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# Bretton Woods 1.0: An Essay in Constructive Retrieval

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## Article Abstract

### Bretton Woods 1.0: An Essay in Constructive Retrieval

Robert Hockett

*This Article, a sequel to earlier articles by the author on financial regulation and global finance, retrieves and updates J. M. Keynes's original International Clearing Union plan for what ultimately became the International Monetary Fund ("IMF," "Fund"). Its motives are not antiquarian. The Article argues that our current domestic and global financial troubles alike are best viewed as products of our not having gone something more like that original Keynesian route with the Fund.*

*Part I tells the tale of Keynes's original Clearing Union plan for what was to become the IMF. It emphasizes the plan's basic structure and motivations, as decisively rooted in Keynes's financially oriented re-conception of what subsequently came to be known as "macroeconomic" theory. It highlights in particular the Clearing Union's projected role as an institutional lever through which trading nations could jointly prevent financial-stability-imperiling global imbalances in the form of persistent trade surpluses and deficits, hence safeguard consumer demand and employment globally as Keynes's earlier work had shown possible to manage domestically.*

*Part II traces our and the wider world's recent financial and macroeconomic troubles to our not having adopted something more like the Keynesian IMF. In particular, building on earlier papers, it models our recent spate of recession-inducing asset price bubbles and bursts as collective action problems rooted in chronic, uncontrolled, and apparently uncontrollable tendencies toward excess credit-money in the American financial economy. That oversupply in turn stems in significant part from an excess of global credit-money. And the latter is rooted in massive and still growing industrial overcapacity and consequent trade surpluses enjoyed by a small number of state actors that act "as if" playing by mercantilist monetary rules even when so doing for legitimate reasons – reasons that a Keynesian IMF would preempt.*

*Part III sketches an updated version of Keynes's Clearing Union arrangement suitable for today's international monetary and financial order. In effect, it serves as rough blueprint for a new IMF – a Fund more like the "old" one we never gave a go. And it does so in a manner that makes optimal use of the global financial architecture that we currently have. Part III also emphasizes that something like this new IMF will be prerequisite to global monetary and financial stability, hence to continued "globalization" itself.*

*The Article concludes with a look ahead to next steps in the direction of fully instituting the revived Global Clearing Union plan that it proposes.*

# Bretton Woods 1.0: An Essay in Constructive Retrieval

Robert Hockett\*

## INTRODUCTION: UNBALANCED TRADE, FINANCIAL FRAGILITY, AND A MISSING KEYNESIAN AGENT

It is not uncommon for lawyers, economists, and laypeople alike to hold both the World Trade Organization and the two Bretton Woods institutions – the International Monetary Fund and the World Bank Group – together in thought.<sup>1</sup> Without a doubt many of us freely associate the names of these organs in something akin to Pavlovian fashion: mention one of the three names or their associated acronyms, and the others come quickly to mind. And rightly so. For these three institutions jointly constitute not merely foundational, but fully complementary pillars of our legally constituted global economic order.<sup>2</sup>

Only a precious few specialists, however, appear to be familiar with the details or deliberate design of the complementarities to which I allude, or with the political, financial, and macroeconomic considerations that lay behind them. How many are aware, for example, that the WTO, although not founded until 1994, was originally envisaged *concurrently* with the IMF and the World Bank, half-a-century earlier?<sup>3</sup> And more to my present purpose, how many know that, per one of the two principal blueprints from which it developed – J. M. Keynes’s “International Clearing Union” plan – the IMF was to serve as a central-bank-like *adjunct* to that then-projected ITO, its mission to prevent long-term trade imbalances and the domestic monetary and financial dysfunctions to which those give rise?

Finally, and more generally, how many tend to associate global trade and domestic monetary or financial fragility *at all* in their thinking? My guess is: not many. And again understandably so, since most of these matters seemed safely consignable to monetary historians until just a few years ago.

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\* Professor of Law, Cornell University Law School. Thanks to ... for stimulating discussion and helpful suggestions. Thanks to participants in workshops at Cornell and ..., and to my co-presenters and participants at the Yale conference on Human Rights and Illicit Financial Flows, for much the same.

<sup>1</sup> Hereinafter “WTO,” “IMF” (or “Fund”), and “World Bank,” respectively. Technically, the name “World Bank” refers solely to the International Bank for Reconstruction and Redevelopment (IBRD), which is but one of several associated sub-institutions. But popular usage tends to treat it as naming the full institution, hence I shall do the same here.

<sup>2</sup> See generally Robert C. Hockett, *From Macro to Micro to “Mission Creep,”* 41 COLUM. J. TRANSNAT’L L. 153 (2002) (“*Macro to Micro*”); and Robert Hockett, *Three (Potential) Pillars of Transnational Economic Justice,* 36 METAPHILOSOPHY 93 (2005) (“*Three Potential Pillars*”).

<sup>3</sup> See Hockett, *Macro to Micro*, id. That proto-WTO was designed under the rubric of a projected “International Trade Organization.” Future references herein to the aborted International Trade Organization employ the acronym “ITO.”

But these gaps in our present day habits of thought are now urgently in need refilling. For ours is a time in which systematically informed institutional imagination is prerequisite to our “fixing” both global and, therefore, domestic finance. We simply cannot competently address one without likewise addressing the other – as Keynes foresaw well over half a century ago, and as relatively few since his day appear to have recognized.<sup>4</sup>

I hope, then, with this Article both to retrieve and to update that original vision for the IMF to which I have referred – that of the Fund as WTO-adjunctive, Keynesian Clearing Union. My motives, as just intimated, are not antiquarian. I believe that our current domestic and global financial troubles are best viewed as products of our *not* having gone something more like that original Keynesian route with the Fund. Were the IMF to function more in the way Keynes envisaged, presently WTO-enabled exporting nations and their sovereign wealth funds would need not hoard surpluses, nor would they find themselves inadvertently taking on *rentier* status vis a vis other nations. Nor, therefore, would developed nations, who’s laborers but recently won middle class standing through hard-fought legislation last century, be faced with today’s Hobson’s choice: the choice between domestic deflation, consequent underemployment, and declining living standards on the one hand, debt peonage and uncontrollable bubble-inflationary credit-money supplies on the other.<sup>5</sup>

Here, then, is the plan for the presentation that follows: Part I tells the tale of Keynes’s original Clearing Union plan for what was to become the IMF. It emphasizes the plan’s basic structure and motivations, as decisively rooted in Keynes’s financially oriented re-conception of what subsequently came to be known as “macroeconomic” theory. It highlights in particular the Clearing Union’s projected role as an institutional lever through which trading nations could jointly prevent stability-imperiling global imbalances in the form of persistent trade surpluses and deficits, hence safeguard consumer demand and employment globally as Keynes had shown possible to manage domestically. Part I also explains the political reasons behind much of the Keynes plan’s rejection by the United States in 1944. Those reasons today cut in the other direction – in favor of the Keynes plan – from the angle even of short term pecuniary, let alone long term “enlightened,” American interest. That in turn renders global acceptance of something like the Clearing Union plan achievable today in a way that it was not in the past – or, perhaps, is

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<sup>4</sup> In this connection, the present paper can be viewed as a sequel to Robert Hockett, *A Fixer-Upper for Finance*, 87 WASH. U. L. REV. 1213 (2010); Robert Hockett, *Foreword: Interpreting – and Learning From? – Yet Another “Meltdown,”* 61 SYRACUSE L. REV. 411 (2010) (symposium vol.); Robert Hockett, *Bailouts, Buy-Ins, and Ballyhoo*, 52 CHALLENGE 36 (2009). The latter three address the domestic sources of our recent difficulties; the present piece addresses the global roots of those domestic sources themselves. On Keynes’s early understanding of the linkage, see, e.g., J. M. KEYNES, *A TRACT ON MONETARY REFORM* (1923), more on which *infra*.

<sup>5</sup> More on the relations among these phenomena, and why they jointly constitute a Hobson’s choice, *infra*, Part I. Likewise “debt peonage.” For more on the dilemmas now faced by labor in the developed economies, and new means to defuse them, see Hockett, *Three Potential Pillars*, *supra* note 2; Robert Hockett, *For a Global Shareholder Society*, 30 U. PA. J. INT’L L. 101 (2008) (“*Global Shareholder Society*”); and Robert Hockett, *Just Insurance Through Global Macro-Hedging*, 25 U. PA. J. INT’L ECON. L. 107 (2004) (“*Global Macro-Hedging*”).

liable to be in the not distant future. For the U.S. now has both the incentive and, for the time being at least, the influence to see such a plan through.<sup>6</sup>

Part II traces our and the wider world's recent *financial* troubles in principal measure to our *not* having adopted something more like the Keynesian IMF at Bretton Woods. In particular, building on earlier papers,<sup>7</sup> it models our recent spate of recession-inducing asset price bubbles and bursts as collective action problems rooted in chronic, uncontrolled, and apparently uncontrollable tendencies toward excess credit-money in the American financial economy.<sup>8</sup> That oversupply in turn stems in significant part from an excess of *global* credit-money. And the latter for its part is rooted in massive and still growing industrial overcapacity and consequent trade surpluses enjoyed by a small number of state actors that act "as if" they were playing by mercantilist monetary rules even when so doing for legitimate reasons – reasons that a Keynesian IMF would preempt.<sup>9</sup>

Sustained surpluses of the sort to which I allude are just what Keynes's 1940s-era Clearing Union plan was meant both to render unnecessary and to prevent, precisely in order to safeguard domestic control of internal credit and monetary conditions in the interest of maintaining full and stable employment and economic growth. For Keynes in the 1930s had shown domestic credit-money control to be crucial in the management of otherwise pathologically "bipolar" financial and, therefore, business and employment cycles. In consequence, Part II concludes, if WTO-facilitated cross-border trade is to remain open, reform

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<sup>6</sup> As Part I explains, it is no accident that the Keynes plan was favored in 1944 by Britain, which at war's end could anticipate net debtor status for decades to come. Nor is it accidental that the United States, then facing net surplus status into the indefinite future, was less enamored of that plan at the time. The United States today, by contrast, occupies a position much like that occupied by Britain then, with the happy difference that there is currently no dominant transnational actor able to dictate terms to it as the United States was able to do to Britain in 1944. I conclude we are faced with a rare – and perhaps fleeting – opportunity at present: a case in which the still dominant power is apt to find currently congenial a plan that in fact is the best plan for all in the long term.

<sup>7</sup> The argument builds especially on Hockett, *A Fixer-Upper for Finance*, supra note 4; but also on Hockett, *Macro to Micro*, supra note 2. It can also be seen as the latest in a series of pieces that I have devoted to designing new institutions, or reconfiguring old ones, in the interest of rendering the global economic order more just and sustainable. See Hockett, sources cited supra, notes 2 and 5. Also Robert Hockett, *Promise against Peril: Of Power, Purpose, and Principle in International Law*, 17 ILSA J. INT'L & COMP. L. \_\_ (2011); Robert Hockett, *Human Persons, Human Rights, and the Distributive Structure of Global Justice*, 40 COLUMBIA HUMAN RIGHTS L. REV. 343 (2009); Robert Hockett, *The Limits of Their World*, 90 MINN. L. REV. 1720 (2006); Robert Hockett, *Justice in International Trade-Liberalization: A Proposed Framework for Analysis*, CARNEGIE COUNCIL GLOBAL SOCIAL JUSTICE PROGRAM at [http://www.cceia.org/resources/articles\\_papers\\_reports/5359.html#3](http://www.cceia.org/resources/articles_papers_reports/5359.html#3) (2006); Robert Hockett, *Institutional Fixes versus Fixed Institutions*, 39 CORNELL INT'L L. J. 537 (2006); Robert Hockett, *From "Mission-Creep" to Gestalt-Switch: Justice, Finance, the IFIs and Globalization's Intended Beneficiaries*, 36 GEO. WASH. INT'L L. REV. 167 (2005).

<sup>8</sup> The term "credit-money" reflects the role of bank credit, as ultimately backstopped by the central banking authority – in the United States, that's the Fed – in constituting the broader money supply. More on this infra, Parts I and II.

<sup>9</sup> The legitimate reasons, we'll see, have to do with self-insurance against capital flight of the 1990s variety, which foreign exchange reserves – especially dollars – enable. The illegitimate reasons, we'll also see, have to do with the export of domestic underconsumption problems endemic to all decentralized capitalist economies once they move past subsistence level production. I elaborate on the latter infra, Part I.B, and on the former infra, Part II.B.

or supplementation of the IMF along something more like the original Keynesian lines will be a prerequisite to its long term sustainability. For such reform is prerequisite to effectiveness on the part of domestic monetary authorities in doing what they must do to avoid future financial manias and meltdowns: that is to maintain a modicum of price stability not only in consumer goods markets, but in money and investment markets as well.<sup>10</sup>

Part III sketches an updated version of Keynes's Clearing Union arrangement suitable for today's international monetary and financial order. In effect, it serves as rough blueprint for a new IMF – a Fund more like the “old” one we never gave a go. Part III also emphasizes that something like this new IMF, though a necessary condition for future monetary and financial stability both domestically and globally, is not a sufficient one. For it functions solely as a crucial transnational adjunct to sound *domestic* fiscal and monetary policies pursued by state actors. On the other hand, Part III argues, the proposed “new/old” IMF *will* suffice of itself to treat *other* ills, thereby yielding significant side benefits. Conspicuous among these will be ending the ongoing and still-growing debt dependence of some developed economies, notably that of the United States, upon a small number of rapidly growing state actors, notably China and the sovereign wealth funds of some of the petroleum-exporting nations. The “new/old” IMF, then, will offer both direct and indirect benefits, all of them significant in their own right and all of them prerequisites to a balanced, sustainable world economic order featuring stable growth and full employment. On that hopeful note I conclude.

#### I. THE GENERAL THEORY OF (GLOBAL) EMPLOYMENT, INTEREST, AND MONEY – AND WHAT TO DO ABOUT IT

It is reasonably well known that Maynard Keynes, on secondment to the U.K. Treasury during the Second World War, had a hand in designing and establishing the IMF. What is less widely recognized is how different Keynes's original plan for the Fund was from what ultimately emerged at the Bretton Woods conference of 1944. Likewise less known is how seamlessly continuous were Keynes's original vision of his “Clearing Union” plan for the Fund, developed in the early 1940s, and his view of the functions a nation's government and central bank had to discharge if they would stably manage the domestic economy's endemic business cycles – a view he had developed as theorist, government advisor, and polemicist over the 1920s and -30s. These gaps in popular understanding stem partly from misperceptions both about what Keynes's economic contributions actually were, and about what the often conflicting aims of the U.K. and U.S. for a postwar economic order were. This Part accordingly first characterizes those misperceptions, then endeavors to displace them with a more accurate picture upon which appreciation of the Clearing Union plan's domestic financial significance depends.

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<sup>10</sup> Further elaboration of this necessity is found in Hockett, *Fixer-Upper for Finance*, supra note 4.

## A. “Keynesian Economics” and “Global Keynesianism”: Two Complementary Misconceptions

By a curious irony, “Keynesian economics” has proved to have little to do with the economics of Keynes. Much the same holds of “global Keynesianism” – that set of global economic arrangements instituted primarily on the initiative of the U.S. and, to a lesser extent, the U.K. at the close of the Second World War. “Keynesian economics” and “global Keynesianism” do roughly mesh *inter se*, however, if less than do Keynes’s actual economics and Clearing Union plan. This Subpart accordingly reprises the first pair as rough complements. The next Subpart reprises the second pair as more graceful complements.

### 1. “Keynesian Economics”: Sticky Wages, Protracted Slumps, and Pump-Priming

In the received telling, “Keynesian economics” is the theory of protracted depression, unemployment, and “multiplier”-enhanced government “pump-priming.” What causes garden variety, frictional unemployment to lapse into longer-term slump in this story is labor market failure. Keynes, we are told, traced enduring unemployment to “sticky” wage rates. The latter are said to have prevented employers in Britain during the 1920s, and America during the 1930s, from effectively addressing what otherwise would have been small-scale, transitory contractions in consumer and investment demand by lowering wage costs. Had employers only been able to cut wages, the story continues, they would not have had to cut jobs. The economy would have “bottomed out” and begun “self-correcting” at higher levels of aggregate demand and employment than prevailed in Britain during the 1920s and America during the 1930s, then would have recovered.<sup>11</sup>

Since employers could *not* lower wages and thus effect this happy landing on their own, the familiar story continues, Keynes concluded that it was up to the government in effect artificially to stimulate aggregate demand. Government could compensate for sticky-wage-induced slumps in demand-side expenditure by (a) spending itself, (b) lowering interest rates, (c) increasing the money supply in other ways, or (d) some combination of these. The stimulative effects of such measures would find amplification through a “multiplier effect” first identified by Keynes’s student Richard Kahn and put to good use, in modified form, in Keynes’s 1936 *General Theory*.<sup>12</sup> This would happen as recipients of augmented expenditure made

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<sup>11</sup> As we shall see, this is a strange story to have foisted on Keynes, and not only because Keynes observed wages in fact to have fallen during the periods in question. It is strange also because lower wages reduce aggregate demand just as do layoffs, and it is the structure of this downward spiral itself – which is in the nature of a recursive collective action problem – that Keynes faulted orthodox theory for having missed. Where the classicals posited self-equilibrating tendencies, Keynes found self-reinforcing feedback effects. But more of this in the next subsection.

<sup>12</sup> J. M. KEYNES, *THE GENERAL THEORY OF EMPLOYMENT, INTEREST, AND MONEY* (1936). All cites herein, unless otherwise stated, are to the Harcourt Brace edition, as this is the one to which most people are apt to have

expenditures of their own, the recipients of which would then make expenditures of their own, and so on until the initial stimulus had worked its way through the economy like new blood in an ailing body.<sup>13</sup> In time this would all lead more firms to resume production and hiring again, and full health would be restored.

This is the core of the familiar “pump-priming” account of what passes for “Keynesian economics” today – the brand Keynes’s student Joan Robinson acidly dubbed “bastard Keynesianism.” It dates back to John Hicks’s influential but surprisingly reductive 1937 “IS/LM” representation of the story Keynes densely elaborated in the *General Theory*.<sup>14</sup> Through the efforts of Alvin Hansen and others at Harvard and M.I.T. in the U.S., Hicks’s Keynes emerged as the American Keynes from the late 1940s onward. This “American Cambridge” view differed markedly from that of so-called “Cambridge school” Keynesianism, which, anchored as it was in Keynes’s own academic home, retained more of the original flavor.<sup>15</sup>

Perhaps unsurprisingly, policymakers who followed the “bastard Keynesian” line over the course of the 1960s and -70s – when defense, war, and Great Society spending unfreighted by countervailing tax increases ensured there was no lack of aggregate demand – came ultimately to grief. Their brand of Keynesianism yielded steadily accelerating consumer price inflation, responsive Nixonian wage/price freezes, consequent financial uncertainty and stagnation, and ultimately a growing impression that something had gone badly wrong in both theory and policy. One upshot was the triumph, by the early 1980s, of politicians purporting to follow the teachings of more pre-Keynesian “classically”-oriented and “monetarist” economists. Some of the latter themselves purported to be Keynesians of a sort – just “Keynesians” who’s mission was, among other things, to “unstick” those wages that Keynes had allegedly fingered, rather than compensate for them with government stimulus.<sup>16</sup>

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easiest access. Occasional cites will be to the version published in the Collected Works, edited by Donald Moggridge and published by McMillan, which version includes helpful supplementary material including Keynes’s Prefaces to the German, French, and Japanese translations of the work. For more on the multiplier, see pp. 113-31 of the first mentioned edition.

<sup>13</sup> The magnitude of the multiplier is simply the reciprocal of an economy’s average propensity to save. If on average eight out of every ten dollars received are spent while the other two are saved, then the propensity to consume is four-fifths, the propensity to save is one-fifth, and the multiplier is five. In effect, the multiplier is the limit of the converging series  $1 + .8 + .8(.8) + .8(.8(.8)) + \dots$ , which is 5.

<sup>14</sup> See J. R. Hicks, *Mr. Keynes and the “Classics”: A Suggested Reinterpretation*, 5 *ECONOMETRICA* 147 (1937). It is hard not to attribute Hicks’s adulteration of Keynes’s story to envy. See, e.g., the Preface to Hicks’s *VALUE AND CAPITAL*, published in 1940, in which he expresses consternation at Keynes’s having beat him to publication of ideas that he alleges he entertained too. It must also be said, however, that the uncharacteristically dense prose of Keynes’s own presentation likely played a role here as well. The elegance of Hicks’s much simplified mathematical rendering, published within a year of the *GENERAL THEORY*, would have been seductive against that backdrop.

<sup>15</sup> The venerable Keynes follower Paul Davidson reports that Hicks recanted his “bastard Keynesiansim” in favor of the genuine article toward the end of his life. See PAUL DAVIDSON, *THE KEYNES SOLUTION* 212 (2009).

<sup>16</sup> See, e.g., Milton Friedman, *The Lag in Effect of Monetary Policy*, 69 *J. POL. ECON.* 447 (1961); Milton Friedman, *The Role of Monetary Policy*, 58 *AM. ECON. REV.* 1 (1968); Edmund Phelps, *Phillips Curves*,

Another, longer-term yield of the era that closed with the 1980s was a perception by some that Keynes's economics had been "discredited" by the inflationary 1960s and "stagflationary" 1970s. For Keynesianism was alleged to have viewed stagnation and price inflation as non-compossibles. The mentioned perception, however, was misperception. For what occurred in the U.S. during the 1960s and -70s was precisely the sort of thing Keynes himself had warned against when the U.K. pulled decisively out of slump in preparing for the Second World War.<sup>17</sup> As we shall presently see, Keynes emerges in this sense to have been not only a perceptive diagnostician of what went wrong in the U.K. and U.S. over the decades preceding the War, but also a prescient predictor of much that occurred later – including today.

## 2. "Global Keynesianism": Sticky Exchange Rates, Debtor Adjustment, and Hump-Lending

The received story of putatively shared British and American plans for the postwar economic order partly complements that of "Keynesian economics." In this case tradition has it that the founders of our postwar arrangements were haunted by memories of misguided trade restrictions and competitive currency devaluations undertaken by *de facto* mercantilist state actors during 1920s and 1930s.<sup>18</sup> "Beggars thy neighbor" policies of that stripe had predictably proved self-defeating: they had wrought only contracted aggregate demand and monetary instability as rewards. These developments in turn had intensified domestic recession and political unrest into full-blown depression and social breakdown, culminating ultimately in resentment, *r evanchism*, and war.

The paramount goals of the victorious American and British founders of our postwar economic order, the story accordingly continues, were to prevent future deadweight losses to economic growth of the sort wrought by the trade restrictions and exchange rate instability of the 1920s and -30s.<sup>19</sup> The projected ITO, for which the General Agreement on Tariffs and Trade ultimately had to make do until 1994,<sup>20</sup> was to handle the trade restrictions. It was to do so – and has done so – principally by first converting all such to tariffs, then steadily reducing the latter

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*Expectations of Inflation and Optimal Employment Over Time*, 34 *ECONOMICA* 254 (1967). See also "The Economy: We Are All Keynesians Now," *Time*, December 31, 1965; "Letter: Friedman and Keynes," *Time*, February 4, 1966 (letter from Milton Friedman responding to previously cited article).

<sup>17</sup> See, canonically, J. M. KEYNES, *HOW TO PAY FOR THE WAR* (1940). Also [1938, 1939 papers, in CW]. It is tempting to wonder, in this connection, whether some of the worst excesses of the first half of the last decade might have been avoided had the government employed its new surpluses to pay down the national debt rather than to fund tax cuts to wealthy citizens of the sort who speculate heavily on the financial markets, thereby fueling asset price hyperinflations.

<sup>18</sup> See, e.g., Hockett, *Macro to Micro*, supra note 2 for more detailed exposition of the received tradition on these events.

<sup>19</sup> *Id.*

<sup>20</sup> Because Congress rejected the then-proposed ITO.

through repeated “Rounds” of negotiation. The IMF was to handle the exchange rates. It was to do so – and did so for about 25 years – principally by pegging all national currencies to the dollar, while in turn keeping the dollar convertible to gold at the fixed rate of \$35 per ounce.<sup>21</sup>

The IMF also would lend, as it does to this day, but would do so only on short term, again as today. The goal of such lending would be – and still is – to enable nations whose current account deficits tempted them to devalue their currencies to “adjust” their domestic economies instead. This it would do by affording them member-supplied tide-over financing as they deflated to dampen down import-encouraging consumer demand, while trimming government spending and other putative short-term causes of poor trade performance and weak currencies.<sup>22</sup> It should be noted that this arrangement placed the full burden of adjustment on deficit-running nations. Nations running persistent trade surpluses had nothing to change or apologize for.<sup>23</sup> This attribute, like the return to a version of the old gold standard, placed the 1944 IMF significantly at odds with the Keynes plan – as well as with Keynes’s actual economics – to which we shall presently turn.

The other institution established at Bretton Woods – the World Bank – was for its part<sup>24</sup> to lend on longer terms to assist war-torn countries of Europe in rebuilding their infrastructures. This mandate was effectively sidelined by the Marshall Plan of 1947, as perceptions grew that the ideological struggle against communism in still-destitute Europe would require more ambitious development assistance than the Bank could manage. The Bank’s mission thereafter accordingly shifted to that we all know and love today – financing development in what used to be called “Third World” nations.

Without apparently intended irony, the familiar tale of “Keynesian economics” and Bretton Woods just sketched has been labeled the story of “global Keynesianism.”<sup>25</sup> But while there is plenty that is “global” and even “Keynesian” – in the above described sense – in this story, there is little that is bona fide Keynes. Indeed the narrative hovers uncomfortably near incoherence even on its own terms, as witness the tension between its “Keynesian pump-priming” and IMF-financed “adjustment” – that is, retrenchment – components in particular.

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<sup>21</sup> This had been the prevailing rate just prior to the war thanks to the machinations of President Roosevelt. This is of course all of it not a little ironic – a full global analogue to the irony noted supra, note 12 – in light of Keynes’s celebrated attacks on the gold standard during the 1920s. See, e.g., J. M. Keynes, *Auri Sacra Fames*, in J. M. KEYNES, *ESSAYS IN PERSUASION* (1931). See generally Hockett, *Macro to Micro*, supra note 2.

<sup>22</sup> For more detail, see, e.g., Hockett, *Macro to Micro*, supra note 2.

<sup>23</sup> Id.

<sup>24</sup> Tellingly named the “International Bank for Reconstruction and Development” (IBRD).

<sup>25</sup> See, e.g., GERNOT KÖHLER, *GLOBAL KEYNESIANISM: UNEQUAL EXCHANGE AND GLOBAL EXPLOITATION* (2001); HARTMUT ELSSENHANS, *STATE, CLASS AND DEVELOPMENT* (1996); W. R. Mead, *American Economic Policy in the Antemillennial Era*, 6 *WORLD POL’Y J.* 385 (1989).

For reasons such as these, it would probably be more apt to label the postwar Bretton Woods system an instance of “global bastard Keynesianism.” For essentially the same reasons, this regime came to grief in the same period – and in much the same way – that domestic “Keynesianism” did in the U.S. This was during the early 1970s, when the aforementioned decline in the real value of the dollar – that is, the accelerating consumer and commodity price inflation experienced by the U.S. in this period, along with growing current account deficits – forced President Nixon unilaterally to suspend dollar-gold convertibility.<sup>26</sup> That in turn forced the IMF to move significantly – albeit far from completely – in the direction originally prescribed by Keynes. Keynes had, in other words, proved as prescient about global economic arrangements as he had about domestic ones.

Our next task, then, is to put things to rights where the details of Keynes’s actual economics and Clearing Union plan for the IMF are concerned. Then we will be better placed to appreciate both how closely and deliberately integrated those two things, properly characterized, were, and how detailed grasp of this unity assists diagnosis and cure of the world’s current – and interconnected – trade and financial dysfunctions.

### *B. Keynes’s Economics and Clearing Union: Two Complementary Reconceptions*

It must be a law of some sort: where a proper name is suffixed by “ist,” “ian,” or “ism,” the thing designated by the resulting word becomes the contrary of what the bearer of the original name actually propounded. Just as Marx had to take pains to repudiate “Marxism,” and as the Federalists would do spit-takes could they but witness today’s “Federalist Society,” so Keynes and his followers had to distance themselves from the self-proclaimed “Keynesians.”<sup>27</sup> By much the very same token, Keynes and his followers had ultimately to welcome the upshot of Bretton Woods not as an institutional embodiment of any true global Keynesianism, but as a regrettably compromised first step in the direction whose proper endpoint – Keynes’s Clearing Union – remained quite far distant. The best way to substantiate these claims is first to describe Keynes’s actual economic vision, then to sketch his plan for a global monetary arrangement – a plan fully rooted in that vision.

#### 1. Keynes’s Economics: Investment-Dependence, Financial Fragility, and Countercyclical Collective Action

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<sup>26</sup> As if intentionally to compound the irony, Nixon purportedly said “I am now a Keynesian in economics” in suspending gold convertibility. For more on this, see, e.g., Steven Pearlstein, “Keynes on Steroids,” *Washington Post*, November 26, 2008; “Letters,” *The Nation*, December 1, 2008. Also Hockett, *Macro to Micro*, supra note 2.

<sup>27</sup> It is no accident, moreover, that Keynes said the “Keynesians” were apt to reap hyperinflation. See [letter to Hansen, in CW].

“Keynesianism” to the contrary notwithstanding, Keynes’s economics is *not* – and never was – the economics of sticky-wage-induced depression. It is, rather, an account of what makes long-term underemployment equilibrium in a decentralized monetary economy possible. Sticky wages are not among the causes in question. Indeed if anything, these help maintain purchasing power and thereby retard recessionary slides toward depression. Recession and depression, for their parts, Keynes finds to be rooted in other factors. These other factors, moreover, *also* lie at the root of *inflation and hyperinflation* in consumer goods and asset price markets in Keynes’s story. Keynes is, in other words, symmetrically concerned with both booms and busts, which stand in symbiotic relation to one another in Keynes’s account much as do “yin” and “yang” in at least one venerable cosmology.

What, then, is the set of factors in question, and how do they combine to produce the boom and bust cycle? In a nutshell, Keynes’s is a story of multiple individually rational acts of decentralized economic decision-making, which occur against a backdrop of ineluctable uncertainty, and in consequence aggregate into recursively self-amplifying, collectively self-defeating outcomes. The mentioned individual decisions take the form that they do *because* they occur in the face of ineluctable uncertainty. They aggregate in self-amplifying fashion, in turn, *likewise* because of that uncertainty, as complemented by prices’, hence portfolio valuations’, functional dependence on decentralized market behavior. The resultant aggregation process threatens stable growth and employment in the “real” economy, in turn, for two related reasons: First, because self-amplifying processes are the antithesis of self-equilibrating dynamics, hence stability. And second, because in this case the disequilibrating dynamic in question occurs in an advanced economy ever prone to looming underconsumption, hence an economy in which sustained growth and employment depend upon stable participation in investment markets – but from which markets participants always are able to withdraw at will to hoard money instead.

That is the short-playing version. Here is the story in a bit more detail, which I’ll pitch with a view to assisting intuitive grasp of Keynes’s later vision for an International Clearing Union.

Keynes’s economics begins with what amounts to an accounting identity. An economy’s aggregate income and aggregate output are, effectively by definition, always equal. Aggregate income, in turn, which Keynes also calls “proceeds,” can be partitioned into two basic streams. Some proceeds are consumed, while others are saved. Now comes a critical empirical premise in the Keynesian argument. It is a “psychological law,” Keynes asserts, that as incomes grow, consumption expenditures represent a steadily declining proportion of them.<sup>28</sup> As you earn

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<sup>28</sup> See, e.g., GENERAL THEORY at 96-98. Appeal to this “law” gives the lie to those who have sometimes faulted “Keynesian economics” for lacking “microfoundations.” One who has not fallen into this error, though he has proposed modifying the premise in keeping with a “permanent income hypothesis,” is of course Milton Friedman. See, e.g., Milton Friedman, *A Theoretical Framework for Monetary Analysis*, and *Comments on the Critics*, both in MILTON FRIEDMAN’S MONETARY FRAMEWORK: A DEBATE WITH HIS CRITICS (Robert J. Gordon ed.,

more, in other words, you save not merely a growing amount, but a growing *proportion* of your income. Unlike most microeconomic propositions, moreover, in Keynes's view this one extends without compositional fallacy to the macroeconomic case:<sup>29</sup> a growing economy is one in which savings represent a growing fraction of all income generated by output. A corollary bears noting as well: The wealthier members of any population are apt to consume less than are the less wealthy, proportionally speaking. They are apt to invest, speculate, or hoard more of their earnings or winnings than are the less wealthy. This body of doctrine, the "law of diminishing marginal propensity to consume," is the empirical starting gate for all else that Keynes has to say. It accordingly represents the principal thrust of the first non-preliminary section of his 1936 *General Theory* – Book III, on "The Propensity to Consume." It is anticipated, moreover, as early as 1923, in Keynes's globally oriented *Tract on Monetary Reform*.<sup>30</sup>

As in the case of many an important theoretical milestone, what sets Keynes's economics truly apart is the fuller set of implications it draws from the seemingly banal observation that savings proportionately rise faster than output itself. The first such implication Keynes highlights is that, depending on what an economy's agents do with their savings, that economy's growth is attended by an ever more threatening potential drag. If consumption diminishes as a portion of output over time, and if consumption is the only form taken by income-expenditure, then rational producers and suppliers of consumer goods and services are bound over time to grow increasingly – even self-fulfillingly – anxious.<sup>31</sup> For they will at some point recognize, looking forward, that they are bound to grow less and less able to sell all that they produce or offer. They will know that the incomes generated by their production will not be spent in their entireties on the output, and will in fact be spent in diminishing measure on it – particularly in a monetary economy, in which income is readily hoarded in the form of cash or bank balances.

If the only expenditures in a macroeconomy were on consumption, then, "Say's Law" would be manifestly false in Keynes's view – "supply" would *not* "create [enough of] its own

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1970). It is tempting to trace Keynes's postulating this law back to his studies under Alfred Marshall, the great English "marginalist." For it was a commonplace of marginalism that marginal utility in consumption is diminishing. If I am right about this, then we have all the more reason to view Keynes's macroeconomics as being quite consciously possessed of microfoundations. Indeed the latter would be more or less the same as those that underlie orthodox macroeconomics; all that would differ would be what the two traditions built upon them. For more on Keynes's relation to Marshall, see, e.g., ROBERT SKIDELSKY, *JOHN MAYNARD KEYNES: HOPES BETRAYED* (1983).

<sup>29</sup> Keynes viewed the macroeconomic orthodoxy of his day – though nothing went by that name at the time – as rife with fallacies of composition. Economists had unreflectively generalized from the individual to the group case, necessitating Keynes's explicit treatment of "the economy as a whole," as he called it. That perspective has of course since come to be called "macro," as explicitly distinguished from "micro." Below we shall find that finance, still oddly cabined off as a separate vocational, "business school" subject by orthodox macroeconomists, is what links micro to macro. Failures of the former's conclusions to generalize to the latter are attributable to the former's effectively being waylaid in the financial markets, which I shall argue are better modeled as interactive, game-theoretic phenomena than as garden variety representative agent, general equilibrium phenomena.

<sup>30</sup> See, e.g., Chapter I, Part I.2, on "The Business Class," in J. M. Keynes, *TRACT*, *supra* note 14 at 18-27.

<sup>31</sup> See *id.* The phenomenon is addressed more fully and self-consciously in *GENERAL THEORY*, *supra* note 21 at 46-51, 98-106.

demand” – and producers would know this.<sup>32</sup> Hence in time each of them would come at some point to find it individually rational to shed labor – or to lower wages, per the faux “Keynesian” desideratum – while *all* of their doing so would in aggregate *worsen* the problem to which each was responding: the problem of steadily worsening aggregate underconsumption. Here, then, is the first instance of that earlier-mentioned dynamic which recurs throughout Keynes’s economics – that of what we now recognize as a classic “collective action problem.”

It bears emphasis that the looming potential problem of underconsumption, and the collective action problem with which it confronts producer/employers, is recursively self-amplifying in character. It bears the structure of a nasty “snowball effect” or “feedback loop.” No “equilibrium” toward which it might tend will, in consequence, be a “full employment” equilibrium – at least not at anything near the level of aggregate wealth the economy has reached when the problem emerges. For the problem emerges only after the economy comes to exceed subsistence-level production – the level beyond which people grow able to save growing portions of their incomes. Hence the problem recedes only when that gap between production and consumption is closed – which is, again, the point at which the economy operates at no more than subsistence level production. If there exists any reliable full employment equilibrium, then, it is only at a presumably now unacceptable level of aggregate production.

One might then wonder how an economy ever gets past subsistence level production, or at any rate remains there, given the looming underconsumption problem just cited. The answer lies in the *other* form of expenditure toward which Keynesian “proceeds” or incomes are directed in an advanced economy – investment. In Keynes’s story, it is *investment* – expenditure on capital goods – which fills the gap that emerges between income/output and consumption expenditure as an economy grows. So long as investment activity remains brisk, such that savers – including individuals, financial institutions, and other business entities alike – place their savings at the disposal of entrepreneurs who employ labor in the production of capital goods, underconsumption need not loom as the self-amplifying problem schematized above.

But this of course saddles the economy’s investment markets with a critical responsibility. And as Keynes is at pains to show, decentralization in these markets, now supplemented by radical uncertainty and the continuing availability of money-holding as an investment alternative,<sup>33</sup> renders them vulnerable to acutely recursive collective action problems of their own. Moreover, pursuant to another “psychological law” cited by Keynes, behavior in these markets shifts both more rapidly and more extremely than it does in consumer goods

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<sup>32</sup> Those who fall into the trap of finding Say persuasive appear to be held captive by the folksy picture, beloved by 18<sup>th</sup> and 19<sup>th</sup> century economic and political thinkers, of a primitive barter economy in which hoardable money simply does not exist.

<sup>33</sup> The effective-demand-imperiling importance of money-holding, cited above at note 32 and associated text, found expression not only in Keynes’s writing, but also in Silvio Gesell’s. Gesell’s “stamped money” proposals were aimed precisely at preempting the hoarding problem. See, e.g., SILVIO GESELL, *THE NATURAL ECONOMIC ORDER* (1906).

markets. Hence these markets prove ultimately to be the most causally salient not only in Keynes's theoretical project, but also in Keynes's practical designs and policy advocacy. They are what "we" as a polity can collectively "do something about" with a view to maintaining stable prices, stable growth, and full employment.

The best way to elaborate this all-important role of decentralized investment markets in the Keynesian vision, I think, will be to start with Keynes's account of the form of uncertainty that afflicts those markets. Then I'll proceed to the specific form of recursive collective action problem that attends decentralized investment markets featuring this form of uncertainty. After that I'll attend to the critical mediating role played by money in this recursive dynamic. The latter role then segues smoothly into the function that Keynes envisaged for what became what is called, after all, the International *Monetary* Fund, which I elaborate in the next Subpart.

First with respect to uncertainty, then, it is imperative to keep clear about precisely what Keynes had in mind. In the manner both of Frank Knight's and of his own, earlier doctoral thesis on probability, Keynes distinguished between what we now sometimes call "radical," or "Knightian" uncertainty on the one hand, and mere "actuarial risk" on the other.<sup>34</sup> Actuarial *risk* is associated with possible outcomes to which meaningful probability measures can be assigned. Radical *uncertainty* afflicts possible outcomes to which no such probability measure can be assigned. If we know how many slots there are on a fair roulette wheel, and what prizes come with each slot, we can assign a meaningful probability-weighted value to each of the wheel's slots. Betting on a particular such slot's catching the ball then exposes us to actuarial "risk." If, by contrast, we are faced with a roulette-like game in which either the number of slots or the prospective winnings associated with them are simply unknown, we face something more like radical "uncertainty." We do not know how to assign expected values to the prospects of "winning" this "game." Either the assigned value, or the probability of its being won, or both are beyond our ken. As Keynes would put it, "our basis of knowledge . . . amounts to little and sometimes to nothing."<sup>35</sup>

According to Keynes, entrepreneurs and investors often are playing a game more like that just described than conventional roulette.<sup>36</sup> On the one hand these people must in effect *wager* on the future, since they cannot *know* it. On the other hand they typically lack principled means

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<sup>34</sup> The references are FRANK KNIGHT, *RISK, UNCERTAINTY, PROFIT* (1921), Knight's published Cornell dissertation of 1916, and J. M. KEYNES, *TREATISE ON PROBABILITY* (1921), Keynes's published Cambridge dissertation of 1909. See in particular Chapter 6 of the latter, on "The Weight of Arguments."

<sup>35</sup> *GENERAL THEORY*, supra note 21 at 149-50.

<sup>36</sup> This is the subject of the matchless Chapter 12 of the *GENERAL THEORY*, titled "The State of Long-term Expectation." It is also the focus of Hyman Minsky's now well-known interpretation of Keynes. See HYMAN MINSKY, *JOHN MAYNARD KEYNES* (1976). Minsky notoriously critiqued mainstream "Keynesianism" for having dispensed entirely with Keynes's focus on radical uncertainty, tartly observing that "Keynes without uncertainty is like Hamlet without the Prince." The only school of thought in whose name "Keynesianism" figures while proponents attend to uncertainty is, ironically, that known as "Post-Keynesian." See generally [Robinson, Godley, Davidson, Harcourt, Pasinetti, Taylor, Buchanan, ...]

by which to calculate reliable probability measures assignable to the manifold prospects before them. The lack of such measures might stem from information's being too costly to gather or analyze – the sorts of obstacle that can render ignorance “rational.”<sup>37</sup> It might even constitute an inherently underprovided “public good.” Alternatively, the lack of reliable actuarial measures might stem from the information's simply not being there to be had – its being in effect “infinitely” costly. Indeed, entrepreneurs and front-end investors often must guess even as to what profits, numerically speaking, might accrue, let alone with what probability. These are presumably among the reasons that such people so often are cast as bold “visionaries” or “pioneers” in popular lore, as Keynes sees it. They are like ancient sea-faring merchants or Viking explorers, heroically sailing out into the unfathomable unknown.<sup>38</sup>

Next we turn to the way that uncertainty of the kind Keynes had in mind combines with decentralization itself to underwrite a potentially recursive collective action problem in investment markets. Although investors cannot hold views of the future with confidence, Keynes observes, they must nevertheless place what effectively amount to wagers. They must, in other words, either invest in one form or another, or refrain from investing by holding money; and, crucially, *either* choice amounts to a wager. There is no other alternative; economies abhor vacuums just as “nature” is said to do.

Now ordinarily, in the absence of specific reason to be fearful, “spontaneous optimism” or “animal spirits” will impel entrepreneurs to plan and pursue projects in hopes of realizing prospective gains. The same spirits will lead many individuals, financial institutions, and other firms, which hold savings or retained earnings, to place capital at the disposal of such entrepreneurs. In time, even savers initially hesitant about investing make capital available, as they see predecessor investors realizing returns. Here, then, is the source of Keynes's oft-quoted observations on the roles not only of animal spirits, but also of “convention” – in particular, the “things will continue as they have done” and “follow the leader” conventions – in investment markets.<sup>39</sup> The important point for present purposes is that as long as it is the “high spirited” whom followers follow, investment will proceed, people will be employed in the production of capital goods in addition to consumer goods and services, and the potential underconsumption problem discussed earlier will be held at bay.

There is, however, a specific form of *fragility* at the core of this happy picture, rooted in the precariousness of expectations in the face of uncertainty itself. When investors fly on a wing and a prayer rather than with firm knowledge, it often takes little to deprive them of their confidence and prompt them to withdraw their investments. Moreover, the danger of such loss

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<sup>37</sup> The notion of “rational ignorance” is of course now a staple of decision theory and the theoretical literatures, including economically oriented legal theorizing, informed by that discipline. See, e.g. ...

<sup>38</sup> The flavor is nicely captured in Pound's translation of the Anglo-Saxon poem, *The Seafarer*. See, e.g., EZRA POUND, PERSONAE 37 (1929). See also THE SAGA OF ERIK THE RED (Riu, trans., 1979).

<sup>39</sup> See, e.g., GENERAL THEORY, supra note 21 at 152-53.

of confidence tends to grow steadily during a boom, owing in turn to another collective action problem grounded in epistemic uncertainty. The problem in this case is found in the dynamic pursuant to which a boom tends to shift over time toward “fueling itself.” In essence, what happens in Keynes’s story is this: Early entrants to a boom – including the entrepreneurs and the first waves of investors themselves – act on the basis of anticipated but ultimately unknowable “fundamentals.” They expect real value to be created or added as viable ideas are conceived, then pursued, and then realized. Later entrants to the boom, however, increasingly bet less on the basis of perceived fundamentals, and more on the mere prospect that asset prices will rise as a consequence of others’ betting on fundamentals, or on others’ betting on others’ betting on fundamentals, ... and so on.

In other words, at some point another self-amplifying process – in this case a spontaneously emergent “pyramid” or “Ponzi” process – kicks in when knowledge of fundamentals is sketchy at best or radically uncertain at worst. And, critically, there need be no “Ponzi” or “scheme” in such cases. The dynamic, in other words, is again that of a recursive collective action problem. Asset prices effectively self-amplify as investors drive them inexorably upward, simply by purchasing on the basis of what turn out to be self-fulfilling expectations that other investors will keep buying. Keynes, as active a market speculator as he was an economic theorist and policy advocate, evocatively likened the process to what he observed in connection with the “beautiful baby” contests run by London newspapers of his day. Contestants won prizes in these contests for designating as “most beautiful” those photos of babies that ultimately received the most votes. It did not take long, Keynes observed, for savvy contestants to shift from voting for those babies whom they themselves found beautiful – an analogue, in effect, to “fundamental value” – to voting for those they anticipated that others would find beautiful – an analogue to “market value.”

When investment markets enter into a self-referential phase of this sort, an ever-growing portion of participants enter not so much to “invest” on the basis of fundamentals, as to “speculate” on the basis of anticipated price movements. That in turn leads to more borrowing. More and more borrow in order to “flip” assets, as we might say today, so as to pocket quick gains. These people “leg the spread” – they effectively arbitrage – between interest rates and current capital gains rates. Lenders, for their part, grow more willing to lend in these circumstances, on the strength of less in the way of exogenous collateral. In effect they collateralize endogenously instead. For they are content to accept the rapidly appreciating assets purchased with the loan proceeds themselves as collateral. The boom accordingly shifts into being more and more debt-fueled as it moves into bubble status, and the debt-fueling feeds into the self-amplification process.

The sense in which a bubble thus characterized amounts to a collective action problem is this: On the one hand, a bubble cannot grow indefinitely. At some point the availability of

credit must come to an end. On the other hand, it is generally impossible to determine with confidence just where that limit point lies. For credit is ultimately a matter of lenders' readiness to believe – *credere* – that they will be repaid, not of some determinately measurable physical magnitude. And for as long as a credit-fueled bubble with indeterminate endpoint is growing at capital gains rates that exceed interest rates, it is individually rational for each investor to borrow yet more so as to bet and win more on the strength of continued price rises. As all market participants act thus rationally, however, they collectively hasten the arrival of that inevitable but never precisely locatable end.

In effect, then, investors under bubble conditions are engaged in a game much like drag-race “chicken,” with the all-important difference that everyone earns more as they draw closer to the cliff's side, while nobody knows just where the cliff's side is located. The faster they drive toward that edge, however, the more likely they are to go over in the end.<sup>40</sup> And there is nothing, Keynes notes, in decentralized investment markets to prevent people's regularly happening into these races. Decentralized investment markets faced with radical uncertainty, in other words, are always inherently subject to self-amplified asset price hyperinflations.<sup>41</sup>

Now, the sense in which these hyperinflations constitute a significant *vulnerability* on the part of investment markets and hence ultimately the “real” economy is this: Participants in these markets implicitly know that the party at some point must end. They might set aside those fears for lengthy periods, particularly during a boom's earlier stages, when investment on the basis of anticipated “fundamentals” remains the dominant element. But gradually booms come to be accompanied by growing anxieties – anxieties effectively proportional to the mounting unsustainability of the credit-fueled bubble itself once Ponzi investment supplants “value” investment as the dominant element. As this anxiety grows, Keynes observes, investors grow more and more mindful of the precariousness of their expectations themselves. They remember, in other words, that they are ultimately faced with uncertainty as distinguished from actuarial risk, and that “anything might happen” tomorrow – even a crash.

At some point, accordingly, investors grow wary of borrowing more, hence of buying more; and lenders grow likewise wary of lending. But when this happens, the bubble stops growing, there are no more gains to be had, and many participants now realize that as earlier entrants cash-in to take profits, the value of their own holdings will begin to drop. There is accordingly now a rational incentive for each participant to aim to be early out, just as there was earlier to be early in. The savvier participants act quickly on this incentive, just as they did when

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<sup>40</sup> See Hockett, *Fixer-Upper for Finance*, supra note 4 at 1233-41 for fuller elaboration of this model. See also post at Dorf on Law, available at: <http://www.dorfonlaw.org/2009/09/what-maynard-keynes-james-dean-and-now.html>.

<sup>41</sup> It is curious that most who recognize the U.S. Federal Reserve's obligation to maintain price stability, per its Article I mandate, fail to recognize asset price bubbles' constituting hyperinflations fully as much as do consumer price hyperinflations. For more on this, see Robert Hockett, *What's the Fed For? Making Sense of a Mandate* (working paper, 2011).

entering at the front end of the boom. More conventional investors, for their part, follow those leaders, again as they did when they entered the boom. But the critical point is that it now looks *rational* for each participant to withdraw. “Holding” looks potentially suicidal to the individual investor, a bit like attempting to wait out the rush for the door in a burning theatre. And of course everyone’s *acting* thus rationally on this incentive leads to collective ruin, again like the rush for the door in the theatre. This is the structure of a “run” from financial assets just as it is of a “bubble” in the same. Both are, symmetrically, the product of self-amplifying collective action problems that afflict decentralized investment markets faced with radical uncertainty.

Now for the next step in Keynes’s story: The vulnerability of *investment* markets just described ultimately feeds back into the “real” economy. It is not difficult to see why or how. As for why, first recall that, in Keynes’s picture, it is investment that takes up the potentially slump-inducing slack between consumption and production as an economy grows past subsistence level production. Volatility in investment markets accordingly translates ultimately into volatility in production rates, economic growth rates, labor markets, and employment rates. Next, to see *how* investment volatility is transmitted to “real” volatility, and thereby complete our summary rendition of Keynes’s story, we need only look to his account of interest and money – the two other factors explicitly named, with employment, in the title of his best known work. For money, as intimated above, plays a critical mediating role in the story, which is in turn why it stands at the center of Keynes’s plan for what ultimately became the International *Monetary* Fund.

The cardinal fact about money in Keynes’s economics is its status as what I’ll call a *residual*, or more popularly, “reserve,” asset. While it is true that people hold money for purposes both of transacting and of providing for well defined contingencies – as even “classical” economists observed – Keynes emphasizes another motive as more salient. This is the motive that he labeled, not altogether felicitously, as “speculative.” The core idea is that peoples’ demand to hoard surplus in the form of money is effectively a measure of disquietude. Just as confidence, faith, or credulity among economic actors finds expression in their willingness to extend credit, so does *want* of such faith or credulity find expression in their demand to withdraw credit and hold money. Credit and money are in that sense two sides of a coin, if one might be forgiven a pun. Hence the term “credit-money,” oft-employed by followers of Keynes.<sup>42</sup> To “hoard” money is withdraw credit; and to lend or “invest” money – particularly under a fractional reserve banking system and a central bank regime that employs quantitative easing – is to extend credit.

Keynes’s account of the so-called “speculative” motive for holding money prompts his departure from orthodoxy in respect of the theory of interest. When confidence in the future is

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<sup>42</sup> See, e.g., JOHN SMITHIN, *CONTROVERSIES IN MONETARY ECONOMICS* (2010); JOHN WILLIAMSON, *HOW CREDIT-MONEY SHAPES THE WORLD ECONOMY* (1994).

high, Keynes observes, people and institutions are willing to part with money at lower rental fees – interest rates – in exchange for claims upon firms – investment securities. When such confidence is low, by contrast, people prefer to “keep options open” and thus remain liquid. They accordingly require more in the way of rental fees – even to the point of demanding “infinite” such fees, by refusing to lend at all – before they will part with their money. Well before his partial follower Tobin, in other words, Keynes cited “liquidity preference” as “behavior toward” something akin to what Tobin would later call, in a different idiom, “risk.” But in Keynes’s case, as we have seen, it was anxious uncertainty rather than actuarial risk that lay at root of the phenomenon. To act on liquidity preference in this sense, in turn, is what Keynes labeled “hoarding.” To hoard is to insist on maximal liquidity, hence to hold off from investing.

Money, then, in the Keynesian picture is what makes hoarding of the sort that imperils growth and employment possible. It is just what is hoarded.<sup>43</sup> And to hoard is effectively to demand a very high – even “infinitely” high – rate of interest. This understanding of interest and money marks a decisive break with the orthodoxy of Keynes’s time. And it is yet another break that I think best understood by reference to Keynes’s then-emergent attention, under the guise of what he would have called “fallacies of composition,” to what we nowadays call collective action problems. On the classical – including today’s Lucasian “real business cycle” theory’s – understanding of interest and money, money was – and is – “neutral.” It had no significance of its own, and was worth only what it could be exchanged for. Holding money for its part had no independent value apart from the transacting costs it spared those who would otherwise have to barter. This view of money lay behind the hallowed “quantity theory” associated with the classicals and their present day followers, pursuant to which individuals with “rational expectations” are free of “money illusion,” and changes in the money supply accordingly bear no lasting effects on the “real” economy. Such changes did nothing but raise or lower the goods-value of currency and coin in the classical view – they changed only *nominal prices*.

Interest rates, for their part, were themselves prices in the classical view, hence expressed in money terms. But they had little more to do with money than that. Lending rates were

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<sup>43</sup> See, in this connection, *supra* notes 32-33 and associated text. This, incidentally, is one of the reasons why Keynes was intrigued by the “stamped money” idea earlier proposed by the “monetary heretic” Silvio Gesell, to which he devoted several pages of the *GENERAL THEORY*. See *supra*, note 33. Gesell’s proposal was to prevent hoarding by rendering money’s fungibility contingent on its being periodically “stamped,” with an increment of value lost with each successive stamping. Though any such scheme would be administratively difficult if not infeasible to implement – in partial contrast, say, to modern voucher-style alternatives – Keynes thought the rationale that prompted the idea to be a compelling one. See *GENERAL THEORY*, *supra* note 21 at 353-58. Gesell’s interesting proposals, and the ideas that prompted them, are in SILVIO GESELL, *DIE NATÜRLICHE WIRTSCHAFTSORDNUNG DURCH FREILAND UND FREIGELD* (1906), translated into English as *THE NATURAL ECONOMIC ORDER: A PLAN TO SECURE AN UNINTERRUPTED EXCHANGE OF THE PRODUCTS OF LABOR, FREE FROM BUREAUCRATIC INTERFERENCE, USURY AND EXPLOITATION* (Phillip Pye trans., 1934). Keynes was not the only comparatively mainstream 20<sup>th</sup> century economist to find Gesell’s proposals interesting. Others included Fisher and, a bit later, Allais. See, e.g., IRVING FISHER, *STAMP SCRIP* (1933); MAURICE ALLAIS, *ECONOMIE ET INTÉRÊT* (1947).

determined in the classical view just as prices of any other goods are. The “goods” in this case were what the classical called “loanable funds,” which they distinguished from money. Interest rates were determined by the intersection of supply and demand curves for loanable funds. More saving meant lower interest rates in the classical picture by dint of its increasing the supply of loanable funds. In consequence, the classical concluded, more savings always meant more investment. For more savings meant cheaper interest, which meant greater readiness on the part of entrepreneurs to invest. Here was the source of the classical proposition that aggregate savings and investment always tend to equality, hence that investment will always close any gap that emerges between output and consumption expenditure, rendering Malthusian “gluts” and “underconsumption” impossible and “Say’s Law” correct.

In rejecting this picture, Keynes did not deny the equality in question. He simply highlighted its triviality – its constituting no more than another accounting identity. Savings and investment indeed must be equal, as Keynes sees things, but the classical theory is wrong in supposing that the *mechanism* through which this equality is maintained operates in the *direction* they claimed. For rather than more saving’s causing more investment, Keynes observed, it is actually more accurate to say that investment effectively causes more savings. And by the same token, diminished investment causes diminished savings.

How could this be? Well, as we have in effect already noted, aggregate savings grow in the Keynesian story as the aggregate economy grows. And the aggregate economy grows on the strength of investment. Investment in turn is the crediting of entrepreneurial accounts – at least in an economy featuring fiat money rather than specie. In modern economies, private banking institutions and central banks jointly determine the money supply – the credit-money supply. The latter determine how much the former *may* lend, and the former decide within those limits how much they *will* lend. How much private lenders will lend, in turn, rides on their willingness to “believe in” – again, to credit – the future performances of entrepreneurs and other borrowers. As long as such crediting continues, and the real economy and incomes then grow as the credited projects are realized, savings grow too. If, however, individuals and institutions refrain from plowing their returns – their savings – back into further investment, their saving lapse into mere hoarding. Productive activity, hence growth, then will slow down or cease. Real incomes accordingly will drop. Recession will accelerate as investment now ceases to cover the gap between consumption and output. And the economy will slide back toward subsistence level production, where all that’s produced is consumed – hence where nothing is saved.

Everyone’s acting individually to save, in other words, aggregates into yet another collectively self-defeating gesture – just like layoff-led recessions, consumer and asset price hyperinflations, arms races, “prisoner’s dilemmas” and “commons tragedies.” This particular instance of the familiar dynamic too has a name. Keynes called it “the paradox of thrift.” Classical economists missed it just as they missed other self-amplifying dynamics rooted in the

collective action problems endemic to a decentralized economy. They did so by lapsing into what Keynes called a fallacy of composition – falsely viewing the macroeconomy as simply the sum of its parts, such that whatever is individually rational to do must be collectively rational to permit, and what ever is individually saved is collectively saved once all individuals’ savings are aggregated. But an economy cannot increase aggregate saving through multiple individual acts of money-hoarding any more than everyone can simultaneously liquidate the same asset at cost, or than everyone can be above average.

Hoarding, then, while individually rational in the face of anxiety-inflected uncertainty, is collectively self-defeating and destructive. That will prove critical in the next Subpart. For the principal role which Keynes envisaged for the IMF was that of an instrument by which to prevent global hoarding. Just before turning to the specifics of that plan, however, we should note one remaining piece of the Keynesian picture. For who would *wield* an “instrument,” as I’ve just called it, like Keynes’s IMF? The answer is that it is the same party as addresses the problem of domestic hoarding, and as addresses any economy-wide collective action problem – a state. I close this Subpart, then, with a quick characterization of Keynes’s view of the proper role of government in a decentralized, investment-dependent economy featuring money and faced with uncertainty.

The notion of a “collective action problem” has come up multiple times in the bona fide Keynesian story as here told. Such challenges lie at the core of each self-amplifying mechanism that Keynes highlights in explaining why decentralized economies lack stable equilibria. Now it is in the nature of a collective action problem that it can only be solved by a collective agent – an agent who acts in the name of all interested parties. That is of course what a government is, or is at any rate meant to be. And so here we find the core of what Keynes took to be the essential role of government in a decentralized, financial and monetary economy that has grown past subsistence level production. Government’s role is not simply to enforce rules of the game in the form of contract, tort, and crime. It is, for present purposes more saliently, to address on behalf of the collectivity all of those collective action problems that render its economy subject to dysfunctionally self-amplifying processes like inflations or price bubbles, deflations or bursts – and in consequence, depression and unemployment.

Where the self-amplifying process in question is that of a consumer price inflation or asset price bubble, the necessary action on behalf of the collectivity in Keynes’s view is to render it no longer individually rational for members of the collectivity to spend and thereby bid prices upward. Governments in the Keynesian schema do that, of course, by reigning-in credit and money system-wide. This they can do either by selling government debt, raising interest rates, raising reserve or capital requirements imposed upon financial institutions (in effect, forced hoarding), increasing excises on incomes, transactions, or capital gains (in effect, “Tobin taxation”), or some combination of these. Keynes prescribed policies of this stripe in the late

1930s and early 1940s, as Britain emerged from depression and then faced looming inflation once war-prompted production ramped up.<sup>44</sup>

Where the self-amplifying process in question is that of a consumer price deflation or asset price slump, the necessary government action on behalf of the collectivity is to render it no longer individually rational for members to hoard money or “run” on assets or institutions. Keynesian governments do that by loosening credit and money system-wide, and if necessary, by acting as lenders, spenders, and price-defenders of last resort. These things they can do either by purchasing back government debt, lowering interest rates, lowering reserve or capital requirements, decreasing excises of various sorts, lending or spending directly, providing insurance to or other guarantees on behalf of borrowers including banks and/or other financial institutions, or some combination of these. Keynes prescribed measures of this stripe, of course, during Britain’s slump of the 1920s and early 1930s.

The key idea in both such cases, of course, is nicely captured by the word “countercyclical.” Keynes in effect viewed the collectivity’s ideal *government*, vis a vis the collectivity’s macro-economy, as a *governor* – in the engineer’s sense of that word. Just as the governor on an engine serves to keep that engine from self-amplifyingly shaking itself to pieces, or as the flywheel on a rotating bit of machinery serves to prevent self-amplifying, centripetally unbalanced movement by that part, so the Keynesian government modulates dangerously self-amplifying upward or downward aggregate expenditures in a monetary economy that features decentralized investment markets. It addresses, as collective agent, those collective action problems that lie at the root of self-amplifying boom and bust cycles, and in so doing lessens the amplitudes of the cycles themselves. That in turn renders economic activity and growth stably sustainable.

## 2. Keynes’s Clearing Union: A Countercyclical Collective Agent for the Global Economy

The role that Keynes envisaged for what ultimately became the International Monetary Fund is readily appreciable against the backdrop of his financial-cum-monetary account of macroeconomic dynamics. Keynes’s Clearing Union plan was essentially that of what I have just dubbed a “collective agent” – in this case, for the world economy as a whole. It would serve as an instrumentality of the collectivity of states rather as the state itself serves as an instrumentality of the collectivity of its citizens. In particular, it would prevent a global equivalent of hoarding, and act as a bona fide transnational – as distinguished from unsustainably

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<sup>44</sup> See HOW TO PAY FOR THE WAR, supra note 33. Also [1938, 1939 papers]. It should be noted that these are the minimal such measures Keynes thought apt to work, and that he left open the prospect that investment might ultimately have to be “socialized” in light of the strength of the manias to which they were subject and the comparative weakness of monetary policy alone in combating the worst of them. See GENERAL THEORY at 164.

national – source of global liquidity.<sup>45</sup> It would do so, moreover, much in the way that Keynes proposed central banks must do within domestic economies.<sup>46</sup>

Keynes believed that the global community would have to address collectively what he foresaw as an ominously looming postwar hoarding problem. He expected the hoarding in question to take the form of what he and others anticipated would be very large unliquidated trade surpluses enjoyed by a few nations – particularly the U.S. – in relation to the rest of the world once the war ended. The U.S. had, after all, racked up persistent trade surpluses relative to the rest of the world over the course of the 1920s and 1930s. And as the only major economy whose infrastructure had not been significantly harmed during the Second World War, and indeed whose infrastructure had enormously *grown* during the war, it was expected – and indeed ultimately proved – to account for over half of gross world product for years after the war.<sup>47</sup>

More generally, and in the longer term, Keynes saw his Clearing Union functioning as a “central bank for central banks,” on the characteristically Keynesian understanding of central banks’ role described in the previous Subpart. It would act as a countercyclical monetary and financial regulator for the world economy much as Keynes argued central banks must do in respect of their domestic economies. It would thereby underwrite sustained global growth and employment, again as Keynes urged central banks to do for domestic economies. And it would do these things for the global economy using much the same means Keynes had suggested that central banks employ in modulating domestic boom and bust cycles. It would do so, in short, by regulating flows and quantities of global *credit-money*.

In Keynes’s view, if trade between nations was once again to be liberalized as it had been for decades prior to the First World War, some institution’s playing the credit-modulatory role globally was prerequisite to *states’ own* capacities to play that necessary role *domestically*. Since the latter in turn was prerequisite to states’ capacities to participate indefinitely in a liberalized trading order, something like the Clearing Union was prerequisite to a sustained liberal trading order itself in Keynes’s view. The only alternative would be unsustainable booms and busts within domestic economies, consequent “gaming” of global trade rules by depression-

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<sup>45</sup> As we shall see *infra*, Part II, the role of the dollar as de facto global reserve currency conscripts the U.S. into supplying liquidity sufficient to keep the world economy growing. But this means the U.S. must run persistent current account deficits relative to the rest of the world, which in turn undermines U.S. and, therefore, global financial stability. The problem for the dollar was foreseen as early as the 1950s by the Belgian Yale Keynesian, Robert Triffin. See, e.g., Robert Triffin, *National Central Banking and the International Economy*, 7 *POSTWAR ECON. STUD.* 46 (1947); ROBERT TRIFFIN, *EUROPE AND THE MONEY MUDDLE* (1957); and ROBERT TRIFFIN, *GOLD AND THE DOLLAR CRISIS: THE FUTURE OF CONVERTIBILITY* (1960). The general problem was foreseen by Keynes, and motivated the global unit of account he advocated as part of the Clearing Union Plan, more on which just below. See Tract, *supra* note 21 at 163-68. See also Hockett, *Macro to Micro*, *supra* note 2. Another who foresaw the general problem was the post-WWI Polish finance minister Feliks Mlynarski. See his *GOLD AND CENTRAL BANKS* (1929).

<sup>46</sup> Per the discussion *supra*, Part I.B.1.

<sup>47</sup> See Hockett, *Macro to Micro*, *supra* note 2.

struck states facing effectively no other choice, and hence ultimate collapse of the liberal trading order itself. There would be, in other words, a return to the world of the 1930s.<sup>48</sup>

That is the short playing version. The best way to flesh out those further details of the picture worth recalling right now, I think, will be simply to sketch two basic structures: first, that of a readily intuited plan that inspired the Clearing Union plan; then second, that of the Clearing Union plan itself, which generalized the first, more basic arrangement. Proceeding in this way will aid intuitive grasp of the connection between the Clearing Union idea on the one hand, and underconsumption-exacerbating money-hoarding on the other. Here, then, are both plans' basic structures, the first of which was, and the second of which Keynes would have, erected upon the pre-existing institutional infrastructure of cross-border transacting itself.

As for the first plan, then, I refer to the set of bilateral clearing agreements between Germany and its key trading partners developed by Reichsbank President Hjalmar Horace Greeley Schacht in the aftermath of the German hyperinflation of 1919-1923.<sup>49</sup> The signal challenge faced by Germany in the aftermath of the First World War was how to earn foreign exchange sufficient to pay down the substantial reparations required of it by the victorious allies.<sup>50</sup> This meant that Germany had to manage its trade relations quite carefully so as to avoid current account deficits with as many trade partners as possible. The solution hit upon by Schacht was to enter into bilateral treaties pursuant to which Germany and each trading partner would establish "clearing accounts" between their central banks. A sale of goods by, say, a Czech exporter to a German importer would result in a credit enjoyed by the former at the German Bundesbank. This credit could subsequently be redeemed, in turn, only in the form of a purchase of German goods.<sup>51</sup> Reciprocal credits would be earned, and spent, in Czechoslovakia by

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<sup>48</sup> The idea that the Second World War was effectively a resumption of the First, as predicted by Keynes's *ECONOMIC CONSEQUENCES OF THE PEACE* (1919), is a commonplace among at least one school of historians. See, e.g., NIALL FERGUSON, *THE WAR OF THE WORLD* (2007); ...

<sup>49</sup> Schacht's Danish parents had spent much time in the U.S., and named him in honor of the renowned *New York Tribune* editor. He served in both the Weimar and, for a time, the "Third Reich" governments. He was ultimately arrested by the Nazi regime and sent to Dachau for covert involvement with the resistance movement and coup plotters. By dint of his serving in the Nazi government he was prosecuted at Nuremberg for "crimes against peace," as distinguished from "crimes against humanity," after the war, and acquitted. Thereafter he was a banker and advised finance ministries of "non-aligned" developing countries until his death, aged 93, in Munich in 1970.

<sup>50</sup> The reparations requirement was notoriously onerous, prompting Keynes to resign his position with the British delegation at Versailles. Keynes famously prophesied that the reparations, which Germany could not possibly pay even under the rosier of projected economic scenarios, would cripple German economic recovery after the war, culminating in social breakdown and resumption of hostilities more destructive than those of the First War. He publicized these views in his first widely read monograph, *THE ECONOMIC CONSEQUENCES OF THE PEACE* (1919), which made of him a global celebrity. The descriptions in this evocative book both of the first modern "globalization" of 1870-1914, and of the destruction to global order done by war and resultant economic dysfunction, ring often surprisingly familiar.

<sup>51</sup> The credit in this sense can be likened to a special purpose voucher, in the spirit of note 37, *supra*.

German exporters. Czech-German trade “cleared” in this way. Such was the scheme in its essence, if not always in its actual operation.<sup>52</sup>

In effect, what Schact’s arrangement did was to locate a space between ordinary monetary arrangements of the sort that make persistent trade imbalance and hoarding possible on the one hand, and hoard- and imbalance-resistant pure barter on the other.<sup>53</sup> Individual buyers and sellers of course did not barter; they effectively employed credit-money. But nations as wholes in the Schactian relation effectively bartered with one another. For no exports yielded anything hoardable, in the Keynesian sense, to exporting nations. Instead exporters’ credits, rather like vouchers, were valueless unless redeemed in a narrowly defined way – through purchase of imports from the nation whose citizens had purchased the exports.

The dependence of hoarding on fully fungible money – the sense in which it is the latter that makes the former possible, hence the sense in which Keynesian “underconsumption” is critically associated with *monetary* economies – is rendered particularly transparent in the Schactian arrangement. It should accordingly not be viewed as surprising that Keynes found himself fascinated with the scheme upon learning of it in the later 1930s.<sup>54</sup> Nor is it surprising Keynes would conclude that something like Schactian clearing might be well suited, if carefully generalized, to preventing global hoarding after the War.

Though Keynes admired the elegance of Schact’s bilateral clearing arrangements, he viewed them as unnecessarily limited for postwar purposes. As he saw it, *multilateral* clearing would boast the same virtues as *bilateral* clearing, while also offering the wealth-growing efficiency potential promised by taking one additional step away from barter toward money-payment. The reason is simple: the distribution of comparative advantage in production among countries might be such that country Alpha would do better regularly to import more from country Beta than it exports to it, while, say, regularly exporting more to country Gamma than it imports from it. Meanwhile, Beta might well compensate for its persistent surpluses vis a vis Alpha by running persistent deficits vis a vis Gamma, which would thereby compensate for its

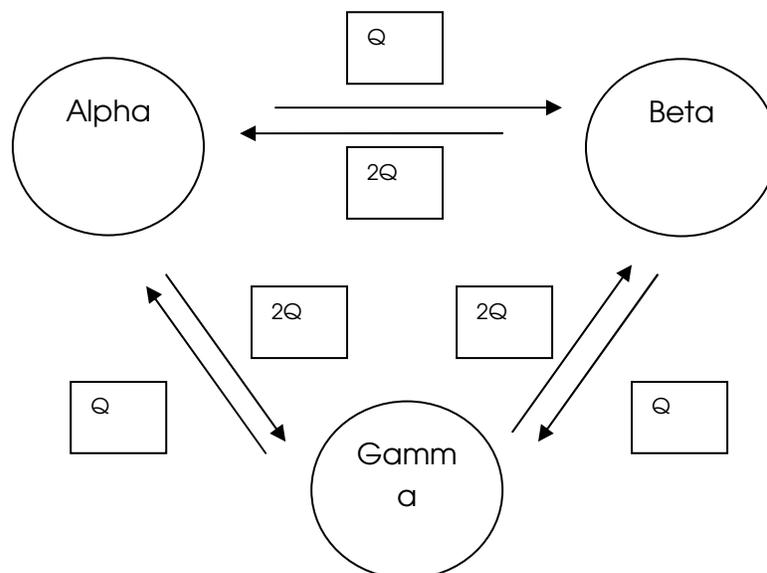
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<sup>52</sup> There are indications that the German government employed the scheme in a manner that exploited its trading partners in the 1930s, which ought not surprise us in view of the government then in power. See ...

<sup>53</sup> It bears noting, in this connection, that it is precisely the fact of money, in Keynes’s economic vision, that renders the “classical” model of an economy associated with Smith, Say, Ricardo, and their later “marginalist” followers inapplicable to the real world. The classical model would hold good of a world in which all transactions were barter transactions, for in such case hoarding would not be possible on a grand scale. Money, however, changes everything, rendering both hoarding and, in consequence, underemployment equilibrium possible. See again *supra*, Part I.B.1. It should accordingly be seen as no accident, I suggest, that the scheme which caught Keynes’s attention as prototype for what became his own plan was a scheme that more or less mimicked barter between nations.

<sup>54</sup> For more on Keynes’s encounter with Schactian schemes, see, e.g., ROY HARROD, JOHN MAYNARD KEYNES: AN ECONOMIST’S BIOGRAPHY 348-72 (1951); ROBERT SKIDELSKY, JOHN MAYNARD KEYNES: FIGHTING FOR FREEDOM 262-97 (2001).

own persistent deficits vis a vis Alpha. And so on. Diagrammatically, with “Q” representing a given currency-denominated quantity of goods and services, we would have:



So long as each nation *on balance* imported and exported in equal-valued amounts, then,<sup>55</sup> multilateral clearing would permit more efficient exploitation of the international division of labor and comparative advantage, while offering the same balancing benefits as bilateral clearing. No nation would need become a persistent net hoarder or debtor.

The key to generalizing Schact’s system of bilateral arrangements, Keynes saw, would be to establish a *single, central* clearing house at which *all* members’ central banks held accounts, instead of multiple separate bilateral clearing agreements between pairs of central banks as in the Schactian scheme. One might even instill greater flexibility in such an arrangement – and provide a new source of aggregate-demand-maintaining global liquidity as the world economy grew – by adding some form of *overdraft* right to clearing accounts: in effect, creating a global credit-money. Keynes exploited both of these prospects in his own plan.

Here, then, is how Keynes fashioned his proposed International Clearing Union, erecting a generalized Schactian structure upon the foundation of the then existing structure of global transacting itself. To begin with, transactions between parties in nations with distinct currencies,

<sup>55</sup> In the diagram, each of the three countries imports and exports a total of  $3Q$ . Each accordingly enjoys balanced trade with “the world” – i.e., with the other two countries together – even while experiencing unbalanced trade with each of the other two countries. Surplus with one offsets deficit with the other.

of course, required currency exchanges. It required conversion of one currency into another.<sup>56</sup> In the presence of cross-border capital controls and the absence of a highly liquid foreign exchange market free of government restriction, as was anticipated in the 1940s,<sup>57</sup> the currency conversion in question would be conducted bilaterally through goods traders' banks. This meant that movements of goods and currencies between trading parties resulted in changes in debits and credits on accounts held at their banks, and hence ultimately on accounts held by those banks themselves at their home nations' *central* banks. The Clearing Union was simply to add a layer to this pre-existing infrastructure by serving as an intermediary between the central banks themselves. In effect, it would serve as a global clearing and central bank to the national central banks. It would constitute a single *situs* at which nations' central banks were credited and debited, hence the ultimate conduit through which all transnational payments in effect flowed.<sup>58</sup>

Now by dint of this "global central bank" role, the Clearing Union would also be well situated to "create" global money in much the same manner that central banks do within domestic economies. And Keynes prescribed that it do just that. The Clearing Union would discharge this function first by establishing a unit of account into which all global currencies passing through it would effectively be converted by denomination. Keynes proposed the name "bancor" for this unit. In effect, it would play the global reserve currency and indexing role that gold had played under the late 19<sup>th</sup> and early 20<sup>th</sup> century gold standard. A crucial difference, however, was that the bancor would constitute a "managed currency" – aka "fiat money" – of the sort that most important national currencies had by that point become, thanks in large part to Keynes's own decade-long urgings, by the mid-1930s.<sup>59</sup> Member nations then would deposit subscriptions of their own currencies – or gold – into bancor-denominated accounts held with the Clearing Union, in prescribed amounts keyed to their shares of cross-border trading volume.<sup>60</sup> In so doing they would position themselves relative to the Clearing Union much as domestic banks do through subscription of their nations' central banks.<sup>61</sup> As run by its member central banks, the Clearing Union would also, of course, determine currencies' relative values inter se – using

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<sup>56</sup> This can of course happen in either or both of two ways. Buyers convert local currencies into sellers' nations' currencies via buyers' nations' central banks, and then purchase; or sellers accept buyers' national currencies and then convert them to domestic currencies via their own nations' central banks. Nothing here hinges on which route the currency conversions take.

<sup>57</sup> Capital controls were gradually reduced during the 1980s and 1990s, to the point that it is now only a very few nations – notably China – that continue to impose them. More on this *infra*, Part III.

<sup>58</sup> In terms that might be familiar to some of today's international economists, a sort of quasi-governmental "Euroclear" for the world. But again, more on the present day trade and payments infrastructure *infra*, Part III.

<sup>59</sup> Keynes had urged movement to "managed currencies" in the 1923 TRACT, as well as in many polemical articles of the era. See, e.g., TRACT, *supra* note 21 at 177-207. Also J. M. Keynes, *Auri Sacra Fames*, in *ESSAYS IN PERSUASION* (1932). On nations' moving to managed currencies in the late 1920s and early 1930s, see, e.g., BARRY EICHENGREEN, *GOLDEN FETTERS: THE GOLD STANDARD AND THE GREAT DEPRESSION 1919-1939* 287-389 (1992).

<sup>60</sup> Members would be able to pay gold into the Clearing Union, but could not trade currencies for gold. Keynes archly called it "one way convertibility," the ultimate aim being to demonetize gold.

<sup>61</sup> The U.S. Federal Reserve, for example, is "owned" by its member banks, which subscribe in the form of (required) deposits (the requirement part of the story accounting for my scare-quotes round "own"). See, e.g., ... In this sense, the Clearing Union would constitute a sort of "World Fed" owned by the central banks of the nations of the world.

some variant of the familiar purchasing power parity yardstick – and hence their values relative to bancor.

After receipt of subscriptions, the Clearing Union also would issue *additional* bancor by establishing *overdraft* facilities for all participating central banks. These facilities would “create” bancor rather as central banks “create” national money by “recognizing” prudent loans made by member banks to borrowers as monetizable assets, and by “discounting” – that is, again monetizing – commercial paper and other evidences of debt meeting certain conditions. The precise overdraft facility of each central bank would, like its initial subscription, be calculated by reference to the volume of its nation’s cross-border trade transactions. In the first draft of Keynes’s plan, the formula was one-half of the five-year moving average of the aggregate value of imports to and exports by the nation in question. Subsequent drafts fine-tuned the formula in various ways that are without consequence for present purposes. The principal point is that the quantity of Union-created bancor was tied to the quantity of trade, rather as domestic bank-created money supplies are (or so one generally hopes) tied to the volume of domestic transactions. And thus as trade grew, so would the global bancor supply, in careful correlation.<sup>62</sup> The Clearing union was, then, in effect to manage a globally “managed currency” much as modern central banks manage domestically managed currencies of the kind that modern currencies now are.

The way in which Clearing Union accounts, including overdrafts, functioned as a global currency can be rendered more intuitively concrete simply by schematizing a typical cross-border trade transaction’s effects upon Clearing Union accounts. If a British buyer were to purchase goods from an American seller, say, the buyer would have to purchase dollars with pounds sterling to pay for those goods.<sup>63</sup> These she would purchase in Keynes’s arrangement from a British bank, which would purchase them from the Bank of England, which would purchase them from the U.S. Federal Reserve. Through the Clearing Union, this last transaction would take the form of credits, in bancor, to the U.S. account held with the Union, and equally valued offsetting debits, again in bancor, to the British account held there. The mentioned offset would of course constitute the “clearing” alluded to by the Clearing Union’s name.

If at some point the sum of such debits to the British account came to exceed the credits that this account held in the form of the U.K.’s initial subscription and export earnings brought in by British sellers, the Bank of England would of course enter into overdraft with the Clearing Union. It would now be purchasing U.S. currency or other nations’ currencies on credit, just as any borrower does. The outer limits of all available credit taking this form would be the outer

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<sup>62</sup> This is of course very much in keeping with the later prescriptions of “monetarist” followers of Keynes, notably Friedman. See, e.g., Friedman, sources cited supra note 50; also MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, *A MONETARY HISTORY OF THE UNITED STATES, 1867-1960* (1963).

<sup>63</sup> In the alternative, she might pay in pounds and the American seller would then convert pounds to dollars at home. Again, nothing here hinges on which route the currency conversion takes. See supra, note 56.

limits of the global credit-money supply itself, just as total lending capacity within a domestic economy sets the outer limits of the domestic credit-money supply.

Persistent overdraft of a nation's account would of course amount to persistent net trade debtor status on the part of that nation under the Clearing Union plan. Parallel remarks hold of trade creditor status of the sort Keynes and others anticipated the U.S. might hold for years to come after the end of the war. Now during the 1930s, like today, a nation's persistent trade debtor status tended to be viewed as undesirable, both on symbolic and on more substantial grounds. Persistent deficit seemed to suggest profligacy or decline, hence to portend future retrenchment and sale of domestic assets – in effect, debt-dependence and -peonage. Persistent surplus symmetrically seemed to suggest virtue and ascent, hence to portend future opulence and even hegemony. Persistent debtor status in consequence tended in the 1930s, again as today, to tempt debtor nations to raise barriers to imports, to subsidize exports, or unilaterally to devalue their currencies so as to alter their standing. The only other alternative was to deflate – to dampen domestic demand for all goods and services, including imports – which of course tended to issue in politically unsustainable unemployment and slump.

But multiple nations' acting on mercantilist temptations of this stripe during the 1930s had, as noted earlier, brought on mounting monetary and financial uncertainty, steady cross-border trade contraction, and rising cross-national resentment during the period. Keynes and more orthodox economists alike hoped to avoid a resumption of that state of affairs after the war. So Keynes's plans for a postwar monetary order were in harmony with more orthodox such plans proffered by others in respect of the exchange rate stability they prescribed. Most thought that trade should be liberal, and all thought that currency devaluations should be gradual, globally managed, and rare. Exchange rate stability of this sort had been one – indeed the sole – feature of the old gold standard that Keynes thought recapturing.<sup>64</sup>

These commitments, however, jointly give rise to a dilemma. For, short of discriminating against imports, discriminating in favor of exports, or unilaterally devaluing the national currency, there seems to be only one means for a persistent deficit nation, if acting alone, to alter its status. It must deflate. It must dampen domestic demand across the board and contract.<sup>65</sup> And that means it must bring on domestic recession of precisely the sort Keynes had shown tends to self-amplify into wholesale depression, with no natural endpoint short of politically unsustainable subsistence level production. Such is one of the lessons of Part I.B.1 above.

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<sup>64</sup> See, e.g., TRACT, *supra* note 21 at 164-76.

<sup>65</sup> If trade represents a relatively small portion of its gross annual product, moreover, it will have to deflate quite substantially before its trade accounts will be brought into balance. This is, as we shall see *infra*, Parts II and III, the situation of today's U.S. It cannot be easy to be Fed Chairman in these circumstances, since the Fed is under a mandate to maintain "the highest possible employment." See 12 U.S.C. 2A. But again, more of this *infra*, Parts II and III.

As Keynes saw things, then, there were but two possible normative responses to this ultimately unacceptable outcome, only one of them reasonable. One such normative response was the doctrine of debtor adjustment favored by orthodox economists of Keynes's day (not to mention our own), which amounted to little more than a "so be it." Orthodoxy, in other words, prescribed much the same medicine for persistent trade deficits as it did for most other ailments – belt-tightening, bullet-biting, and bleeding. Keynes proposed, by contrast, a less deflationary and more equitable means of addressing persistent trade imbalance. Thus was born the doctrine of simultaneous debtor and creditor adjustment.

As Keynes saw things, a long term trade imbalance between two nations simply signaled a fundamental misalignment in the comparative values of their currencies.<sup>66</sup> The relative values of their currencies were out of synch with those nations' comparative advantages of production. Hence not unlike even some orthodox theorists, Keynes favored gradual, carefully managed adjustments of exchange rates via his Clearing Union in cases of long term trade imbalance. That would amount to *simultaneous* adjustment on the part of *both* nations, which seems warranted when trade imbalance is attributable to fundamentals in the way that long term such imbalances seem to be. A short-to-medium term trade imbalance, on the other hand, orthodox theorists tended to view as attributable to profligacy on the part of the debtor, which the debtor was accordingly obligated to change. Keynes, by contrast, thought short-to-medium term imbalance just as likely to be attributable to de facto mercantilist behavior on the part of the surplus nation as to profligacy on the part of the deficit nation.<sup>67</sup>

Moreover, Keynes observed, a nation that ran *long* term trade surpluses relative to the *world as a whole* was *particularly* likely to be engaged in de facto mercantilist practices. These in turn functioned as drags upon global growth as a whole. For persistent surpluses vis a vis the world as a whole amounted to nothing other than global hoarding. They were to the global accounts just what a huge, uninvested bank balance or corporate retained earnings are to national accounts.<sup>68</sup> In consequence of these observations, Keynes structured his Clearing Union plan in a manner that placed burdens of adjustment on persistent creditors just as fully as on persistent debtors.

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<sup>66</sup> That misalignment might be rooted in profligacy or poor management on the part of one nation, but it might also be rooted in mercantilist behavior on the part of the other nation. Or it might be rooted in no particular fault on the part of either nation. In effect, we shall see, Keynes offered a means of simply sidestepping the fault question.

<sup>67</sup> Such as, for example, currency manipulation of the sort we shall find some nations to be embarked upon now, *infra* Part II.

<sup>68</sup> A provocative neo-Berle-Meansian critique of contemporary corporate law's lenience in respect of retained corporate earnings is RAGURAM RAJAN & LUIGI ZINGALES, *SAVING CAPITALISM FROM THE CAPITALISTS* (2003). See also Hockett, *What Kinds of Stock Ownership Plans?*, *supra* note 4 at 97. Note that, while American household savings rates have until the recent crisis been ominously low and even negative, retained earnings by firms have been hefty indeed. For the numbers, see, e.g., [Fed, NBER].

Here is how the adjustment burdens worked under the Keynes plan. Each member nation's overdraft rights were called its "index quota." A nation's availing itself of these rights, of course, would amount to a deficit relative to the world as a whole. If a nation's central bank maintained an *annual* overdraft averaging more than  $\frac{1}{4}$  of its index quota under the Keynes plan, it was to be designated a "deficit bank." Deficit banks then would be permitted, in consultation with the Clearing Union's board, to depreciate their currencies relative to the bancor – hence to the world – up to 5% at year's end. If the overdraft average in question reached  $\frac{1}{2}$  of the bank's index quota, the central bank in question was deemed a "supervised bank," and was now *required* either to depreciate its currency relative to the bancor by 5% at year's end, or to lower its deficit by paying-in gold.<sup>69</sup> Interest charges on overdrafts would kick in as well in this case, and persistently profligate nations could be suspended or expelled from the Clearing Union. Adjustment, then, would be gradual in comparison to the wild fluctuations that can occur in global foreign exchange markets under a free floating regime, while nevertheless potentially rather more frequent than the rare "extraordinary" adjustments permitted under the Bretton Woods regime from 1944 to 1971 as described above in Part I.A.2.

*Paralleling* the burdens placed upon persistent debtors under the Keynes plan was a sequenced set of burdens placed upon persistent *creditors*. Here too the burdens were keyed to each nation's index quota. A nation's central bank that maintained persistent credit balances in the Clearing Union was of course running a surplus relative to the world as a whole. It was effectively hoarding. So the Keynes plan prescribed that an annual credit averaging more than  $\frac{1}{4}$  of a nation's index quota would result in that nation's being "permitted" to appreciate its currency relative to the bancor by up to 5% at year's end. Of course no de facto mercantilist nation would be wont to avail itself of this "permission" – the permission here was meant simply to provide symmetry with the debtor adjustment scheme – so the real teeth of creditor adjustment came with the Keynes plan's additional details. First among these was that a nation in the situation just described would be *required* to pay 5% *interest* on its credit balance in excess of the mentioned  $\frac{1}{4}$  of its index quota. In effect, part of the persistent surplus was to be confiscated. Next, again in parallel to the burden scheme for net debtors, the Keynes plan *required* revaluation by 5% of the currency of a nation running a surplus averaging  $\frac{1}{2}$  of its index quota at year's end. This nation would also be required to pay 10% interest on any increment of surplus exceeding the mentioned 50% of its index quota.

The idea that a nation would be required to pay interest on its persistent surpluses is of course apt to strike the orthodox mind as paradoxical. But the paradox here is rather less surprising when considered in conjunction with the "paradox of thrift" described in the previous

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<sup>69</sup> Payouts of gold were the means of restoring balance under the old gold standard. The classic exposition is DAVID HUME, *ESSAYS POLITICAL AND ECONOMIC* 32 (Peter Laslett ed., 1992). Gold-hoarding had accordingly proved to be a recurring form of self-insurance. As we'll see *infra*, Part II, today's counterpart is the hoarding of foreign exchange – in particular the dollar, which is the closest the world now has to a global currency or precious metal. The unfortunate consequences for domestic monetary authorities are considerable.

Subpart. The idea there, recall, was that widespread over-saving actually results in a shrinking economy and, paradoxically, therefore in aggregate savings themselves. In that sense hoarding is a form of antisocial behavior whose penalization should not be thought surprising.

The cardinal point in the present context is that persistent trade surpluses, as unrecycled earnings, amount to a global counterpart to domestic hoarding. Unlike domestic hoarding, moreover, global hoarding is not always readily attributable to understandable caution in the face of frightful financial uncertainty.<sup>70</sup> It is, rather, more typically a form of globally antisocial behavior in Keynes's view. It is effectively to act in beggar-thy-neighbor fashion just as the pre-18<sup>th</sup> century mercantilists had advocated; it is to play what amounts to a zero sum game. The only difference is that today's hoarding takes the form of foreign exchange reserves – nowadays mainly the dollar – rather than gold. And this difference proves critical, for it not only deprives the world economy of needed liquidity, but also effectively forces the central bank of the nation whose currency is hoarded to keep the domestic credit-money supply loose. That in turn limits the central bank's capacity to act as a countercyclical modulator of the financial markets in the manner we found necessary above. We shall return to this in Part II in accounting for the U.S.'s recent financial experience.

What Keynes hoped to accomplish with the Clearing Union plan, then, was to prevent global hoarding and the loss of domestic credit-money control that this tended to foment, and thereby to safeguard national control of domestic financial conditions and underwrite balanced, hence sustainable, growth worldwide. That would in turn give rise to a reciprocal reinforcement dynamic between liberal global trading arrangements on the one hand, and stable full-employment growth along bona fide Keynesian lines within national economies on the other. The Clearing Union would do that by facilitating orderly currency realignments, “incentivizing” purchases from sellers in deficit nations by buyers in surplus nations, and rendering hoarding transparent to all in the form of persistent surplus nations' Clearing Union accounts themselves.<sup>71</sup> The regime just described embodied the particular means Keynes suggested for accomplishing these ends. He did not, however, claim these were the only such means, nor should we. He drafted multiple variations on the basic theme, many of them in response to suggestions by colleagues and critics. I shall adopt a similarly flexible posture in sketching an updated template suitable to current conditions below, in Part III.

So then what happened to the Keynes plan in the run-up to Bretton Woods? I've told a fuller version of the tale elsewhere, and abler historians have told the story in painstaking

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<sup>70</sup> Although it can be in some cases. As we shall see in Part II, for example, self-insurance against sudden capital outflows of the late 1990s variety likely accounts for some of today's accumulation of dollar reserves by some nations.

<sup>71</sup> As we'll see in Part II, this could be viewed today as a list of all those things lacking in current Chinese trade and currency practice.

detail.<sup>72</sup> The short-playing version I'll tell here is the same in essentials but, well, short. It is that the U.S., which held by far the better part of the bargaining power during the course of negotiations over the early 1940s, could not be reconciled to the doctrine of creditor liability.<sup>73</sup> Nor, relatedly, was it willing to vest global money-creating authority in an international organ – even one in which it would hold veto authority.<sup>74</sup> To be sure, the first versions of what ultimately became the American proposal at Bretton Woods, drafted by Harry Dexter White of the U.S. Treasury, bore more in common with Keynes's Clearing Union Plan than did later versions. But by 1944 White's ambitions had been steadily "down-sized" by Treasury officials who, if not more cautious themselves than were White and especially Keynes, were at any rate convinced Congress would be.<sup>75</sup>

In consequence the U.S. proposed little more than a currency "stabilization fund" designed to "soften the landing" that would be debtor adjustment. Specifically, the U.S. position was that a nation in deficit was obligated to decrease imports or increase exports, and to do so in a non-discriminatory way. It must not, then, raise tariffs or export subsidies. Nor could it be permitted to devalue its currency save in an orderly manner with global – meaning ultimately U.S. – approval. It must instead either diminish consumption across the board – that is, deflate – or, if need be in the long run, seek approval from a new global institution to devalue. Recognizing that these forms of adjustment work hardship, however, the U.S. was prepared to support a short-term lending facility that might enable debtors to adjust somewhat more gradually than they otherwise would be able to do.<sup>76</sup> Its proposed "International Monetary Fund" was to serve as that lending facility.

This facility would not be able to "create" money in any manner. Instead it could only lend out what would already have been put in. It would be funded, in turn, by the pooled contributions of member nations, which would contribute quotas keyed not to their cross-border trading volume, but to their gross domestic products. Adjustment loans would be extended from out of those pooled funds. Decision-making in respect of such lending, for its part, would be by board vote, and voting power in turn would be keyed to contributions. Consequential decisions, moreover, could only be made by supermajority vote – specifically, by 85% or more of all votes. This in turn meant that one nation, as the largest contributor by far to the fund, bore a veto. That nation was of course the U.S. It still is. The U.S. plan also meant, in effect, that the dollar would serve as the world's de facto reserve currency – a fact which has proved problematic, to say the least.<sup>77</sup> But we shall return to this in Parts II and III.

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<sup>72</sup> See Hockett, *Macro to Micro*, supra note 2.

<sup>73</sup> See id.; also Eichengreen, supra note 68 at 395-99.

<sup>74</sup> See sources cited supra, note 38. The veto authority, for its part, is what the U.S. uniquely enjoys in the IMF that we have. More on this infra.

<sup>75</sup> See, e.g., ROBERT SKIDELSKY, JOHN MAYNARD KEYNES: FIGHTING FOR BRITAIN 370 (2001).

<sup>76</sup> See Hockett, *Macro to Micro*, supra note 2.

<sup>77</sup> Id.

Keynes and his British Treasury colleagues were unsurprisingly convinced that the U.S. took the line that it did at Bretton Woods precisely because it had been the world's largest net global creditor for many years prior to the war, and looked poised to continue that position long after the war. American bankers' preference for a strong dollar, they reckoned, played a role too. The Americans, for their part, appear to have suspected that Keynes's doctrine of simultaneous debtor and creditor adjustment had something to do with Britain's large debt to the U.S. incurred both before and, especially, during the war years. The fact of anticipated long term British debt, combined with what seems to have been a traditional American suspicion of clever Britons' capacity to "pull a fast one" in financial dealings with the rubes who were their erstwhile colonial subjects, might have led the Americans to take Keynes's impassioned – and often cleverly barbed – professions of idealism with more than a grain of salt. In any event, the upshot was that the U.S. delegation made few concessions to the U.K. during the Bretton Woods negotiations, and the resultant IMF accordingly ended up looking much more like White's scaled-down "Stabilization Fund" than Keynes's Clearing Union.

The U.S. came later, of course, to find wisdom in Keynes's earlier proposals, as its own – and its currency's – position relative to the rest of the world grew manifestly unsustainable over the course of the 1960s.<sup>78</sup> One upshot – Nixon's suspension of dollar/gold convertibility in 1971 – has been mentioned already. Another was a much scaled-down rendition of Keynes's "bancor," in the form of so-called "special drawing rights" (SDRs), instituted by amendment to the IMF Charter in the aftermath of Nixon's measure.<sup>79</sup> My aim in the next Part will be to indicate why the resultant so-called "Bretton Woods II" has proved not to be anything near enough. We shall not have done enough until we "proceed backwards," so to speak, to the original Bretton Woods – what I am calling "Bretton Woods 1.0." That is something rather more like Keynes's Clearing Union Plan, or at any rate its functional equivalent.

## II. THE WAGES OF GETTING THINGS WRONG: UNBALANCED TRADE, FRAGILE FINANCE

The world in general and the U.S. in particular have paid, and are still paying, a considerable price for not having gone the bona fide Keynesian route after the War. We have succeeded in finally vindicating the 1944 hope for an International Trade Organization, by instituting a World Trade Organization fifty years later. And this success is but the capstone on five decades of steadily liberalized global trade under the ad hoc GATT regime that commenced in the late 1940s and culminated in the Uruguay Round of 1994. But this regime has come unaccompanied by any adjunct of the form Keynes originally prescribed. And much that has

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<sup>78</sup> See Hockett, *Macro to Micro*, supra note 2.

<sup>79</sup> Id.

happened both on global and in domestic financial and monetary markets since the late 1950s is attributable to this fact.

This Part substantiates that claim in respect of the past decade and a half, rather as an earlier work did in respect of earlier years.<sup>80</sup> Focusing on the U.S. case, it schematically narrates the story of the past fifteen years' financial volatility in Keynesian terms, as the product of just that form of recursive collective action problem described in Part I.B.1. It also documents the apparent inability of national collective agents – domestic central banks, the U.S. Fed in particular – to modulate that volatility under current worldwide credit conditions. It attributes this inability in particular to persistent trade surpluses racked up by a small number of state actors that have gone unassisted and unchecked by any Keynesian mechanism like that described in Part I.B.2.

#### *A. Our Latest Keynesian Boom and Bust Cycle: The U.S. as Case Study*

The performance of U.S. financial and real estate markets over the past 15 years constitutes a classic case of the boom and bust cycle described above in Part I.B.1, rooted in the recursive collective action problems Keynes found endemic to decentralized investment markets. This Subpart briefly narrates that story, dividing it into three phases. The next Subpart then roots the story in the position occupied by the U.S. and its currency in the current global trading order. The ultimate aim is to indicate how something more like the IMF Keynes envisaged, or its functional equivalent, will be necessary if we are to prevent repeat performances of those booms and busts we've experienced over the past decade and a half since the 1994 Uruguay Round.

##### 1. First Phase: The “Tech Stock” Bubble

In Part I.B.1 we noted that self-amplifying asset price hyperinflations take root initially in exogenous developments in the “real” economy that naturally attract “fundamental value” investment. They subsequently morph into toxic events as over-levered value investors, then “flipping” Ponzi-style investors, become the dominant participants. In recent American financial history, two of the most conspicuous exogenous developments at first attracting value investors were (a) the emergence and spread of distributed home and office computing technologies in the 1980s, followed by (b) the privatization of the World Wide Web and Internet in the early-mid 1990s.

Americans were quick to recognize the revolutionary potential of these developments. When Netscape, developer of the first popularly accessible web browser, went public in mid

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<sup>80</sup> See Hockett, *Macro to Micro*, supra note 2.

1995, its stock price more than doubled the first day.<sup>81</sup> From that day forward, investment in tech stocks rose rapidly. So did investment in other stocks. These rises seemed warranted even by prospective “fundamental” value for a time. New computing and communications technologies, after all, rendered business firms more efficient. It is no accident that productivity grew at historically high rates of over 4 percent during the second half of the 1990s.<sup>82</sup> It was no surprise, then, that firms began attracting more investment, and that those most responsible for the productivity “miracle” accounted for a disproportionate share of it.

There were additional reasons of a more or less “fundamental” nature for stock prices to rise. American firms had widely adopted Japanese management and production techniques over the late 1980s and early 1990s. These too improved productivity growth. There were also decisive demographic developments underway. Baby boomers were entering their 40s and 50s, which decades constitute the most productive in a working life. Furthermore, aging baby boomers began turning attention to retirement savings, hence to investment options. A boom in mutual fund investments, as well as investment-encouraging changes to the tax code, quickly ensued.<sup>83</sup>

Another development, part “fundamental” and part “speculative,” was the sequence of associated stock and real estate busts that occurred first in Japan, then in Scandinavia, then in Pacific Rim nations over the course of the late 1980s and 1990s. Those developments, which themselves constituted textbook cases of the boom and bust cycle schematized above in Part I.B.1, resulted in globally mobile investment capital’s seeking seemingly better investment prospects than East Asia and Scandinavia had proved to be. The “fundamentals” just mentioned, along with the U.S.’s traditional role as “safe haven” for investment during globally turbulent times, rendered the U.S. a natural recipient of those funds.<sup>84</sup>

Against this backdrop, it was natural not only that more people would be investing in tradable securities, but also that some would at some point begin betting on *asset price rises* fueled by those “fundamentals”-prompted investments themselves. And rise is precisely what securities prices did, at a steadily accelerating rate, over the course of the 1990s. The Dow Jones, S&P 500, and NASDAQ Composite Indices all rose steadily through 1995, more rapidly through 1996 and 1997, and downright precipitously in the final years of the 1990s and early 2000.

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<sup>81</sup> See CHARLES MORRIS, *THE TWO TRILLION DOLLAR MELTDOWN* 32 (2009). Also WILLIAM A. FLECKENSTEIN, *GREENSPAN’S BUBBLES* 58 (2008).

<sup>82</sup> MORRIS, *id.*

<sup>83</sup> See MATTHEW FINK, *THE RISE OF THE MUTUAL FUND INDUSTRY* (2008), on this boom.

<sup>84</sup> See, e.g., CHARLES P. KINDLEBERGER & ROBERT ALIBER, *MANIAS, PANICS, AND CRASHES: A HISTORY OF FINANCIAL CRISES* 142-64, 275-93 (5<sup>th</sup> ed., 2005) for a helpful summary account of these stories. See also Hockett, *Macro to Micro*, *supra* note 2.

So, in keeping with Part I.B.1's self-amplification picture, did borrowing rates. People and institutions increasingly borrowed to purchase investment securities on margin, evidently with a view to arbitraging the spread between interest and capital gains rates as described in Part I.B.1. Spreads between asset prices and borrowing costs rapidly widened, to the point that it grew steadily less plausible to attribute stock price rises solely to fundamentals-prompted investment as distinguished from "beautiful baby" investment. Alan Greenspan, of course, publicly worried as much in December of 1996 after a presentation made by Robert Shiller at Jackson Hole. And in a revival of Irving Fisher's venerable but largely forgotten "debt deflation theory of great depressions" that same year, John Geanakoplos expressed similar worries.<sup>85</sup>

In response to such developments, a Keynes-inspired collective agent would at some point decide to err on the side of caution and step in to modulate market behavior. It would impose higher reserve ratios and/or capital requirements upon, or raise the funds rate charged to, banks and, were there such, other financial institutions that lent or used borrowed funds for purposes of speculative asset purchase. It might also act to tighten the money supply through open market operations. Finally it might even ensure or recommend, depending upon its jurisdiction, that higher capital gains rates, or even "Tobin taxes," be levied on rapid turnaround sales of speculative assets. One might have expected some such measures by, say, late 1998 or early 1999 at latest in the U.S. In fact, however, apart from Chairman Greenspan's isolated remarks of late 1996, this was a period during which the Fed championed financial deregulation, kept credit-money cheap, and recommended that taxes be kept low – which they ultimately were. I shall of course argue that this was bad policy, but I shall also argue that U.S. trade deficits have significantly tied the Fed's hands in respect of two of the three mentioned policies.

Back to our cheap money story, in August 1995, the month of the aforementioned Netscape IPO, the Fed Open Market Committee (FOMC) dropped the benchmark federal funds rate from 6 to 5.75 percent.<sup>86</sup> The rate continued to drop for the next 18 months. The March 1997 FOMC meeting brought a modest rise to 5.5 percent, but then followed with three straight cuts over the ensuing 15 months. All of this came as stock prices continued to climb.<sup>87</sup> By the end of 1997, the S&P 500 had risen 31 percent for the year. That was over 100 percent relative

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<sup>85</sup> See, e.g., John Geanakoplos, *Promises, Promises*, in THE ECONOMY AS AN EVOLVING COMPLEX SYSTEM 285 (Brian Arthur et al. eds., 1997) (originally posted on Cowles Foundation website in 1996); Robert J. Shiller et al., *Why Did the Nikkei Crash?*, 78 REV. ECON. & STAT. 156 (1996); Robert J. Shiller & Andrea Beltratti, *Stock Prices and Bond Yields: Can Their Comovements Be Explained in Terms of Present Value Models?*, 30 J. MON. ECON. 25 ((1992). For Fisher's early linking of leverage rates and bubbles, see IRVING FISHER, BOOMS AND DEPRESSIONS: SOME FIRST PRINCIPLES (1932). For Greenspan's remarks, see <http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm> . See generally Hockett, *Fixer-Upper for Finance*, supra note 5 at 1245-54.

<sup>86</sup> See, e.g., FLECKENSTEIN, supra note 39, at 97. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>87</sup> Id. at 99. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

to where the index had been when the rate-cutting began, mid-1995.<sup>88</sup> By mid-1998, the index had risen another 21 percent, by which point the Fed had eased the federal funds rate to 5.5 percent again.<sup>89</sup> There were no changes to reserve or capital requirements during this time either.

With the collapse of the Russian ruble and the near-failure of the Long Term Capital Management Hedge Fund in early autumn of 1998, the Fed acted to maintain market confidence by cutting the rate further, to 5.25.<sup>90</sup> Though the markets had quickly rebounded by October, the FOMC surprised everyone with yet another, follow-up cut. This took the rate down to 5 percent.<sup>91</sup> The easing did not stop there. Although by mid-October the markets were up over 3 percent for the year, and shortly thereafter had risen 5 percent more, the FOMC cut rates again, to 4.75 percent, in November 1998.<sup>92</sup> And still there were no changes to reserve or capital requirements. This looked positively perverse. Why, then, did the Fed act in this way? Again, I think the answer lies ultimately in the U.S.'s deteriorating trade position during this period, but more of that presently.

Now as people began speaking of a "Greenspan put," opinion began turning to the effect that a bubble was inflating. Market actors clearly were borrowing to buy on the strength of anticipated "flipping" potential. Tech stocks rose especially precipitously on borrowed money toward the end of the 1990s. Theglobe.com's IPO, in mid-November of 1998, saw its stock rise by over 600 percent in one day.<sup>93</sup> The day after Thanksgiving, all 15 of the NASDAQ's top stocks rose over 45 percent.<sup>94</sup> The trend accelerated in early 1999. Average price gains for tech firm IPOs in the first quarter of 1999 were as follows: in January, 271 percent; in February, 145 percent; in March, 146 percent.<sup>95</sup> By mid-1999, the NASDAQ had more than doubled over the previous mid-October measure, when the FOMC had begun the just described sequence of rate-cuttings.<sup>96</sup>

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<sup>88</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>89</sup> Id. at 101. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>90</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>91</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>92</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>93</sup> Id. at 104. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>94</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>95</sup> Id. at 105. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>96</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

The Fed finally began raising rates incrementally upward in August. It raised the rate first to 5.25 percent that month, then to 5.5 percent in November.<sup>97</sup> By this point, however, as often happens in late bubble conditions, rate rises seemed no longer to be taken seriously.<sup>98</sup> And there were no changes to reserve or capital requirements to catch speculators' attention. Investors appear, in fact, to have come to anticipate that the Fed would lower rates again at the first sign of a market dip. That, after all, was the "put." Moreover, by now prices were rising so quickly that small interest rate hikes would have seemed trivial. Tech IPO stocks now rose hundreds of percentage points over their very first days.<sup>99</sup> At the same time, moreover, apparently in contemplation of "Y2K" worries, the Fed had been pumping newly printed *money* into the economy through the autumn of 1999. The money supply grew by \$147 billion – a 14 percent annualized growth rate.<sup>100</sup> The year's final two months saw that rate grow yet higher, to 44 percent.<sup>101</sup> This simply augmented a yet longer-running trend on which there will be more to say in the next Subpart: from early 1996 to late 1999, the money supply grew by \$1.6 trillion, about 20 percent of GDP.<sup>102</sup>

Familiar benchmarks of "fundamental" value on the part of investment securities, it should be noted, led growing numbers of market-watchers to express concern over the Fed's apparent willingness to ignore stock price hyperinflation during this period. Price to earning (P/E) ratios grew to unprecedented heights. Respected authorities like Paul Volcker, Warren Buffet, and George Soros worried aloud that rapidly ascending tech stock prices were associated with firms that had not yet turned profits. So did market-watching websites like iTulip.com. The party surely would soon end. By early 2000 the NASDAQ had risen over 900 percent in five years. Nevertheless, by early February, the FOMC still had not raised rates above 5.75 percent – the rate in effect at the time of the Netscape IPO.<sup>103</sup> This same week the NASDAQ rose 9 percent, its largest weekly gain in nine years.<sup>104</sup> It continued to rise until March 10<sup>th</sup>, its

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<sup>97</sup> Id. at 106. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>98</sup> The Fed began tightening money, too late, in late 1928 and early 1929 too. See, e.g., KINDLEBERGER & ALIBER, *supra* note 79 at 137.

<sup>99</sup> See, e.g., *id.* Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> . Breaking the back of the 1970s consumer price inflation had required Paul Volcker's Fed to raise rates to 18%.

<sup>100</sup> Id. at 118. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>101</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>102</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>103</sup> Id. at 117. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>104</sup> Id. at 119. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

peak day. Its level that day, 5048, represented a gain of 24 percent on the first day of the year only a bit over two months before.

The following graph summarizes the tale told up to now, plotting changes in the federal funds rate, the money supply, and NASDAQ performance from 1995 to early 2000:

[Insert Figure 1]

Beginning in March, tech stocks finally – and quite suddenly – began falling as quickly as they had risen, in keeping with the model of asset price bubbles and bursts sketched in Part I.B.1. Other stocks soon followed. Between March and May, the NASDAQ lost 47% of its value.<sup>105</sup> Other indexes began dropping too as the year wore on. In the first days of 2001, the S&P 500 dropped 10%.<sup>106</sup> The FOMC responded by cutting the lending rate again, to 6 percent, after a sequence of incremental hikes it had imposed in the final months of the bubble that peaked in 2000.<sup>107</sup> The stock markets wavered thereafter till summer, their bubble potential apparently spent.<sup>108</sup> This led people to wonder what might underwrite growth in the broader economy in future. By his own public admission, Greenspan banked on an answer: real estate.

## 2. Second Phase: The Real Estate Bubble

As the equity bubble inflated over the late 1990s, spillover market-valued wealth seems to have spread to the real estate markets. During the first half of the decade, mortgage debt grew at a 3.7 percent annual rate.<sup>109</sup> That number rose to 6.2 percent in 1996 and 1997, then 9.5 percent by 1998.<sup>110</sup> By late 2000, U.S. mortgage debt was 50 percent higher than five years earlier.<sup>111</sup> Investors noticed these developments just as they had those in tech and other stocks. And as with tech stocks, so here, “fundamentals” could at first rationalize the trend. For land was, of course, in finite supply, while population seemed only to grow. Ricardian marginal land

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<sup>105</sup> Id. at 120. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>106</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>107</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>108</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>109</sup> Id. at 122. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>110</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>111</sup> Id. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

rent theory seemed to combine with Malthusian population growth theory in public perception to make real estate seem a sure thing. In the long run, it “could only go up.”

There were other reasons at first to attribute real estate price rises to “fundamentals.” New home-finance instruments, techniques, and institutions, for example, originally pioneered by the then new Home Owners Loan Corporation (HOLC), Federal Housing Authority (FHA) and Federal National Mortgage Association (Fannie Mae) during the late Hoover and early Roosevelt years, then further developed by unregulated private “mortgage banks” and associated industries, along with investment banks, during the late 1980s and early 1990s, represented bona fide value-adding technological advances.<sup>112</sup> For finance is a technology just as are computing and communications technologies – particularly when it makes use of the latter.

As long term interest rates declined and the money supply grew during the later 1990s, then, all while stock and home prices rose, financial firms began to develop and market more and more new debt products by which to capitalize on the trend. And at first they could do so with legitimate reason to suppose they were facilitating bona fide value investment. Some of these financial innovations, moreover, helped to add real purchasing power to home-owning consumers, hence to boost aggregate demand in an economy where real wages had languished close to stagnant for nearly two decades.<sup>113</sup>

An early new debt product developed in these years was the “refi,” a means of converting home equity growth into cash. With lower interest rates, home-owners could borrow higher loan amounts on the same monthly payment arrangements. With these they could pay off their original loans and then pocket the difference, in effect converting home-value growth into liquid purchasing power. Refinancing transactions, valued at a mere \$14 billion in 1995, leapt to nearly a quarter-trillion by 2005.<sup>114</sup>

As demand for refis grew, so did demand for more rapid means of processing loan applications. Credit-scoring was increasingly automated – another technology-grounded, value-adding development – and decreasingly subject to careful verification – potentially value-reducing in the long run, but less so at the outset, on actuarial grounds.<sup>115</sup> The work of credit-scoring, then -originating, were increasingly *farmed-out* as well. The earlier mentioned new industry of federally unregulated “mortgage banks,” mortgage brokers, and other mortgage originators grew rapidly in the second half of the 1990s, filling the vacuum left by the savings

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<sup>112</sup> See Hockett, *Fixer-Upper for Finance*, supra note 5; Hockett, *Bailouts, Buy-Ins, and Ballyhoo*, supra note 5; also Robert Hockett, *A Jeffersonian Republic by Hamiltonian Means*, 79 SO. CAL. L. REV. 45 (2006).

<sup>113</sup> See, e.g., sources cited infra, note 147, in Part II.B.

<sup>114</sup> See MORRIS, supra note 49 at 68.

<sup>115</sup> See id.

and loan industry that came a cropper following deregulation a bit over decade earlier.<sup>116</sup> Some of the names have since become “household words,” pun intended: Countrywide, Indy Mac, etc.

With growing numbers of unregulated mortgage originators came growing numbers of yet newer financial products, developed with a view to bringing yet more people into levered home-buying markets. Adjustable rate mortgages (ARMs), offering low front-end “teaser” rates of interest that later “ballooned,” were developed to attract less wealthy buyers into the home markets. As home prices accelerated over the second half of the 1990s and, especially, in the early 2000s, these debt structures came to look less imprudent to individual market actors than they might earlier have seemed. The collective action problem schematized in Part I.B.1, in other words, afflicted the real estate market. For it became increasingly plausible for each individual to believe she might “refi” her mortgage before higher rates kicked in, on the strength of the accleratingly appreciating endogenous collateral that was the real estate itself. Like considerations would apply in the case of lenders. Against such a backdrop, it could even look individually irrational *not* to join the party. Chairman Greenspan himself, apparently failing to distinguish between his own role as a collective agent and the roles of home-buyers as individual actors, said as much. He did so in widely quoted public remarks made in 2004.<sup>117</sup>

As home prices continued to rise through the late 1990s and early 2000s, mortgage originators looked for new prospects to whom to lend. If that were not motive enough, investment banks and other financial intermediaries, who were discovering the virtues of mortgage-backed securities (MBSs), began adding to the demand for new borrowers. The so-called securitization of mortgages did not, contrary to popular belief, begin during this period.<sup>118</sup> But in the late 1990s and early 2000s, MBSs did become a particularly “hot,” fad investment vehicle. They offered high returns for the bearing of what looked like little risk. The U.S. had not, after all, seen substantial mortgage default rates since the 1930s. And once home prices began rising quickly, profits on lending grew too.

A classic positive feedback loop of the Keynesian kind described in Part I.B.1 seems to have set in to real estate markets by the early 2000s. Increasingly, people began borrowing to buy homes not simply to inhabit, but to “flip” them – to sell them at a profit as prices

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<sup>116</sup> Intriguingly, the Savings and Loan industry was wiped out in significant part owing to overly rapid deregulation, but the deregulation itself – albeit not necessarily rapid deregulation – was necessitated by the consumer price inflation of the 1970s. Had the Fed, Congresses, and Presidents of the time only heeded the anti-inflation side of Keynes’s thought described supra, Part I.B.1 – or even the advice of Fed Chairman William McChesney Martin of the late 1950s to late 1960s era – we might have avoided the late 1980s, 1990s, and early 2000s real estate bubbles. For more on this, see Hockett, *Fixer-Upper*, supra note 5; Hockett, *Bailouts, Buy-Ins, and Ballyhoo*, supra note 4.

<sup>117</sup> See, e.g., *Greenspan Says Personal Debt is Mitigated by Housing Value*, N.Y. TIMES, Feb. 24, 2004, at C11.

<sup>118</sup> Again, it was a product of the Roosevelt era. See Hockett, *Fixer-Upper for Finance*, supra note 5; Hockett, *Bailouts, Buy-Ins, and Ballyhoo*, supra note 4; also Robert Hockett, *A Jeffersonian Republic by Hamiltonian Means*, 79 SO. CAL. L. REV. 45 (2006).

accelerated. Levered purchases accordingly shifted into spontaneous Ponzi territory as modeled in Part I.B.1. By 2005, fully 40 percent of U.S. home purchases were investment purchases, bought with the intention of resale – a remarkable rate.<sup>119</sup> That fact showed up in another telling pair of numbers: Whereas in 1990, there was a total of \$3.8 trillion in outstanding mortgage debt in the U.S., in the two years from 2003 to 2005 mortgage debt *grew* by nearly that amount.<sup>120</sup>

So-called subprime loans – loans to people with poor credit histories, unreliable incomes, or both – were a response first to the housing market’s move into this “feedback loop” phase. They grew especially popular as the market showed signs of nearing saturation by about 2003. Subprime lending volume was \$145 billion in 2001.<sup>121</sup> It was over \$625 billion in 2005, and accounted for over 20 percent of home lending in the years 2004-2006.<sup>122</sup> The comparable figure for 1997 was less than 3 percent.<sup>123</sup> Over a third of the subprime loans extended in 2004-2006, moreover, were for 100 percent or more of home value – in effect, an infinite leverage rate.<sup>124</sup>

Ordinarily, of course, lending on these terms is not thought prudent – nor is such borrowing. But when prices are growing at double-digit rates, borrowers and lenders not unreasonably assume refinancing on the basis of growing collateral values will be available. So do others, such as rating agencies. That is the role of endogenous collateral mentioned above in Part I.B.1. Add in the fact that the two largest mortgage securitizers, Fannie Mae and Freddie Mac, had missions dating back to the 1930s to boost home-ownership rates, and it is scarcely surprising that so much risky lending and borrowing occurred in the early 2000s – at least for as long as the credit-money was cheap.

Against this backdrop, Fed monetary and interest rate policy of the time looks all the more curious, if not ominous. So do the tax cuts of 2001 and 2003, given their skew toward those with the lowest marginal propensities to consume and the highest propensities to speculate on the secondary investment markets, as noted above in Part I.B.1. At first these policies might have appeared warranted even to well meaning – if perhaps Keynes-ignorant – people. As noted above, after all, the burst of the tech stock bubble in 2000 led to a difficult period for securities

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<sup>119</sup> See FLECKENSTEIN, *supra* note 49 at 123. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html>.

<sup>120</sup> *Id.* Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html>. Much as he had done in response to the stock market bubble, Robert Shiller worried aloud about housing prices. See, e.g., ROBERT J. SHILLER, *IRRATIONAL EXUBERANCE* (2000); Robert J. Shiller, *Moral Hazard in Home Equity Conversion*, 7 REAL ESTATE ECON. 1 (2000); Robert J. Shiller & Allan N. Weiss, *Home Equity Insurance*, 19 J. REAL ESTATE FIN. & ECON. 21 (1999).

<sup>121</sup> See MORRIS, *supra* note 49 at 70. ROBERT SHILLER, *THE SUBPRIME SOLUTION* 57 (2008).

<sup>122</sup> MORRIS, *id.*

<sup>123</sup> *Id.*

<sup>124</sup> *Id.* at 71.

markets. By mid-2001, the NASDAQ was down 34 percent for the year, the S&P down 18 percent.<sup>125</sup> The FOMC continually cut interest rates in response. The Fed funds rate was down to 3.5 percent by September of 2001.<sup>126</sup> Following the terrorist attacks of that month, we now tend to forget, people worried about the possible extension of a “corporate profits recession” already long since underway.<sup>127</sup>

The concern for a time proved well founded. The NASDAQ declined another 32 percent over 2002. The S&P fell another 24 percent.<sup>128</sup> The Fed responded to these developments both by lowering the Fed funds rate further, and by commencing overtly to *commend* rising *real estate* prices precisely as a means of *encouraging* slumped *consumer* spending. By the end of 2001, the funds rate was down to 1.75 percent.<sup>129</sup> By late 2002, it stood at 1.25 percent.<sup>130</sup> Though economic growth had picked up by 2003 with Iraq war expenditures, the FOMC curiously dropped the funds rate yet further, to 1 percent, in the second quarter of that year.<sup>131</sup> There it remained for a year, until the summer of 2004.<sup>132</sup> But all of this was occurring as home prices, which are particularly sensitive to interest rates, charged upward.

The credit-fueled housing bubble drew increasing attention from the popular media and the Fed in early 2002. Mainstream magazine articles advised Americans how to “borrow against [their] house[s] to buy stocks.”<sup>133</sup> Fed Chairman Greenspan testified before Congress that real estate price rises were compensating for the ongoing stock price declines.<sup>134</sup> Increasingly, policymakers and citizens at large were *relying* on mortgage investment as generator of consumer spending and economic growth.

The problem, however, was that the growth was now being fueled not by any underlying growth in “fundamental” value, but by an unsustainable positive feedback loop of the kind described in Part I.B.1. It was Ponzi growth, as is readily verified by comparing home prices

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<sup>125</sup> See FLECKENSTEIN, *supra* note 49, at 125. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>126</sup> *Id.* Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>127</sup> *Id.* Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>128</sup> *Id.* at 127. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>129</sup> *Id.* at 128. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>130</sup> See MORRIS, *supra* note 49, at 115.

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

<sup>133</sup> See FLECKENSTEIN, *supra* note 49, at 123. Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

<sup>134</sup> *Id.* Also Federal Reserve Bank of New York, Historical Changes of Target Federal Funds and Discount Rates, 1971 to Present, available at <http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html> .

with two plausible proxies for fundamental value – rental prices and home building prices. The following graph affords quick means of doing so, charting the changes not only in housing prices, rental prices, and home building prices, but also in interest rates and money supplies, over the years from 1995 through 2007:

[Insert Figure 2]

As levered home purchasing drove housing prices higher, those who by borrowing were doing the driving grew increasingly exposed – again, as per the Keynesian picture described in Part I. Were home prices to cease growing, refinancing on the strength of appreciating collateral would cease to be available, “balloon” rates would finally kick in, and people would find themselves “under water.” Were that to happen, the debt “overhang” would leave lenders exposed too. The same, of course, would happen to those whom lenders in turn owed obligations – investors, for example.

And this, as it happens, implicates yet another important financial development that occurred over the course of the late 1990s and early 2000s: Financial institutions that invested in MBSs had increasingly entered into derivative risk-trading arrangements to insure against portfolio loss in the event of mortgage defaults. The huge growth in markets for credit-default swaps and other, more complex derivative risk-sharing instruments were products of this era.<sup>135</sup>

Ordinarily, of course, the spread of risk-bearing is a salutary development. It lessens the exposures of individual actors and makes credit more widely available. But when the risks being spread all amount to the risk occasioned by burst bubbles, and when credit is over-abundant rather than rare, the spreading in question is that of systemic destruction. The spread of risk-bearing over the course of the housing price bubble assured that, once it burst, many would be swept into the ensuing conflagration and contraction.

### 3. Final Phase: Global Contagion, Again

Housing prices reached their inflection point by mid-to-late 2006.<sup>136</sup> As many as could be drawn in to the pyramid-structured mortgage markets by now had entered. Prices leveled off, then began rapidly to decline – again in keeping with the model sketched earlier in Part I.B.1. Those who had borrowed on terms only sustainable while prices continued to rise now found themselves pinched. As balloon mortgage rates began to inflate, low-end borrowers began to default. That of course began lowering the market values of mortgage-backed securities. And

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<sup>135</sup> See, e.g., MORRIS, *supra* note 49, at 73-79.

<sup>136</sup> *Id.* at 78.

that in turn issued in calls upon credit default swappers and other de facto insurers to make counterparties whole.

Over \$350 billion worth of subprime and other low grade home loans that closed in 2005 and 2006 “reset” in 2007 and 2008. Their monthly payments began to balloon.<sup>137</sup> Foreclosure rates rapidly mounted in consequence. Talk of a “subprime crisis” grew widespread by summer of 2007. Lenders, then holders of repayment rights, began feeling the pinch. All of the highest profile financial institution defaults and bailouts, commencing with Countrywide itself in 2007, on through Bear Stearns, Fannie and Freddie, Lehman Brothers, AIG, Washington Mutual, and others in 2008 and 2009, stemmed directly from the collapse of home prices and consequent mortgage defaults. So, of course, did the dramatic loss of capitalization on the securities markets over the course of 2008 and much of 2009.

Other nations too – notably the U.K., Australia, and Spain – went through real estate bubbles and bursts of their own during the years just described, and like the U.S. are continuing to deal with the fallout – Spain especially. Moreover, MBSs and derivative arrangements tied to mortgage values had spread over the globe. It was far from American investors alone who bet on continued growth in American and other mortgage markets; many were global investors who had sought an alternative to the economies of Scandinavia, East Asia, and South America that had crashed in response to asset price bubbles of their own over the 1990s and early 2000s. Against this backdrop it is readily appreciated why the credit crisis of 2008-10 was from the start global in nature. And that is before we consider the role that contracting credit and plummeting consumer confidence play in lowering global demand for consumer goods and services. Scarce wonder, then, that the IMF reported, in 2009, the first worldwide economic contraction since the 1940s.<sup>138</sup>

Against this calamitous and still ominous backdrop, the role of the U.S.’s principal Keynesian countercyclical regulator – the Fed – in the story is again curious, at least initially. For as noted it seems not to have modulated the booms in tech stocks, other stocks, and mortgage-related instruments, but indeed to have fueled them. And it sees in part even to have willfully aided and abetted, if not indeed orchestrated, the *last* of those booms as a means both of “softening the landing” occasioned by first of the booms’ ending – as if addressing methadone withdrawal symptoms with heroin – and of compensating for stagnant and even declining real incomes among most Americans during the 1980s and 1990s.

Was the Fed, then, asleep at the switch? Worse yet, was it in the grip of mistaken understandings either of its own proper role or of the nature of asset price bubbles and bursts as described in Part I? In the previous articles to which this Article serves partly as sequel, I

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<sup>137</sup>

Id.

<sup>138</sup>

See ...

suggest that this *might* be the case.<sup>139</sup> In particular, failure to appreciate bubbles’ and bursts’ compatibility with rationality on the part of individual investors and informational efficiency on the part of financial markets seems to have led some to think asset price bubbles either impossible or undetectable – positions I rebut in the aforementioned articles.<sup>140</sup> Yet it is also the case, I shall argue, that the Fed had little choice to do other than it did in any event – owing to the U.S.’s role in the global economy. To that missing piece of the puzzle, then, we now turn.

### *B. The Role of Our Missing Global Keynesian Modulator: The U.S. as Buffer and World Central Banker*

In the tale just told, it seems pretty clear that the Fed did not so much as attempt to act as a Keynesian countercyclical regulator to rein-in cheap credit-money or otherwise dampen credit-fueled asset price inflation. Some believe that this owes to misguided Fed policy – or, relatedly, to the role of a misguided ideologue who served as Fed Chair.<sup>141</sup> I don’t wish to rule out those prospects. I do wish, however, to argue that the Fed might in any event have had little choice, such that no imputation of irresponsibility or idiocy at the Fed is necessary to account for events.<sup>142</sup>

This Subpart argues that, whether or not the Fed tugged at the bonds, its hands were at any rate by and large tied. It was the U.S.’s global trade position, as partly determined by the role of its currency in the world’s economy, that tied them. The latter, in turn, owes much to precautionary, “as if” mercantilist hoarding behavior on the part of some U.S. trading partners. But it also owes partly to the sheer size and historically path-dependent role of the U.S. in the world economy – in particular, to the role that these factors have effectively forced on the U.S. currency. The important thing is that a functional equivalent of the Keynesian Clearing Union, suitable to today’s markets, would put an end to the problem irrespective of which of these causes is dominant.

#### 1. Trade Surpluses as Hoarding, Trade Deficits as Disinvestment

The way in which protracted trade deficits tie the hands of central banks, forcing them to keep monetary policy loose, is readily appreciated against the backdrop of Keynes’s economics and Clearing Union plan outlined in Part I.B. The first thing to note is that, where the

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<sup>139</sup> See Hockett, sources cited *supra*, note 4.

<sup>140</sup> *Id.*

<sup>141</sup> See, e.g., FLECKSTEIN, *supra* note 49; also JOHN B. TAYLOR, *GETTING OFF TRACK: HOW GOVERNMENT ACTIONS AND INTERVENTIONS CAUSED, PROLONGED AND WORSENERED THE FINANCIAL CRISIS* (2009). There are others, but these two suffice.

<sup>142</sup> I argue on behalf of such “charitable interpretation” at greater length in Robert Hockett, *Bubbles, Busts, and Blame*, 39 CORNELL LAW FORUM 5 (2011).

maintenance of aggregate demand is concerned, exports on the part of any nation's producers act as a substitute for domestic investment expenditure. When domestic consumer expenditure wanes as a proportion of output proceeds per the Keynesian story told earlier, in other words, exports offer an additional means of filling the gap. Diminished proportional domestic consumption expenditure now can be supplemented, not only by domestic investment expenditure, but also by foreign expenditure on domestic products. It is precisely for this reason that exports often are categorized as "investment" by Keynes's followers. Exports discharge the same demand-supplementary function, hence stave off the underconsumption threat faced by any advanced economy.

It follows, from the role played by exports, that imports function as *disinvestment* where underconsumption is concerned. That is to say, they aggravate the gulf that opens between domestic production and domestic consumption as an advanced economy moves past subsistence level production. For domestic producers now confront looming underconsumption of their offerings not only in the domestic population's diminishing marginal propensity to consume, but also in competition from foreign producers for what consumer demand there remains. In short, then, if a nation persistently imports more than it exports, it will have to spend that much more on domestic investment if it would maintain domestic production, growth, and employment. And if a nation succeeds in exporting substantially more than it imports, it can rely less upon domestic investment expenditure to fill the gap that emerges between production and consumption expenditure as it grows. This accounts in part for attraction of the export-led growth policies pursued by many nations through history, and perhaps even for the appeal of mercantilism itself in earlier eras.<sup>143</sup> The problem, however, is that this amounts to exportation of the nation's underconsumption problem to other nations; one nation's success is necessarily another's failure in this "game."

Now suppose that a nation does persistently import more than it exports – indeed much more, as has been the case with the U.S. over the past decade and a half.<sup>144</sup> Suppose also that this nation's central bank operates under a mandate, as does the U.S. Fed, to act as a countercyclical actor in respect of the credit-money supply, with a view to maintaining both price stability and a high level of employment.<sup>145</sup> Suppose finally that wealth and income gaps between upper and lower tiers in the distribution are large and still growing in the nation in question, as is the case in the U.S.,<sup>146</sup> such that a large and growing portion of the nation's wealth is directed less to consumption and more to speculative trading on asset markets. In such case the nation's central bank will be faced with a very difficult task. For the larger the excess of

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<sup>143</sup> For a history of mercantilist thought and policy in the pre-classical era, see, e.g., ...

<sup>144</sup> As is apparent in Figure 11, below.

<sup>145</sup> The mandate is laid down in the opening sections of the Federal Reserve Act. See 12 U.S.C. § 2A.

<sup>146</sup> On these measures, see, e.g., Robert Hockett, *What Kinds of Stock Ownership Plans Should There Be?*, 92 CORNELL L. REV. 865 (2007); Gabriel Palma, *The Revenge of the Market on the Rentiers*, 33 CAM. J. ECON. 1 (2009); Emmanuel Saez, *Striking it Richer: The Evolution of Top Incomes in the United States* (working paper, July 2010), available at: <http://elsa.berkeley.edu/~saez/>.

imports over exports – that is, the larger the trade deficit – the looser will the bank’s monetary policy have to be to comply with its mandate to maintain aggregate demand and employment at home. That will be what is required to “sterilize,” as central banks call it, the loss of foreign exchange.<sup>147</sup> And of course, the longer the trade deficit endures, the longer the loose monetary policy will have to be maintained.

Against such a backdrop, it is not difficult to appreciate how a nation that runs persistent trade deficits can come to experience difficulty in attempting to control its own credit-money supply. For one thing, its monetary authority will be under great pressure to maintain loose credit and monetary conditions at home simply to maintain domestic economic activity and employment. For by dint of its trade deficit, the nation is effectively disinvesting more than it is investing in this form. For another thing, exporting nations with which the nation in question runs trade deficits can find it tempting not only to hoard surplus – for reasons we’ll presently consider – but also to do something more: insofar as they recycle the surplus in the form of investment in the deficit country, they will be tempted to do so in the form of *consumer* credit, with a view to financing yet more imports from the surplus country. Persistent surplus nations, in other words, not only might hoard, but might use the surplus to generate yet more surplus, hence yet more deficits and unproductive debt on the part of the deficit nation. Such, we shall see, is much the relation that obtains between China and the U.S., with China serving both as seller and consumer finance provider (for purchase of Chinese goods) to the U.S.

Finally, if it should happen that a particular deficit nation’s currency occupies a particularly important role in the international trading order, such that it tends to be viewed as a secure investment asset or reserve currency in its own right, the nation’s plight as just described will be exacerbated. For nations that are inclined to hoard, perhaps in response to perceived financial insecurity, will tend disproportionately to seek that nation’s currency rather than nations used to hoard gold. That will in turn tend to prevent the value of the currency in question from declining in a manner that might restore balance to the nation’s external trading accounts. Insofar as the nation in question tends both to be viewed and to view itself as responsible for maintaining global political stability – by acting as the world’s market and borrower of last resort so as to maintain global economic growth – moreover, the problem will be all the worse.

In short, then, against the Keynesian backdrop, the absence of gradual, routine exchange rate adjustment and a bona fide global currency can combine to produce or enhance persistent trade deficits on the part of any nation whose currency becomes the functional equivalent of a global currency. And that will in turn render the nation in question less able to manage its own

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<sup>147</sup> Note that central banks also are sometimes hard put to sterilize incoming foreign exchange when the nation racks up trade surpluses. Unbalanced trade presents all central banks with challenges in controlling domestic credit-money conditions. It is easier, however, to sterilize incoming foreign reserves than outgoing ones, we shall see. For the use of capital controls for such purposes does not smack of the taboo known as “protectionism” in the manner that sterilizing outflows does.

credit-money supply, hence financial and “real” economic activity, at home. Its central bank will have to keep money loose in the interest of maintaining domestic demand even as domestic asset markets heat up – particularly if wealth and income are concentrated at the top. In a world with liberal cross-border trading arrangements, in other words, the absence of a *global* Keynesian collective agent precludes the existence of an effective *domestic* Keynesian collective agent where money and finance are concerned. I am now going to argue that this fact provides the key to understanding the presently precarious financial and broader economic position of the U.S., and ultimately the world, economies.

## 2. The U.S. as (Shocked) Global Shock-Absorber

Central bankers and other authorities over the past decade have observed, with growing frequency, both that global interest rates are surprisingly low and that global savings are surprisingly high. Alan Greenspan was one such authority, toward the end of his tenure as Chairman of the Federal Reserve.<sup>148</sup> Ben Bernanke has been another, since shortly before beginning his current tenure in the same post.<sup>149</sup> The reason that people have found these rates surprising is that world economic growth in the past decade and a half has been high by historic standards; and high growth rates generally tend to bring high, not low, rates of interest. Data compiled by the IMF suggests that world economic growth proceeded at close to a 4% rate from late in the last millennium until the recent credit crunch – a period coinciding with the U.S. bubbles and bursts described in the previous section.<sup>150</sup> Real interest rates, meanwhile, have hovered near 2%.<sup>151</sup> And that includes not only short term, but long term rates as well. The last decade that saw a juxtaposition like this one, intriguingly enough, was that from 1919 to 1929, during which global real interest rates averaged about 1.8% and growth about 3.4%.<sup>152</sup> The following two figures show the trendlines in question – those of 1919-1929 and 2000-2010:

[Insert Figures 3 & 4]

The “conundrum,” as Chairman Greenspan put it, of low global interest rates’ juxtaposition with high global growth rates has a twin. This twin is the accrual and flow of massive savings in recent years, not in the developed economies and toward the developing ones, respectively, but the other way round. In stark contrariety to the classical picture of “mature”

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<sup>148</sup> See Alan Greenspan, *Remarks by Chariman Alan Greenspan to the International Monetary Conference, Beijing, People’s Republic of China*, June 6, 2005, available at [www.federalreserve.gov](http://www.federalreserve.gov).

<sup>149</sup> See Ben Bernanke, *The Global Saving Glut and the U.S. Current Account Deficit*, March 10, 2005, available at [www.federalreserve.gov](http://www.federalreserve.gov).

<sup>150</sup> See INTERNATIONAL MONETARY FUND, *WORLD ECONOMIC OUTLOOK*, April 2009, Statistical Appendix, Table 1, available at [www.imf.org](http://www.imf.org).

<sup>151</sup> Id.

<sup>152</sup> See Luis Catao & George A. Mackenzie, *Perspectives on Low Global Interest Rates*, IMF Working Paper WP/06/76, March 2006, available at [www.imf.org](http://www.imf.org).

economies' investing surplus in "immature" economies, in other words, the latter have been "investing" surpluses in the former. The sheer numbers involved render the story all the more surprising. The United States and the United Kingdom, to take the most conspicuous examples within the "developed" world, are by far the lowest domestic net savers and largest recipients of externally originating "investment" capital.<sup>153</sup> Meanwhile China, a few other East Asian nations, and the petroleum exporting nations, to take the most conspicuous examples within the "developing" world, are by far the highest domestic savers and largest suppliers of cross-border "investment" capital.<sup>154</sup>

In fact, as it happens, the U.S. and China appear each to be rather like the photographic negative of the other where domestic savings and foreign "investment" are concerned, as the following figures indicate:

[Insert Figures 5 & 6]

At least as surprising – when considered in isolation – as the co-presence of low global real interest rates and high global growth rates over the past decade, then, has been the emergence of certain developing nations as the world's principal savers and "investors," and of certain developed nations as the world's principal dis-savers and recipients of "investment" capital. I now want to suggest that neither of these anomalies remains puzzling when considered, not in isolation, but together. For it is easy to account for the first by reference to the second. And it is easy to account for the second, in turn, by reference to an historically not unfamiliar phenomenon – namely, the foreign exchange practices of nations that run persistent trade surpluses.

To begin the explanation, consider first the source of the Chinese and petroleum exporting nations' "savings glut," as Chairman Bernanke has described it.<sup>155</sup> China, as well as several other mainly East Asian developing economies and the petroleum exporting nations, have enjoyed massive and growing trade surpluses over the past decade. These surpluses have been matched by equally massive and growing current account deficits on the part of the U.S. and, to a lesser extent, the U.K. and a few other European nations. Now, by definition, a current account surplus always entails a gap between savings and domestic investment. Domestic investment, in other words, does not account for all of a nation's savings when the nation enjoys a current account surplus. For "external investment" – exports – always account for a portion of savings as well. Parallel remarks hold of a current account deficit. A nation with a trade deficit is by definition a nation in which domestic savings are less than domestically-originating "investment." We'll return to this presently.

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<sup>153</sup> See IMF, *supra* note 151.

<sup>154</sup> *Id.*

<sup>155</sup> See *supra*, note 150.

The next step to take in accounting for our recent twin global anomalies is to consider the form that Chinese savings take. While it is true that households in China save much, it also is true that by far the *greater* part of savings in China takes the form of government surpluses on the one hand, and state-owned business enterprises' retained earnings on the other. Meanwhile, China consumes less than half of its GDP, and spends a surprisingly small share of its savings on domestic investment – even though domestic investment is so high as to have led to a remarkable degree of overcapacity. The following figures provide a suggestive snapshot:

[Insert Figures 7 & 8]

A similar, if somewhat less dramatic tale is told by the counterpart figures applicable to a few other developing Asian countries and the petroleum exporting nations. These nations too have accumulated large foreign reserves, and when “investing” tend to direct surplus less to improving the domestic standard of living than to “investment” in the U.S. and a few other developed nations. Here is a representative sampling:

[Insert Figure 9]

The final question to consider in explaining our recent twin global anomalies is what those in the surplus nations who hold surpluses are doing with them. And as it happens, the two principal answers to this question quickly dissipate the air of paradox often found to attend recent trends in the global economy. Broadly speaking, surplus nations have been employing their savings in two ways, each of which has dramatically diminished the capacities of central banks in deficit-running nations to modulate credit-money supplies in the manner I've argued in Part I.B.1 to be necessary if boom and bust cycles are to be smoothed or ended.

The first use to which surplus nations, especially China, have been putting their surpluses is to intervene in foreign exchange markets to purchase other nations' currencies – principally, by far, that of the U.S. The numbers are quite telling. In the first five years of the present millennium, emerging market economies amassed over two and half trillion dollars in foreign currency reserves.<sup>156</sup> The Asian emerging market countries, in turn, accounted for nearly two trillion – 80% – of the accumulation.<sup>157</sup> Within this group, in turn, China alone accounted for nearly a trillion, or about half, of the accumulation.<sup>158</sup> Since then China's role as foreign exchange accumulator has exploded, with an additional quarter trillion in reserves accumulated in 2006, and an additional half trillion in 2007.<sup>159</sup> As if this were not striking enough, these additional accumulations actually exceed China's and the rest of East Asia's *current account*

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<sup>156</sup> See IMF, supra note 151.

<sup>157</sup> See IMF, supra note 151.

<sup>158</sup> See IMF, supra note 151.

<sup>159</sup> See IMF, supra note 151.

surpluses over the years in question. Even a growing portion of *domestically* generated savings, in other words, are going into the hoarding of foreign currency – principally dollars.<sup>160</sup>

Comparable figures for petroleum exporting nations tell a similar story, albeit with smaller magnitude. Middle eastern petroleum exporters ran current account surpluses of about \$200 billion in the middle years of the 2000-2010 decade, while Russia and its Commonwealth of Independent States peers ran about half that.<sup>161</sup> In both cases, moreover, the surpluses and then some were employed to amass large foreign currency reserves. The end result, as of 2007, was a global stock of foreign currency reserves totaling well over \$5 trillion, with East Asian nations accounting for a bit over three-fifths of the total and China for about one-quarter of the world total.<sup>162</sup> The following table summarizes the pattern:

[Insert Figure 10]

The next thing to note is the *composition* of this pool of foreign currency reserves. According to Bank of International Settlements (BIS) data,<sup>163</sup> a bit over two-thirds of all foreign exchange reserves other than China's in the current millennium have been held in dollar denominated instruments.<sup>164</sup> The percentage of China's reserves represented by dollars is surely significantly higher, but cannot be determined with precision because China provides no official information concerning its reserves.

The reasons that one can confidently surmise China holds a significantly higher portion of its reserves in dollars even than the two-thirds ratio of the rest of the world are straightforward. First, it is estimated on independent grounds that approximately 75% of the world's holdings of foreign exchange reserves take the form of dollars; China must then account for the total's being so much greater than that accounted for by non-Chinese dollar-accumulators.<sup>165</sup> Second, China appears officially to target a specific exchange rate between its own currency and the dollar, in order to prevent the dollar from dropping in value relative to its currency as would otherwise tend to occur in response to the gaping and still growing current account imbalance between the two nations.<sup>166</sup> China evidently intervenes in the global foreign exchange markets, in other words, purchasing dollars in order to prevent dollar depreciation relative to the renminbi.<sup>167</sup> It apparently does so at least in part precisely because depreciation

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<sup>160</sup> See IMF, *supra* note 151.

<sup>161</sup> See IMF, *supra* note 151.

<sup>162</sup> See IMF, *supra* note 151.

<sup>163</sup> More on the BIS *infra*, Part III.A.

<sup>164</sup> See Philip D. Wooldridge, *The Changing Composition of Official Reserves*, BIS Q. Rev. 25, September 2006.

<sup>165</sup> *Id.*

<sup>166</sup> *Id.*

<sup>167</sup> *Id.* See also Nicholas R. Lardy, *China: Rebalancing Economic Growth*, in PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS, *THE CHINA BALANCE SHEET IN 2007 AND BEYOND* 3 (2008).

would increase the U.S. cost of imports from China.<sup>168</sup> This observation takes us straight to the “mercantilist” part of our story, which is possessed of both innocent and, perhaps, sometimes less innocent components.

There appear to be three principal reasons for global hoarding not only of foreign currencies in general, but of the U.S. currency in particular. Two of these are what I’ll call “risk-aversively mercantilist,” the other is what I’ll call “aggressively mercantilist.” The risk-aversively mercantilist motives are of course more innocent than the aggressively mercantilist motives – though as we shall see, all three motives would be removed from each nation’s calculus were we to subject global trade to an updated rendition of the Keynesian Clearing Union arrangement described in Part I.B.2. To begin, then, with the perhaps aggressively mercantilist motive, it is a commonplace that the economic growth strategies pursued by East Asian nations since the 1950s have been what one calls “export-led.”<sup>169</sup> The aim, pursued by domestic ministries devoted tellingly to “trade and industry,” has been to channel domestic investment toward industries that produce goods for export.<sup>170</sup> This way industries that economies of scale, existing comparative advantage patterns, or insufficient domestic demand would otherwise render inefficient or difficult to develop at home, can be developed nevertheless.

Postwar history appears to vindicate this strategy. Export-led growth has paid rich dividends first in Germany and Japan, then in South Korea, and later in the other “East Asian Tiger” economies from the early 1950s down to the present day. The strategy only works, however, so long as the currencies of targeted export markets do not appreciate to restore trade balance between exporting and importing nations, per the classic Humean “specie flow” dynamic noted earlier. It is accordingly not surprising that Japan and its successor “tigers” historically have intervened – and in some cases continue to intervene – in foreign exchange markets to prevent the dollar in particular from appreciating. For the U.S. long has been the preferred foreign market for export-led growth purposes. Nor is it all that surprising, one supposes, that China would have noticed the successes wrought through this strategy as pursued by its near neighbors.

What is somewhat more surprising, however, is that China would seem to have less reason, at least in the long run, than its neighbors to rely as heavily as it does upon export-led growth. For unlike them, it enjoys a potentially gargantuan internal market, such that scale economies do not require it to produce for export in order to develop heavy industry at home. What is more, as noted above Chinese investment in domestic productive capacity appears thus far to have outpaced even potential *internal* demand, as witness the fact that it currently

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<sup>168</sup> See sources cited supra, note 167.

<sup>169</sup> See, e.g., Max W. Corden, *Those Current Account Imbalances: A Skeptical View*, 3 THE WORLD ECONOMY 363 (2007); Max W. Corden, *Exchange Rate Protection*, in THE INTERNATIONAL MONETARY SYSTEM UNDER FLEXIBLE EXCHANGE RATES (Richard N. Cooper et al, eds. 1982)..

<sup>170</sup> Id.

produces, to take one example, steel in excess of current domestic needs by an amount equal to the total production right now of Japan, the world's second largest producer.<sup>171</sup> China thus appears to be exporting what would otherwise be a (presumably temporary) domestic underconsumption problem to the U.S., which as a developed economy faces underconsumption vulnerability aplenty of its own, for reasons elaborated in Part I.B1.<sup>172</sup>

On the other hand, the degree and scale of underdevelopment that long has afflicted and still afflicts China – where over 800 billion people still remain in dire poverty – goes some way toward explaining its refusal thus far to rely upon internal markets. The difficult transition to well spread growth and prosperity is presumably eased by reliance on already huge, well developed markets like that of the U.S. Whatever the motives, however, China is following a well trodden path, and its currency practices reflect the fact. It intervenes massively in foreign exchange markets to prevent the dollar from appreciating relative to its currency, in order to keep its trade surpluses with the U.S. likewise massive and growing.<sup>173</sup> We'll return to the effect this wreaks on the U.S. and global financial systems presently.

The two “risk-aversively mercantilist” policies pursued by the foreign exchange accumulators can be seen at work not only in Chinese and East Asian policy, but more widely as well. Both also are closely related. The thing to remember here is the comparatively recent experience these accumulators have had with globalization-facilitated financial crisis. It tends now, a bit over ten years after the fact, to be forgotten that until the new millennium many developing countries, even those in East Asia, relied heavily upon highly liquid foreign investment – typically dollar-denominated bank lending – for internal development purposes.<sup>174</sup> Surplus capital in this period tended to flow as it historically always has done until recently – from developed regions like the U.S., Europe, and Japan toward lesser developed countries like those in East Asia and Latin America.<sup>175</sup>

The liberalization of global banking and financial markets over the later 1980s and early 1990s of course facilitated the pronounced growth in flows during this period.<sup>176</sup> But they also enabled the flows to reverse on a dime, so to speak.<sup>177</sup> Fears concerning nepotistic and “crony capitalist” domestic business and financial practices in recipient nations at the end of the 1990s

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<sup>171</sup> See, e.g., Lardy, *supra* note 167.

<sup>172</sup> Such is the argument, e.g., of those sources cited *supra*, note 167.

<sup>173</sup> Another possible motive, which I do not explore here, at least bears mention. China's hoard of dollars affords it a potential strategic benefit. Were it one day to dump dollar holdings massively on the global foreign exchange market, it could wreak sudden havoc on the dollar. (As Lenin of course observed many decades ago, the most efficient means of destroying a nation might be to debase its currency.) Presumably China would not consider it advantageous to do anything like this unless it considered the trade advantages it accrues owing to dollar strength no longer advantageous or, perhaps, sustainable.

<sup>174</sup> See Hockett, *Macro to Micro*, *supra* note 2 for more on this recent history.

<sup>175</sup> *Id.* Also KINDLEBERGER & ALIBER, *supra* note 79.

<sup>176</sup> *Id.*

<sup>177</sup> *Id.*

prompted spectacularly rapid “panic” withdrawals of funds from, and calls upon debt owed by firms in and governments of, those nations.<sup>178</sup> Private and public institutions in the nations in question were hard put to make good on their debts using their own currencies, in turn, owing to lack of confidence in their governments and central banks, hence their currencies, as pronounced as the distrust of their business entities.<sup>179</sup> There were “runs” on these countries’ currencies, in other words, as dramatic as the runs on their firms. The upshots of these panics included the storied “peso crisis” of 1995, the “Asian Financial Crisis” of 1997-99, the “ruble crisis” and Russian default of the same period, and the Argentine default of 2001.<sup>180</sup> Domestic entities owing dollar-denominated debt were rapidly rendered insolvent as the debts were called in and domestic currencies plummeted, wreaking havoc first in domestic financial, then in the “real” economies of the affected countries.<sup>181</sup>

It is not then surprising, against this backdrop, that the very nations implicated in the crises of the 1990s and early 2000s are among the largest accumulators of foreign reserves – in particular, dollar reserves – today. For these reserves – especially the dollar reserves – serve as historically reliable cushions against runs on domestic currencies and investment vehicles. It is for precisely this reason that nations with healthy economic growth trends historically have tended to hold foreign reserves in amounts roughly equal to the value of short term external debt – debt with maturity of one year or less.<sup>182</sup> What remains striking in this connection, however, is that in the first decade of the new millennium, the principal hoarding nations are holding foreign currency – again, mainly dollar – reserves well in excess not only of *short* term debt, but of *all* debt.<sup>183</sup> Chinese reserves, for example, are estimated to exceed short term debt by nearly \$700 billion, and total debt by a very surprising \$ 550 billion.<sup>184</sup> Such gaps suggest either very morbid degrees of risk-aversion vis a vis prospective runs on debt, or, perhaps, more aggressively mercantilist motives for hoarding – viz., currency manipulation in the interest of export maintenance as described above.<sup>185</sup>

The other risk-averse motive for holding foreign exchange and especially dollars is closely related to that just described but more broadly sweeping. It is, essentially, just Keynes’s “speculative” motive for money-holding described earlier in Part I.B.1. In financially volatile times, parties naturally attempt to maintain liquidity cushions. Within a domestic economy, that means hoarding the domestic currency. In the world economy, it means hoarding the closest

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<sup>178</sup>

Id.

<sup>179</sup>

Id.

<sup>180</sup>

Id.

<sup>181</sup>

Id.

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See, e.g., Laurence Summers, *Reflections on Global Account Imbalances and Emerging Marts Reserve Accumulation*, L. K. Jha Memorial Lecture, Reserve Bank of India, March 24, 2006, available at [www.president.harvard.edu/speeches/2006/0324\\_rbi.html](http://www.president.harvard.edu/speeches/2006/0324_rbi.html).

<sup>183</sup>

Id.

<sup>184</sup>

Id.

<sup>185</sup>

See, e.g., sources cited supra, notes 167 and 169.

substitute to a global currency. And that is the dollar, the world's de facto "reserve currency." Perhaps unsurprisingly, then, this fact underwrites a dysfunctionally self-reinforcing tendency in the global economy much like those found in part Part I.B.1 to afflict any developed domestic economy in the Keynesian vision. In essence, global financial turbulence prompts more holding of the world's monetary "safe haven," its reserve currency – the dollar. But heightened demand for the dollar for hoarding purposes of course maintains or worsens U.S. current account deficits with the rest of the world. And those trade imbalances in turn worsen U.S. and hence global financial turbulence itself. In effect, this is a financially-inflected rendition of the bind foreseen by Belgian economist Robert Triffin, then at Yale, shortly after the Bretton Woods conference's settling on a plan for the IMF more like White's than Keynes's. The bind, at the time named "the Triffin dilemma," ultimately brought the first Bretton Woods regime to grief in 1971, and its finance-inflected contemporary rendition is bringing the subsequent regime to grief now.<sup>186</sup>

The fundamental reason is that, as observed above in Part II.B.1, a current account deficit is functionally equivalent to domestic disinvestment, meaning the gap that Part I.B.1 observed to open between production and expenditure in any developed country is not filled by domestic investment. The only way to maintain domestic growth and employment in such circumstances is through expansionary monetary policy on the part of the central bank and fiscal policy on the part of the central government. That is what "sterilization" of foreign exchange flows amounts to in a deficit-running nation. But this of course fuels inflation in consumer goods, financial asset markets, or both,<sup>187</sup> all on a growing structure of debt – much of the latter obligingly supplied by the surplus running nations themselves, who in effect serve as consumer finance companies on behalf of their producer-affiliate's increasingly indebted customer.<sup>188</sup> And so the persistent deficit-running nation, forced and then aided and abetted by its creditor nations, lurches into debt-fueled asset price bubble territory of the kind described earlier. In short, then, while *domestic* hoarding is the *antithesis* of overinvestment and consequent overheated growth, *external* hoarding tends symmetrically to *induce* overinvestment and overheated growth – at least in the nation that issues the world's de facto reserve currency and, largely in consequence, also supplies its consumer market of last resort.

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<sup>186</sup> It might more aptly have been named the "Keynes dilemma," or the "Mlynarski dilemma," for reasons cited supra, note 57. See Hockett, *Macro to Micro*, supra note 2 for more on the history of this bind.

<sup>187</sup> In Triffin's day, domestic financial markets were more tightly regulated today, and capital controls prevented their being global in scope. Hence the inflation problem afflicted mainly the consumer goods and services markets – as happened in the U.S. from the later 1960s well into the 1970s and even early 1980s. (It is no accident, incidentally, that Fed Chairman Volcker's successful breaking of consumer price inflation occurred after, not only a raising of domestic interest rates to levels around 20% circa 1982, but also by formal agreements with the German and Japanese central banks to engineer a significant devaluation of the dollar relative to the Deutschemark and the yen shortly thereafter. More on this infra, Part III.) Today's rendition of the "Triffin dilemma," by contrast, is afflicting the U.S. financial markets, where we have just been through two hyperinflations.

<sup>188</sup> In view of the fungibility of money, that financing itself can spill over into the broader economy, feeding debt-fueled asset price hyperinflations of the sort we've just experienced.

When one nation supplies the world's reserve currency, then, it is not able to maintain external trade balance with the rest of the world, or to control its credit-money supply, in the manner prescribed by bona fide Keynesians as discussed in Part I. The nation might enjoy what Valéry Giscard d'Estaing, as French Minister of Finance, deplored as the "exorbitant privilege" of borrowing cheap from the world for a period of years – as the U.S. did in the 1960s and does again now.<sup>189</sup> But it will not be able to continue in any such role indefinitely. At some point either its currency must depreciate, its consumer goods and services markets must fall prey to inflation, or its financial system must overheat and then crash and burn in response to the growing internal debt burden. This is precisely why Keynes's Clearing Union plan featured *both* a non-national global currency *and* an automatic currency-adjustment mechanism. Hence in the next Part we shall return to that plan and update it.

### *C. Integrating the Trendlines: U.S. Monetary Policy and Global Dollar Holdings Since the Uruguay Round*

Just before turning to how Keynes's Clearing Union Plan might be updated with a view to today's global money and financial markets, it will be helpful to combine in one figure some of the trendlines sketched in the previous two Subparts. For the intuitive connections between Fed interest rate policy and domestic money supplies even in the face of bubble inflation on the one hand, and growth in dollar-accumulation rates among China and some of the other East Asian and petroleum-exporting nations on the other, turn out to be quite "granularly" close. Indeed they are so close that we can observe things growing quickly worse after the Uruguay Round of 1994, and very much worse after Chinese accession to the resultant WTO at the turn of the millennium. It accordingly grows all the more tempting to suggest that the absence of a global reserve currency and surplus/deficit-preventing clearing arrangements lies importantly behind our current financial travails.

The following figures, then, show trendlines for U.S. interest rates, the U.S. domestic money supply, levels of U.S. household indebtedness, levels of U.S. income, U.S. building costs and rental rates, U.S. current account deficits, and growing dollar holdings by China and a representative sampling of other persistent current account surplus-running nations from 1995 to the present. I'll also briefly suggest means of quantifying, in subsequent projected empirical work, the precise impact on domestic interest rates and money supply wrought by foreign holdings of dollars.

[Insert Figure 10]

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<sup>189</sup> See Hockett, *Macro to Micro*, supra note 2.

### III. BALANCE RESTORED: A 21<sup>ST</sup> CENTURY CLEARING UNION

Part I explained why, in an economy possessed of money and a financial sector, credit-modulation is prerequisite to financial stability, hence to sustainable growth and full employment. It also explained the sense in which the credit-modulatory role amounts to a characteristic central banking function. Part II, in turn, explained why, under liberal cross-border trading arrangements, the central banking function cannot successfully be played domestically unless it also is played globally. It made the case theoretically by extending the analysis of Part I from the “closed” to the “open” economy context, then corroborated the theoretical case by reference to salient empirics of the past fifteen years.

In this Part I aim to schematize the “global central bank” – what Part I called the “missing Keynesian agent” – that I’ve suggested we require. In essence, I shall sketch the broad contours of an institution that can serve as an instrumentality of nations’ central banks much as those central banks themselves serve as instrumentalities of nations’ citizens and their domestic banking institutions.

The institution I have in mind looks much like Keynes’s original Clearing Union in its basic functions, but will be built upon presently existing institutional infrastructures in a manner that I believe will cause no more disruption than necessary to the functioning of the institution itself. As it happens, present day modes of bank-to-bank interaction, as well as the foreign exchange infrastructure and other institutional structures, are such as to lend themselves readily to the addition of this one new banking layer that I shall propose. I shall begin, then, by sketching the essentials of those structures themselves. Then I shall sketch the new institution.

#### *A. Relevant Present-day Infrastructure*

This Subpart briefly sketches the relevant components of the existing financial architecture with which the new Clearing Union plan that I shall sketch must engage in one way or another. The next Subpart will then offer that new Clearing Union plan itself.

##### 1. The Group of Twenty

Any outline of the present global financial architecture, particularly since our most recent financial crisis, must begin with the Group of Twenty, or G20. The G20 has become in recent years the premier plenary governance body where international financial and economic questions

are concerned.<sup>190</sup> Comprising the finance ministers and central bank chiefs of the largest developed and emerging market countries, it was formally constituted in 1999, in the wake of the Asian Financial Crisis of the late 1990s. Since then it has met annually, and in the wake of our most recent crisis it has displaced that smaller forum, comprising the finance ministers and central bank chiefs of only developed nations, known as the G8.<sup>191</sup>

Most significant policy measures recently adopted by developed and emerging market nations with the largest economies have been adopted pursuant to agreements reached at G20 summits. While the Bank for International Settlements and the International Monetary Fund, discussed next, handle much in the way of month to month and indeed day to day challenges posed by global financial and economic affairs, the G20 in effect oversees all such operations in broad terms. If those two organizations might be characterized as “officers” of the transnational economic order, the G20 can be viewed as its “board of directors.” I shall accordingly have occasion from time to time to refer back to the G20 in the remainder of this Part.

## 2. The Bank for International Settlements

Most of the relatively few people who are aware of the existence of the Bank for International Settlements (BIS) are aware of it only indirectly – through its Basle Committee on Bank Supervision.<sup>192</sup> The Committee, comprising bank regulators from a bit under 30 nations with sizable banking sectors, meets regularly to discuss issues of common concern and strategies for dealing with them.<sup>193</sup> Its best known work product is doubtless its series of “capital accords,” pursuant to which bank regulators agree upon common “core” standards for the regulation of bank buffer capital holdings.<sup>194</sup> The most recent accord was reached a few months ago as of this writing.<sup>195</sup> In recommending at least optional imposition of new “countercyclical” buffers, this latest accord manifests once again the Committee’s characteristic tendency – not to mention that of the BIS more generally – to outpace many domestic central banks in recognizing the critical role central banks must play as modulators of credit-rooted financial cycling.<sup>196</sup>

The BIS deserves to be known for much more than the Basle Committee, however. For one thing, it serves quite literally as a “central bank for central banks.” It does so, for example, in the sense that national central banks hold foreign reserves there – a fact I shall exploit in the

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<sup>190</sup> See, e.g., HAL SCOTT, INTERNATIONAL FINANCE 48-65 (14<sup>th</sup> ed., 2010). Also the G20 website, available at <http://www.g20.org/index.aspx>.

<sup>191</sup> See sources cited *id.*

<sup>192</sup> See, e.g., DANIEL K. TARULLO, BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION (2008).

<sup>193</sup> *Id.*

<sup>194</sup> *Id.*

<sup>195</sup> See BIS website, available at <http://www.bis.org.htm>.

<sup>196</sup> *Id.*

new Clearing Union I shall propose below.<sup>197</sup> For another thing, as a regular forum at which central bankers, finance ministers, and/or their delegates from the 57 largest financial economies meet on a bimonthly basis, the BIS, along with the Financial Stability Forum (FSF) for which it supplies office space and a secretariat, constitutes the preeminent situs at which those “collective agents,” as I have called them, coordinate policies.<sup>198</sup> Finally, the BIS’s secretariat and research support staff have consistently been well out ahead of the curve both in tracking indicators of potential monetary and financial instability – rather than only consumer price inflation – and in forcefully advocating that central banks act as modulators of such instability. In all of these senses, the BIS constitutes an ideal forum at which those national collective agents known as central banks, which ordinarily act on behalf of their national constituents, can “collect themselves” more or less into a transnational collective agent as well, so as self-consciously to act on behalf of *all* whose well being the global financial system significantly affects.

Historically speaking, it is no accident that the BIS is well situated to play these related roles. It was more or less *designed* to do so the last time the global financial system came to grief in the wake of a collapsing twin stock price and real estate bubbles – in 1930.<sup>199</sup> The only problem was that, for a time, it came to be perceived as tainted by the roles some of its early personnel – including Schacht, discussed above in Part I.B.2 – were forced to play in the German economy once the Nazi’s took power in 1933.<sup>200</sup> Indeed, partly for this reason, the BIS nearly found itself liquidated during the Bretton Woods conference of 1944, to be replaced altogether by the newly constituted IMF.<sup>201</sup> It was the intervention, in fact, of none other than Keynes and his UK delegation that ultimately rescued the institution.<sup>202</sup> All the more fitting, then, that I shall propose the BIS itself as situs of the new Clearing Union that I sketch below.

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<sup>197</sup> It does so in other senses as well. Here, for example, is the BIS’s own summary of its “traditional banking” role: [T]he BIS has always performed “traditional” banking functions for the central bank community (eg gold and foreign exchange transactions), as well as trustee and agency functions. The BIS was the agent for the European Payments Union (EPU, 1950-58), helping the European currencies restore convertibility after the Second World War. Similarly, the BIS has acted as the agent for various European exchange rate arrangements, including the European Monetary System (EMS, 1979-94) which preceded the move to a single currency. Finally, the BIS has also provided or organised emergency financing to support the international monetary system when needed. During the 1931-33 financial crisis, the BIS organised support credits for both the Austrian and German central banks. In the 1960s, the BIS arranged special support credits for the French franc (1968), and two so-called Group Arrangements (1966 and 1968) to support sterling. More recently, the BIS has provided finance in the context of IMF-led stabilisation programmes (eg for Mexico in 1982 and Brazil in 1998). See Bank for International Settlements, *BIS History – Overview*, available at <http://www.bis.org/about/history.htm>.

<sup>198</sup> See BIS website, *supra* note 196.

<sup>199</sup> For the relevant history, see, in particular, GIANNI TONIOLO & PIET CLEMENT, *CENTRAL BANK COOPERATION AT THE BANK FOR INTERNATIONAL SETTLEMENTS, 1930-1973* (2007). Also LIAQUAT AHAMED, *LORDS OF FINANCE: THE BANKERS WHO BROKE THE WORLD* (2008).

<sup>200</sup> See Ahamed, *id.* at 59-84.

<sup>201</sup> *Id.*

<sup>202</sup> *Id.*

### 3. The International Monetary Fund

As discussed above in Part I.B.2, the IMF was what emerged, in lieu of Keynes's Clearing Union, from the very conference – Bretton Woods – at which Keynes pushed his proposal. Then and now, the differences between Fund and Union have been quite substantial. For one thing, the Fund never has served as a situs at which cross-border transactions have cleared. For another thing, the Fund never has served as a significant issuer of global liquidity, or as a modulator of global trade imbalances or consequent financial instability. Instead it has played two principal roles, one of them more prominent for its first thirty years, the other more prominent since.<sup>203</sup>

The first prominent role played by the Fund was to assist in the maintenance of stable currency relations grounded in the so-called “par value system” that emerged from the Bretton Woods Conference. Pursuant to this system, all currencies were to maintain fixed exchange rates relative to the U.S. dollar, which in turn was to be fixed to gold at the rate of \$35 per ounce. Nations that found their currencies losing value relative to the dollar owing to persistent trade deficits were obliged to defend their currencies by expending gold or foreign currency reserves. Where such proved impossible, nations could borrow from the “fund” of currency reserves from which the Fund drew its name (these were supplied by member nations in the form of GDP-linked “quotas”), provided that they met certain “conditions” – for the most part, domestic deflationary measures meant to trim appetites for imports. Were these loans and measures to prove insufficient owing to some perceived “fundamental” cause, then the last resort short of expelling the nation in question from the Fund would be for the Fund to devalue that nation's currency in an orderly manner.

The par value system came a cropper in the late 1960s and early 1970s owing to a foundational flaw at the core of that system. One nation began running deficits in such profusion that it lost capacity to defend its currency with gold or foreign exchange reserves, while the Fund lacked sufficient resources to assist in the degree that would have been requisite. Moreover, the nation in question was, sensibly enough, unwilling to deflate its economy – both because this would have been domestically unacceptable and because domestic deflation in this case would quickly have issued in global deflation. The nation to which I allude, of course, could only have been one – it was the U.S., whose currency lay at the heart of the par value system itself. The sense in which the U.S.'s and the par value system's plight owed to a foundational flaw is straightforward, and indeed is already described above in Part I.A.2 and II.B.2. The U.S. could not play its appointed role as national supplier of a transnational reserve currency without racking up massive deficits that undermined confidence in the dollar itself. That was the “Triffin

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<sup>203</sup> See Hockett, *Macro to Micro*, supra note 2 for more detail on matters covered in the next several paragraphs.

dilemma” noted above. And as Part II suggests, we’re still living with it – all because we forwent the Keynesian plan for what became the IMF.

The second prominent role played by the Fund is that it has played since the demise of the par value system after President Nixon’s unilaterally suspending its gold/dollar convertibility provision. In essence, it serves as a forum through which nations’ central banking and finance ministers jointly manage the so-called “dirty float” among currencies. Currencies are permitted to vary in value relative to one another in response to trading activity on the foreign exchange market – more on which market below. National officials, however, routinely coordinate interventions – purchases and sales – in those markets in order to influence both the directions in which, and the rates at which, such adjustments take place. The Fund facilitates that coordination.

The Fund also plays several ancillary roles that bear noting. For one thing, its staff, like staff at the BIS and the FSF, track and study both global and domestic monetary and financial developments with a view to emerging problems. In this connection it also regularly consults with member nations about domestic monetary, financial, and complementary legal and regulatory matters. For another thing, the Fund continues to provide loans to nations that find themselves in temporary monetary or financial trouble, whether this be to assist them in defending their currencies or simply to afford them “breathing space” as they act to stabilize conditions at home. As in the early days, of course, strings are attached in the form of “conditions,” which often prove controversial both for their deflationary biases and for their tendency to reflect distinctly anti-Keynesian economic orthodoxy. Finally, since the final years of the par value era, the Fund has “issued” a humble transnational quasi-currency known as the “Special Drawing Right,” or “SDR,” more on which just below.

#### 4. Special Drawing Rights

As the par value system described in the previous section came under strain in the late 1960s, some members of the IMF recognized that the Triffin dilemma lay behind the trouble.<sup>204</sup> The U.S. could not supply adequate liquidity for the financing of growing volumes of cross-border trade without jeopardizing the value of its currency. The Fund accordingly took tentative steps in the direction of instituting a truly global reserve currency of the sort Keynes had proposed at Bretton Woods. The result was the Special Drawing Right, or SDR. The SDR served – and serves – both as a unit of account like any currency, and as claim upon reserves held by member with the fund.

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<sup>204</sup> See supra, note 203, for source of more detail on matters covered in the next several paragraphs.

In its role as unit of account, the SDR's value is calculated as a weighted sum of the values of a "basket" of other major currencies – originally the dollar, the pound, the yen, the Deutsche mark and the French franc, and now the dollar, the pound, the yen, and the euro. As the relative values of those currencies change, so does that of the SDR in terms of each of them. The IMF accordingly posts the SDR's value in terms of the dollar each day. (Weights assigned to the constituent "basket" currencies are changed regularly, albeit of course much less frequently, as well.) Several international organizations – notably the IMF and the BIS themselves – use the SDR as unit of account, a fact I shall exploit below. A small number of nations now peg their currencies to the SDR as well. Were the basket of currencies from which the SDR's value is calculated to be more inclusive – so as to include, say, the Chinese renminbi, the Indian rupee, the Swiss franc, and the Australian and Canadian dollars – it might come to function, in its unit of account role, rather as Keynes's bancor was to do. That fact as well I shall exploit.

In its role as a claim upon reserves, hence as a form of credit-money, the SDR functions as a sort of a very modest proto-bancor. SDRs are allocated to IMF members in proportion to their quota contributions to the Fund itself. Because the latter are determined as functions of GDP rather than global trade volume, however, SDRs are not allocated in the proportions that Keynes's bancor overdraft privileges would have been. That constitutes one blemish upon them as means of dealing with trade imbalance in particular, a fact I shall aim below to remedy. Another such blemish is that SDR holdings with the Fund in excess of allocation earn interest paid by the Fund, while nations that draw in excess of their allocations pay interest. Persistent surpluses, in other words, are rewarded rather than penalized as they would have been under the Keynes plan described earlier, while deficits are indeed penalized.

The most vitiating blemish of SDRs at present, however – at least insofar as the world requires a truly transnational reserve asset that is not simply some issuing nation's currency – is simply their modest magnitude. Although, with approval of the G20, the IMF substantially boosted SDR allocations to provide more global liquidity in the thick of financial crisis in 2009, total SDR allocations remain paltry in comparison with foreign holdings of U.S. dollars. The numbers are telling. The total 2009 allocation was worth about \$284 billion.<sup>205</sup> This as compared, recall from Part II.B, *supra*, to well over \$5 trillion in foreign currency reserves – principally dollars – now held by nations running persistent trade surpluses. Nevertheless, there is reason for optimism here. For SDRs since the crisis erupted have been allocated in much larger quantities than before, and some central bankers – notably Zhou Xiaochuan of the People's Bank of China, who lauded Keynes while he was at it – have publicly called for the gradual adoption of the SDR as global reserve currency.<sup>206</sup> If Mr. Xiaochuan was serious in his

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<sup>205</sup> See International Monetary Fund, General and Special SDR Allocations, available at <http://www.imf.org/external/np/tre/sdr/proposal/2009/0709.htm>.

<sup>206</sup> See Zhou Xiaochuan, Reform the International Monetary System, People's Bank of China website, available at ...

praise of Keynes and his bancor,<sup>207</sup> then this is very good news indeed. This too I shall exploit below.

## 5. The Foreign Exchange Market

The phrase “foreign exchange market” is apt to connote mystery, or to conjure up images of crowded and chaotic trading floors, in the minds of many who encounter it.<sup>208</sup> In fact, however, this market is surprisingly simple and even “old-fashioned” in its operations. In essence, it is banks themselves that engage in foreign exchange transactions, and indeed, they simply exchange, quite literally, currencies with one another in so doing.<sup>209</sup> They often do so, however, through intermediaries – brokers. Foreign exchange brokers, for their part, are much like stock and bond brokers, with the difference that they are less likely to trade on their own account. They remain agents rather than acting as principals. They earn their living by collecting brokerage fees in return for bringing counterparty banks, which seek one another to exchange currencies, together.

“Bringing counterparty banks together,” for its part, has a straightforward meaning. The broker tells banks the rates, in terms of one currency, for which there are firm buyers or sellers available in respect of another currency at any given time. Typically this information is provided in response to inquiries made of them by banks with which they are in regular correspondence. The transactions between banks that brokers thus facilitate can be either for “spot” delivery of the currencies in question, or for “forward delivery” at some later specified date. Often the broker will act as a go-between through which banks in effect negotiate, anonymously, to arrive at an agreed exchange rate. Once a firm agreement is reached and a transaction consummated, the broker reveals the collects a fee. Brokers also, collaterally to discharging their “go-between” function in relation to particular pairs of counterparties, inform banks more generally at what rates currencies have recently traded between such counterparties. In effect, then, they keep multiple prospective counterparties apprised of the “market prices” of various currencies in terms of other currencies.

Most banks that conduct foreign exchange transactions through brokers also have “dealing rooms” of their own, whose personnel work on behalf of their banks in transacting with other banks with the assistance of brokers. Sometimes, banks that have dealt with one another repeatedly in foreign exchange transactions find that they can dispense with brokers altogether.

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<sup>207</sup> Michael Pettis, a respected analyst of PBOC policy, thinks not. See Venkatesan Vembu, “China Cannot Really Dump the Dollar: An Interview with Michael Pettis,” *Daily News and Analysis*, July 13, 2009, available at [http://www.dnaindia.com/money/interview\\_china-cannot-really-dump-the-dollar\\_1273469-all](http://www.dnaindia.com/money/interview_china-cannot-really-dump-the-dollar_1273469-all).

<sup>208</sup> See SCOTT, *supra* note 192 for more detail on matters covered in the next several paragraphs.

<sup>209</sup> The stock exchanges of some European countries have small meeting rooms – “bourses” – in which foreign exchange brokers deal rather as stock brokers do on exchanges. In most major financial centers such as New York, London, Tokyo, Hong Kong, and Singapore, however, deals are done electronically.

They develop good working relations inter se, such that their dealing rooms find it easy enough to deal directly with one another. A separate industry of foreign exchange brokers – a fairly small niche market in any event – proves ultimately to be unnecessary to them. That fact will prove encouraging when I turn to the updated Clearing Union proposal below.

## 6. The “Eurodollar” Market

The global role played by the dollar, as described in Part II, gave rise almost as soon as that role commenced to a global dollar-denominated asset and liability – the so-called “Eurodollar” bank deposit.<sup>210</sup> The nature and significance of Eurodollars and, now, other “Eurocurrencies” is best conveyed simply by briefly narrating the tale of their development.

American policy immediately following the Second World War was to get dollars quickly into the hands of Europeans. The reasons were principally two. One was to enable Europe to rebuild after the War as quickly as possible, partly in order to render Soviet communism less attractive than it was then feared it might become.<sup>211</sup> Another was to develop another deep market for American manufactures, as overcapacity loomed as a significant problem as the U.S. wound-down production after the War. The means that the U.S. employed also were principally two. One was to make large cash grants of foreign aid, the best known such program doubtless having been the Marshall Plan. Another was to encourage massive importation of European products, in order to enable struggling European nations to earn foreign exchange with which to pay off war debts.

The massing of European dollar holdings over the course of the 1950s that U.S. policy encouraged resulted in the offering, before long, of dollar depositing and borrowing by London banks. Increasingly, Europeans could deposit dollars into British banks and retain dollar denomination of those deposits. By the same token, British banks began lending dollars directly on the strength of those deposits. The resulting “Eurodollar” market, as it came to be called, soon came to be recognized as offering certain advantages even to Americans that American bank deposits could not boast. For one thing, the banks that offered these services were not under American jurisdiction, which rendered them attractive to persons operating out of countries with which the U.S. did not enjoy warm relations – e.g., the Soviet Union in the later 1950s. For another thing, and more generally, banks offering Eurodollar products were not subject to U.S. banking regulations such as interest rate ceilings and reserve requirements. That meant that these banks could do more – and more risky – lending than their American counterparts, and that they could afford to offer depositors higher returns in consequence.

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<sup>210</sup> See SCOTT, *supra* note 192 for more detail on matters covered in the next several paragraphs.

<sup>211</sup> See Hockett, *Macro to Micro*, *supra* note 2, for more on this history.

In time, the Eurodollar idea came to be generalized. It is now common for banks in one jurisdiction – not necessarily a European one – to offer deposits and loans denominated in currencies issued by other jurisdictions – not just the U.S. dollar. Hence there are now, for example, “Euroyen” deposited in and lent by British banks, and indeed “Euroeuro” deposited in and lent by Japanese banks. “Eurocurrency,” in other words, no longer connotes anything necessarily European other than the history of this particular form of depositor asset or bank liability. It simply refers to the taking of deposits or extension of credit denominated in once currency by a bank operating within a jurisdiction that issues a different currency. Nevertheless, Eurodollars are by far the largest source of global finance in cross-border transactions today. And this represents another obstacle to the Fed’s maintaining control over the U.S. money supply and the relative value of the dollar. This fact, too, will inform the Clearing Union design offered below.

## 7. Offshore Financial Centers

In a development that somewhat parallels – and one-ups (or -downs) – that of the Eurocurrency markets, a number of small political units over the past two decades have taken to offering their jurisdictions up as low-tax, low-regulation sites to which financial firms are invited either to locate subsidiaries or to relocate altogether.<sup>212</sup> Originally serving as “tax havens,” these jurisdictions, most located around the Caribbean or among the British Channel Islands, have in effect become “law havens” more generally. During the first decade of the new millennium, many familiar financial firms domiciled in larger nations began locating subsidiaries in these places, on whose books they could conceal financial activities that they wished to shield from domestic regulatory scrutiny.

Some believe that many of the worst practices that dangerously increased risk exposures of major financial institutions as our most recent bubbles inflated were in fact hidden by precisely these means. Others note the prevalence of money-laundering on the part of organized crime and terrorist organizations at these centers. As such, these centers represent gaping holes in our system of global financial regulation. As robust such regulation is both important in its own right and apt to be all the more important in connection with the Clearing Union proposal I sketch below, I shall be recommending that these places simply be shut down – by robust use of force if need be. Happily, however, the G20 appears to be already on the case where this matter is concerned – just as it seems to be on the case where boosting SDR allocations is concerned, as noted above. Hence what I shall propose is not apt to be controversial in serious company.

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<sup>212</sup> See SCOTT, *supra* note 192 for more detail on matters covered in the next several paragraphs.

## 8. The Society for Worldwide Interbank Financial Telecommunication (SWIFT)

Over the course of the 1970s, the Society for Worldwide Interbank Financial Telecommunication, or “SWIFT,” a multiple bank-owned coop based near Brussels under Belgian company law, established a telecommunications network and set of protocols to facilitate rapid and efficient transacting between banks worldwide.<sup>213</sup> The protocols include codes for particular transaction types, routinized operating procedures, liability rules, and the like. These have become sufficiently respected across the world that SWIFT is now sanctioned by the United Nations as standard-setting authority for the promulgation and maintenance of global financial messaging protocols.

Since the 1970s, an ever growing majority of cross-border interbank communications have come to be routed through the SWIFT network. Banks do not transfer funds or settle accounts via SWIFT, but they do communicate payment orders. Banks then make payments via separate correspondent accounts that they maintain with one another. The volume of transactions conducted in part via SWIFT has grown very large over the years. Trillions of dollars worth of payment orders are made every day over the network. As more and more transactions are arranged via the network, the prospects for tracking transnational money flows systematically grow too. That renders the prospects of global monetary and financial regulation more bright as well – though this is not without controversy. I shall exploit this infrastructure as well in the updated Clearing Union proposal sketched below.

## 9. Wire Transfer and Automated Clearing House Systems

While SWIFT constitutes a uniform communications network used by banks worldwide to communicate payment orders and, after the fact, actual payments, the systems by which payments themselves actually are made vary from nation to nation.<sup>214</sup> In the U.S., the principle wire transfer networks are the Federal Reserve Wire Network, or “Fedwire,” and the Clearing House Interbank Payments System, or “CHIPS.” The former is owned and operated by the Federal Reserve System itself, which in turn is partly owned by its member banks. The latter is owned by its participating banks, rather like SWIFT. Other nations have their counterparts to Fedwire and CHIPS – for example, CHAPS in the U.K and CHATS in Hong Kong.<sup>215</sup>

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<sup>213</sup> See SWIFT website, available at <http://www.swift.com/>, for more detail on matters covered in the next two paragraphs.

<sup>214</sup> See SCOTT, *supra* note 192 for more detail on matters covered in the next several paragraphs

<sup>215</sup> Acronyms for “Clearing House Automated Payment System” and “Clearing House Automated Transfer System,” respectively.

Nations' payment systems also typically include automated clearing house (ACH) systems that facilitate direct, electronic deposits of payroll moneys or business-to-business payments into bank accounts held by payment recipients. The two principal such systems in the U.S. are the network known as "ACH" itself in the one case, governed by the Fed and by the National Automated Clearing House Association (NACHA); and the privately owned network known as the "Electronic Payments Network" (EPN) on the other. In effect, these networks relate counterparties and their banks to one another rather as SWIFT relates banks across borders to one another, with wire transfer networks then effecting actual transfers of funds between banks. They accordingly complete the picture of multiple transacting parties exchanging funds with one another via their banks.

### *B. A New Clearing Union Plan*

Given the global financial architecture just described, design and implementation of a Keynesian clearing union suitable to the present day is not a terribly complicated affair. A variety of routes might be taken, but the most straight-forward, I believe, will be that I shall now map. I'll do that mapping by enumerated reference to the constitutive elements of the architecture laid out just above in the previous Subpart.

#### 1. Employ – and Merge – the BIS and the IMF, and Fully Monetize the SDR

Recall first that the Keynesian Clearing Union described in Part I was itself a bank. It was a central bank to the central banks, in that each nation's central bank maintained an account with the Clearing Union rather as private banks within nations typically maintain accounts with – and indeed partly own – their central banks. Now as it happens, the BIS already plays such a role, in part. That is to say, as noted in the previous Subpart, central banks keep accounts at the BIS already. What differs between the BIS as presently constituted and Keynes's Clearing Union is that, first, the BIS does not issue global currency or credit, and second, the BIS does not administer any system pursuant to which global trade accounts are automatically kept in long-term balance by a straightforward rule-based system of national currency revaluation.

Now note, however, that those two Keynesian features not present in the case of the BIS that Keynes defended *are* present, in a rudimentary way, in the case of the *IMF* that Keynes played a part in *designing*. That is, as noted in the previous Subpart, the IMF does now issue a global proto-currency – the SDR – and does issue, to a modest degree, global credit as a means of maintaining global liquidity. Moreover, the IMF oversees – and is indeed charged with overseeing – an orderly, if not altogether regular, regime of occasional currency revaluation.

What this all adds up to is the fact that the BIS and the IMF together, between them, possess in rudimentary form all of the essential features that Keynes's Clearing Union plan possessed. What is more, as noted above, both employ the SDR as a monetary unit of account. What we should consider, then, is first to merge the two institutions – calling the resultant institution something like “the Global Clearing Union” in honor of Keynes – then incrementally but steadily to augment their current functions so as to take them beyond merely rudimentary status. We can do the latter as follows.

First, we agree – through the G20 mechanism – that henceforth all cross-border transactions are to be cleared ultimately by crediting and debiting BIS accounts held by national central banks, just as Keynes proposed. Those who administer national central bank accounts held at BIS now will continue to do so within the merged BIS/IMF – the Global Clearing Union.

Second, we agree that henceforth persistent surplus- and persistent deficit-running nations' currencies shall be regularly revalued, again along the original Keynesian lines. Those who administer the current IMF's oversight role in the current regime of sporadic revaluation might continue to do so under the new regime – it being understood, however, that henceforth the adjustment mechanism is to operate “automatically,” pursuant to a formula. The system, in other words, will be “rule-based” and accordingly predictable. That, we shall see, shall remove a considerable source of uncertainty and volatility in global financial markets, and will also render much that is currently done in the global foreign exchange market unnecessary.

Finally, we agree that the SDR – perhaps renamed simply the “DR” since it will no longer be “special,” or even the “bancor” in honor of Keynes – is to continue as the unit of account employed by the merged BIS/IMF. Further, we agree that the SDR is to be fully monetized – again along Keynesian lines. Our new Global Clearing Union institution, that is to say, will issue global credit-money just as Keynes's would have done, and will do so in sufficient quantity as to render massive U.S. trade deficits no longer necessary as principal source of global liquidity. The SDR will accordingly become the international reserve currency, enabling us at long last to take ourselves off of the horns of the “Triffin Dilemma.”

Governance matters within the new BIS/IMF will of course be critically important and potentially controversial. For the institution is on the one hand supranational while on the other hand discharging the politically charged credit- and finance-modulatory functions of a (global) central bank. But this should not cause us all that much worry. The reason is that both the BIS and the IMF already are governed by the central bank chiefs and finance ministers of the nations that constitute them. They are not, in other words, independent of the nations on whose behalves they operate as instrumentalities. The Global Clearing Union would not be either.

Moreover, the G20 – which is itself constituted by national central banking and finance ministerial authorities – will presumably continue to oversee global financial and economic matters at large as it does now. It will, that is to say, constitute “Board” to BIS/IMF “officers” considered jointly rather as it presently constitutes “Board” to BIS and IMF “officers” considered severally.

Another remaining question would be what to do about the research arms of the BIS and IMF, whose respective functions in part overlap but also diverge. I have no particular wisdom to offer in response to this question, other than to say that not all that much would seem to hinge upon what answer we ultimately settle upon. As a default, I would suggest simply keeping the distinct research departments as we currently find them, simply calling one such set the “Washington” offices, and the other such set the “Basle” offices, referring to their present locations. In time we might expect fuller merging, but as it happens there is considerable back-and-forthing among personnel already, so no particularly radical change would seem to be necessary or in the offing here.

## 2. Continue to Employ SWIFT and the Current Wire Transfer and Automatic Clearing Systems

Because the new BIS/IMF institution will simply complete what is already a manner of “top layer” to the global payments and interbank clearing system, and because the latter as we currently find them do not seem apt to occasion any particular frictions in the interactions of this newly completed layer on the one hand and existing lower layers on the other, there seems no reason not to continue to employ the latter. That is, SWIFT and the current wire transfer and automatic clearing systems described above can continue to operate as they currently operate. Movements of funds between individuals, firms, and their banks within and across nations, in other words, should be able to continue to be directed through the mixed private-public communications infrastructures that we have.

Presumably some of the latter will merge over time, pursuant to a process already underway. But such developments both are and seem apt to remain independent of the addition of what I am calling our one new layer. We might also find it convenient to employ SWIFT in communicating payment orders among national banks to the new BIS/IMF supranational bank, but again nothing critical would seem to hinge on this. In sum, then, our new institution need not conflict with, and might well even employ, the current interbank communications and clearing architecture. Matters are different, however, in respect of three other components of the current institutional infrastructure, to which I now turn.

### 3. Phase-Out the Foreign Exchange and Eurodollar Markets, and Shut Down the OFCs

While the existing communications and clearing architecture are compatible with our proposed “new” institution, matters are somewhat different where the foreign exchange and Eurocurrency markets, as well as the unregulated offshore financial centers are concerned. All three of the latter, I believe, will be best phased-out and shut down, respectively. There are both “affirmative” and “negative” reasons for judging things so.

The negative reasons are that these institutions will no longer be needed, pursuant to any legitimate needs, once the new Global Clearing Union is fully instituted. In the case of the foreign exchange market, that is because there will no longer be any need to trade currencies; cross-border transactions will clear at the Clearing Union through the account-crediting and – debiting mechanism. In the case of the Eurocurrency market, it will be partly for the same reason, as well as for another: neither the dollar nor any other national currency will any longer constitute a de facto global reserve currency, hence there will be no legitimate need for anyone to hold significant quantities of national currencies at foreign banks. Nor, relatedly, will there be any legitimate need to hold large quantities of currencies in non-issuing-country banks as hedges against possible changes in other currencies’ relative values, as I shall explain just below.

The affirmative reasons for phasing out the mentioned institutions dovetail with the negative ones, in a manner alluded to by my use of the word “legitimate” just above. Once the new Clearing Union is operating, the only reasons that people would have to operate in the foreign exchange or Eurocurrency markets, or at offshore financial centers, would be illegitimate ones. They would be, in other words, either to speculate in a manner that no longer is necessary to afford liquidity – since the Clearing Union itself will supply that – or to evade nations’ domestic regulations and criminal statutes. Those are per se illegitimate aims. Their only effects on the global financial system are non-salutary – indeed destabilizing. Shut them down.

It might be objected that foreign currencies have become useful hedging assets, and that closing the foreign exchange markets, at least, would accordingly deny financial market participants a valuable form of insurance. But this simply is not so. Insofar as people have legitimate needs to hedge against changes in relative currency valuations, they can always engage in derivative transactions.

Moreover, because changes in relative currency valuations are now to be effected in an altogether foreseeable and predictable fashion, pursuant to a straightforward rule-based, account-balance-maintaining formula, there seems little need to hedge in this particular manner anyway. One hedges against volatility, while speculative hedging itself often causes or augments volatility in the ways described above in Part I. But part of the very point of the Global Clearing

Union, of course, is precisely to bring an end to monetary and financial volatility of these sorts. And a transparent rule-based revaluation formula does just that.

It might also be worth noting that closing these markets will not affect many people other than those with non-cognizable interests. For the only such people would seem to be the foreign exchange brokers themselves, many of whom are circumvented in any event by direct bank-to-bank currency transacting, as noted above. These people and their skills would seem easily marketable in continuing markets calling upon similar skills, in particular the still growing – though happily soon to be better regulated – global derivatives markets.

### CONCLUSION

We have of course covered a great deal of ground here, and yet more remains to be said. In particular, questions concerning the appropriate sequencing of the institutional proposals I've made must be addressed. So must questions concerning the formulae pursuant to which national currencies are to be revalued or devalued within the combined BIS/IMF Clearing Union institution. Finally, a host of prospective objections to what I have here proposed must be acknowledged or anticipated, and then appropriately addressed. I trust, however, that enough has been done in the present Article to justify deferral of remaining questions to the next installment.

What we have established here, I hope, is the following. First, that domestic financial and monetary, hence full employment macroeconomic stability, require that a central bank modulate its national economy's credit-money cycle – a cycle that is otherwise vulnerable to self-augmenting “feedback” loops rooted in recursive collective action problems. Second, that persistent transnational trade imbalances of substantial magnitude render this critical domestic central bank role decidedly difficult, when not altogether impossible, to fulfill. And finally third, that a straightforward variation on J. M. Keynes's original International Clearing Union plan for what became the IMF will be well suited to putting an end to those persistent imbalances, and can do so in a manner that makes optimal use of the greater part of the global financial architecture we currently have. Such were the arguments of Parts I through III, respectively.

Let that suffice for the present. And let the process of detailed planning and argumentation begin.