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The Second End of Laissez-Faire -- Bootstrapping Nature of Money and Inherent Instability of Capitalism

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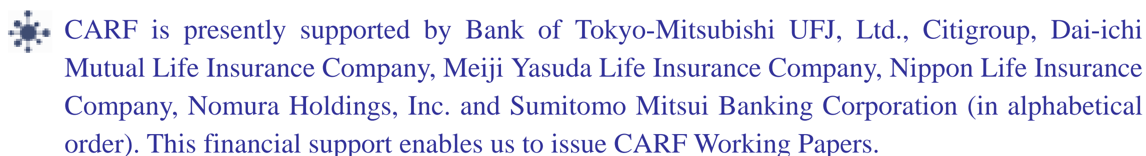

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The Second End of Laissez-Faire

-- Bootstrapping Nature of Money and Inherent Instability of Capitalism

by

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<ABSTRACT>

"Globalization" can be interpreted as a grand experiment of the laissez-faire doctrine of neoclassical economics that the wider and the deeper markets cover the capitalist economy, the more efficient and the more stable it would become. The "once a hundred years" global economic crisis of 2007-9 stands as a testament to the grand failure of this grand experiment.

Following the lead of Wicksell and Keynes, this article argues that capitalist economy is subject to an inevitable trade-off between efficiency and stability because of its essentially "speculative" nature. First, while financial markets need, for their risk-diversifying function, the participation of a large number of risk-taking professional speculators, competition among professionals can be likened to Keynesian beauty-contest that constantly exposes financial markets to risks of bubble and bust. Second and more fundamentally, it is the very use of "money," which is the ultimate source of efficiency for capitalist economy, which is also its ultimate source of instability. To hold money is the purest form of Keynesian beauty contest, because we accept money only because we expect everybody else accepts it as money. When there emerges a speculative bubble on money, it plunges the real economy into depression, and when there emerges a speculative bust on money, it eventually leads to hyperinflation. Indeed, Wicksellian theory of cumulative process shows that any disturbance in monetary equilibrium triggers a disequilibrium process that drives all the nominal prices cumulatively away from it. Keynesian principle of effective demand then demonstrates that it is the stickiness of nominal wage that saves capitalist economy from its inherent instability, albeit at the expense of full employment. This article also contends that in the current global crisis such monetary instability has manifested itself in the form of the collapse of liquidity in the financial markets as well as in the form of the loss of confidence on dollar as the global capitalism's key currency.

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[1] Part of this paper is taken from my "On the 21st Century Capitalism – Crises of the Global Market Economy," the First Essay of *The 21st Century Capitalism* (Tokyo: Chikuma Shobo, 2000), "The Second End of Laissez-Faire," *Nihon Keizai Shimbum* (2008.10.24), and "When Will Dollar Abdicate the Key Currency of the World?" an Interview article in *Bungei Shunju,* January 2009, all in Japanese. I am grateful to Kojima Foundation for financial support for the research contained in this article.

0. TOWARDS THE "SECOND END OF LAISSEZ-FAIRE"

It is high time to write "The Second End of Laissez-Faire." I said "the second" because the essay titled, "The End of Laissez-Faire," was already published in 1926 by John Maynard Keynes.[2] If, however, it was none other than Keynes who wrote the first "End," why on earth should its sequel be written at all?

It is because Keynes wrote that essay before he became a true Keynesian. Indeed, Keynes' main criticism was targeted not at his fellow neoclassical economists but at "the popularisers and the vulgarisers" (p. 17) of the already defunct doctrine of political philosophers of the eighteenth century. "It is *not* a correct deduction from the Principles of Economics," he claimed, "that enlightened self-interest always operates in the public interest" (p.39). He then faulted the naïve advocates of *laissez-faire* doctrine for having taken little notice of the presence in reality of economies of scale, indivisibility of production, external economies or diseconomies, adjustment lags, imperfect information, imperfect competition, and inequality of incomes and wealth.[3] But they are no more than "the complications" to the simple and elegant edifice of neoclassical theory, which no undergraduate microeconomics textbook would now fail to mention as possible sources of "market failures." Then, all Keynes could propose as *agenda* of the State were the deliberate control of currency and credit as well as the full publicity of useful business data, the intelligent guidance of the way saving is allocated across sectors, and an enlightened policy over population size (pp. 47-49)[4] – *agenda* so modest in its scope that even die-hard neoclassical economists might embrace them as not so unreasonable.[5] At the time of writing the first "End of Laissez-Faire," Keynes was merely a neoclassical economist -- in fact, a leading disciple of Alfred Marshall – who happened to have a warm heart.

On October 1929 the stock market crashed in the United States and the world economy plunged into a

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[2] John Maynard Keynes, *The End of Laissez-Faire*, London: Hogarth Press, 1926.

[3] He wrote that: "Apart from other objections to be mentioned later, the conclusion that individuals acting independently for their own advantage will produce the greatest aggregate of wealth, depends on a variety of unreal assumptions to the effect that the processes of production and consumption are in no way organic, that there exists a sufficient foreknowledge of conditions and requirements, and that there are adequate opportunities of obtaining this foreknowledge. For economists generally reserve for a later stage of their argument the complications which arise - (1) when the efficient units of production are large relatively to the units of consumption, (2) when overhead costs or joint costs are present, (3) when internal economies tend to aggregation of production, (4) when the time required for adjustments is long, (5) when ignorance prevails over knowledge and (6) when monopolies and combinations interfere with equality in bargaining - they reserve, that is to say, for a later stage their analysis of the actual facts. Moreover, many of those who recognise that the simplified hypothesis does not accurately correspond to fact conclude nevertheless that it does 'represent what is 'natural' and therefore 'ideal.' They regard the simplified hypothesis as health, and the further complications as disease. …. Yet, besides this question of fact, there are other considerations, familiar enough, which rightly bring into the calculation the cost and character of the competitive struggle itself, and the tendency for wealth to be distributed where it is not appreciate4d most."(p. 32-33.)

[4] pp. 47-49. Note that at that time Keynes equated saving and investment and never took consideration of their *ex ante* divergence.

[5] Indeed, Keynes' *Tract on Monetary Reform* (1924) can be regarded as a precursor of Friedmanian monetarism.

depression that was so wide, so deep, and so prolonged that it was called the Great Depression ever since. It was during this economic crisis Keynes published *Treatise on Money* in 1930 and *The General Theory of Employment, Interest, and Money* in 1936 and transformed himself from a warm-hearted neoclassical economist into a cool-headed founder of a new school of economics that sometimes carries his name.

1. TWO VIEWS OF CAPITALISM

The capitalism we live in has long been the object of two rival views. One is the view of the neoclassical school of economists who put whole faith in the "Invisible Hand" of the price mechanism, as was described by Adam Smith:

> The natural price [that leaves capitalists a natural rate of profit after having paid workers and landholders their natural rates of wage and rent], therefore, is, as it were, the central price, to which the prices of all commodities are continually gravitating. Different accidents may sometimes keep them suspended a good deal above it, and sometimes force them down even somewhat below it. But whatever may be the obstacles which hinder them from settling in this centre of repose and continuance, they are constantly tending towards it. (Adam Smith, *Wealth of Nations*; Book 1, Chap.7.)

If we trust in the "Invisible Hand" of the price mechanism, spread free markets across the entire globe, and bring the economic system ever closer to pure capitalism, we will approach the "ideal state" (or what Adam Smith called the "natural state") that provides both efficiency and stability. The root of all evils thus consists of the "impurities" that keep all markets from operating smoothly. These include various community conventions and social institutions that impede the free movement of people in the labor market and many financial regulations and security laws that impede the free movement of money in the capital market. Once these impurities were removed, capitalism would operate both efficiently and stably. Milton Friedman of the University of Chicago who died in 2006 was the twentieth-century champion of this neoclassical view of capitalism.

The other is the view of what I would call "Wicksell-Keynes school." This is the school of economic thoughts that came into being when Knut Wicksell worked out the monetary theory of cumulative process at the turn of the nineteenth century in Sweden.[6] I placed the names of Keynes and Wicksell together, because

[6] Knut Wicksell, *Geldzins und Güterpreise* (Jena: Gustav Fischer, 1898); English translation by R. F. Kahn, *Interest and Prices,* (London: Macmillan, 1936) and Reprinted edition (New York: Kelly, 1962); John Maynard Keynes, *General Theory of Employment, Interest and Money* (London: Macmillan, 1936).

Keynes was Wicksellian in *Treatise on Money*[7] and, while in *The General Theory* his theoretical apparatus changed radically from that of *Treatise*, he remained Wicksellian at least in his analysis of the stability of the economy as a whole under flexible money wages.[8] According to this second view, there is no 'ideal state' in capitalism. This, however, by no means mean that either Wicksell or Keynes was a romantic utopian who dreams of the abolition of money, finance and capitalism. They fully agree with the neoclassical school that the capitalist economy is by far the most efficient economic system at its microscopic level. What they demonstrated theoretically is that such increase in microscopic efficiency would come hand in hand with macroscopic instability in the forms of bubbles and panics, booms and slumps, hyperinflations and depressions. As capitalism is made purer, efficiency increases, but stability decreases. The capitalist system, while going through numerous ups and downs of business fluctuations, has managed to maintain a certain degree of stability throughout the history only because of the "impurities" that have impeded free adjustment of prices in markets, such as the rigidity of monetary wages and the regulation of speculative investments. To be sure, these impediments also have their costs, such as underemployment of labor and underutilization of capital in normal times. There is, in other words, an inevitable trade-off between efficiency and stability in capitalist economy.

The publication of *The General Theory* in the throes of the Great Depression marked the onset of the 'Keynesian revolution' that influenced both the academic and policymaking worlds for several decades. Thanks to a substantially larger role of government resulted from New Deal policies in the U. S. and various welfare programs in other western countries, together with systems of banking regulation and monetary intervention that provides the lender of last resort to financial institutions, advanced capitalist economies were able to enjoy both macroeconomic stability and relatively high growth rates for about two decades immediately after WWII. But, then, the success of Keynesian economics brought about its own downfall. The very macroeconomic stability it was able to engineer before 1970s revived the old faith in the Invisible Hand mechanism in markets, and the governmental commitment, nay, over-commitment, to full employment gave rise to an strong inflationary bias after 1960s in most of advanced capitalist countries. Both set the stage for the counter-revolution of neoclassical school led by Milton Friedman, who soon gained the upper hand both among academic profession and policy makers by the middle of 1970s. During the 1980s the administrations of US President Ronald Reagan and British Prime Minister Margaret Thatcher, which were strongly

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[7] Keynes recorded in a footnote of *A Treatise on Money* the following remark: "There are many small indications, not lending themselves to quotation, by which one writer can feel whether another writer has at the back of his head the same root ideas or different ones. On this test I feel that what I am trying to say is the same at root as what Wicksell was trying to say." (*A Treatise on Money: The Pure Theory of Money*, MacMillan: London, 1930); reprinted as Volume V of *The Collected Writings of John Maynard Keynes* ,MacMillan: London, 1971; p.177.)

[8] See Katsuhito Iwai, *Disequilibrium Dynamics – A Theoretical Analysis of Inflation and Unemployment,* (New Haven: Yale University Press, 1981 [downloadable: http://cowles.econ.yale.edu/P/cm/m27/index.htm] for an attempt at synthesizing Wicksellian theory of cumulative process and Keynesian principle of effective demand.

influenced by the ideas of Friedman and his followers, shifted course sharply in the direction of laissez-faire economic policies. Under the banner that "the government is not the solution to our problem; the government is the problem," deregulation was implemented in many industries. A financial revolution took place, which securitized risks of every sort, and then securitized the risks of these newly created securities. And the rapid process of globalization of commodities, money, and information got underway, spreading the market economy across the entire world. Globalization can thus be interpreted as a "grand experiment" of the fundamental principle of the neoclassical economics that making capitalism increasingly pure would raise both efficiency and stability, taking the economy closer to an ideal state.

In November 2002 at a conference to honor the ninetieth birthday of Milton Friedman, Ben Barnanke, then a governor and since 2006 the chairman of FRB, endorsed his monetarist explanation of the Great Depression that it was caused not by the stock market crash of 1929 but by the Federal Reserve's failure to prevent the sharp decline of money supply from 1928 to 1933.[9] He then said to Friedman and his co-author, Anna Schwartz, that "regarding the Great Depression, you're right; we did it." "We're very sorry." "But, thanks to you," he pledged, "we won't do it again."[10]

Three months later, in the presidential address for the one-hundred fifteenth meeting of the American Economic Association Robert E. Lucas Jr., the prime architect of the so-called rational-expectation theory of macroeconomics and probably the most influential neoclassical economist since Milton Friedman, declared: "Macroeconomics …has succeeded." "Its central problem" of preventing the recurrence of the Great Depression "has been solved, for all practical purposes, and has in fact been solved for many decades. … Taking U.S. performance over the past 50 years as a benchmark, the potential for welfare gains from better long-run, supply-side policies exceeds by far the potential from further improvements in short-run demand management."[11]

Then, suddenly in 2007, scarcely five years after Bernanke's pledge and Lucas's declaration, "once a hundred years" financial crisis erupted in the United States. The crisis not only propagated to the entire world instantaneously through a tight-knit global network of capital markets but also led to a sharp downturn of the real economy on the scale never seen since the Great Depression.

This is a spectacular testament of the grand failure of the grand experiment of the basic principle of neoclassical economics that making capitalism purer would take the economy closer to an ideal state. It is true that globalization did indeed raise the efficiency of the capitalist economy and bring about a high level of

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[9] Milton Friedman and Anna Schwartz, *A Monetary History of the United States*, *1867-1960,* Princeton: Princeton University Press, 1963). Bernanke's own academic works on the Great Depression is collected in *Essays on the Great Depression*, (Princeton: Princeton University Press, 2000).
[10] See http://www.federalreserve.gov/BOARDDOCS/SPEECHES/2002/20021108/default.htm
[11] Robert E. Lucas, Jr., "Macroeconomic Priorities,"*American Economic Review,* 93 (1) (Mar., 2003), pp. 1-14.

growth on average for the world as a whole. At the same time, however, it produced great instability, demonstrating conclusively "the inconvenient truth" about capitalism – there is a trade-off between efficiency and stability.

2. CAPITALISM IS A SYSTEM BASED ON SPECULATION

So why is there a trade-off between efficiency and stability?

This is because *capitalism is a system that is built essentially on "speculation."*

What is speculation? It is in general to conjecture without firm evidence, and in particular to buy things, not for the returns or utilities from their use, but for the prospective gains from their future sale to other people in markets.[12]

> When the division of labour has been once thoroughly established, it is but a very small part of a man's wants which the produce of his own labour can supply. He supplies the far greater part of them by exchanging that surplus part of the produce of his own labour, which is over and above his own consumption, for such parts of the produce of other men's labour as he has occasion for. Every man thus lives by exchanging, or becomes in some measure a merchant …. (Adam Smith, *The Wealth of Nations*, Book 1, Chap.4.)

As Adam Smith saw it in *The Wealth of Nations*, the capitalist economy is founded upon the division of labor. It is an economy in which producers produce commodities not for their own consumption but for the sale to others and consumers consume commodities not by their own production but by the purchase from others. The future's not ours to see. Whenever producers start production, they must speculate the prices their products will fetch in markets, and whenever consumers prepare shopping, they must speculate the prices they will pay in markets. In capitalist economy every producer and every consumer thus becomes in some measure a speculator. This is not all. I will indeed argue later that in our capitalist economy everyone is a speculator in the much more fundamental sense.

If Milton Friedman were still alive, he would immediately interject that, if people do not want to be speculative, they can hedge against their risks by buying futures contracts or insurance policies or other risk-diversifying instruments in financial markets.[13]

Finance originally meant the settlement (finis) of a debt, but it now implies a much wider set of activities, a

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[12] According to the Compact Oxford English, "speculate" means (1) to form a theory or conjecture without firm evidence. And (2) to invest in stocks, property, or other ventures in the hope of financial gain but with the risk of loss.

[13] Milton Friedman, "The case for Flexible Exchange Rates," in *Essays in Positive Economics*, Chicago: University of Chicago Press, 1953.

majority of which provide people with opportunities to manage and diversify their risks. Indeed, one of the defining characteristics of capitalism is to transform everything of value into a commodity tradable in markets. As long as there are people, either natural or legal, who do not want to be exposed to risks, any contractual arrangement that enables them to shift their risks to others becomes valuable and potentially tradable. When a piece of legal document that certifies such arrangement is made transferable from one party to another, it is called a financial security (or a financial instrument), and the market that buys and sells such security becomes a financial market. Examples of financial markets are markets for mutual funds, bonds, debentures, stocks, foreign currencies, futures, forwards, options, and swaps. For example, to buy a barrel worth of Brent Crude Oil futures is to get hold at present of a barrel of oil to be delivered at a fixed date in the future. It allows the buyer to protect themselves against the risk of price change in the spot market in the future by paying a settled price in the futures market at the present, usually at the expense of certain risk premium. The presence of financial markets thus provides producers and consumers with opportunities to organize their risky activities efficiently, thereby contributing to the immense growth potential of the capitalist economy as a whole.

Notice, however, that in order for these producers and consumers to be able to avoid risks by buying futures and other financial securities, there must be someone in financial markets who are willing to bear these risks by selling those financial securities. Financial markets can thus function only thanks to the participation of a large number of people who dare to take the positions opposite to those of ordinary producers and consumers, in the hope of making large profits. They are professional speculators. Or we may rather define professional speculators as people, either natural or legal, who make a living by buying others' risks.

3. TWO VIEWS OF SPECULATION IN FINANCIAL MARKETS -- FRIEDMAN'S DARWINIAN MODEL VS. KEYNES' BEAUTY CONTEST MODEL

Milton Friedman would then claim that professional speculators who bear the risks of ordinary producers and consumers have stabilizing influences on the way markets function.

"People who argue that speculation is generally destabilizing seldom realize that this is largely equivalent to saying that speculators lose money," he asserts, "since speculation can be destabilizing in general only if speculators on average sell when the [commodity] is low in price and buy when it is high."[14] Destabilizing speculators are irrational bunch of people who sell commodities when they are cheap, driving prices down even further, or buy commodities when they are expensive, driving prices up even further. But they have to

[14] *Ibid.*, p. 175.

pay for their irrationality and will sooner or later lose their money. Darwinian mechanism of the survival of the fittest comes in and weeds them out of the market. Only speculators who can remain in markets are those who behave rationally, buying low and selling high. So markets are stable even in the face of speculation—nay, speculation in fact makes markets more stable, strengthening further the Invisible Hand mechanism of Adam Smith.

A fundamental objection to Friedman's view of speculation, however, was already presented long before his time. It is the model of "beauty contest" Keynes offered in Chapter 12 of *The General Theory*. Instead of the usual sort of (now politically incorrect) beauty contest, where women parade in front of a panel of judges, who pick one of them to be Miss Something-or-other based on a certain set of standards, this is a post-modern contest with full participation of the public as real competitors. Competitors are asked to pick out the faces from a hundred photographs displayed in a newspaper, the prize being awarded to the one whose choice most nearly corresponds to the average choice of the competitors as a whole. Anyone who wants to win cash has to pick, not whose faces which conform to an objective set of beauty standards or to his or her own subjective opinion of who is prettiest, "but those which he or she thinks likeliest to catch the fancy of the other competitors." Nay, if all the other competitors are also aiming to win cash, they are also looking at the problem from the same point of view.

"It is not," Keynes then argued, "a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be. And there are some … who practise the fourth, fifth and higher degrees." (Keynes, *The General Theory*, p. 154.) In the end, the only reason a particular face is selected as the prettiest is that every competitor believes every other competitor believes she is selected as the prettiest, without any support from reality, either objective or subjective. The prettiest is the prettiest merely because she is selected as the prettiest. What we see here is the working of the "bootstrapping" logic of Baron Münchausen who claimed he had pulled himself out of a swamp by pulling on his own bootstraps.

To those competitors in this post-modern beauty contest Keynes likened professional speculators in financial markets. He argued that the energies and skill of the professional speculators are, in fact, largely concerned, not with making superior forecasts of the probable yield of an investment over a long term of years, but with foreseeing the market prices a short time ahead of the general public. Indeed, "this battle of wits" to anticipate the changes in the psychology of the market ahead of time, Keynes continued, "does not even require gulls amongst the public to feed the maws of the professional." "It can be played by professionals among themselves."(pp. 154-156.) And, as soon as legion of professional speculators start the battle of wits with each other, prices set in these markets thus become inherently precarious. They are subject

to huge sudden fluctuations in response to minor bits of news or unreliable rumors, totally apart from the fundamental supply-demand conditions in the real economy. If everybody thinks everybody thinks prices will rise, purchase orders come rushing in, and prices do indeed surge—a speculative bubble forms. Conversely, if everybody believes everybody believes prices will fall, the sell orders pile up, and prices plunge—a bust.

The key point here is that bubbles and busts look totally irrational at the macroscopic level. Yet, the behavior of individual speculators—buying when they expect prices to rise and selling when they expect them to fall—is rational on the level of individuals, indeed profitable at least in the short-run. As Keynes put it, "this behaviour is not the outcome of a wrong-headed propensity. … For it is not sensible to pay 25 for an investment of which you believe the prospective yield to justify a value of 30, if you also believe that the market will value it at 20 three months hence."(p. 155.) Macroscopic irrationality is not necessarily a reflection of individual irrationalities but often an unintended aggregate outcome of individual rationalities.

4. AN INCONVENIENT TRUTH ABOUT FINANCIAL MARKETS – A TRADE-OFF BETWEEN EFFICIENCY AND STABILITY

So whose view of speculation comes out ahead, Friedman's or Keynes'?

The answer is obvious. Though Friedman advanced his theory of stabilizing speculation to make a case for flexible rates in foreign exchange markets, he was implicitly assuming a kind of markets, such as those for apples or cabbages, where speculators buy produce directly from producers and sell it directly to consumers. In such idyllic markets, speculation may indeed contribute to their stability. There is, however, no reason why speculators should not trade with each other. As soon as they start to trade among themselves, they have to play the battle of wits, setting in motion the bootstrapping process of Keynesian beauty contest. Indeed, once we come to markets for financial derivatives, such as bond futures, stock options, and interest rates swaps, that have securitized the risks arising from the very financial markets that securitized the risks associated with production, consumption and other real economic activities, the participants are almost exclusively professional speculators who have little choice to trade with each other.

The history of financial markets is as old as the history of capitalism itself.[15] Even futures markets have existed for centuries. For example, Dôjima Rice Exchange in Tokugawa Japan already developed by the early eighteenth century a complex trade system of rice-futures. But the markets for financial derivatives are much younger; the first one was International Monetary Market that deals with futures of foreign currencies in the Chicago Mercantile Exchange (CME). It was created in 1972 by the CME's chairman, Leo Melamed, who

[15] Werner Sombart, *TheQuintessence of Capitalism,* New York: Howard Fertig, 1967; Fernand Braudel, *Civilization and Capitalism, 3 Volumes*, New York: Harper and Row, 1979; Niall Ferguson, *Ascent of Money: A Financial History of the World*, New York: Penguin, 2008,

was an ardent disciple of the free market philosophy of Milton Friedman and with much encouragement from Friedman himself.[16] Subsequently, propelled by the strong current of laissez-faire thinking after Reagan-Thatcher era and assisted by the development of capital asset pricing models, option-pricing models, and other mathematical finance models, as sophisticated applications of neoclassical general equilibrium theory, there has been a rapid expansion of the markets for financial derivatives both in numbers and in volumes. Ironically, it is this free-market development that ultimately proved the correctness of not Friedman's Darwinian theory of stabilizing speculation but Keynes' beauty contest theory of destabilizing speculation.

Here emerges an "inconvenient truth" about capitalism – there is an inevitable trade-off between efficiency and stability in financial markets.

The original function of financial markets was to promote the efficiency of the capitalist economy by providing producers and consumers with opportunities to diversify the risks they have to incur in their activities dealing with real economies. But, this is possible only because of the participation of a great number of professional speculators willing to take risks in the hope of making large profits – in contrast to ordinary producers and consumers, who participate because they do not want to take such risks. The social object of those professionals should thus be, as Keynes put it, "to defeat the dark forces of time and ignorance which envelope our future." (p. 155.) As soon as, however, those professional speculators start the battle of wits among themselves, the bootstrapping process of Keynesian beauty contest sets in and expose the financial markets to the larger scale risks of bubbles and busts. It is this inherent instability of financial markets that came into clear view with the U. S. subprime mortgage meltdown of 2007.

We, however, cannot finish off the present paper here. If the instability of capitalism can be reduced entirely to the Keynesian beauty contest among professional speculators in financial markets, there is little need for the Second End of Laissez-Faire to be written. It is because it can still be regarded as a tremble, albeit a quite jerky tremble, of the Invisible Hand of the price mechanism. After all, financial markets are derivatives, and financial derivatives markets derivatives of derivatives, of the real economic activities. Aren't those professional speculators just greedy, short-sighted, and overly competitive barbarians living in the jungle of Wall Street, as opposed to ordinary producers and consumers who diligently toil and labor every day on Main Street? Now that they are named the chief culprits of the on-going market failure, confine them into a cage of legal regulations and tame their wild behaviors by governmental supervisions, and we will be able to restore the original function of financial markets to diversify risks at least in part. Then, the neoclassical economic theory will reemerge with its core teaching of the self-regulating force of the price mechanism essentially intact.

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[16] http://www.leomelamed.com/essays/07-Friedman-oral.htm

I, however, do not believe that the instability of capitalism can be reduced entirely to the instability of Keynesian beauty contest among professionals speculating in financial markets. On the contrary, I am now going to argue that under capitalism everybody, even ordinary consumer and producer, has to live a life of speculator, because to hold "money" – the lifeblood of capitalism – is nothing but the purest form of speculation.

5.TO HOLD MONEY IS THE PUREST FORM OF SPECULATION

What is Money?

The answer is easy. It is "the general medium of exchange" that everybody accepts in exchange for every commodity at any time and place. If you have a 10 euro bill or a 100 yen coin, you are able to obtain any commodity worth 10 euro (at least in Euro zone) or 100 yen (at least in Japan).

Why, then, do people accept a 10 euro coin or a 100 yen coin as something worth 10 euro or 100 yen? This second question is, however, not so easy to answer. Indeed, since millennium philosophers, historians, jurists, sociologists, economists, and even psychoanalysts have advanced two competing theories to answer this question. They are "commodity theory of money" and "cartal theory of money."[17] Commodity theory asserts that a certain thing functions as a general medium of exchange because it is a useful commodity that has a value independent of its use as money.[18] Cartal theory, in opposition, asserts that a certain thing serves as a general medium of exchange because its use as money is approved by communal agreement or decreed by the head of kingdom or sanctioned by legal order. Although historians of monetary theory have been busy in classifying past authors on monetary matters into these two camps, we now know that both theories are wrong.[19]

We are happy to receive a 10 euro bill or a 100 yen coin not because we want to munch the bill like a goat or we find the coin useful as a screwdriver. There is nothing in 10 euro bill or 100 yen coin as a commodity that supports the value of 10 euro or 100yen. To be sure, a 10 euro bill is a legal tender most of Eurozone countries enforce their citizens to accept it in settlement of a debt. But in the case of 100 yen coins they are legal tenders only up to 20 pieces. Japanese citizens can legally refuse the 21st piece of 100 yen coin in any payment, but without exception they happily accept it as money worth100 yen. (All the yen bills are legal

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[17] See Schumpeter [1954], especially pp. 62- 64 and 288 - 322, for the most authoritative account of this debate, though Schumpeter used the terms: metallist theory of money and cartal theory of money, or Metallism and Cartalism, which he borrowed from Knapp's *State Theory of Money* [1924].

[18] See *ibid.,* p.63.

[19] See Katsuhito Iwai, "Evolution of Money," in Ugo Pagano and Antonio Nicita eds., *Evolution of Economic Diversity* (London: Routledge, 2001), pp. 396-431

tenders without any maximal limits, though.) Indeed, monetary history is abound with monies like Maria Theresa Thalers that circulated widely in many of African countries until WWII long after they lost their status as legal tender even in Austria, their issuing country.[20] Besides, various forms of bank accounts also serve as general media of exchange and are counted as M1 without any legal backing (except, of course, at the time of bank run). Money can circulate as money neither because it has an intrinsic value as a useful commodity nor because it has an extrinsic value imposed by communal agreement or political authority or legal order.

Why, then, do we accept a 10 euro bill or a 100 yen coin as a thing worth 10 euro or 100 yen? It is simply because we expect other people will be happy to receive it as worth10 euro or 100 yen. Why, then, do they accept a 10 euro bill or a 100 yen coin as a thing worth 10 euro or 100 yen? It is again neither because they want to use it as a useful commodity nor because they are forced by communal or political or legal power. It is because they themselves expect other people will be happy to receive it as a 10 euro bill or 100 yen coin. We have thus reached the third link of a chain of expectations where we expect other people expect other people accept it as a bill or a coin, and in fact in the case of money such chain of expectations will continue indefinitely. In the end, the only reason a 10 euro bill or a 100 yen coin is accepted as a 10 euro bill or a 100 yen coin is that everyone believes everyone else believes it is accepted as a 10 euro bill or a 100 yen coin. Money is money simply because it is accepted as money.[21]

Here we find the same "bootstrapping" process that we saw in Keynesian beauty contest. Indeed, what we now see is the bootstrapping process in its purest form. In the case of financial markets, even if the objects of their trades are financial derivatives that are twice-removed from real commodities, they are not completely removed from them either and are capable of providing producers or consumers with opportunities to manage at least some part of the risks and other inconveniences in their real economic activities. Money, by contrast, has no real function to serve. It is by definition the general medium of exchange; we take it from others, not for gaining the returns or utilities from its use, but for the sole purpose of giving it to others in the future in

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[20] Monetary history is also abound with legal tenders that did not circulate as money in spite of desperate and often heavy-handed efforts of princes and governments.

[21] See my "The Bootstrap Theory of Money -- A Search-Theoretic Foundation of Monetary Economics", *Structural Change and Economic Dynamics*, 7(4) Dec. 1996, pp. 451-477; "Corrigendum," 9 1998, p. 269 and "Evolution of Money", in U. Pagano and A. Nicita eds., *The Evolution of Economic Diversity*, (London: Routledge, 2001), pp. 396-431. Both papers are drawn from my earlier paper: "The Evolution of Money – A Search-Theoretic Foundation of Monetary Economics," *CARESS Working Paper* #88-03 (Dept. of Economics, University of Pennsylvania), Feb. 1988, and "Fiat Money and Aggregate Demand Management in a Search Model of Decentralized Exchange," *CARESS Working Paper* #88-16 (Dept of Economics, University of Pennsylvania), Sept. 1988; "Addendum," *CARESS Working Paper* #89-01 (Dept. of Economics, University of Pennsylvania), Dec. 1988. I have also published (in Japanese) *Money (Kahei Ron),* (Chikuma-shobo,1993; Chikuma-Gakugei-Bunko, 1998) that discusses the philosophical implications of the bootstrapping nature of money in depth by means of a deconstructive analysis of Marx's theory of value forms.

exchange for something with real value. (The so-called "liquidity" money provides to its holder is nothing but the "derived" return or utility of holding money as the general medium of exchange.[22])

Holding money is the "purest form of speculation."

Once we are thrown into a capitalist economy, we cannot engage in economic activity without using money as the general medium of exchange. That means, under capitalism every one of us has to live as a life of "speculator" who buys and sells the purest object of speculation – money. In this sense, ordinary producers and consumers in Main Street are no different from professional speculators in Wall Street. Not only that, whenever we are circulating money among ourselves as the general medium of exchange, we are all acting like professional speculators who trade objects of speculation with each other, without ever being conscious of the fact. This is what I meant when I said at the beginning of section 2 that capitalism is a system that is built "essentially" on speculation.

In as much as money is an object of speculation, it is subject to the instability of Keynesian beauty contest, thereby exposing the entire capitalist economy to the risks of bubbles and busts. I am going to show that a bubble of money is what is usually called a slump, or when it turns extreme, a depression, and a bust of money a boom, or when it turns extreme, a hyperinflation. But, for that purpose, I have to dwell more on the essential nature of money and then elucidate the fundamental core of Wicksell-Keynes school of economics.

6. MONEY HAS NO MARKET OF ITS OWN

We all know that a barter exchange requires a double coincidence of wants. Unless the commodity one demands is the commodity another supplies and the commodity one supplies is the commodity another demands, no direct exchange is possible between two people.

Once, however, money enters into an economy as the general medium of exchange, such reciprocal unity of demand and supply in barter exchange is split into two separate acts of purchase and sale – a purchase being a demand for commodity in exchange of money, and a sale a supply of commodity in exchange of money. One can then "buy" any commodity one demands as long as one can find another who supplies it (at a certain price), and one can "sell" any commodity one supplies as long as one can find another who demands it (at a certain price). It does not matter when, where, and with whom one transacts, in so far as the other is accepting the same money as the general medium of exchange. The intermediation of money thus burst through the restrictions as to time, space, and knowledge about trading partners, imposed by double coincidence of wants, and triggered a phenomenal expansion of the sphere of economic exchanges,

[22] As John Law said, "Money is not the value for which goods are exchanged, but the value by which they are exchanged: the use of money is to buy goods, and silver (while money) is of no other use." John Law, *Money and Trade considered, with a Proposal for supplying the Nation with Money,* 1705; p.100.

temporally, spatially, and socially, an end result of which is this global capitalism that now covers the entire globe. Money is, in other words, the original source of efficiency in our capitalist economy.

It is, however, this very money that is also the original source of instability in our capitalist economy.

No one can sell unless someone else buys. But no one has to buy immediately after she has sold. She can simply hold a part or the whole of the money from the sale. No one can buy unless someone else sells. But no one has to sell immediately before he will buy. He can simply spend a part of the money he has already held. In our capitalist economy a supply does not necessarily create a demand, nor does a demand create a supply. Indeed, by some reason or other when people as a whole decide to increase their money holding by refraining from spending it on commodities (a situation Keynes called an increase in liquidity preference), the aggregate demand for all commodities (exclusive, of course, for money) falls short of the aggregate supply of all commodities (again, exclusive of money). When, on the other hand, people as a whole decide to decrease their money holding by rushing to spend it on commodities (a decrease in liquidity preference), the aggregate demand for all commodities exceeds the aggregate supply of all commodities. The so-called "Say's law" that insists that the aggregate demand and the aggregate supply are always equal to each other breaks down in capitalist economy. In fact, when aggregate demand rises above aggregate supply, we say that the economy is in a boom, and when aggregate demand falls short of aggregate supply, we say that the economy is in a slump.

Neoclassical economists would immediately raise an objection that, even if it were theoretical possible that aggregate demand and aggregate supply deviate from each other, such disequilibrium would soon be wiped out by the Invisible Hand of the price mechanism, just as any disequilibrium between demand and supply of a commodity would be. It is true, a disequilibrium between demand and supply of the commodities as a whole is no more than a mirror-image of a disequilibrium between demand and supply of money.[23] But, unlike all the other commodities, *money does not have its own market.*

To sell a commodity is to give that commodity to someone else in exchange of money, and to buy a commodity is to receive that commodity from someone else in exchange of money. We can "sell" money only by buying some commodities in their markets; we can "buy" money only by selling some commodities in their markets. As the general medium of exchange that has to mediate the sales and purchases of all the commodities in their markets, money cannot have a market of its own. To be sure, there is a market that is often called a money market. But, all it means is a financial market for short-term lending and borrowing, not the market for money itself.

In the case of non-monetary commodities, each has its own market to adjust its own disequilibrium by

[23] By Walras' Law that sums up all the consumers' budget equations, when there is an excess demand (supply) for the commodity as a whole, there must be an excess supply (demand) of money with equal value.

moving its (relative) price up and down. In the case of money, by contrast, its disequilibrium has to be adjusted only indirectly by drawing on all of the markets for commodities. It becomes necessarily a macroeconomic phenomenon.

Robert Malthus and Karl Marx both attacked, the former timidly and the latter vehemently, Adam Smith, David Ricardo, Jean Baptist Say and other classical economists for their blind belief in Say's law. They, however, failed to develop a theory that took full account of the breakdown of Say's law. It was Knut Wicksell who first succeeded in working out macroeconomic consequences of a disturbance of equilibrium between aggregate demand and aggregate supply in his 1898 *Interest and Prices*.[24]

7. WICKSELLIAN THEORY OF DISEQUILIBRIUM CUMULATIVE PROCESS

Wicksell's starting point was an attempt to reformulate the quantity theory of money from the neoclassical perspective. As the author of *On Value, Capital and Rent* which successfully integrated Walrasian general equilibrium theory and Bohm-Bawerkian capital theory, Wicksell was too good a neoclassical economist to accept the mechanical manner in which the quantity theory relates the general price level to the total quantity of money. Instead, he proposed to explain the general movement of prices from the "detailed investigations into the causes of price changes."[25] He thus began by reiterating the neoclassical law of supply and demand that "every rise and fall in the price of a particular commodity presupposes a disturbance of the equilibrium between the supply of and demand for that commodity, whether the disturbance has actually taken place or is merely prospective," and then claimed that "what is true--in this respect-- of each commodity separately must doubtless be true of all commodities collectively." If there is a general rise in prices, Wicksell insisted, it is "only conceivable on the supposition that the general demand has for some reason become, or is expected to become, greater than the supply."

This proved a decisive step. For Wicksell realized that this was tantamount to the refutation of Say's law of classical and neoclassical school he had faithfully subscribed to. He nevertheless proceeded to study what occurs when the intermediation of money has driven a wedge between aggregate demand and aggregate supply.[26] As a faithful student of Bohm-Bawerkian capital theory, Wicksell singled out the rate of interest as the key variable that determines the relationship between aggregate demand and aggregate supply. He then

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[24] Knut Wicksell, *Interest and Prices,* First English edition, 1936, (Reprinted by Kelly: New York, 1962);--------, *Lectures on Political Economy, Vol.2 Money* , English edition, (Routledge & Kegan Paul: London, 1935). For a more formal representation of Wicksellian cumulative process, see Part I of my *Disequilibrium Dynamics-- A Theoretical Analysis of Inflation and Unemploymen*. It has reformulated Wicksell's theory by explicitly incorporating firms' decentralized price-formation process into a monetary theory of macroeconomic dynamics.

[25] *Lectures on Political Economy, Vol.2*, p.159.

[26] *Ibid.,* p.159.

introduced the concept of the natural rate of interest as the rate of interest that equates aggregate demand and aggregate supply, and contrasted it with the market rate of interest which is quoted daily in financial markets (in particular, in the market for bank loans).[27] When the market rate is left lower than the natural rate, aggregate demand is excessively stimulated and tends to exceed aggregate supply, and when the market rate remains above the natural rate, aggregate demand is choked off and tends to fall short of aggregate supply.

What Wicksell found in his analysis of the general movement of prices is a new form of "macroeconomic" phenomena, which cannot be reduced to a mere aggregation of individual price-formation processes. He said that a general rise or fall in prices is a "fundamentally different phenomenon" from that of an isolated rise or fall in individual price. Since the demand and supply of a particular commodity is a function of its *relative* price – the former being a decreasing function and the latter an increasing function, an increase in its price will work to rectify a market disequilibrium by discouraging demand and stimulating supply, *so long as* it is not followed by others. But, what is possible for an individual commodity in isolation may not be possible for all the commodities at once. Whenever there is a positive gap between aggregate demand and aggregate supply, then, as an arithmetic fact, most producers must experience excess demand for their products. They therefore *simultaneously* attempt to raise the relative prices of their products. (To simplify the argument, I will represent each product's relative price by the ratio of its price to the general price level.) No matter how rational they might be, their intentions are not mutually compatible. It is arithmetically impossible for all the "relative prices" to increase simultaneously! Indeed, as long as each producer cannot observe the prices set by the other producers in advance, all they can do is to raise their own prices relative to their *expectations* of the others' prices. Now, the general price level being no more than the economy-wide average of individual prices, most producers's simultaneous attempts at raising their prices relative to their expectations of the general price level will *necessarily* raise the general price level relative to their expectations of the general level. What does this mean? Most producers will find out at the end of the day that the general price level has gone up *unexpectedly*. In contradistinction to the so-called rational-expectation hypothesis in neoclassical economics, whenever there is disequilibrium between aggregate demand and aggregate supply, *errors in expectations* are generated *endogenously* as the very aggregate outcome of individual producers' pricing decisions!

Having learned that they have underestimated the general price level, most producers will revise their expectations upward. But such revisions of expectations will be of little help. For as long as there is a positive gap between aggregate demand and aggregate supply, most producers will again simultaneously raise their

[27] *Ibid.,* p. 102. Although the level of the natural rate of interest depends upon many factors, it is he prospective rate of return on investment that will have a decisive influence on it.

own prices relative to their revised expectations of the general price level. And, of course, their simultaneous bidding up of their prices will inevitably betray their intentions of realigning the relative prices, and only the level of general price will increase *unexpectedly*. Further upward revisions of the expected general price level and an equally large increase in the general price level itself will follow the lead. Wicksell was therefore able to conclude that:

> If, for any reason whatever, the average rate of interest is set and maintained *below* the normal rate [i.e., the aggregate demand is set and maintained below the aggregate supply], no matter how small the gap, prices will rise and will go on rising; or if they were already in the process of falling, they will fall more slowly and eventually began to rise. If, on the other hand, the rate of interest is maintained no matter how little *above* the current level of the natural rate [i.e., the aggregate demand is maintained above the aggregate supply], prices will fall continuously and without limit."(*Interest and Prices,* p. 94.)

A general rise or fall in prices is a disequilibrium process which is "not only permanent, but also cumulative."[28]

8. SPECULATIVE NATURE OF MONEY HOLDING AND FUNDAMENTAL INSTABILITY OF CAPITALISM

This is still not the whole story. For a cumulative rise or fall in prices may in turn alter the relationship between aggregate demand and aggregate supply, thereby creating a new macroeconomic condition for its

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[28] *Ibid.,* p.94. I have to note here, however, that in his original formulation of cumulative process Wicksell adopted the neoclassical assumption of perfect competition and implicitly supposed that all prices are set by the "market auctioneer" *à la* Leon Walras. Looking back from now, Wicksell failed to be thoroughly neoclassical at least in the way he approached to the law of supply and demand. For a truly neoclassical economist would not accept its too mechanical a formulation and must have asked the following question: "whose behavior is thereby expressed? And how is that behavior motivated?" (Tjalling Koopmans, *Three Essays on the State of Economic Science*, New York: McGraw Hill, 1957; p.179.) Indeed, if the market is assumed to be perfectly competitive in the sense that every buyer and seller regards the price as a parametric signal and make demand and supply decisions accordingly, as Wicksell assumed without much ado, we have a paradoxical situation in which there is no one left over whose job it is to make a decision on price. Indeed, if the price of a commodity moves in response to a disturbance of the equilibrium between demand and supply, such price movement expresses the imperfectly competitive behavior of producers (or in some cases buyers), which is motivated by their intermittent adjustment of anticipations in light of the observed discrepancies between *ex ante* and *ex post*, revealed in the form of excess demand or excess supply in markets. It is for this reason that my *Disequilibrium Dynamics* dropped the assumption of perfect competition and instead supposed that every product is differentiated from each other and its price is set by the producer him- or herself. The theory of cumulative inflation and deflation process I have elucidated in the main text is my reformulation of Wicksellian theory of cumulative process within a theoretical framework of monopolistically competitive economy.

further development. Note that a continuous rise in the general price level, or inflation, is equivalent to a continuous depreciation of the value of money, and a continuous fall in the general price level, or deflation, is equivalent to a continuous appreciation of the value of money. It is from this point on that the purely speculative nature of money-holding begins to play a decisive role.

When aggregate demand is set and maintained above aggregate supply, the general price level starts rising. As long as it is regarded as temporary, there is little change in people's attitudes to their money holding. As inflation persists, however, some people may begin to expect inflation to continue. And, once a majority of people come to expect many other people expect inflation to continue, a spell is broken. People start to lose their confidence in the value of money and try to reduce their money holding by buying commodities. This tends to stimulate aggregate demand and speeds up the pace of inflation. Fearing a further acceleration of inflation, people stampede to unload their money holding by snatching up any commodity available in markets. Inflation accelerates even more, confirming their fear of further acceleration of inflation. The economy now enters into the phase of hyperinflation and a flight from money is set off. In the end, nobody is willing to accept money as money, reducing it to an insignificant sheet of paper or a useless disc of metal, and the economy collapses to the most primitive system of barter exchanges. What we have seen is a bust of money as money.[29]

Conversely, when the aggregate demand is maintained below the aggregate supply, the general price level start falling, and, once many people come to expect many other people expect deflation to continue, they may come to desire money, which is no more than a medium of exchange for commodities, more than actual commodities. This tends to dampen aggregate demand and causes a further deflation, meaning that the value of money rises still more relative to commodities in general. This in turn makes people even more inclined to hold their money. In the end, the economy falls into a depression, where nobody wants to buy anything anymore from markets. This is a bubble of money as money.

Of course, as long as a certain form of outside money (mostly bills and coins issued by central bank and government) is being used for economic payments, cumulative inflation will have the effect of reducing its real value and may work to narrow down the gap between aggregate demand and aggregate supply, either by discouraging directly the demand for consumption goods (the so-called Pigou effect) or indirectly the demand for investment goods through the tightening of financial markets (the so-called Keynes effect). We, however, now know that the effects of rising prices on the private debt/credit structure in financial markets have far stronger opposite effects. Rising prices, as long as they were not anticipated in advance, have the effect of

[29] Wicksell was well aware of this possibility. He wrote: "We may go further. The upward movement of prices will in some measure 'create its own draught'. When prices have been rising steadily for some time, entrepreneurs will begin to reckon on the basis not merely of the prices already attained, but of a further rise in prices. The effect on supply and demand is clearly the same as that of a corresponding easing of credit." (*Ibid.,* p. 96.)

transferring the real purchasing power from holders of private financial debts to their issuers, by relieving the real indebtedness of the latter. Since debtors are likely to have a higher propensity to spend out of their wealth than creditors, this mere redistributional effect of private debts has a destabilizing effect. Moreover, the relief of the indebtedness of private debtors effected by rising prices may encourage them to deepen their indebtedness further by issuing more debt or by replacing their short-term debts in maturity by long-term debts. This injects new liquidity into financial markets and encourages both consumption and investment spending still more. This may be called "the debt-inflation process."

The same argument applies equally well to the case of a cumulative fall in prices. Indeed, Irving Fisher, after having lost both his academic reputation and financial wealth by the Great Depression whose occurrence he had denied publicly and speculated against it privately, came to a view that the debt-deflation process, the reverse of the debt-inflation process, was "its" chief cause, and his post-Great Depression view was elaborated further by Hyman P. Minsky.[30] Besides, in what Wicksell called the "pure credit economy," where all payments are effected by means of bookkeeping transfers through the private banking system, there is no room for a stabilizer to work.[31]

Wicksell's theory was an emancipation, or at least a first step away, from the spell of the Invisible Hand. In contrast to an equilibrium between demand and supply of an individual commodity, an equilibrium between aggregate demand and aggregate supply has no self-regulating tendency in itself; any deviation from it will trigger a disequilibrium process that drives the general price level cumulatively away from it. What is more, the purely speculative nature of money-holding makes the matter worse by widening a disequilibrium between aggregate demand and aggregate supply further and throws the economy into hyperinflation or into depression. Not only is the Invisible Hand not working but also causing the very instability of the capitalist economy. The world of Adam Smith was thus turned upside down.

We, human-beings, stumbled upon money in the dim and distant past. It was the original move toward greater efficiency in economic activity, removing the inconvenience of barter trades and freeing economic exchanges from any restrictions on time, space, and individuals. Without money, the grand economic structure of this global capitalism could not stand. But it is the same money that makes it possible for depressions and hyperinflation to occur. This is a fundamental trade-off between efficiency and stability under capitalism.

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[30] Irving Fisher, *Booms and Depressions : Some First Principles*, Adelphi, 1932; -------, "The debt-deflation theory of great depressions." *Econometrica,* 1(3), 1933, pp. 337-57; Hyman P. Minsky, *Can "It" Happen Again? – Essays on Instability and Finance*, M. E. Sharpe: New York, 1982; -----, *Stabilizing an Unstable Economy*, New Haven: Yale University Press, 1984, reprinted by McGraw Hill: New York, 2008.

[31] *Interest and Prices*; pp.70-71.

9. KEYNESIAN POSTULATE OF MONEY WAGE STICKINESS AS THE STABILIZER OF CAPITALIST ECONOMY

The picture of the capitalist economy painted by Knut Wicksell, or to put it more precisely, the picture of the laissez-faire capitalist economy Wicksell would have painted if he had pursued the logical implications of his theory to its limit, was that of a self-destructive one. Any disequilibrium between aggregate demand and aggregate supply (or the natural rate and the market rate of interest) would set off a dynamic process that would move the general price level cumulatively away from equilibrium. Unless some outside authority intervenes to restore equilibrium, its ultimate destination would be a hyper-inflation if the aggregate demand continued to exceed the supply or a great depression if the aggregate demand continued to fall short of the supply.

But -- and this is a critical "but" -- the actual capitalist economy in which we live does not appear to be so violently self-destructive. Of course, booms and slumps have always been with us as different phases of regular business cycles; but hyperinflations and depressions were rare exceptions in the history, (thought we may be on the brink of another great depression now). This observation must be the starting point for John Maynard Keynes when he began his work on *General Theory*. He indeed wrote:

> It is an outstanding characteristic of the economic system in which we live that, whilst it is subject to severe fluctuations in respect of output and employment, it is not violently unstable. Indeed, it seems capable of remaining in a chronic condition of sub-normal activity for a considerable period without any marked tendency either towards recovery or towards complete collapse…. Fluctuations may start briskly but seem to wear themselves out before they have proceeded to great extremes, and an intermediate situation which is neither desperate nor satisfactory is our normal lot." (*General Theory*, pp.249-259.)

We are thus led to pose a question, which should sound paradoxical to those who used to live in the world of Adam Smith: "What saves the capitalist economy from its self-destructive tendency?"

Once the question has been posed in this manner, the answer to it, though as paradoxical as the question itself, comes up immediately. For it is not hard to notice that Wicksellian theory of disequilibrium cumulative process presupposed one critical assumption. It is the assumption that the price of every commodity, including that of labor, is assumed to respond flexibly to any disequilibrium between demand and supply of that commodity. Wicksell was after all too pure a neoclassical economist to introduce any imperfections into his theory.

Keynes was, as I already pointed out, Wicksellian in *A Treatise on Money*[32] and remained so even in *The General Theory* when he wrote the following passages:

> If ... money wages were to fall without limit whenever there was a tendency for the less than full employment, ... there would be no resting place below full employment until either the rate of interest was incapable of falling further or wages were zero. (pp.303-304.)[33]

Keynes then argued that:

> In fact, we must have some factor, the value of which in terms of money is, if not fixed, at least sticky, to give us any stability of values in a monetary system. (p. 304.)

What Keynes found as a factor whose monetary value is, if not fixed, at least sticky, is of course "labour". In a normal wage bargaining, he wrote, "labour stipulates (within limits) for a money-wage rather than a real wage," for "[w]hilst workers will usually resist a reduction of money-wages, it is not their practice to withdraw their labour whenever there is a rise in the price of wage-goods." Such behavior is of course "illogical" from the standpoint of neoclassical economics, for it appears to imply workers suffer from money illusion and do not care the purchasing power of their money wages. (p. 9.)[34] Keynes, however, argued that "this might not be so illogical at it appears at first," and then added an enigmatic sentence: "and, … fortunately so."(p. 9.)

In the first place, once we accept that workers are not isolated individuals whose end is merely to seek their own well-being but social beings (zoon politicon *à la* Aristotle) whose main concern is how they stand *vis-à-vis* others within a social network, it is no longer illogical for workers to resist a reduction of money-wages but not to resist an increase in the price level. For, then, an object of workers in a wage bargain

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[32] For instance, Keynes wrote in *A Treatise on Money* that: "[I]f the volume of saving becomes unequal to the cost of new investment [i.e., if aggregate demand becomes unequal to aggregate supply], or if the public disposition towards securities take a turn, even for good reasons, in the bullish or in the bearish direction [ie., if the natural rate rises above the market rate of interest], then the fundamental price levels can depart from their equilibrium values without any change having occurred in the quantity of money or in the velocities of circulation." *A Treatise on Money, Vol. 1: The Pure Theory of Money*, p. 132.)

[33] Similarly, in p. 269, he wrote: "[I]f labour were to respond to conditions of gradually diminishing employment by offering its services at a gradually diminishing money-wage, this would not, as a rule, have the effect of reducing real wages and might even have the effect of increasing them, through its adverse influence on the volume of output. The chief result of this policy would be to cause a great instability of prices, so violent perhaps as to make business calculations futile in an economic society functioning after the manner of that in which we live."

[34] See George Akerlof and Robert Shiller, *Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism*, Princeton University Press: Princeton, 2009; pp. 42-50, for a history of thought on money illusion.

is not to determine their real wage but "to protect their *relative* real wage." Indeed, in so far as there is imperfect mobility of workers across jobs, regions, employers, etc., "any individual or group of individuals, who consent to a reduction of money-wages relatively to others, will suffer a relative reduction in real wages," whereas "every reduction of real wages, due to a change in the purchasing-power of money .. affects all workers alike," keeping their relative position more or less intact. (p. 14.)

More fundamentally, we are now able to make sense of Keynes' enigmatic statement: "and, … fortunately so." It is indeed "fortunate" for the capitalist economy that workers resist a reduction of money wages but not an increase in the general price level as a manifestation of their self-identity, not as a self-seeking utilitarian, but as a social-being who cares about the fairness of their treatment within social network. The real paradox is that it is this seemingly illogical behavior of workers – money illusion-- and the consequent stickiness of the value of wages in terms of money that has given us a certain degree of stability in our capitalist economy. It is, in other words, the presence of "impurities" in labor markets that saves the capitalist economy from its self-destructive tendency! As Keynes himself put it:

> To suppose that a flexible wage policy is a right and proper adjunct of a system which on the whole is one of laissez-faire, is the opposite of the truth. (p. 269.)

It should be, however, emphasized here that such suppression of the cumulative process in no way implies the disappearance of disequilibria from the capitalist economy. On the contrary, the downward stickiness of money wages will merely replace one form of macroeconomic disequilibrium by another. Indeed, under the downward stickiness of money wages, the laissez-faire capitalist economy is subject to severe but not violently unstable fluctuations in respect of output and employment, through the multiplier process of incomes and the acceleration principle of investments. When aggregate demand falls below aggregate supply, a majority of producers who are unable to force a reduction of money wages have to cut the employment of workers in order to scale down their output supply. Consumers are then forced to curtail their consumption on goods and services in reaction to their lower incomes, and producers are then forced to cut back their investment on plant and equipment in reaction to their lower profits. Aggregate demand will fall off further and set off a second-round reduction of output, employment and investment, which will then induce a third-round, a fourth-round ⋯ reduction. In the end, the induced fall in aggregate demand will be many times larger than the original fall. Under the downward stickiness of money wages, the laissez-faire capitalism thus has a tendency to suffer a large amount of inefficiency, in the form of chronic underemployment of workers and recurring underutilization of productive capacities.

It is for this reason Keynes devoted the entire volume of *The General Theory* to the study of "the forces

which determine changes in the scale of output and employment as a whole." (p. vii.) The macroeconomic inefficiency in the form of underemployment of labor and underutilization of capital is a dear price we have to pay in order to tame the inherent instability of the general price movement under capitalism. (Note that because of the governmental commitment to full employment after the (short-lived) success of Keynesian economics after WWII there emerged an inflationary bias in most of advanced capitalist countries and that it was inflation, not unemployment, that became a price we had to pay until 1980s.) This is the second form that the fundamental trade-off between efficiency and stability expresses itself under capitalism where everybody has to deal with the object of the purest speculation – money – in their daily economic activities.

10. THE LIQUIDITY OF BANK MONEY AND KEYNESIAN BEAUTY CONTEST ONCE AGAIN

I have already pointed out that the subprime meltdown of 2007 can be regarded as a dramatic representation of the instability of financial markets. Seen in this light, the crisis that has resulted might seem to be essentially no different, albeit broader in reach, than the collapse of bubbles in Finland, Sweden and Japan in the early 1990s or the Asian currency crisis of the late 1990s or the burst of US dotcom bubble in 2000.[35] I, however, believe that "this time is different."It is not in the sense that professional speculators, policy makers, and academic cheerleaders have uttered those words in justifying ongoing financial bubbles (and consequent busts) on the basis of some seemingly new features in market fundamentals; but it is in the sense that this global economic crisis has brought to clear light the inherent instability of capitalism as the manifestation of the purely speculative nature of money for the first time since the Great Depression. It has indeed manifested itself in two different ways – first as the spectacular collapse of liquidity in financial markets and second as a harbinger of the future collapse of dollar as a key currency in global capitalism. I will take up the collapse of financial liquidity first.

One of the biggest lessons of the Great Depression was that commercial banks must be regulated. To understand this, we need to look at the relationship between bank deposits and their liquidity.

When we economists measure the total amount of money supply (more precisely, M1), we count not just cash in the form of bills and coins but also such "highly liquid" form of private debts as demand deposits at

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[35] Graciela Kaminsky and Kenneth Rogoff, "This Time is Different: A Panoramic View of Eight Centuries of Financial Crises," *NBER Working Paper* 13882, March 2008, for an excellent overview of qualitative and quantitative parallels across a number of financial crises from England's fourteenth-century default to the current US subprime meltdown. See also Graciela Kaminsky and Kenneth Rogoff, "Is the 2007 U.S. Sub-Prime Financial Crisis So Different? An International Historical Comparison," *American Economic Review*, 98 (29), May 2008, and Graciela Kaminsky and Carmen M. Reinhart**.** 1999. "The Twin Crises: The Causes of Banking and Balance of Payments Problems." *American Economic Review* Vol. 89: 473-500;

commercial banks.[36] Saying that my demand deposit is "highly liquid" means that I believe I can go to a bank window or an automated teller machine and withdraw cash from my bank account whenever I want to. I thus keep my deposit confidently in the bank until I need it. Many other depositors leave their deposits in the bank as well in the belief that they can also withdraw them at any time. The bank taking the deposits therefore needs to keep only a fraction of the deposited cash on hand to prepare for withdrawals; it can lend out the rest. And much of the cash it lends out gets deposited again in banks somewhere, which can again lend the bulk of it out. Through this process called "credit creation," my original deposit can generate an amount equal to many times—or even tens of times—its value in additional deposits that can be counted as money supply.

But how elusive this attribute of liquidity is, which demand deposits are supposed to possess! I believe I can withdraw cash from my bank at any time, because I believe that all the other depositors are also confidently keeping their deposits in the bank. And the only reason all the other depositors are keeping their deposits is again they also believe all the other depositors are confidently keeping their deposits in the bank. This brings us back once again to Keynes' beauty contest. The liquidity of demand deposits is supported by exactly the same bootstrapping process that supports money as money; just as money is money merely because everybody believes everybody else believes it is money, demand deposit has liquidity merely because every depositor believes every other depositor believes it has liquidity. If, however, the depositors all started to doubt the liquidity of their deposits, they would all rush to withdraw their deposits. The bank would quickly run out of cash, and most of the depositors would be unable to make withdrawals, and the liquidity of the deposits would vanish without a trace.[37] This is a bust of liquidity.

In the financial crisis that struck after the stock market crash of 1929, many US banks, which up to then had been operating relatively free of regulatory constraints, suffered runs and went under. Not only the volume of money supply contracted sharply but also people's liquidity preferences swelled enormously. The resulting decline of aggregate demand transformed potentially one of many financial crises into the Great Depression. On the basis of this lesson of the fundamental instability of the demand deposit liquidity and its huge impact on the aggregate demand of the real economy, the United States adopted the Glass-Steagall Act of 1933 as part of the New Deal. This act established a distinction between two types of financial institution: (1) deposit-taking commercial banks that were capable of generating credit creating process and (2) investment banks (securities companies) that were not. Commercial banks were under the cover of Federal Deposit Insurance Corporation (FDIC) that guarantees the safety of deposits in their accounts up to $5,000 (now raised $100,000 and because of the ongoing financial crisis temporarily to $250,000 until the end of

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[36] To be precise, M1 consists of M0 or high-powered money (= cash + commercial banks' deposits in central bank) , demand deposits, certificate of deposits, and traveler's checks.

[37] This bootstrapping process of demand deposit liquidity was formalized first by Diamond, Douglas, and Philip Dybvig (1983) 'Bank Runs, Deposit Insurance, and Liquidity,' *Journal of Political Economy* 91, 401-419.

2009) and given access to the Federal Reserve Board (Fed)'s discount window, and in return were subject to reserve requirements and Fed's close supervision against speculative behaviors. Investment banks, by contrast, were free to take risks in pursuit of their profits, provided that they did not commit fraud and swindles, such as accounts rigging, false disclosure, and inside trading, all watched over by Security and Exchange Committee (SEC). (There was, however, a loophole in regulatory laws that exempted publicly-unlisted private equity from most of SEC's oversights, allowing them to be totally speculative. This of course became the springboard for the enormous expansion of the so-called hedge funds since 1980s.)

Amid the wave of financial deregulations and innovations starting in the 1980s, however, inside players in financial markets, outside supporters of financial interests, and academics experts in financial engineering came to argue that the only regulation financial markets required was SEC's controls to prevent frauds and swindles. After all, isn't it the very *raison d'être* of financial markets to securitize risks of any sort, whether they arise from real activities or from financial transactions, and diversify them through market exchanges among a huge number of people with a wide spectrum of attitudes towards risks around the globe? Financial market is, they thus argued, able to take care of their own risks without any governmental oversights and legal protections. And under the strong forces of these arguments and the relentless pressures from interest groups, the United States congress effectively repealed the Glass-Steagall Act in 1999.

The twenty-first century brought the subprime mortgage meltdown in the United States. Subprime mortgages are housing loans extended to people without steady incomes or with poor credit records. These people bought homes financed by loans that they could not reasonably expect to repay. They, however, did so because they expected that the housing bubble would continue, enabling them to sell their homes for considerably higher prices. And banks extended them loans in the belief that they could average out the risk of default by bundling many such loans into mortgage-backed securities. Financial engineering was then used to process the risks and turn the mortgage securities into complex derivatives, which were incorporated into numerous investment portfolios and hedge funds and scattered around the world.

Even these extraordinarily risky securities, built on the dubious assumption that the housing bubble would continue indefinitely, were treated as if they were highly liquid instruments that could be cashed in at any time, and many people came to hold them with confidence—as a result of which they became more liquid in their eyes. This in turn allowed commercial banks, now turned into investment banks, investment banks, now simulating hedge funds, and hedge funds, now indulging in more speculation, to raise their leverage ratios further by selling more elaborate and hence much riskier derivatives around the world. Through the workings of this now familiar bootstrapping process, the financial market as a whole was enabled to create a huge amount of credit almost out of nowhere, as if it were a huge commercial bank without, however, appropriate regulations.

Particularly fast growth was seen in what are called "credit default swaps (CDSs)." These are financial derivatives created by pulling out just the risk that the issuer of an original security will fail and packaging it as a separate instrument. CDSs were hailed as the ultimate means of avoiding financial risks, and at their heyday in 2007 the volume of the CDS market was a massive $58 trillion -- an amount greater than the gross domestic product of the entire world which was $55 trillion in the same year. If one looks at who bought these derivatives, though, one can immediately find that mere 1.5% (about $0.7 trillion) was actually in the hands of investors outside of financial markets.[38] In other words, there was nobody actually covering the default risks of financial institutions and derivatives dealers. They merely took on each other's risks and lulled themselves and each other into a false sense of confidence. Then, in 2007, when the housing bubble showed signs of weakening, the bootstrapping process underlying the liquidity of the CDSs began to crumble. Suddenly everybody wanted to dispose of these derivatives, and then started to sell off even regular financial securities like stocks and bonds as well. This amounted to a run on the financial market as a whole. The swollen supply of credit contracted almost instantaneously, and all that was left in the debris of the marketplace was the reality of defaulted mortgages.

The bank failures during the Great Depression left the lesson that credit-creating banks need to be regulated. The financial market crash this time has highlighted the fact that credit is created not merely by commercial banks but also by the financial markets as a whole through the same bootstrapping process as the one supporting the liquidity of bank deposits. The biggest lesson to be drawn from it is therefore the necessity to introduce into the entire financial system a set of old-fashioned regulations on commercial banks, such as Central Bank's stricter supervisions, disclosures of their accounts, requirement of minimum reserves or/and of adequate capital asset ratios, plus some innovations in regulatory apparatuses, in proportion to the extent of the net risks they are potentially capable of exposing the general public to.

Ironically, the current global economic crisis has resulted in the total disappearance of pure investment banks from the United States. They have all either gone under or converted themselves into commercial banks. This is nothing other than the revenge of the exterminated Glass-Steagall Act.

11. THE TRUE CRISIS OF CAPITALISM IS NOT DEPRESSION BUT HYPERINFLATION

What is the true crisis of capitalism?

"Depression" – is the answer a majority of social thinkers and policy makers, both left and right, have given since at least the days of *Communist Manifesto*. To be sure, from the standpoint of our everyday experience in markets, to sell a commodity is a much more difficult task than to buy it. A commodity in the hands of a seller

[38] See http://www.bis.org/publ/otc_hy0811.htm

is of value only to a limited number of people with specific desires or needs for it, whereas cash in the pocket of or deposits in the bank account of a buyer is, by the very nature of its being the general medium of exchange, of value to everybody in the economy. An act of a sale is indeed a "*salto mortale* of the commodity"; "if it falls short, then, although the commodity itself is not harmed, its owner decidedly is."[39] The view that the capitalism's true crisis is the depression comes about naturally as a straightforward deduction from our daily experiences in markets. It is after all a manifestation of one of the real paradoxes of capitalist economy in which people may come to have more desire for money, which is originally a mere means of obtaining useful commodities, than for the commodities themselves that are the real end.

Yet, once we shift our standpoint from that of a daily user of money in markets to that of a social scientist contemplating the ontological structure of money, the answer will turn completely upside down. While money as money is of value to everybody in the economy, money as a thing is a non-entity that has no intrinsic utility to support its value as money. The value of money as money is supported, as we have refrained so many times, only by a pure bootstrapping process of everybody believing everybody else believing it being of value. The occurrence of a depression, however deep it is, will never jeopardize this elusive process that supports the value of money. On the contrary, the fact that in the midst of a depression everybody desires money more than real commodities, that is, a means more than its end, implies that everybody has a faith in its intangible force far firmly than the concrete materiality of individual commodities. It can be regarded as a manifestation of their confidence in the continuity of the capitalist economy, that its participants will perpetuate the motion of the bootstrapping process by willing to accept the money in current use even in the future. In this sense, the depression can never be the capitalism's true crisis, no matter how undesirable its consequences are to the people in the street. Indeed, history tells us that capitalism became stronger and stronger every time it underwent a succession of challenges posed by economic depressions.

What, then, is the capitalism's real crisis?

> Lenin is said to have declared that the best way to destroy the capitalist system was to debauch the currency…. Lenin was certainly right. There is no subtler, no surer means of overturning the existing basis of society than to debauch the currency. The process engages all the hidden forces of economic law on the side of destruction, and does it in a manner which not one man in a million is able to diagnose. (J. M. Keynes, *The Economic Consequences of the Peace*, 1919)

Keynes was certainly right (as always). "Hyperinflation" is the capitalism's true crisis.

Hyperinflation is, as we have seen in section 8, a vicious cycle where people's fear of accelerating inflation

[39] Karl Marx, *Capital, Volume One*, Chapter 3: Money, Or the Circulation of Commodities."

will drive them to reduce their money-holding by spending more on commodities and actually accelerate inflation, thereby confirming their original fear.[40] Such flight from money to commodities starts to unravel the bootstrapping process that supports money as money and ends up in actually reducing money to an insignificant sheet of paper or a useless disc of metal or in the case of bank money an unpaid account in bank. But, then, deprived of the general medium of exchange, the economy is now fallen back to a pre-monetary barter system that leaves everybody with unsalable products on one hand and unfulfilled desires on the other. Everybody's simultaneous attempt at fleeing from money to commodities thus defeats their purpose, turning every commodity they have sought out into something they are not able to reach. The end point of hyperinflation is the breakdown of the whole edifice of economic activities.

One may, however, cut in at this moment, wondering what the use of discussing such esoteric event as hyperinflation is. Granted that it is theoretically possible, and no doubt that it actually happened many times in history -- Russia after socialist revolution, Germany, Austria, Hungary, Poland after WWI, Greece and Hungary after WWII, China before the communist takeover, Latin American countries in the turbulent 1980s, and Russia and other former socialist countries in the course of a transition to capitalism.[41] But they were all during abnormal times. In today's advanced capitalist economies that are fully equipped with a variety of macroeconomic policy instruments it must be a mere curiosity to an armchair theorist, except perhaps for some of the developing countries with totally bankrupt government.

But, there is at least one place in this global capitalism in which this hyperinflation may not remain a mere theoretical possibility -- it is the global capitalism itself.

12. THE DOLLAR AS KEY CURRENCY AND THE REAL CRISIS OF THE GLOBAL CAPITALISM

The existing global capitalism has a blatantly "asymmetric" structure. On the one hand is the United States whose dollar is used by all other countries; on the other hand are all the other countries that have to use the US dollar for mutual transactions. The US dollar is the "key currency" and all the other national currencies

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[40] Phillip Cagan defined hyperinflation mechanically as any inflation exceeding 50 percent per month (or 12,875 percent per year) in his well-cited paper on hyperinflation. (Phillip Cagan, "The monetary dynamics of hyperinflation," chap. 2 of Milton Friedman ed., *Studies in the Quantity Theory of Money,* Chicago: Chicago University Press, 1956.) My characterization of hyperinflation given here and in section 7 is a functional one. Indeed, the purpose of Cagan's research, which was conducted under Milton Friedman's supervision, was to show that even hyperinflation can be explained by the quantity theory of money.

[41] As for German hyperinflation afterr WW II, see Frank D. Graham, *Exchange, Prices and Production in Hyperinflation: Germany 1920-1923,* (Princeton: Princeton University Press, 1930) and C. Bresciani-Turroni, *The Economics of Inflation: A Study of Currency Depreciaion in Post-war Germany, 1914-1923,* (London: Allen & Unwin, 1937). The more recent study is, for instance, Steven Webb, *Hyperinflation and Stabilization in Weimar Germany,* (Oxford: Oxford University Press, 1989).

are not. For example, when a Thai wants to buy a good from a Brazilian, she first exchanges Thai baats for dollars and uses these dollars for payment. When a Brazilian reaches the maturity date for its borrowing from a Thai, it first exchanges Brazilian reals to dollars and use these dollars for repayment. When, however, an American buys a good from a Brazilian or pays back his borrowing from a Thai, he can use his own national currency, dollars, for both payment and repayment. An American can buy things and borrow funds without ever bothering himself over whether he is at home or abroad. Of course, this is an exaggerated picture. As it is, Euro is establishing itself as a regional key currency and still expanding its sphere of exchanges even outside of Euro zone, and Japanese yen and to a certain extent Chinese yuan may be regarded as functioning as local key currencies in some part of Asia. Moreover, there are also direct transactions between two non-key currency countries, using their local currencies. In this sense, it is more true to picture the current international currency system as a hierarchy with the dollar standing at its apex, Euro at the second level, yuan and yen at the third, and the rest at the lower layers. But, what is crucial is the presence of asymmetric relationship between the dollar and the other currencies.

When the Soviet Union collapsed in 1991, many people, still caught up with Cold War thinking, saw the surfacing of this asymmetric structure between the "key" currency and other "non-key" currencies as the emergence of a new imperialistic economic order unilaterally dominated by the triumphant and hegemonic American economy. But, to identify this key/non-key relationship with the traditional master/slave or the ruler/the ruled relationship is to miss the essence of the matter.

It is true that the major impetus that enabled the dollar to gain the unrivaled position of the world's key currency was the overwhelming strength the US economy attained after WWI that was then consolidated during World War II. Immediately after WWII America accounted for half of the world's GDP, and with Europe, Japan and many other countries left in rubble by the war, it was the only country with major manufacturing capacities able to produce sophisticated investment goods and fancy consumption goods. People all around the world craved for made-in-America, and they desperately sought the dollars they needed to buy these products. Then, as Western Europe and Japan began to recover "miraculously" from war destructions (thanks partly to American aids), America's relative economic strength started to decline. The US economy found its productivity more or less caught up by Western Europe and Japan during 1970s and 80s, pressed hard by East Asian in 90s, and saw the rapid rise of China, Russia, India and Brazil in 2000s. Its trade balance ran into the red by the late 1950s, current balance has chronic deficits since 1980s, capital account turned negative in 1990s, and the dollar has a 35-year history of trend depreciation. In fact, American GDP now occupies only 25 % of the world GDP and American trade volume mere 15% of the world. Yet, the dollars are used dominantly in the trades and finances around the world, at least outside of Europe. For instance, a percentage of the use of US dollars in invoicing for traded goods is far higher than the US share in

the imports in Asian countries, Latin American countries, and Australia.[42] Or, to use another measure, the percentage share of the dollar as reserve currency held by central banks is about 63 %, while Euro 17% and Yen 2%.[43] People in the world hold the US dollars not necessarily for the purpose of importing American products or borrowing from American banks.[44]

Up until 1971, there were still some economists who could adhere to the commodity theory of money, arguing that the reason for the dollar to remain the sole key currency of the world, in spite of the relative decline of American economic hegemony, was the pledge of the US government that the dollars (at least those held by foreign governments) are convertible into gold at a fixed rate of 35 dollars = a ounce. It was the solid value of the gold as commodity, they believed, that backed the international circulation of the dollar. This naïve belief was shattered in August of 1971. Faced with mounting fiscal burden of the Vietnam War and sharp deterioration of gold coverage of dollars, President Richard Nixon declared the end the convertibility of the dollar into gold and started a process that led to the demise of fixed exchange rate system for all major currencies by 1976. The intention of this so-called Nixon shock was to relieve the US from its burden of keeping the dollar as the key currency and turn it into just one of the many national currencies whose exchange rates are to be determined freely in foreign exchange markets.

Contrary to the intention of the US authorities, however, the dollar continued to circulate as the sole key currency in the world, even if it completely lost its convertibility into gold. In fact, its key currency status became even slightly elevated immediately after Nixon shock.[45] This episode tells us what the defining characteristic of the key currency is. The fact that people around the world hold large amounts of dollars for the purpose of buying commodities or borrowing capital from the United States does not suffice to earn it the label of the key currency. This merely makes it a strong currency, like the euro and the yen. *The dollar becomes the key currency of the world only when it comes to be used as the means of settlement for trade and investment transactions that do not directly involve the United States.* For example, a Japanese buys a good

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[42] For instance, Korea, Thailand, and Malaysia use the dollar in invoicing more than 75 percent of their import transactions at the beginning of 2000s, though the US shares in their imports are 14% in Korea, 10% in Thailand and 12% in Malaysia. Japan and Australia's use of the dollar in import invoicing are 69% and 51%, though the US shares in their imports are 16% and 2% respectively. (Data on invoicing are from Linda S. Goldberg and Cédric Tille,"Vehicle currency use in international trade," *Journal of International Economics* 76 (2008) 177−192, and data on import shares are taken from IMF Direction of Trade.)

[43] According to IMF estimates of Currency Composition of Official Foreign Exchange Reserves (COFER), Claims in US Dollars among Allocated Reserves is 4,213,437, Euros 1,116,780, Japanese yen 137,695 among total allocated reserves 6,712,857 (all million dollars) in the 4th quarter of 2008 IV. (The amount of unallocated reserves is 2,499,419).

[44] See, for instance, Alan Blinder, 'The Role of the Dollar as an International Currency', *Eastern Economic Journal*, 22, Spring 1996, pp.127–36.

[45] According to one estimate, the dollar share of foreign exchange reserves was 77.2% in 1970, 78.6% in 1972, 76.6% in 1976, 67.2% in 1980, 65.8% in 1984. Akinari Horii, "The Evolution of Reserve Currency Diversification," *BIS Economic Papers*, No. 18, Dec. 1986.

from an Australian and pays for it in dollars. The Australian accepts payment in dollars because it expects to be able to use the dollars for a capital transaction with a Canadian. The Canadian accepts the dollars because it expects to be able to use them to pay for a purchase from a German. And the process may continue indefinitely without any American involved in transactions. People around the world accept the dollars as the key currency merely because they expect other people around the world accept dollars as the key currency. Here once more, we see the bootstrapping process of money at work.[46] After all, the key currency is nothing but the general medium of exchange for the global capitalism, and the relationship between the key currency and all the other non-key currencies in an inter-national economy is analogous to that between money and non-monetary commodities in an intra-national economy.

The above characterization leads us to an important proposition about the nature of key currency. It is that there is no one-to-one correspondence between the circulation of one country's national money as the key currency and the real economic power, either absolute or relative, of that country. This has been borne out abundantly by the history. The British pound retained its key currency position until around 1940, even though the British economy was overtaken by the US economy in its size already in 1872, and its export also began to lag behind the US export after 1915. It was only in 1945 the US dollar took over the pound as the unrivaled key currency of the global economy.[47] And this proposition should of course apply to the current key currency status of the US dollar as well. Once a particular nation's money has become accepted as key currency, it is able to hold on to that status regardless of changes in the strength of that nation's economic fundamentals, not to mention their military might or diplomatic presence or cultural dominance. Every time some sign of the weakening of the US economy showed up, there appeared a crop of reports that pronounced the dollar's death as key currency. But, precisely for this reason, they have all turned out to be greatly exaggerated.

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[46] A classical discussion on the advantage of a single currency serving the key currency of the world economy is Charles P. Kindleberger, *The Formation of Financial Centres: a Study in Comparative Economic History*, Princeton Studies in Internatkional Finnance, No. 36, 1974. He concluded that there is a strong economies of scale associated with centralization in a single currency and single financial center in the world as a whole, due to the reduction of transactions costs, especially those of search. (This is precisely the *raison d'être* for the emergence of money demonstrated in my papers cited in notes 18 and 20.) See also his "Key Currencies and Financial Centres," F. Machlup, G. Fels, andH. Müller-Groeling (eds) *Reflections on a Troubled World Economy: Essays in Honour of Herbert Giersch*, London: Macmillan, 1983,pp. 75-90; reprinted in Charles Kindlebeger, *Keynesianism vs. Monetarism and Other Essays in Financial History*, London: George Allen & Unwin, 1985, 155-167. Barry Eichengreen emphasized the role of network externality (that is roughly the same concept as what I have called the bootstrapping process) in *Globalizing Capital,* Princeton: Princeton University Press, 1996, esp. pp. 5-6. He, however, now questioned this bootstrapping logic and argued that several currencies have often shared the key currency role in the past and that the dollar and the euro are likely to share the key currency positions for the foreseeable future. (Barry Eichengreen, "Sterling's Past, Dollar's Future: Historical Perspectives on Reserve Currency Competition," *NBER Working Paper* 11336, May 2005.)

[47] See, for instance, Barry Eichengreen, *Globalizing Capital*.

Yet, we cannot rest assured by this proposition for the future of the dollar as key currency. There is indeed the other side of the coin (or the greenback) to it. In as much as the key currency is supported primarily by the same bootstrapping process as that of money, it is subject to the same instability as money is – the depression as a bubble of money as money and the hyperinflation as a bust of money as money. If a depression were to occur in global capitalism, it should be caused by a sudden surge in people's desires for dollars as the key currency in place of the other non-key currencies. The so-called Asian currency crisis gave us a glimpse of such possibility. Suddenly in 1997, Thai baats, Malaysian ringgits, Indonesian Rupiahs, Korean wons, Russian rubles, and Brazilian reals were dumped in foreign exchange markets, then a selling-off of Japanese yens started in 1998, and even the newborn Euro became a target of distress selling. The aggregate demand for the world as a whole was hit hard and the global economy began to experience a cumulative deflation process for a short while. Note, however, that the funds withdrawn from Asia, Russia, Latin America, and later from Japan and Europe, did not vanish in the air, nor did it rush to gold and other precious metals. Most of it was actually held in the form of dollars, a part of which was then headed to financial markets in the US. As a result, the US stock markets were able to continue their unprecedented boom (which turned out to be a mere bubble) and the US bond markets were able to maintain their already low rates of interest, except in the immediate aftermath of LTCM debacle. In this sense, the global slump caused by the Asian currency crisis can be interpreted as a vote of confidence on the status of the US dollar as the key currency, and after a year or two of turmoil the global economy was able to resume its growth path almost unscathed.

It must be obvious by now that it is 'the dollar crisis' that is the real crisis of the global capitalism (in addition, of course, to the crises of global warming, energy depletion, food shortage, population explosion in developing countries, population aging in advanced countries, crashes of religions, global terrorism, etc.) The dollar crisis is nothing but a hyperinflation of the dollar as key currency -- an unraveling of the bootstrapping process that has supported its key currency status independently of the real strength of the US economy.

If, for any reason whatever, people around the world begin to believe their holding of dollars as excessive, they start to sell dollars against the other currencies in foreign exchange markets. As long as the resulting depreciation of the dollar is expected to be temporary, a dollar crisis will not develop. But, once a large number of people come to fear that other people fear that the dollar will continue to depreciate, the situation reaches the tipping point. They start refusing to accept dollars as the means of settlement in their international transactions, further depreciating the value of the dollar and actually confirming their original fear. The flight from the dollar is now set off. Not only dollars are dumped into foreign exchange markets all over the world, but also a bulk of them that have circulated outside of the United States now rush to the United States, directly demanding the US products in their exchange. This will overheat the aggregate demand within the US economy and plunge it into a hyperinflation domestically as well. The dollar will be reduced not only to the

mere national currency of the US just like all the other currencies but also to one of the weaker ones with a far smaller purchasing power than it used to have.

If such a dollar crisis were actually to occur, most of the trades and finances that have been made possible by the intermediation of the dollars as the key currency would become difficult to sustain. The world economy would be split into a mere collection of numerous national economies, or more likely, would be divided into a few trading and/or financial blocks, each with its own local key currency. The final destiny is a breakdown, at least a temporal breakdown, of the global capitalism itself. Of course, the history of international monetary system has taught us that sooner or later a new key currency will emerge in place of the dethroned key currency. But, the same history also taught us that it would be far easier to destroy an existing bootstrapping process than to create a new one. In order for one currency to become a key currency there must already be a critical mass of people who expect a critical mass of other people will accept it as something like a key currency! In fact, it was during a long transition period of the key currency from the pound to the dollar that the Great Depression erupted, and it was during the Great Depression that the world economy divided itself into few blocks, which paved the way to WWII.[48]

Many will no doubt argue that such dethroning process of the dollar would not be so violent. It would only lead to a two-headed system with the dollar and the euro peacefully sharing the key currency status or a three-headed one with the dollar, the euro, and the yuan (or, if I am allowed to be a bit chauvinistic, the yen).[49] I do not, however, believe that such a dual or triad key currency system would ever be stable, even if the rapid development of financial technology will continue to reduce the cost of converting currencies. On the contrary, the easier to convert currencies, the easier to speculate in foreign exchange markets. This would be nothing but an invitation for professional speculators to participate in the easiest form of Keynesian beauty contest. The essence of the Keynesian beauty contest is not a simple 'winner-take-all' game, as has been sometimes misunderstood. There are indeed two different winners in this game -- the face who is chosen to be 'the prettiest' and the voters who receive cash prizes for voting 'the prettiest.' As to the former, it is certainly a winner-take-all game, but as to the latter, it is a game where everyone becomes a winner simply by joining in the majority. When the choice is among two or three, instead of a hundred, a small sign, even a false one, that one of them is getting more votes will push everyone to vote to that face, especially when there is no or little cost in switching one's vote.

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[48] One of the main theses of Charles Kindleberge in his *The World in Depression, 1929-1939.* 2nd ed., (Berkeley: University of California Press, 1986) is that the Great Depression became the greatest depression in history because Great Britain was no longer able to act as the lender of the last resort nor the United States were ready to do so.

[49] For instance, Eichengreen suggested that the dollar and the euro are likely share the key currency status for the foreseeable future. He, however, did not see the rise of the Chinese yuan to a major interntional currency even 40 years from now. See his "Sterling's Past, …"

13. THE FUTURE OF THE KEY CURRENCY SYSTEM

Is there any mechanism within the present global capitalism that can prevent the outbreak of the dollar crisis? The answer is, unfortunately, no. It is because the monetary structure of the present global capitalism has a basic dilemma – one country's national currency is used as the key currency of the entire world. There is no guarantee that what is best for the US is best for the world, and *vice versa*.[50]

Now, there is a great advantage to being a key-currency country. For example, even if a Japanese manages to use yens to buy something from a German, those yens will probably be used right away to buy something from Japan. This is because the yen is not the key currency. If, by contrast, an American uses dollars to buy something from a Japanese or a German, at least a part of those dollars will continue to circulate around the world and not return to the United States for a considerable period. This means that the Americans as a whole have been able to purchase that amount in commodities from other countries without providing any US-produced commodities in return. This "free lunch" is nothing but the 'seigniorage' of being the key-currency country. According to one (rough) estimate, 85% to 90% of the US currency in circulation would be held outside of the United States, and since the current stock of US currency is about $750 billion, this amounts roughly to $640 billion to $680 billion.[51] Perhaps, the more important is that the dollar being the key currency endows the dollar-denominated securities with more liquidity than the securities denominated by other currencies. This allows the US financial markets as a whole to borrow short and lend long as if they were the banks to the world and earn the difference between long/short interest rates through such intermediation.[52] This is the 'seigniorage' in the broader sense.[53] I believe this broader seigniorage must be

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[50] This is the well-known 'Triffin Dilemma," recently referred to in a well-cited speech made by governor Zhou of the People's Bank of China (http://www.pbc.gov.cn/english/detail.asp?col=6500&id=178). Such dilemma was first pointed out by Robert Triffin, *Gold and the Dollar Crisis: The Future of Convertibility*, New Haven: Yale University Press, 1960.

[51] This figure is taken from Robert Mundell who attributed it to a study by an IMF staff member. See, Robert Mundelll, "The International Monetary System in the 21st Century: Could Gold Make a Comeback?" Lecture delivered at St. Vincent College, March 12, 1997. The basic idea is that, since the currency/GDP ratio of the Canada is only 10%-15% of that of the US, if American and Canadian currency preferences are the same in relation to their GDP domestically, the remaining 85%-90% of the US currency must be used as the key currency outside of the US. Another estimate made by Federal Reserve staff, based on the shipments data of $100 bills by the Federal Reserve Bank of New York and reported by Alan Blinder, is much smaller but still substantial; it is about 50-70%. See p. 130 in Alan Blinder, *op. cit.* Blinder then calculated the imputed interest earning of the US as $11-15 billion per year, using the average interest rate of US Treasury securities.

[52] See Emile Despres, Charles P. Kindleberger and Walter S. Salant, *The Dollar and World Liquidity : a Minority View*, Washington, D.C.: Brookings Institution, 1966.

[53] Portes and Rey called a saving of interest payments on U.S. government securities because of their greater liquidity as the issuer of the key currency a "neglected source of seigniorage to the issuer of the international currency," and suggested that it could amount to at least $5-10 billion a year. Portes, Richard and Hélène Rey (1998), "The Emergence of the Euro as an International Currency," in David Begg, Jürgen von Hagen, Charles Wyplosz, and Klaus F.

much larger than the narrower one, though there seems to have been no attempt to estimate its magnitude.

The literal meaning of 'seigniorage' is king's privilege that originated from the cartal theory of money dominant in medieval Europe. Privileges are bedfellows of abuse. The key-currency country has a great temptation - the temptation to issue its currency in excessive amounts or let its financial sector to expand its leverage ratio in excessive proportions. There can be no greater temptation, since the more dollars circulate around the world and the more dollar-dominated securities are sold to the rest of the world, the more the US stands to gain the seigniorage, both narrow and broad. But if it actually succumbed to this temptation, that would trigger the dollar crisis, which would not only deprive its own status of the key-currency country but also bring down the global capitalism itself to a halt.

Hence, the basic lesson: being the key-currency country imposes global responsibility on its own behavior. Even though the key currency is also its own nation's currency, it must be managed while taking into account the interests of the whole world. Though the Nixon shock was an attempt to relinquish the dollar's key currency status for the sake of domestic advantages, the United States has gradually come to recognize the advantage of being the key-currency country. During the Cold War years, it could act with a sort of self-discipline as the leader of the capitalist camp. But, as the Cold War ended in 1991, Japan suffered a lost decade during 1990s, and European countries were busy in setting up Euro zone also during 1990s, the US economy looked, to the eyes of many both inside and outside, as the sole hegemonic power creating a new economic order that dominates the entire globe. It then began to behave as such, especially during the presidency of George W. Bush. A key-currency country believing itself as the hegemonic economic power is likely to ignore its global responsibility associated with its key-currency country status. Never before in history a key-currency country is running a current account deficit amounting to 6% of GDP and incurring a net foreign debt amounting to 25% of GDP.[54] The former appears to reflect an excessive circulation of dollars as key currency outside of the US, and the latter an excessive expansion of the role of the US financial sector as the bankers to the rest of the world. The US economy has apparently overindulged in the king's privilege, both narrow and broad, forgetting that he is only 'the hansomest' of the Keynesian beauty contest.

Even if the direct cause of the current financial crisis was the meltdown of US subprime loans that triggered the collapse of the bootstrapping credit-creation process of the whole US financial markets, the US economy's excessive pursuit of the seniorage from its key-currency country status has much contributed to its global scale. It has thus invited French President Nicolas Sarkozy's statement in November, 2008, that the

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Zimmermann, eds., *EMU: Prospects and Challenges for the Euro* (Oxford, UK: Blackwell), 307-343. I believe that the similar argument can be applied to most of the dollar-denominated securities issued by private financial institutions in the US.

[54] Eichengreen, "Sterlin's Past,…, " p.1.

dollar can no longer claim to be the "only global currency" and the governor Zhou of the People's Bank of China's proposal in March, 2009, for the creation of a new international currency based on a basket of a broad range of currencies. I do not believe that the present key currency system will soon collapse as a result of the current financial crisis and the consequent weakening of the US economy. But what ultimately supports the dollar as the key currency is the bootstrapping process of everybody believes everybody else believes everybody else believes…. The statements by French president and People's Bank of China's governor are indications that a certain number of people all over the world have already started to fear that a certain number of people all over the world have already started to fear that the dollar may not be able to sustain its key currency status in the near future. There is always a danger that wolf-criers could turn into soothsayers if their number were to reach a critical mass.

The ongoing financial crisis is "different" from many other recent crises, because it has given us a glimpse of the real possibility of the collapse of the key currency status of the dollar for the first time since the Great Depression.

How should we deal with this impending crisis? A mere transition of the key-currency status from the dollar to the euro or the yuan or some basket of several national currencies would not be its final solution, even if by some miracle the transition took place without much global turbulence. It merely substitute 'the euro crisis' or 'the yuan crisis' for 'the dollar crisis.' The basic dilemma that one currency serves both a national currency and the key currency of the entire world would remain intact.

In the long-run, there is only one solution – it is to cut the causal chain from the presence of seigniorage to the temptation to excessive creation of money and credit. There is no other way but to set up a global central bank that issues and controls a new key currency, similar to Bancor of the ill-fated Keynes plan presented to Bretton Woods conference in 1944 or its latest version suggested by People's Bank of China's governor. With all due respect to Mr. Keynes and the governor, I do not believe, and nobody in fact believes, that such system will emerge in the foreseeable future. In the first place, the US government would do everything to maintain the dollar's status as the sole key currency in order not to lose its free lunch called seiniorage. More fundamentally, the global capitalism is totally different in nature from a nation state that can be characterized as an imagined community that presupposes the presence of other nation states and is unified through the feelings of rivalry with them. With no global government, weak international law, and no rivals to fight against, it would be next to impossible to create a global institution to which all the countries authorize and give up at least part of their right to govern their own monetary affairs. This is all the more so now than in 1944, the year of Bretton-Woods conference, because the rise of the emerging economies has greatly increased the number of countries whose economic weight entitles them to a say in international monetary affairs. Indeed, even European countries, with their shared cultures, regional proximity, and relatively small

disparity of economic conditions, took half a century to set up its own central bank. Moreover, even if some sort of an institution named global central bank were created, possibly as a hugely expanded version of IMF both in scale and functions, there would be little common ground among contributing countries to be able to guarantee its independence and freedom in its control of the supply of key currency and regulation of international finances that can transcend all kinds of conflicting interests. Money is a living thing and credit is more so. It is hard to imagine that a currency issued by a committee-like institution could amass enough confidence among people in the world who are daily making decisions as to money, commodities, and finances.

We are, however, all dead in the long run. In order to cope with the problem of impending crisis of global capitalism, we cannot be waiting for the appearance of a global central bank. In the short run, we have no other option than to be practical. That means that we have to start from recognizing the fact, whether we like it or not, that the key-currency country and the non-key currency countries together form a community sharing a common fate within this blatantly asymmetric structure. The United States, as a beneficiary of its key currency status, has an obligation to behave with a self-awareness of its global responsibility as a key-currency country. Equally importantly, the non-key currency countries also have a joint obligation to keep watch over the key-currency country that has a tendency for ignoring its key-currency status, to constantly remind it of its global responsibility and cooperate with it whenever necessary. We have been accustomed to perceiving international order as either on the basis of the traditional mental framework of understanding every asymmetric relationship as the ruler/the ruled relationship or on the basis of politically correct way of painting all the international relationships as the league of equals. But the key/non-key relationship is neither of those. Although their asymmetry does not satisfy anyone's desire for domination or demand for equality, given the fact that the collapse of a key currency system always triggered a global crisis in the past, the stake that the 21st century has in carefully balancing this asymmetric relation is by no means low.

14. AFTER THE SECOND END OF LAISSEZ-FAIRE

Manias, euphoria, insanity, blind passion, orgies, frenzies, fevers, wishful thinking, intoxication, overconfidence, hysteria, rage, craze, mad rash, etc—these are the words often used to describe people’s behaviors during financial bubbles, business booms, and hyperinflations. Panic, depression, despair, distress, terror, sudden fright, confusions, paralysis, suicidal, etc.—these are the words often used to describe people’s behaviors during financial busts, business slumps, and economic depressions.[55]

[55] Most of these terms are taken from Charles Kindleberger, *Manias, Panics, and Crashes: A History of Financial*

I have absolutely no intention to deny that people's behaviors during such abnormal economic times are often quite irrational, as can be described by these psychopathological terms. We, human-beings, are far from being cool-headed rational decision-makers postulated in neoclassical economic models, as numerous experimental studies on human behaviors have amply shown.[56] No doubt, recent developments of behavioral economics have enriched our understanding of the way capitalist economy behaves both microscopically and macroscopically.[57] I am afraid, however, that too much emphasis on human irrationality may lead us astray from the essential insight of what I have called "Wicksell-Keynes school" of economic thought.

Individual speculators who play the Keynesian beauty contest among themselves in financial markets do not have to be irrational to generate bubbles and busts that look totally irrational at macroscopic level. On the contrary, it is rational for them to buy a barrel of oil futures when they believe everybody else believes its price to rise further, and it is rational for them to sell a stock of corporation when they believe everybody else believes its price to decline further. When there emerges a disequilibrium between aggregate demand and aggregate supply, most producers start to raise or lower their price *relative to* their expectation of the other prices because most of them face an excess demand or excess supply for their product. But, their simultaneous actions will inevitably cancel out each other's effect and result only in raising or lowering the general price level above or below their expectations. The general price level then rises or falls continuously and without limit. During such cumulative inflation or deflation process, each producer's decision looks irrational *ex post*, but is rational at least in their intentions *ex ante*. Moreover, as inflation or deflation goes on and people begin to believe other people believe inflation or deflation to continue, it is rational for them to reduce or augment their holding of money when they expect a further depreciation or appreciation of its value. But, their adjustment of their money holding tends to widen the originating macroscopic disequilibrium which may turn a normal inflation or deflation into the most irrational of macroscopic irrationalities -- a hyperinflation or a depression.

On top of all that, the most profound insight of Keynes in his *General Theory* is that it is the downward stickiness of money wages that prevents the capitalist economy from plunging into cumulative deflation process and eventually into great depression when aggregate demand declines below aggregate supply. What

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Crises, Rev. ed., NewYork: Basic Books, 1989, and J. K. Galbraith, *A Short History of Financial Euphoria*, New York: Penguin, 1994.

[56] Since the pioneering work of Tversky and Kahneman, we have seen a huge increase in works, both experimental and theoretical, that try to integrate insights from psychological research into economics, especially concerning human judgment and decision-making under uncertainty. Kahneman, Daniel and Tversky, Amos. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica,* March 1979, 47(2), pp. 263-92. See also Rabin, M., "Psychology and Economics," *Journal of Economic Literature,* Vol. XXXVI, 11-46, March 1998; Camerer, C. 2003, *Behavioral Game Theory*, Princeton: Princeton Univ. Press.

[57] See, for instance, George A. Akerlof, "Behavioral Macroeconomics and Macroeconomic Behavior," *The American Economic Review,* Vol. 92, No. 3 (Jun., 2002), pp. 411-433, and Akerlof and Shiller, *Animal Spirits*, *op.cit.*

neoclassical economists would characterize as sheer irrationality -- money illusion! -- on the part of individual workers thus works to infuse certain rationality or stability into the capitalist economy at macroscopic level. This, however, does not imply that such suppression of cumulative deflation process removes all the instabilities from the capitalist economy. Far from it. The downward stickiness of money wages merely replaces the cumulative process of price deflation by the income multiplier and investment accelerator processes, during which every consumer's rational decision to lower their consumption in response to a reduction of their income and every producer's rational decision to curtail their investment in response to a reduction of their profit will induce a further decline of aggregate demand that will in the end become many times larger than the original decline.

One of the core teachings of Wicksell-Keynes school is that seemingly irrational behaviors of capitalist economy at macroscopic level are not necessarily the results of microscopic irrationality of individual participants in it. On the contrary, they are often unintended aggregate outcomes of many individuals' rational actions or reactions in response to macroeconomic conditions they are in.

More fundamentally, Wicksell-Keynes school has located the ultimate cause of macroeconomic instability in the very monetary nature of the capitalist economy. It is the circulation of money as the general medium of exchange that has provided us with a freedom to exchange any commodity at any time at any place with anybody, thereby allowing the sphere of economic exchanges to expand temporally, spatially, and socially in a grand scale. Money is thus the original source of efficiency in our capitalist economy. At the same time, such freedom is the original source of instability in our capitalist economy. Because it also gives people a freedom to hold or not to hold money at any time we choose, thereby allowing aggregate demand and aggregate supply to deviate from each other. And, it is this disequilibrium between aggregate demand and aggregate supply that sets off a cumulative process of inflation or deflation and may drive the entire capitalist economy into a hyperinflation or a depression, if all the prices, including money wages, are perfectly flexible. If, on the other hand, some prices, especially money wages, are sticky downward, a decline of aggregate demand relative to aggregate supply will trigger not a cumulative deflation process but an income multiplier process and an investment deceleration process, which are perhaps not as violent as the cumulative deflation process but are severe nevertheless. Indeed, if the induced decline of aggregate demand becomes so large that workers can no longer resist the downward pressure on their money wages, the Keynesian economy will then revert to being Wicksellian and start a cumulative process of deflation that may end up in a depression. On the other hand, since money wages are unlikely to be sticky upwards, whenever aggregate demand exceeds aggregate supply, the capitalist economy is always in danger of setting off a process of cumulative inflation that may turn, when worst comes to worst, into a hyperinflation – its truest crisis.

If the ultimate cause of the instability of capitalist economy lies not in individual irrationality but in the

disequilibrium between aggregate demand and aggregate supply, it is not a mere *agendum* but a true *imperative* of the government and the central bank to try to maintain their equilibrium by a suitable mix of fiscal, monetary and other macroeconomic policies, together with an efficient system of financial regulations that can mitigate excessive credit creation.

Globalization was a "grand experiment" of the laissez-faire doctrine of the neoclassical economics that spreading free markets across the entire globe and making the capitalism purer would raise both efficiency and stability. The global economic crisis that began in 2007 was a spectacular testament of the grand failure of this grand experiment. It has instead demonstrated "the inconvenient truth" about capitalism – a trade-off between efficiency and stability. As an almost reflex action to the swiftness, broadness, and deepness of this crisis, we have now seen in most advanced capitalist countries a sudden revival of a large scale fiscal and monetary stimulus, together with an effort to implement tighter financial regulations, which only a few years ago would have been summarily dismissed as harmful to the smooth working of the Invisible Hand of the price mechanism.

This certainly marks the end of the laissez-faire – in fact, its second end, because its end was already declared once after the Great Depression of 1930s (but miraculously come around in the 1970s).

Can this second end really the true end of the laissez-faire?

The answer is perhaps "no".

People's memory is short, especially on economic matters. When all the dust raised by the current global economic crisis has settled down and, with the help of discretionary fiscal and monetary policies as well as stricter rules of financial regulations, the global capitalism has achieved a certain degree of stability in the future, the advocates of laissez-faire doctrine will be bound to come back and start to rain praise upon the virtue of the Invisible Hand of the price mechanism. History may then repeat itself, first time as tragedy and the second time probably as tragedy too.

There is, however, a more objective ground for my pessimism as to the true end of laissez-faire. Globalization has covered the entire globe with a tight network of markets and transformed the world economy from a mere league of trading national economies into what we now call a global capitalism that more or less transcends individual national economies. Scarcely had this global capitalism come into being when it got caught in the global economic crisis that reminded us of the inevitability of discretionary macroeconomic policies and well-designed financial regulations. Yet, this global capitalism has neither central government nor central bank to implement such policies and regulations. All it has is G8 or G20 that can at best coordinate fiscal and monetary policies of a selected group of countries, the Federal Reserve Board of the US that is endowed with a *de facto* monopoly power to control the money supply of the entire global, and a motley of not so powerful international organizations such as IMF, the World Bank, OECD, etc.

With all the teachings of Wicksell-Keynes school of economics at our disposal, this global capitalism is still at the stage of the laissez-faire capitalism in the age of Adam Smith. It will be in the far-off future when we can finally declare the true end of laissez-faire.