalist market economy as a climax. Let us examine the mechanisms underlying these modes.

Various products such as grains, livestock, tools, and ornaments were not initially produced for the purpose of exchange in the market, and non-reproducible goods such as land, people, and art were not originally exchanged in the market. Land and humans as providers of labor were, of course, reproduced ecologically, and other general goods were reproduced for self-consumption and co-consumption through communal reciprocity and hierarchical redistribution, without exchange or trade in the market.

However, there are markets outside or between communities and states that connect these local exchanges and redistributions globally, creating a situation similar to an equivalent exchange. Reciprocity and redistribution do not assume equivalence. But, through arbitrage by merchants' capital "to buy cheaper and sell dearer," the market exchange relation approaches an equivalent relation. These markets are a global network of merchants' capital. In such a market outside the community, it is "external commercialization" that general goods become commodities for consumption (Fig. 4.4). In this mode, however, intra-community reproduction is still unaffected by external markets and is conducted without the intermediation of global money.

External commodification is a process in which market relations occur and expand incidentally and sporadically outside of a non-market society. It refers to being taken out to the market outside of a non-market society of general goods (G) that were initially produced for self-consumption or social joint consumption and sold as a commodity (C) for money (M). The symbol G → C-M-C′. Here, "→" indicates the conversion of general goods G to commodities C. Consider, for example, the situation in which a surplus of rice or spices produced for consumption happens to be brought in by foreign merchants. At that time, even if rice and spices could be sold, it was an accident. Such rice and spices were not produced on the assumption that they would be sold from the beginning. Karl Polanyi called labor, land, and money "fictitious commodities" that is an expression based on a fictitious

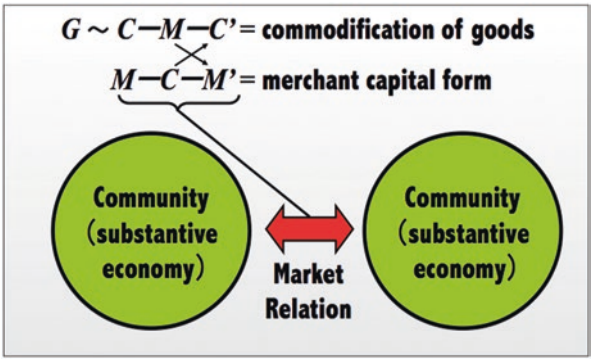

Fig. 4.4 External commodification

premise that all of these, although not produced or traded in a market society, are tradable like ordinary goods.

Internal Commodification

As Marx noted in his earlier quotation, "as soon as products have become commodities in the external relations of a community, they also, by reaction, become commodities in the internal life of the communities," or "this is where barter begins and moves thence into the interior of the community, exerting a disintegrating influence upon it." As a result, reciprocal exchanges and redistributions based on social institutions, such as traditions and customs, significantly reduce their scope of existence and thereby alter the economic system of the general goods that were reproduced by them.

All goods and services that were not yet commodities at the mode of "external commodification" are now tradable with money, and a fixed monetary compensation would be required for the alienation. Thus, general goods are produced for the exchange for money, not for self-consumption or co-consumption, from the beginning. It is the "internal commodification" (Fig. 4.5).

Repetitive trades of merchants' capital tend to create equivalence in the commodity exchange relations even within communities and states. Such erosion of communities and states by money is nothing but the destruction of non-equivalence found in the principles of reciprocity in community and distribution in state. Equivalence is, as it were, not only the commensurability of different commodities but also the standard by which the money holders can make their choices consistent.

Namely, internal commodification is a process in which the market generated outside the community and the state reflexively permeates and dissolves them, and the commodification of general goods is established both outside and inside community and state so that the boundary between markets and non-markets will disappear. Here, small independent producers, artisans, and even farmers need money to

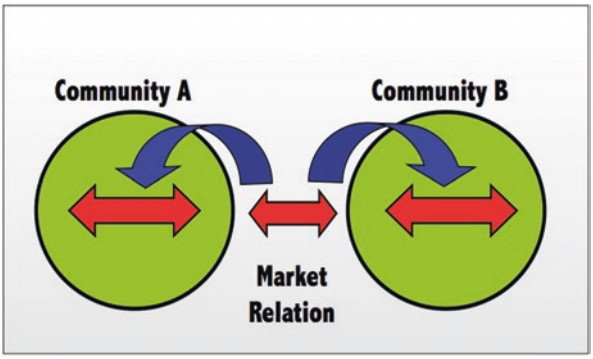

Fig. 4.5 Internal commodification

buy commodities. Therefore, they produce their products not for self-consumption but money income.

However, even in this mode, commodity production is not for earning profits, and, therefore, margins are not included in the price. Even if they sold their products with a markup added to the costs, its purpose is not to make a profit, but to secure a necessary buffer in cash just like inventory against the fluctuations in sales. In this way, as trading repeats, the fluctuating prices form a bundle of going rates. Under budget constraints and production costs, the equivalence principle replaces reciprocity in community and redistribution in state with competitive market forces.

General Commodification

Besides, general goods are initially produced for obtaining as much profit as possible after deducting costs from sales. It is the "general commodification" (Fig. 4.6).

It means that the production and sales of general goods are the investment activities whose primary purpose is profit-seeking. General commodification refers to a situation where profit-making agents for production appear, and the production tends to be centralized to a large scale to pursue efficiency and reduce costs, but they still remain household handicrafts or domestic industries under the wholesaler system based on family management. But it should be noted that even if the "primary purpose is profit-seeking," it does not necessarily mean that agents can maximize profits by rational predictions, calculations, and behaviors.

The market division of labor replaced the non-market division of labor in a social class such as *shi-no-ko-sho* (samurai, farmers, artisans, and merchants) or a caste system. The specialization of occupations, work, and knowledge dynamically takes place through the process and product innovations. However, large-scale factory or machine production that employs workers has yet to take place. This is because

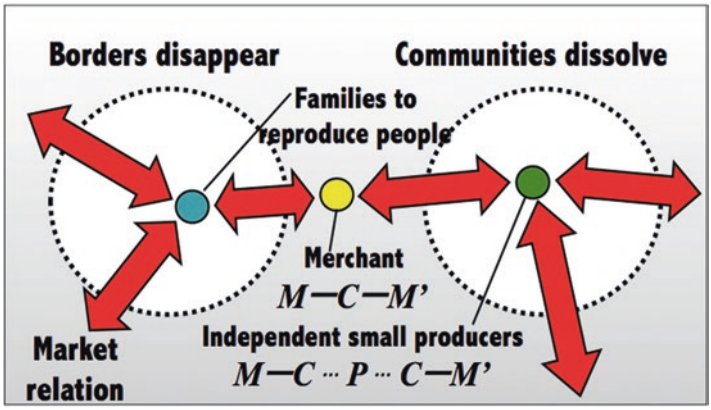

Fig. 4.6 General commodification

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

Fig. 4.7 Three patterns of internalization of the market

labor-power and land are subject to communal regulations such as customs and traditional norms, and they cannot be freely moved or produced for profit, making them more difficult to commodify than general goods. Therefore, since they have not yet been commodified, the production of goods has to rely solely on in-house labor. The price of a product is calculated by adding a profit margin to the total costs of the means of production, such as raw materials, tools, and machinery, and in-house labor necessary for its production process.

There are three modes of internalization of the market: external commodification, internal commodification, and general commodification. The purposes of production of general goods, excluding labor-power and land, are consumption (of its own or shared), income, and profit, respectively (Fig. 4.7). As three modes proceed, the extent to which the market infiltrates and embraces the substantive economy increases, and the degree of socio-economic integration by the market rises in the order. In a historical view, the three modes of commodification were widely observed in this order, but they do not always occur so in case of reversal or skipping. Therefore, it would be better to call these three "types" or "modes" rather than "stages." It is also true of the evolution of a capitalist market economy with three modes of labor-power commodification, which will be described later.

Establishment of Capitalist Market Economy

The "capitalist market economy" we live in today is the economy that is fulfilling "production of commodities by means of commodities" based on the external commodification of labor-power and the general commodification of general goods (Fig. 4.8). In other words, there exists a market in which general goods other than labor-power and land are produced and sold for profit, assuming the existence of a labor-power market. The capitalist economy thus logically presupposes the existence of three modes of market internalization such as external, internal, and general

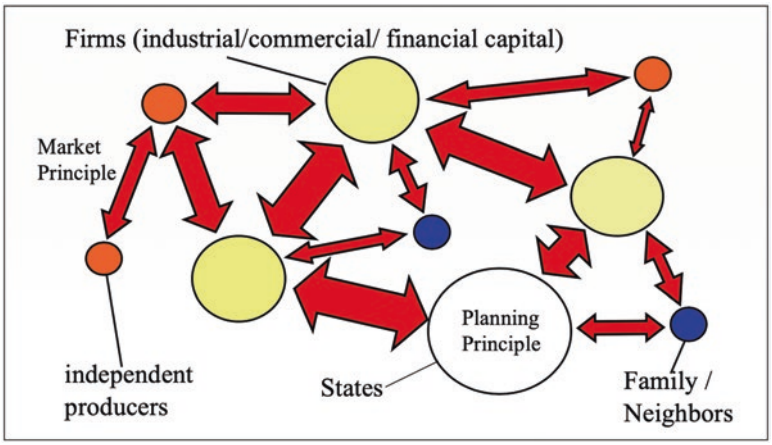

Fig. 4.8 Establishment of capitalist market economy

commodification. It is a necessary condition for the establishment of capitalism, but it is not a sufficient condition.

A sufficient condition for the establishment of a capitalist economy is that labor-power and land, which are strongly regulated by non-economic institutions such as tradition, custom, and law, are freely bought and sold on a contract in the external labor market. The historical condition for the rise of a capitalist market economy is that a large number of wage laborers, who have no ties or protections in village communities and no means of production for a living, are "free in the double sense." For the first time, industrial capitals as manufacture firms and modern families can become economic agents within a capitalist economy.

Industrial capital is the agents who employ a large number of labor-power for simple labor at low wages and produce cheap products in large quantities in mechanized factories. It is a corporate organization whose purpose is to provide products by the input of the labor-power and means of production purchased in the market and to obtain profit by the difference between the sales of products in the market and the previously invested capital. Industrial capital has an internal organization that is externally controlled by market principles at the time of purchase and sale but is responsible for planning, decision-making, and execution to efficiently manage and organize production processes.

Since all input factors for production, including labor-power, are commodified here, the cost of products can be calculated clearly, and as a result, we can realize "production of commodities by means of commodities" aiming at profit. Industrial capital as a manufacturing firm is the agent in a capitalistic market economy whose objective is to make as much profit as possible by producing and selling certain goods using labor-power and means of production such as raw materials, factories, machinery, and land. A modern family is a household community that reproduces the present and future workforce by purchasing and consuming consumer goods at the wage of the worker.

Historically, along with the dissolution of the feudal society from around the sixteenth century, "historical separation process between producers and means of production" progressed during the primitive accumulation process. It was a sufficient condition for the rise of the capitalist economy. The commodification of labor-power and land is the situation where non-economic factors such as Enclosure, the abolition or amendment of Poor Laws, and the creation of the Speenhamland system gave rise to laborers who have lost bonds and protections in communities as well as all means of production for a living. This kind of commodification of labor-power is "internal commodification" in the sense that the market dissolved the community relations of tribes and villages and replaced their interior. But it also appears as "external commodification of labor-power" to the small community newly established as modern families as a result. Accordingly, the capitalist market economy is a particular market economy as a combination of two modes of internalization of the market, that is, "the general commodification of general goods and the external commodification of labor-power."

The above is an explanation of the emergence process of the capitalist market economy through the internalization of markets.

Commodification of Labor-Power

With the establishment of capitalism, the internalization of the market now involves labor-power, and not only general goods but also the labor-power are capitalistically produced. Initially, the labor-power was not a commodity capitalistically produced for profit like general goods, but a simple commodity that is self-produced within the community of families. In today's capitalist market economy, however, the pattern of the commodification of labor-power changes. In this process, the labor-power changes from a "simple commodity" as being self-produced without a profit to a "quasi-capitalistic commodity" as being produced seemingly for profit.

As described above, the capitalist market economy was established on the condition of the existence of labor-power commodities, but it evolved along with the change of the commodification of labor-power. In other words, most regional and kinship relations in the neighborhoods and families have been replaced by market relations, and the family in our time, which could be called the "last community" in a capitalist economy, is being transformed into a "fictitious production sector of labor-power" that produces labor-power in a capitalistic manner requiring the general rate of profit.

Now, we will examine the evolution of the capitalist market economy as a result of shifts in the rules of the commodification of labor-power. Based on the concept of modern families, which were newly established through the commodification of labor-power, three modes of capitalist economy can be assumed as the processes in which they are dismantled by the internalization of markets. In this hypothesis, three modes—external, internal, and general—of internalization of the market associated with general goods repeat themselves self-similarly concerning labor-power,

as if "ontogeny recapitulates phylogeny," in the capitalist market economy. The following is a schematic rearrangement of the above:

1. External commodification of general goods
2. Internal commodification of general goods
3. General commodification of general goods
4. General commodification of general goods + external commodification of labor-power and land = establishment of the capitalist market economy
   (a) E mode (external commodification of labor-power) capitalist market economy
   (b) I mode (internal commodification of labor-power) capitalist market economy
   (c) G mode (general commodification of labor-power) capitalist market economy

To understand the evolution of capitalist market economy by focusing on the modes of commodification of labor-power, we neglected the commodification of land as another essential factor. However, the similar three modes to those of commodification of labor-power can also be thought with land. Land is usually considered to be unreproducible, but it is possible to create new land by cultivation and reclamation and effectively expand space through increasing the density of utilization of land by constructing a high-rise apartment and commercial buildings. In modern times, real estate generally produces income gains as land or house rent, and the price of real estate is often calculated by the capitalization method of income gains. It means that the general commodification of land has been thus already accomplished.

"Domestic Services" and "Domestic Labor"

In order for modern families born from the establishment of capitalism to reproduce themselves, it is necessary to reciprocally exchange or redistribute not only goods that can be purchased on the market but also goods and services that are not traded as commodities among family members. Relations among members of modern families depend more on non-market reciprocal exchanges and redistributions than on market equivalent exchanges.

Since there is no concept or standard for reciprocal exchanges on the premise of equivalence such as price or costs, even if a sense of gain or loss occurred, it does not necessarily have a reasonable basis. However, given the logic of equivalence in the market economy, the fact that the value of labor-power commodity only includes the value of the means of consumption purchased in the market indicates that there exist "hidden costs" that are not practically evaluated for the goods and services that are not commodities in modern families.

In many cases, the means of consumption purchased on the market are supposed to be raw materials or semi-finished products, and they finally become consumable only after such housekeeping services as sewing, washing, cooking, serving, cleaning, or repairing are added. Such housekeeping services conducted within families are widely referred to as "domestic labor." Generally speaking, any "service" can be called "labor" when purposeful agents recognize that their mental or physical services are burdens, disutility, or sacrifice and want to minimize them to achieve given purposes or when they can claim rewards for their duties or sacrifice if someone other than themselves enjoys the obtained results. On the other hand, if their services by themselves constitute their joys or happiness in life, such services cannot be thought of as labor because they are their purposes, not means.

For example, we do not refer to eating as labor because we find in itself fun and pleasure, rather than a means for the reproduction of the labor-power by taking nutrition. In the end, various services at home can be called "domestic labor" only when recognizing them as means or sacrifices to receive the reward. Conversely, when, for example, such services themselves serve for a spiritual purpose to enhance communication among family members and promote mutual assistance and devotion, they do not fall under the definition of labor and should be referred to as "domestic services," not "domestic labor."

Then, the characteristic of E mode capitalist economy with the external commodification of labor-power is that we do not recognize domestic services as domestic labor that can demand a certain amount of money. Illich regards such domestic service as domestic labor and calls it "shadow work" because it is "not paid" volunteer work and supports the family like a shadow of paid work done outside the family (Illich 1981). Thus, looking back at this mode of the commodification of labor-power from later modes, the price calculation does not explicitly include all costs, and labor-power commodities always appear to be undervalued.

How the Price of Labor-Power Is Determined

In order for domestic services, which have been mainly provided by women, to be recognized as domestic labor, and to be recognized as the sacrifice and cost required to produce the labor-power, the concept of "labor" established by external commodification of labor-power, and "wage" as its monetary consideration, is reflected and permeated in modern families and is understood within families. This means that the labor-power is internally commodified within the community of families. For the first time, in this internal commodification of labor-power, domestic labor has become a fictitious commodity, which is included as an explicit cost in wage determination.

From the classical school to Marxian and neo-Ricardian schools, economics has taken the externalization of the labor-power for granted, but the reproduction of the labor-power has two meanings. The first is that wage earners and their spouses reproduce the present labor-power by maintaining their own body, spirit, and culture

through the input of wage goods consumption and domestic labor, and the second is that families give birth to children, support them, and educate them to reproduce the future labor-power.

Similarly, the concept of external commodification of labor-power differs depending on whether the reproduction of the labor-power is considered at present or in the future. Although Ricardo and Marx examine both sides, Ricardo emphasizes the latter in particular to explain the dynamic adjustment mechanism, and Marx focuses on the former to address long-term equilibrium levels.

Ricardo considers that real wages in a capitalist economy are determined at the subsistence wage level by the biological population adjustment mechanism in the long run. If real wage exceeds this level, it will decrease as a result of an increase in the labor supply due to a rise in the birth rate and a fall in the death rate and vice versa. In this way, a long-term negative feedback function of population works, and the real wage approaches to a natural level. In other words, the market price of labor tends to coincide with its natural price. Ricard focused on labor reproduction in the future with childbirth and raising (Ricardo 1817).

On the other hand, Marx identified the price or value of the labor-power with the price or value of the social means of subsistence, which are socially and culturally determined wage goods bundles that the labor-power needs to consume to reproduce itself and support one's family in a given society and culture. The consumption process was regarded as the reproduction process of the present labor-power. The social means of subsistence only consists of goods and services purchased in the market and does not include substantial costs for domestic labor (Marx 1867). Thus, Ricardo and Marx both agree that real wages are exogenously given in a socio-economic situation, although the emphasis is different on natural/biological aspects or social/cultural ones.

A mathematical expression for such a way of determining the value of a labor-power, as in the von Neumann model (Neumann 1945–46), would result in equating the price of the labor-power as money wage with the price of the collection of wage goods consumed by that unit of labor. This idea became a kind of premise understanding of the neo-Ricardian school and the Marxist school after Sraffa.

The difference between the price mechanism of general commodities and that of labor commodities in E mode (the external commodification of labor-power) lies as follows.

General commodities are priced by calculating the unit cost of production, which is the total cost of inputs per product, such as production goods multiplied by their prices and labor multiplied by money wage, and then adding the average profit that is the total costs multiplied by the uniform profit rate. The reason why the general rate of profit is applied as an additional margin to the cost price is that there assumed to be a competition mechanism for equalizing profit rates such as capital transfer among sectors. The usual explanation is that, as long as the free entry and exit of capital for each sector of production prevails, profit rates in all sectors are equalized in the long run because capital constantly moves to more profitable sectors from less profitable ones.

In contrast, labor-power commodities are not products that capital produces for profit, but so-called simple commodity in which family communities reproduce without being conscious of hidden costs. If family members have not come to recognize domestic services as domestic labor, the real costs of those services are not accounted for as the production costs of labor-power. The money wage is thus calculated as the sum of the quantity of each consumption goods multiplied by the price on the assumption that the wage bundle of the consumption goods necessary to reproduce a unit of labor-power is given exogenously. In somewhat unclear terms, this would mean that laborers are in a weaker position as labor-power sellers than general goods sellers.

We have observed that in modern capitalism, the labor-power tends to go beyond internal commodification and reach general commodification, where it becomes a capitalist commodity or fictitious capital. When families in a quasi-production sector of labor-power sell their product, they calculate the cost by applying the money wage rate not only to wage bundles of consumption goods but also to domestic labor and mark up the total cost by the general profit rate to determine the money wage. These structural changes in wage determination are theoretically extracted from the current situation in which the family as the last community in a market economy is being eroded by market forces and is being reorganized into a quasi-production sector of labor-power.

Internal Commodification of Labor-Power

What are the factors and mechanisms behind the progress of internal and general commodification of labor-power?

First, we must point out that the internalization of the labor market is influenced more by socio-institutional and non-economic factors in a broad sense, including traditions, customs, conventions, and laws, than by economic factors. The non-economic factors are the rise of labor participation rate of women, the adoption of new legal systems such as the Equal Employment Opportunity Law that eliminate gender discrimination, and changes in general social customs and socially accepted ideas due to women's independence and social movements such as feminism, as well as the collapse of patriarchal systems in modern families and consequent changes in the attitudes of family members.

Social and cultural institutions, such as tradition, custom, common sense, and law, and our daily and realistic ways of thinking are interrelated and evolve through mutual influence. This is a dynamic change in the interrelation between the market and non-market sectors. In general, the erosion of market principles into our socio-economy has accelerated, and previously inconvertible activities into money tend to become convertible into money. Once market principles dissolve non-market domains such as families and commodity trading in money terms replace all aspects of our lives, the concept of "opportunity cost" becomes easily accepted.

If it is the case, "shadow works" such as housework and childcare, which women or housewife in the family carry out, do not earn money income and are not only socially underestimated as worthless but also seen as the loss of money income that would otherwise be gained by working outside, i.e., as the opportunity cost. As previously mentioned, if a woman who was previously engaged exclusively in domestic service can earn wages in an external labor market, she will come to recognize domestic service as domestic labor and regard it as an activity that should be minimized, requiring a certain amount of costs. Besides, she would compare the costs of outsourcing services such as housework and childcare with wage income earned, and as far as the former is no higher than the latter, she would make a rational choice of substituting domestic labor with outsourcing services as commodities. In other words, the wage income that would have been earned unless domestic labor is carried out would be regarded as the opportunity cost of domestic labor. In this way, domestic services such as housework and childcare would lose their social value of human activities in a family community that used to be given as the means of expressing affection and communication as well as the pleasure and enjoyment of one's own life. As a result, it would be more and more conceivable that the amount of housework and childcare that generate such opportunity costs should be reduced as much as possible.

Opportunity costs are not accompanied by actual expenses. We regard the time spent in a family community as costs because it would lead to a decrease in working hours and a decrease in money wages. Accordingly, the concept of opportunity cost highlights the fact that the change of views in the consciousness of the subject transforms the sense of values and its actual behavior. Social phenomena such as neglect and abuse of childcare by mothers might be modern forms of alienation that occur when they feel intense mental distress because they realize that childcare is a burden and produces no economic profit as well as makes them lose beneficial economic opportunities.

Furthermore, as the number of wage earners in double-income families increases, the allocation of domestic labor among the members of families becomes an essential problem, and they seriously consider outsourcing of household labor. As long as the income of other members is available, flexible job search and change become frequent when dissatisfied with salary and other conditions. Thus, as a result of the rational choice on time allocation for maximizing the money income by family members, domestic labor, which was previously implicitly borne and excluded from costs in the community of families, is at present recognized explicitly as an expense.

In this way, if the equivalence of "opportunity cost for housework and childcare work" = "prices of products and services related to housework and childcare that replace these" = "wages for working outside the family" prevails as a social and cultural rule, domestic labor such as housework and childcare will become fictitious commodities within the family. This is the internal commodification of labor-power.

General Commodification of Labor-Power

In the first place, since housework, childcare, and nursing care are labor that reproduces the present, past, and future labor (couples, parents, and children), families that used to be communities can be regarded as an industrial sector that produces labor like a sector that produces production goods and consumer goods. The purchase of home appliances would then be viewed as the introduction of new technologies into the labor-power production sector, while the purchase of paid services would be viewed as outsourcing. Through the spread of the concept of opportunity cost to a community of family, the position of housework and childcare, which reproduces the labor-power, will be changed from "gratis activity as shadow work" to "paid labor."

On the other hand, as new products and services replace domestic labor, they gradually enter the wage goods basket. From household appliances such as refrigerators, washing machines, vacuum cleaners, dishwashers, and automatic water heaters, to services such as water, electricity, gas, electrical appliances, meal catering, childcare services, cleaning services, and home delivery services, and to transportation means such as bicycles, automobiles, and trains, a considerable number of possible consumer goods and services have emerged as substitutes for domestic labor as domestic service changed to domestic labor. As a result, domestic labor declines and wage goods bundles expand, so living standards of the family will generally rise.

Also, if we recognize educational expenses on children as investment expenditure to earn the highest possible wages in the future rather than labor reproduction expenditure, the labor-power will become "human capital." Human capital investment is to maximize the net present value as the difference between the investment at present and the present value of expected future returns, which is the summation of the stream of expected future returns discounted at the present rate of interest. In this way, the family becomes very similar to the labor-power production sector that produces the product of labor-power as human capital and sells it in the labor market to make profits from the beginning.

As the concept that various academic backgrounds, qualifications, specialized skills, knowledge, and skills are "human capital" for increasing income in the future has become more common, and people have come to consider education, vocational training, skill formation, health promotion, etc. as human capital investment, the general commodification of labor-power can be established. As with other production and consumption goods, the selling price of labor-power also includes the profit margin, and human capital investment is considered to be an investment activity for increasing profit in the labor-power production sector. As a result, the labor-power becomes a quasi-capitalistic commodity that is produced and sold for profit. The modifier "quasi" means that families that reproduce labor-power are considered to do so like for-profit companies.

In Japan, however, the reality is parents bear most of the cost of education. As long as this is the case, even if the labor-power is getting close to human capital,

investment and gift or reciprocity are mixed in that the parent invests and the child benefits. This seems to be the evidence that the parent-child relationship of families in Japan still retains the characteristics of a collective community. In the case of individualism of the United States, each individual enters a university with an educational loan and pays the loan back using future income after graduation, and the concept of investment in human capital fits better. It remains to be seen whether Japan will move closer to such individualism in the future.

Furthermore, changes in wage patterns will also promote the internal commodification and general commodification of labor-power. The allowance for dependents included in prevailing wages implicitly has the nature of compensation for domestic labor, and diligence allowance and bonus fluctuate following the profit because they have the character of reward for contributing to the enterprise. Even if collective bargaining between labor and management determines them, the rate of increase of money wage is most affected by macroeconomic economic environments and trends in corporate profits, especially the profit rate of the company calculated from ordinary returns, rather than by the combativeness of labor unions in negotiations.

Even if such changes in non-economic and institutional factors promote the internal commodification and general commodification of labor-power, can the general commodification of labor-power be fully accomplished?

If the general commodification of the labor-power is progressing, the labor-power will become more and more a commodity produced in a capitalistic way for profit. It is theoretically determined by whether there is a mechanism in the labor-power production sector similar to the free intersectoral capital flows that lead to equalization of the profit rate in the production sectors of general goods.

Let's leave aside the question of how realistic these trends are. At the very least, it is an obvious fact that economic theories increasingly treat the labor-power indiscriminately with capital. As we work through Becker's concept of "human capital," we encounter the difficulty of making a general distinction between personal consumption and human capital investment because any personal consumption can have some positive effect on future earnings. The problem, however, is the reality that economic theories that cannot distinguish investment from consumption have emerged in economics and are being accepted widely without much resistance, which may have a significant impact on people's consciousness and conventional wisdom and transform them. These changes in economics clearly show the progress of commodification of labor-power.

The Evolution of Capitalism

As capitalism evolves, the total wage rises as the number of earners in modern families increases, and the real wage rate rises as the positions of laborers and domestic laborers as sellers of labor-power get better. At the same time, the status of capital in the distribution of capital and labor will decline, and the average profit rate will

fall. As a result, the potential for capital accumulation and economic growth will tend to weaken.

However, in G mode (the general commodification of labor power) capitalist market economy in which the labor-power reaches the same status as capital, promoting the technological innovation can raise the profit rate of capital and improve the relative status of workers simultaneously so that it can enhance the potential for capital accumulation and economic growth again (Fig. 4.9).

As a result that the capitalist market economy evolved to treat labor-power in the same way as general commodities, the exploitation of workers and domestic laborers would naturally disappear, and the potential growth would gradually be induced by the rise in the profit rate achieved by technological innovation. It is due to the mechanism of relative surplus value production mediated by the creation and disappearance of Marx's so-called extra surplus value.

In this way, the capitalist economy reverses the trend of long-term stagnation by transforming the rule of commodification of labor-power itself, which is the fundamental condition of its existence and demonstrates a strong vitality that activates itself. This is a self-organizing order in the sense that it endogenously changes the nature of the system entirely by causing changes in values and consciousness of people such as workers and their families. In this respect, capitalism does not refer to a complete economic system, but rather to highly adaptive capacity, in which rules as replicators of capital manipulate human being as its vehicle, and intentionally changes rules of its replicators.

When commodification of labor-power reaches its ultimate form as G mode, the capitalist market economy evolves into an autonomous economic system in which all commodity production, except natural resources and environments that cannot be humanly reproduced, can be adjusted by profit principles. Capitalism has purified itself not because the degree of state intervention in the economic process by economic policy decreases, but because as the labor-power commodity as the fundamental condition of capitalism gradually came to be produced for profit, and family as the last community is dissolved into the market. For a capitalist economy to become a completely autonomous economic system that is not constrained by the external environment, it is necessary to be able to produce not only labor-power but

	Types of Capitalist Market Economy	Purpose of production
E-Mode	External commodification of labor-power capitalist economy	Production of General Goods for Profit + Production of Labor Power for Consumption
I-Mode	Internal commodification of labor-power capitalist economy	Production of General Goods for Profit + Production of Labor Power for Income
G-Mode	General commodification of labor-power capitalist economy	Production of General Goods for Profit + Production of Labor Power for Profit

Fig. 4.9 Types of capitalist market economy

also information, services, and nature itself, including natural resources, energy, and land in a capitalistic manner. Is it on earth possible?

In reality, there must be a limit to the commodification of labor-power reproduction by the market in capitalism, and it seems that families are not fully integrated into the logic of capital. From now on, until artificial insemination, surrogate mother, and the cloned human finally become generalized, the family will shoulder the human reproduction function of birth, nursing, and education of the child. Therefore, even under the developed capitalism, the family will still function as an essential community of society, which cannot be reduced to contractual cohesion or production units of "human capital" even with considerable changes.

It is also clear that if a capitalist economy continues to proceed on the path of technological progress and economic development, it will run into problems such as resource depletion, natural destruction, environmental pollution, and climate change. As far as the capitalist economy can exist only in an open and steady global ecosystem, it will be impossible in principle to create a closed system completely independent of external natural conditions.

Internalization of the Market in the Knowledge Economy

We defined the process in which market domains invade and destroy non-market domains and self-organize to integrate a socio-economy as "internalization of the market" and have analyzed the mechanism in case of general goods and labor-power.

According to it, markets occur within non-market societies such as communities and empires, and as they expand and develop, they gradually penetrate deeper into these societies and dismantle old productive relations (e.g., feudalism) and forms of life (family) within them, and capital reorganizes them into market economies. We have also clarified that the capitalist market economy is established as a result of commodification of labor-power and it evolves with the modes of commodification of labor-power.

Since the 1970s, developed countries have experienced "de-industrialization" in which the center in industrial structure has shifted from secondary industry to tertiary industry related to services and information, and the number of employees in tertiary industry has rapidly increased. In particular, since the 1990s, when globalization became a hot topic, the "knowledge-based economy" (OECD 1996) that is "directly based on the production, distribution and use of knowledge and information" (*ibid*. 7) was established, and the recognition that "knowledge is now recognised as the driver of productivity and economic growth, leading to a new focus on the role of information, technology and learning in economic performance" (*ibid.* 3) was expressed.

Indeed, in OECD countries, R&D in highly knowledge-intensive high-tech industries has boomed, and demand and human capital investment for knowledge-intensive labor that requires high skills and expertise are expanding to a large extent.

On the other hand, the economic gap between skilled and unskilled information workers is widening.

In the United States, "creative class" including YouTubers, musicians, artists, scientists, and system engineers, who have relatively high incomes and possess human capital such as specialized skills and expertise, accounts for more than 30% of the workforce, and they are driving economic development while forming new cultures (Florida 2002, 2005). Also, in Japan and Europe, as in the United States, the rise of the creative class is seen mainly in urban areas and is creating new class problems.

At the end of this chapter, we will examine the relation between the "internalization of the market" process and the actual trend toward a knowledge-based economy. As well as the evolution of a capitalist market economy using models of external commodification, internal commodification, and general commodification of general goods and labor-power products, we will consider the commodification of knowledge and information. A comparison of the characteristics of information goods with those of material goods will reveal the unique features of information goods.

Comparison of Characteristics of Information Goods and Material Goods

In the beginning, in order to consider the commodification of knowledge and information, let's look at the differences in characteristics between information goods and material goods. It is challenging to calculate development costs for new technologies and products because inventors and capitalists initially invest their personal talents, creativity, time, and effort in developing new products. However, if the development succeeds and the sales forecast of the product expands, the development cost is calculated more clearly because the company takes charge of the development systematically. The situation is the same for information goods. However, regarding information goods, writing and programming, including proofreading and debugging, are "development," and printing and copying are equivalent to "production." Accordingly, information goods differ from material goods in the following three points.

First, information goods, once developed, as long as the information is accurately maintained, can be used semi-permanently without wear and decay since there is no distinction between the original and the copy. Even if the information recording medium may be physically worn, the information itself is not deteriorated if it is kept replicated. In this respect, information goods look similar to fixed capital and durable goods that have long periods of physical depreciation, but that period is semi-permanent.

In the first place, knowledge is a general concept that includes not only information and data that objectively and passively "exist" but also the subjective and active

mind "activity" of man. In the latter form, knowledge is embodied in an individual's body or personality in practical activities for research and development as well as production, through which it is repeatedly reproduced or replicated as stock in the body. Therefore, knowledge in this sense is not a simple "labor product" produced by "labor" which is voluntary physical and mental activities, but "joint products" produced simultaneously with material goods, and is accumulated like fixed capital.

Von Neumann, a mathematician who created Neumann-type computer, and Piero Sraffa, an economist who criticized the general equilibrium theory of Neoclassical school, thought that fixed capital embodying technology such as tools and machinery was jointly produced into the fixed capital of one older period each time it was used in the production process (Neumann 1945–46, Sraffa 1960). Here knowledge can be seen analogous to such fixed capital. However, unlike fixed capital that has a finite physical depreciation period, knowledge can be free from wear and tear as long as it is correctly replicated because it has a semi-permanent useful life. Besides, apart from physical deterioration, material goods, including fixed capital, become economically obsolete if new products with better efficiency, performance, design, etc. are developed. This corresponds to what Marx calls "moral depreciation" (Marx 1967, Chapter 15). In the case of information goods, this degree of economic obsolescence is much higher than that of material goods because of the frequency of upgrades and innovations on the one side and the volatile trends and popularity on the other.

Second, because new information and communication technology (ICT) has drastically reduced the cost of replication and transmission, production costs in information goods have become a much lower percentage to development costs than in material goods. Therefore, most of the average unit cost as the cost price is development costs. In other words, the indirect cost for development accounts for the overwhelmingly more dominant percentage of the price formation than the direct cost for production or replication. As the average unit cost of information goods decreases rapidly as the sales volume increases, the profit at the fixed price sales increases. This will thus intensify competition in the development of information goods in search for the creation of huge markets and big hit products.

Third, because of the low cost of reproduction and distribution, the same information goods as original information can simultaneously be owned and used by many people and computers. A variety of information goods such as computer software, music, photos, images, and textual information can be copied to CD, DVD, HDD, and flash memory at low cost, and high-speed mass transmission of information is possible through the Internet via broadband, so that many people, theoretically all people living on the earth from now to the future, can share the same information goods.

When individuals enjoy the benefits of a good, but others can simultaneously enjoy the benefits, the good is "non-rivalrous," and when it is difficult to collect compensation from individuals who enjoy the benefits of a good, the good is "non-excludable." Information is typically non-rivalrous and non-excludable under the conditions of ease of replication and distribution. In order to commodify such information goods, it is necessary to give exclusive access to the information goods

artificially. First, the state should protect copyrights and legally prohibit unauthorized copying. But that alone cannot prevent piracy. A variety of copy guards have been developed to protect against duplication and distribution, but as technologies to cancel them are also being developed one after another, they are just like playing a "cat and mouse game."

This has led to a "copyleft" movement among those who believe that it is socially desirable to share information more freely than to protect private ownership of information assets through copyrights and copy guards. Various free and open-source software has been developed and provided under the GNU General Public License (GPL), which allows users to freely execute, study, copy, and modify the software. Creative Commons, which enables users to select a license and disclose and share information goods, is increasing the number of users. Therefore, today, an immense diversity of information and knowledge is supplied to individuals almost free of charge on the Internet.

It should be noted, however, that it is virtually impossible to enjoy an infinite variety of information goods because there are differences in information formats, such as language and culture, and humans have limited time and restricted ability to collect, perceive, and understand information. Information goods are thus naturally selected according to a variety of local and personal environmental conditions, such as the local time and space in which the user is located, the social and cultural community to which the user belongs, and the value and interest the user judges significant. Such conditions characterize information goods and strongly constrain market expansion for them. These also apply to culture-related material goods like food and clothes such to some extent, but not as much as to information goods.

In the case of material goods, because the production cost is relatively higher than information goods, the price does not drop so much due to the economy of scale. Therefore, budget constraints remain active on the demand side, and the principle of effective demand in "money" works. On the other hand, as the cost of replicating information goods is already minimized, it is possible to supply them in large quantities at quite low prices. But the human capacity of memory, information collection, and information processing are limited, and social and cultural filtering is applied. Accordingly, cognition constraints become active on the demand side, and the principle of effective demand in "time" works. Because the market for information goods cannot wholly escape the magnetic fields of culture, society, and communities, sales of information goods do not increase enough to cover the high development costs broadly.

The capitalistic production, as symbolized by the belt conveyor factory that is a huge fixed capital assisted by simple labor, incorporates harsh rationality such as promoting modularization of products and standardization of parts and works and aiming at automatic production while incorporating human beings themselves as part of machines. A variety of experiences, skills, and judgment are required for the developers of these new technologies and products related to significant fixed capital. As they continue to engage in development activities, such knowledge is reproduced in their bodies as a joint product and accumulated as human capital.

In the case of production of information goods, as in the case of material goods, we find the mechanisms both for separating information-related human capital that enables automated production and for complementing automated production by simple labor. People who can create high-value-added information goods form a "creative class" who embodied advanced knowledge and information in human capital. On the other hand, people without human capital work as low-wage contract labor, conducting tasks relatively simple for human beings that cannot be easily performed by computer programs, such as situational awareness, data collection and input, personal authentication, and telephone response. When such workers are created in large numbers, a new class differentiation occurs in the "knowledge-based society."

Progress in the Commodification of Information Goods

In "material-based society" in which both major production and consumer goods are material goods, knowledge and information are production technology, product design, and trademarks. When an individual or company develops or invents a new technology or product, it is granted exclusive rights by patent rights, design rights, and trademark rights for a specified period. In the meantime, they may earn super profits as the differential of costs or quality based on differences in efficiency, performance, and design, or they may obtain patent usage, design, and trademark royalties and allow imitation.

The purpose of the development of such knowledge and information is not to sell such knowledge and information directly, but to sell material goods produced by the productive use of production technology and product designs.

As far as a legal right permits such a monopoly of knowledge and information, super profits and royalties are obtained. Besides, there emerge professional intermediaries and merchants who mediated the sale of patent rights and design rights or profited from the sale by themselves. This is the "external commodification" of information goods.

Over time, companies began to compare the cost of in-house development of new technologies and products with the cost of imitation of other companies' technologies and products, such as patent and design royalties, and choose the more advantageous one. As a result, waste and unplanning associated with in-house development are eliminated, and development costs for new technologies and new designs can be estimated and reflected in the cost price calculations within companies. It gives rise to the "internal commodification" of information goods.

In addition, as the outsourcing of R&D by companies increases and consulting companies specialized in research and technology development and product design companies are created, companies that sell information goods related to R&D of technology and products to other companies for profit will be derived. It corresponds to the "general commodification" of information goods.

In this way, the commodification of information goods in the "material-based economy" has advanced related to the "R&D" of technology and designs of industrial products as well as trademarks. The commodification of information goods in the "knowledge-based economy" basically follows the same pattern as in the "material-based economy": external commodification, internal commodification, and general commodification. However, in the "knowledge-based economy," the commodification of information goods will be fully generalized over the entire development of production goods and consumption goods. That is, various information goods including personal, corporate, social, and natural information, for instance, on networks of individuals and groups, sales, credit, global positioning, health, biometrics, gene, medical history, weather, disasters, and scarce resources are all commodified in G mode.

If a free software, which had been distributed free of charge, is converted into a paid software, "external commodification" of information goods will take place. Then, individuals who write their own programs using such free software will also have to pay royalties. As a result, the cost of free software developed by the software developer will increase, making it inevitable for the software developer to charge fees. This is the "internal commodification" of information goods.

Moreover, when profit-making software giants such as Microsoft package applications that run on top of the Windows operating system and sell them in bulk for profit-making, "general commodification" of information goods is completed. If Microsoft were to dominate the software market in this way, everyone would have to use Windows because using other operating systems would be at a significant disadvantage in terms of compatibility with other users and types of applications. This lock-in effect establishes a "*de facto* standard."

Because of this "network externalities," the information goods market is likely to be rapidly monopolized. Monopolization tends to make monopolistic firms larger because it lowers average costs and increases net profit margins.

"Internalization of the Market" as a Pervasive Tendency

The concept of "internalization of the market" has been used to clarify the commodification of general goods, labor-power, and information goods. The "internalization of the market" theory we have seen in this chapter has two significances. Finally, let's think about it.

First, it showed that the agency driving the development of commodification was the form of capital, but that for it to be the driving force, human desire, consciousness, and action had to be the mediator.

The biologist Dawkins once thought of "meme" as a mimic unit by which human beings propagate cultural information through imitation in the analogy with genes that transmit vital information (Dawkins 1976). If we use this metaphor now, the form of capital is equivalent to "meme" as a socio-economic gene, and human beings correspond to "vehicles" carrying it. Through "internalization of the market,"

a person, who is a vehicle of capital, is created as an independent and free personality having self-interest and the concept of equivalence and is cultivated as a capitalist or investor seeking profit by making a comparative evaluation of costs.

Second, the "internalization of the market" theory clarifies that the market economy shows diversity as in the three modes of commodification, due to the dynamic interaction or integration, not the static coexistence or mixture, of the market and the non-market community and state and that the capitalist market economy emerged as a special form of the market economy by bifurcation and evolved and differentiated into three modes through its dynamic property that exhibits the morphogenesis of the market.

In his book, the Japanese economist Makoto Itoh thought that the historical trend of getting "impurity" of capitalist economies since the end of the nineteenth century had been reversed in the course of the great recession since the 1970s and that this had led to the recovery of the autonomy and revitalization of capitalism, as in the formerly mercantilism and liberalism stages, and called the capitalism after 1970s "backflowing capitalism" (Itoh 1990). Ito said so because the polarization to the great powered countries and their colonies since the end of the nineteenth century had been generally understood as exhibiting "non-universality" of capitalism.

However, as we have already seen in detail, what has progressed deeply in the tendency of "globalization" since the 1990s is not only the spatial expansion of markets but also the infiltration of the market in non-market domains such as community and state. Globalization has been a gradual process since the 1970s, but it has manifested itself in the 1990s. Historically speaking, the tendency of internalization of the market has proceeded even after the establishment of the capitalist market economy until now, although there were periods during which commodification stagnated on imperialism stage after the end of the nineteenth century or declined due to the replacement of markets with central plans in socialist planned economies since World War I.

The reason why it was difficult to observe "internalization of the market" was that there were various inhibiting factors for it, not because there was no such tendency. If so, we can say that the movements since the 1970s have been not so much "backflow" as "forward current" along the deep ocean currents that continue to flow under the sea without being affected by ocean currents or turbulence.

Globalization has also manifested itself as an observable phenomenon of "internalization of the market" because of the accidental convergence of social, institutional, and technological conditions. Leaves falling through the air sway to the ground over time, swinging wildly through the air due to air resistance and sometimes rising when blown by the wind. In a vacuum, however, the leaves fall freely vertically, just like rocks. The "gravity," whether in air or vacuum, is always present and operating. However, since the falling motion of an object depends on various conditions such as the characteristics of the fallen object such as air resistance, air concentration, and the direction and intensity of the wind, the existence and action of "gravity" does not clearly appear when a leaf is dropped in the air.

"Internalization of the market" also exists as a force or tendency of universal law such as "gravity," and it causes a visible phenomenon of extensive expansion and

intensive deepening of the market through commodification that corresponds to falling of an object. The market is not merely a passive price mechanism or price calculator but is instead an actively self-organizing principle like a living body. Only when one perceives capital as an agency, a driving force that triggers the differentiation, growth, and evolution of a capitalist market economy, can one understand the inherently dynamic nature of capitalism.

Globalized capitalism has completed the "general commodification" as fictitious capitalization of land, funds, and capital and is now moving ahead with "general commodification" as fictitious capitalization of the labor-power, at least in part. It is also at a stage in the transition to a knowledge-based economy in which markets are infiltrating the inner workings of human beings and promoting the commodification of information goods.

Chapter 5
Money as Communication Media

The Essence of Money[1]

As we have seen in the theory of the emergence of money in Chap. 3, when we thoroughly examine the essence of money, we find that it is established by means of the expectation of others' desires, not one's own desire. The reason we receive "something" as money is because we expect someone will receive it next. If the same chain of expectations continues infinitely, this "something" is accepted as money, and as a result, money is established as an event, not just a thing.

However, if money as an event lasts stably, it will become to appear that money as a thing has value. The reason why people forget the difference between a thing and an event and receive money is not because they rationally predict what will happen in the future, but simply because they unconsciously believe that the same thing as the past will continue into the future. This "trust" is reasonable in a normal state of affairs, not an irrational illusion, because the value of money as an event is continuously realized if people believe it. So what do people trust here?

It is the "constancy" of the value of money as an event or the "practice" of society supporting it. It is not the promise or the enforcement power of the issuer nor the use value of money as a thing. The evidence is as follows. The value of modern money usually is stable though it fluctuates within some range. However, once it falls below a certain limit line by any reason, more and more people will doubt the "constancy" of the value of money. If a sufficient number of people stop following the "practice" of accepting money in anticipation that others will not take it, money as an event actually collapses, and the economy plunges into hyperinflation in which the value of money falls cumulatively. On the other hand, if, in a deflationary spiral,

[1] This section gives a condensed summary of basic ideas on modern money shown in *The Enigma of Money* (Nishibe 2016) published after this book in Japanese but skips crucial steps in the argument. The readers interested in the topic in more details are advised to consult with it and to see more accurate and logical developments of discussion.

M. Nishibe, *Whither Capitalism?*, https://doi.org/10.1007/978-981-13-0704-1_5

people acceleratingly worship and hoard money as a thing in anticipation that the value of money keeps on rising, it will result in unemployment and bankruptcy.

The reason why money is unstable is that there is no basis of trust anywhere in modern money, and trust in money is too weak. Credit money has been established when people believe in the certainty of the issuer's debt repayment or conversion into standard money. However, the central bank that issues inconvertible fiat money is exempt from the obligation of debt repayment from the beginning, though it monopolizes the authority of money issue and control. Consequently, people cannot fundamentally trust money.

On the other hand, as long as people retain economic and selfish motives to receive and possess money, they will not trust it from the viewpoint of the national community. Nevertheless, money as an event can be sustained probably because we instinctively know that money is an indispensable medium for us.

Historically, there are two different tendencies in the evolution of money. First, a tendency for dematerialization and informatization of money is observed. Money is approaching non-material codes and information without substance or backup: grain and livestock ---> precious metals and coins to paper money ---> deposit money --> plastic cards ---> digital money. Money has become more an event than a thing, similar to a concept or an idea.

Second, a tendency for creditization of money can also be found. Standard money whose material has intrinsic value, such as precious metal coins, changed to IOUs payable at sight such as convertible banknotes and deposit money and finally to inconvertible banknotes, IOUs with no right to claim. The modern money takes on two forms: cash, the central banknotes, and demand deposit, IOUs of private banks.

The Future of Money

Then what is the future of money? One scenario might look like this.

There is always a risk that hyperinflation takes place when people do not become to trust the constancy of the value of modern money. But it does not mean the death of money proper and a return to barter. It is merely the death of one national or supranational currency, for example, the US dollar or euro, and the beginning of another one. The new money might be more dematerialized and informatized or creditized and managed by a global issuing agency beyond nation-states or confederations. But if the new money inherits the same basic properties as the current money, it will be just a repetition of the current national currency on a global scale. Therefore, hyperinflation is a crisis of some national or regional currency but is not the end of capitalism. It will only postpone a severer crisis in the future by prolonging the life of capitalism.

Another future must begin with people realizing and changing the nature of money. In order to avoid the first scenario and seek post-capitalist market socio-economy, it is necessary to gradually transform the nature of money from the micro

level and to improve the constitution of the entire market economy from within and bottom-up, instead of trying to abolish or maintain money in a centralized or revolutionalized way. One possibility would be to modify the evolutionary course of money from "credit money" to "trust money."

As we have seen it, money has shown the tendency of informatization in its evolution. All national currencies including the world's key currency, the US dollar, abandoned the institution for the material basis of "credit" such as the gold standard or the gold exchange standard in 1973 when the floating rate exchange system started in the world. However, they have lasted for a considerable time since then. This fact paradoxically suggests that money as an event might be long sustained through "trust" rather than "credit."

If trust money spread over the world, many non-capitalistic rules for both outer and inner institutions will be added to the capitalist market economy, and it would change the nature of the economic system as a whole. The market economy based on trust money, if it is possible, would be beyond capitalism.

Of course, trust money cannot be built and diffused all at once in a global physical or virtual space where people of different languages, ethnic groups, cultures, norms, values, and interests live. The first step is to build trust money in a local range where people are close enough to know and communicate with each other.

Global Money Management

There have been many attempts to change the way money is. As mentioned earlier, the twentieth century was 100 years of failure in abolition and control of money, and the era of globalization had finally surged. The global financial crises, currency crises, and sovereign risks that occurred one after another in the late twentieth century and the early twenty-first century suggest that this century will be the era in which challenges to more substantive monetary reform will begin at the global, regional, and local levels.

So what alternatives are possible? Let's take a look at this first. The challenge here is not to scrutinize and examine the validity of various monetary reform plans, but to give a broad overview of what each reform plan criticizes assuming a single currency. From there, I would like to obtain a rough outline of the problem structure concerning money, which would serve as an auxiliary line to my idea of monetary reform.

The first option for monetary reform is to introduce the "Tobin tax" aimed at managing global speculative transactions. It is said that 85% of foreign exchange transactions are speculative and 80% are round-trip transactions within a week. To curb such short-term capital flows, a very low tax rate (0.1–25%) is imposed on foreign exchange transactions. These taxes will be used for urgent global issues such as poverty eradication, job creation, AIDS prevention, and global warming. The Tobin tax is not valid unless all countries introduce it all at once because even if it is adopted in some countries alone, speculative capital will flee to tax havens.

After the global financial crisis, British Prime Minister Gordon Brown proposed the Tobin tax, which was introduced in Brazil in 2009. In the United States and European countries, a Tobin tax bill has been passed by Congress and is being considered for submission. However, it will take time to reach an international consensus because it has yet to be implemented due to strong opposition from the financial industry. This is aimed at finding problems in short-term capital flows, or speculative transactions themselves, and preventing them by using national tax policies.

The second option is to establish a globally managed currency system. For example, Keynes proposed the "Bancor" as a multilateral clearing for the international monetary system after World War II. An artificial international currency could be created and managed by the World Bank. However, the United States did not accept the Keynes plan and eventually created the IMF based on the White plan.

The International Monetary Fund (IMF) established Special Drawing Rights (SDRs) in 1969 and distributed among member countries according to their IMF quotas. Originally, SDR was to be used by member countries to supplement reserve assets such as gold and US dollars to sustain the Bretton Woods system, which entails the fixed exchange rate system. With the shift to the floating exchange rate system, the need for SDRs declined. After the global financial crisis of 2008, however, the SDR allocation was reviewed, and then the total allocated 21.4 billion SDR was increased to 204.1 billion SDR (about US $321 billion). The SDR was determined to be worth US $1 in 1969, equivalent to 0.888671 grams of fine gold, but under floating exchange rates, the value is currently defined by the SDR basket, the weighted average of euro, Japanese yen, Chinese yuan, British pound, and US dollar. SDR is used as an accounting unit in international organizations such as the IMF, but it is neither a currency nor a claim to the IMF. It is a claim on members' currencies and means the right to receive loans from the IMF. It may be used when a country has insufficient reserves due to sovereign risk, but it is unlikely to become a global currency. It is because the system itself is premised on the current national currencies such as the US dollar and the British pound.

The United States will not give up its vested interests because the dollar is the world's key currency and thus earns a large amount of money issue profit called *Seigniorage*. It is also unlikely that Europe, which has just begun its journey as the EU, will abandon the euro and accept a proposal to create an international currency. In Asia, socialist camps such as China, Vietnam, and North Korea remain, and it is still unclear whether the gap between the two Koreas is narrowing. It would be even more challenging to create a global currency that would be accepted by the entire world in a situation where these conflicting powers are separated and independent.

The first and second proposals are made from a Keynesian point of view, such as the management of currencies and capital, both of which focus on how the union of states or world governments globally manage the volatility and speculation of capital. In other words, more globalization of management is the challenge here. And it is the global federal government that is considered to replace the nation-states.

Theory of Denationalization of Money

The third option is to shift the current trend of market liberalization and deregulation to "liberalization of money issue" or "free banking." For example, as Hayek said, we need to recognize the central bank's monopoly on the right to issue money as the nationalization of money and demand the central bank that the money be denationalized or privatized (Hayek 1976). Hayek advocated that private banks and firms are allowed to hold baskets of multiple currencies or commodities as reserves for payment and issue their own banknotes. The public is free to select multiple currencies by referring to public information on the amount of issue and reserves by issuers. In this way, if the issuers compete with each other for the circulation of banknotes and a floating rate is adopted for the exchange rate, the "choice in currency" principle of "good money drives out bad," contrary to Gresham's law stating that "bad money drives out good" in case of a fixed rate, should work.

The purpose of this policy is to eliminate the profits from issuing money monopolized by the state, to stop inflation as the corruption of money, and to enhance the benefits enjoyed by individuals. Of course, central banknotes and deposit currencies can circulate at the same time. Currently, Internet banks that are operated by private companies specialize in deposit and settlement services rather than lending services. It is called "narrow banking." However, the network-type electronic money issued by these banks is not a new creation, but a substitute for cash and deposit currencies. Even if net banks are allowed to create credit in the future, the situation will not change significantly unless several different currencies are issued. Since the two-tiered structure of cash and deposit currencies in the national currency is maintained, it can be said that the amplitude of the expansion and contraction of credit creation will only change.

On the other hand, transnational corporations may adopt their own corporate currencies, which circulate within the enterprise, to avoid exchange rate risks. Because corporate profits fluctuate according to the exchange rate to which they are converted, in some cases, they are translated into surpluses when converted into one currency and into deficits when converted into another currency, and current national currencies thus cannot play an appropriate role as a measure of value. If the central bank of corporate currencies holds a basket of national currencies at a specific ratio, the value of assets can be maintained even if exchange rates fluctuate. Therefore, if internal transactions are conducted using the corporate currency based on this standard, foreign exchange risks can be avoided, and the central bank's holdings of foreign currencies play a role of buffer in transactions with external parties. The third option is the so-called liberal reform plan, which seeks to strengthen the principle of competition and lower the status of the state by carrying out liberalization and privatization not only in areas such as market structures and industrial organizations but also in monetary and financial systems.

Theory of Money Issue Reform

The fourth option is to move beyond the liberalization of money issuance and toward a broader redesign of the monetary system. Joseph Huber and James Robertson proposed a money-issuing reform "new money" proposal (Huber, Robertson 2000) that would retain the basic structure of the current financial system but, contrary to the third option, strengthen central bank issuance authority and prohibit private banks from credit creation. Specifically, all demand deposits in saving accounts and checking accounts held by private banks are transferred to the central bank, which issues deposit currencies by lending a predetermined amount to the government (by transfer to a government checking account). Private banks are financial intermediary banks that accept time deposits and provide loans. As a result, the government will collect all the profits from the issuance of money as the difference between loan interests and deposit interests, which are currently enjoyed by private banks, and return them to the public through public spending and debt redemption. This system is somewhat similar to Japan's postal savings system and the Fiscal Investment and Loan Program (FILP), but differs fundamentally in the following ways.

First of all, most postal savings are time deposits such as fixed-amount postal savings, and demand deposits are few. In the case of the FILP, the primary lender is the Ministry of Finance's Trust Fund Bureau, and the primary lender is special public corporations. In this proposal, the primary lender is the Bank of Japan, and the primary lender is the government. Therefore, the central bank will be the sole issuing party for cash and deposit currencies. The central bank has direct control over the money supply, making it easier to control the economy and inflation and to avoid a bubble in credit. However, the feasibility of such unipolar management by the central bank should be examined, for example, whether a sufficient money supply can be provided, whether the settlement system can function smoothly, and whether the economic control of a single nation is effective in the framework of a global market economy. This indicates a direction to further expand the freedom to pursue the unknown possibilities in the design of the monetary system, but on the other hand, it drags the idea of centralized control to unify the issuing parties.

The Plan of the Most Radical Monetary Reform

The fifth option is an attempt to cover the negative aspects of the capitalist market economy or to change the minus elements themselves from the inside by fundamentally reviewing the nature of money and creating money from the bottom up by changing and removing some of the characteristics of the current money. Examples include alternative banks, microcredit, community currencies, and depreciation currencies.

Hayek's idea of the denationalization of money to liberalize the issuance of money was an attempt, by giving private banks and private companies the freedom to issue money, to encourage competition among issuers. On the other hand, Huber and Robertson's money reform for creating new money was a proposal to make the monopoly of the issuance of money by the central bank effective and to increase the controllability of money supply even more. The directions of two reforms are completely opposite. While the former is liberal and competitive, the latter is nationalistic and monopolistic. Despite such a difference, they both did not attempt to modify the more fundamental principles of the monetary and financial system, such as the principle and ethics of issuance, issuer, circulation sphere, and interest.

Community banks maintain the current monetary and banking systems, but incorporate ethical and social elements such as coexistence with the environment and the promotion of local communities into their management philosophy and lending objectives. Microcredit or microfinance also provides small business loans to poor people in developing countries, especially women's groups in rural areas, without collateral and with joint guarantees, and has a very high repayment rate. The famed Grameen Bank of Bangladesh offers a financing instrument used in many poor areas of developing and developed countries to foster endogenous economic development with women's independence and poverty alleviation.

On the other hand, I believe that community currencies, in particular, LETS, are the most radical money reform at present. It replaces some significant elements of money. The issuing entity is a community or an individual, the circulation sphere is limited to a specific community, and no interest is charged in principle. In terms of no interest, Islamic finance is also attracting attention. Under Islamic law (*Sharia*), it is prohibited to take interest (*Riba*), so many interest-free banks were created after the war. There are also various schemes for Islamic bonds (*Sukuk*) to distribute returns other than an interest to investors.

Depreciation currency introduces negative interest or *demurrage*. Interest defines the economic time structure. If the interest rate is positive, as in the current financial system, then the future earnings as future value are discounted and assessed, so the present is more important. On the other hand, zero or negative interest generates either a time structure in which the past, present, and future values are uniform or a time structure in which the value increases gradually from the past to the present, present, and future. Under such a time structure, the significance of the natural environment, community, tradition, and culture, which take a long time to grow and maintain, will be appreciated more than ever.

Money is both the medium that creates markets and an essential component of capital. Therefore, by changing money, we should be able to change the characteristics of the market formed by money, the way capital functions, and the economy, culture, and ethics defined in these.

The monetary reforms as the fifth option, which began in many parts of the world in the twentieth century, all question money from more fundamental problems such as community, ethics, interest, time, generation, sex, and culture. They are also common in that they propose a total way of society by reforming money and finance.

Money as Communication Media

The five monetary reform plans mentioned above show that the further forward they go, the more they will seek to reassess money from a more fundamental level and to design the monetary system with a view to a broader social and cultural domain other than the economy.

At the very least, they teach us that, even after the many top-down attempts in the twentieth century to abolish or manage money, there are still vast unknown fields for the future of money that seemed to be no longer remained. We cannot detect such fields under the prevailing institutions and rules that look impossible to change at present. They can only be identified only in a thought experiment in which we assume that they are modifiable.

I believe that changing the way money today will be a breakthrough in overcoming the crises that globalization has created. More specifically, I think that the starting point is for people to reconsider money as a communication medium, and think deeply about "community currencies" that are integrative communication media, and gradually spread them from below. But if we present the system and structure of the community currencies as they are, it would probably seem to many people to be nothing more than a whimsical idea or a utopia of fantasy.

We have already seen the meaning of globalization and the problems that derive from it (Chap. 1), the errors in the market vision described by Neoclassical economics and the general equilibrium theory (Chap. 2), the characteristics of autonomous-distributed markets and the role of money in them (Chap. 3), and the evolution of capitalist market economy that gradually changes the modes through "internalization of the market" (Chap. 4). These are our attempts to precisely understand the necessity and possibility of money as well as the relation between the market economy and the capitalist economy and to decipher modern economic phenomena such as globalization from such a viewpoint. In this chapter, we will further discuss the significance and potential of community currency.

Community currency can be seen as the revival of the initial character of money as "communication media," and it has the potential to change the ways other monies work than community currency, as well as our internal values and motivations. Before we touch on community currencies more specifically, let us first consider language and money as communication media and then raise the issue of community currency as an integrative communication medium.

Luhmann's Communication System

Niklas Luhmann, a German sociologist, defines a total system of society as an autopoietic or self-producing system of communication and regards economy, politics, science, education, and religion as partial systems of society in which each of the different symbolically generalized communication media functions independently.

According to Luhmann, communication is not just transferring information from a sender to a receiver, but rather emergent integrity of three selections of information, transmission (utterance), and understanding. Luhmann's "media" has a wider connotation than is conventionally used for mass media, means of transmission and mediators.

There are three types of communication media: (1) "language" that enables communication of meanings by using auditory and visual signs, (2) "extended media (distribution media)" such as documents and printing and communication technologies that temporally and spatially extend the reach of communication by language, and (3) "symbolically generalized media" such as money, truth, power, love, and norms. Each of these communication media concerns uncertainty in terms of (1) understanding, (2) reach, and (3) attainment (acceptance), respectively (Luhmann 1984–1993, 1998–1991).

Here, "symbolic generalization" is a function that mediates differences and connects them, and conversely, "diabolic generalization" is a function that creates differences and separates them from each other. These two functions are usually inseparably linked.

Because "extended media" function at the reaching stage of information, we might call it "reaching media," and because "symbolically generalized media" function at the received stage of information, we might call them "received media." The subject, based on the "received media," decides whether to accept the information obtained through this "reaching media" and continually selects and chooses it. In this sense, the "received media" serves as "filtering" that selects information and gives motivation. Although knowledge as a system of information is shared between the sender and the receiver through "receptive media," it is not entirely the same, and there is a difference between the two. In this sense, subjectification (tie) and desegregation (detach) work simultaneously, and self and others are separately coupled (Masamura 2001).

Homology of Money and Language

Now let's consider the identity and difference between money and language, based on the ideas of Luhmann.

Money is a communication medium called "payment," and "economy" is a partial system formed by payment communication. Similarly, the subsystems formed by the power media and the truth media are, respectively, politics and academia. It is a social view peculiar to Luhmann that the whole society is differentiated into partial systems according to the type of media.

Although money and language are the "artificial media" as products of social and cultural evolution, there are some similarities between these two media (Kasuga 2003). First, distinguish between media and form. Whereas media is characterized by loose coupling, forms create rigid structures and strong bonds. Media can take many forms, but a form can be carved on only one medium.

In the case of language media, the form is "utterance" in which multilayered structures such as the object, the subject, and the situation are expressed. In the case of monetary media, the form is "payment," which represents the object, the subject, the total expense, etc.

Money and language are also homomorphic in "generalization" that overcomes differences in three dimensions of time, events, and society. The generalization of events of money is enabled by the function of a measure of value, which attaches unidimensional "price" to diverse and heterogeneous "commodities" to provide universality and comparability. "Commodities" and "price" in money correspond to "sentences" and "meaning" in language.

Language also has a function of generalization of events, although not as much as the function of a measure of value by money. The decisive difference between money and language is that money is "uniform media" that reduces the qualitative diversity and complexity of goods to unified information through price expression, whereas language is "diverse media" that can express overwhelming diversity and complexity, although it has the function of eventual generalization described above.

In other words, the form of payment only contains a much simpler structure than the form of utterance. Money as a measure of value can express the complexity of the real world by reducing and condensing it to unified values. Furthermore, the form of payment, by acting as "symbolic generalization," facilitates the division of labor, the division of knowledge, and the discovery and innovation of knowledge in the market and enables the sale of a wide variety of commodities in large quantities.

At the same time, however, when money expresses everything at unified single prices, it will result in "diabolical generalization" in which the uniqueness and qualitative diversity in the culture, values, and norms of regions, organizations, and groups would be erased. In particular, once money emerges as capital whose sole purpose is to augment value, and in the midst of recent globalization, not only investment and speculation prevail, but also the investors' mode of thinking such as opportunity costs and human capital are widespread among ordinary people, this problem becomes quite serious.

What this means is that people's consciousness will gradually become closer to capitalists. Increasingly, women and mothers perceive housework and childcare as the loss of an opportunity for wage income to earn outside their families, and people are increasingly viewing higher education, learning, qualifications, and even health as investments in human capital to increase future returns. Such changes in value and awareness are accelerating to the point where communities such as families, schools, and universities are completely disassembled into markets. We will see later how community currencies as integrative communication media can answer these problems.

What Is the Difficulty of Language and Money?

Let's take a closer look at money and language as a communication medium. The language we use generates deep understanding and empathy, but at the same time, it can also create unnecessary misunderstandings and cracks. But communication without language is impossible. Money is also a communication medium that is essential, but both good and bad, for people to run an economy.

When we look at language and money as a communication medium, we tend to think that the meaning of a message or a sentence is transmitted through words and likewise that the value of a commodity is transferred through money. But that's not true. Here, both language and money are understood as a means of avoiding the difficulty of not being able to achieve the assuming ideal state of pure communication and barter exchange that is not mediated by language and money.

But the meaning of a message cannot exist without language, and the value or price of commodities cannot exist without money. Messages and commodities cannot exist in themselves, independently of language and money. Conversely, language can be recorded and stored as words or voices even if they are not immediately read or heard, and money can also be hoard or stored without immediately buying commodities.

Accordingly, "representation" by writing or speaking and "understanding" by reading or listening in linguistic communication can be separated in time and place as independent processes, and similarly, "selling" and "buying" in money exchange can be separated in time and place as independent processes. In other words, because both language and money have the property of being saved and stored as substantive stock, language or money decouples linguistic communication or currency exchange into two independent processes as "representation" and "understanding," or "selling" and "buying."

The accumulation of stock by this separation serves as a buffer, making each process relatively independent and enabling individuals to act autonomously and locally based on their own information and judgment (see Chap. 3). And it also makes the whole system very flexible, robust, and emergent. Therefore, we should not assume transparent two-way communication or barter exchange in advance of linguistic communication or money exchange but should consider "representation" and "understanding" or "selling" and "buying," respectively, as independent processes.

The Difference Between Language and Money

So what is the difference between the two? The difficulty of realization of communication is particularly concentrated, on the one hand, in the second process of "understanding" as to linguistic communication but, on the other, in the first process of "selling" of commodities as to money exchange. The difference between them

lies in the fact that the main difficulty of realization is in a different process. Truly, "representation" and "buying" are not necessarily straightforward, but as mentioned above, language has a more complicated structure than money that is unified by numbers and requires a certain level of background knowledge and comprehension ability of others, so that "understanding" by others becomes more difficult.

Besides, in the case of money, since money is given an incentive of "interest" for accumulating it as stock, difficulties of "selling" are intensified. To think about how to stimulate communication, we need to think about these factors that make communication difficult. For example, if the "interest" of money is removed, the difficulty of "selling" can be significantly reduced.

In recent years, it is said that the linguistic communication ability of the younger generation has declined significantly. Even if the cause is the general weakness of young people's linguistic expressiveness, comprehension, and background knowledge, we will have to ask why this happens. You could think of this as follows.

It might be the case where, as a result of the "extensive expansion" and "intensive deepening" of the market due to globalization described in Chap. 1, the quantifiable communication of money exchange has become so bloated that the younger generation has become accustomed to the ease of "buying" in the second process of money exchange and has come to seek the same ease of "understanding" in the second process of linguistic communication, or, as a result of the adaptation only to the choice on the "menu" in "buying" of money exchange, the language itself for young people has become like a symbol as simple as money, and they cannot stand the complexity of linguistic communication with others.

If it is true, one of the causes of the impoverishment of linguistic communication must be found in the rapid enlargement of the money exchange, and the problem must be solved not only by the change of the linguistic medium itself but also by that of the money medium.

History of Community Currencies

The characteristics of money as a communication media were examined by referring to the theory of communication system by Luhmann. We have thus finally reached a point through a long detour so that we can explain the community currency.

Community currencies have a long history. Its mutual aid character is also seen in the "Yui" to help each other in busy seasons such as rice planting and harvesting in farming villages in Japan and in the "Ko," whose examples are "Mujin-Ko" and "Tanomoshi-Ko" as mutual aids financing associations, to allow the ordinary people to reserve and lend contributions to each other. However, the origin of modern community currencies should be found in Robert Owen's "Labour Exchanges." The community currency appeared almost at the same time as the capitalist economy that was established during the Industrial Revolution.

Owen achieved great success by introducing cooperative management principles, reasonable labor management, training of young workers, and coupons that could be used at factory stands in the cotton spinning mill in New Lanark, Scotland, but failed in an attempt to build a cooperative village in New Harmony, Indiana, USA. After returning to the United Kingdom, Owen established the "National Equitable Labour Exchange" in London in September 1832 and conducted an experiment using the "Labour Exchanges." A "Labour Exchange" is a certificate stating the working hours required to produce a product.

Workers receive "Labour Exchanges" in exchange for their products at "National Equitable Labour Exchange" and thereby can purchase other products of equal value. This experiment aimed at the equitable exchange of products based on labor hours in Ricardo's labor theory of value but came to a standstill due to inequality in the calculation of labor hours for each product and the intervention of merchants. But the idea of equitable exchange based on labor hours has been passed on to such modern community currencies as Ithaca hours, time dollars, and time banks.

Currencies that complement the national currency emerged around the world during the recession following the Great Depression. Many communities in Austria, Switzerland, and the United States introduced community currencies in the early 1930s to stimulate local trade.

These are all based on the idea of "stamped money" advocated at the end of the nineteenth century by Silvio Gesell, who was noted in the appendix of Keynes's book, *The General Theory of Employment, Interest and Money* (Keynes 1936). Gesell was a successful German businessman in Argentina and later published the main book on the theory of free money and free land (Gesell 1916). A "stamped money" is paper money that cannot be used without putting a paid stamp on its back every week or month, which devaluates gradually over time. Such demurrage like negative interest on money was intended to prevent hoarding and to promote the circulation of money.

In 1932, the Austrian town Wörgl issued stamped money at a monthly rate of one percent to pay for public work projects as an employment measure. This reduced unemployment and revitalized shopping districts, but the National Bank of Austria took legal action to stop it, thus derailing the effort.

WIR was a cooperative type exchange ring formed in 1934 by small- and medium-sized business operators and shopkeepers in Zurich, Switzerland, based on Gesell's free money theory, and many workers participated. In 1936, the WIR Bank, a bank organization capable of credit creation, was established, giving WIR both a decentralized and a centralized system.

WIR is defined to be equivalent to Swiss franc as in "1 WIR = 1 CHF." Currently, 76,000 companies, which is 17% of the total number of enterprises in Switzerland, from manufacturers to hotels and restaurants, participate in WIR. Transactions between companies are also settled by WIR. Because salaries for employees and foreign trade must be paid in the Swiss franc, and because the federal and local governments feared a drop in tax revenues, a mixed WIR and Swiss franc pricing was assumed. The price is listed as "1,000 CHF with WIR 50%." In the early 1930s, municipal governments, chambers of commerce, association, and communities in

many areas in the United States issued community currency called depression scrips. However, it gradually declined with the implementation of the New Deal and was abolished in 1943 due to a shortage of wartime supplies. Ithaca hours, time dollar, time banks, and commercial barter systems have carried on the tradition of community currencies in the United States.

The most common community currency is Local Exchange Trading System (LETS). It was born in Canada in 1983 during the recession and quickly spread to Western countries such as the United Kingdom, France, the Netherlands, Germany, the United States, Australia, and New Zealand. Experiments have also started in developing countries, including Thailand, Mexico, South Africa, and Senegal, with an estimated total of more than 2,000 now.

The most extensive community currency system in developing countries is Argentina's Red Global del Trueque (RGT), which used to hold more than one million participating members until the early 2000s but since then reduced the participants due to various reasons so that it changed the name.

In this way, community currencies (CCs) have emerged spontaneously in many parts of the world during periods of economic recession. They are the socio-economic institutions that aim at building reciprocal exchange systems without interest incomes, creating opportunities for unemployed people to work, and stimulating transactions in goods and services within local economies. But unlike full institutional design or top-down economic planning, CCs start with the daily practices of a small number of participants and spontaneously self-organize themselves to grow the circle of participants. Each community currency has its own name and is not uniform because it has been improved little by little depending on the characteristics of the local region. The uniqueness and diversity of these community currencies have never disappeared and still exist.

Community Currencies as Integrated Communication Media

Community currencies are economic and social-cultural media that play a crucial role in the domain of community (common), which is the socio-economic coordination domain along with market (private) and state (public).

Here we will view community currencies from language and money that are the communication media. First, we must pay attention to the following unique characteristics of community currencies.

Community currencies, like the ancient Roman god "Janus," have two aspects: "monetary" and "linguistic." They are unions of these two factors, but the term "currency" or "money" naturally indicates strong economic connotations. To make it clear that community currencies include not only economic but also social and cultural domains, we will call them "integrated communication media" in the sense that they simultaneously hold both money as economic media and language as social-cultural media.

Figure 5.1 summarizes the dual characteristics of community currency as an integrated communication medium. First, look at the "economic aspect" in the left column. Here, the monetary aspect means that heterogeneous and diverse goods and services are reduced to a single measure of community currency, say, "green yen," and are one-dimensionally expressed and evaluated by the quantity of the "green yen."

While producers or sellers set prices of goods and services and wait for buyers to come, consumers or buyers look at the prices and buy goods and services if they judge the prices are not high. The entire network formed of these individual bilateral transactions of buying and selling constitutes the "market." As long as community currencies are used to set prices for goods and services, such unified expressions and evaluations are required. As monetary media, therefore, community currencies also constitute a market domain that is a different type from the current capitalistic market economy.

It is often misunderstood that community currencies create, not markets, but communities, but it is not true. The community currency contains the monetary aspect in the sense that it aims at the exchange in reciprocity, "reciprocal exchange." If another "linguistic aspect" is also considered, community currencies form markets that are not only "competitive" but also "cooperative," that is, "coopetitive" local markets. To understand this, we need to escape from Neoclassical view of markets in which participants are supposed to be selfish and rational, and have no

CCs as 'integrative communication media'		
Side	**Money (Economic media)**	**Language (Social-cultural media)**
Purpose	Vitalization of local economy (autonomy, circulation, recycling)	Rehabilitation of community (dialogue, interchange, commitment)
Function	Independent Design, Issue and administration Bounded sphere of circulation Zero/ minus interest	Ferment of trust and reciprocity Cooperative 'prosumers' Linguistic expression/ transmission
Form	Complementary currencies and Emergency currencies (Stamp scrip, WIR, RGT, CC coupon)	Mutual-help and reciprocity (Time dollar, Time bank, Fureai kippu, Eco-money)
Domain	Commercial /non-commercial circulation (Market)	Non-commercial circulation (Non-market =community)

Fig. 5.1 Dual properties of community currency as integrative communication media

interactions under perfect competition, and rethink that markets can include altruistic and bounded rational agents and cooperative and mutually help interaction.

Next, note the "social-cultural media" aspect of the community currency in the right column of Fig. 5.1. It is also called the "linguistic aspect." All human relations use language and numbers complementarily, but the monetary media is "one-dimensional media" that evaluates goods and services as single numbers and is different from "multi-dimensional media" that can express and evaluate everything more complexly like language. A community currency can represent and communicate the social values, norms, and cultural diversity inherent in the issuing and operating entity and the local community in which it is circulated, as compared to ordinary currency.

Objectives of "Economic Media"

A community currency has two purposes that respectively correspond to the "economic media" and the "social-cultural media."

The purpose of the "economic media" for community currencies is "revitalization of the local economy." One of the causes of the recession and unemployment in the local economy is that money flows out of the region, and there is a lack of money circulating in the area. Even if deflation occurs in Japan as a whole, the seriousness of the problem, which appears as the bankruptcy rate and the unemployment rate, varies from region to region depending on the balance of payments and industrial structure. In general, the situation is more severe in rural areas than in metropolitan areas. Furthermore, every town and village in the nation is suffering from depopulation, an aging society with a declining birth rate, and the decline of shopping districts. Young people go to cities where there are many job opportunities. In addition, more and more local residents have become not to shop at local shopping districts, but instead, drive to large stores in neighboring towns or go to local convenience stores. As a result, purchasing power is flowing out of the region, and the problem is only getting worse. If shopping districts are dismantled, invisible community functions such as crime prevention, mutual aid, childcare, and cultural events will be lost. As a result, the living conditions of not only the elderly who cannot go shopping by cars but also the entire community will deteriorate, accelerating the decline of the local economy.

Under these circumstances, if people can create and manage a community currency by themselves that does not flow out of the region and make it circulate within the local area, the regional economy will be revitalized and become relatively self-reliant, thereby promoting the formation of a circular economy based on "local production and local consumption." This is the primary purpose of the implementation of community currencies for the purpose of regional economic revitalization.

Objectives of "Social-Cultural Media"

On the other hand, another purpose is "revitalization of the community" or "strengthening of bond and activation of communication." This corresponds to the "social-cultural media" of the community currency. Today, organs, germ cells, carbon emission rights, and even genetic information can be bought with money, expanding the domain of the markets (including black markets). Market fundamentalism is gaining momentum as the market economy increasingly covers the world, and deregulation and liberalization are promoted. In this globalized world where markets are expanding both in quality and quantity, human relations tend to be reduced only to economic trade and legal contract relations. But that would destroy communities that were built on mutual aid and altruism.

Communication between people also tends to be diluted, relying on mobile phones and the Internet, with non-face-to-face and anonymous relations expanding. If people become completely selfish and isolated, they may not be able to help each other or volunteer. Therefore, community currencies have come to be used in such trends of market and individualism as a means of reconstructing mutually supportive and reciprocal relations or as a means of making communication between people "face to face" and activating it.

In Japan, there was a strong tendency in the early 2000s to adopt a community currency called "eco-money" that is used only for volunteer activities and mutual aid, because we should shoulder one of the two purposes mentioned above, "revitalization of the community." However, such eco-money had become a problem because it does not circulate well and accumulates among some participants. For this reason, since the late 2000s, there had been an active movement to develop a community currency by allowing multiple circulations of gift certificates, which can also be used in shopping districts, rather than redeeming them once. This event indicates that community currencies should be considered to be unique media because they combine both economic and social-cultural aspects simultaneously.

Functions of "Economic Media"

Next, let's look at the functions of community currencies for "economic media" and "social-cultural media." There are three functions of "economic media" as follows.

1. Voluntary issuance and management. Community currency that people make with their own hands can let people be conscious that they can create and control the "money," which is located at the root of the region or society in which they live, as their common property. It is, so to speak, a democratic "money of the people, by the people, for the people." Since any voluntary organization can spontaneously issue and manage the currency independently, if people can create their own community currency and trade within a specific range, it means a

return of the right to issue money as a right of liberal rights or social rights. This is the liberal and democratic nature of community currencies.

2. Limited distribution within the region. Community currencies are designed to circulate only within a specific area without flowing out of it, thereby promoting the regional economy, defending the regional economy from external unstable financial markets, and creating a green circular economy. In other words, the currencies that cannot be taken out of the local area and circulate in it can protect the community and make it independent. When consumers shop at a local supermarket or convenience store, the money they pay is collected at the headquarters located outside the area. Investment funds also flow out to those places where they can make more money, such as large metropolitan areas where real estate prices are rising sharply. This leakage of money has a tremendous negative impact on the region, especially in the period of deflation. Since the community currency is circulated only within a particular area, the trade of goods and services within the region can be more active, and the shortage of effective demand due to hoarding of money will be resolved. It indicates regional protectionism and local independence in community currencies.
3. Zero or negative interest. Community currencies free from interest can stimulate consumption without credit creation, bubbles of assets, or wasteful public investment. They are designed to function only as a means of exchange or circulation that is not used for moneymaking or wealth accumulation. They are antiproliferative currencies that are not stored, are used, and activate the economy. In other words, all community currencies, including types of notes, accounts, and bills, have characteristics of free issuance and sharing of operating costs by citizens or civil organizations, non-convertibility to national currencies, a relatively small circulation area, and no or minus interest as in depreciation money. If it is ordinary money, you have to pay interest when you borrow. This is the case when borrowing from financial institutions such as banks and consumer financial institutions. Interest or non-interest in debt is nothing but a barometer of the social distance between lenders and borrowers, as in religious communities. Close relatives, friends, and neighbors do not ask for interest when lending money because it is a sign of trust and affection. "Ko," a mutual aid financial system for the common people that existed in Japan for a long time and still exists in some areas, also bears no interest. In community currency, interest-free is considered to promote mutual aid and solidarity based on trust. The negative interest rate can be regarded as "demurrage" that is the cost of hoarding money and is based on Silvio Gesell's idea of "stamped money" in which money diminishes its privileged position by being depreciated over time, as is the case with decaying general goods, and promotes its circulation. Thus, the non-interest, negative interest, or zero-sum principle represents the non-capitalistic economic nature of community currencies.

Is Community Currency Money?

These three characteristics are based on the "economic media" of community currency. These fundamental properties of community currency are now common sense. But the problem is ahead.

First of all, we have to think whether community currency can be said to be "money." As mentioned above, the community currency called "eco-money" was once widespread in Japan. This was a community currency whose use is limited to the exchange of human services not traded in the market, such as mutual aids and volunteers.

The reason why many municipal governments and communities adopted eco-money was as follows. Unless formal market domains where general goods and services are traded are clearly separated from informal non-market domains where mutual help and volunteer services that cannot be purchased by legal tender are tradable with eco-money, the boundaries between business activities and volunteer services will become ambiguous, and the volunteers would erode the business domain or that "pure" volunteer services for nothing will be impossible. Furthermore, it may be the reason to avoid being taxed income earned in community currency. For example, if someone provides car pick-up service, it could take away the jobs of taxi companies, and the community currency it earns might be considered taxable income. Therefore, in eco-money, they excluded the services that might be judged by the tax authority as business activities such as pick-up service by car from the beginning. Despite its name, "eco-money" claimed that it was not "money" but merely a medium for non-market transactions.

However, these attempts to view the use areas of national currency and community currency as market domain and non-market domain, respectively, would eventually lead to accepting the current economic trend of globalization as it is and result in making reviving a warm connection between individuals and revitalizing mutual support and volunteerism lost in globalization be the sole purpose of the community currency. And it could be just ended in being utilized to fill in niche services such as those not covered by nursing care insurance that cannot be provided by corporate activities in markets nor by social security and welfare policies of states. It was indeed a very convenient interpretation for the central government that had difficulties in providing welfare services with the people due to severe financial deficits.

In the first place, limiting the purpose of community currencies to the restoration of mutually supportive human relations is premised on the values that "village"-type human relations are preferable to those of "urban." Indeed, market liberalization, deregulation, and capital globalization tend to destroy communal social relationships and reduce people and individuals into disjointed individuals. Urbanization and individualization are now phenomena not only found in large cities but also in small cities, towns, and villages throughout Japan. However, because the urbanized and globalized market economy also gives people freedom, independence, and convenience, it would not be acceptable nor desirable for them to return to closed communities to where they are forced to belong, even if their relations with others are diminished and they seek much closer ties.

Accordingly, to make the economic effects of community currencies work, it is necessary to recognize that it is a kind of "money" from the beginning. If community currencies are allowed to be used as part of the payment for goods and services that are currently traded in the market, they will be used as a part of the payment for the trading in designated local areas so that local retailers can compete more with larger nationwide supermarkets, and it can enhance "local production for local consumption." Thus, community currencies will be able to promote local industries and reduce unemployment.

The actual trend of community currencies in Japan was in that direction. As mentioned above, the gift certificate type of community currencies had spread over after eco-money declined in Japan in the early 2000s. Such community currencies evolved from gift certificates and inherited such unique properties that they can circulate multiple times within the specific local region differently from national currencies, while they legally remain redemptive as gift certificates.

Thus, community currencies act as a safety net to protect the regional economy from violence in the global capitalist market. The strategy of making the local economy autonomous and circular by using community currencies and protecting it from the instability of the worldwide market is certainly valid. During the recession in the 1930s, there were such successful cases as Schwanenkirchen in Germany and Wörgl in Austria where the introduction of stamped money, which stimulates consumption by its depreciation over time, could make a rapid economic recovery at the town and village level. The cases of "depression scrip," which included the same idea as Gesellian money to depreciate, were widely observed also in the United States at the time. Nevertheless, those examples were still sporadic and temporary.

The view of community currency as a local safety net is instead a defensive response to globalization on a narrow understanding of the locality of community. It seeks to rescue vulnerable people left out of fierce competition within the region and to use community currencies to shelter and survive together. It tends to see the peril of globalization only as of the economically declining local areas in depression and aging society. But community currencies could be used for more fundamental problems as correcting unfair income disparities between the regions and classes, as well as eliminating economic instability itself caused by speculative capital movement. Moreover, the "local community" here resembles the image of a closed and buried community. The contemporary significance of community currency may be sought that it can build a new form of open community where individual freedom and autonomy are maintained.

Functions of "Social-Cultural Media"

Next, let us examine the functions of the "social-cultural media" of community currencies. When we focus on the aspect, we find that the view that community currency is a tool for overcoming economic crises and escaping recessions is too narrow.

4. Trust and cooperation. Community currencies circulate based on trust and cooperation. By using community currency, people can deepen their ties and expand mutual aid. In doing so, trust between participants is also formed and strengthened. Instead of giving security and "peace of mind" to people, they build "trust" among people, so that the communications among people that are currently unified only into money exchange relations can be more diverse and more productive. Trust and cooperation are crucial elements of dynamically developing community relations through community currencies.
5. Cooperative prosumers. "Prosumer" is a compound term invented by futurist Alvin Toffler that combines "producer" and "consumer." The phrase "cooperative prosumers" implies that citizens as producers and consumers at the same time should mutually cooperate while making effective use of individuals' resources. It represents the ideal that community currency participants as producers and sellers, and sellers and buyers, stand on the same plane as much as possible. It presents a philosophy and framework for the horizontal coordination of labor, consumption, welfare, and environmental activities of nongovernmental organizations and nonprofit organizations.
6. Linguistic expression and transmission. Each local area has its own cultural characteristics and personalities, but these appear to be incommensurable qualitative diversity that cannot be expressed with national currency such as central banknotes and deposit money. Community currencies are used as media to express and communicate the individuality of each region. Many names of community currency are unique. Not only do they represent local geography or place names ("Orion" from Orio district, Kitakyushu City, "Kurin" from Kuriyama town, Hokkaido), regional specialties, or characteristics ("Peanuts" from peanuts in Chiba City, Chiba, "Moyai currency" from Moyai Naoshi meaning rebonding after Minamata disease in Minamata, Kumamoto), but they also symbolize the ideas and thoughts of virtual communities ("Watt" from citizen power generation, "earth day money" from Earth Day Tokyo). In this way, community currencies function as linguistic media for local culture, interests, and values.

The Significance and Possibility of Community Currencies

There are two aspects of community currency: monetary and economic medium and linguistic and social and cultural medium. These are intricately combined and integrated into community currencies, but it is possible to detect these two aspects. We cannot understand its unique property from one side only. Since one of the two aspects is usually relatively stronger, reflecting its uniqueness and originality of local regions, each community currency takes a peculiar form of individuality. The evolution of community currencies into species has led to the emergence of a variety of "subspecies." The purposes of introduction and the characteristics of each region are diverse, and the community currencies also vary accordingly.

That's not all. The motivations and behaviors of participants and the performance and patterns of their communities influence each other and change over time. Through the media characteristics of community currencies, the micro agents and the macro environment change endogenously through interactions. In this evolutionary process, it makes no sense to ask what form of community currency is optimal or most efficient. This is because, in the course of evolution, the criteria for evaluation and judgment themselves change, and so do the rules of the game.

The community currency aims to restrain the negative function of money as capital as in Luhmann's "diabolic generalization" and restore social stability and sustainability by intentionally limiting the versatility in terms of circulation area, period, objects of transactions, participants, etc. of a modern national currency. If a community currency that is overwhelmingly weaker than a current national currency can be maintained evolutionarily, it will slowly have a gradual impact on the values, ethics, and habits of thought that are the inner institutions as shared rules of behavior for such agents as individuals and organizations.

Community currency is, figuratively speaking, not a symptomatic treatment, such as medication, which is expected to have an immediate effect, but a slow-acting healing method, such as acupuncture, which aims to improve the constitution. In other words, by inserting a minute foreign substance such as acupuncture into the immune system or the nervous system of the human body, subtle changes are given to the phase of order and chaos at the region boundary, and as a result, each cell is activated so as to coordinate the whole system.

Community currencies proliferated in many parts of the world in the 1990s and Japan in the early 2000s, when globalization was rapidly in progress, As community currencies enter a period of growth, the number and types of currencies will increase, and simultaneously as networking progresses, a certain number of currencies will be eliminated. Besides, the conversion of community currency to electronic money, the virtual and regional expansion of communities, and the pluralistic attribution of individuals to multiple community currencies and the situated use of multiple community currencies based on the environment will be realized.

Here we introduce the basic structure, history, and practical examples of community currencies and present a tentative picture of the institutional design in the future. We will then discuss the potential and significance of community currencies that can overcome the limits of the capitalist market economy as counter-media for globalization.

The details of the community currency systems are not necessarily the same. For example, community currencies include "centralized issue system" in which an administrator or management committee issues paper currency according to the predetermined rules or arbitrarily and "distributed issue system" (also called "mutual credit system" or "multilateral clearing system") in which participants can voluntarily create money as buyers up to a specific limit or unlimitedly and an administrator registers sales as plus and purchases as minus in the accounts of both sellers and buyers. They can also be categorized into those that link currency values to labor hours, those that link to the national currency, and those that link both as in Ithaka

hours. The community currency differs according to the time and place in which it was established and according to its purpose and philosophy.

As we shall see, such diversity indicates the significance and potential of community currencies. Here, however, we will take LETS as a typical example to help people understand the actual operation and structure of community currencies.

Alternative Named LETS

In February 1983, six members, led by Michael Linton, started LETS in the Comox Valley, a town of 60,000 people on Vancouver Island, Canada. LETS is a network in which participants voluntarily trade goods and services using community currency. Linton and his colleagues called the monetary unit "green dollar."

To start LETS, they must first decide on "registry" and "trustee." The registry opens and manages the participant's account, records the transaction, and sends the account statement to the participant every month. The trustee sets transaction fees, monitors the system, regulates anti-social activities, and exchanges information with other LETS and engages in system development. Participants (1) open their accounts and start from zero balance, (2) put the goods or services that they offer (sell) or want (buy) on the item list, (3) contact the other party when they find the goods or services they want and negotiate the terms of transaction such as price and quantity, and (4) ask the trustee to record the transactions in which the price agreed is added on sellers' account and the same price is subtracted from buyers' account. The balance of each participant can be negative up to a predetermined limit.

Participants may, at the time of transactions, learn from the registry about the account balance and transaction performance of other participants. No interest is charged or paid on the account balance. Finally, administrative expenses are paid with internal currency from the participant's account. The system is thus so simple.

The original system, which Linton started, does not allow green dollars to be converted into Canadian dollars, but the two are assumed to have the same currency value. This is to serve as a reference for valuing goods and services and to allow the price of goods to be expressed as a mixture of cash and green dollars, for example, "$10 (payable by green dollar up to 20%)."

The actual exchange is, for example, as follows.

The buyer calls the office and leaves the following message on the answering machine: "This is David on number 35. Please get Cathy on number 220 to make a 100 green dollar surplus for computer lessons." The registry records this information on a computer. Kathy runs a 100 green dollar surplus, and David runs a 100 green dollar deficit or "commitment." David doesn't need to have it in his account before he spends 100 green dollars. And if Cathy is confident enough to make money from teaching computer lessons, she can buy the listed used Volkswagen van for 1000 green dollars from Mary. As a result, Cathy's account has a 900 green dollar deficit. Finally, Mary asks David to fix the roof of her house for 300 green dollars, and the result of these three transactions would be a surplus of 700 green

dollars in Mary's account and a surplus of 200 green dollars in David's account (Fig. 5.2). Each participant's account surplus or deficit is continuously changing with each transaction, but the sum of all accounts balance in surplus or deficit is always zero. Therefore, credit creation does not occur as a whole in LETS. The sharing of deficits or commitments among participants facilitates trades in goods and services.

Interests on deposits and loans in bank accounts accumulate, so the balance increases over time. But LETS has no interest in surpluses or deficits. So those who have surpluses will buy goods and services from other participants as much as possible without hoarding them. As a result, community currencies in LETS circulate rapidly within the community, stimulating demand within the local economy. In LETS, each participant can create money when buying goods or services and holds the surplus or deficit as a result. It does not represent the position in bilateral legal relations of right/obligation between two parties as in debtor/creditor relation. In the words of Linton, "It is the commitment of the people in the community to the people in the community," not the right/obligation under a legal contract.

Four Principles

The national currency flows as income in the community from the outside eventually flows out as expenditure. LETS aims to complement such money flow into or out of the community and to construct money circulation in which it flows around within the community as much as possible.

LETS is based on freedom in the community and the resulting responsibilities and follows the four principles of "consent," "no interest," "sharing," and "information disclosure." "Consent" means that all transactions, including participation and withdrawal, are based on consent; "no interest" means that there is no interest in

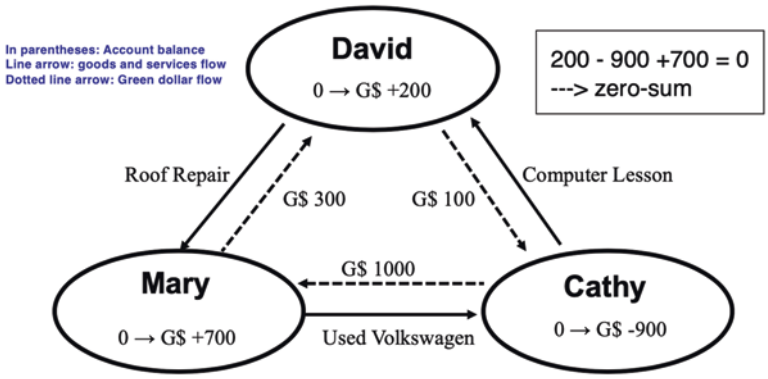

Fig. 5.2 An example of transaction on LETS

either the positive or negative balance of the account; and "sharing" means that one of the participants provides LETS support services on a non-commercial cost basis, with all participants sharing the costs, depending on their use. "Information disclosure" ensures that participants have access to information about other participants' transactions and account balances when making transactions. Linton calls LETS specifically LETSystem, which adds to these four principles the fifth principle of using an internal monetary unit of the same value as the national currency. This distinction became necessary when the LETS that uses standard labor hours was introduced in Britain and elsewhere. Linton's prototype is the LETSystem.

LETS appears to be a system with mutually contradictory duality. It is because it has the aspect of making individualism and liberalism in the market economy more thorough, and it also aspires to trust between neighbors and friends in the region and community. The two dimensions of freedom and cooperation are linked to the ethical dimensions of the individual: commitment based on personal choice and the resulting responsibilities. Cooperative nature is by no means a "closed" nature that forces exclusivity and assimilation into communities, and freedom and responsibility do not mean only those as consumers/investors who consider only economic merit.

Whether an individual LETS becomes an urban type with a strong individualistic character or a community type with a strong communitarian tendency, in other words, the desirable combination of free openness and social cooperation and trust depends on the social and cultural characteristics of the country or region in which it is introduced.

LETS as the General Form of Community Currencies

By the way, why can LETS be said as the representative community currency? It is not because LETS is the most popular in the world. It is because LETS has the highest degree of freedom and versatility, and it is conceivable that other community currencies can be incorporated as a special case of LETS.

LETS does not reduce the value of money to an absolute measure of labor time. The 1:1 ratio between the community currency and the national currency is presupposed in LETSystem, but it is possible to remove it so that LETS can be independent of the pricing system of the external market and the parties to the exchange can determine the price comprehensively taking into account the more pluralistic values. Such endogenous and independent pricing decisions that do not depend on a single external measure imply that LETS is a system with a large degree of freedom that can encompass cultural, social, and ethical values other than economic values.

Also, LETS does not exogenously determine the amount of issue for circulation, as in the case of Robert Owen's Labor Notes where a single institution such as the management committee issues notes, but it is determined endogenously by voluntary issuance of participants. It has also been found that the money stock as a total surplus of all participants' account balance in LETS determined by the self-organized

and distributed issuance method of the mutual credit system is much more efficient in realizing all transactions compared to the centralized issuance method such as the central banknote. LETS should also be noted for its efficiency of circulation for realizing transactions (Kichiji, Nishibe 2012). The interest rate in LETS is usually zero, but it can be minus as in Gesell's stamped money, and such LETS actually does exist. This is why what can be said about LETS thus applies to community currencies proper.

The Significance and Possibility of LETS

Then what is the significance and possibility of LETS?

First of all, LETS has a limited range of circulation for its currency as other community currencies; its "community" is not a preexisting territorial or kinship community, nor a closed community that demands a single membership, but a topological neighborhood space in which participants commit positively in resonance with hobbies, interests, or ideas. Such a "community" can be realized by the use of information communication technology such as the Internet and smartphones. A community currency deficit is called a "commitment" because it implies the responsibility for the "community" of one's choice, not for the "debt" nor "liability" to another particular individual. Instead, participants multilaterally lend and borrow via the community, and they do not stand in bilateral debtor/creditor relations. So, the crucial point is that we should understand the money created and multilaterally canceled in LETS as IOC (I Owe Community), not IOU (I Owe You). It is because the relations of participants in LETS are formed by the "pay-forward" principle of multiple parties rather than the "pay-back" principle between two parties.

The "zero-sum principle" that the summation of balances in all participants' accounts in LETS amounts to zero means that money can seemingly appear only locally on the micro level but does not exist globally as the aggregation on the macro level. In other words, the money in LETS is not a thing as a material entity that can exist independently, but an event as the whole record information or collective memory on balances through all transactions in the past. The unique property of LETS lies in the fact that LETS constitutes a multilateral clearing system as a "community" where "money" is bilaterally created and multilaterally canceled among all participants as members of the community. Here a community is regarded as the group of individuals as well as the field of reciprocal exchange conducted by members. LETS simply depicts the modern image of an ideal community that keeps existing only as a collection of individuals and keeps being continuously sustained by mutual aids and cooperation among members in a community.

Also, since we can simultaneously participate in an arbitrary combination of multiple LETS as many as possible, we can express our identities regarding inter-

ests and values by selecting a unique blend of "multi-LETS." The different diversity of multi-LETS that each one chooses exhibits the uniqueness of individuals. Through such pluralistic attribution of individuals to multiple community currencies, the meaning of "community" is extended from a "closed community" to an "open community," and the implications of "liberty" and "responsibility" are also extended from the freedom and self-responsibility of consumers and investors in the single global market to the freedom of choice and responsibility of multiple belongings to multi-LETS.

In general, "local" means a close area or a neighborhood as an opposite concept of "global" representing a global area or a wide area. The term "local" in community currency refers specifically to geographical regions ranging from neighborhood to elementary school districts, local shopping districts, and municipalities. In the past, many attempts at community currency, regardless of its purpose or method, have been made "local" in this geographical sense.

However, these include "communities" who share specific issues, values, and interests, such as the conservation of the environment and nursing care. In this case, they can be considered as "communities of interest (COI)" that refer not only to the physical space or geographical region but also to the topological space of the neighborhood of meaning. In other words, the space in which people gather on specific themes, interests, hobbies, values, and ideas is also "local." Such locality may be more easily understood as circles, communities, or associations sharing some meanings. It does not necessarily depend on geographical proximity. If we can share values and interests, it can be broader. The development of information and communications technology represented as the Internet, Wi-Fi, and smartphones as products of globalization is making it much easier to create such virtual communities.

There already exist countless websites and blogs, and communities on such SNS as Facebook are virtual "communities." When we want to know the latest information about environmental issues and discuss them, we don't care where they are in the world. Such "communities" are "global" in the sense that they can participate from anywhere on the earth and "local" in the sense that they form autonomous COIs. In other words, "virtual" communities are, by its very nature, "glocal," global and local at the same time. And such "glocal" community currencies on the Internet enable such a variety of virtual "communities."

The reason why community currencies can be said to be counter-media against globalization is not because they deny globalization, or rebuild and confine ourselves in closed local communities, but because they have the possibility of creating new virtual "communities" by making the best use of the fruits of globalization. Community currencies should aim to develop new types of communities in which people who spontaneously meet in harmony with values and ideas can build mutually beneficial relations and create richer communication based on trust and cooperation.

Change in the Concept of Time

Second, the significance of LETS that is interest-free money is that it prevents the accumulation of money and the self-augmentation of capital and stimulates the "use" of money rather than the "possession," thereby increasing the velocity of circulation and promoting both buying and selling. As mentioned above, minus interest like Gesell's money to depreciate might be possible in LETS. In this way, the circulation of goods and services within the region is enhanced.

Also, zero or minus interest changes the very idea of time. As it is interest-free, both surplus and deficit in LETS are constant over time. Therefore, the past, present, and future can be valued with the same weight, and the past, present, and future generations can be considered on the same time horizon. When interest is positive, we underestimate the future by discounting future income. If the interest rate is zero, present and future income will be the same, or if the interest rate is negative, future income will be more evaluated than present income, thus promoting long-term projects, such as forest work, culture creation, intercultural research, and education, that generate income or utility in the distant future. As a result, participants will be forced to pay more attention to future generations as well as the current generation and will naturally deal with issues such as the global environment, culture, and education.

Third, LETS, which takes the form of voluntary issuance by participants, allows participants to issue money as needed for their purchases without being affected by the malicious discretion of central bank issuance and monetary policy or the lending policies of financial institutions. Of course, participants are responsible for their own "commitments" and have to manage themselves, which also stimulates buying and selling.

Fourth, LETS, like markets and the Internet, represents an autonomous-distributed network. The whole system is self-organized as a collection of individual buying and selling processes without regard to centralized management or overall coordination. Transactions are bilateral transactions, and pricing is left to the parties involved. Thus, actual valuations can take into account a variety of values other than economic efficiency and profitability with reference to historical and nearby customary prices, such as reciprocity, reproduction, and environmental conservation.

LETS can also pay for services that are generally not priced in the market. It thus promotes nonprofit activities and cooperatives by targeting volunteers and "shadow works" that were not previously traded in money. That is to say, we will be able to vanish the conflict occurring between volunteer and business and between altruism and selfishness. In this sense, LETS can be conceived as not just economic media but also ethical and cultural media.

Some community currencies, such as Ithaca hours in the United States, link the value of the money to "working hours," but it is not necessarily the requirement for a community currency. Such community currencies may exist as mainly applied to services, but linking everything to "working hours" would rather undermine the

diversity of community currencies. In other words, we may adopt the concepts "labor time" or "labor value" as a value standard for exchange depending on the objectives and situations, but it is up to the operator and the community of LETS.

LETS as Trust Money

Fifth, LETS is "trust money" formed by participants' commitment to a "community" and trust among them. Attribution and solidarity of participants are spontaneously fostered based on trust. This allows participants to cultivate creativity and demonstrate originality actively and to confirm their dignity. For example, those who have lost their confidence after losing their jobs will empower themselves by thinking about what they can put on the offer list and developing their capability.

Finally, in LETS, the very meaning of money ownership and choice diversifies. The portfolio mix of multi-LETS in which we participate in and use is no longer determined in terms of maximizing economic value. There is a wide range of potential for cultural, ideological, and normative values to be reflected. Thus, LETS takes on the character of social-cultural media beyond economic media. The communication realized as money exchange is gradually more multi-dimensional and complex and approaching linguistic communication. By complementing linguistic communication in a multitude of different community currencies, these two forms of communication will not be completely separated, but rather will be combined and integrated as a hybrid.

Such conventional money as cash made people autonomous individuals and formed the basis for liberalism and individualism, but the excessive expansion of liberty as trade and investment in the market led to a decline in linguistic communication and communities. Conventional money also enabled anonymity in transactions, thus forming an area of personal confidentiality. But the spread of credit and debit cards has already shrunk the realm of anonymity, and the fact that credit companies and banks have instant access to personal information could even threaten personal privacy. If it is the case, it might be possible to open up a considerable area of anonymity to many different partial public spaces. LETS discloses information on transactions and balances of all participants, but it is up to the individual to decide what transactions should be conducted at which LETS. In other words, the extent to which an individual opens up to multi-LETS can be freely determined.

Alternative Beyond Capitalism

As we have seen, a community currency can be said a new model of "money" as an integrative communication medium that forms cooperative relations based on diverse ideas while expanding the scope of freedom based on liberalism and individualism.

Now we all know that commodities as products or services themselves carry various cultures and values, and we have also experienced that purchase and investment, including buying products related to sustainable development goals (SDG) and environmental, social, and governance (ESG) investment, convey not only economic but social-cultural values and messages.

The emergence of information products, such as electronic books and computer software sold and consumed through cloud computing on the Internet; the consumption seeking for ostentation and commonality; the advertising copy culture; the boycott for political appeal; and the consumer cooperatives for organic products are all examples. In the field of finance, microfinance and cloud funding are thought of as examples to express and convey social-cultural massages.

On the other hand, it has rarely been imagined that "money" itself, a homogeneous and inorganic medium, can convey social-culture values and messages until recently. But, the emergence of tremendous kinds and volumes of cryptocurrencies including bitcoin, altcoins, and other tokens has completely changed the environments. As a result, it seems that the idea of money as integrative communication media has been realized to some extent, but we cannot say that it is familiar to the public by now.

Community currencies will further develop as integrative communication media linking various economic, social, and cultural values and integrating linguistic and monetary communications. In contrast to the trend toward monetary union as in euro, community currencies aim to diversify their cultures and values in order to solve not only the economic problems posed by global capitalism but also its consequential problems of over-uniformity of value and culture and the decline of linguistic communication, which are the secondary but more fundamental problems of globalization. It is an integrative communication medium with the duality of money and language, and it presents the possibility of an alternative market economy beyond the capitalist market economy.

Chapter 6
Afterword: The New Possibility of Community Currencies

Eight years have passed since the publication of this Japanese edition, and the economic and social situation in Japan and the world has changed considerably. Such changes are still driving, not reversing, the trends of internalization of the market and globalization described above and seem to reinforce the validity of our discussion here. Besides, in the midst of these changes, community currencies have begun to offer the new possibility one again. Let's confirm these points in this final chapter.

Free Investment Capitalism: As the Goal of Globalization or the Climax of "Internalization of the Market"

As we saw in Chaps. 1 and 4, the ultimate destination of globalization, global capitalism, is the socioeconomy in which the movement of capital seeking value augmentation controls everything. The universal tendency of global capitalism to extensively expand and intensively deepen markets can be conceived as "internalization of the market," which appears today as the tendency toward free investments. In this way, not only capitalists and corporate organizations but also ordinary individuals such as workers, housewives, and students have become more and more taken into consideration all their actions as selfish investment for profit as personifications of fictitious capital and choose social actions such as education, training, occupation, marriage, childcare, and nursing care based on utilitarian concepts such as human capital and opportunity costs. Thus, for example, child-rearing, housework, and nursing care that generate no income are considered to be a cost burden in the sense that income opportunities from employment are lost and are regarded only as mentally troublesome and laborious work.

In this way, under global capitalism, not only is the market extensively expanding geographically and spatially as commodification expands, but it is also intensively deepening as commodification penetrates all areas of goods and services

M. Nishibe, *Whither Capitalism?*, https://doi.org/10.1007/978-981-13-0704-1_6

including information, rights, and risks. With the spread of such spirit as "free investmentism," self-interest in efficiency, convenience, and comfort, as well as monetary income, has been thoroughly pursued, and the commonality and altruism involved in reciprocity and mutual help in communities such as families and neighbors have become obsolete. Thus, the effects of globalization of capitalism are widespread and profound. This is the root cause of socioeconomic phenomena such as the bubble economy, its collapse, and the ensuing financial crisis, leading to the decline of norms and ethics, the collapse of traditions and customs, and the loss of safety and security. Bullying and abuse of children, domestic violence, and mass murder, which are increasingly common in developed countries including Japan today, seem to be also deeply linked to this problem.

Financial Capitalism and "Financialization of Labor Power": One Aspect of Free Investment Capitalism

Modern global capitalism takes the form of monetary and credit expansion and its collapse, which are separated from investment and growth in the real economy, as typified by the collapse of Japan's bubble economy in the 1990s. The globalization of finance has also led to the creation of derivatives such as futures, options, and swaps that commodify various rights and risks associated with underlying instruments. As a result, highly complex derivatives transactions such as collateralized debt obligation (CDO) and credit default swap (CDS), as seen in the subprime crisis in 2008 and the European sovereign debt crisis in 2010, expanded rapidly and became speculative, not only destabilizing the financial system but also having a severe negative impact on the real economy.

Such property of "financial capitalism" is based on globalization since the 1980s and the diffusion of the "free investmentism" as its ethos, as well as the informatization and servitization in deindustrialization. The financial capitalism in the twenty-first century arose as a result of the popularization of the inner institution of "free investmentism" in the evolution of global capitalism after the 1980s.

In financial capitalism, along with the abovementioned enlargement of financial transactions and innovation of financial instruments, (1) the self-financing of private enterprises, (2) the relative expansion of investment banking business of banks and the expansion of loans to households and workers, and (3) the expansion of financial liabilities and financial assets of households, that is, "financialization of labor power," have progressed. The third characteristic is the expansion of housing loans and the increase of speculative consumer finance related to durable consumer goods such as automobiles. This means that workers are becoming free investors seeking profits, which was one of the causes of the 2008 subprime crisis. The "financialization" of modern capitalism observed as such changes in the financial roles of firms, banks, and households is also an aspect of the "free investment capitalism" resulting from globalization and postindustrialization and is the result of capitalism's purifi-

cations toward replacing states and communities with markets through advancement of modes of commodification (Nishibe 2019).

Self-Contradictions of Financial Capitalism

Major financial institutions, including investment banks in the United States, accepted partial nationalization by injecting public funds in order to avoid bankruptcy at the time of the Lehman crisis, but they made enormous profits and reinstated high executive pay less than a year later. At the same time, many middle- and low-income earners were defaulted on subprime loans and were forced to leave their homes that were mortgaged by financial institutions when they borrowed loans. Although they lost the place for living, no relief has been given to them. This shows the self-contradictory nature of financial capitalism.

That is, financial capitalism is a world in which the state, on the one hand, abandons individuals and small- and medium-sized enterprises under the name of self-responsibility but, on the other hand, arbitrarily rescues only some of the large financial institutions on the pretext of avoiding the collapse of the financial system due to systemic risk. In the European sovereign debt crisis, the risk of national fiscal failure appeared in the so-called PIGS countries, which are weak parts of the EU. It was no longer a matter of whether the state should bail out financial institutions, but a matter of an upper level of whether the EU should bail out Greece and other countries to protect the common European currency, the euro, but the basic picture remains the same. In other words, what is bailed out this time is the nation-state that was supposed to bail out financial institutions that would endanger its financial system and currency. People in PIGS suffering from a high unemployment rate and salary cut were not rescued here either. It is no doubt that the austerity policy of state finances in the EU without any unique financial policy on the national level has made people's lives more difficult.

Growing Unfairness, Not Greater Inequality: A More Fundamental Problem in Financial Capitalism

After a series of financial crises since the 2000s, income and asset disparities have increased in developed countries, and "resulting inequality" has spread throughout society. This is certainly a matter of concern. Then, can the problem be solved if the state imposes a tax increase on the top 1% of wealthy people and redistributes it to middle- and low-income people? Seemingly, Piketty's answer is yes (Piketty 2013). He analyzed that inequality in all developed countries expanded in the midst of globalization since the late 1970s and suggested that those countries should inter-

vene strongly to solve the problem of inequality by imposing domestic property taxes alongside international Tobin taxes.

However, the more fundamental problem of financial capitalism is something else, not related to income redistribution aimed at rectifying economic disparities. In principle, the market economy should be based on free competition. It presupposes equal opportunities, even though there occur economic disparities as a result. This is what libertarians who have been promoting globalization have always said. In reality, however, it has become clear that the state has broken the equal footing that should be a precondition for free competition in capitalism and created unequal opportunities between large banks and citizens, under the pretext of protecting the financial system. As it were, in order to continue a so-called capitalism game, a chief manager as a nation-state or a union of nation-states was frequently forced to add a new rule that was clearly unfair to the small player, that he could cancel the loss of the big player only. Then the rules of the game inconsistently change. The problem here is not the resulting inequality under equal opportunities but the fraudulent inequality under unequal opportunities. In other words, the problem is inequality or unfairness in the rules of the game, which is much more fundamental than inequality as a result of the game.

There have been widespread claims that the "Anti-Wall Street" movement that spread around the world after the subprime crisis is seeking to correct disparities, but the real target of people's anger, whether or not they are clearly aware of the problem, is probably more toward this issue. It must be a crisis of the game itself that any game is widely questioned about the fairness of its rules.

Beyond the Dichotomy Between the Market and the State: "State Failure" Glossing Over "Market Failure"

It has been believed that macroeconomic imbalances arising from business cycles, such as recessions and unemployment, should be adjusted through the discretionary implementation of fiscal and monetary policies by the central government and central bank and systemic risks, such as financial crises, should be coped with by the central bank's safety net. But neither worked well in Japan's deflationary spiral since 1997. In the end, the disposal of bad loans had to rely on such government's direct intervention as injecting public funds into financial institutions, i.e., partial nationalization of financial institutions, which basically denied the market principle. The situation was temporarily improved; however, the problem was only postponed, not fundamentally cured. Also, pension and social security problems have become more serious due to the declining birthrate and aging population, making it an urgent task to reduce the huge fiscal deficit that has accumulated. These tragedies were repeated on a larger scale during the US subprime and European sovereign shocks.

In the midst of the advance of global capitalism, it was none other than large financial institutions that changed the financial markets into casinos and created financial instability through continuous development and sale of smaller credit products for risk diversification and credit derivative commodities to hedge default risk. Even though those financial institutions should be self-responsible for their own default, the unfair situation that the government bailed out only those financial institutions as the principal offenders of the financial crisis was openly exposed. The government has become known to the public that it is the leading player in fostering such unfairness, rather than playing a role in preserving the fairness of market rules. If fair market competition results in economic disparities, which can be viewed as distributional inefficiencies that impede future economic growth, it may be justifiable that the government should rectify such inequalities as "market failure." In this case, the market and the government complement each other because the government corrects economic inequalities that hinder economic growth through redistribution. However, if the government is the entity that relieves some players by excluding them from applying market rules for the sake of the survival of the market economy, it is no longer possible to say that the government that makes arbitrary changes to such unfair rules complements the "market failure." This is a big "government failure" to cover up the "market failure."

After the 1990s, the conventional idea that the government should supplement the "market failure" in a broad sense seen as chronic depression, unemployment, disparity, and inequality, with its fiscal and monetary policies and redistribution policies became no longer valid, while the "government failure" such as the collapse of pension system and the fiscal bankruptcy became conspicuous. The role of the government and the central bank as a safety net is also full of deception. Thus, the traditional dichotomic view of market "freedom" versus government "regulation" lost its theoretical and policy effectiveness and went bankrupt. This is why new socioeconomic and policy perspectives that go beyond the dichotomic approach are now required.

Abenomics Failure

In this section, Abenomics will be taken up as a concrete example of the aforementioned "failure of the government." The 2nd Abe administration, which was inaugurated at the end of 2012, 1 year after the Great East Japan Earthquake and the accident at the Fukushima Daini Nuclear Power Plant, with the aim of overcoming long-term deflation and restoring the economy to a nominal growth rate of 3%, advocated "Abenomics" as an economic policy based on the following pillars called "three arrows": (1) bold monetary policy, (2) flexible fiscal policy, and (3) growth policy to stimulate private investment.

In April 2013, Bank of Japan Gov. Kuroda announced radical quantitative and qualitative monetary easing, under which the central bank would achieve an inflation target of 2% in about 2 years. To that end, the BOJ will double its monetary base by buying not only short-term government bonds but also long-term government

bonds, exchange-traded funds (ETFs), and real estate investment trusts (REITs). These monetary policies led to a weaker yen and higher stock prices, which led to a recovery in corporate earnings. However, the real wages of workers did not rise, and the consumer price index was sluggish, making it difficult to overcome deflation. Therefore, in January 2016, the Bank of Japan introduced the first-ever negative interest rate policy in order to achieve the inflation target at an early stage and also implemented quantitative easing by purchasing government bonds without limit. Despite this, the inflation target was not completed, and the timing was repeatedly postponed.

The United States terminated its quantitative easing policy in October 2014 and raised its interest rate for the first time in 9.5 years in December 2015. Japan will eventually be forced to shift to an exit strategy. In April 2018, the target achievement time of "Around 2019" was finally deleted. Although the government and the Bank of Japan have not officially acknowledged this, in effect, this means that the government has given up on achieving its inflation target.

In this way, the unprecedented negative interest rate and ultra-easy money policy failed to lift Japan out of the "the lost 20 years" and put it on the path to economic recovery. The reason why the Bank of Japan's monetary policy is not effective is that, no matter how much the monetary base is increased, there is little demand for funds from the private sector and banks are unable to create credit through increased lending. This is evident from the fact that the monetary base has increased fivefold in recent years, while the money stock has barely increased. The lack of domestic demand for funds may be due to the inability to find profitable investment opportunities in the real economy. If an increase in demand for funds based on future economic growth cannot be expected, the artificially created excess liquidity will flow into asset markets such as stocks, bonds, real estate, foreign exchange, and derivatives as speculative funds. Thus, the upward trend in asset prices over the past several years has been attributed to the Bank of Japan's aggressive qualitative and quantitative monetary easing.

The Significance of Community Currencies: The Bottom-Up Solution Based on the Reciprocal Exchange Principle in Community

Community currencies attracted much attention because, despite the early mentioned economic, social, and political problems caused by globalization of capitalism, both the market and the government have thus failed and people are no longer relying solely on the market and the government to solve these problems. Instead, there have been growing worldwide movements to solve these problems autonomously, and bottom-up from the grassroots and local levels, while stimulating community functions.

In the 1990s, when economic globalization was progressing, community currencies rapidly spread around the world, and the number of such currencies is said to have exceeded 5000. In Japan, there were more than 650 examples of community currencies in operation in the early 2000s. In the case of Japan, voluntary civic groups took the lead in launching local currency movements, and local governments, chambers of commerce and industry, and private companies including local financial institutions also took part in these activities. Many nonprofit organizations were established to manage community currencies.

Since 2003, a series of support measures for community currencies have been launched, including the provision of a computer-based platform by the central government, the designation of special districts for community currency, and its subsequent nationwide deployment. Also, many attempts have been made to obtain the same effect as the community currency by enabling local gift certificates to circulate multiple times. This also led to the removal of the conventional requirement that community currencies could not be converted into legal currencies. Although the number of community currencies that are supported by various kinds of government supports has increased rapidly by trial and error, a large number of term-limit experiments were included, and many have not lasted long when the subsidies expired.

Community currencies constitute an evolving system in which those that meet environmental conditions survive under natural selection with various kinds of artificial variations. The survival of community currencies is greatly affected by the environmental conditions of both outer institutions of the capitalist market economy such as markets, property rights, and corporate organizations and inner institutions that comprise the behavior, motivation, and values of the people living in it. Thus, even in the same system of community currency, changes in environmental conditions can result in either its selection or survival. That is, it is impossible to determine whether an individual community currency system is superior or not independently of environmental conditions. In particular, local environmental conditions, such as the nature of local communities as the target of a community currency and the norms and values of the residents living in them, can vary greatly depending on how the currency is applied. The view is often found that the system of community currency itself is to be blamed for its failure to continue, judging that "the community currency does not work" but this is a hasty view and is by no means correct.

The basic direction in which the introduction of community currencies in order to solve the problems associated with global capitalism should be intended to make the best use of "Community = reciprocity principle" in addition to "Market = exchange principle" and "State = redistribution principle" is not wrong. Then, how should we deal with community currencies?

Community Dock with Community Currency

It is clear that under the environmental conditions in which the state currency and the market principle exhibit high fertility in global capitalism, the fitness of the community currency and the reciprocal exchange principle cannot be easily increased. The key to making community currencies viable over the long term is to influence and transform the local environments, including the nature of local communities and the norms and values of the people living there. But, since there was no attempt to raise the questions on a methodological level of who and how perceives and causes such changes and to think fundamentally about how to answer them, we have tackled to accomplish the tasks. We examined the theoretical significance of applying "Community = reciprocity principle" in addition to "Market = exchange principle" and "State = redistribution principle" by introducing community currencies in order to solve the problems associated with globalization. We also systematized the framework of "community dock" which is an endogenous community development method by the parties concerned based on the evolutionary characteristics of the socioeconomy and made recommendations for the practical introduction and utilization of community currencies (Kusago, Nishibe 2018).

"Community dock," the equivalent to the local community of a comprehensive and regular health check called "human dock," is a comprehensive and endogenous evaluation method for comprehensively diagnosing the local socioeconomy and leading to improvement of the living environment conditions through self-evaluation and self-improvement of the residents. The aim of this project is, by introducing a community dock method using community currency, to establish a comprehensive diagnostic approach for grasping the current situation of the local community from a multifaceted point of view and to propose a prescription for the improvement of the problem through quantitative analysis of the circulation velocity, circulation tree, and circulation network of community currency and analysis of subjective data through questionnaires and interviews. In addition, we proposed a management method to assist residents in discovering unique measures for revitalizing their local communities by themselves by feeding back the diagnosis results to local residents and to update institutional designs such as the rules and parameters of the community currency by trial and error so that they can fit the properties of each community. We have also conducted action research in several regions, including two areas in Hokkaido (Nishibe 2018).

The Limit of Human Ability: Encounter to *Engi*, Global to Local

I retired Hokkaido University's Graduate School of Economics in March 2017 and moved to Senshu University's Faculty of Economics in April, after 23 years of living in Sapporo. If I had not experienced in Hokkaido the Asian currency crisis of

1997 or the domestic financial crisis of 1998, I would not have studied or practiced community currency. When I studied in Toronto, Canada, for 2 years from 1987, I already knew about LETS on Vancouver Island. My impression of LETS then was a cozy "playing house" for self-satisfaction, which was unrealistic. This is no different from what many people feel today about community currencies. Therefore, if I had kept living in Tokyo without going to Hokkaido at that time, I would not have met the community currency again.

In fact, it was after the failure of Hokkaido Takushoku Bank in 1998 that I started taking community currencies seriously. Before that, I remember I had advised the seminar students that "Don't get a job at Takugin (Hokkaido Takushoku Bank)." So the bankruptcy of Takugin was within my expectation. But when it actually did happen, I felt a wave of quiet anger in my mind. It was understandable that the Bank of Japan would not rescue government-affiliated banks such as the Long-Term Credit Bank of Japan and The Nippon Credit Bank, Ltd., or securities firms such as Yamaichi and Sanyo. However, the situation was different with Takugin that is a regional city bank in Hokkaido. It was apparent that the failure of the leading bank in the region would deal a severe blow to the entire local economy, especially small and medium-sized companies and workers of those. Nevertheless, Takugin was not rescued and became the only city bank to fail. In the end, Takugin was regarded as a scapegoat for driving financial restructuring planned by the central government.

Over the next several years, Hokkaido's economy experienced agony. Fiscal and monetary policies by the central government and the central bank did not work. Since then, Hokkaido's economy had not recovered despite a nationwide economic recovery. We often heard a semi-masochistic joke that Hokkaido always catches a cold first but gets better last. I came to focus on community currencies again because I felt that unless local governments restructured their economies from the bottom up, such tragedies would be repeated around the world. Now that I think about it, it may have been some sort of righteous indignation. However, there is no memory even now that the theme of the community currency was intentionally chosen. Instead, I feel that because I happened to live in Hokkaido at that time, community currency chose me.

Meeting people, meeting land, meeting occupations, and meeting objects of interest are all determined by a curious coincidence, not by a rational choice. In essence, coming across oneself is also a magical encounter. It is neither a decision nor a choice as to when, in which country, as a child of whom, with what attributes—race, sex, appearance, constitution, and personality—you are born. It all happened to be given. The encounter with myself is so accidental. Although it may be because my life passed fifty and my ego weakened, I am magically inclined to believe it.

Finding the connection between the world and oneself leads to the esoteric point of Buddhism that everything in the universe is interdependent co-arising, "Engi." We never have the ability to take a bird's-eye view from a global perspective but live as "Engi" in a local encounter. That is why we cannot decide or choose our own existence or environments. In this sense, we are tiny and weak in the universe. The

underlying conditions of community currency should be sought in such fundamental existence conditions of the limit of human ability.

The Economic Origin of the Freedom of Self-Determination: Expansion of Free Choice by Money Under Financialization

However, in contrast to this, in the era of globalization, the idea that one can or should choose one's existence or circumstances from the point of view of oneself has been strengthened. This freedom of self-determination and self-choice is at the heart of the Enlightenment and rationalism of modern Western Europe. Such a way of thought is very different from the Asian Buddhist worldview, which states that the way of oneself and the world all depends on how they accidentally meet each other. It may be realized as the state to reach as a result of repeated experiences of being unable to decide only at one's own will in one's life. Nevertheless, the idea of freedom of self-determination and self-choice is spreading so widely in Japan now, and it intends to expand further. Why? Is it because the modern age does not allow people to attain spiritual maturity and forces them to be forever enlightening youths, or is it because fundamental human rights under modern democracy have become widespread and expanded? After experiencing the postmodern culture in the 1980s and the post-bubble society in the 1990s, I came to believe that it was not merely spiritual or cultural, neither political, but economic. It had an "economic" origin in globalization since the 1970s[1].

Under globalization after the 1980s, the market economy based on money has been expanding both in quality and in quantity. As a result, anyone with enough money can get what they want. Through the shift from "consumption of products" to "consumption of services" with the background of deindustrialization, the target of the purchasing power of money expanded rapidly not only to material goods but also to information and services, as well as one-time experiences and human relations. The expansion of freedom in self-determination and self-choice is caused by the increase of free selection and decision by money with globalization. In other words, what actually supports the expansion of freedom of self-determination and self-choice is not the infancy of the human spirit or the modernization of the political system, but the expansion of the economic institution called the market, which is the scope of using the currency.

[1] It is consistent with the materialistic historical view in that it recognized the underlying basis of the economic foundation that the substructure determines the superstructure, but since it relies on the concept of "thing" as product and "production" as in production relationship and productive power, deindustrialization and financialization in globalization will lead to rethinking the meaning of "economy" with an emphasis on the concept of replication and variation of knowledge and information, not on production of products as things. It means that money is not a thing, but information. We would like to discuss these methodological and philosophical issues in a separate book.

To Freedom to Create and Choose Money

Because I have now become convinced of this, this book interprets globalization as the expansion and deepening of markets on one side and the shrinking and thinning of communities and countries on the other and draws the basic view that community currencies have emerged as a means of solving economic, environmental, social, and cultural problems caused by globalization.

As a result of the central proposition on the globalization seen above, the following critical consciousness has also strongly sprouted. Although the freedom of individual self-determination and self-choice has increased in globalization and neoliberalism since the 1980s, the monetary system that underpins such freedom has been taken for granted. However, we cannot ignore the direction of "freedom to determine and choose money." Furthermore, it would be necessary to seek a more radical implementation of liberalism in the direction of "freedom to create and choose money."

Keynesians and Marxians reject the question of the creation and choice of various currencies as an error from the beginning. Although Keynesians regard the unity of the national currency and the monopoly of issuing by the central bank as artificial and Marxians regard it as natural, they take a similar stance in the sense that they both accept it as the fact. I hasten to add that Marx and Keynes themselves were much more flexible in posture and delicate in intelligence than their successors. Marx himself was critical of the liberal or egalitarian monetary reforms that did not change the economic foundations of such libertarians as Proudhon or such Ricardian socialists as Bray, but he showed a sympathetic understanding of the attempts of monetary reforms that entailed changes in cooperative organizations in production and consumption of Owen. Keynes also evaluated Proudhon's free credit and Gesell's stamped money (Nishibe 2013, 2006).

Escape from the Theory of "One Currency in One Country": Toward Innovation and Diversity of Money

Up to now, the legal currency issued by the central bank differs from country to country, but basically, one currency has been used in one country. However, from a long-term perspective, monetary nationalism cannot be viewed absolutely. Historically, many kinds of money have been differently used in various ways, depending on the types of commodities and transaction conditions. It was not until the Bank of England was created by the Peel Act of 1844 that the state monopoly of currency had been established. It is just recently in the history of money as a whole, and the oldest central bank has a 170-year history only. Then, this same system has been genetically transmitted to advanced capitalist countries. Since the establishment of the Bank of Japan was in 1882, about 40 years later than that, its history is only 130 years.

The current theory of inflation targeting and Friedman's monetarism that formed the basis for it do not make any difference in that they uphold the unity of the national currency and the monopoly of issuing by the central bank. The only exceptions are the Austrian economist Hayek and such free-banking theorists as Selgin and White. Hayek's discussion on denationalization of money after the introduction of the floating exchange rate system in 1973 clearly indicated the possibility of such a direction (Hayek 1976). Although he could not escape from the institutional and technical constraints of the times, such as limiting issuers to private companies and financial institutions, he had the foresight for the twenty-first century.

The themes of community currency and cryptocurrency have further advanced from the innovation and diversity of commodities arising from the freedom of money to decide and choose commodities to the innovation and diversity of money arising from the freedom of man to decide and choose currencies. Its basic message comprises the following three points. First, it is possible to change the "one currency in one country" whereby the nation-state and the central bank exclusively issue statutory currencies. Second, the denationalization of money expands the possibility of the existence of a variety of currencies whose circulation areas are regions or communities and enables individuals and organizations to choose multiple currencies to use based on differences in their own preferences, environments, or ideals or according to different parties of transactions. Third, the coexistence of community currencies and cryptocurrencies and other private currencies broadens the meaning of freedom that permits variation and diversity and seeks to solve the problems arising from globalization by enhancing people's "quality of life" rather than quantitative increases such as economic growth and capital accumulation.

The Reaction to Globalization in the West: A shift to Protectionism, Regionalism, and Pluralism

The European Union is created centering on Germany and France in 1993 and has advanced national currency integration into the euro by establishing the European Central Bank in this century. It has been considered to be a path toward the formation of a single global currency and a single global market economy. However, the spate of sovereign risks, particularly in Greece, raised fears of a split in the euro. PIGS, which suffered from high unemployment and other economic difficulties, raised doubts about the euro because it prevents each country from implementing its own monetary policy, and there is a growing interest in the reversion to the national currency and the introduction of community currencies. In 2016, the United Kingdom voted to leave the EU in a referendum and began exploring the opposite direction of economic integration. In this way, the course toward a single global currency and market economy was questioned and forced to change course.

It should be noted that the central banks of Japan and Europe have introduced negative interest rates during this period and have kept it up to now. This indicates

that the positive rate of return on capital or investment profitability, which is the precondition of capitalism, has declined over the long term and the demand for funds for real investment has declined. This may be because, in recent years, the quality and quantity of cryptocurrencies have increased explosively, and as a result of the realization of a wide variety of currencies, a flight from the national currency has begun actually to occur.

In 2017, the Trump administration came into power in the United States, clearly moving away from global free trade and toward protectionism by a single nation. This does not necessarily mean that globalization has stopped or started to reverse. Rather, as the "internalization of the market" underlying globalization has continued to proceed, it has been more widely recognized that the negative economic, social, and cultural aspects of globalization have become more serious even in the United States, where it originated, and protectionism, regionalism, and pluralism have begun to be explored from a critical viewpoint. In the future, criticism of the progress of the "internalization of the market" will increase. As these realities gradually make capitalism approach its extreme point, the G mode, and if humans deeply recognize its limitations, it seems to be a starting point for the non-capitalist market economy to become a reality.

Fusion of Cryptocurrency and Community Currency as a Symptom of a Non-capitalist Market Economy

As the search for a post-capitalist market economy begins, community currencies and cryptocurrencies are now attracting attention as one of the most important signs. While community currencies and cryptocurrencies are spreading, the issuing parties are expanding variously to local governments, commerce and industry associations, shopping streets, nonprofit organizations, citizen groups, and server networks on the Internet. The innovation and diffusion of ICT such as the Internet and smartphones have promoted the digitization and cashlessness of money and have accelerated the diversification of money such as electronic money and corporate currency. Then, digital-community currency or virtual-community currency in which cryptocurrency and community currency are fused has appeared. Thus, the diversity of currencies other than legal tenders is no longer the subject of mere discussion but is emerging as a new reality.

In Japan, community currencies became a big boom in the early 2000s, and many community currencies were created, but many of them were not sustainable for a long time beyond several years because subsidies expired, administrators exhausted, and temporal enthusiasm faded. Thus, the sustainability of community currencies has become a problem. Of course, some of them have survived for longer than 15 years. The experience and lessons learned from such longevity community currencies should be shared and their genes should be utilized.

In the evolution of money, community currencies remain small. However, it is more vital for them to survive without extinction than for them to grow big. This is because the possibility of the same significant environmental changes as in the time when dinosaurs died out will be expected to increase in the future. Mammals have made great strides since the extinction of the dinosaurs, and humans, who have evolved among mammals, have realized the development of global civilization. In this way, when the external environment changes drastically, the weak can adapt and flourish the most in the new environment. Given the uncertain future of the national currencies, the same may hold true for community currencies.

On the other hand, cryptocurrencies are highly transmissible and have grown in number and size dramatically in recent years. At present, there are more than 2000 types of cryptocurrencies, including altcoins and tokens, and their market capitalization once reached the Japanese national budget of 80 trillion yen. Its representative currency, bitcoin, was designed as a decentralized private currency in which a number of servers around the world could manage their issuance autonomously and in a decentralized manner on the Internet as "mining," even without a centralized issuing authority such as a central bank, and was initially intended to be widely used as a "money" to buy and sell goods and services.

In reality, however, cryptocurrencies are now recognized as one of the high-risk, high-return speculative financial instruments such as FX and futures, which have extremely high volatility, and are not used for consumption and investment in goods and services.

Since the latter half of 2017, cryptocurrencies, including bitcoin, have skyrocketed around the world and suddenly collapsed in January 2018. In the same month, 500 million NEM tokens worth 58 billion yen were stolen from an account of the exchange Coincheck, heightening concerns about the security of the exchange. Such a cryptocurrency bubble is probably a result of partly absorbing the surge in legal currencies caused by the Bank of Japan's ultra-easy monetary policy.

Although there are various problems, the explosion of the mass of the entire cryptocurrencies has a significant impact on the current national currency and financial system and has the potential to transform the economic system as a whole. Is there any way to turn cryptocurrency into "good money," which is a means of exchange with stable value, that ordinary people can use for real transactions with peace of mind?

Hayek's Denationalization of Money: Good Money Drives Out Bad

Hayek favors allowing private banks to issue their own currencies, as in Scotland and Hong Kong today. However, they should not use the same name or denomination as central banknotes such as "pound" and "Hong Kong dollar." If it is the case, users will not distinguish between different coins or banknotes with the same name

and hoard good money with high value or credibility and pay bad money with low value or credibility so that Gresham's law that "bad money drives out good" holds. In this case, as in the case of quantitative easing, the money supply of one kind quantitatively increases, causing only inflation (Hayek 1976).

Therefore, Hayek insisted that if a large number of private currencies competed with each other, they should be denominated with different names and exchanged at floating rates so that users can distinguish them qualitatively and trade according to its quality. If Japan were to denationalize its money, each private bank should name its own currency differently such as Sumitomo Mitsui Yen or Mitsubishi Yen besides the Central Bank's yen, and people would choose the best one among them if they competed with each other. Accordingly, for example, a person who wants to reduce uncertainty in transactions can make a qualitative distinction between the currencies with stable value as "good money" and the ones with high volatility as "bad money" and then choose the former. When multiple concurrent currencies are clearly distinguished as being qualitatively different and exchanged at floating rates, the principle of money choice that "good money drives out bad" works (*ibid.*).

Recently, a variety of cryptocurrencies have been exchanged at floating rates, and we can say Hayek's argument has been realized now. There are various kinds of money, and the exchange rates can change according to users' evaluation of quality. If some money wins the competition, it circulates smoothly. The problem, however, is that cryptocurrency, on the other hand, gave a sharp negative image of being speculative and vulnerable to theft. As a result, the present situation is many people hold the impression that cryptocurrency is "bad money."

The Conditions for Cryptocurrency to Become Good Money

For cryptocurrency to become "good money," it must break away from its global use as fictitious capital, in which people seek to increase the quantity in terms of legal tender by pursuing capital gain as in the case of such financial instruments as FX and futures. To achieve this, first, it is necessary to assume the "situations of existence for organic human," where the time and space that organic humans, not AI or robots, mutually interact with are particular and the human ability to recognize, calculate, and execute is strongly limited. Under these conditions, we should consider the "conditions of good money," in which money can be used in daily economic transactions of goods and services by real people in order to reproduce their lives and environment repeatedly based on limited ability in local time and space.

In doing so, as in the case of community currencies, cryptocurrencies must overcome the problem of the traditional dichotomy of "market vs. government" or "freedom vs. regulation." This dichotomy, in this case, is in a different form: "non-statutory currency/private currency vs. statutory currency/national currency." At present, however, "digital-community currency" or "virtual-community currency" as a fusion of cryptocurrency and community currency has also appeared. In order to consider the "conditions of good money" while understanding these realities, we

need a theoretical framework that, by adding "community" to the dichotomy of "market vs. government/state," reintegrates these three principles.

The Emergence of Virtual-Community Currencies

Over the past few years, many digital coins have been emerging that aim to realize the objects of community currency such as revitalizing local economies and communities by introducing innovative FinTech of cryptocurrency such as distributed ledger technology (DLT) called "blockchain" and consensus algorithm called "Proof of Works." They are realized as the digital value on smartphone applications, which can be paid instantly at local shops, supermarkets, and restaurants at the fixed rate (1 coin = 1 yen) and circulate multiple times within users in regional areas. Such examples include "Sarubobo Coin" issued and managed by Hida Credit Union in Takayama City, Gifu Prefecture, and "Harukas Coin," which Kintetsu, one of the major private railroad companies in Kansai district, has been conducting a feasibility test for circulation for 2 years in Osaka and other cities along the line.

This is an attempt to create a digital-community currency as a hybrid combining the technologies of cryptocurrency and the ideals of community currency. It is, on the one hand, a local currency with geographical boundaries, but, on the other side, a virtual-community currency formed globally on the Internet.

As far as community currencies are concerned, we tended to think of community in terms of a geographical area such as an administrative district and neighborhood association. But once the smartphone app for Sarubobo Coin is downloaded, it can be used not only by Takayama residents but also by tourists and visitors from outside, including inbound tourists from overseas. Therefore, those who are interested in Takayama can enter the community, and such different kinds of users will form the community. Thus, the community becomes the "community of interest" based not only on the geographical closeness of users but also on the theme, ideal, value closeness of interest[2].

[2] The meaning of the word "community" seems to have changed significantly in the 2010s. From the 1990s to the 2000s, even if the same term "community" was used, there still remained the old meaning of "community" which was a closed and exclusive group, such as blood relations of families and relatives, regional ties of neighborhoods, villages based on agricultural collaboration and mutual cooperation monitoring, and trade unions and guilds sharing craftsmanship skills. However, the appearance and popularization of SNS in the 2000s changed the meaning and reality of the community considerably. With the advance of globalization, communities such as families and regional ties have become increasingly sparse. Now, it's not even "community of interest" as a group of people sharing the same interests, but it's just a group of nominal recipients of information, followers called "friends," and such a community seems to be back to the masses. They do not intend to talk about their real interests, but to increase the number of followers and "friends," they turned into a social, commercial group that offered food and travel topics of interest to everyone and shared good-looking photos. The community, in this sense, can be said to be another name for the market. Although money is not directly used or circulated there, Facebook's "like" is widely used as reputed money, a measure of popularity. It seems necessary to reconsider the meaning of the community in comparison with the market.

Overseas examples are Bristol Pound in Bristol, a British city of 3 million people, and Chiemgauer in Prien am Chiemsee, Bavaria, Germany. A significant portion of both currencies has already been digitized. But the latter also implemented a mechanism to depreciate money. As the value of money decreases with time, people are encouraged to spend it as soon as possible, which will lead to economic revitalization.

What is needed now is to make cryptocurrency be widely used for real transactions for production and consumption, not for speculative assets, and to make community currency be not merely a tool to promote goodwill and volunteer activities, but also a media to improve "local production and local consumption" through the formation of currency circulation in the local economy and achieve shock-resistant sustainability. Digital-community currency, the fusion of digital coins and community currencies, suggests a crucial direction for the sustainability of the socioeconomic and natural ecosystem in the future.

The Possibility of Regional Digital-Community Currency: A Prospect for the Post-capitalist Economy

In order for digital-community currency to be extensively used in all sides of production, consumption, and investment in the real economy, we need to not only use it for the payment for consumption, finance, and tax but also receive it as the income as salary, pension, subsidy, dividend, interest, and return. Also, in order to create a significantly high self-sufficient and autonomous socioeconomic zone where people as consumers can obtain most goods, services, and information they need by spending income they earn as producers of goods and services and creators of information, the circulation sphere must be sufficiently large. From the perspective of the regional industrial structure as interindustrial/sectoral input-output linkages within the region, we must assume such a vast area at a level of the Doshu system, a system of regional administrative units composed of several prefectures in Japan to form the highly self-contained market economy that domestically provide necessary living goods and services such as energy, food, education, medicine and care.

For example, a regional currency in Hokkaido, the northernmost of Japan's main islands, whose industrial structure is somewhat independent, would exert its economic effects. In Hokkaido, the self-sufficiency rates of the primary industry and the tertiary industry exceeded 100% and 90%, respectively, but since there were not many secondary industries, Hokkaido had to rely on import for most manufacturing products such as automobiles, electric apparatus, and machinery, which resulted in a large interregional deficit of payments and was balanced by local allocation tax grants from the central government. Therefore, until the 1990s, efforts to reduce the significant interregional deficit of payments by inviting secondary industries to Tomakomai East Industrial Park continued. Unfortunately, this attempt failed. First of all, we should stop thinking about regional revitalization on the premise of indus-

trialization in the postindustrial age. If the local government earnestly tackles the issue of Hokkaido's regional currency, to turn tourism and agriculture into a sixth industry in the postindustrialization era, there is a possibility that the economy will continue to grow.

If the Hokkaido digital-community currency is established, the ratio of local production to local consumption in the region will increase economically, enabling the region to become self-reliant. At the same time, not only the central government but also local governments will be able to implement regional monetary and fiscal policies in accordance with specific local economic conditions. As long as yen as the national currency within the framework of "one currency in one country" is an invariable premise, a large gap would remain in the economic situation between metropolitan areas such as Tokyo, Osaka, and Nagoya and other regions. No matter how much redistribution or transfer of tax and financial resources is conducted, the gap will not be bridged regardless of repeated calls for regional revitalization. People's living would be more stable and secure if autonomous economic zones formed by regional currencies could become to be relatively independent of the national and global markets.

We could visualize a post-capitalist market economy that transcends the global capitalist market economy as a *glocal* autonomous distributed network formed by overlapping local cooperative market economies.

Good Money Lab for Digital-Community Currency to be Good Money

In April 2018, exactly 1 year after I transferred to Senshu University, we established "Senshu University Digital-Community Currency Consortium Laboratory." It is commonly known as "Good Money Lab." Its mission is to create and nurture "good money" as a new combination of cryptocurrency and community currency through collaboration among industry, academia, public, and private sector. The consortium-type laboratory was established as a base for carrying out research, education, learning, and dissemination activities concerning digital-community currency and for building a framework for information sharing and consultation.

Money, in this era of its diversification, is no longer given top-down as a ready-made thing but is created from below and selected by people. Therefore, in the creation and selection of money, the question of what kind of money is "good money" becomes essential. It's not just convenient, efficient, and stable. What exactly is "good money"? It is the most fundamental problem. The answer is not something anyone can give, but something we have to find ourselves.

What kind of life do we want to spend, what type of economy do we think is good, and what kind of society do we want to live? From now on, we must ask not only the amount of gross domestic product (GDP), wealth, or population growth but also the quality of life and the quality of our society and economy.

What on earth do we want to make sustainable? Money accumulation, economic growth, population growth, or technological progress? Or is it a community that has continued as a rich natural environment, an ecosystem composed of diverse life forms, a language and culture that has been passed down through generations, and a gathering and connection of people?

Good money is a medium that depends on a good life from the perspective of "quality of life" and reflects the value that people have in their minds as quality, not quantity. Good Money Lab, as an industry-academia-public-private consortium-type laboratory, aims to explore, discover, and realize the newly emerging digital-community currency as good money in a variety of ways.

Bibliography

Andersen, B. (1983). *Imagined communities: Reflections on the origin and spread of nationalism*. Verso.

Arrow, K. J., & Hahn, F. H. (1971). *General competitive analysis*. Holden-Day.

Baudrillard, J. (1970). *La Société de Consommation: ses mythes ses structures* (The consumer society: Myths and structures). Denoël.

Barone, E. (1908). Il Ministro della Produzione nello Stato Collettivista (The ministry of production in the collectivist state). *Giornale degli Economisti e Annali di Economia, Nuova Serie, 71*(Anno 125) in Hayek (1935).

Becker, G. (1964–1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.

Berlin, I. (1969). Two concepts of liberty. In *Four essays on liberty*. Oxford University Press.

BIS. (2007). *Triennial central bank survey of foreign exchange and derivatives mrket activity in 2007.*

Caldwell, B. (1988). Hayek's transformation. *History of Political Economy, 20*(4), 513–542.

Dawkins, R. (1976). *The selfish gene*. Oxford University Press.

Fleetwood, S. (1995). *Hayek's political economy*. Routledge.

Florida, R. (2002). *The rise of the creative class*. Basic Books.

Florida, R. (2005). *The flight of the creative class*. Harper Business.

Fukuyama, F. (1992). *The end of history and the last man*. Free Press.

Gesell, S. (1916). *Die natürliche Wirtschaftsordnung durch Freiland und Freigeld.* Selbstverlag, Les Hauts Geneveys (The natural economic order: A plan uninterrupted exchange of the products of labour).

Hobsbawm, E. (1994). *The age of extremes: The short twentieth century, 1914–1991*. Abacus.

Hayek, F. A. (Ed.). (1935). *Collectivist economic planning*. Routledge & Kegan Paul Ltd.

Hayek, F. A. (1937). Economics and knowledge. *Economica, 4*(new ser.) in Hayek (1948).

Hayek, F. A. (1944). *The road to serfdom*. Routledge.

Hayek, F. A. (1945). The Use of Knowledge in Society. *American Economic Review*, *35*(4) in Hayek (1948).

Hayek, F. A. (1946a). *Individualism: True and false.* B.H. Blackwell in Hayek (1948).

Hayek, F. A. (1946b). *The meaning of competition*. The Stafford Little Lecture in Hayek (1948).

Hayek, F. A. (1948). *Individualism and economic order*. Routledge & Kegan Paul.

Hayek, F. A. (1960). *The constitution of liberty*. University of Chicago Press.

Hayek, F. A. (1968). Competition as a discovery procedure. The lecture delivered to the meeting of Philadelphia Society at Chicago.

Hayek, F. A. (1973, 1976, 1979). *Law, legislation and liberty: A new statement of the liberal principles of justice and political economy*. University of Chicago Press.

M. Nishibe, *Whither Capitalism?*, https://doi.org/10.1007/978-981-13-0704-1

Hayek, F. A. (1976). *Denationalization of money: The argument refined*. Institute of Economic Affairs.
Hayek, F. A. (1978). *New studies in philosophy, politics, economics and history of ideas*. University of Chicago Press.
Hicks, J. R. (1939). *Value and capital: An inquiry into some fundamental principles of economic theory*. Clarendon Press.
Hicks, J. R. (1969). *A theory of economic history*. Clarendon.
Huber, J., & Robertson, J. (2000). *Creation of new money, a monetary reform for the information age*. New Economics Foundation.
Hurwicz, L. (1960). Optimality and informational efficiency in resource allocation process. In K. J. Arrow et al. (Eds.), *Mathematical methods in social sciences*. Stanford University Press.
Illich, I. (1981). *Shadow work*. Marion Boyars Publishers.
IMF. (2010). *International financial statistics*, April.
Isenberg, D. (1997). The rise of the stupid network. *Computer Technology*.
Itoh, M. (1990). *Gyakuryusuru shihonsyugi* (*Backflowing capitalism*). Toyo-Keizai Shinpo-sha.
Iwai, K. (1996). The bootstrap theory of money: A search-theoretic foundation of monetary economics. *Structural Change and Economic Dynamics, 7*.
Keynes, J. M. (1936). *The general theory of employment, interest and money*. Macmillan.
Kichiji, N., & Nishibe, M. (2012). A comparison in transaction efficiency between dispersive and concentrated money creation. *International Journal of Community Currency Research, 16*(D), 49–57.
Kirzner, I. (1985). *Discovery and the capitalist process*. The University of Chicago Press.
Kirzner, I. (1989). *Discovery, capitalism and distributive justice*. Basil Blackwell.
Kirzner, I. (1992). *The meaning of market process*. Routledge.
Kornai, J. (1971). *Anti-equilibrium*. North-Holland Publishing Company.
Kornai, J. (1980). *Economics of shortage*. North-Holland Publishing Company.
Kresge, S., & Wenar, L. (Eds.). (1994). *Hayek on Hayek, an autobiographical dialogue*. The Bartley Institute.
Kusago, T., & Nishibe, M. (2018). Community dock: A new policy approach for altering institutions. *Evolutionary and Institutional Economics Review, 15*(2), 431–459.
Lange, O. (1936–1937). On the economic theory of socialism. Pt I-II, *Review of Economic Studies* 4, Pt I, October 1936, 53–71; Pt II, February 1937, 123–142.
Lange, O. (1967). The computer and the market. In C. Feinstein (Ed.), *Socialism, capitalism and economic growth: Essays presented to Maurice Dobb*. Cambridge University Press.
Lavoie, D. (1985). *Rivalry and central planning: The socialist calculation debate reconsidered*. Cambridge University Press.
Lippincot, B. E. (Ed.). (1938). *On the economic theory of socialism*. Minnesota University Press.
Luhmann, N. (1984). *Soziale Systeme: Grundriß einer allgemeinen Theorie*. Suhrkamp Verlag.
Luhmann, N. (1988). *Die Wirtschaft der Gesellschaft*. Suhrkamp Verlag.
MacBride, W. L. (1990). "Two concepts of liberty" thirty years later: A Sartre-inspired critique. *Social Theory and Practice, 16*(3), 297–322.
Marx, K. (1859–1970). *Zur Kritik der Politischen Ökonomie.* Franz Duncker. *A contribution to the critique of political economy*. Progress Publishers, Lawrence & Wishart.
Marx, K. (1867–1976). *Das Kapital. Kritik der politischen Oekonomie*, Bd. I, Marx-Engels Werke, Bd. 23, Dietz Verlag. *Capital: A critique of political economy*, Vol. 1, Penguin Books.
Marx, K. (1885–1978). *Das Kapital. Kritik der politischen Oekonomie*, Bd. II, Marx-Engels Werke, Bd. 23, Dietz Verlag. *Capital: A critique of political economy*, Vol. 2, Penguin Books.
Marx, K. (1894–1981). *Das Kapital. Kritik der politischen Oekonomie*, Bd. III, Marx-Engels Werke, Bd. 23, Dietz Verlag. *Capital: A Critique of Political Economy*, Vol. 3, Penguin Books.
Mikami, M., & Nishibe, M. (2018). Chapter 12: Gaming simulation using electronic community currencies: Behavioural analysis of self-versus-community consciousness. In G. M. Gomez (Ed.), *Monetary plurality in local, regional and global economies* (pp. 243–274). London/New York: Routledge.

Mises, L. von. (1920). Die Wirtschaftsrechnung im sozialistischen Gemeinwesen. *Archiv für Sozialwissenschaften*, Vol. 47. "Economic calculation in the socialist commonwealth" in Hayek (1935).

Morishima, M. (1994). *Shiso to shiteno Kindai Keizaigaku* (*Modern economics as a thought*). Iwanami Shoten.

von Neumann, J. (1945–1946). A model of general economic equilibrium. *The Review of Economic Studies, 13*(1), 1–9.

Nishibe, M. (1996) *Sijyozou no Keifugaku* (*A genealogy of market-images*). Toyo-Keizai Shinpo-Sya.

Nishibe, M. (1997a). Rodoryoku no Gaibu Shohinka, Naibu Shohinka, Ippan Shohinka – Shijo no Naibuka niyoru Shihonshugi no Shinka (External Commodification, Internal Commodification and General Commodification of Labor – Evolution of Capitalism through Internalization of Market). *Keizairiron Gakkai Nenpo (Annual Bulletin of Japan Society of Political Economy)*, *34*, 143–164. Aoki Shoten.

Nishibe, M. (1997b). Gosyu-teki Koukan to Touka Koukan: Saiseisan Keizai Taikei niokeru Kakaku no Hitsuyosei (Reciprocal exchange and equivalent exchange: Necessity of price in a reproducible economic system). *Keizaigaku Kenkyu (Economic Studies), 50*(3), 78–98. Hokkaido University.

Nishibe, M. (2000a). Chapter 4: Ethics in exchange and reciprocity. In Y. Shionoya & K. Yagi (Eds.), *Trust, cooperation and competition*. Springer-Verlag.

Nishibe, M. (2000b). Jiritsubunsan-teki Sijyo niokeru Kahei (Money in an autonomous distributed market). *Keizaigaku Kenkyu (Economic Studies), 50*(3), 78–98. Hokkaido University.

Nishibe, M. (2006). Chapter 7: The theory of labour money: Implications of Marx's critique for the Local Exchange Trading System (LETS). In H. Uchida (Ed.), *Marx for the 21st century* (pp. 89–105). Routledge.

Nishibe, M. (2012). Community currencies as integrative communication media for evolutionist institutional design. *International Journal of Community Currency Research, 16*(D), 36–48.

Nishibe, M. (2013). *Chiiki Tsuka* (*Community currencies*). Minerva Shobo.

Nishibe, M. (2015). Globalization: Evolution of capitalist market economy through "Internalization of market". *Evolutionary and institutional rconomics review, 12*(1), 31–60. Springer.

Nishibe, M. (2019). Marx's financial capitalism. *The Japanese Political Economy, 45*(1–2), 68–80. Routledge.

OECD. (1996). *The knowledge-based economy*. General Distribution 96.

Okishio, N. (1965). *Shihonsei Keizai no Kiso Riron* (*Basic theory of capitalist economy*). Sobusha.

Piketty, T. (2013). *Le Capital au XXIe siècle*. Éditions du Seuil (*Capital in the twenty-first century*. Harvard University Press, 2014).

Polanyi, K. (1944–1971). *The great transformation: The political and economic origins of our time*. Beacon Press.

Polanyi, K. (1957). The economy as instituted process. In K. Polanyi et al. (Eds.), *Trade and market in the early empires: Economies in history and theory*. Free Press.

Polanyi, K. (1977). *The livelihood of man* (Harrry W. Pearson, Ed.). New York: Academic Press.

Polanyi, M. (1966). *The tacit dimension*. Doubleday.

Ricardo, D. (1817–1951). *On the principles of political economy and taxation* (P. Sraffa, Ed.). Cambridge University Press.

Roemer, J. E. (1994). *A future for socialism*. Harvard University Press.

Ryle, G. (1946). Knowing how and knowing that. *Proceedings of the Aristotelian Society, 46*, 1–16.

Sandel, M. J. (1996). *Democracy's discontent: America in search of public philosophy*. Belknap Press.

Schumpeter, J. A. (1911). *Theorie der wirtschaftlichen Entwicklung*. Duncker & Humblot. (1934) *The theory of economic development*. Harvard University Press.

Schumpeter, J. A. (1954). *History of economic analysis*. Oxford University Press.

Shibata, K. (1935). *Riron Keizaigaku Jo* (Theoretical economics, Vol. 1). Kobundo shobo.

Simon, H. A. (1956). Rational choice and the structure of the environment. *Psychological Review, 63*(2), 129–138.
Soros, G. (1998). *The crisis of global capitalism: Open society endangered*. Public Affairs.
Sraffa, P. (1960). *Production of commodities by means of commodities: Prelude to a critique of economic theory*. Cambridge University Press.
Strange, S. (1986). *Casino capitalism*. Basil Blackwell.
Uno, K. (1980). *Principles of political economy: Theory of a purely capitalist society*. Translated from the Japanese by Sekine. The Harvester Press.