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

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by

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<ABSTRACT>

"Globalization" can be understood as a grand experiment to test the laissez-faire doctrine of neoclassical economics, which claims that a capitalist economy will become more efficient and stable as markets spread deeper and wider around the world. The "once a century" global economic crisis of 2007-9 stands as a testament to the failure of this grand experiment.

Following the lead of Wicksell and Keynes, this article argues that a capitalist economy is subject to an inevitable trade-off between efficiency and stability because of its essentially "speculative" nature. First, while a financial market requires the participation of a large number of professional speculators to support its risk-diversifying function, competition among professionals can be likened to a Keynesian beauty-contest that constantly exposes financial markets to the risks of bubble and bust. Second and more fundamentally, the use of "money" itself—the ultimate source of efficiency in a capitalist economy—is also the ultimate source of its instability. To hold money is to take part in the purest form of the Keynesian beauty contest, since we accept money only because we expect everybody else to accept it as money in turn. A speculative money bubble can plunge the real economy into depression, while a speculative money bust eventually leads to hyperinflation. Indeed, the Wicksellian theory of cumulative process shows that any disturbance in monetary equilibrium triggers a disequilibrium process that cumulatively drives all nominal prices further away from equilibrium. The Keynesian principle of effective demand demonstrates that it is the stickiness of nominal wages that saves the capitalist economy from its inherent instability, albeit at the expense of full employment. This article also contends that in the context of the current global crisis, 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 key currency of global capitalism.

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

It is high time to write "The Second End of Laissez-Faire." I say "the second" because an essay entitled, "The End of Laissez-Faire" was published as long ago as 1926, by John Maynard Keynes.[2] But if it was none other than Keynes who wrote the first "End," why on earth should its sequel need to be written at all?

The reason is that Keynes wrote his 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 doctrines of eighteenth-century political philosophy.. "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 went on to fault the naive advocates of the laissez-faire doctrine for having taken insufficient notice of such factors as economies of scale, indivisibility of production, external economies or diseconomies, adjustment lags, imperfect information, imperfect competition, and inequality of incomes and wealth.[3] But these are no more than "complications" in the simple and beautiful edifice of neoclassical theory, which no undergraduate microeconomics textbook would now

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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 appreciated most."(pp. 32-33.)

fail to mention as possible sources of "market failures." At the time, 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, intelligent guiding of the way savings are allocated across sectors, and an enlightened policy on population size (pp. 47-49)[4]—*agenda* so modest in scope that even die-hard neoclassical economists might find them not unreasonable.[5] When he wrote the first "End of Laissez-Faire," Keynes was simply a neoclassical economist—a leading disciple of Alfred Marshall, no less—albeit one who happened to have a warm heart.

In October 1929 the US stock market crashed and the world economy plunged into a depression so wide, so deep, and so prolonged that it has been known as the Great Depression ever since. It was during this economic crisis that Keynes published his *Treatise on Money* (1930) and *The General Theory of Employment, Interest, and Money* (1936), transforming himself from a warm-hearted neoclassical economist into the cool-headed founder of a new school of economics that sometimes carries his name.

1. TWO VIEWS OF CAPITALISM

The capitalism we inhabit has long been subject to two competing views. One is the view of the neoclassical school, who put their whole faith in the "invisible hand" of the price mechanism, as 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

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

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

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 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 the various community conventions and social institutions that impede the free movement of people in the labor market and the many financial regulations and security laws that impede the free movement of money in the capital market. Once these impurities were removed, capitalism would be both efficient and stable. Milton Friedman of the University of Chicago, who died in 2006, was the twentieth-century champion of this neoclassical view of capitalism.

The second view is that of what I would call the “Wicksell-Keynes school.” This is the school of economic thought that came into being when Knut Wicksell worked out the monetary theory of cumulative process in Sweden at the turn of the nineteenth century.[6] I place the names of Keynes and Wicksell together, because Keynes was Wicksellian in *A Treatise on Money*[7] and remained Wicksellian in *The General Theory,* at least in his analysis of the stability of the

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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).

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.)

economy under flexible money wages, even if his theoretical apparatus changed radically between the two publications.[8] According to this second view, there is no such thing as an "ideal state" in capitalism. This is not to suggest by any means that either Wicksell or Keynes was a romantic utopian who dreamed of the abolition of money, finance and capitalism. Both men agreed with the neoclassical school that the capitalist economy is by far the most efficient economic system at the microscopic level. What they demonstrated theoretically was that such increases in microscopic efficiency came hand in hand with macroscopic instabilities in the form of bubbles and panics, booms and slumps, hyperinflations and depressions. Efficiency may increase as capitalism is made purer, but stability decreases at the same time. The capitalist system, while moving through regular ups and downs of business fluctuations, has managed to remain relatively stable throughout most of history only because of the "impurities" that have impeded the free adjustment of market prices, such as the rigidity of monetary wages and the regulation of speculative investments. To be sure, these impediments also have their costs, such as the underemployment of labor and the underutilization of capital in normal times. In a capitalist economy, in other words, there is an inevitable trade-off between efficiency and stability.

The publication of *The General Theory* in the throes of the Great Depression marked the beginning of the "Keynesian revolution" that was to have such an enormous influence on both the academic and policymaking worlds for the next several decades. For roughly two decades after World War II, advanced capitalist economies enjoyed both macroeconomic stability and relatively high growth rates, thanks to a substantially increased role for government resulting from New Deal policies in the US and a variety of welfare programs in other Western countries,

[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 the Wicksellian theory of cumulative process and the Keynesian principle of effective demand.

together with a system of banking regulations and monetary intervention that provided a lender of last resort to financial institutions. But the success of Keynesian economics eventually brought about its own downfall. The very macroeconomic stability it was able to engineer until the 1970s revived the old faith in the "invisible hand" mechanism in markets, and governmental commitment—or rather, over-commitment—to full employment gave rise to an strong inflationary bias in most advanced capitalist countries after the 1960s. Both set the stage for the neoclassical counter-revolution led by Milton Friedman, who had gained the upper hand among both academics and policymakers by the mid-1970s. During the 1980s the administrations of US President Ronald Reagan and British Prime Minister Margaret Thatcher, both strongly influenced by the ideas of Friedman and his followers, shifted course sharply in the direction of laissez-faire economic policies. Many industries were deregulated, under the banner that "the government is not the solution to our problem; the government is the problem." A financial revolution took place that securitized risks of every sort and then securitized the risks of these newly created securities. Rapid globalization of commodities, money, and information began, spreading the market economy across the entire world. Globalization can thus be interpreted as a "grand experiment" designed to test the fundamental principle of neoclassical economics: namely, that making capitalism increasingly pure would raise both efficiency and stability, bringing the economy closer to an ideal state.

At a conference to honor the ninetieth birthday of Milton Friedman in November 2002, Ben Barnanke, then a governor and since 2006 the Chairman of the Federal Reserve, endorsed Friedman's monetarist explanation that the Great Depression was caused not by the stock market crash of 1929 but by the Federal Reserve's failure to prevent the sharp decline in the money supply from 1928 to 1933.[9] He said to Friedman and his co-author, Anna Schwartz:

[9] Milton Friedman and Anna Schwartz, *A Monetary History of the United States, 1867-1960*, Princeton: Princeton University Press, 1963). Bernanke's own academic work on the Great

"Regarding the Great Depression, you're right; we did it. We're very sorry. But, thanks to you, we won't do it again."[10]

Three months later, in his presidential address to the 115th 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." The "central problem" of preventing the recurrence of the Great Depression, he claimed, "has been solved, for all practical purposes, and has in fact been solved for many decades. … Taking US 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, a "once a century" financial crisis erupted in the United States. The crisis not only spread instantaneously throughout the world via a tightly knit global network of capital markets, but also led to a sharp downturn in the real economy on a scale not seen since the Great Depression.

This was a spectacular testament to the failure of the basic neoclassical principle: that making capitalism purer would bring the economy closer to an ideal state. It is true that globalization did indeed improve the efficiency of the capitalist economy and bring about a high level of average growth for the world as a whole. At the same time, however, it produced massive instability, demonstrating conclusively the "inconvenient truth" about capitalism—the inevitable trade-off that exists between efficiency and stability.

Why does this trade-off between efficiency and stability exist? It exists because *capitalism is*

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.htm5

[11] Robert E. Lucas, Jr., "Macroeconomic Priorities," *American Economic Review*, 93 (1) (Mar., 2003), pp. 1-14.

a system that is built essentially on "speculation."

2. CAPITALISM: A SYSTEM BASED ON SPECULATION

What is speculation? In general terms, it means to conjecture without firm evidence, and in particular refers to the act of buying things, not for any return or utility arising from their use, but for the prospective gains to be had by selling them on to other people in the future.[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 sale to others, and in which consumers consume commodities not by producing them themselves but by purchasing them from others. The future's not ours to see. Whenever producers start production, they must speculate as to the prices their products will fetch in the market. Likewise, whenever consumers prepare to buy something, they must speculate as to the price they will pay in the market. In a capitalist economy, every producer and every consumer thus becomes in some measure a speculator. And this is not all. Indeed, I will argue in section 5 that in our capitalist economy everyone is a speculator in a much more

[12] According to the Compact Oxford English Dictionary, "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.

fundamental sense.

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

Finance originally meant the settlement (*finis*) of a debt, but it now implies a much wider range of activities, a majority of which provide people with opportunities to manage and diversify their risks. Indeed, one of the defining characteristics of capitalism is the transformation of 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 onto others becomes valuable and potentially tradable. When a legal document that certifies such an 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 securities becomes a financial market. Examples of financial markets include the markets for mutual funds, bonds, debentures, stocks, foreign currencies, futures, forwards, options, and swaps. For example, to buy a barrel of Brent Crude Oil futures is to buy in the present a barrel of oil to be delivered at a fixed date in the future. It allows the buyer to protect himself against the risk of future price changes in the spot market by paying a settled price in the present, usually at the expense of a certain risk premium. Financial markets thus allow producers and consumers 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 risk by buying futures and other financial securities, there must be someone else in the market who is willing to bear these risks by selling those financial securities. Financial markets can thus

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

function only thanks to the participation of a large number of people who are prepared to take positions contrary to those of ordinary producers and consumers, in the hope of making large profits. They are professional speculators. In other words, we may 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 claim that the professional speculators who bear the risks of ordinary producers and consumers have a stabilizing influence 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 an irrational bunch of people who sell commodities when they are cheap, driving prices down even lower, or buy commodities when they are expensive, driving prices up even higher. But they have to pay for their irrationality and will sooner or later lose their money. The Darwinian mechanism of the survival of the fittest kicks in and weeds them out of the market. The only speculators who can survive in a market are those who behave rationally, buying low and selling high. So markets are stable even in the face of speculation—indeed, speculation makes markets more stable, further strengthening the "invisible hand" mechanism of Adam Smith.

A fundamental objection to Friedman's view of speculation, however, was put forward long before his time. It is the "beauty contest" model proposed by Keynes in Chapter 12 of *The*

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[14] *Ibid.*, p. 175. 8

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, Keynes' version is a post-modern contest involving the full participation of the public as real competitors. Competitors are asked to choose faces from a hundred photographs 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 has to pick, not the faces that 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." Indeed, if all the other competitors are also aiming to win the prize, 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 will be chosen 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 to have pulled himself out of a swamp by tugging on his own bootstraps.

Keynes likened the competitors in this post-modern beauty contest to professional speculators in financial markets. He argued that the energies and skills of the professional speculators are largely concerned not with making superior forecasts of the probable yield of an investment over a long period of years, but with predicting market prices a short time ahead of the general public. Indeed, “this battle of wits” to anticipate 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 a legion of professional speculators starts the battle of wits with one another, prices these markets 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 that everybody thinks that prices will rise, purchase orders come rushing in, and prices do indeed surge—a speculative bubble forms. Conversely, if everybody believes that everybody believes that 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 perfectly rational on the individual level, and indeed profitable—at least in the short term. 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. Although Friedman advanced his theory of stabilizing speculation to make the case for flexible rates in foreign exchange markets, he was implicitly assuming a kind of market, such as that 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 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 the Keynesian beauty contest. Indeed, once we come to markets for financial derivatives, such as bond futures, stock options, and interest rate swaps—which 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 but 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, the Dôjima Rice Exchange in Tokugawa Japan had 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 was the International Monetary Market that deals with foreign currency futures in the Chicago Mercantile Exchange (CME). It was created in 1972 by CME chairman Leo Melamed, an ardent disciple of the free market philosophy of Milton Friedman, with much encouragement from Friedman himself.[16] Subsequently, there has been a rapid expansion in both the number and the volume of financial derivatives markets, propelled by the strong currents of laissez-faire thinking that came in with

15 Werner Sombart, *The Quintessence 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.
16 http://www.leomelamed.com/essays/07-Friedman-oral.htm

the Reagan-Thatcher era, and assisted by the development of capital asset pricing models, option-pricing models, and other mathematical finance models that functioned as sophisticated applications of neoclassical general equilibrium theory. Ironically, it was this free-market development that ultimately proved the correctness not of Friedman's Darwinian theory of stabilizing speculation, but of 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 improve the efficiency of the capitalist economy by providing producers and consumers with opportunities to diversify the risks they inevitably incur in dealing with the real economy. 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 precisely because they do *not* want to take such risks. The social object of these professionals should therefore be, as Keynes put it, "to defeat the dark forces of time and ignorance which envelope our future." (p. 155.) However, as soon as these professional speculators start the battle of wits among themselves, the bootstrapping process of the Keynesian beauty contest sets in and exposes financial markets to the larger-scale risks of bubbles and busts. It was this inherent instability of financial markets that came into clear view with the US subprime mortgage meltdown of 2007.

But the present paper does not finish here. If the instability of capitalism could be reduced entirely to a Keynesian beauty contest among professional speculators in financial markets, there would be little need for the "Second End of Laissez-Faire" to be written. The instability could still be regarded as a trembling, albeit quite a jerky trembling, of the "invisible hand" of the price mechanism. After all, financial markets are derivatives—and financial derivatives markets derivatives of derivatives—of real economic activities. Aren't these professional speculators just greedy, short-sighted, and overly competitive barbarians living in the jungle of Wall Street, as opposed to the ordinary producers and consumers who diligently toil and labor every day on Main Street? Now that they have been named as the chief culprits of the ongoing market failure, all we have to do is confine them within a cage of legal regulations and tame their wild behaviors by governmental supervisions, and we will be able to restore the financial markets to their original function of diversifying risk—at least partially. And then neoclassical economic theory will be free to reemerge, with its core teaching—the self-regulating force of the price mechanism—essentially intact.

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

5. HOLDING MONEY: THE PUREST FORM OF SPECULATION

What is Money?

The answer is easy. Money 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 the euro zone) or 100 yen (at least in Japan).

But why should people agree to accept a 10 euro bill or a 100 yen coin in exchange for something worth 10 euro or 100 yen? This second question is not so easy to answer. Indeed, for more than a millennium, philosophers, historians, jurists, sociologists, economists, and even psychoanalysts have advanced two competing theories to answer this question. They are the "commodity theory of money" and the "chartalist theory of money."[17] The 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] The chartalist theory, in contrast, asserts that a certain thing serves as a general medium of exchange only because its use as money has been approved by communal agreement or decreed by the head of a kingdom or sanctioned by legal order. Although historians of monetary theory have long been kept busy classifying historical authors on monetary matters into one or the other of 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 because we find the coin useful as a screwdriver. There is nothing in a 10 euro bill or a 100 yen coin as a commodity that gives it its value. To be sure, a 10 euro bill is legal tender, and most euro zone countries require their citizens to accept it in settlement of a debt. But 100 yen coins are legal tender only up to 20 pieces. Japanese citizens can legally refuse the 21st coin in any payment, although in fact they happily accept it without exception as money worth 100 yen. (Paper money is legal tender without any maximal limits.) Indeed, monetary history abounds with incidents of monies that continued to hold value long after ceasing to be legal tender, such as the Maria Theresa thalers that circulated widely in many African countries until WWII, long after they lost their status as legal tender even in Austria, their issuing

[17] See J. Schumpeter *History of Economic Analysis*, Oxford: Oxford University Press, 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 G. F. Knapp, *The State Theory of Money*, London: MacMillan,1924 (original publication: 1905).
[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.

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, during a bank run). Money can circulate as money not because it has an intrinsic value as a useful commodity or 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 being worth 10 euro or 100 yen? Because we expect that other people will be happy to receive it at the same value from us in turn. And why do they accept a 10 euro bill or a 100 yen coin as a thing worth 10 euro or 100 yen from us? Again, they do so neither because they want to use it as a useful commodity nor because they are required to by some communal or political or legal power. They accept the money because they expect that other people will be happy to receive it as a 10 euro bill or 100 yen coin in turn. We have thus reached the third link of a chain of expectations according which we expect other people to expect other people to accept a bill or a coin as having a certain value. In the case of money, this 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 that everyone else believes that it will be 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 the Keynesian beauty contest.

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[20] Monetary history also abounds with legal tenders that did not circulate as money despite the 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", *op. cit.*, 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）, which 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.

Indeed, what we now see is the bootstrapping process in its purest form. In the case of financial markets, even if the objects being traded are financial derivatives twice-removed from real-world commodities, they are not completely removed from them either, and are capable of providing producers and consumers with opportunities for managing at least some part of the risks and other inconveniences inherent in their real economic activities. Money, by contrast, has no real function to perform. It is by definition the general medium of exchange; we take it from others not in order to gain any return or utility from its use, but for the sole purpose of passing it on to others in the future in exchange for something with real value. (The so-called "liquidity" that 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. This means that under capitalism every one of us has to live the life of a "speculator" who buys and sells the purest object of speculation—money. In this sense, the ordinary producers and consumers in Main Street are no different from the professional speculators in Wall Street. And what is more: Whenever we circulate 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 built "essentially" on speculation.

Inasmuch as money is an object of speculation, it is subject to the instability of the Keynesian beauty contest, thereby exposing the entire capitalist economy to the risk of bubbles and busts.

[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.

In what follows, I will show that a bubble of money is in fact what is usually called a slump or, in extreme cases, a depression, and that a bust of money is in fact a boom—or, when it turns extreme, a hyperinflation. But first I want to dwell a little longer on the essential nature of money and then elucidate the fundamental core of the 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 party demands is the commodity another party supplies and vice versa, no direct exchange is possible between two people.

Once money enters an economy as the general medium of exchange, however, this reciprocal unity of supply and demand is split into two separate acts of purchase and sale. A purchase represents a demand for a commodity in exchange for money, while a sale represents supplying a commodity in exchange for money. One can then “buy” any commodity one demands, so long as one can find someone else to supply it (at a certain price). Likewise, one can “sell” any commodity one supplies, so long as one can find someone else to buy it (again, at a certain price). It does not matter when, where, and with whom one carries out the transaction, insofar as the other party is accepting the same money as the general medium of exchange. The intermediation of money thus burst through all restrictions of time, space, and knowledge about trading partners imposed by the double coincidence of wants, and triggered a phenomenal expansion in the temporal, spatial, and social spheres of economic exchange, the end result of which is the capitalism that now covers the entire globe. In other words, money is the original source of the efficiency in our capitalist economy.

At the same time, however, it is also the original source of the instability in that same system.

No one can sell unless someone else buys. But no one has to buy immediately after she has sold. She can simply hold on to some or all of the money made 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 part of the money he already holds. In our capitalist economy, a supply does not necessarily create a demand, and neither does a demand create a supply. Indeed, when people for some reason or other decide as a whole to increase their money holdings by refraining from spending on commodities (a situation Keynes called an increase in liquidity preference), the aggregate demand for all commodities (exclusive, of course, of 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 holdings by rushing to spend on commodities (a decrease in liquidity preference), the aggregate demand for all commodities exceeds the aggregate supply. In a capitalist economy, “Say’s law,” which insists that aggregate demand will always be equal to aggregate supply, breaks down. 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 probably object at this point that, even if it were theoretically possible for aggregate demand and aggregate supply to deviate from each other, this disequilibrium would soon be wiped out by the “invisible hand” of the price mechanism, just as it would be in the case of an imbalance between demand and supply of a commodity. It is true that a disequilibrium between demand and supply of 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*.

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[23] According to Walras’ Law summing 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.

To sell a commodity is to give that commodity to someone else in exchange for money, and to buy a commodity is to receive it from someone else in exchange for money. We can “sell” money only by buying commodities in their markets; likewise, we can “buy” money only by selling some other commodity in a market. As the general medium of exchange that mediates the sale and purchase of all the commodities in all the markets, money cannot have a market of its own. To be sure, there is a market that is often called a money market. But in reality this is nothing more than a financial market for short-term lending and borrowing, and not a true market for money itself.

In the case of a non-monetary commodity, it has its own market to adjust the disequilibrium between supply and demand. In the case of money, however, the disequilibrium can only be adjusted indirectly by drawing on all of the commodity markets. It necessarily becomes a macroeconomic phenomenon.

Robert Malthus and Karl Marx both attacked (the former timidly, the latter vehemently) Adam Smith, David Ricardo, Jean Baptist Say and other classical economists for their blind faith in Say’s law. However, they 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 the macroeconomic consequences of a disturbance in the equilibrium between aggregate demand and aggregate supply in his 1898 publication *Interest and Prices*.[24]

7. THE WICKSELLIAN THEORY OF DISEQUILIBRIUM CUMULATIVE PROCESS

[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 Unemployment*. It has reformulated Wicksell's theory by explicitly incorporating firms’ decentralized price-formation process into a monetary theory of macroeconomic dynamics.

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 quantity theory relates the general price level to the total quantity of money in circulation. Instead, he proposed to explain the general movement of prices based on “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, to which he, along with the rest of the classical and neoclassical schools, had faithfully subscribed. Nevertheless, he proceeded to study what happens 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 introduced the concept of the natural rate of interest—a rate of interest that equates aggregate demand and aggregate supply—contrasting this with the market rate of

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

interest quoted daily in financial markets.[27] When the market rate is left lower than the natural rate, aggregate demand is excessively stimulated and tends to exceed aggregate supply. Conversely, 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 represented a new "macroeconomic" phenomenon, one that cannot be reduced to a mere aggregation of individual price-formation processes. He claimed that a general rise or fall in prices is a "fundamentally different phenomenon" from 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 commodities at once. Whenever there is a positive gap between aggregate demand and aggregate supply, it follows as an arithmetic fact that most producers must experience excess demand for their products. They therefore *simultaneously* attempt to raise the relative prices of their products. No matter how rational they may be, their intentions are not mutually compatible. It is arithmetically impossible for all the "relative prices" to increase simultaneously! Indeed, as long as producers cannot observe the prices set by others in advance, all each producer can do is to raise his own prices relative to his *expectations* of the prices that others will set. (To simplify the argument, I will represent each product's relative price by the ratio of its price to the general price level.) Since the general price level is no more than the average of individual prices across the economy, simultaneous attempts by a majority of producers to raise their prices relative to their expectations of the general price level will

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

necessarily cause the general price level to go up relative to their expectations. 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 aggregate outcome of individual producers' pricing decisions*!

Once they realize that they have underestimated the general price level, most producers will revise their expectations upward. But such revisions 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 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 the general price level will increase *unexpectedly* again. Further upward revisions of the expected general price level and an equally large increase in the actual general price level will follow. 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 above 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 below 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 that is "not only permanent, but also cumulative."[28]

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

This is still not the whole story. A cumulative rise or fall in prices may in turn alter the relationship between aggregate demand and aggregate supply, thereby creating new macroeconomic conditions for further developments. Note that a rise in the general price level, or inflation, is equivalent to a depreciation of the value of money, while a fall in the general price level, or deflation, is equivalent to an 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 to rise. As long as this 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. Once a majority of people come to expect that many others do, the spell is

[28] *Ibid.*, p.94. I have to note here, however, that in his original formulation of the cumulative process Wicksell adopted the neoclassical assumption of perfect competition and implicitly supposed that all prices were set by the "market auctioneer, " *à la* Leon Walras. In retrospect, Wicksell failed to be thoroughly neoclassical, at least in the way he approached the law of supply and demand. A truly neoclassical economist would not have accepted such a mechanical formulation and would 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 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 a 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.

broken. People start to lose confidence in the value of money and try to reduce their money holdings 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 holdings by snatching up any commodity available. Inflation accelerates even more, confirming consumers' fears. The economy now enters into the hyperinflation phase, triggering a full-scale flight from money. Eventually, nobody is willing to accept money as money anymore, and it is reduced to an insignificant sheet of paper or a useless disc of metal, and the economy collapses, reverting to the most primitive system of barter exchanges. What we have seen is a bust of money as money.[29]

Conversely, when aggregate demand is maintained below aggregate supply, the general price level start to fall, and once a significant number of people start to anticipate that other people expect deflation to continue, they may come to desire money, itself no more than a medium of exchange for commodities, more than the commodities themselves. This tends to dampen aggregate demand and causes 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 on to their money. In the end, the economy falls into a depression, in which nobody wants to buy anything. 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 banks and governments) is being used for economic payments, cumulative inflation will have the effect of reducing its real value and may work to narrow 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

[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.)

tightening of financial markets (the so-called Keynes effect). However, we now know that the effects of rising prices on the private debt/credit structure in financial markets have far stronger opposite effects. So long as they are not anticipated in advance, rising prices have the effect of transferring real purchasing power from the 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 redistributional effect of private debts is sufficient to exert 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 with 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 (indeed, more strongly) to the case of a cumulative fall in prices. Indeed, Irving Fisher, having lost both his academic reputation and financial wealth in the Great Depression whose occurrence he had denied publicly and speculated against privately, came to the view that the process of debt deflation (the reverse of debt inflation), was the chief cause of the Great Depression. His post-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 from the spell of the "invisible hand"—or at least, a first step away from it. In contrast to an equilibrium between the demand and supply of an

[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.

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 a state of equilibrium. What is more, the purely speculative nature of money-holding makes matters worse by widening the disequilibrium between aggregate demand and aggregate supply and throwing the economy into hyperinflation or depression. Not only is the "invisible hand" not working—it is causing the instability of the capitalist economy. The world of Adam Smith has been turned upside down.

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

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

The picture of the capitalist economy painted by Knut Wicksell, or rather,the picture Wicksell *would* have painted if he had pursued the implications of his theory to their logical conclusion, was a self-destructive laissez-faire capitalist economy. 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 intervened to restore equilibrium, its ultimate destination would be either hyper-inflation (if aggregate demand continued to exceed supply) or a major depression (if aggregate demand continued to fall short of 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 the regular business cycle; but hyperinflations and depressions have been rare exceptions in history (although we may be on the brink of another great depression now). This observation must have been the starting point for John Maynard Keynes when he began work on his *General Theory*. He 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 that would have sounded paradoxical to those who used to live in the world of Adam Smith: “What saves the capitalist economy frm its self-destructive tendency?”

Once the question has been posed in this manner, the answer presents itself immediately, although it appears as paradoxical as the question itself. For it is not hard to notice that the Wicksellian theory of disequilibrium as a cumulative process makes one critical assumption: namely, that the price of every commodity, including labor, will respond flexibly to any disequilibrium between demand and supply. After all, Wicksell was too pure a neoclassical economist to introduce any imperfections into his theory.

As I have already pointed out, Keynes was a Wicksellian when he wrote his *Treatise on Money*[32] and remained so, at least in part, even in *The General Theory*, as exemplified in the following passages:

> If ... money wages were to fall without limit whenever there was a tendency for 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 pointed to as a factor whose monetary value is, if not fixed, at least sticky, was of course "labour". In 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 that workers suffer from a money illusion and do not care

[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 or falls below 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."

about 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 aim 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 in the same 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. One object of workers in wage bargaining is not to determine their real wage but "to protect their *relative* real wage." Indeed, insofar 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, in line with their self-identity as social beings who care about the fairness of their treatment within a social network. The real paradox is that this seemingly illogical behavior of workers—their money illusion—and the consequent stickiness of the value of wages in terms of money that has given us a degree of stability in our capitalist economy. In other words, it is the presence of "impurities" in the labor market that saves the capitalist economy from its self-destructive tendency! As Keynes himself put it:

[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.

> 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.)

However, it should be emphasized that this 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 with another. Indeed, under the downward stickiness of money wages, the laissez-faire capitalist economy is subject to severe but not violently unstable fluctuations in output and employment, through the multiplier process of incomes and the acceleration principle of investments. When aggregate demand falls below aggregate supply, the majority of producers who are unable to force a reduction of money wages must reduce the number of workers they employ in order to scale down their output supply. Consumers are forced to curtail consumption in reaction to lower incomes, and producers in turn are forced to cut back on their investment in plant and equipment in reaction to lower profits. Aggregate demand will decline further and set off a second-round reduction of output, employment, and investment, which will then induce a third-round reduction, followed by a fourth, and so on. 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, therefore, laissez-faire capitalism tends to suffer a large amount of inefficiency in the form of chronic underemployment and recurring underutilization of productive capacities.

It was for this reason that Keynes devoted the entirety 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 inefficiencies of underemployment of labor and underutilization of capital is the price we have to pay to tame the inherent instability of general price movements under capitalism.[35] This is the second form taken by the fundamental trade-off between efficiency and stability 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 A RETURN TO THE KEYNESIAN BEAUTY CONTEST

I have already suggested that the subprime meltdown of 2007 can be regarded as a dramatic demonstration of the inherent instability of financial markets. Seen in this light, the crisis that followed 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, the Asian currency crisis of the late 1990s, or the burst of the US dotcom bubble in 2000.[36] However, I believe that "this time is different." Professional speculators, policy makers, and academic cheerleaders have uttered these words many times before in justifying ongoing financial bubbles (and consequent busts) on the basis of some apparently new features in market fundamentals; but this bust *is* different in the sense that the current global economic crisis made clear the inherent instability of capitalism and the purely speculative nature of money for the first time since the Great Depression. It has manifested itself in two different ways: first as the spectacular collapse of liquidity in financial markets, and second as a harbinger of the coming collapse of the dollar as a

[35] Note that because of governments' commitment to full employment after the (short-lived) success of Keynesian economics after WWII there emerged an inflationary bias in most advanced capitalist countries and that inflation, rather than unemployment, was the price we had to pay until 1980s.

[36] 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.

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 forms of private debts as demand deposits at commercial banks.[37] To say 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 too can 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. Much of the cash it lends out gets deposited again in banks somewhere else, and again the second bank is free to lend the bulk of the money out. Through this process, known as "credit creation," my original deposit can generate an amount equal to many times—sometimes 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. But the only reason all the other depositors are keeping their deposits is they too believe they can withdraw cash from their banks at any time because they believe that 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

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

money; just as money is money merely because everybody believes everybody else believes it is money, a demand deposit has liquidity merely because every depositor believes that 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, most of the depositors would be unable to make withdrawals, and the liquidity of the deposits would vanish without a trace.[38] This is a bust of liquidity.

In the financial crisis that struck after the stock market crash of 1929 many US banks, which until then had operated relatively free of regulatory constraints, suffered runs and went under. Not only did the money supply contract sharply; people's liquidity preferences grew enormously at the same time. The resulting decline of aggregate demand transformed what might potentially have been just one of many financial crises into the Great Depression. Having learned the lesson of the fundamental instability of demand deposit liquidity and its huge impact on the aggregate demand of the real economy, in 1933 the United States adopted the Glass-Steagall Act as part of the New Deal. This act established a distinction between two types of financial institution: (1) deposit-taking commercial banks that were allowed to generate credit creating processes and (2) investment banks (securities companies) that were not. Commercial banks were covered by the Federal Deposit Insurance Corporation (FDIC), which guaranteed the safety of deposits up to $5,000 (now $100,000, and because of the ongoing financial crisis raised temporarily to $250,000 until the end of 2009). The commercial banks were also given access to the discount window run by the Federal Reserve Board's, and in return were subject to reserve requirements and close supervision by the Fed to guard against speculative behaviors. Investment banks, by contrast, were free to take risks in pursuit of profits, provided they did not

[38] 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.

commit fraud and swindles, such as account rigging, false disclosure, and insider trading, all watched over by the Security and Exchange Committee (SEC). (There was, however, a loophole in the regulatory laws that exempted publicly unlisted private equity from most aspects of SEC supervision, allowing them to be totally speculative. This of course became the springboard for the enormous expansion of hedge funds from the 1980s on.)

Amid the wave of financial deregulations and innovations starting in the 1980s, however, there was a growing conviction among many financial market insiders, outside supporters of financial interests, and academic experts in financial engineering, who argued that the only regulation financial markets required was the SEC controls to prevent frauds and swindles. After all, the argument ran, was it not the very *raison d'être* of financial markets to securitize risks of any sort, whether they arise from real activities or financial transactions, and diversify them through market exchanges among a large number of people around the globe with a wide spectrum of attitudes toward risk? Financial markets, they argued, are therefore able to take care of risk on their own without government oversight or legal protection. Under the influence of arguments such as these, and relentless pressure 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 who lack a steady income or have a poor credit rating. These people bought homes financed by loans that they could not reasonably expect to repay. However, they did so because they expected that the housing bubble would continue, enabling them to sell their homes for considerably higher prices. Banks extended them loans in the belief that they could average out the risk of default by bundling loans together 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 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, the securities became even more liquid in their eyes. This allowed commercial banks (now operating as investment banks), investment banks (now simulating hedge funds), and hedge funds (now indulging in more speculation than ever), 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—but without appropriate regulations.

Particularly fast growth was seen with credit default swaps (CDS). These are financial derivatives created by extracting the risk that the issuer of an original security will fail and packaging it as a separate instrument. Credit default swaps were hailed as the ultimate means of avoiding financial risk, and during their heyday in 2007 the volume of the CDS market was a massive $58 trillion—more than the gross domestic product of the entire world that year ($55 trillion). Yet, the data shows that a mere 1.5% (about $0.7 trillion) of these derivatives was in the hands of investors outside of financial markets.[39] In other words, nobody was 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 security. When the housing bubble showed signs of slowing down in 2007, the bootstrapping process underlying CDS liquidity began to crumble. Suddenly everybody wanted to get rid of these derivatives, and soon started to sell off regular financial securities such as stocks and bonds as well. This

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

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.

Bank failures during the Great Depression showed that credit-creating banks need to be regulated. The recent financial market crash has highlighted the fact that credit is created not merely by commercial banks but by the financial markets as a whole through a bootstrapping process similar to the one supporting the liquidity of bank deposits. The biggest lesson to be drawn, therefore, is the necessity of introducing into the entire financial system a set of old-fashioned regulations on commercial banks, such as stricter supervisions by the Central Bank, account disclosures, minimum reserve requirements and/or adequate capital asset ratios. There is also a need for innovations in the regulatory apparatus to bring it in line with the extent of the net risks they might potentially 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. The Glass-Steagall Act has had its revenge.

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

What is the true crisis of capitalism?

The answer given by a majority of social thinkers and policy makers on both the left and the right has been the same since the time of the *Communist Manifesto*: depression. To be sure, from the standpoint of our everyday experience in markets, it is much harder to sell a commodity than to buy it. A commodity in the hands of a seller is of value only to a limited number of people with specific desires or needs for it. Cash in the pocket or deposits in the bank, however, is by its very nature as the general medium of exchange of value to everybody in the economy. An act of a sale is a "*salto mortale* of the commodity. If it falls short, then, although the commodity itself is not harmed, its owner decidedly is."[40] The view that capitalism's true crisis is depression comes about naturally as a straightforward deduction from our daily experiences in markets. It is after all one of the real paradoxes of a capitalist economy that people may come to have a greater desire for money, originally merely a means of obtaining useful commodities, than for the commodities themselves.

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 turns completely upside down. While money as money is of value to everybody in the economy, money as a thing is a non-entity with no intrinsic utility to support its value. The value of money as money is supported, as I have emphasized several times, only by a bootstrapping process according to which everybody believes that everybody else believes it of value. A depression, no matter how profound, will never jeopardize this elusive process. On the contrary, the fact that in the midst of a depression everybody desires money more than real commodities (in other words, valuing the means over the end), implies that everybody has more faith in the intangible power of money than in the concrete materiality of individual commodities. This can be regarded as a manifestation of their confidence in the continuity of the capitalist economy, a belief on the part of its participants that will perpetuate the bootstrapping process by continuing to accept in the future the money in current use. In this sense, a depression can never be a true crisis of capitalism, no matter how undesirable its consequences to the people in the street. Indeed, history tells us that capitalism has become stronger every time it has undergone a succession of challenges posed by economic depressions.

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

What, then, is the true crisis of capitalism?

> 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 true crisis of capitalism

As we saw in Section 8, hyperinflation is, a vicious cycle in which people’s fear of accelerating inflation drives them to reduce their money-holding by spending more on commodities, thereby accelerating inflation and confirming their original fears.[41] Such a flight from money to commodities starts to unravel the bootstrapping process that supports money as money and ends up in reducing money to nothing more than an insignificant sheet of paper or a useless disc of metal, or (in the case of bank money) an unpaid account in a bank. Deprived of the general medium of exchange, the economy now falls back to a premonetary barter system that leaves everybody with unsalable products on one hand and unfulfilled desires on the other. The simultaneous flight from money to commodities thus defeats its purpose, turning commodities sought out into something unobtainable. The end point of hyperinflation is the breakdown of the whole edifice of economic activity.

But what is the use of discussing such an esoteric event as hyperinflation? Granted, it is

[41] 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.

theoretically possible, and has indeed actually happened many times in history—in Russia after the socialist revolution, in Germany, Austria, Hungary, Poland after WWI, in Greece and Hungary after WWII, in China in the leadup to the communist takeover, Latin American countries in the turbulent 1980s, and in Russia and other former socialist countries in the course of a transition to capitalism.[42] But these events all occurred during abnormal times. In today's advanced capitalist economies, fully equipped with a variety of macroeconomic policy instruments, hyperinflation is surely nothing than more than a mere curiosity of the armchair theorist, except perhaps for some developing countries with totally bankrupt governments?

But there remains one place in which this hyperinflation still represents something more than a theoretical possibility—and that is global capitalism itself.

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

Global capitalism as it exists today has a blatantly "asymmetric" structure. On the one side stands the United States, whose dollar is used by all other countries; on the other stand all the other countries that have to use the US dollar for mutual transactions. The US dollar is the "key currency;" the rest are not. When a Thai wants to buy something from a Brazilian, he first exchanges his Thai bhat for dollars and uses these dollars for payment. When a Brazilian's debt to a Thai comes due, she exchanges her reals to dollars and uses these dollars for repayment. But when an American buys something from a Brazilian or pays back borrowing debt to a Thai,

[42] As for German hyperinflation after 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 Depreciation 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).

he can use his own national currency for both payment and repayment. An American can make purchases and borrow funds regardless of whether he is at home or abroad. Of course, this is an exaggerated picture. The euro is rapidly establishing itself as a key regional currency and continues to expand its sphere of influence outside the euro zone, while the Japanese yen and to a certain extent the Chinese yuan as well may be regarded as local key currencies in some parts of Asia. Direct transactions also take place between two non-key currency countries, using their local currencies. In this sense, it is perhaps more accurate to picture the current international currency system as a hierarchy, with the dollar standing at its apex, the euro on the second tier, the yuan and yen on the third, and all the rest on the lower layers. But what is crucial is the asymmetrical relationship between the dollar and all other currencies.

When the Soviet Union collapsed in 1991, many people, still caught up in Cold War thinking, saw the development of this asymmetrical structure between the one “key” currency and all the other “non-key” currencies as marking 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, ruler/ruled relationship is to miss the essence of the matter.

It is true that the major impetus behind the dollar’s rise to an unrivaled position as the world’s key currency was the overwhelming strength that the US economy attained after WWI and consolidated during World War II. At the end of WWII, America accounted for half of the world’s GDP and with Europe and Japan reduced to rubble by the war, it was the only country with the manufacturing capacity to produce sophisticated investment goods and fancy consumption goods. People around the world craved made-in-America, and desperately sought the dollars they needed to buy these products. As Western Europe and Japan began to recover “miraculously” from the destruction of war (thanks partly to American aid), America’s relative economic strength started to decline. Western Europe and Japan more or less caught up with the US in terms of economic productivity during the 1970s and 80s. The US was then pressed hard by East Asian economies in 90s, followed by the rapid rise of China, Russia, India, and Brazil during the first decade of the twenty-first century. The US trade balance was in the red by the late 1950s, the current balance has been running a chronic deficit since the 1980s, the capital account turned negative in 1990s, and the dollar has a 35-year history of trend depreciation. In fact, American GDP now makes up only 25 % of global GDP, and American trade volume mere 15% of the world total. Yet the US dollar remains the predominant currency used in trade and financial transactions around the world, at least outside of Europe. For instance, the percentage of trade goods invoiced in US dollars is far higher than the US share in imports to Asia, Latin America, and Australia.[43] Or, to use another measure, the dollar makes up about 63 % of central banks' reserve currency holdings, against 17% for the euro and 2% for the yen.[44] People around the world do not necessarily hold US dollars for the purpose of importing American products or borrowing from American banks.[45]

Up until 1971, some economists still adhered to the commodity theory of money, arguing that the reason for the dollar's continued status as the world's sole key currency despite the relative decline of American economic hegemony, was the pledge of the US government that dollars (at least those held by foreign governments) were convertible into gold at a fixed rate of 35 dollars

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[43] 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.)

[44] 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).

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

per ounce. It was the solid value of gold as a commodity, they believed, that backed the international circulation of the dollar. This naive belief was shattered in August 1971. Faced with the mounting fiscal burden of the Vietnam War and a sharp deterioration in gold coverage of the dollar, President Richard Nixon ended the convertibility of the dollar into gold and started a process that led to the demise of the 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 maintaining the dollar as the key currency and to turn it into just one of the many national currencies whose exchange rates were to be determined freely in foreign exchange markets.

Contrary to the intention of the US authorities, however, the dollar continued to circulate as the world's sole key currency, even though it had completely lost its convertibility into gold. In fact, its key currency status even became went up slightly immediately after the Nixon shock.[46] This episode illustrates the defining characteristic of the key currency. 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 goods from an Australian and pays in US dollars. The Australian accepts payment in US dollars because he or she expects to be able to use the dollars for a capital transaction with a Canadian. The Canadian accepts the dollars because he or she expects to be able to use them to pay for a purchase from a German. And the process may continue indefinitely without any American involvement in the transactions whatsoever. People around the world accept dollars

[46] 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.

as the key currency merely because they expect other people around the world accept dollars as the key currency. Once again, we see the bootstrapping process of money at work.[47] After all, the key currency is the general medium of exchange for global capitalism, and the relationship between the key currency and all the other non-key currencies in the international 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 a key currency: namely, that no one-to-one correspondence exists 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 had been overtaken in its size by the US as early as 1872, and despite the facts that its exports also began to lag behind US exports after 1915. It was only in 1945 that the US dollar took over from the pound as the unrivaled key currency of the global economy.[48] This proposition of course applies to the current key currency status of the US dollar as well. Once a particular nation's money has become accepted as a key currency, it is able to maintain that status regardless of changes in the strength of that nation's economic fundamentals, not to mention its military

[47] A classic discussion of the advantages of a single currency serving as 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 International Finance, No. 36, 1974. He concluded that there are 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 transaction 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, and H. 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 (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.)

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

might, diplomatic presence, or cultural dominance. Every time some sign emerges of the weakening of the US economy, a crop of reports appears pronouncing the dollar's death as the key currency. But for the reason described above, these reports have inevitably turned out to be greatly exaggerated.

Yet, we cannot rest assured by this proposition for the future of the dollar as key currency. There is another side of the coin (or greenback, in this case).. Inasmuch as the key currency is supported primarily by the same bootstrapping process as money, it is subject to the same instability—depression (a bubble of money as money) and hyperinflation (a bust of money as money). If a depression were to occur in global capitalism, it would likely be caused by a sudden surge in people's demand for the dollar as the key currency in place of the other non-key currencies. The so-called Asian currency crisis gave us a glimpse of such a possibility. Suddenly in 1997, large amounts of Thai baht, Malaysian ringgit, Indonesian rupiah, Korean won, Russian rubles, and Brazilian reals were dumped on foreign exchange markets. A selling-off of the Japanese yen started in 1998, and even the newborn Euro became a target of distress selling. Aggregate demand for the world as a whole was hit hard and for a time the global economy experienced cumulative deflation. But the funds withdrawn from Asia, Russia, Latin America, and later from Japan and Europe, did not vanish into the air; nor did people rush to convert it into gold and other precious metals. Most of it was actually held in the form of dollars, part of which then headed to financial markets in the United States. 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 the 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 almost unscathed.

It must be obvious by now that it is a “dollar crisis” that represents the real crisis of 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 dollar holdings to be 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 a tipping point. People start refusing to accept dollars as the means of settlement in their international transactions, further depreciating the value of the dollar and confirming their original fears. The flight from the dollar now sets off. Not only are dollars dumped on foreign exchange markets all over the world, but the bulk of those that have circulated outside the United States now rush back home, directly demanding the US products in their exchange. This will overheat aggregate demand within the US economy and plunge it into domestic hyperinflation. The dollar will be reduced not only to the mere national currency of the US just like all the other currencies but 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 dollar as the key currency would become difficult to sustain. The world economy would split into a 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, or at least a temporary breakdown, of global capitalism itself. Of course, the history of international monetary system has taught us that sooner or later a new key currency will emerge. But the same history also shows that it is much 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 to accept it as something like a key currency! In fact, it was during the long transition from the pound to the dollar as the key currency that the Great Depression erupted, and it was during the Great Depression that the world economy divided itself into blocks, which paved the way to WWII.[49]

Many will no doubt argue that the dethroning process would not be so violent in the case of the dollar. It would merely lead to a two-headed system, with the dollar and the euro peacefully sharing key currency status, or perhaps a three-headed one with the dollar coexisting with the euro and the yuan (or, if I am allowed to be a bit chauvinistic, the yen).[50] However, I do not believe that such a dual or three-part key currency system would ever be stable, even if the rapid development of financial technology continues to reduce the cost of converting currencies. On the contrary, the easier it is to convert currencies, the easier it becomes to speculate in foreign exchange markets. This would be nothing but an invitation for professional speculators to participate in the easiest form of the Keynesian beauty contest. The essence of the Keynesian beauty contest is not a simple “winner-take-all” game, as it has sometimes been misunderstood to be. There are in fact two winners in the game—the face chosen as the prettiest and the voters

[49] One of the main theses of Charles Kindleberge in *The World in Depression, 1929-1939.* 2nd ed., (Berkeley: University of California Press, 1986) is that the Great Depression turned into the greatest depression in history because Great Britain was no longer able, and the United States not yet ready, to act as the lender of the last resort. .

[50] For instance, Eichengreen suggested that the dollar and the euro are likely to share key currency status for the foreseeable future. However, he did not foresee the rise of the Chinese yuan to the status of a major interntional currency even 40 years from now. See his “Sterling’s Past, …”

who receive cash prizes for voting for her. Although the competition to be chosen as the prettiest is certainly a winner-take-all game, the voting process itself is a game where everyone becomes a winner simply by joining 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 than the others will push everyone to vote for that face, especially when there is no or little cost in switching one's vote.

13. THE FUTURE OF THE KEY CURRENCY SYSTEM

Is there any mechanism within global capitalism at present that can prevent the outbreak of a dollar crisis? The answer, unfortunately, no. This is because of a basic dilemma at the heart of the present monetary structure of global capitalism: 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*.[51]

There is a great advantage to being a key-currency country. Even if a Japanese manages to use yen to buy something from a German, for example, those yen 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" that comes from being

[51] 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.

the key-currency country. According to one (rough) estimate, 85% to 90% of the US currency in circulation is held outside the United States, and since the current stock of US currency is about \$750 billion, this amounts to roughly \$640 billion to \$680 billion.[52] Perhaps more importantly, the dollar's position as key currency endows dollar-denominated securities with more liquidity than securities denominated in other currencies. This allows US financial markets as a whole to borrow short and lend long as if they were banks to the world and to earn the difference between long/short interest rates.[53] This is "seigniorage" in the broader sense.[54] I believe this broader seigniorage must be much larger than the narrower one, though there seems to have been no attempt to estimate its magnitude.

The original meaning of "seigniorage" was "king's privilege," originating from the chartalist theory of money dominant in medieval Europe. But privileges are the bedfellows of abuse. The key-currency country faces a great temptation—the temptation to issue its currency in excessive amounts or let its financial sector 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 in

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[52] This figure is taken from Robert Mundell, who attributed it to a study by an IMF staff member. See Robert Mundell, "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.

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

[54] Portes and Rey called a saving of interest payments on US 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. 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.

seigniorage, in both narrow and broad senses of the term. But if it ever actually succumbed to this temptation, it would trigger a dollar crisis, not only depriving the United States of its status as the key-currency country but bringing global capitalism itself to a halt.

Hence the basic lesson: being key-currency country imposes a global responsibility on the behavior of that country. Even though the key currency also acts as its own nation's national currency, it must be managed while taking the interests of the whole world into account. 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 setting up the euro zone during 1990s, the US economy seemed in the eyes of many both inside and outside the country to the sole hegemonic power capable of creating a new economic order that would dominate the globe. It began to behave as such, especially during the presidency of George W. Bush. A key-currency country believing itself to be the hegemonic economic power is likely to ignore the global responsibility that comes with its key-currency country status. Never before in history has a key-currency country run a current account deficit amounting to 6% of GDP and incurred a net foreign debt amounting to 25% of GDP.[55] The former appears to reflect an excessive circulation of dollars as key currency outside the US, while the latter represents an excessive expansion of the role of the US financial sector as 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 "handsomest" at the Keynesian beauty contest.

Even if the direct cause of the current financial crisis was the meltdown of US subprime loans

[55] Eichengreen, "Sterling's Past,…" p.1.

that triggered the collapse of the bootstrapping credit-creation process of the US financial markets, the US economy's excessive pursuit of seigniorage from its key-currency country status has much contributed to the global scale of the crisis. It has thus invited French President Nicolas Sarkozy's statement in November, 2008, that the dollar can no longer claim to be the "only global currency," and the proposal made by Governor Zhou of the People's Bank of China's 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 whereby everybody believes that everybody else believes that everybody else believes…. The statements by the French president and the governor of People's Bank of China are indications that a certain number of people have already started to fear that a certain number of people 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 a final solution, even if by some miracle the transition took place without much global turbulence. It would merely substitute "the euro crisis" or "the yuan crisis" for "the dollar crisis. " The basic dilemma that one currency serves as both a national currency and the world's key currency would remain.

In the long run, there is only one solution: 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 the Bancor that was part of the ill-fated Keynes plan presented to the Bretton Woods conference in 1944 or the latest version suggested by the governor of the People's Bank of China. With all due respect to Keynes and the governor, I do not believe (and in fact nobody 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 seiniorage-derived free lunch. More fundamentally, the nature of global capitalism is totally different from that of a nation state, which can be characterized as an imagined community that presupposes the presence of other nation states and is unified through 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 recognized by all countries, which would give up at least part of their right to govern their own monetary affairs. This is even more the case 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. Even Europe, with its shared cultures, regional proximity, and relatively small disparity of economic conditions, took half a century to set up its own central bank. Even if a global central bank of some sort were created, possibly as a vastly expanded version of the IMF both in scale and functions, there would be little common ground among contributing countries to guarantee its independence and freedom to control the supply of the key currency and to regulate international finances in a way that would transcend conflicting interests. Money is a living thing and credit is even more so. It is hard to imagine a currency issued by a committee-like institution amassing sufficient confidence among the world’s decision-makers in terms of money, commodities, and finances.

We are, however, all dead in the long run. In order to cope with the problem of an impending crisis in global capitalism, we cannot afford to sit around waiting for the appearance of a global central bank. In the short run, we have no other option than to be practical. This means starting by recognizing the fact that, whether we like it or not, 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 status as the key-currency country, has an obligation to behave with an awareness of its global responsibility as the key-currency country. Equally importantly, the non-key currency countries have a joint obligation to keep watch over the key-currency country that has a tendency for ignoring its key-currency status, to remind it constantly of its global responsibility, and to cooperate with it whenever necessary. We have been accustomed to perceiving international order either on the basis of the traditional mental framework according to which every asymmetric relationship was a ruler/the ruled relationship, or on the basis of a politically correct tendency to paint all international relationships as being a league of equals. But the key/non-key relationship fits neither of these categories. Although the asymmetry does not satisfy anyone's desire for domination or demands for equality, the stake that the 21st century has in carefully balancing this asymmetric relationship is by no means low, given the fact that the collapse of a key currency system has always triggered a global crisis in the past,.

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 behavior 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.[56]

I have absolutely no intention of denying that people's behaviors during such abnormal economic times are often quite irrational, and can be described by these psychopathological terms. We human-beings are far from being the cool-headed rational decision-makers postulated in neoclassical economic models, as numerous experimental studies on human behaviors have amply shown.[57] No doubt recent developments in behavioral economics have enriched our understanding of the ways in which a capitalist economy behaves, both microscopically and macroscopically.[58] 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 the macroscopic level. On the contrary, it is rational for them to buy a barrel of oil futures when they believe that everybody else believes that its price will rise further, and it is rational for them to sell stock in a corporation when they believe that everybody else believes that its price

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[56] Most of these terms are taken from Charles Kindleberger, *Manias, Panics, and Crashes: A History of Financial Crises*, Rev. ed., NewYork: Basic Books, 1989, and J. K. Galbraith, *A Short History of Financial Euphoria*, New York: Penguin, 1994.

[57] 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 "Psychology and Economics," *Journal of Economic Literature*, Vol. 36, 11-46, March 1998; Camerer, C. 2003, *Behavioral Game Theory*, Princeton: Princeton Univ. Press.

[58] 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.*

will 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 expectations of other prices, because most of them face an excess demand or excess supply for their product. But their simultaneous actions will inevitably cancel each other out 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, each producer's decision looks irrational *ex post*, but is in fact rational at least in intentions *ex ante*. Moreover, as inflation or deflation continues and people begin to believe that other people believe that the inflation or deflation will continue, it is rational for them to reduce or augment their holdings of money when they expect a further depreciation or appreciation of its value. But their adjustment of their money holdings tends to widen the original macroscopic disequilibrium, and this may turn a normal inflation or deflation into the most irrational of macroscopic irrationalities—a hyperinflation or depression.

On top of all that, Keynes' most profound insight in his *General Theory* is the observation that it is the downward stickiness of money wages that prevents the capitalist economy from plunging into a process of cumulative deflation and eventually into a great depression when aggregate demand falls below aggregate supply. What neoclassical economists would characterize as sheer irrationality—money illusion!—on the part of individual workers thus works to infuse a certain rationality or stability into the capitalist economy at macroscopic level. This, however, does not imply that such a suppression of a 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 consumption in response to a reduction of income and every producer's rational decision to curtail investment in response to a reduction of profit will induce a further fall in aggregate demand that will eventually become many times larger than the original decline.

One of the core teachings of the Wicksell-Keynes school is that apparently irrational behaviors of the capitalist economy at macroscopic level do not necessarily result from microscopic irrationality on the part of individual participants. On the contrary, they are often the unintended aggregate outcomes of many individuals' rational actions or reactions in response to the macroeconomic conditions in which they find themselves.

More fundamentally, the 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 the 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 major way. Money is thus the original source of efficiency in our capitalist economy. At the same time, this freedom is the original source of the instability in our capitalist economy. This is because it also gives people the freedom to hold or not to hold money at any time, 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 for some reason 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 upward, 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—the true crisis of the system.

If the ultimate cause of the instability in a 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 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” to test the laissez-faire doctrine of the neoclassical economics, which claimed that spreading free markets across the entire globe and introducing a purer form of capitalism would increase both efficiency and stability. The global economic crisis that began in 2007 was a spectacular testament to the grand failure of this experiment. Instead, it has demonstrated the “inconvenient truth” about capitalism—the inevitable trade-off that exists between efficiency and stability. As an almost reflexive reaction to the swiftness, broadness, and deepness of this crisis, we have seen a sudden revival of a large scale fiscal and monetary stimulus in most advanced capitalist countries, 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 seems to mark the end of laissez-faire—in fact, its second end, since its end was already declared once after the Great Depression of the 1930s (though miraculously the system came around again in the 1970s).

Can this second end really be the true end of laissez-faire? The answer is perhaps “no“.

People’s memories are 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, global capitalism has regained a certain degree of stability, the advocates of the laissez-faire doctrine are 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, the first time as tragedy, and the second time probably as tragedy too.

There is, however, a more objective ground for feeling pessimistic about the true end of laissez-faire. Globalization has covered the world with a tighly knit network of markets and has transformed the world economy from a 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 than it got caught in a global economic crisis that reminded us of the inevitability of discretionary macroeconomic policies and well-designed financial regulations. Yet this global capitalism has neither a central government nor a central bank to implement such policies and regulations. All it has is the G8 or G20, loose groups that can hope at best to coordinate fiscal and monetary policy between a selected group of countries, the US Federal Reserve Board that is endowed with a *de facto* monopoly power to control the money supply of the entire global, and a motley of not particularly powerful international organizations such as the IMF, the World Bank, OECD, and so on. With all the teachings of the Wicksell-Keynes school of economics at our disposal, this global capitalism is still at the stage of laissez-faire capitalism during the age of Adam Smith. It will be in the far-off future when we can finally declare the true end of laissez-faire.