

Frank H. Knight on Market Thinking

Reflections on the Logic and Ethics of the Capitalist Economy

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I What Money Can and Cannot Buy: An Introduction

1-1. Sandel on the Moral Limits of Markets

For everyman in the street, it is so important to distinguish between what money can buy and what money cannot buy. These two things are clearly different and should not be confused. It seems very strange to see, however, that there are many modern economists who tend to forget the differences, thus simply applying the logic of buying and selling to the whole aspects of life.

Michel Sandel is a famous professor of political philosophy at Harvard University. His famous 'Justice' course has been the first Harvard course made freely available online and on television.¹⁾ In a very popular book, Sandel (2012) once remarked:

As the cold war ended, markets and market thinking enjoyed unrivaled prestige, understandably so. No other mechanism for organizing the production and distribution of goods had proved as successful as generating affluence and prosperity. And yet, even as growing number of countries around the world embraced market mechanisms in the operation of their economies, something else was happening. Market values were coming to play a greater and greater role in social life. Economics was becoming an imperial domain. Today, the logic of buying and selling no longer applies to material goods alone but increasingly governs the whole of life. It is time to ask whether we want to live this way.

(Sandel (2012), pp.5-6)

¹⁾ Sandel's Harvard course was also easily available on Japanese television. Its style was so appealing and influential that it was nicknamed "Sandel's exciting lecture." It seems that his emphasis on justice and equity impressed very much those Japanese economics students who were tired of repeated talk on money and efficiency.

Let us recall the 1950s and the 1960s when the general equilibrium theory was firmly established by the three eminent economists, Lionel W. McKenzie (1919-2010), Kenneth J. Arrow (1921-2017) and Gerard Debreu (1921-2004). Interestingly enough, if we collect the initials of these economists, we would form the catch word MAD. Therefore, some cynical persons might say that we then lived in the MAD Age, or perhaps another name of the Golden Age. We would like to investigate how powerful (or perhaps mad) the general equilibrium way of thinking once was, and also discuss how and to what degree it continues to be so even today.

1-2. Gary Becker on an Economic Approach to Marriage

Gary S. Becker (1930-2014) was a Nobel-winning scholar of economics and sociology. He was working for the University of Chicago, and greatly contributed to raising the good (and possibly bad) reputations of the Chicago School in modern times. He was a famed scholar of remarkable impact beyond the academic world.

In a very interesting book, Becker (1976) once remarked:

According to the economic approach, a person decides to marry when the utility expected from marriage exceeds that expected from remaining or additional search for a more suitable mate. Similarly, a married person terminates his (or her) marriage when the utility anticipated from becoming single or marrying someone exceeds the loss in utility from separation, including losses due to physical separation from one's children, division of joint assets, le-

gal fees, and so forth. Since many persons are looking for mates, a market in marriages can be said to exist. (Becker (1976), p.10)

This article sounded to me a thunderbolt from a clear sky. Although I got married with a lovely girl a year before, any kind of pecuniary calculations over benefits and losses never crossed to my mind. My marriage had nothing to do with the Becker way of market thinking. Besides, the change of my place of employment from an American university to a Japanese university resulted in a reduction of my yearly income by half. I was then in a mood to accept it: I did this because of my family obligation to old parents living in the land of the Rising Sun.

1-3. Knight versus Friedman: Uzawa's Remark

Hirofumi Uzawa (1928-2015) was one of the most famous economists in postwar Japan: he was once working for the University of Chicago before he came back to the University of Tokyo, Japan. In a very popular book, Uzawa (2013) once made a very important remark in Japanese. Although it was a bit long sentence, let us attempt to write its English translation down below:

In the 1950s and the 1960s, the central figure of the so-called Chicago School was Friedman, with a supportive role being played by Hayek. In contrast, Knight thoroughly condemned the atomic bombing by the U.S. over Hiroshima and Nagasaki in 1945 for the worst crime ever committed by mankind. Knight gave serious thought to the problem of competition and ethics: he was really an outstanding economist. In my opinion, Knight was entirely

different from what people loosely called the Chicago School.

Friedman and his circle continued to devote themselves to moneymaking. As Knight seemed to think that this was not the right thing to do, he once said to many colleagues around him, "It is true that Milton Friedman and George Stigler finished their doctoral dissertations under my direction. I would like to say, however, that their recent behaviors were too much for me. So I would rather like to declare that they are no longer my students". This was presumably a sort of the declaration of expulsion. I can recall that he was then an old man over 80 years, yet such a good and wonderful person. (Uzawa (2013), pp.35-36.)

Uzawa's remark aforementioned clearly indicates a striking difference between Knight and Friedman from an ethical point of view. Concerning the relationship between the logic and ethics of the market economy, Knight was very cautious against falling into the trap of the market logic first and nothing else: in fact, he emphasized that ethics and social philosophy should play a critical role in protecting from possibly devastating consequences of excessive competition. Contrary to such teachings of his mentor, Friedman became a strong believer in "market fundamentalism without ethics." It would not be fair to say that Knight and Friedman belonged to the same school of economic thought, namely the Chicago School. Alternatively, we could say that Knight early led the original Chicago School, and Friedman later modified the morals of the school in a different direction. .

The contents of this paper is as follows. In Section 2, we will outline the solid framework

of general equilibrium theory which was strongly promoted by McKenzie, Arrow and Debreu, and point out the unique ethics and ideology lying its background. In Section 3, we will turn to the reassessment of Knight's strong objections against the market fundamentalism. In order to escape from mathematical jungles, we will make use of graphical illustrations as much as possible. It is hoped that our visual and intuitive way of presentation will work out beautifully.

II The Ethics and Ideology of General Equilibrium Theory

2-1. The Life and Work of "Professor Fixed Point"

In the 1960s, the campuses of many Japanese universities and colleges were so noisy: there were so many political gatherings and strike activities. Some of the active youth wanted to go abroad, and could continue to do their graduate studies. I myself was one of those ambitious students, thus applying for admission of graduate schools at American universities. Very fortunately, in 1968, I was admitted to the Graduate School of Economics, the University of Rochester.

There was a very prominent professor at the Rochester Economics Faculty, who was mainly responsible for the establishment of the outstanding graduate program in economics. The name of that famous professor was Lionel W. McKenzie. He was one of those pioneers who together with Kenneth Arrow and Gerard Debreu succeeded in introducing advanced mathematics such as differential topology into economics. One of his favorable mathematical

2) For details, see McKenzie (1999). Personally speaking, my academic relation to McKenzie, a mentor at Rochester, carried over to Pittsburgh. I myself made Sakai (1972), my own lecture note on general equilibrium theory, by occasionally consulting McKenzie (1969) and adding some original materials. For the life and work of Kakutani whose theorem of fixed point was

fondly used by McKenzie, see Hirota (2004).

3) McKenzie (1969) was the handwritten lecture note he used in a graduate seminar in general equilibrium theory at Rochester. It was a loosely written manuscript full of corrections and imperfections. Fortunately, it was later typewritten by his efficient secretaries and eventually

tools was the Fixed Point Theorem which was established by great mathematicians including L.E.J. Brouwer (1881-1966) and Shizuo Kakutani (1911-2004). So it would be quite natural to see that McKenzie was nicknamed "Professor Fixed Point."²⁾

The way in which McKenzie taught general equilibrium theory at Rochester was legendary. Every time, he distributed to a selected group of graduate students his hand-written manuscripts, which contained a lot of mathematical symbols and complicated equations. The symbols and equations were rather loosely written and sometimes almost incomprehensible. Occasionally, he spoke the names of some Japanese economists in heavy English accents, Morryshe-ma (exactly, Michio Morishima), Woozawer (Hirofumi Uzawa), Inner-da (Ken-ichi Inada), Knee-kwaido (Hukukane Nikaido), and Nay-gee-she (Takashi Negishi).

I still remember the occasion when McKenzie did not feel well and unfortunately got struck in a mathematical jungle. This incident happened exactly when he was about to finish the proof of general market equilibrium solution. He knows that the mathematical tool needed was no less than the effective use of the Fixed Point Theorem. Then he stopped walking and began to fold his arms, holding a piece of white chalk with his right hand. After five minutes or so, his cheek suddenly got more brighter than before, and nodded his head to himself, "I've got it!" And after completing the existence proof successfully, he convincingly yet rather quietly muttered with sigh, "Oh, it's so beautiful!" This was only faintly heard to me: I was lucky enough to sit on the front row. A will-o'-the-wisp would be burning and sneer at us forever!³⁾

became a hard-covered book, namely, McKenzie (2002). The time span between the lecture note and the complete book is amazingly 33 years. Time flies like an arrow!

2-2. The Brouwer Fixed Point Theorem

L.E.J. Brouwer (1881-1966) is a famous Dutch mathematician, who worked in topology, measure theory and complex analysis. He proved a number of mathematical theorems including what mathematicians later called the Brouwer fixed point theorem.

In what follows, let us briefly explain the Brouwer fixed point theorem. Let us consider a set X and a function f from X to X , namely a transformation of X into itself. We find it very interesting to find the existence of an element x^* such that $x^* = f(x^*)$, namely, an element which does not move in the transformation. Such an element is particularly named a fixed point of the function f .⁴⁾

Let us assume that X is a non-empty, compact, convex set of R^n , then n -th dimensional real space. It is well-known that in the real space, a compact set is equivalent to a bounded and closed set. If we consider a unit closed interval $[0, 1]$, it is indeed non-empty, compact, and convex. For an illustrative purpose, let us consider the following continuous function from $[0, 1]$ into itself.

$$f(x) = x^2 - x + 3/4 \quad (1)$$

Then as is seen in Fig. 1, the curve f must cross the 45 degree line at least once. Such a crossing point Q^* constitutes a fixed point, namely, $f(x^*) = x^* (= 1/2)$.

More formally speaking, we can establish the following simple yet powerful theorem which was first proved by Brouwer (1910) more than 100 years ago:

4) Debreu (1959) and Takayama (1974) are very useful in understanding the Brouwer fixed point theorem and its related topics.

Theorem 1 (the Brouwer fixed point theorem)

Let X be a non-empty, compact, convex set of R^n , and f be a continuous function from X to itself. Then f has a fixed point: namely, there is an element x^* of X such that $x^* = f(x^*)$.

Although the Brouwer fixed point theorem seems very powerful, it should never be almighty: namely, it does not hold unconditionally. A clear yet rigorous proof is provided by Nikaido (1970). We are only content here to confirm that the following four conditions must be satisfied for applicability of the theorem.

- (i) The function f must be continuous on the set X .
- (ii) X must be a closed set.
- (iii) X must be a bounded set; namely, X must have upper and lower bounds.
- (iv) X must be a convex set.

Fig. 2 shows that if one of those four conditions is not met, the fixed point theorem is no longer applicable. In Panel (A), the curve f is not continuous at $x = 1/2$, whence f does not cross the 45 degree line. Panel (B) stands for the case in which the set X is an open unit interval $(0,1)$, which demonstrates non-intersection of f and the 45 degree line. In Panel (C), since X is an infinite interval $[0,\infty)$, it is no longer bounded above. If the curve f under question is always increasing above the 45 degree line, then there should be no crossing point between these the curve and the line. Finally, Panel (D) indicates the situation under which X is not a convex case. Suppose that X is the union of the two closed sub-intervals such that $X = [0,1/3] \cup [2/3,1]$. Then if the

curve f jumps at $x = 1/3$ and $x = 2/3$ as is seen the panel, there should be no crossing point.

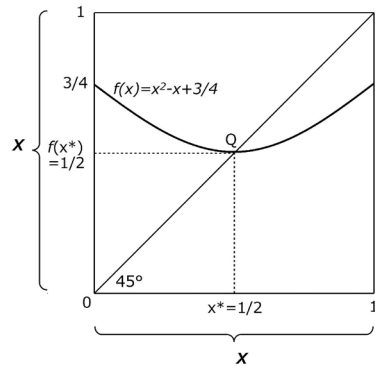


Fig. 1 The Brouwer fixed point theorem

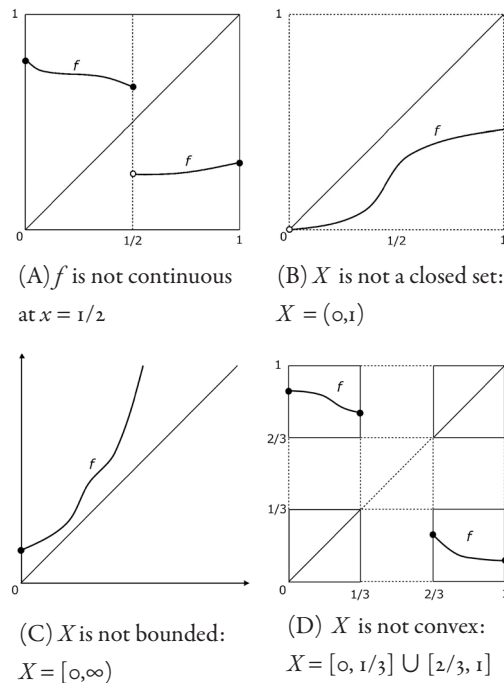


Fig. 2 The four cases where the fixed point theorem are not applicable

2-3. The Equivalence between the Walras Existence Theorem and the Brouwer Fixed Point Theorem

The Brouwer fixed theorem is one of the most beautiful theorems in modern times. Although the theorem per se is a pure brain product, it has many applications to other fields such as economics and game theory.⁵⁾

In the 1950s and the 1960s, there reemerged a bulk of mathematical economists who found much interest in giving a rigorous proof for the existence of multi-market equilibrium a la Leon Walras (1874), a lonely French pioneer. Among those economists were Arrow (1951), Arrow & Debreu (1954), Debreu (1959), McKenzie (1954, 1955, 1959), Gale (1955), and Nikaido (1956). Unquestionably, the Brouwer fixed point theorem and its generalizations such as the Kakutani fixed point theorem have been the most powerful mathematical tools employed by those economists.⁶⁾

The purpose of this sub-section is to show the equivalence between the Walras existence theorem and the Brouwer fixed point theorem. Uzawa (1962) was the first person to point out such equivalence in a very exact form. In what follows, let us attempt to give an elementary proof by help of simple figures.

In what follows, we would like to pick up a very simple, one-good market equilibrium model a la Walras (1874) in order to establish following theorem:

Theorem 2 (equivalence between the fixed point and the market equilibrium)

The fixed point implies the market equilibrium, and vice versa.

Let the demand function and the supply functions of good x respectively be denoted by $x = d(p)$ and $x = s(p)$, where p stands for the unit price of x . For simplicity, assume that the functions d and s are both continuous and smooth. Then we can write down the excess demand function e of good x as follows:

$$e(p) = d(p) - s(p). \quad (2)$$

Common sense tell us that when the price of a good x rises, the demand for the good decreases and the supply increases. Consequently, on the one hand, if the price p is low enough (namely, $p = p^L$), the excess demand for x occurs, so that $e^L = d^L - s^L > 0$. On the other, in case the price p is high enough (i.e., $p = p^H$), minus the excess demand (namely, the excess supply) for x takes place, whence $e^H = d^H - s^H < 0$. Let put $P = [p^L, p^H]$. Then evidently, P is a closed interval; whence it is a non-empty, compact, closed set.

Now, let us consider the following mapping from P into itself:

$$\Phi(p) = p + \alpha \cdot e(p) \quad (3)$$

It is noted here that α stands for a fraction, namely, a constant between 0 and 1. the mapping $\Phi(p)$ indicates a sort of Walrasian price adjustment process. For example, Let us put $\alpha = 1/2$. Then if the excess demand for x occurs (i.e. $\alpha > 0$), we find $\Phi(p) = p + (1/2) e(p)$, meaning that the price p must go up by 50%. By the same token, if the excess supply takes place, then p must go down by 50%.

Clearly, the mapping $\Phi: P \rightarrow P$ is continuous. So if we apply the Brouwer fixed point theorem

5) See Wald (1936) and Von Neumann & Morgenstern (1944) for instance.

6) From the 1970s onward, very useful advanced textbooks in general equilibrium theory have been appeared. So systematic presentations of the Fixed Point Theorems and their economic applications are now available to any

eager graduate student. For instance, see Nikaido (1970), Arrow & Hahn (1971), and Takayama (1974). Compared with those works, McKenzie (2002) was a belated product, yet presumably showing the culmination in this field.

here, we may find the fixed point, namely, p^* such that $\Phi(p^*) = p^*$

In the light of Eq. (3), we can immediately obtain the following equivalent relation:

$$\Phi(p^*) = p^* \Leftrightarrow e(p^*) = 0. \quad (4)$$

Needless to say, this relation is a mathematical restatement of Theorem 2. Therefore, the Brouwer fixed point theorem implies the Walras market equilibrium, and vice versa. Take a look at Fig. 3. The point Q^* and the point R^* respectively indicate the fixed point and the market equilibrium. It is very obvious from this figure that the existence of Q^* in the upper figure implies the existence of R^* in the lower figure, and vice versa. The proposition that the fixed point equals the market equilibrium constitutes one of the very fundamental ideas underlining the core of general equilibrium theory.

III Welfare Implications of General Equilibrium

3-1. The Impact of the Cold War on the Economics Profession

Just after the Second World War, we were engaged in another world war named the Cold War. There emerged many political, military, and ideological tensions between the Western Capitalist Bloc (the United States, its NATO allies, Japan, and others) and the Eastern Socialist Bloc (the Soviet Union, its Warsaw Treaty allies, China, and others). The term "Cold War" was intentionally employed since there was no longer large-scale "hot fighting" directly between those two blocs. The importance of the "ideological struggles", however, should not be underestimated.

In the field of economics profession, a sort of "Economics Cold War" took place between what we called modern economics and what we named Marxian economics. It should be recalled that Marxian economics was not only the official economics taught in the Eastern Bloc, but also a more or less popular subject in

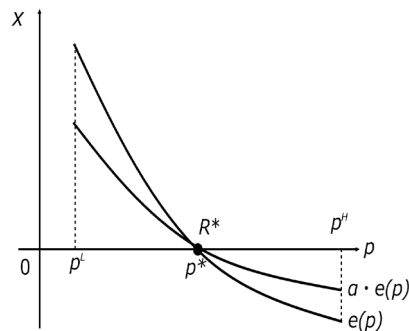
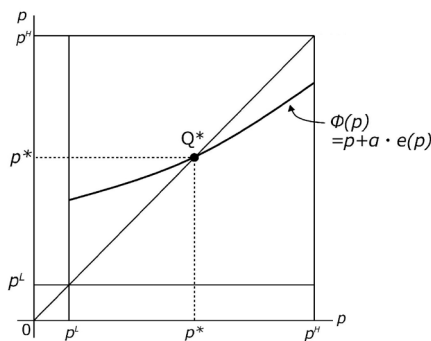


Fig. 3 Equivalence of the fixed point Q^* and the market equilibrium point $R^* : \Phi(p^*) = p^* \Leftrightarrow e(p^*) = 0$

the Western Bloc except the United States. In Japan, most of the major universities were then dominated by Marxian socialists, with modern economists taking a back seat.

Under the circumstances mentioned above, especially in the United States, general equilibrium theory has played a very special role in establishing the proposition that the capitalist economy really works at least as efficiently as its rival, socialist economy. A great number of research projects on mathematical economics were very generously supported by the National Science Foundation, Naval Research Logistics Project, and the like.⁷⁾

The thinking of Immanuel Kant (1785), a famous German philosopher, has influenced moral philosophy a great deal. According to his philosophy, there are three important value judgments in human behavior. They are truth, good and beauty. In line with the philosophy of Kant, general equilibrium theory has taught us that the market economy works, and indeed works very beautifully.

It is really remarkable to see the following theorem has been established by Arrow (1951), Hurwicz (1960), and others.

Theorem 3 (the fundamental theorem of welfare economics)

Let us suppose that an exchange economy be "normal." Then it possesses the following properties:

- (i) Every market equilibrium achieves Pareto-optimality.
- (ii) Every Pareto-optimal state can be achieved as a market equilibrium position.

The rigorous proof of this theorem is omitted here. We note that in a "normal economy", an increase in the quantity of any good increases the total utility of every person but decreases his/her marginal utility. Besides, in a Pareto-optimal economy, it is not possible to make any one person better off without making the other worse off. Whether and to what extent Pareto optimality really represents the "ideal state" of the economy remains to be debatable.⁸⁾

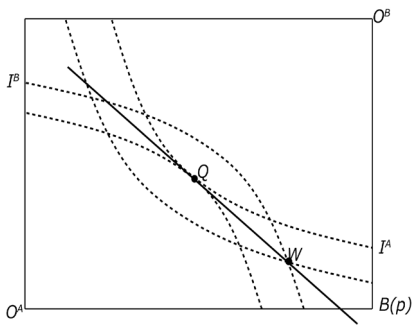
3-2. The Market Equilibrium and Pareto Optimality

The relation between the market equilibrium and Pareto optimality may easily understood by the box diagram a la Edgeworth (1881). Let us take a close look at two panels in Fig. 4. Panel (A) shows Property (i) of Theorem 3: every market equilibrium achieves Pareto optimality. In order to understand this, let us arbitrarily pick up the initial endowment point W and the budget set $B(p)$ passing through W . Then the point Q lying on $B(p)$ achieves the equality of demand and supply for the two goods, good 1 and good 2, since it is really a point in the box diagram. Moreover, it is apparently a point at which the two persons, Ms. A and Ms. B, can achieve her utility maximization subject to the budget constraint since at the point Q . Now let us simply look at such a situation and forget the presence of the budget set for a while. Then we immediately see that the two indifference curves I^A and I^B just touch at Q . This shows that Pareto optimality is now achieved at Q .

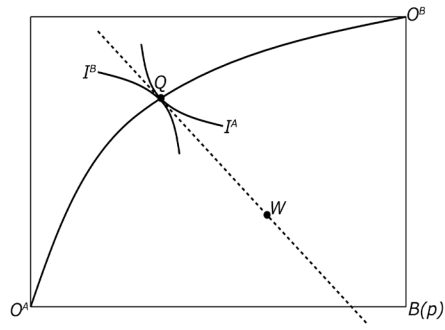
In contrast, Panel B indicates Property 2 of Theorem 3; Every Pareto optimal state can be achieved by a market mechanism. Let us pick up a point Q on the contract curve $O^A O^B$.

⁷⁾ Newman (1968) was a nice collection of outstanding papers on mathematical economics. The reader could easily understand how effectively many scientific research funds were used in the 1950s and the 1960s.

⁸⁾ The concept of Pareto optimality was first introduced by Pareto (1906). For a nice discussion for the relation between the market equilibrium and Pareto optimality, see Negishi (1960) and Quirk & Saposnik (1968).



(A) The equilibrium point Q achieves Pareto optimality



(B) The optimal point Q achieves a market equilibrium with W

Fig. 4 The market equilibrium and Pareto optimality

Since point Q is a Pareto-optimal point, it must be the point in which the two convex indifference curves I^A and I^B just touch each other. We can then find a separating line $B(p)$ and an initial endowment W . It is now clear that the Pareto optimal point P becomes a market equilibrium point with the initial endowment W and the common budget line $B(p)$.

I still remember how some graduate students reacted when I energetically taught the nice relation between the market equilibrium and Pareto optimality at the University of Pittsburgh in the early 1970s. A clever female student from Turkey had the courage to ask a question to me: "Dr. Sakai, I was really impressed by your lecture to inform me that the Market Economy is a sort of the Earthy Paradise. The three virtues of true, good and beauty seem to be perfectly achieved there. I would like to tell you, however, that I am from a less developed country located between Asia and Europe. I wonder whether and to what extent

your today's talk is relevant to the present state of my poor country." I was then really shocked by this question: it seemed to be a bolt out of the blue. I took a short pose, and eventually managed to answer it. " This is really a very good question. As you know, I am also from the country of tradition and culture like you. Now, all my fellow students, let us together think of the validity and limitations of general equilibrium theory. Man is a thinking reed!" This was part, though by no means the whole, of the reason for the change in my research area from general equilibrium to risk and uncertainty.

IV Frank Knight's Strong Objections against the Capitalist Economy

4-1. Knight's Pluralist Insight

Frank H. Knight was perhaps one of the deepest thinkers and the most critical economists in the 20th century. When I joined the

economics faculty at Pittsburgh in the 1970s, I was surrounded by many people who had mixed feelings for general equilibrium theory and fondly talked about Frank Knight's philosophical pluralism.⁹⁾

Knight was often called the "Grand Old Man" of Chicago, playing a central role in setting the character of "the early Chicago School." Interestingly enough, Patinkin (1973) vividly recalled the days when Knight was a teacher at the University of Chicago (1941-47):

A the Chicago of my student days it was, ironically enough, the socialist Oskar Lange who extolled the beauties of the Paretian optimum achieved by a perfectly competitive market—and Frank Knight who in effect taught us that the deeper welfare implications of this optimum were indeed quite limited. (Patinkin (1973), p.801)

At Chicago in the 1940s, there were the two economics giants: Oskar Lange and Frank Knight. While the market socialist Lange extolled the beautiful equivalence of a competitive equilibrium and Pareto optimality, the reluctant capitalist Knight raised serious objections against it. Lange simply believed that human behavior was rational in the sense that a consumer maximizes his/her utility subject to the budget constraint while a producer maximizes his/her profit subject to the technological constraint. In contrast, Knight's view of human nature was more complicated and more realistic than such a simple-minded view. As Boyd (1997) noted, the intellectual legacy of Frank Knight was a study in paradox. Although he could be regarded as an outstanding

scholar in neoclassical economics, he nevertheless stood high as it harsh critic as well.

In this connection, Knight (1925) once remarked:

It is time to admit that while the craving for a monistic view of the world is real, the project of resolving either minds or objects into the other type of existence is futile. Both realism and idealism are, in the vernacular, "the bunk"; monism is moonshine! In the human and social sciences, most clearly, the only possible point of view is pluralistic. (Knight (1925), p. 255; Knight (1999), p.121)

Generally speaking, there are two views of the worlds, a monistic view and a pluralistic view. According to Knight, monism is too simplistic, and tends to view the world either white or black. The situation, however, is not a matter of black and white. Between black and white, there should be many complicated colors. If monism is regarded as weak moonshine, pluralism is sunshine and sheds a stronger and more colorful light into the world.

4-2. Knight's Strong Objections against the Market Economy

Throughout his career, Knight never regarded the capitalist system as ethically defensible. In fact, he fondly adopted his pluralistic view in order to critically investigate the ethical foundations of the market economy. According to Knight (1935), we can enumerate the following twelve reasons why the market economy cannot be defended from a moral point of view.

(i) The assumption that the economy is made up of freely contracting individuals is

⁹⁾ The philosophy and economics of Knight was intensively discussed in Sakai (2010, 2015).

quite questionable. All minors, the aged, and some others must be taken care of by adult persons. The family, but not an individual, is still the unit in consumption and production.

(ii) An individual is in large measure a product of the cultural environment. Human beings are not accurate mechanisms of desire satisfaction: human activity is largely impulsive, a relatively unthinking and undetermined response to external stimulus and rumors. When the family is the social unit, the inheritance of wealth and educational advantages tend toward the progressive increase of inequality. Therefore, the results which a competitive economy bring about are often far from being ethically ideal.

(iii) The traditional assumption that all goods and services are perfectly divisible and freely mobile is based on mere supposition, thus being far from the actual economy.

(iv) One of the most important prerequisites to perfect competition is complete knowledge on the part of every individual. A perfect market would involve perfect, instantaneous, and costless intercommunication among all the traders. This would be existent only in a fictitious world.

(v) Competition further assumes that every buyer of every good knows very accurately its properties to satisfy his/her want. The competitor must perfectly foresee things as they will be, a too unrealistic assumption.

(vi) We have to find the proper relation between efficiency and equity. The social order must be judged ethically rather by the wants which it generates than by its efficiency in satisfying wants.

(vii) The workings of competition educate men progressively for monopoly. This is being

achieved not merely by producers, but by labor and in many branches of agriculture. In short, free competition will destroy itself!

(viii) In reality, what is desired is more largely a matter of human relations than goods as such; we want things because other people have them, or cannot have them. A typical illustration is the improvement or use of property in ways which may add or subtract value from neighboring property.

(ix) An exchange system cannot work at all according to theory without a control unit. With the use of credit highly developed, the control of banking and currency involves a large measure of control over all business, but really free banking would soon reduce all exchange relations to chaos.

(x) An economic organization must employ its available productive power in part to provide for present needs of society and in part to provide for future growth. In an individualistic system, provision for progress depends on the interest of present individuals in future individuals, which is being engendered to uncertain extent and with uncertain consequences by a change of the social and historical condition.

(xi) All human planning and execution involve uncertainty, and a rational social order can be realized through individual action only if all persons have rational attitude toward risk and uncertainty. As can be seen in gambling and speculative behavior, however, the general human attitude tends to non-rational, and much social limitation is required.

(xii) We have to closely examine the ethical foundations and consequences of unbounded individualism and competition. In the capitalist economy, productive contribution can have little or no ethical significance from the stand-

point of absolute ethics. For instance, no one contends that a bottle of old wine is ethically worth as much as a barrel of flour, or a fantastic evening wrap for a powerful person's mistress as much as a substantial dwelling house. Besides, Knight has noticed that the ownership of personal or material capacity is based on a complex mixture of inheritance, luck, and effort, probably in that order of relative importance.

4-3. Inheritance, Luck and Moral Hazard

Knight do not believe that individualism can automatically bring about an ideal utilization of economic resources. He contends that the welfare results of trading are based rather on initial endowment and chance, than on hard work.

According to Knight, all human planning and execution can be realized through individual action only if all persons have a rational attitude toward risk and chance. The general human attitude, however, is not necessarily very rational, and individual knowledge is more or less limited. The traditional assumption that every buyer of any good perfectly knows its properties to meet his/her want would not be satisfied in reality.

One of many interesting problems is how we relate quality uncertainty to the market mechanism. As Akerlof (1972) noted, the existence of a single good with several grades may pose a very serious problem for the working of a market. In this case, there emerges the possibility that a seller has an incentive to tell a lie to a buyer: he/she may supply a poor-quality good rather than a good-quality good. As a result, dishonest dealings may tend to drive honest

dealings out ; indeed, the market per se may shrink and will eventually vanish. This is what Akerlof has wisely called the lemons principle. We must bear in mind, however, that far back in the 1930s, Knight already did a significant contribution to this field, so that he could also be thought as one of important founders.

V The Disappointing Performance of the Economics Profession: Final Remarks

Later in 2008, the world banking system collapsed and we found ourselves involved in the biggest economic crisis after the Great Depression of the 1930s. In a popular book, Richard A. Posner (2009) has recently remarked:

My focus is on the causes, and offered cures of the depression. But I also emphasize some points that have received relatively little coverage in other accounts: the depression's political dimensions, the disappointing performance of the economics profession in regard anticipating and providing guidance to responding to the depression, how ideology can distort economic policy, the inherent limitations of depression economics, how the self-interested decisions of rational businessmen and consumers can give rise to a depression..... (Posner (2009), Preface, p. xiv)

Posner's remark aforementioned is both very serious and greatly challenging. We all have seen the disappointing performance of the economic profession in regard to the breakdown of the market economy. The two great economists, Knight (1921, 35, 99) and Keynes (1936),

made outstanding contributions on the ethical foundations and consequences of a competitive economy. Now, we need a Knight, and also a Keynes.

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Frank H. Knight on Market Thinking

Reflections on the Logic and Ethics of the Capitalist Economy

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The purpose of this paper is to shed a new light on the working and performance of the market economy from a pluralistic viewpoint. To this end, we first pay attention to the general equilibrium theory à la L.W. McKenzie, K. J. Arrow and G. Debreu. Whereas this theory seems to be established on the foundation of solid logic and advanced mathematics, the existence of special ethics and ideology behind the scenes should not be forgotten. We next reexamine the thought of Frank H. Knight, who has raised a strong objection against glorification of the market economy.

In the late 1960s, I was a graduate student at the University of Rochester. I still recall the touching moment when Professor McKenzie, finally succeeding after a long struggle to prove the existence of a competitive economy by help of a mathematical theorem of fixed point, posed a bit in a class and said quietly, "It's so beautiful!". The world was then in the midst of Cold War and divided into the two powerful blocs, the socialist bloc dominated by the Soviet Union and the capitalist block led by the United States of America. McKenzie's complacent whispering sounded like the victory declaration of capitalism over socialism.

Around 40 years have passed since then. It seems that the "academic Cold War" between Marxian economics and modern economics is now over. At the same time, the ethics and ideology of general equilibrium looks surely fading away although it is not completely vanished. It is our regret, however, that the new, synthetic social science which can replace the existing dogmatic doctrines is not in sight yet. A completely new approach like a second Knight or a second Keynes would urgently be needed.

Key words: Knight, market thinking, general equilibrium, ethics, ideology

