

POLITICAL ECONOMY RESEARCH INSTITUTE

**PERI**

University of Massachusetts Amherst

The Last Refuge of Scoundrels:  
Keynes-Minsky Perspectives on the Uses and Abuses  
of the “Liquidity Defense”

James Crotty and Gerald Epstein

October 2014

**WORKINGPAPER SERIES**

Number 367

**POLITICAL ECONOMY  
RESEARCH INSTITUTE**

**The Last Refuge of Scoundrels:  
Keynes-Minsky Perspectives on the Uses and Abuses  
of the “Liquidity Defense”**

**James Crotty and Gerald Epstein**

**December, 2012; This version, January 11, 2013**

This Chapter has been prepared for a Festschrift volume in honor of Jane D’Arista. The authors thank Iren Levina for excellent research assistance and the Institute for New Economic Thinking (INET) for financial support.

## **1. Introduction: The Liquidity Defense in the Battle For Financial Reform**

The role played by investment banks in creating the conditions that led to the global financial crisis that broke out in 2007 is well chronicled.<sup>1</sup> These banks took excessive risks and used excessive leverage to support their immensely profitable proprietary trading; they were a major source of credit to other financial institutions, such as hedge funds, that were also major speculators; and they created, perfected and distributed the innovations in financial products at the center of the financial collapse.<sup>2</sup> The proprietary character of the banks' trading was often hidden within the banks' inventories, in their role as market-makers who buy and sell securities to help create and sustain "liquid" security markets. It was thus easy to disguise holdings of securities purchased with the intention to sell at some future date for the bank's profit – proprietary trading - as securities being kept in inventory for the bank's market-making activity. To prevent the recurrence of excessive risk-taking with excessive leverage in institutions that are considered too big to fail and therefore potential wards of the state in a serious financial crisis, the U.S. government enacted the Volcker Rule intended to prohibit proprietary trading as part of the Dodd-Frank financial reform legislation. Not surprisingly, the politically-powerful giant investment banks and banking conglomerates that dominate the industry and had successfully lobbied on behalf of radical financial market deregulation for decades, have fought tooth and nail against the effective implementation of Volcker Rule.<sup>3</sup> They have waged an expensive campaign, using armies of lobbyists, generous contributions, their influence in the media and the promise of high paying jobs in finance to legislators after they leave the government, to convince Congress and the President to eviscerate the Rule.

Jane D'Arista has played a key role in working with the Americans For Financial Reform (AFR) and SAFER in fighting against these lobbyists. Her knowledge of financial and monetary history and grasp of the real operations of financial institutions and financial regulations helped to counter the arguments of these bankers and their allies. Yet, with many millions of dollars to spend, these forces of finance send wave after wave of assaults against reforms such as the Volcker Rule.

---

<sup>1</sup> See, for example, FCIC, 2011; Crotty, Epstein, Levina, 2010.

<sup>2</sup> The second and third of these criticisms are discussed below.

<sup>3</sup> See Wall Street Watch, 2009, on the history of financial de-regulation. See Kutner, 2011.

In pleading their case, the banks have, above all else, mounted “the liquidity defense”: essentially they claim that any regulation that reduces “liquidity” necessarily harms financial customers and the overall economy. Analytically, their liquidity defense is divided into two inter-connected arguments. First, the banks claim that the Rule, by limiting their proprietary trading, would make it difficult if not impossible for them to perform the crucial function of providing “*liquidity*” to the nation’s securities markets. Here liquidity is defined as the ability of investors to buy and sell securities quickly at a very low transactions cost.<sup>4</sup> Without adequate liquidity, markets could not operate efficiently, these investment bankers claim. Investors would not be able to transact quickly when they needed or wanted to, and they might have to eventually accept a price that was well below what their securities were worth, or the below the “appropriate price.”<sup>5</sup> In turn, if investors came to believe that they would be punished when they sold securities by being forced to wait to sell and/or accept a substantial capital loss, they would be less willing to buy the securities that fund investment in capital goods, research and development, and business and residential construction, and make it possible for corporations and individuals to insure against excessive risk. This would, they argue, raise the costs to investors wishing to borrow money, slow economic and productivity growth, and reduce the efficiency of resource allocation.

The second argument is that the Rule would interfere with the crucial role of “*price discovery*” played by investment banks, hedge funds and other aggressive traders. It turns out that this argument is difficult to sustain within standard neo-classical financial theory, but these opponents of the Rule are un-phased. Canonical models of neoclassical financial market theory assume that prices in financial security markets are always optimal equilibrium prices that properly reflect the true risk-return characteristics of securities. In such a world, it is hard to see why *discovery* would be required. However, when talking about the real world, these economists insist that financial market equilibrium prices must be discovered through the dynamic interaction of bulls and bears in liquid markets. They argue that investment banks accelerate the discovery process through informed proprietary trading by acting as market makers. Financial

---

<sup>4</sup> We refer to this as Trading Liquidity. This is a part of what economists call Market Liquidity. For a discussion of various concepts of liquidity, see the discussion below.

<sup>5</sup> We call this Appropriate Price Liquidity or just Price Liquidity. Mainstream economists often implicitly slip this meaning into their definition of Market Liquidity, usually without even knowing it. The concept of an acceptable or appropriate price is explored below.

market lobbyists insist that the Rule would seriously impede the price-discovery process, causing markets to generate the “wrong” prices much of the time.

These banker criticisms of the Volcker rule on the grounds that they will reduce “liquidity” and “price discovery” are simply one among many examples of the common response by the banking lobby and supportive economists to virtually any attempt to impose stricter financial regulation. The same arguments have been used against attempts to regulate derivatives, increase capital and liquidity requirements, regulate “naked” credit default swaps, limit commodity speculation, regulate high frequency trading, or impose a financial transactions tax. (Duffie, 2010) All of these policies are met with a chorus of opposition based on the claim that these regulations will limit market liquidity, raise costs for customers trying to access credit or hedge risk, and inhibit “price discovery”. In short, the “liquidity defense” is the go to weapon for defenders of the status quo in financial regulation and has been remarkably successful as they are repeated uncritically by much of the financial press, and rationalized by analysts from “think-tanks” and academia alike (eg. Oliver Wyman, 2012; Duffie, 2012).

In this chapter, we argue here that the “liquidity defense” is theoretically incoherent. And the role of investment banks in the financial crisis discussed at the outset, gives a *prima facie* case that it is wrong empirically as well.<sup>6</sup> The liquidity defense is based on definitions of liquidity that are fuzzy, at best, and on narratives about the roles of liquidity that largely contradict the core assumptions of the models used by these analysts and lobbyists. This “liquidity defense” is set within, *and only make sense within*, the framework of neoclassical financial market theory because it assumes that more liquidity *always* leads to greater market efficiency, a proposition that is, in fact, wrong. By contrast, the core propositions of mainstream theory relied on to defend proprietary trading do not hold in the more realistic financial market theories associated with John Maynard Keynes and Hyman Minsky. In Keynes-Minsky (hereafter referred to as KM) theory, the relation between trading liquidity and market efficiency is non-linear. Clearly, a market with little liquidity cannot create an adequate demand for long-term risky securities, and therefore cannot adequately finance capital investment. On the other

---

<sup>6</sup> It is also lacks empirical support, given the role of liquidity in helping to create the financial crisis. But we do not deal with the empirical issues in depth here.

hand, a market in which investors believe they can buy and sell cheaply and unload their risky securities instantaneously at the first hint of trouble will encourage excessive speculation and market volatility. Moreover, in the Keynes-Minsky world, financial actors like investment banks do not aid “price discovery”: they contribute to asset “**price creation**”; and if the financial actions they engage in, such as proprietary trading, are focused on short-term speculation and manipulation, then the asset prices they help create are unlikely to efficiently further social goals such as employment creation and long-term productive investment.

While for the mainstream, the more market liquidity the better, for Keynes, the issue of liquidity presents a genuine “dilemma” (his term). In chapter 12 of the *General Theory (GT)* Keynes called attention to the stark change in the liquidity properties of ownership claims on capital goods that took place between the 19th century and the 1930s when he was writing the *General Theory*. "In former times, when enterprises were mainly owned by those who undertook them or by their friends and associates, investment depended upon a sufficient supply of individuals of sanguine temperament and constructive impulses who embarked on business as a way of life, not relying on a precise calculation of prospective profit." (150) He noted that: "Decisions to invest in private business of the old-fashioned type were, however, decisions that were irrevocable, not only for the community as a whole, but also for the individual." That is, capital goods were an illiquid asset not only for the community or the national economy, but also for the individual. Neither could avoid the high risk associated with illiquid capital goods. But the rise of publicly-owned corporations whose stock was traded on the market as the dominant form of enterprise ownership created a stark difference between the liquidity properties of capital goods' ownership between the individual and the community. "With the separation between ownership and management that prevails today and with the development of organised [sic] investment markets, a new factor of great importance has entered in, which sometimes facilitates investment but *sometimes adds greatly to the instability of the system.*" (150-51, italics added). Market liquidity, Keynes argued, made investors willing to invest in long-term capital that is supportive of capital accumulation, employment, and productivity growth. But liquidity can also lead to excessive speculation, instability, and stagnation.

Thus Keynes identifies a dilemma: he argues that liquidity is a dangerous illusion for society as a whole. Yet, it appears to be required to induce investors to make investments in otherwise long-term, relatively illiquid, socially useful capital. Still, Keynes argued, in actually existing financialized capitalism, there are many processes that undermine liquidity's usefulness. In developing this dilemma, we focus in this chapter on Keynes' views in Chapter 12 of the *General Theory*. As we show in more detail in Crotty and Epstein (2013):

1. In chapter 12 of the *General Theory*, (*GT*) Keynes stresses the short-termism and speculative aspects that liquidity induces with respect to investment decisions tied to the stock market, leading to capital misallocation.
2. In chapters 13-15, of the *General Theory* Keynes notes the excessive demand for safe assets (money) in crisis that can undermine the accumulation of risky, long-term capital.
3. In chapter 22 of the *GT* these aspects of liquidity contribute to liquidity cycles and real economic cycles, that exacerbate the business cycle in capitalism, and thereby induce significant costs to society without necessarily contributing to the accumulation of long term capital.

In short, whereas Keynes argues that in some circumstances we might need to accept the necessary evil of liquidity in order to facilitate capital accumulation, in the end, the benefits might not be worth the costs. It might be that effective financial regulation could reduce these liquidity pathologies sufficiently to help facilitate the appropriate accumulation of long term socially productive investment. But in the absence of effective regulation, the greater the need, according to Keynes, for a much more socialized control over investment processes.

Keynes is not alone in his concern over this dimension of excessive liquidity. James Tobin proposed his financial transactions tax precisely in order to remove excessive liquidity and therefore excessive volatility from the market. Paul Volcker recently said: "There should not be a presumption that evermore market liquidity brings a public benefit. At some point, great

liquidity, or the perception of it, may itself encourage more speculative trading.”<sup>7</sup> Former chief IMF economist Simon Johnson asked: "Is maximum liquidity the right goal?," and answered: "Not necessarily, because a high degree of liquidity in good times can lull investors into a false sense of safety and reduce their incentive to do a careful credit analysis."<sup>8</sup> But none of these other economists have developed a coherent framework that can explain why these liquidity problems are endemic to capitalism . We must turn to the Keynes-Minsky approach to get the necessary insight.

In what follows, we first explore various definitions of the term “liquidity” and show that this concept is often ill defined and even defined in contradictory ways by mainstream financial economists. We then turn to a general discussion of the Keynes-Minsky (KM) analysis of the role of liquidity in financial cycles, starting off with some key general methodological points about Keynes’ theory that are critical to an understanding of the KM discussions of the role of liquidity in capitalism. In section III, we focus on Keynes’ views in chapter 12 of the *General Theory*, where he develops in detail the “liquidity dilemma”, both with respect to financial instability and, the longer term impact on capital misallocation in the longer term. In the chapter’s final section, we discuss Keynes’ solutions to the problems of liquidity, and highlight the stark contrast between Keynes’ solutions to the “liquidity dilemma” and mainstream finance’s “liquidity defense”.

## **II. What is Liquidity? The Theoretical Incoherence of the Mainstream Perspective**

Before the treatment of liquidity in mainstream theory and KM theory can be compared, we have to ask: *what is liquidity?* This is a more difficult question to answer than it might appear because the word is used to represent various dimensions or aspects of financial markets, but it is usually not defined, requiring the reader to intuit its meaning from the particular context or contexts in which the word appears in an article or book. To exaggerate only slightly, it seems as if in the mainstream literature any characteristic of financial markets that is claimed to be

---

<sup>7</sup> See <http://www.bloomberg.com/news/2012-02-13/volcker-says-more-market-liquidity-doesn't-bring-public-benefit.html>.

<sup>8</sup> See <http://mobile.bloomberg.com/news/2012-02-20/liquidity-versus-capital-debate-divides-stanford-simon-johnson>. Note the presumption that if everyone did careful credit analyses, there might be no instability, a claim with little credence in a world of uncertainty.

“efficient”, is said to add to "liquidity." This makes it extremely difficult to critically evaluate theories that incorporate the concept of liquidity in such broad and elastic ways. In a book contrasting the use of models and theories in physics and financial economics, Emanuel Dermin, a physicist who became a financial “quant” at Goldman Sachs and, later, a professor at Columbia University and director of Columbia’s program in financial engineering, made the following correct observation:

The difficulties one encounters in modeling economic abstractions are illustrated by attempts to deal with the notion of market liquidity. Liquidity is the metaphorical quality that makes trading possible: it connotes the easy availability of counterparties to buy something you want to sell or sell something you want to buy, and its disappearance in states of fear causes the great damage that characterized the recent global financial crisis. *Everyone thinks he knows what liquidity means, yet no one has adequately defined and qualified it.* (2011, p. 48: - italics added)

When they do try to define liquidity, mainstream financial economists often make a distinction between funding liquidity and market liquidity. Funding liquidity refers to the ability of financial actors to fund their positions in financial assets; it plays an important role in the creation of financial cycles and relates to the role of central bank policy and lender of last resort activities as well as the behavior of private financial institutions (eg. BIS, 2011). As for market liquidity, in theoretical discussion, neoclassical theory usually defines market liquidity rather narrowly as trading liquidity the more quickly and cheaply securities can be bought and sold and the lower the cost of transactions, the more liquid the market is with respect to Trading Liquidity.<sup>9</sup> However, in policy debates and discussions, they often refer to a broader definition of market liquidity: they add the *idea that a liquid market is one that allows securities to be sold at an "appropriate" price.* We refer to this as “appropriate price liquidity”. As we discuss below, using this broader definition of market liquidity which includes both Trading and Price liquidity creates serious problems for the coherence and meaningfulness of mainstream discussions:

---

<sup>9</sup> In chapters 13-15 of the General Theory, Keynes broadened the concept of liquidity to apply not just to markets but to financial assets themselves. In his discussion of “liquidity preference” Keynes defined money and other short-term financial assets such as Treasury bills to be liquid because they can be sold quickly *without a significant capital loss.* We refer to this as Safe Haven Liquidity. Long-term assets such as bonds and stocks are inherently illiquid under this definition because they can suffer a substantial capital loss at sale. See the Appendix below for more detail.

under this definition, almost any requirement for financial market efficiency can appear in the implicit definition of liquidity.<sup>10</sup>

In some discussions, the concept of liquidity is defined even more broadly to include in the concept funding liquidity, trading liquidity, and appropriate price liquidity, as well as a fourth concept: Safe-Haven liquidity.<sup>11</sup> For Keynes, this concept plays a key role in defining what money is: a safe asset that can be bought and sold easily with no loss of value or risk. As we show in Crotty and Epstein (2013), according to Keynes, money plays a key role in underpinning all other forms of liquidity in the financial system. In recent concerns over the lack of so-called riskless assets in the global economy, this issue has come to the fore in mainstream discussions as well. (IMF, 2012, Ch. 3)

The difficulty in interpreting claims about “liquidity” is that the mainstream economists slip back and forth seamlessly using various combinations of these concepts, even though they do not coherently work with their underlying theory and have very different meanings and implications. In what follows, we will be discussing mostly the issue of market liquidity, which often entails only the concept of trading liquidity in mainstream theoretical discussions, but often slide into appropriate price liquidity as well when mainstream economists discuss narratives about actual events or make claims about policy issues. But be prepared for some reference to even broader notions of liquidity (funding liquidity and safe haven liquidity) when connecting these concepts to liquidity cycles and macroeconomic instability.

#### *Market Liquidity: Trading-Liquidity and Appropriate Price Liquidity*

As discussed above, much of the mainstream discussion of the dangers of financial regulation focus on the issue of market liquidity. But as we discuss below, their definition of

---

<sup>10</sup> See the appendix at the end of the chapter for more detailed discussions of liquidity definitions and for a comparison of mainstream and Keynes-Minsky notions of liquidity.

<sup>11</sup> See for example the following: ). In an article on the relation of liquidity and leverage, two New York Fed economists make the following statement: "Our findings also shed light on the concept of "liquidity" as used in common discourse about financial market conditions. In the financial press and other market commentary, asset price booms are sometimes attributed to "excess liquidity" in the financial system. Financial commentators are fond of using the associated metaphors, such as financial markets being "awash with liquidity," or liquidity "sloshing around." However, the precise sense in which "liquidity" is being used in such contexts is often left unspecified" (Adrian and Shin, December 2010, p.3). The concept of liquidity used in the article is virtually synonymous with the demand for securities itself.

market liquidity is fuzzy and even incoherent. This is especially true when they slip in the idea of the “appropriate price” for a security in their broader definition of market liquidity.

What is the “appropriate” price of a security? The answer depends crucially on the assumption used in the theory about the character of agent expectations of future states of the economy. In their formal mathematical models of financial markets, mainstream economists usually assume “rational expectations” in which the stochastic distributions of future cash-flows associated with all securities are predetermined and known by agents prior to their decisions to buy or sell securities. Thus, future cash-flows cannot be affected by the agent portfolio selection decisions that co-determine the equilibrium prices of securities. Rather, equilibrium security prices are determined by pre-given agent preferences over risk and return in conjunction with pre-determined expected future cash-flows. Of course, the only way agents could know the probability distributions that describe future states of the economy is if the future was already determined prior to current agent choice. This logically implies that current decisions cannot affect future outcomes, a peculiar feature of a theory that claims to be micro-founded. Mainstream theory asserts that market prices set in competitive financial markets are the equilibrium price. Thus, in this theory, by assumption, markets are never wrong.

In KM theory, the processes that determine prices are more complex. No claim is made that actual market prices are either optimal or equilibrium prices. They simply are what the forces of supply and demand at any moment force them to be. Moreover, prices move endogenously, they are not predetermined by exogenous expectations and preference functions. Rather, the processes that determine prices are path dependent. As discussed in more detail in section III, the entry point for this theory is the assumption of fundamental uncertainty. In contrast to neoclassical theory, KM theory insists that because the future does not yet exist and is not yet determined, it cannot be known in the present. The assumption of “rational expectations” is itself considered to be irrational because there is no possible way agents can achieve knowledge of the future. Deprived of certain knowledge of the future, KM agents have to rely on guesses or hunches about future states of the economy based on heuristics and social conventions. Their expectations are normally strongly influenced by the extrapolation of price movements from the relevant past. Agents know that expectations thus formed are not the “truth”

about the future, and their confidence in the reliability of their expectations changes over time. These fallible expectations, along with endogenously-changing attitudes toward risk, strongly influence the level of current security prices.

When markets are booming, agents tend to extrapolate the rate of growth of security prices, reinforcing the boom's forward motion. However, boom-era expectations eventually outrun the economy's ability to generate cash flows. As Keynes argued in chapter 22 of the *General Theory*, booms must eventually end, and they often end in panics and crashes, but post-crisis depressed financial markets eventually recover and at some point begin to boom again. The result is recurring financial cycles around a variable trend, a pattern that can be discerned in the historical record of financial markets. Thus, in theoretical discussions (as opposed to when they bring up narratives or talk about policy issues) neoclassical financial theory can focus solely on the narrow dimension of market liquidity (that is, trading liquidity) because the appropriate price is assumed to be the pre-determined optimal price and markets are always assumed to be in equilibrium.

KM theory, by contrast, must address the broader dimension of liquid markets - what determines the price at which a security can be sold? The short answer is the demand for securities, which depends on endogenously-determined expectations and risk-preferences as well as the confidence investors have in their expectations.<sup>12</sup> KM theory's explanation for the "appropriate price" is that at any moment in time the current price is determined by the relative strength of bull and bear forces in an ever-evolving market process. This price has no optimality property whatsoever.

A key implication of this viewpoint for our discussion of liquidity is that the mainstream economists claim that investment bank regulations such as the Volcker rule reduces liquidity and this creates inefficiency, because they simply assume that security prices are at their fundamental (optimal) levels. In this world, regulations over liquidity cannot improve the pricing of securities by definition. So there is absolutely no room to argue that restrictions on investment banks'

---

<sup>12</sup> Since the volatility of the demand for securities is typically much greater than that of the supply of securities, it is not unreasonable to argue that, to a first approximation, changes in demand determine security price movements.

speculative liquidity creation through proprietary trading, for example, can actually improve the quality of security pricing, say, by lengthening the horizons of effective investor expectations.

With self-contradiction, however, although mainstream theory insists that markets always get prices right, when mainstream economists engage in policy debates in the business and financial press or on television during periods of financial stress, their concept of liquidity is broadened to include the appropriate demand for and price of securities - though no one tells the reader that the definition of market liquidity used in canonical theory has been augmented to include appropriate price liquidity. Equilibrium theory fades from the scene. Mainstream economists now fret about the chaos of market disequilibrium processes, while Keynesians understand that the current turmoil is simply a normal phase of markets that have no stable equilibrium in any case. Apparently, we are all Keynesians in a financial crisis because everyone acknowledges that security prices are driven by a sense of uncertainty and unpredictability, and by a “fear” of capital loss that is the product of emotion as much as analysis. When financial markets are in distress, securities can usually be sold quickly at low transactions cost, but only at a price that is well below recent levels and falling. Even when Trading Liquidity is perfect, economists inevitably say that *liquidity is inadequate, or has "frozen" or "evaporated"* because the current price is widely believed to be low relative to something - to some vague notion of market “fundamentals.” In these times, Market liquidity depends both on Trading Liquidity and Appropriate Price Liquidity. Mainstream economists cannot explain what the "appropriate" equilibrium price *is* at any point in a crisis; they only know it should be much higher than it is, and high enough to erase much of the capital loss caused by the market downturn.

When markets crash, many mainstream financial economists demand that the Federal Reserve take aggressive policy actions to raise liquidity levels, by which they mean increasing the demand for and the price of securities (lender of last resort actions). These economists clearly believe that in a crash, markets have gotten prices seriously wrong and they cannot self-correct, an idea that has no place in the canonical mainstream models of financial markets. Note the asymmetry here. When security prices are rising rapidly, few financial economists demand that the Fed reduce liquidity in order to lower prices or at least slow their growth, because they believe that markets know best. But when prices go into free-fall, there is a veritable chorus of

demands by economists that the Federal Reserve sharply increase the level of liquidity, defined now as the demand for securities in order to raise prices substantially above current market levels because markets have gotten prices wrong. Apparently, neoclassical economists really believe that markets make mistakes, but only in one direction.<sup>13</sup>

Thus, when economists discuss real-world financial markets, their definition of liquidity almost always includes its effect on the demand for securities and thus on the price of securities. However there is a serious problem with the usefulness of mainstream financial market theory in policy discussions. Mainstream models define the appropriate price as their model's equilibrium price, but key elements in those models, such as investor expectations and utility functions, have no observable empirical counterpart. It is therefore not possible in principle to tell whether market prices are or are not appropriate prices as defined by theory. In policy discussions, then, mainstream economists in effect assert that markets get prices right except when they don't. Thus, when prices are either stable and acceptable to the average investor, or when they are rising, markets are presumed to get prices right. But when they are stable but disappointing to investors or are falling rapidly, prices are wrong.

The switch from the theory of policy to real-world policy debate reveals a schizophrenia that infects mainstream financial economists. They insist that because neoclassical models of optimal equilibrium financial markets are the whole truth and nothing but the truth, serious government regulation and intervention will destroy market efficiency. Yet when financial crises appear, as they inevitably do from time to time, they insist that markets must be rescued by the government from their self-destructive behavior. This schizophrenia is not surprising. Neoclassical financial market theory is an unrealistic, ideologically-based theory whose flaws can be hidden from regulators and the public during market booms but are exposed for all to see when markets fail, as they did so catastrophically after 2007.<sup>14</sup> No one should accept arguments made against the Volcker Rule or any other proposal to strengthen market regulation that are

---

<sup>13</sup> Consider this example of this phenomenon. In a *Wall Street Journal* article titled "Liquidity" written at a time of financial market distress in late 2011, the authors rely on a broad definition of liquidity that includes Trading Liquidity and Price Liquidity. "The problem is a lack of liquidity - a term that refers to the ease of getting a trade done *at an acceptable price*" (October 18, 2011, emphasis added)

<sup>14</sup> For a discussion of methodological flaws in neoclassical financial market theory, see Crotty 2011.

grounded in canonical neoclassical theory. KM theory, on the other hand, is based on realistic assumptions and can explain both boom and bust as inherent phases of endogenous financial market processes. It is the theory that should be used to evaluate proposals to strengthen financial market regulation. This becomes even clearer when we consider the second part the “liquidity defense”: the issue of “price discovery”.

What about price discovery? In the informal narrative in which efficient financial market theory is embedded, though rarely in the formal models used in the theory, there are discussions of the process through which these optimal equilibrium prices are "discovered" by the market. In these fairy tales, professional arbitrageurs, such as hedge funds and investment banks, "find" the predetermined equilibrium price when markets are temporarily out of equilibrium or when the equilibrium position changes.<sup>15</sup> If irrational or ill-informed investors push prices away from equilibrium, or if unexpected news leads to a different equilibrium, savvy professional investors who are, in the theory, rational and fully-informed about future security cash-flows, have a profit incentive to push them back toward equilibrium. The process of disequilibrium arbitrage in such narratives does not affect equilibrium prices, it just uncovers or discovers them.

KM theory takes a polar opposite position on this issue. It argues that market activity cannot “discover” pre-determined security prices *because they do not exist*. There is no knowable future out there in the present that can fix prices. Rather, the ever-changing relative strength of bulls and bears operating in an environment of fundamental uncertainty *determines or creates security prices* with no optimality properties at all. Buying and selling in the market that is driven by endogenously-changing expectations and an endogenously-changing level of agent risk-aversion alters the “appropriate” market price of securities. Prices are what they are because they balance the supply and demand for securities at the current instant. In other words, investment banks and other large financial actors are potent *creators*, not discoverers of asset prices.

---

<sup>15</sup> Some of the reasons why these stories are fairy tales and not realistic descriptions of market processes are contained in noise-trader theory (which is prefigured by arguments made in chapter 12 of the General Theory) and rational-bubble theory. The main reason is contained in Keynes’s theory of decision making under uncertainty.

Two important conclusions related to the debate over financial regulation and reform can be drawn from this discussion. First, in realistic theory, the buying and selling of securities by investment banks, hedge funds, and other institutional agents in pursuit of proprietary capital gains and various forms of fee income not only creates and sustains market liquidity, *it simultaneously creates and sustains market bubbles while building the preconditions for market crashes*. As noted, these institutions also facilitate gambling by others and create the innovative products and service around which speculation often takes place. They facilitate excessive speculation and volatility creation, not equilibrium price discovery. Such behavior helps to provide the rationale for regulations such as the Volcker Rule.

Second, Keynes convincingly argued that a high degree of trading liquidity is a necessary though not sufficient condition for speculative booms and busts to become inherent endogenous characteristics of financial markets. If agents had to pay large transactions costs and wait for a substantial period of time before they could sell financial assets, and if they had no assurance they could sell without suffering a substantial capital loss, speculation and financial market volatility would be much lower than the historical record shows it to have been.<sup>16</sup>

In the rest of this section we consider the Keynes-Minsky approach to understanding the nature and impact of liquidity in financialized capitalism. After an important methodological discussion, we consider first the K-M approach to understanding the role of liquidity in generating financial cycles; we then discuss the views of John Maynard Keynes on the issue of financial market liquidity and its effect on financial market efficiency and capital accumulation, focusing on Chapter 12 of the *General Theory*. Whereas mainstream financial economists and the representatives of giant bank conglomerates argue that maximum market liquidity leads to maximum financial market and real-sector efficiency, Keynes believed that maximum liquidity leads to maximum financial market instability and an unstable real sector with chronically high unemployment rates. Furthermore, Keynes considered the “liquidity dilemma”: in the end, he argued that the “fetish of liquidity” was so dangerous that most capital investment should be disconnected from financial markets and placed under the direct control of government

---

<sup>16</sup> Of course, illiquid markets might also have lowered the average rate of capital accumulation over long periods since they can substantially raise the cost of capital. This is the “dilemma” - Keynes's word – presented in the introduction.

institutions. This is what Keynes meant when he argued in the last chapter of the *General Theory* that economic efficiency would be best served by the “socialization of investment.” These policy implications Keynes drew from his evaluation of market liquidity are contained in the final section of the chapter.

### **III. Keynes and Minsky on Endogenous Instability in Financial Markets and the Role of Investment Banks in Liquidity Cycles**

#### *Methodological Concepts of Keynes and Their Implications for Understanding Liquidity*

To understand Keynes views on liquidity and what is wrong about the mainstream views, it is important to understand some key aspects of Keynes’ methodology in the *General Theory*. The revolution in macro theory presented in the *General Theory* is built on two major innovations. The first, familiar even to undergraduate students, is that Keynes rejected the dominant classical theory that free-market forces keep the economy tethered to full capacity supply, while aggregate demand adjusts to aggregate supply automatically. The second innovation is somewhat less well known and is rarely emphasized in either graduate or undergraduate courses. Keynes built his macro theory on the assumption that the future is fundamentally uncertain and therefore unknowable in the present. Mainstream theories, to the contrary, assume that agents either know the true probability distributions that will generate future states of the economy ("rational expectations"), or at least believe they know them (as "subjective" probability distributions) even though such knowledge cannot possibly be available to them in the real world.<sup>17</sup>

---

<sup>17</sup> Keynes thus raises key questions about the very meaning of “rationality” in the theory of agent choice. In mainstream theory agents have probabilistic knowledge of future states of the economy that is in fact complete and correct (as in “rational expectations” models of New Classical theory) or is believed by the agent to be complete and correct (as in the subjective probability models used in most neoclassical theory) whether it is in fact correct or not. Agents are thus assumed to have a known objective function (at least implicitly assumed not to change in the time that elapses from when a choice is made until the outcome is determined) and complete knowledge of the relation between choice and outcome. An agent is rational if she performs the optimization math correctly and irrational if she does not. If we replace the obviously unrealistic perfect-knowledge assumption used in these theories with Keynes’s obviously correct assumption of fundamental uncertainty, mainstream theories have absolutely nothing to say about rationality in agent choice; they have assumed the problem away. For an extensive analysis of Keynes’s approach to decision-making under fundamental uncertainty, see Crotty 1994. For a discussion of the issue of agent rationality in the *General Theory* see O’Donnell 1988.

This perspective on fundamental uncertainty plays a key role in Keynes' discussion of the nature and impact of liquidity in various parts of the *General Theory*, including in Chapter 12. Chapter 12 of the *General Theory* analyses the factors that determine the demand for long-term capital goods. This is, thus, a key terrain of Keynes' dilemma. To decide whether to invest in a particular capital good, a firm must form expectations about the profit that will be generated by the investment over its expected life. Keynes explained why, in an environment of uncertainty, firms are forced to rely on social and behavioral conventions to formulate expectations of the future states of the economy that will determine the profit rate on investment projects. He used a rather simple assumption about expectations formation as the basis for an analysis of the effects of uncertainty on investment spending. (In his 1937 article in the *Quarterly Journal of Economics* defending the *General Theory* against several critics and in other writings, Keynes presented a more complex view of conventional expectations formation.) Keynes said: "In practice we have tacitly agreed, as a rule, to fall back on what is, in truth, a *convention*. The essence of this convention ... lies in assuming that the existing state of affairs will continue indefinitely, except in so far as we have specific reason to expect a change." (152) Earlier in the chapter Keynes made the same point: our usual practice is "to take the existing situation and to project it into the future, modified only to the extent that we have more or less definitive reasons for expecting a change." (148)

Since agents are aware that they do not know the future, they can never have complete *confidence* that their expectations will be correct. This means that their decisions will be affected both by their best forecasts and by the degree of confidence they have in the usefulness or validity or reliability or truth-content of these forecasts – "on how highly we rate the likelihood of our best forecast turning out quite wrong" (Keynes 1973, p. 148). "The state of confidence is relevant," Keynes said, "because it is one of the major factors determining ... the investment demand schedule." (149) It would be reasonable to assume that the longer that conventionally-formed expectations served investors well, the more confidence they would place in these expectations, and conversely. Note that for Keynes, optimism and confidence are not used as synonyms, which is often the case in the literature. One can have a great deal of confidence in a very pessimistic forecast, as would be common in the depths of a long depression.

Keynes's assumption about the construction of expectations and confidence over time in an uncertain environment is the foundation of Keynes's and Minsky's theories of endogenous

financial cycles. Agents are assumed to believe that "the existing state of affairs will continue indefinitely" or "will take the existing situation and ... project it into the future" except if there are concrete reasons not to do this. *This assumption generates endogenous change in expectations and confidence, and therefore in the demand for and price of securities.*

This interacts with liquidity generation to help generate cycles. It also implies an endogenous dynamic in the demand for capital goods by firms. Keep in mind that "the existing state of affairs" does not necessarily imply that agents expect a steady state. The existing state of affairs may be a situation in which stock prices have been rapidly rising for some time. In such conditions, Keynes argues, investors are likely to assume this trend will continue, unless there are specific reasons not to do so. The longer it continues, the more confident they become that the future will see a continuation if not acceleration of this trend. Increasing optimism held with increasing confidence will help this trend continue. In the stock market booms of the late 1920s and late 1990s in the US, an almost universally-held expectation developed that the rapid capital gains of the recent past would continue in the future. Similarly, if the achieved profit rate on capital investment has been rising rapidly for several years, firms are likely to assume it will continue to do so - except if there are concrete reasons to expect a change in performance. Since upswings in capital gains and the profit rate can never be sustained forever, booms are eventually self-destructing. As we show in the next part of this section, Keynes believed that excessive or inappropriate liquidity feeds these cycles, and this helps to explain why more liquidity is not always better.

### *Keynes-Minsky Theory on Liquidity and Endogenous Liquidity Cycles*

As we just described, the entry point for KM financial market theory is fundamental or Keynesian uncertainty. Minsky improved Keynes's treatment of the implications of agent choice under uncertainty in two ways. First, he stressed the dependence of businesses on borrowing to finance capital investment in the expansion, and thus on the danger posed by increasing leverage as the expansion loses steam. Investment booms leave in their wake an increasingly tight web of interest payment and principal repayment commitments on the part of investing firm. If profits do not meet the optimistic expectations formed in the upbeat environment of the mid-expansion, investing firms may find themselves in financial distress. Both Minsky and Marx emphasized the importance of the effect of heavy borrowing in a boom or in a longer-term era of financial

buoyancy on the balance sheets of borrowers. This is reflected in Minsky's emphasis on "financial fragility"- a condition in which balance-sheet financial commitments become so large relative to current cash-flows that any substantial fall in profits or in household incomes can create financial distress, forced deleveraging and even waves of insolvency. Second, Minsky put equal stress on the effects of uncertainty on decision-making by financial institutions and real-sector firms.<sup>18</sup> When business firms want to increase borrowing to fund investment in the optimism of the boom, banks are likely to believe it is safe to make large corporate loans because they share their conventionally-determined optimistic outlook. Given optimistic expectations of future prices, buying securities previously seen as risky will seem like a reasonable decision. As the boom proceeds and optimistic expectations are shown to be justified, buying and creating securities with borrowed money will also seem reasonable.

In addition to optimistic expectations in an expansion, investment bank top executives, traders and salesmen have bonus-driven incentives to maximize firm revenue by maximizing bank risk and leverage.<sup>19</sup> Rising investment bank proprietary investment as well as increased loans to other institutional and individual investors helped drive the recent financial boom forward, raising overall leverage while raining capital gains on investors. The heaviest rain falls on the most aggressive investors, which leads most agents to believe either that risk is objectively low or that risk-taking brings much higher rewards than it used to. Risk-assessment and risk-preference are endogenous. When risky behavior is being highly rewarded, fear of risk declines and conversely.

*Liquidity, broadly defined to include trading liquidity plus appropriate price liquidity (as the demand for securities), rises endogenously in a boom; funding liquidity also typically expands; eventually almost anyone can sell securities for more than they paid for them.* In the terms of our earlier discussion, the "appropriate price" increases as the boom proceeds. Neoclassical economists assure investors that each new price is the optimal equilibrium prices. Leverage rises as well because borrowers, lenders and financial market regulators come to

---

<sup>18</sup> As noted above, Keynes argued that financial market booms require optimism on the part of both market investors and the brokers who lend them money to speculate with.

<sup>19</sup> For a detailed analysis of the role of perverse incentives in the ongoing financial crisis, see Crotty 2009 at <http://www.umass.edu/economics/publications/2009-13.pdf>.

believe that leverage is not as risky as it used to be in today's efficient financial markets. Interest rates remain low through much of the boom, and credit is available even to agents previously considered to be bad credit risks.

There is a crucial feedback loop joining the real and financial sectors that is missing in efficient financial market theories. Rising security prices in the boom increase the value of individual and institutional agents' assets and net worth. This increases the amount of debt they and their lenders believe they can 'safely' hold, and thus increases their borrowing power just as conventional definitions of adequate safety margins become less stringent. *Investment banks experience this cyclical change.* As Taylor (this volume) shows, rising security prices raise investment banks' net worth and lower their leverage ratio. (also see Adrian and Shin, 2010). This allows these banks to increase their own borrowing and use the additional funds to either lend to others to purchase more securities, or to purchase securities themselves as proprietary investments or as added input into their securitization business.

Since every long-term financial boom is accompanied by the widespread belief that we have entered a "new era" in which the forces that ended all previous booms are no longer operative, the current boom, if it lasts long enough, eventually comes to be seen as permanent. A near-universal belief develops that high yields previously achievable only by accepting high risk can now be gained safely.

As both Keynes and Minsky stressed, market ebullience cannot go on forever. As a boom matures, the economy becomes "financially fragile" due to the buildup of balance-sheet commitments. *At some point, the economy becomes unable to generate the cash flows needed to sustain euphoria-inflated financial asset prices.*

As financial institutions retrench in the face of rising risk, interest rates rise and defaults jump. Fear of higher default rates will cause interest rates to rise further, and credit for riskier agents to be eliminated.

As the market for suspect securities collapses, borrowers will be forced to sell ‘sound’ securities, which will spread the crisis across markets. Mainstream models of efficient financial markets assume both that Trading Liquidity is perfect and that securities can always be sold at their market-clearing equilibrium price (Price Liquidity is also perfect). But in a financial downturn, few agents want to buy suspect financial assets, so they can only be sold at fire-sale prices as liquidity broadly defined evaporates. Watching their own asset values and their capital shrink, financial institutions will be less willing to loan to corporations, households *or each other*.

Both the causes of the recent financial boom and the destructive downward dynamics of the subsequent collapse can be explained by KM theory because its assumption set adequately reflects the endogenous forces that bring instability to financial markets. On the other hand, the assumption set used to construct canonical neoclassical financial and macro models makes such endogenous instability impossible. Neoclassical theory cannot explain the instability we have observed recently nor the role of endogenous liquidity creation that facilitated it: it is a theory in which market dysfunction is impossible, and markets and liquidity provision are *always* efficient.

Investment banks are a major force in the creation of instability because they are crucial to the provision of trading liquidity that, as Keynes argued, magnifies instability tendencies, and because they are crucial to the creation and subsequent destruction of liquidity broadly defined in financial cycles. In short, in KM theory, financial markets endogenously produce *cycles of liquidity*. Liquidity, or the demand for securities, is excessive in the boom because it generates prices too high to be sustained, and "evaporates" in the downturn, which aggravates the severity of the crash. Keynes-Minsky theory, then, comprehends theoretically the empirically obvious pro-cyclical role played by liquidity creation in financial cycles of the economy (see the paper by Borio which fails to even mention Keynes, and has almost no mention of Minsky (Borio, 2012).

In the next section, we show how Keynes in chapter 12 of the General Theory shows the longer term dangers of private liquidity creation, showing how it can lead to excessive “speculation” and undermine the efficiency of the capital accumulation process. This is where Keynes poses

his “liquidity dilemma”, and raises the question of whether the social benefits of private liquidity provision outweigh the social costs.

#### **IV. Chapter 12 of the *General Theory*: "The Fetish of Liquidity": High Market Liquidity Creates High Investment Instability.**

In chapter 12 of *The General Theory (GT)*, devoted to the “The Inducement to Invest” in capital goods, Keynes analyzed the effect of market liquidity on the behavior of stock prices and, therefore, on the behavior of capital investment spending. His concern, first, is strictly with Trading Liquidity, the ability to buy and sell securities quickly at low transactions cost. Keynes's main conclusion in chapter 12 is that the high degree of such liquidity in modern financial markets, celebrated by economists and market practitioners, in fact causes capital investment spending to be excessively volatile, so volatile that the state should take *direct* control over the lion's share of investment spending.<sup>20</sup>

As discussed in the introduction, Keynes called attention to the liquidity dilemma: necessary long term productive capital is highly illiquid both for society, and, in the 19<sup>th</sup> century, for the investor. With the separation of ownership and control in the 20<sup>th</sup> century, such capital is still illiquid for society as a whole, but the typical modern investor requires liquidity in order to lure him or her to invest in long-term, illiquid capital. This creates a dilemma because the social costs of generating this liquidity, given the structure of modern financial markets, may outweigh the social benefits of generating the long term capital investment.

To explore this dilemma, Keynes introduced his innovative concept of the "marginal efficiency of capital" or MEC, an index of the expected profit rate on new capital goods that emphasized the uncertainty of future profits or cash flows. Minsky and other Post-Keynesians refer to Keynes's two-price model of the cycle. In Minsky's version of Keynes's model, the price of consumer goods is assumed to be set at unit cost plus a markup that covers profit plus administrative expense.<sup>21</sup> But the price that firms will be willing to pay for capital goods depends on the present discounted value of the future cash flows the firm *expects* to earn on its

---

<sup>20</sup> Keynes was concerned not just about the dangerous level of volatility of investment spending, but about the long-term stagnation of investment spending as well. The average growth rate of investment spending in the UK had been too low to generate full employment for several decades. Long-term stagnation is discussed in many places in the *General Theory*. Keynes ties this problem, in part, to excessive demand for liquidity (safe haven liquidity).

<sup>21</sup> See Minsky (1988).

investment over the *expected* life of the capital good. What Minsky called the demand price of capital goods is thus based on expectations and confidence in a world of fundamental uncertainty, as is Keynes marginal efficiency of capital. Thus, the price firms are willing to pay for capital goods may be much higher or lower than the cost of production or supply-price of capital goods, and will, at times, be quite volatile. This difference drives the business cycle.

In chapter 12 Keynes focused on the stock market as the site of determination of real investment demand. He argued that fluctuations in the stock market inevitably create changes in the same direction in the demand for real investment goods. In Keynes's words: "Daily revaluations of the Stock Exchange, though they are primarily made to facilitate transfers of old investments, inevitably exert a decisive influence of the rate of current investment." (151) Much of chapter 12 is devoted to explaining why the modern stock market, and therefore the level of capital investment spending, is subject to periods of substantial instability. He argued that much of this volatility is caused by the interaction of fundamental uncertainty, liquidity, and speculation.

Keynes investigated the "liquidity dilemma" by raising an important question in this chapter: *why are financial investors willing to buy hold risky equity securities whose price behavior over time is so volatile and unpredictable?* There are two parts to Keynes's answer. The first is implicit in his theory of conventional expectations and confidence formation, a behavioral theory that implies that agents' perception of market risk will be low in periods of stable prices and even lower during market bubbles when a confident expectation of rising prices becomes widespread. In ebullient markets, agents come to believe that stocks are not risky investments. The second part of his answer is that the high trading liquidity of the stock market enables investors to believe that in the event that stock prices begin to fall, they can exit the market before prices decline significantly. This makes potentially high-risk investment in stocks *appear* to be a relatively safe investment. Keynes concluded that the liquidity properties of modern stock markets make them dangerously volatile. We examine these two reasons in turn.

Keynes proposed a joint hypothesis to explain why investors are willing to take risky market positions even if they believe that long-term conventional expectations are not reliable. If investors can count on the fact that stocks can be sold quickly and with a low transactions cost, and if most investors rely on conventional expectations and confidence formation over the short-

run, they will normally be happy to buy and hold stocks until a serious downturn begins to develop. "An investor can legitimately encourage himself with the idea that the only risk he runs is that of a genuine change in the news *over the near future*, as to the likelihood of which he can attempt to form his own judgment, and which is unlikely to be very large. For assuming the convention holds good, it is only these changes which can affect the value of his investment, and he need not lose any sleep merely because he has not any notion what his investment will be worth ten years hence." (152-53, italics in original) That is, investors believe that outcomes beyond a relatively short-run future are not relevant to their portfolio investment decision as long as markets remain highly liquid in the narrow sense. If, as Keynes claimed, significant unexpected events that will substantially affect stock prices in the short-run are legitimately considered to be "unlikely to be very large," and investors can sell their stock in an instant at little cost, they may come to believe that aggressive investment strategies that would be very risky if the securities had to be held over the long run are in fact relatively safe. "Investment becomes reasonably "safe" for the individual over short-periods, and hence over a succession of short periods *however many*, if he can fairly rely on there being no breakdown of the convention and on his therefore having an opportunity *to revise his judgment and change his investment position before there has been time for much to happen*"(153, italics added). Even if investors believe that stock prices can be volatile and unpredictable in the longer run, so that not much confidence can be placed in conventional expectations of future stock prices past the short run, Keynes argued that they would still be willing to hold stocks if are convinced that they can quickly exit before stock prices can fall very far in a market downturn.

*It is the very high trading liquidity of the market that permits investors to take comfort in the belief that they can exit quickly, at little cost, and with only a modest capital loss if the market starts to fall.* Of course, if all investors actually did try to exit the market simultaneously, all but the quickest would suffer large capital losses, so that what may be sensible for the individual investor can be disastrous for the investing class.<sup>22</sup> Keynes thus makes the implicit assumption that agents are not conscious of the collective illogic in their position.

---

<sup>22</sup> Financial Times columnist John Kay made a similar observation about investor strategies in a boom. Each is "riding an unsustainable trend in the hope that [he or she] will be clever enough to get out just ahead of the crash." He refers to such dangerous behavior as "tailgating" (Tailgating blights markets and motorways," January 19, 2010).

As a result of high liquidity, Keynes argued, stock market investment "based on genuine long-term expectations is so difficult today as to be scarcely practicable. He who attempts it must surely ... run greater risks than he who tries to guess better than the crowd how the crowd will behave; and, given equal intelligence, he may make more disastrous mistakes. There is no clear evidence from experience that investment policy which is socially advantageous coincides with that which is more profitable." (157)

The problem Keynes is concerned with here is that if most investors are willing to take the high risk associated with stock holdings only because they believe they can exit before the market turns down, *long-term capital investment is being guided by stock market investors with very short-term horizons*. "Investments which are "fixed" for the community are thus made "liquid" for the individual." (153) This is clearly not a good way to determine the long-run capital investment decision, and with it the future trajectory of the economy.

Keynes's view is thus clear: *the stock market would not be so volatile and capital investment would not be so unstable if the stock market was not extremely liquid*.

Financial markets are thus potentially very unstable because the future is unknowable, which makes investors *inevitably* "ignorant" of the future and dependent upon psychological mechanisms to guide their decisions. Volatile expectations are "unreasoning" yet "legitimate" because the information needed to make assuredly-optimal decisions *does not exist*. There are no knowable future fundamentals to guide investor choice. We are outside the realm of "rational expectations" or of the standard neoclassical assumption that economic agents form subjective probability distributions over all future economic states that they believe - irrationally - are the absolute truth about the future.

Keynes then added an early version of noise-trader theory to argue that professional investors, the heroic arbitrageurs of mainstream theory who force prices to their equilibrium values even in the midst of a sea of incompetent investors, cannot set markets right. If short-term speculators are in the process of driving a price above its sustainable level, it makes sense for the pros to buy the security in anticipation of expected capital gains, which only adds to the forces creating disequilibrium. The pros are concerned not with what "an investment is really worth to a

man who buys it "for keeps," but with what the market will value it at, under the influence of mass psychology, three months or a year hence." This "is an inevitable result of an investment market organized along the lines described. For it is not sensible to pay 25 for an investment of which you believe the prospective yield to justify 30, if you also believe that the market will value it at 20 three months from now." (155) Moreover, arbitrageurs don't have enough capital to conduct an ongoing battle with the ignorant herds: "an investor who proposes to ignore near-term market fluctuations needs greater resources for safety and must [if risk averse] not operate on so large a scale, if at all, with borrowed money..." (157).

As a result of high liquidity, Keynes argued, stock market investment "based on genuine long-term expectations is so difficult today as to be scarcely practicable. He who attempts it must surely ... run greater risks than he who tries to guess better than the crowd how the crowd will behave; and, given equal intelligence, he may make more disastrous mistakes. There is no clear evidence from experience that investment policy which is socially advantageous coincides with that which is more profitable." (157)

Thus, stock market and capital investment volatility "is the inevitable result of investment markets organized with a view to so-called "liquidity." *Of the maxims of orthodox finance none, surely, is more anti-social than the fetish of liquidity, the doctrine that it is a positive virtue on the part of investment institutions to concentrate their resources upon the holding of "liquid" securities. It forgets that there is no such thing as liquidity of investment for the community as a whole*" (155) This conclusion is as applicable today as it was in 1936.

In chapter 12, Keynes' furthermore showed that another cost of this fetish of liquidity is excessive and destructive speculation. Keynes defined speculation as "the activity of forecasting the [short-term] psychology of the market" and enterprise as "the activity of forecasting the prospective yield of [real] assets over their whole life." (158) For markets to be economically efficient, the capital investment decision must be guided by enterprise, not speculation. *But as market liquidity increases, "the risk of the predominance of speculation [also] increases."* (159, italics added). The higher the market liquidity, the greater the proportion of speculators in the market. "Speculators may do no harm as bubbles on a steady stream of enterprise. But the

position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes a by-product of the activities of a casino, the job is likely to be ill-done. The measure of success attained by Wall Street, regarded as an institution of which the proper social purpose is to direct new investment into the most profitable channels in terms of future yield, cannot be claimed as one of the outstanding triumphs of laissez-faire capitalism - which is not surprising, if I am right in thinking that the best brains of Wall Street have been in fact otherwise engaged." (159) Keynes concluded that the disastrous consequences of speculation "*are a scarcely avoidable outcome of our having successfully organized "liquid" [financial] investment markets.*" (159, italics added).

Hence, Keynes' liquidity dilemma: liquidity is necessary given the modern organization of private investment in capitalism to facilitate capital accumulation; but the modern, unregulated organization of liquidity undermines and distorts the capital accumulation process.

## **V. Keynes's Radical Policy Remedies for the Problems Created by Excess Liquidity**

What is the solution to the "liquidity dilemma"? Keynes rarely focused on issues of theory that did not have important policy implications. Such is the case with his disquisition on the dangers of excessive financial market liquidity. Chapter 12 discussed three possible ways to reduce or eliminate the deleterious impact of excessive liquidity on the capital investment decision.

First, Keynes believed that the threat posed by excessive liquidity was so serious that he considered a truly radical solution. "The spectacle of modern investment markets has sometimes moved me towards the conclusion that to make the purchase of an investment permanent and indissoluble, like marriage, except by reason of death or other grave causes, might be a useful remedy for contemporary evils" caused by excessive liquidity. "For this would force the investor to direct his mind to the long-term prospects and to these only." The fact that this proposal would entail serious costs as long as investment spending depended on stock prices that would have to be weighed against its substantial benefits would, he said, constitute a "dilemma," a word he used twice in the same paragraph. "The liquidity of investment markets often facilitates, though it sometimes impedes the course of new investments. For the fact that each individual investor

flatters himself that his commitment is "liquid" (though this cannot be true of all investors collectively) calms his nerves and makes him much more willing to run a risk. If individual purchases of investments were rendered illiquid, this might seriously impede new investment, so long as *alternative ways* in which to hold his savings are available to the individual. This is the dilemma" (italics in original, 160) He argued that as long as investors have the option of holding their wealth in the form of safe financial assets like money or Treasury bills or short-term savings accounts, "the alternative of purchasing risky capital assets cannot be rendered sufficiently attractive ... except by organizing markets wherein these assets can be easily realised [sic] for money." (161-62)

In Chapters 13- 15 of the *General Theory*, Keynes focused on the dangers of excessive demand for liquidity in a depression or crisis. This "safe-haven" demand for liquidity when confidence evaporates, creates a barrier to restored capital accumulation and economic growth. Says Keynes, "the only radical cure for the crises of confidence which afflict the economic life of the modern world would be to *allow the individual no choice* between consuming his income and ordering the production of the specific capital asset which, even though it be on precarious evidence, impresses him as the most promising investment available to him." (161, italics added) This would at least "avoid the disastrous, cumulative and far-reaching repercussions of its being open to him, when thus assailed by doubts, to spend his income on neither one nor the other" by hoarding his income in the form of money or other safe short-term asset like Treasury bills, thereby lowering aggregate demand, income and employment. (161) The fact that Keynes considered such a radical policy prescription reflects the depth of his concern with excessive financial market liquidity.

Second, Keynes proposed the imposition of a substantial financial transactions tax, now often called a Keynes tax or Tobin tax, that would respond to the dilemma described above by substantially reducing but not totally eliminating the liquidity of financial markets. Keynes observed that the instability of prices on the London Stock Exchange was of a lesser magnitude than on Wall Street. This was because speculation in London was, in comparison with speculation on Wall Street, "inaccessible and very expensive" due to the "high brokerage charges and the heavy transfer tax ... The introduction of a substantial Government transfer tax on all transactions might prove the most serviceable reform available with a view to mitigating the present predominance of speculation over enterprise in the United States." (160). Since Keynes

believed that, given fundamental uncertainty, excessive liquidity made modern capitalist economies dangerously unstable, the transfer tax would have to be very large indeed to be effective. For recent versions of the financial transactions tax, see the work of Robert Pollin and colleagues. (Pollin, 2012).

Third, in the last paragraph of chapter 12, Keynes presented his preferred policy solution to the twin problems of excessive investment instability and a trend level of investment chronically too low to generate sustained full-employment, problems he believed were created in substantial part by the combination of uncertainty and excessive liquidity. It is a radical solution that reflects his belief that this problem is so deeply-rooted in modern capitalism that no normal set of market regulations is capable of resolving it. Keynes proposed that the government take responsibility for directly controlling the bulk of capital spending. "I expect to see the State, which is in a position to calculate the marginal efficiency of capital goods on long views and on the basis of the general social advantage, taking an ever greater responsibility for *directly* controlling investment..." (164, italics added). This conclusion at the end of chapter 12 is missing from virtually all mainstream literature on Keynes and *The General Theory*. Many economists are familiar with his statement in the final chapter of the book: "I conceive therefore of a somewhat comprehensive socialization of investment will prove the only means of securing an approximation to full employment..." but they tend to dismiss it as a obiter dictum, a marginal note that with no foundation in the body of analysis - even though it is the main policy conclusion of the crucial chapter 12 (378) and similar statements appear on pages 219, 220, 247, 320, 325 and 327 of the book. However, as demonstrated in Crotty 1999, government control over the lion's share of capital investment had been Keynes's central proposed policy tool from 1924 until his death in 1946, conventional wisdom to the contrary notwithstanding. He argued that once the state achieved control over the bulk of capital spending through a "Board of National Investment," the counter-cyclical macro policy that is widely believed to be Keynes's *only* policy conclusion would be dysfunctional and should be avoided.

In Volume II of his 1930 Treatise on Money Keynes offered the following observation on investment instability. "Perhaps the ultimate solution lies in the rate of capital development becoming more largely an affair of state, determined by collective wisdom and long views. If the

task of accumulation comes to depend somewhat less on individual caprice, so as to be no longer at the mercy of calculations partly based on the expectation of life of the particular mortal men who are alive today, the dilemma between thrift and profit as the means of securing the most desirable rate of growth of the community's aggregate wealth will cease to present itself." (145). In 1942 he wrote: "if two-thirds or three-quarters of total investment is carried out or can be influenced by public or semi-public bodies, a long-term programme of a stable character should be capable of reducing the range of fluctuations to much narrower limits than formerly." In 1943 he said: "if the bulk of investment is under public or semi-public control and we go in for a stable long-term programme, serious fluctuations are enormously less likely to occur."

It is astonishing that the central policy conclusion drawn by Keynes that he stated over and over again, including throughout the *General Theory*, disappeared in expositions of and debates about Keynes's theory of economic policy after his death. In any case, it presents a clear and stark contrast to the "liquidity defense" proffered by bankers and their economist friends, and one which heterodox economists working in the tradition of Jane D'Arista should, we believe, take seriously.

## References

Adrian, Tobia and Hyun Song Shin, 2010. "Liquidity and Leverage". *FRBNY Staff Report no. 328*, Revised, December.

BIS, 2011. *Global liquidity – concept, measurement and policy implications*. Report submitted by an Ad-hoc Group established by the Committee on the Global Financial System. November.

Borio, Claudio, Mathias Drehmann, and Kostas Tsatsaronis 2012. 'Characterising the financial cycle: don't lose sight of the medium term!' June.

Crotty, James. 1990. "Keynes on the Stages of Development of the Capitalist Economy: An Essay on Methodology," *Journal of Economic Issues*, Sept. 1990, pp. 761-80.

\_\_\_\_\_. 1994. "Are Keynesian Uncertainty and Macrotheory Incompatible? Conventional Decision-Making, Institutional Structure and Conditional Stability in Keynesian Macromodels." In G. Dymski and R. Pollin, eds. *New Perspectives in Monetary Macroeconomics*. Univ. of Michigan Press: Ann Arbor, 1994. pp. 105-47

\_\_\_\_\_. 1999. "Was Keynes a Corporatist: Keynes's Radical Views on Industrial Policy and Macropolicy in the 1920s," *Journal of Economic Issues*, September, pp. 1-23.

\_\_\_\_\_. 2009. Structural causes of the global financial crisis: a critical assessment of the 'new financial architecture' *Cambridge Journal of Economics*, July, pp. 563-580.

\_\_\_\_\_. 2013. "How bonus-driven 'rainmaker' financial firms enrich top employees, destroy shareholder value, and create systemic financial instability", in *After the Great Recession The Struggle for Economic Recovery and Growth*, edited by Barry Z. Cynamon, Steven Fazzari, Mark Setterfield. New York: Cambridge University Press.

\_\_\_\_\_. 2013. "The Realism of Assumptions Does Matter: Why Keynes-Minsky Theory Must Replace Efficient Market Theory as the Guide to Financial Regulation Policy". *The Handbook of the Political Economy of Financial Crises*. edited, by Martin H. Wolfson and Gerald A. Epstein. New York: Oxford University Press.

Crotty, James and Gerald Epstein, 2013. "Keynesian Vs. Mainstream Perspectives on the Role of Liquidity in Capitalist Economies", Political Economy Research Institute Working Paper.

Crotty, James, Gerald Epstein and Iren Levina. 2010. "Proprietary Trading is a Bigger Deal than Many Bankers and Pundits Claim", SAFER Policy Brief #20.  
[http://www.peri.umass.edu/fileadmin/pdf/other\\_publication\\_types/SAFERbriefs/SAFER\\_issue\\_brief20.pdf](http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/SAFERbriefs/SAFER_issue_brief20.pdf)

D'Arista, Jane. *The Evolution of US Finance; Restructuring Institutions and Markets*. Armonk: NY. ME Sharpe: vol II.

Derman, Emmanuel. 2011. *Models Behaving Badly: Why Conflating Illusion with Reality Can Lead to Disaster, on Wall Street and in Life*. Free Press: New York

Duffie, Darrell. 2012. “Market Making Under the Proposed Volcker Rule”. Stanford University.

International Monetary Fund. 2012. *Global Financial Stability Report*. Washington, DC: IMF. April.

Keynes, John Maynard. 1936. *The General Theory of Employment, Interest and Money*. London: Macmillan and Co.

Keynes, John Maynard. 1930. *A Treatise on Money*. New York: Harcourt, Brace and Company.

Kuttner, Robert. 2011. *A Presidency in Peril*. White River Jct.Vt: Chelsea Green Publishing.

The Financial Crisis Inquiry Commission (FCIC). 2011. *The Financial Crisis Inquiry Report*. Washington, DC: Government Printing Office.

Minsky, Hyman. 2008. *Stabilizing an Unstable Economy*. New York: McGraw-Hill. ( 1<sup>st</sup> Edition: Yale University Press, 1986)

O’Donnell, R. *Keynes: Philosophy, Economics and Politics*, London: Macmillan, 1989.

Oliver Wyman, 2012. “The Volcker Rule Restrictions on Proprietary Trading: Implications for Liquidity”. <http://www.oliverwyman.com/the-volcker-rule-restrictions-on-proprietary-trading.htm#.UM4gNXewWHs>

Pollin, Robert. 2012. “A U.S. Financial Transactions Tax”. *The New Labor Forum*. [http://www.peri.umass.edu/fileadmin/pdf/other\\_publication\\_types/magazine\\_\\_\\_journal\\_articles/Pollin----Fin\\_Transaction\\_Tax\\_for\\_New\\_Labor\\_Forum\\_5-1-12.pdf](http://www.peri.umass.edu/fileadmin/pdf/other_publication_types/magazine___journal_articles/Pollin----Fin_Transaction_Tax_for_New_Labor_Forum_5-1-12.pdf)

Taylor, Lance. 2013. “Liquidity, Leverage, and Financial Instability”, *This Volume*.

Wall Street Watch, 2009. “How Wall Street and Washington Sold Out America.” [http://www.wallstreetwatch.org/reports/sold\\_out.pdf](http://www.wallstreetwatch.org/reports/sold_out.pdf)

## **Appendix**

### **Definitions of Liquidity**

#### *Defining Liquidity*

The meaning and implications of “liquidity” depend strongly on the theoretical framework that is utilizing the concept. Mainstream economists distinguish between *market liquidity* and *funding liquidity*. We call these *M-liquidity* and *F-liquidity*. As the discussion above indicates, market liquidity as used by the mainstream entails two concepts: *Trading Liquidity (T-liquidity)* and *Appropriate Price Liquidity (P-Liquidity)*.

*Funding liquidity (F-liquidity)*, on the other hand, refers to the funding needed for financial investors, brokers and market makers, to hold assets and manage financial inventories, thereby facilitating an “appropriate” demand for securities.

In addition to this, a fourth concept of liquidity that is crucial to Keynes’ analysis is the idea of **Safe Haven Liquidity** or **S-Liquidity**: This refers to Keynes’ argument about demand and needed supply for safe assets to easily buy and hold. This is crucial for Keynes’ argument about the nature of money.

Table 1 below summarizes the meaning and implications of these different concepts of liquidity as developed by the mainstream and within Keynes’ thought.

**Table 1**

**Mainstream vs. Keynesian Views on Liquidity**

<b>Liquidity Type</b>	<b>Specific Type</b>	<b>Mainstream Assumptions and Perspective</b>	<b>Policy Implication</b>	<b>Keynes' Assumption and Perspective</b>	<b>Policy Implications</b>
<b>Market Liquidity</b>	<b>(M-Liquidity)</b>	More is better	Financial Liberalization	Can be destructive after a point	Financial regulation
	<b>Trading Liquidity (T-liquidity)</b>	"immediacy; sell on short notice, small transactions cost, little loss of value	Financial liberalization	can lead to excessive short-termism, mis-allocation of capital	financial regulation, taxes, etc.
	<b>Price Discovery</b>	More liquidity facilitates "price discovery" of pre-determined "fundamental value" of security	Financial Liberalization	This does not exist: prices are created by market forces, not discovered: key role of fundamental uncertainty	Asset prices can be driven into bubbles and crashes or be stable, but they are NOT determined by "fundamentals"
	<b>Appropriate Price liquidity (P-liquidity)</b>	Mainstream policy perspectives implicitly assume that for a market process to be liquid the asset must be sold easily at an "appropriate price"—in practice this means so as not to take a big capital loss. But this is contradictory to assumption that assets sell at their fundamental, pre-determined values.	Undertake policies, such as lender-of-last resort, to maintain demand for securities and prevent "fire sales"	Keynes agrees that some asset prices are more disruptive than others, but, unlike the mainstream view that is contradictory on this, the idea that assets might not sell for non-disruptive prices is consistent with Keynes views on asset price determination processes.  With respect to equities, prices are driven by short-termism and conventions to overcome fundamental uncertainty	lenders of last resort might be necessary at a macroeconomic level, but not necessarily to keep an asset price at a "fundamental value"  Financial Transaction Taxes  financial regulation  Socialize investment decisions

Liquidity Type	Specific Type	Mainstream Assumptions and Perspective	Policy Implication	Keynes' Assumption and Perspective	Policy Implications
	<b>Note on Market Making and Market Makers</b>	Market makers contribute to T-liquidity which facilitates AP-liquidity and price discovery. They do this by holding inventories and taking risks to act as buyers and sellers to provide “immediacy”, i.e., T-liquidity.	Financial liberalization: eg. No Volcker rule; or any restriction on market makers	Market “makers” are speculators just like other market participants. Proprietary trading can add to and withdraw liquidity, and generate price swings, since prices are not predetermined; market makers contribute to price creation, not price discovery.	Regulate market makers; Volcker Rule and other provisions.
<b>Funding Liquidity</b>	<b>F-liquidity</b>	<p>In normal times, seem happy with free market provision.</p> <p>In crisis times, ambivalent and incoherent on this. Concerns raised about maturity mis-match, and panics, but no coherent explanation of why this should be a problem.</p> <p>But the theory is incoherent about why this should be a problem apart from diamond-dybvig games.</p>	liquidity cushions, deposit insurance, LOLR activities, possible regulation of funders	Liquidity provision based on social conventions that are subject to abrupt change. So can lead to panics and bubbles. Excessive funding liquidity can lead to excessive speculation and short-termism	As above.
<b>Safe Haven Liquidity</b>	<b>S-liquidity</b>	All of a sudden, a great concern about whether there are enough safe haven assets. Not clear where this comes from.		Safe haven assets “money” crucial to analysis of demand for risky assets: need safe asset to switch into; facilitates willingness of investors to hold	These add up to argument for more socialized investment to facilitate socially useful capital accumulation

				<p>risky capital, but also facilitates short-term orientation of investors because these investments are seen as highly liquid</p> <p>leads to “anti-social” nature of liquidity</p>	
--	--	--	--	--	--