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

by

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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. (Keynes 1926) But if it was none other than Keynes who wrote the first “End,” why on earth should a sequel be needed?

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” (Keynes 1926:17) of the 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” (Keynes 1926: 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. But these are no more than “complications” in the simple and beautiful edifice of neoclassical theory, which no undergraduate microeconomics textbook would now fail to mention as possible sources of “market failures.” All Keynes could propose for an “*agenda*” of the state was 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—an *agenda* so modest in scope that even die-hard neoclassical economists might find it not unreasonable. When he wrote the first “End of Laissez-Faire,” Keynes was simply a neoclassical economist 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, deep, and 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* and *The General Theory of Employment, Interest, and Money*, 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 that puts its whole faith in the “invisible hand” of the price mechanism:

The natural price ... is ... the central price, to which the prices of all commodities are continually gravitating. Different accidents may sometimes keep them suspended a good deal above it, and sometimes force them down even somewhat below it. But whatever may be the obstacles which hinder them from settling in this centre of repose and continuance, they are constantly tending towards it. (Smith (1776, 1904): 58.)

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

The second view is that of what I call the “Wicksell-Keynes school.” This is the school of economic thought that came into being when Knut Wicksell in Sweden worked out the monetary theory of cumulative process in his *Interest and Prices* at the turn of the nineteenth century. I place the names of Keynes and Wicksell together, because Keynes was Wicksellian in *A Treatise on Money* and remained Wicksellian in *The General Theory*, at least in his analysis of the stability of the economy under flexible money wages, even though his theoretical apparatus changed radically between the two publications.² According to this second view, there is no such thing as an “ideal state” in capitalism. This is not to suggest that either Wicksell or Keynes were romantic utopians dreaming 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 its 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 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.” For roughly two decades after World War II,

² See Iwai (1981) for an attempt to synthesize the Wicksellian theory of cumulative process and the Keynesian principle of effective demand.

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, 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 that sets the stage for the neoclassical counter-revolution led by Milton Friedman, who eventually 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 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. It securitized risks of every sort and then securitized the risks of these newly created securities. Rapid globalization of goods, 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.

In his presidential address to the 115th meeting of the American Economic Association held in January 2003, 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.”(Lucas 2003)

Then, suddenly, in 2007, scarcely five years after this 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 impressively the “inconvenient truth” about capitalism—that its efficiency inevitably comes with a trade-off in terms of instability.

Why does this trade-off between efficiency and stability exist? Because *capitalism is a system built essentially on “speculation.”*

2. TWO VIEWS OF SPECULATION IN FINANCIAL MARKETS: FRIEDMAN’S DARWINIAN MODEL VS. KEYNES’ BEAUTY CONTEST MODEL

What is speculation? In general, it means to conjecture without firm evidence; in particular, it 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.

As Adam Smith saw it in *The Wealth of Nations*, the capitalist economy is founded upon the division of labor in which “it is but a very small part of a man’s wants which the produce of his

own labour can supply.” (Smith 1776, 1904; 31.) Everybody has to produce commodities not for their own consumption but for sale to others. The future’s not ours to see. Whenever people engage in production, they must speculate as to the prices their products will fetch in the market. In a capitalist economy, everybody thus becomes in some measure a speculator.

If Milton Friedman were alive today, he would immediately interject that if people do not want to take risks, they can always hedge against them by buying futures contracts or insurance policies or other risk-diversifying instruments in the financial markets. 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. As long as there are persons, 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 instrument). 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 securities thus allow people 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 people to be able to avoid risk by buying futures and other financial securities, there must be someone else in the markets who is willing to bear these risks by selling those financial securities. Financial markets can thus function only thanks to the participation of a large number of professional speculators who are prepared to take positions

contrary to those of ordinary producers and consumers, in the hope of making large profits.

Milton Friedman would claim that these professional speculators who bear the risks of ordinary people 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.” (Friedman 1953: 175.) Destabilizing speculators would be irrational. They would have to pay for their irrationality and would sooner or later lose their money. The Darwinian mechanism kicks in, and the only speculators who can survive in markets 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 General Theory*. Instead of the usual sort of beauty contest, where women parade in front of a panel of judges, who pick one of them to be Miss Something-or-other, Keynes’ version is a post-modern contest involving the full participation of the public. 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 all the competitors. Anyone who wants to win the prize 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.” But, most of the other competitors are also aiming to win the prize and 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 1936: 154) In the end, the only reason a particular face is selected as the prettiest is that every competitor expects every other competitor expects she will be chosen as the prettiest, without any anchor in 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 “bootstrap” logic of Baron Münchhausen, who claimed to have pulled himself out of a swamp by tugging on his own bootstraps.

Keynes likened the professional speculators in financial markets to the competitors in this post-modern beauty contest. 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. Indeed, “this battle of wits” to anticipate changes in the psychology of the market, 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.” (Keynes 1936: 154-6) And, as soon as a legion of professional speculators starts the battle of wits with one another, prices become 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. If everybody believes that everybody believes that prices will fall, 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. Contrary to Milton Friedman’s claim, macroscopic irrationality is not necessarily a reflection of individual irrationalities but often an unintended aggregate outcome of individual rationalities.

3. A TRADE-OFF BETWEEN EFFICIENCY AND STABILITY IN FINANCIAL MARKETS

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

The answer is obvious. Although Friedman (1951) 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 cabbage, 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.³ Even futures markets have existed for centuries, such as the Dôjima Rice Exchange in Tokugawa Japan in the early eighteenth century. But the markets for financial derivatives are much younger; the first

³ See, for instance, Sombart (1967), Braudel (1979), and Ferguson (2008).

was the International Monetary Market that deals with foreign currency futures in the Chicago Mercantile Exchange. 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. 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 the Reagan-Thatcher era, and assisted by the development of mathematical finance models 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 the "inconvenient truth" about capitalism—there is an inevitable trade-off between efficiency and stability in financial markets. The original rationale for financial markets was to improve the efficiency of the capitalist economy by providing people 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 objective of these professionals should therefore be, as Keynes put it, "to defeat the dark forces of time and ignorance which envelope our future." (Keynes 1936: 155.) However, as soon as they start their battle of wits, the bootstrapping process sets in and exposes financial markets to the larger-scale risks of bubbles and busts. This inherent instability of financial markets came into clear view with the US subprime mortgage meltdown of 2007.

However, 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

writing the “Second End of Laissez-Faire”. The instability could still be regarded as a trembling, albeit quite a jerky trembling, of the “invisible hand”. 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 people 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 supervision, 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.

However, the instability of capitalism cannot be reduced entirely to the instability generated by mechanisms in financial markets that work analogous to the Keynesian beauty contest. On the contrary, I am now going to argue that under capitalism everybody, even ordinary people on Main Street, inevitably lives the life of a speculator, because to hold “money”—the lifeblood of capitalism—is itself nothing but the purest form of speculation.

4. HOLDING MONEY IS 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 other commodities. If you have a 100 yen coin, you are able to exchange it for any commodity worth 100 yen (at least in Japan).

But why should such a tiny piece of metal serve as money? 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 ontological question of why money is money. They are the “commodity theory of money” and the “chartalist theory of money.”⁴ The commodity theory asserts that a thing can serve as money because it is useful and has a value independent of its use as money. The chartalist theory, in contrast, asserts that a certain thing functions as money only because it has been approved as such 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 neither theory is correct.⁵

We are happy to accept a 100 yen coin as money not because we appreciate it as a beautiful object or we find it useful as a screwdriver. There is nothing in a 100 yen coin as a commodity that gives it its value as money. 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, monetary history abounds with incidents of monies that continued to serve as money 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 in Austria, their issuing country.⁶ Besides, various forms of bank accounts also serve as money without any legal backing. Money can circulate as money neither because it has an intrinsic value as a useful commodity nor because it has an extrinsic value imposed by political authority.

We thus have to ask again: why do we accept a tiny piece of metal as being money worth 100

⁴ See Schumpeter (1954), especially pp. 62- 64 and 288 - 322, for the most authoritative account of this debate. The term Chartalism is borrowed from Knapp (1924). See Wray (2010) for a modern formulation of the chartalist theory.

⁵ See Iwai (2001). I also concur with Ganssmann (2010) that the “credit theory of money” is not correct either. In contrast to a credit relationship that requires a “know-who” network, “the buyer-seller relationship ends when ‘money says good-bye’ to the buyer.”

⁶ 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.

yen (or a small sheet of paper as being money worth 10 euro)? It is because we expect that other people will be happy to accept it at the same value from us in turn. This is a decisive turn in the ontological query on money. It is “the wants of others,” not of ourselves, that endow money with its value as money. Yet, we cannot rest satisfied with this answer, no matter how decisive it is. For in a capitalist economy, “it is,” to quote Adam Smith again, “but a very small part of a man’s wants which the produce of his own labour can supply.” It is the wants of others who consume it, not of the one who produces it, that endow any commodity with its value as a commodity. In order to distinguish money from all other commodities, we thus have to repeat the question: why do other people accept a 100 yen coin as money from us? Again, they do so neither because they have a need to use it as a useful commodity nor because they are ordered to by some political authority. They accept a 100 yen coin because they expect that other people will be happy to receive it as so much money in turn. We have thus reached the third link of a chain of expectations according to which we expect other people to expect other people to accept a 100 yen coin as so much money. Here we find the same “bootstrapping” process that we saw in the Keynesian beauty contest. Indeed, in the case of money there is no end to this chain of expectations. Ultimately, the only reason a 100 yen coin is accepted as so much money is that everyone believes that everyone else believes that it will be accepted as money worth 100 yen. *Money is money simply because it is accepted as money.*⁷ It is nothing but the product of a pure “bootstrapping” process that does not owe its existence to *physis* (nature) or *nomos* (law).⁸⁹

⁷ See Iwai (2001, 1996), both of which are drawn from Iwai (1988). I have also published in Japanese a monograph titled *Ontology of Money* (1993) which discusses the philosophical implications of the bootstrapping nature of money by means of a deconstructive analysis of Marx’s theory of value forms. See also section 2 of Ganssmann (2010) for a related discussion.

⁸ As long as an object circulates as money, its abstract value as money thus necessarily exceeds its concrete value as a thing. Seaford (2004, 2010) has taught us that what made the Greek cultures so much more like our own than the more ancient civilizations – the birth of philosophy, democracy, and drama – was that the Greek polis in the 6th century BC was the first thoroughly monetized society. It enabled its citizens to have daily access to the idea of abstract universality distinct from the varying appearance of concrete things. Although Seaford emphasizes the

In the Keynesian beauty contest model of financial speculation, even if the objects being speculated on are financial derivatives twice-removed from real-world commodities, they are not completely removed from them, 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. 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. *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 people in Main Street are no different from the professional speculators in Wall Street. And what is more: Whenever we circulate money among ourselves, we are all acting like professional speculators who trade objects of speculation with each other, without ever being conscious of the fact. In this sense, capitalism is a system

invention of coinage as the decisive development, it was the very circulation of money as money, not its coinage, that drove a wedge between the abstract value and the concrete value. Even when gold and silver were used as money in their bare metallic form, their value as money must have exceeded their value as things. Gold and silver were “symbols” as soon as they were used as money. True that the invention of coinage immensely facilitated their circulation, but only by making counterfeiting difficult and counting easy.

⁹ I should hasten to add here that my rejection of commodity, chartalist, and credit theories of money by no means implies my rejection of the historical possibility of commodity or chartalist or credit origin of money. As Cartelier (2010) emphasizes, there is generally no decentralized process that spontaneously leads an economy to transit from autarky (or gift-exchange system à la Marcel Mauss) to a monetary system. To set the bootstrapping process of money in motion, “something must be added” – something that creates a critical mass of people expecting a critical mass of people to use money as money. And that “something” can be the existence of a commodity with high salability or the designation of a token as money by political power or the *de facto* transferability of debts issued by a wealthy goldsmith. One should, however, distinguish the ontology of money from its genealogy. Once a certain thing has started circulating as money, it is the pure bootstrapping process that supports its existence as money, independently of its historical origin.

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. 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.

5. MONEY HAS NO MARKET OF ITS OWN

As we know, 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). 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 on time, space, and 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 capitalism now covering the entire globe. In other words, money is the original source of efficiency in our capitalist economy.

At the same time, however, it is also the original source of instability in that same system. 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 has to sell immediately before he will buy. He can simply spend part of the money he already holds. 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 on the identity between aggregate demand and aggregate supply, necessarily 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 any disequilibrium between aggregate demand and aggregate supply 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 particular commodity. To be sure, 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.¹⁰ But, unlike all the other commodities, *money does not have its own market*.

We can “sell” money only by buying commodities in their markets; likewise, we can “buy”

¹⁰ According to Walras’ Law, if we sum up all the consumers’ budget equations, an excess demand (supply) for the commodity as a whole, must coincide with an excess supply (demand) of money with equal value.

money only by selling commodities in markets. 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 the money market. But this is nothing more than a financial market for short-term lending and borrowing, not a true market for money itself. Any non-monetary commodity has its own market to eliminate the disequilibrium between supply and demand. For money, however, a disequilibrium can only be remedied 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) 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 *Geldzins und Güterpreise* (*Interest and Prices*).

6. THE WICKSELLIAN THEORY OF CUMULATIVE PROCESS AND THE FUNDAMENTAL TRADE-OFF BETWEEN EFFICIENCY AND STABILITY IN A CAPITALIST SYSTEM

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* who 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.” (Wicksell 1935: 159.) 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 had faithfully subscribed until then. Now, he proceeded to study what happens when the intermediation of money has driven a wedge between aggregate demand and aggregate supply. As a faithful student of Bohm-Bawerk, Wicksell singled out the rate of interest as the key variable that determines the relationship between aggregate demand and aggregate supply. He thus introduced the concept of the natural rate of interest—a rate of interest that would equate aggregate demand and aggregate supply—contrasting this with the market rate of interest quoted daily in financial markets.¹¹ 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 is 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

¹¹ 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.

relative price, 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 other price. 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 have to raise the relative prices of their products *simultaneously* to choke off excess demands. Yet, it is arithmetically impossible for all the “relative prices” to increase simultaneously! Indeed, as long as there is no central authority or collusive agreement to coordinate pricing decisions, each producer has to form an expectation of the prices set by others and raise his or her own price relative to that expectation. 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 *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 total 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’ decentralized 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 individual prices will inevitably

betray their intentions of realigning their relative prices. Instead, the general price level will increase *unexpectedly* again. 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 begin 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. (Wicksell 1936: 94.)

A general rise or fall in prices is a disequilibrium process that is “not only permanent, but also cumulative.”(ibid.)¹²

This is still not the whole story. 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 this connection between price and money that makes money-holding a purely speculative activity with 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

¹² 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* 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 mechanical formulation and would have asked: “Whose behavior is thereby expressed? And how is that behavior motivated?” (Koopmans (1957: 179) If the market is perfectly competitive in the sense that every buyer and seller regards the prices as parametric and make demand and supply decisions accordingly, we have a paradoxical situation in which there is no one left to make a decision on price. Indeed, if the price of a commodity moves in response to a disequilibrium between demand and supply, such a price movement expresses the imperfectly competitive behavior of its producers (or in some cases buyers) in markets. For this reason our elucidation of the cumulative process, based on Iwai (1981), deviates from Wicksell’s original formulation.

to their money holding. As inflation persists, however, some people may begin to expect inflation to continue. Once a majority of people comes to expect that many others expect inflation to continue, the spell is broken. Fearing a further decline in the value of money, people try to reduce their money holdings by buying commodities. This tends to stimulate aggregate demand and speeds up the pace of inflation, confirming their fears. People then stampede to unload their money holdings by snatching up any commodity available. Inflation accelerates even more. 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 a useless disc of metal or an insignificant sheet of paper. What we have seen is a bust of money as money.¹³

Conversely, when aggregate demand is maintained below aggregate supply, the general price level starts to fall, and once a significant number of people start to expect 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

¹³ Wicksell (1935) 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." (p. 96.)

demand and aggregate supply, either by discouraging directly the demand for consumption goods (the so-called Pigou effect) or indirectly the demand for investment goods through the tightening of financial markets (the so-called Keynes effect). However, we now know that the effects of rising prices on the private debt/credit structure in financial markets induce far stronger opposite effects. So long as they are not anticipated in advance, rising prices transfer 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 *mere* re-distributional effect of private debts is sufficient to exert a destabilizing effect. Moreover, the relief of the indebtedness of private debtors generated by rising prices may encourage them to deepen their indebtedness further by borrowing more or by replacing their short-term debts by long-term debts. This injects new liquidity into financial markets and encourages both consumption and investment spending still more. This may be called “the debt-inflation process.”

The same argument applies (indeed, more strongly) to the case of a cumulative fall in prices. Irving Fisher (1932, 1933), 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 (1982, 1984).

Wicksell's theory was a liberation 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 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.

7. 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 that of a self-destructive laissez-faire economy. 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. 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. (Keynes 1936:249.)

We are thus led to pose a question that would have sounded paradoxical to those who believe in Adam Smith's "invisible hand": "What saves the capitalist economy from 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 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.

Keynes was a Wicksellian when he wrote his *Treatise on Money*¹⁴ and remained so 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. (Keynes 1936: 303.)

¹⁴ For instance, Keynes (1930: 132) held that: "[I]f the volume of saving becomes unequal to the cost of new investment [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 [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."

Keynes concluded that “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. (Keynes 1936: 304.)

The sticky factor is, 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. Keynes, however, argued that “this might not be so illogical at it appears at first,” and then added an enigmatic sentence:

and, ... fortunately so. (Keynes 1936: 9.)

In the first place, once we accept that workers are not isolated individuals but social beings whose 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 an increase in the price level. 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. (Keynes 1936: 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, because this seemingly illogical behavior of workers—their money illusion—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! “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,” Keynes concludes, “the opposite of the truth. (Keynes 1936: 269)

It should be emphasized, however, that this suppression of the cumulative process in no way implies the disappearance of disequilibria from capitalist economy. On the contrary, the downward stickiness of money wages will merely replace one form of macroeconomic disequilibrium – the Wicksellian cumulative process -- with another – the Keynesian multiplier process. Indeed, when aggregate demand falls below aggregate supply, the majority of producers who are unable to enforce a reduction of money wages must reduce the number of workers they employ in order to scale down their output. 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, and so on. In the end, the induced fall in aggregate demand will be many times larger than the original fall. The macroeconomic inefficiencies of underemployment of labor and capital are thus the price we have to pay to tame the inherent instability of general price movements under capitalism.¹⁵ 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.

8. THE LIQUIDITY OF BANK MONEY AND A RETURN TO THE KEYNESIAN BEAUTY

¹⁵ 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.

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 2000.¹⁶ However, I believe that “this time 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 key currency in global capitalism. I will take up the collapse of financial liquidity first.

One of the major lessons of the Great Depression of the 1930's was that commercial banks must be regulated. 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. 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. 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 “money (credit) creation,” my original deposit can generate an amount equal to many times its value in

¹⁶ Reinhart and Rogoff (2009).

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 that they, too, believe they can withdraw cash from their bank 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 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 start to doubt the liquidity of their deposits, they will 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.¹⁷ Indeed, "there is no such thing as liquidity of investment for the community as a whole." (Keynes 1936; 155.) 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, the United States adopted the Glass-Steagall Act

¹⁷ This bootstrapping process of demand deposit liquidity was formalized first by Diamond and Dybvig (1983).

as part of the New Deal in 1933. This act established a distinction between two types of financial institution: (1) deposit-taking commercial banks that were allowed to generate money-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, but raised to \$250,000 until the end of 2013). 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 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 inside players of financial markets, outside supporters of financial interests, and academic experts in financial engineering, that the only regulation financial markets required was SEC supervision. 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 risks 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 could expect to repay their home loans only because they expected that the housing bubble would continue, enabling them to sell their homes for higher prices. Banks extended them loans in the belief that they could average out the risks of default by bundling loans together into mortgage-backed securities. Financial engineers then processed 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. 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. Through the workings of this now familiar bootstrapping process, the financial market as a whole was enabled to create a huge amount of liquidity 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 that packaged the default risk of the issuer of an original security as a separate instrument. CDSs 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.¹⁸ 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 amounted to a run on the financial market as a whole. The swollen supply of liquidity contracted almost instantaneously, and all that was left in the debris of the marketplace was the reality of defaulted subprime mortgages.

As bank failures during the Great Depression showed, money-creating banks need to be regulated. The recent financial market crash highlighted that liquidity 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 to which they might potentially expose the general public.¹⁹

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

¹⁸ See http://www.bis.org/publ/otc_hy0811.htm

¹⁹ For such attempt, see Brunnermeier et. al. (2009).

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 for everybody in the economy. The sale is the “*salto mortale* of the commodity.” “If it falls short, then, although the commodity itself is not harmed, its owner decidedly is.” (Marx 1867, 1906; Vol. 1. Chap.3, para. 31.) The view that capitalism’s true crisis is depression is generated spontaneously as a straightforward deduction from our daily experiences in markets.

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 is turned 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 anchor its value. The value of money as money is supported only by a bootstrapping process according to which everybody believes that everybody else believes it to be 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 confidence in the continuity of the capitalist economy, a belief on the part of its participants that they will perpetuate the bootstrapping process by continuing to accept the money in current use

in the future. 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.

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. (Keynes 1920)

Keynes was certainly right (as always). “Hyperinflation” is the true crisis of capitalism. Hyperinflation is, as we saw in Section 6, 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.²⁰ 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 a useless disc of metal or an insignificant sheet of paper, 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 barter system that leaves everybody with unsellable 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.

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

²⁰ Cagan (1956) 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." My characterization of hyperinflation given here and in section 6 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 lead-up 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.²¹ 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 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.

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

Global capitalism as it exists today has an “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 bahts 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 a debt to a Thai, he can use his own national currency for both payment and repayment, 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, while the Japanese yen and the Chinese yuan as well may be regarded as

²¹ As for German hyperinflation after WW II, see Graham (1930) and Bresciani-Turroni (1937). The more recent study is, for instance, Webb (1989).

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. With Europe and Japan reduced to rubble, 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, America’s relative economic strength started to decline. Western Europe and Japan more or less caught up in terms of economic productivity during the 1970s and 80s. Then pressure came from East Asian economies in 90s, to be 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. American GDP now amounts to only 25 % of global GDP, and American trade a 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 of imports by Asia, Latin America, and Australia.²² About 63 % of central banks' reserve currencies are held in dollars, against 17% for the euro and 2% for the yen.²³ People around the world do not hold US dollars just for the purpose of importing American products or borrowing from American banks (Blinder 1996).

Up until 1971, some economists still adhered to the commodity theory of money. They explained the dollar's continued status as the world's sole key currency despite the erosion of American economic hegemony by 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 per ounce. They believed that the international circulation of the dollar was backed by the solid value of gold as a commodity, a belief that was shattered in August 1971. President Richard Nixon ended the convertibility of the dollar into gold and started a process leading to the demise of the fixed exchange rate system for all major currencies by 1976. The original 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 this intention, however, the dollar

²² 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 shares of the dollar in import invoicing are 69% and 51% vs. US shares in their imports of 16% and 2% respectively. (Data on invoicing from Goldberg and Tille (2008), data on import shares from IMF Direction of Trade Statistics.)

²³ According to IMF estimates of the currency compositions of official foreign exchange reserves, claims in US dollars among allocated reserves amounted to 62.7% (vs. 16.6% in Euros) of total allocated reserves 6,712 in the 4th quarter of 2008.

continued to circulate as the world's sole key currency, even though it was no longer convertible into gold. Its key currency status even increased slightly immediately after the Nixon shock.²⁴

The episode illustrates the defining characteristic of the key currency. This role is not due to people around the world holding large amounts of dollars for the purpose of buying commodities or borrowing capital from the United States. *The dollar is the key currency of the world only because it is 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 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 so on, without any American involvement in the transactions. People around the world accept dollars 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.²⁵ The key currency is the general medium of exchange for global capitalism. 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 within a national economy.

This characterization leads us to an important proposition about the nature of a key currency: There is no one-to-one correspondence between the circulation of one country's national money

²⁴ 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. Horii (1986).

²⁵ In his classic discussion on the advantages of a single currency serving as the key currency of the world economy Kindleberger (1974) calls attention to strong economies of scale associated with the reduction of transaction costs, especially those of search. This is precisely the *raison d'être* for money in general, as demonstrated in Iwai (2001, 1996, also 1985). While Eichengreen (1996) also emphasizes the role of network externality (roughly the same concept as the bootstrapping process), in a more recent work (2005) he questions this bootstrapping logic, and argues 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.

as the key currency and the real economic power, either absolute or relative, of that country. This has been borne out abundantly by 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 British exports 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. (Eichengreen 1996) This proposition 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 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 these reports have inevitably turned out to be greatly exaggerated, as Mark Twain said about his own death.

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 in general, it is subject to the same instability— to depression and hyperinflation. 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 for 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 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. After a year or two of turmoil the global economy was able to resume its growth.

It must be obvious by now that a “dollar crisis” would be the real crisis of global capitalism and it would be nothing but a hyperinflation of the dollar as key currency. The scenario is as follows: 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, a tipping point is reached. 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 takes 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 exchange. This will overheat aggregate demand within the US economy and plunge it into domestic hyperinflation. Most of the trades and financing 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 a breakdown, or at least a temporary breakdown, of global capitalism itself.

Of course, the history of international monetary system has taught us that a new key currency will emerge eventually. But the same history also shows that it is much easier to destroy an existing bootstrapping process than to create a new one. 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.²⁶

Many will no doubt argue that the dethroning process of the dollar 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. However, I do not believe that such a dual or three-part key currency system could 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 for professional speculators to participate in the Keynesian beauty contest. This is not a simple “winner-take-all” game, as it has sometimes been misunderstood. There are in fact two winners in the game—the face voted for as the prettiest and the voters 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,

²⁶ According to Kindleberger (1986) 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.

especially when it costs little or nothing to switch one's vote.

11. THE FUTURE OF THE KEY CURRENCY SYSTEM

At present, is there any mechanism within global capitalism to prevent the outbreak of a dollar crisis? Unfortunately, no. A basic dilemma is at the heart of the present monetary structure of global capitalism: Although one the dollar as one country's national currency is used as the key currency by the entire world, there is no guarantee that what is best for the US is best for the world, and *vice versa*.²⁷

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. 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 are 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 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 to 680 billion.²⁸ Perhaps more importantly, the dollar's position as key currency endows

²⁷ This is the well-known 'Triffin Dilemma' (Triffin 1960).

²⁸ Mundell (1997), citing a study by an IMF staff member. The figures are derived according to the idea 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 outside of the US. An estimate of this share made by Federal Reserve staff based on the shipments data of \$100 bills by the Federal Reserve Bank of New York (Blinder 1996: 130), is much lower but still substantial at about 50-70%. Blinder then calculated the imputed interest earning of the US as \$11-15 billion per

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 earn the difference between long/short interest rates.²⁹ This is “seigniorage” in the broader sense.³⁰ It must be much larger than the narrower one, though I do not know of any attempt to estimate its magnitude.

The original meaning of “seigniorage” was “king’s privilege,” but privileges are the bedfellows of abuse. The key-currency country faces the great temptation— to issue its currency in excessive amounts or let its financial sector expand its leverage ratio in excessive proportions. If the US 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 serves as its own national currency, it must be managed by 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, the US economy seemed to be 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

year.

²⁹ See Despres, Kindleberger and Salant (1966).

³⁰ Portes and Rey (1998) called the 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,” and suggested that it could amount to at least 5-10 billion a year. A similar argument should be applied to most of the dollar-denominated securities issued by private financial institutions in the US.

the global responsibility that comes with its key-currency status. Never before 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 (Eichengreen 2005: 1). The deficit appears to reflect an excessive circulation of dollars as key currency outside the US, while the foreign debt 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" in the Keynesian beauty contest.

Even if the direct cause of the current financial crisis was the meltdown of US subprime loans that triggered the collapse of the bootstrapping credit-creation process of the 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. 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.... There is always a danger of wolf-criers turning into soothsayers once 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.

12. 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. (Kindleberger 2005, Galbraith 1994)

I have no intention to deny that people's behaviors during such abnormal economic times are often quite irrational. We human beings are far from being the cool-headed rational decision-makers postulated in neoclassical economic models, as numerous studies on human behaviors have shown.³¹ I am afraid, however, that too much emphasis on human irrationality may lead us astray from the essential insight of what I have called the "Wicksell-Keynes school" of economic thought. One of its core teachings is that the apparently irrational behaviors of the capitalist economy at the macroscopic level do not necessarily result from irrationality on the part of individual participants. On the contrary, they are often the unintended aggregate outcomes of many individuals' rational actions.

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 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

³¹ Since the pioneering work of Tversky and Kahneman (1979), we have seen a huge increase in works that try to integrate insights from psychological research into economics, especially concerning human judgment and decision under uncertainty. See also Rabin (1998), Camerer (2003), Akerlof and Shiller (2009)..

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 are perfectly flexible. If, on the other hand, some prices, especially money wages, are sticky downward, a decline of aggregate demand relative to aggregate supply will trigger not a cumulative deflation process but an income multiplier process, 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 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 liquidity 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” 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.

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.” 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 tightly 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 then 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. Despite 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. The true end of laissez-faire is still far away in the future.

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