

BRETTON WOODS 1.0: A CONSTRUCTIVE RETRIEVAL FOR SUSTAINABLE FINANCE

*Robert Hockett**

Global trade imbalance and domestic financial fragility are intimately related. When a nation runs persistently massive current account deficits to maintain global liquidity as has the United States now for decades, its central bank effectively relinquishes exchange rate flexibility to become a de facto central bank to the world. That in turn prevents the bank from playing its essential credit-modulatory role at home, at least absent strict capital controls that are difficult to administer and have long been taboo. And this can in turn render credit-fueled asset price bubbles and busts all but impossible to prevent, irrespective of the nation's regime of domestic financial regulation. Counterpart remarks hold of nations that run persistently large surpluses, notably China, which now faces looming financial dysfunction of its own notwithstanding strict capital controls. If the U.S., Asian, and European economies are to emerge from and stay out of crisis, a new global legal architecture that fully melds trade, monetary, and financial arrangements, in a manner that renders the global liquidity required by global trade no longer dependent on one national currency or permanent national deficits, will be a sine qua non.

This article, which draws together three distinct sequences of articles by the author on financial regulation and central banking, economic

* Professor of Enterprise-Organizational, Finance-Regulatory, and International Economic Law, Cornell Law School; Consulting Counsel, International Monetary Fund; Visiting Consultant, Federal Reserve Bank of New York; Visiting Scholar, Federal Reserve Bank of Philadelphia Global Interdependence Center; Fellow, The Century Foundation; Commissioned Author, New America Foundation; and Board Member, The Occupy Money Cooperative. Special thanks to Dan Alpert, Arnab Das, John Jackson, Saule Omarova, Nouriel Roubini, Sherle Schwenninger, Bob Skidelsky, and Bob Thompson. Additional thanks to Tobias Adrian, Kaushik Basu, Tom Baxter, Claudio Borio, Mike Dorf, Adam Feibelman, Bob Frank, Anna Gelpern, David Grewal, Sean Hagan, John Head, Howell Jackson, Peter Katzenstein, Jon Kirschner, Odette Lienau, Jeff Madrick, Meg McConnell, Herbert Morais, Charlie Morris, Jay Pelosky, Thomas Pogge, Aziz Rana, John Roemer, Carne Ross, Bob Shiller, and participants in workshops and conferences at the Cornell Law School, Georgetown University Law Center, Harvard Business School, Roubini Global Economics, Yale Law School, and the Yale Philosophy Department. Thanks also to many colleagues at Cornell, the Federal Reserve Bank of New York, the International Monetary Fund, the Century Foundation, the New America Foundation, Global Financial Integrity, OWS, and The World Economic Roundtable group in New York, with whom I have long discussed many of the matters considered herein. Thanks finally to Richard Sawyer and his colleagues on this Journal for superb editorial assistance. All claims, opinions, errors are of course for present purposes my own.

rebalancing, and the legal underpinnings of the world economy, retrieves and updates J. M. Keynes's original International Clearing Union ("ICU") plan for what ultimately became the International Monetary Fund ("IMF," "Fund"). Part I tells the tale of Keynes's original ICU plan as advocated at Bretton Woods, emphasizing the plan's basic structure and motivations as rooted in Keynes's financially oriented re-conception of monetary and what later came to be known as "macroeconomic" theory. Part II traces recent financial, monetary, and macroeconomic troubles to our not having adopted something more like the Keynesian IMF. Part III proposes an updated version of Keynes's ICU arrangement suitable for today's international trade and financial order. In effect, it serves as a rough blueprint for a new IMF: a Fund more like the "old" one we never gave a go, and indeed more like a world central bank, a "Global Fed."

The article concludes by looking ahead to next steps in the direction of fully instituting the revived Global Clearing Union plan that it proposes. What has blocked progress until now, it suggests, might well be a tendency to segregate thought about international trade and monetary orders, on the one hand, from thought about domestic financial and "real" economies on the other hand. In counseling abandonment of those misleading segregations, the article ultimately suggests we change more than one institution. It suggests we reform a false and destructive way of thinking.

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INTRODUCTION

Global trade imbalance and domestic financial fragility are intimately linked. When a nation persistently runs large current account deficits to maintain global liquidity, as has the United States now for decades, its central bank effectively relinquishes exchange rate flexibility to become a *de facto* central bank to the world. That in turn prevents the bank from playing its essential credit-modulatory role at home, at least absent strict capital controls that are difficult to administer and have long been taboo.¹ And *this* can in turn render credit-fueled asset price bubbles and busts all but impossible to prevent, irrespective of the nation's regime of domestic financial regulation. Counterpart remarks hold for nations that run large surpluses, notably

1. On what I call the central bank's "essential credit-modulatory role," see discussion *infra* Part I.B. My references to exchange rate flexibility and capital controls allude to the so-called "impossible trinity," or "trilemma," which holds that simultaneously maintaining exchange rate stability, free capital mobility, and domestic monetary autonomy is impossible. See, e.g., Maurice Obstfeld & Alan M. Taylor, *The Great Depression as a Watershed: International Capital Mobility Over the Long Run*, (Nat'l Bureau of Econ. Research, Working Paper No. 5960, 1999) (describing the trilemma and exploring its impact on policymakers since the nineteenth century). One way of thinking of the claim made in this paragraph, then, is as an implicit appeal to the trilemma within a specific context: The nation that provides global liquidity effectively relinquishes exchange rate flexibility, meaning that it cannot enjoy both remaining terms of the trilemma—cross-border capital mobility and domestic monetary policy autonomy—at once. For more on these matters, see discussion *infra* Part I.B.

Although the trilemma supports my conclusions, however, I do not rest my argument on it. There are two reasons. First, the trilemma is indirectly associated, through the (independent) work of Robert Mundell and Marcus Fleming, with the "bastard Keynesian" "IS-LM" analysis introduced by John Hicks in 1937. See Robert A. Mundell, *Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates*, 29 CANADIAN J. ECON. & POL. SCI. 475 (1963); J. Marcus Fleming, *Domestic Financial Policies Under Fixed and Under Floating Exchange Rates*, 9 STAFF PAPERS—INT'L MONETARY FUND 369 (1962); J.R. Hicks, *Mr. Keynes and the "Classics"*; *A Suggested Interpretation*, 5 ECONOMETRICA 147 (1937) (introducing the IS-LM interpretation of Keynes). Part I.B repudiates the IS-LM interpretation of Keynes as Hicks himself ultimately did. See John Hicks, *IS-LM: An Explanation*, 3 J. POST KEYNESIAN ECON. 139 (1980). In so doing, it articulates a more authentically Keynesian account of the link between trade imbalance and financial dysfunction. Second, global liquidity provision as a source of exchange rate inflexibility differs in certain respects from the more typical source associated with Mundell-Fleming—viz. a deliberate policy of fixed exchange rate maintenance. For a thorough treatment of the trilemma, in respect of both its theoretical underpinnings and its empirical corroboration, see Maurice Obstfeld, Jay C. Shambaugh & Alan M. Taylor, *The Trilemma in History: Tradeoffs Among Exchange Rates, Monetary Policies, and Capital Mobility* (NBER Working Paper No. 10396, 2004). For more on Hicks, IS-LM, and Hicks's later repudiation of the same, see *infra* notes 20–22, and accompanying text.

China, which now faces looming financial dysfunction of its own notwithstanding strict capital controls. Persistent imbalance in one realm—currency—all but inevitably brings imbalance to connected realms: trade and finance.

If the U.S., Asian, and European economies are to emerge from and stay out of crisis, a new global legal architecture that fully melds trade, monetary, and financial arrangements, in a manner that renders the global liquidity required by global trade no longer dependent on one national currency or permanent national deficits, will be a *sine qua non*. In effect, that means an International Monetary Fund (IMF, Fund) that serves as true complement to the World Trade Organization (WTO) as its originator first envisaged it—that is, as a de facto world central bank (a Global Fed) capable of both (a) gradually expanding global liquidity to accommodate growing trade, and (b) managing a bona fide global fiat currency into which trading nations' currencies are convertible at regularly adjustable rates.

These claims might ring initially surprising. To be sure, it is not uncommon for lawyers, economists, and laypeople alike to hold at least the WTO and the two Bretton Woods institutions, the IMF and the World Bank Group (World Bank), together in thought.² Doubtless many among 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 fully complementary pillars of our legally constituted global economic order.³

Yet most casual observers do *not* comprehend the *details* or *de-liberate design* that render these institutions complementary, nor do they understand the political, financial, monetary and macroeconomic considerations that lay behind them. For example, although the WTO was not founded until 1994, it was originally envisaged *concurrently*

2. 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 the author shall do the same here.

3. See generally Robert Hockett, *From Macro to Micro to “Mission Creep”: Defending the IMF’s Emerging Concern with the Infrastructural Prerequisites to Global Financial Stability*, 41 COLUM. J. TRANSNAT’L L. 153 (2002) [hereinafter *Macro to Micro*] (describing and justifying the IMF’s broadening role in ensuring global financial stability); Robert Hockett, *Three (Potential) Pillars of Transnational Economic Justice: The Bretton Woods Institutions as Guarantors of Global Equal Treatment and Market Competition*, 36 METAPHILOSOPHY 93 (2005) (arguing that the IMF, World Bank, and WTO can together provide for global economic justice).

with the IMF and the World Bank, half a century earlier.⁴ Further, under one of the two principal blueprints from which it developed (Keynes's "International Clearing Union" plan), the IMF was to serve as a central-bank-like *adjunct* to that then-projected International Trade Organization (ITO), its mission both (a) to afford global liquidity that would not be dependent on national currencies or national deficits, and (b) in so doing, to prevent long-term trade imbalances and the concomitant domestic monetary and financial dysfunctions. Finally, and relatedly, Keynes's original plan recognized a link between global trade and domestic monetary and financial fragility that continues to elude many contemporary economists. Indeed, the word "Fund" in "International Monetary Fund" is an obvious analogue to the word "Reserve" in "Federal Reserve."

I hope with this article both to retrieve and to update Keynes's original vision for the IMF.⁵ My motives, as already intimated, are not antiquarian. Our current domestic and global financial and monetary troubles are best viewed as products of our *not* having established the original Keynesian Fund.

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 "monetary" and "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, thereby safeguarding consumer demand and employment globally as Keynes had shown possible to manage domestically.

Part I also explains the political reasons why the United States rejected the Keynes plan in 1944. Today, Keynes's plan would be in

4. See *Macro to Micro*, *supra* note 3, at 162. 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."

5. The present paper can be viewed as a sequel to earlier works by this author: Robert Hockett, *Bailouts, Buy-Ins, and Ballyhoo*, 52 *CHALLENGE* 36 (2009); Robert Hockett, *A Fixer-Upper for Finance*, 87 *WASH. U. L. REV.* 1213 (2010) [hereinafter *A Fixer-Upper for Finance*]; and Robert Hockett, *Foreword: Bubbles, Busts, and Blame: Interpreting—and Learning From?—Yet Another "Meltdown"*, 61 *SYRACUSE L. REV.* 411 (2010). Those articles discuss the domestic sources of our recent difficulties; the present piece addresses the global roots of those domestic sources themselves. For Keynes's early understanding of the linkage, see, for example, J. M. KEYNES, *A TRACT ON MONETARY REFORM* (1924) [hereinafter *TRACT ON MONETARY REFORM*].

the United States's short-term pecuniary and long-term "enlightened" interest for the very reasons we originally rejected it. 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 liable to be in the future. The United States now has both the incentive and, for the time being at least, the influence to see such a plan through.⁶

Part II traces the world's recent financial and monetary troubles to our failure to adopt the Keynesian IMF at Bretton Woods. In particular, building on earlier papers,⁷ it models our recent spate of recession-inducing asset price bubbles and bursts as recursive collective action problems rooted in chronic, uncontrolled, and apparently uncontrollable tendencies toward excess credit-money in the American financial economy.⁸ 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

6. 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.

7. The argument builds especially on Hockett, *A Fixer-Upper for Finance*, *supra* note 5, but also on Hockett, *Macro to Micro*, *supra* note 3. 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 generally 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); Robert Hockett, *Human Persons, Human Rights, and the Distributive Structure of Global Justice*, 40 COLUM. HUM. RTS. L. REV. 343 (2009); Robert Hockett, *Institutional Fixes versus Fixed Institutions*, 39 CORNELL INT'L L.J. 537 (2006); Robert Hockett, *Promise Against Peril: Of Power, Purpose, and Principle in International Law*, 17 ILSA J. INT'L & COMP. L. 71 (2011); Robert Hockett, *The Limits of Their World*, 90 MINN. L. REV. 1720 (2006) (book review); Robert Hockett, *Justice in International Trade-Liberalization: A Proposed Framework for Analysis*, CARNEGIE COUNCIL (Apr. 5, 2006), http://www.carnegiecouncil.org/publications/articles_papers_reports/5359.html#3.

8. 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.

when so doing for legitimate reasons—reasons that a Keynesian IMF would preempt.⁹

Sustained surpluses of this sort 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, monetary, and financial 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 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.¹⁰

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 version 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

9. The legitimate reasons have to do with self-insurance against capital flight of the 1990s variety, which foreign exchange reserves—especially dollars—enable. The illegitimate reasons 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. For more on the problem of overcapacity, see DANIEL ALPERT, ROBERT HOCKETT & NOURIEL ROUBINI, *THE WAY FORWARD: MOVING FROM THE POST-BUBBLE, POST-BUST ECONOMY TO RENEWED GROWTH AND COMPETITIVENESS* (2011), available at http://newamerica.net/publications/policy/the_way_forward.

10. Further elaboration of this necessity is found in *A Fixer-Upper for Finance*, *supra* note 5, at 1283–86.

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 J. M. Keynes, on secondment to the U.K. Treasury during the Second World War, had a hand in designing and establishing the IMF.¹¹ 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 and credit cycles. These gaps in popular understanding stem partly from misperceptions about what Keynes’s economic contributions actually were, and a dim comprehension of the often conflicting aims of the United Kingdom and United States for a postwar economic order. This Part accordingly attempts to present an accurate picture of Keynes’s Clearing Union plan and to describe the political context that compromised it.

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 United States and, to a lesser extent, the United Kingdom 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

11. See generally BENN STEIL, *THE BATTLE OF BRETTON WOODS: JOHN MAYNARD KEYNES, HARRY DEXTER WHITE, AND THE MAKING OF A NEW WORLD ORDER* (2013) (recounting the centrality of the debate between Keynes and the American economist Harry Dexter White in the development of the transnational economic institutions, including what would become the IMF, following World War II).

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.¹² Keynes’s economics, we are told by those self-described Keynesians who incorporated the master’s work into the so-called “neoclassical synthesis,” traced enduring unemployment to “sticky” wage rates.¹³ Sticky wage rates 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.¹⁴

12. For a contemporary account along these lines, emphasizing missing labor search markets see, for example, ROGER E.A. FARMER, *EXPECTATIONS, EMPLOYMENT AND PRICES* (2010); ROGER E.A. FARMER, *HOW THE ECONOMY WORKS* (2010). Farmer’s work is richer than this, but it is striking how critical the labor market failure remains to his story. For the importance of “sticky wages” to pre-Keynesian theorists, as well as some of those who called themselves “Keynesians” see, for example, VICTORIA CHICK, *MACROECONOMICS AFTER KEYNES* 132–57, 162–70 (1983); LANCE TAYLOR, *MAYNARD’S REVENGE* 221–54 (2010).

13. See, e.g., DON PATINKIN, *MONEY, INTEREST, AND PRICES* (2d ed. 1965); Franco Modigliani, *Liquidity Preference and the Theory of Interest and Money*, 12 *ECONOMETRICA* 45, 65–67 (1944). For more on the same, see also Paul A. Samuelson, *A Brief Survey of Post-Keynesian Developments*, in *KEYNES’S GENERAL THEORY: A REPORT OF THREE DECADES* (Robert Leakman ed. 1964). It is Samuelson who coined the term “neoclassical synthesis.” See *id.*; see also PAUL A. SAMUELSON, *ECONOMICS* (1948). A typical latter-day propagation of the myth that Keynes was all about “sticky wages” is Paul Wells, *The Aggregate Supply Curve: Keynes and Downwardly Sticky Money Wages*, 16 *J. ECON. EDUC.* 297, 298–300 (1985).

14. See *supra* note 13 and accompanying text. 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-

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 to stimulate aggregate demand artificially. 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.¹⁵ 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*.¹⁶ This would happen as recipients of augmented expenditure made 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.¹⁷ In time this would all lead more firms to resume production and hiring again, and full health would be restored.¹⁸

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.”¹⁹ 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*.²⁰ Through the efforts of Alvin Hansen and others at Harvard

equilibrating tendencies, Keynes found self-reinforcing feedback effects. *See generally* JOHN MAYNARD KEYNES, *THE GENERAL THEORY OF EMPLOYMENT, INTEREST AND MONEY* 257–71 (1936) [hereinafter *THE GENERAL THEORY*]. Ironically, Keynes actually warned against wage-cutting in Chapter 19 of *The General Theory*. The advocate for wage cutting was none other than the “classical theorist” against whom Keynes inveighed in *The General Theory*, Arthur Cecil Pigou. *See, e.g.*, A.C. Pigou, *The Classical Stationary State*, 53 *ECON. J.* 343, 349–50 (1943) (Pigou attempts to rebut Keynes). The so-called “Pigou Effect” stemming from this work feeds into Modigliani, *supra* note 13.

15. *See supra* note 12 and accompanying text.

16. *THE GENERAL THEORY*, *supra* note 14, at 113–31.

17. 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. If an initial recipient of \$10 of income spends \$8, the recipient of this first expenditure then spends 80% of that \$8, and so on. In effect, the multiplier is the limit of the converging series $1 + .8 + .8(.8) + .8(.8)(.8) + \dots$, which is 5.

18. *See THE GENERAL THEORY*, *supra* note 14, at 327.

19. *See, e.g.*, 2 ROBERT SKIDELSKY, JOHN MAYNARD KEYNES, *THE ECONOMIST AS SAVIOR, 1920–1937*, at 538 (1992) [hereinafter 2 SKIDELSKY].

20. *See generally* J.R. Hicks, *Mr. Keynes and the “Classics”*: A Suggested Interpretation, 5 *ECONOMETRICA* 147 (1937). It is hard not to attribute Hicks’s adulteration of Keynes’s story to envy. *See, for example*, J.R. HICKS, *VALUE AND CAPITAL* vi (1940), in which he expresses consternation at Keynes’s having beat him to publica-

and M.I.T. in the United States, Hicks's Keynes emerged as the American Keynes from the late 1940s onward.²¹ 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.²²

Perhaps unsurprisingly, policymakers who followed the bastard Keynesian line over the course of the 1960s and 1970s—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.²³ Ironically, bastard Keynesianism led, by the early 1980s, to the rise of politicians purporting to follow the teachings of pre-Keynesian "neo-classical" and "monetarist" economists.²⁴ Some of these economists purported to be Keynesians themselves—just "Keynesians" whose mission was to "unstuck" wages rather than to compensate for them with government stimulus.²⁵

Another, longer-term yield of that era 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.²⁶ However, inflation and stagflation are precisely the sorts of things

tion 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 simplified mathematical rendering, published within a year of *The General Theory*, would have been seductive against that backdrop.

21. See, e.g., TAYLOR, *supra* note 12, at 221–30.

22. The venerable Keynes follower Paul Davidson reports that Hicks recanted his "bastard Keynesianism" in favor of the genuine article toward the end of his life. PAUL DAVIDSON, *THE KEYNES SOLUTION* 175 (2009).

23. See TAYLOR, *supra* note 12, at 233–34 (describing the Friedman-Phelps model, which purported to pin "stagflation" on Keynesian policies).

24. See *id.* at 251–53.

25. See generally 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, Expectations of Inflation and Optimal Employment Over Time*, 34 *ECONOMICA* 254 (1967); *The Economy: We Are All Keynesians Now*, TIME, Dec. 31, 1965, available at <http://www.time.com/time/magazine/article/0,9171,842353,00.html>; Milton Friedman, Letter to the Editor, *Friedman and Keynes*, TIME, Feb. 4, 1966, available at <http://www.time.com/time/magazine/article/0,9171,898916-2,00.html> (letter from Milton Friedman responding to previously cited article).

26. See generally TAYLOR, *supra* note 12.

Keynes himself had warned against when the United Kingdom pulled decisively out of slump in preparing for the Second World War.²⁷ As we shall presently see, Keynes emerges in this sense to have been not only a perceptive diagnostician of what went wrong in the United Kingdom and United States 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 the 1920s and 1930s.²⁸ “Beggars thy neighbor” policies had predictably proved self-defeating: they had wrought only contracted aggregate demand and monetary instability as rewards by lessening the volume of trade and increasing the frequency with which currencies were revalued in relation to one another.²⁹ These developments in turn had intensified domestic recession

27. See JOHN MAYNARD KEYNES, *HOW TO PAY FOR THE WAR* (1940) [hereinafter *HOW TO PAY FOR THE WAR*]; see also J.M. Keynes, *The Policy of Government Storage of Foodstuffs and Raw Materials*, 48 *ECON. J.* 449, 456–60 (1938); J.M. Keynes, *Paying for the War*, *TIMES* (London), Nov. 14–15, 1939, reprinted in *THE COLLECTED WRITINGS OF JOHN MAYNARD KEYNES* 41–51 (Donald Moggridge ed. 1971). 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.

28. See STEIL, *supra* note 11, at 140. In a competitive currency devaluation, one nation would act unilaterally to lower the value of its currency relative to other currencies. This would simultaneously render the devaluating nation’s goods less expensive abroad and competing nations’ goods more expensive at home, thereby aiding domestic manufacturers and the employment prospects of domestic labor. See Jeanne Asherman, *The International Monetary Fund: A History of Compromise*, 16 *N.Y.U. J. INT’L L. & POL.* 235, 237–42 (1984) (describing events following World War I and the calibrated response at Bretton Woods); see also *Macro to Micro*, *supra* note 3, at 165–66, 172–74. For a comprehensive history, see generally I *THE INTERNATIONAL MONETARY FUND 1945-1965*, at 1–118 (J.K. Horsefield ed. 1969).

29. *Macro to Micro*, *supra* note 3, at 162–63; see also *Cooperation and Reconstruction (1944-71)*, INT’L MONETARY FUND, <http://www.imf.org/external/about/histcoop.htm> (last visited Feb. 20, 2013) (explaining that currency devaluation, trade restrictions, and restrictions on foreign exchange led to a self-defeating decline in world trade).

and political unrest into full-blown depression and social breakdown, culminating ultimately in resentment, *révanchism*, and war.³⁰

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 1930s.³¹ The General Agreement on Tariffs and Trade (GATT) was designed to handle the trade restrictions. GATT did so principally by first converting restrictions to tariffs, then steadily reducing the latter through repeated “Rounds” of negotiation.³²

The IMF was to handle the exchange rates.³³ It did so for about twenty-five 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: a *de facto* return to the gold standard.³⁴ The IMF also would engage in short-term lending to enable nations to “adjust” their domestic economies, rather than devaluing their currencies, to address current account deficits.³⁵ This it would do by affording them member-supplied tide-over financing as the troubled nation deflated its economy to dampen import-encouraging consumer demand,

30. See U.S. DEP’T OF STATE, I PROCEEDINGS AND DOCUMENTS OF UNITED NATIONS MONETARY AND FINANCIAL CONFERENCE, BRETTON WOODS, NEW HAMPSHIRE 81 (1944) [hereinafter BRETTON WOODS PROCEEDINGS AND DOCUMENTS] (“All of us have seen the great economic tragedy of our time. We saw the world-wide depression of the 1930’s. We saw currency disorders develop and spread from land to land, destroying the basis for international trade and international investment and even international faith. In their wake, we saw unemployment and wretchedness—idle tools, wasted wealth. We saw their victims fall prey, in places, to demagogues and dictators. We saw bewilderment and bitterness become the breeders of fascism, and, finally, of war.”); see also Asherman, *supra* note 28, at 239–40 (describing how currency manipulation became an economic weapon and how economic aggression led inevitably to war); *Macro to Micro*, *supra* note 3, at 162–63.

31. *Macro to Micro*, *supra* note 3, at 164; see also BRETTON WOODS PROCEEDINGS AND DOCUMENTS, *supra* note 30, at 80–82 (expressing hope that conference participants could foster global prosperity and avoid “economic tragedy” of 1930s).

32. John H. Jackson et al., *Implementing the Tokyo Round: Legal Aspects of Changing International Economic Rules*, 81 MICH. L. REV. 267, 270–71 (1982) (describing the creation and implementation of GATT); see also *Macro to Micro*, *supra* note 3, at 164, 178.

33. *Macro to Micro*, *supra* note 3, at 164.

34. See *id.* at 171–72. 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 in light of Keynes’s celebrated attacks on the gold standard during the 1920s. See, e.g., JOHN MAYNARD KEYNES, *Auri Sacra Fames*, in *ESSAYS IN PERSUASION* (1931).

35. See Sandra Blanco & Enrique Carrasco, *Pursuing the Good Life: The Meaning of Development as It Relates to the World Bank and the IMF*, 9 TRANSNAT’L L. & CONTEMP. PROBS. 67, 74–75 (1999) (noting that IMF was designed to allow for “adjustments”); see also *Macro to Micro*, *supra* note 3, at 164, 167.

while trimming government spending and other putative short-term causes of poor trade performance and weak currencies.³⁶ It should be noted that this arrangement placed the full burden of adjustment on deficit-running nations.³⁷ Nations running persistent trade surpluses had nothing to change or apologize for.³⁸ This attribute, like the return to a version of the old gold standard, placed the 1944 IMF significantly at odds with the Keynes plan and Keynes's actual economics.

The other institution established at Bretton Woods—the World Bank³⁹—was, for its part, to lend on longer terms to assist war-torn countries of Europe in rebuilding their infrastructures.⁴⁰ 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.⁴¹ 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.⁴²

Without apparently-intended irony, the familiar tale of “Keynesian economics” and Bretton Woods just sketched has been labeled the story of “global Keynesianism.”⁴³ But while there is plenty that is “global” and even “Keynesian” in this story, there is little bona fide Keynes. Indeed the narrative hovers uncomfortably near incoherence even on its own terms, in particular, in the tension between its “Keynesian pump-priming” and IMF-financed “adjustment”—that is to say, retrenchment—components.

36. *Macro to Micro*, *supra* note 3, at 186–87 (discussing the rationale behind the requirement of conditionality).

37. *Id.* at 169–70.

38. *Id.* at 165–66.

39. Tellingly named the “International Bank for Reconstruction and Development” (IBRD). *See id.* at 156; *see also* David D. Driscoll, *The IMF and the World Bank: How Do They Differ?*, INT'L MONETARY FUND, <http://www.imf.org/external/pubs/ft/exrp/differ/differ.htm> (last visited Feb. 20, 2013).

40. *Macro to Micro*, *supra* note 3, at 163; Driscoll, *supra* note 39 (noting that the World Bank is primarily responsible for financing economic development and that “first loans were extended during the late 1940s to finance the reconstruction of the war-ravaged economies of Western Europe”).

41. *See Macro to Micro*, *supra* note 3, at 163.

42. *See* Driscoll, *supra* note 39 (noting that initial recipients of World Bank loans were Western European countries but “the Bank turned its attention to assisting the world's poorer nations, known as developing countries” and adding that Bank now lends exclusively to developing countries).

43. *See, e.g.*, GERNOT KÖHLER, *GLOBAL KEYNESIANISM: UNEQUAL EXCHANGE AND GLOBAL EXPLOITATION* (2001); *see also* HARTMUT ELSENHANS, *STATE, CLASS AND DEVELOPMENT* (1996); W. R. Mead, *American Economic Policy in the Antemillennial Era*, 6 *WORLD POL'Y J.* 385, 396 (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.” Unsurprisingly, this regime came to grief in the same period—and in much the same way—that domestic “Keynesianism” did in the United States. The system faltered when President Nixon unilaterally suspended dollar-gold convertibility in the early 1970s to address accelerating consumer and commodity price inflation and growing current account deficits.⁴⁴ That in turn forced the IMF to move significantly—albeit far from completely—in the direction originally prescribed by Keynes, by allowing for more frequent currency realignments and instituting, albeit in modest amounts, a global credit-money known as the “Special Drawing Right” or SDR, more on which below.⁴⁵ Keynes had, in other words, proved as prescient about global economic arrangements as he had about domestic ones.

The 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 a 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.”⁴⁶ By much

44. As if intentionally to compound the irony, Nixon purportedly said “We are all Keynesians now” after suspending gold convertibility. See Steven Pearlstein, *Keynes on Steroids*, WASH. POST, Nov. 26, 2008, at D1; see also *Macro to Micro*, *supra* note 3, at 172.

45. See *Macro to Micro*, *supra* note 3, at 165–66, 171–74.

46. See generally Robert Leeson, *The Eclipse of the Goal of Zero Inflation*, 29 HIST. OF POL. ECON. 445 (1997) (describing American economist Alvin Hansen’s espousal of a “Keynesianism” at odds with Keynes’s published writings); see also AXEL LEIJONHUFVUD, *ON KEYNSIAN ECONOMICS AND THE ECONOMICS OF KEYNES: A STUDY IN MONETARY THEORY* (1968) (an early example of a theoretician tracing the divergence between Keynes and “Keynesianism”). For a defense of Keynes against “Keynesianism” from the political right, see Daniel J. Mitchell, *Keynes Was Wrong on Stimulus, but the Keynesians Are Wrong on Just about Everything*, CATO AT LIB-

the very same token, Keynes and his followers had ultimately to welcome the results 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. This Subpart will first describe Keynes’s actual economic vision and then 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*

“Keynesianism” to the contrary notwithstanding, Keynes’s economics 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 do not cause long-term underemployment. Indeed if anything, they maintain purchasing power and thereby retard recessionary slides toward depression.⁴⁷

Instead, Keynes found recession and depression 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.⁴⁸ 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-equi-

ERTY (Sept. 13, 2010, 1:14 PM), <http://www.cato.org/blog/keynes-was-wrong-stimulus-keynesians-are-wrong-just-about-everything>.

47. See THE GENERAL THEORY, *supra* note 14, at 257–71.

48. See *id.* at 147–65 (discussing uncertainty).

librating 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 market participants always are able to withdraw at will to hoard money instead.

a. Investment as Solution to Underconsumption

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.⁴⁹ Aggregate income, in turn, which Keynes also calls "proceeds," can be partitioned into two basic streams. Some proceeds are consumed, while others are saved.⁵⁰ 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.⁵¹ As you earn more, in other words, you save not merely a growing amount, but a growing *proportion* of your income. Unlike most microeconomic propositions, moreover, this one extends without compositional fallacy to the macroeconomic case.⁵² A growing economy

49. *See id.* at 63.

50. *See id.* at 52–65.

51. *See id.* 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*, in MILTON FRIEDMAN'S MONETARY FRAMEWORK: A DEBATE WITH HIS CRITICS (Robert J. Gordon ed. 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, for example, 1 ROBERT SKIDELSKY, *JOHN MAYNARD KEYNES: HOPES BETRAYED 1883–1920*, at 165–66 (1983).

52. 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

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 consume a smaller proportion of their income than do the less wealthy. Wealthy people 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.⁵³

Keynes took the seemingly banal observation that savings proportionately rise faster than output itself and weaved a theoretical masterpiece. Keynes showed that the increasing savings rates of growing economies paradoxically serve as a drag on growth when savings are hoarded in the form of cash or bank balances.⁵⁴ When consumption diminishes in proportion to output over time, and consumers hoard income as cash, then rational producers and suppliers of consumer goods and services are bound over time to grow increasingly anxious.⁵⁵ They will at some point recognize that they cannot sell everything that they produce.⁵⁶ They will know that the incomes generated by production will not be spent in their entirety 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.⁵⁷

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 its own demand”—and producers would know this.⁵⁸ Hence, each of them would come at some point to find it individually rational to shed labor or lower wages, while *all* of their doing so would in aggregate *worsen* the problem to which each was responding: the problem of steadily worsening aggregate undercon-

representative agent, general equilibrium phenomena. *See, e.g.,* THE GENERAL THEORY, *supra* note 14, at vii.

53. This idea represents the thrust of “The Propensity to Consume,” Book III of *The General Theory*. *See* THE GENERAL THEORY, *supra* note 14, at 89–131. Keynes anticipated this idea as early as 1923, in his *Tract on Monetary Reform*. TRACT ON MONETARY REFORM, *supra* note 5, at 18–27.

54. *See, e.g.,* THE GENERAL THEORY, *supra* note 14, at 96–98.

55. *See id.* at 46–51, 98–106.

56. *See id.* at 52–65, 96–98.

57. *See id.* at 166–74.

58. *See, e.g., id.* at 26 (arguing that *The General Theory of Employment* fills a gap left by Say’s Law). Those who fall into the trap of finding Say persuasive appear to be held captive by the folksy picture, beloved by 18th and 19th century economic and political thinkers, of a primitive barter economy in which hoardable money simply does not exist.

sumption. Here, then, is Keynes's dilemma, which we now recognize as a classic "collective action problem." The problem recedes only when that gap between production and consumption is closed, when the economy returns to subsistence-level production. If there exists any reliable full employment equilibrium, then, presumably it is only at a now unacceptable level of aggregate production.

b. Investment's, Hence Sustained Growth's, Vulnerability to Radical Uncertainty and Recursive Collective Action Problems

One might then wonder, given the looming underconsumption problem just described, how an economy ever sustainably moves beyond subsistence level production. The answer is investment. In Keynes's story, *investment*—expenditure on capital goods—fills the gap that emerges between income/output and consumption expenditure as an economy grows.⁵⁹ So long as investment activity remains brisk, and savers 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.⁶⁰

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, supplemented by radical uncertainty and the continuing availability of money-holding as an investment alternative, renders them vulnerable to acutely recursive collective action problems of their own.⁶¹

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 shall proceed to the specific form of recursive collective action problem that attends decentralized investment markets featuring this form of uncertainty. After that I shall 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

59. *See id.* at 98–106.

60. *See id.*

61. *See id.* at 166–68. The effective-demand-imperiling importance of money-holding, cited above at note 54 and accompanying text, found expression not only in Keynes's writing, but also in Silvio Gesell's. Gesell's "stamped money" proposal, in which stamps would have to be purchased and affixed to money at regular intervals for it to retain its value, were aimed precisely at preempting the hoarding problem. *See generally* SILVIO GESELL, *THE NATURAL ECONOMIC ORDER* (1906) (advancing the stamped money proposal).

what became what is called, after all, the International *Monetary* Fund, which I elaborate in the next Subpart.

First, with respect to uncertainty, it is imperative to clarify precisely what Keynes had in mind. Keynes distinguished between what we now sometimes call “radical,” or “Knightian” uncertainty on the one hand, and mere “actuarial risk” on the other.⁶² Actuarial *risk* is associated with possible outcomes to which meaningful probability measures can be assigned.⁶³ Radical *uncertainty* afflicts possible outcomes to which no such probability measure can be assigned.⁶⁴ 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.”⁶⁵

According to Keynes, entrepreneurs and investors often play a game of roulette where nobody knows how many slots the wheel has or what each slot’s payoff might be.⁶⁶ On the one hand these people must in effect *wager* on the future, since they cannot *know* it.⁶⁷ On the other hand they typically lack principled means by which to calculate reliable probability measures assignable to the manifold prospects

62. See JOHN MAYNARD KEYNES, *TREATISE ON PROBABILITY* 71–78 (1921); see also FRANK KNIGHT, *RISK, UNCERTAINTY, PROFIT* (1921) (representing the seminal exposition of this idea).

63. See KNIGHT, *supra* note 62, at 119.

64. *Id.*

65. *THE GENERAL THEORY*, *supra* note 14, at 149–50.

66. 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 generally 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.” *Id.* at 55. The only school of thought in whose name “Keynesianism” figures while proponents attend to uncertainty is, ironically, that known as “Post-Keynesian.” See Bob Hockett, *What Maynard Keynes, James Dean, and Now Richard Posner All Have in Common*, DORF ON LAW (Sept. 28, 2009, 2:09 AM), <http://www.dorfonlaw.org/2009/09/what-maynard-keynes-james-dean-and-now.html>.

67. *THE GENERAL THEORY*, *supra* note 14, at 161–62.

before them.⁶⁸ Presumably, this uncertainty is why popular lore casts investors and entrepreneurs as bold “visionaries” or “pioneers.”⁶⁹ They are like ancient sea-faring merchants or Viking explorers, heroically sailing out into the unfathomable unknown.⁷⁰

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.⁷¹ 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.

Ordinarily, “spontaneous optimism” or “animal spirits” will impel entrepreneurs to plan and pursue projects in hopes of realizing prospective gains.⁷² 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 make capital available, after they see predecessor investors realizing returns. As long as investors follow the “high spirited,” investment will proceed, people will be employed in the production of capital goods in addition to consumer goods and services, and underconsumption will be held at bay.⁷³

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 takes little to deprive them of their confidence and prompt them to withdraw their investments. Moreover, the danger of such loss of confidence tends to grow steadily during a boom. Early entrants to a boom—including the entrepreneurs and the first waves of investors themselves—act on the basis of anticipated

68. *Id.* at 162. This ignorance can be “rational” when the information is too costly to gather or analyze. 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—it 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.

69. Keynes likens investment to an expedition to the South Pole. *See id.* at 162.

70. The flavor is nicely captured in Pound’s translation of the Anglo-Saxon poem, *The Seafarer*. *See* EZRA POUND, *The Seafarer*, in *PERSONAE* 64 (1929). *See generally* THE SAGA OF ERIK THE RED (Riu, trans., 1979).

71. THE GENERAL THEORY, *supra* note 14, at 147–64.

72. *Id.* at 161.

73. *See id.* at 98.

but ultimately unknowable “fundamentals.”⁷⁴ 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.⁷⁵

In other words, at some point another self-amplifying process—in this case a spontaneous “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.”⁷⁶ Rather, it is yet another recursive collective action problem.⁷⁷ 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.⁷⁸

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. Investors “leg the spread”; they effectively arbitrage between interest

74. “Fundamentals” are determinants of value that can be expected to be in play for some appreciable period of time. They are typically—and in some cases controversially—contrasted with more fleeting, “artificial” determinants of market valuation such as fads, fancies, or excess-credit-induced inflationary “bubbles.”

75. See, e.g., Daniel K. Tarullo, *Neither Order Nor Chaos: The Legal Structure of Sovereign Debt Workouts*, 53 EMORY L.J. 657, 688 (2004) (noting that low interest rates in the United States led to increased capital flows to emerging markets “sufficient to prompt the chairman of Citibank to warn that there [was] a risk that markets may again be moving ahead of fundamentals, as was the case in 1997 prior to the Asian crisis”) (internal quotation marks omitted).

76. *A Fixer-Upper for Finance*, *supra* note 5, at 1225–32 (describing self-amplifying, speculative investment cycles).

77. For a description of the nature of “recursive collective action problems,” see Robert Hockett, *Recursive Collective Action Problems*, 5 J. APP. ECON. (forthcoming 2013) (manuscript at 1–6), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2239849.

78. For a more detailed description of this process see *A Fixer-Upper for Finance*, *supra* note 5, at 1232–41. Keynes, as active a market speculator as he was an economic theorist and policy advocate, evocatively likened this self-amplifying 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.” *Id.* at 1225–32.

rates and current capital gains rates.⁷⁹ Lenders, for their part, grow more willing to lend in these circumstances, demanding less exogenous collateral and accepting the rapidly appreciating assets as endogenous collateral instead.⁸⁰ Debt increasingly fuels the bubble, and the debt-fueling feeds into the self-amplification process.⁸¹

A bubble cannot grow indefinitely. At some point the availability of credit must come to an end. But for as long as a credit-fueled bubble grows at capital gains rates that exceed interest rates, it is individually rational for each investor to borrow, bet, and win on the strength of continued price rises. Collectively, this behavior hastens the arrival of that inevitable but never precisely locatable end to available credit.⁸²

In a bubble, investors engage 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.⁸³ And nothing in decentralized investment markets prevents these races from happening. Decentralized investment markets faced with radical uncertainty, in other words, are always inherently susceptible to self-amplified asset price hyperinflations.⁸⁴

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.⁸⁵ 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.⁸⁶ But gradually booms come to be accompanied by growing anxieties— anxieties effectively proportional to the mounting unsustainability of the credit-fueled bubble it-

79. *Id.* at 1238.

80. *See id.* at 1237.

81. *See id.* at 1238.

82. *Id.*

83. *See* Hockett, *supra* note 66.

84. 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. *See* Robert Hockett, *When Private Goods Themselves Are Public Goods: Credit-Money, Central Banks, and Legal Hybridization*, 14 THEORETICAL INQUIRIES IN L. ___ (2013) (forthcoming symposium issue); *see also* Robert Hockett, *What’s the Fed For? Making Sense of a Mandate* (2011) (unpublished manuscript) (on file with the author).

85. *See A Fixer-Upper for Finance*, *supra* note 5, at 1243–44.

86. *Id.*

self once Ponzi investment supplants “value” investment as the dominant element. As such anxiety grows, Keynes observes, investors grow more and more mindful of the precariousness of their expectations themselves.⁸⁷ 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 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 individual rational action on this incentive leads to collective ruin. “Runs,” just like bubbles, are the product of self-amplifying collective action problems that afflict decentralized investment markets faced with radical uncertainty.⁸⁸

The vulnerability of investment markets ultimately feeds back into the “real” economy. It is not difficult to see why or how. Recall that investment takes up the 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.

87. See *THE GENERAL THEORY*, *supra* note 14, at 132–47.

88. For a fuller explication of this idea, see *A Fixer-Upper for Finance*, *supra* note 5, at 1225–44.

c. *The Role of Money in Facilitating the Hoarding, Rather Than Investment, of Surplus*

Money 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 will call a *residual*, or more popularly, "reserve," asset. Classical economists recognized that people hold money both for transacting and for providing for well-defined contingencies, but Keynes emphasizes another motive. Keynes argued that people hoard their surplus money because they lack the confidence to lend it as credit.⁸⁹ Credit and money are in that sense two sides of a coin, if one might be forgiven a pun. Hence the term "credit-money," often used by followers of Keynes.⁹⁰ To "hoard" money is to 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 money hoarding prompts his departure from orthodoxy in respect of the theory of interest. When confidence in the future is 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.⁹¹ When such confidence is low, by contrast, people prefer to "keep options open" and thus remain liquid by hoarding money.⁹² 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.⁹³ 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."⁹⁴ But in Keynes's case, as we have seen, it was anxious uncertainty rather than actuarial risk that lay at root of the phenomenon.⁹⁵ To act on

89. See *THE GENERAL THEORY*, *supra* note 14, at 166–94. Keynes infelicitously called this motive "speculative." *Id.* at 170.

90. See, e.g., JOHN WILLIAMSON, *HOW CREDIT-MONEY SHAPES THE WORLD ECONOMY* (1994).

91. See *THE GENERAL THEORY*, *supra* note 14, at 166–67.

92. *Id.* at 167–74.

93. *Id.*

94. See *id.* For the canonical statement of Tobin's theory, see James Tobin, *Liquidity Preference as Behavior Towards Risk*, 25 *REV. ECON. STUD.* 65 (1958). Unlike Tobin, Keynes grounded liquidity preference in anxious uncertainty rather than actuarial risk.

95. See *THE GENERAL THEORY*, *supra* note 14, at 160–61, 174, 208–09, 341–57.

liquidity preference in this sense, in turn, is what Keynes labeled “hoarding.”⁹⁶ To hoard is to insist on maximal liquidity, hence to hold off from investing.

Money, then, is what makes it possible to hoard surpluses, which imperils growth and employment in economies that have moved beyond subsistence.⁹⁷ Interest rates were among the means Keynes proposed to prevent money from being hoarded.

Granted, classical economists saw things differently. In the classical view, lending rates were determined just as are prices of any other goods.⁹⁸ The “goods” in this case were what the classicals called “loanable funds,” which they distinguished from money.⁹⁹ Interest rates were determined by the intersection of supply and demand curves for loanable funds.¹⁰⁰ More saving meant lower interest rates in the classical picture because it increased the supply of loanable funds.¹⁰¹ In consequence, more savings always meant more investment because it meant cheaper interest.¹⁰² Here was the source of the classical proposition that aggregate savings and investment always tend to equality. Investment will always close any gap that emerges between output and consumption expenditure, rendering Malthusian “gluts” and “underconsumption” impossible and “Say’s Law” correct.

Keynes turned this picture on its head. For rather than more savings causing more investment, Keynes observed, it is actually more accurate to say that investment effectively causes more savings. And

96. *See id.*

97. *See id.* at 174. This property of money, 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 id.* at 353–58. 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 id.* Gesell’s interesting proposals, and the ideas that prompted them, can be found in SILVIO GESELL, *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 20th 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).

98. *See* *THE GENERAL THEORY*, *supra* note 14, at 175–85.

99. *Id.*

100. *Id.*

101. *Id.*

102. *Id.*

by the same token, diminished investment causes diminished savings.¹⁰³

How could this be? Well, as we have in effect already noted, aggregate savings grow in the Keynesian story as the aggregate economy grows.¹⁰⁴ And the aggregate economy grows on the strength of investment.¹⁰⁵ Investment in turn is the crediting of entrepreneurial accounts—at least in an economy featuring fiat money rather than specie. As long as such crediting continues, and the real economy and incomes 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 savings 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.¹⁰⁶ And the economy will slide back toward subsistence level production, where all that is produced is consumed—hence where nothing is saved.¹⁰⁷

Everyone acting individually to save, in other words, aggregates into yet another collectively self-defeating gesture. Followers of Keynes called it “the paradox of thrift.”¹⁰⁸ 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.

d. The Central Bank: A Countercyclical Collective Agent to Solve the Recursive Collective Action Problem

The notion of a “collective action problem,” like the “paradox of thrift,” has come up multiple times in this account of Keynes’s economics. 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 pro-

103. *See id.* at 52–85.

104. *See supra* Part I.B.1.

105. THE GENERAL THEORY, *supra* note 14, at 166–94.

106. *Id.* at 245–54.

107. *Id.*

108. Paul Krugman, *The Paradox of Thrift—For Real*, CONSCIENCE OF A LIBERAL (July 7, 2009, 8:48 AM), <http://krugman.blogs.nytimes.com/2009/07/07/the-paradox-of-thrift-for-real>.

duction.¹⁰⁹ Government's role is not simply to enforce rules of the game in the form of contract, tort, and crime. It must also address all of those collective action problems that render its economy subject to dysfunction, depression, and unemployment.¹¹⁰

Where the self-amplifying collective action problem is a consumer price inflation or asset price bubble, Keynes's collective agent must render it no longer individually rational for members of the collectivity to spend and thereby bid prices upward by reigning-in credit and money system-wide. Governments can do this by selling government debt, raising interest rates, raising reserve or capital requirements imposed upon financial institutions (in effect, forcing hoarding), increasing excises on incomes, transactions, or capital gains (in effect, "Tobin taxation"¹¹¹), or some combination of these.¹¹² 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.¹¹³

Where the self-amplifying collective action problem is a consumer price deflation or asset price slump, the government should render it no longer individually rational for members to hoard money or "run" on assets or institutions.¹¹⁴ 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.¹¹⁵ These things they can do either by purchasing back government debt, lower-

109. See *THE GENERAL THEORY*, *supra* note 14, at 372–84.

110. See *id.*

111. In its pure form, a Tobin tax imposes a penalty on short-term currency transactions, and is designed to dissuade currency speculation. See James Tobin, *A Proposal for International Monetary Reform*, 4 E. ECON. J. 153, 155 (1978) (describing how a uniform 1% tax on currency exchange "could be overcome only by an 8 point differential" between two currencies). The term might be used more generally to suggest a tax on other speculative forms of investing, such as "flipping" houses. See *A Fixer-Upper for Finance*, *supra* note 5, at 1286 n.303 (describing the concept of a Tobin tax for the housing market).

112. *A Fixer-Upper for Finance*, *supra* note 5, at 1283–87.

113. See *HOW TO PAY FOR THE WAR*, *supra* note 27. 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 *THE GENERAL THEORY*, *supra* note 14, at 164.

114. See Hockett, *supra* note 77, (manuscript at 15–19).

115. See Anna Carabelli & Nicolo De Vecchi, *Individuals, Public Institutions and Knowledge: Hayek and Keynes*, in *KNOWLEDGE, SOCIAL INSTITUTIONS AND THE DIVISION OF LABOR* 229, 234 (Pier Luigi Porta et al. eds., 2001) ("Policies which [Keynes] considered as remedies to uncertainty and conflict are, for instance, the management of aggregate demand, socialization of investment, control of global saving . . .").

ing 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.¹¹⁶ Keynes prescribed measures of this stripe, of course, during Britain's slump of the 1920s and early 1930s.¹¹⁷

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*, as a *governor*, in the engineer's sense of that word. Just as the governor on an engine serves to keep that engine from shaking itself to pieces through self-amplifying vibrations, 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. As a collective agent, it addresses 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*

Keynes's designed his Clearing Union to be what I have dubbed a "collective agent" 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. It would prevent a global equivalent of hoarding, and act as a bona fide transnational source of global liquidity.¹¹⁸ It would do so, moreover,

116. See, e.g., John B. Taylor, *An Empirical Analysis of the Revival of Fiscal Activism in the 2000s*, 49 J. ECON. LITERATURE 686, 687 (2011) (describing the "Keynesian countercyclical fiscal policy" under which, for example, a decline in investment can be offset by increasing government purchases).

117. For a good summary account, see ROBERT SKIDELSKY, JOHN MAYNARD KEYNES: 1883–1946: ECONOMIST, PHILOSOPHER, STATESMAN 405–505 (2005).

118. As we shall see *infra* Part II, the role of the dollar as de facto global reserve currency conscripts the United States into supplying liquidity sufficient to keep the world economy growing. But this means the United States 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 Robert Triffin. See, e.g., ROBERT TRIFFIN, EUROPE AND THE MONEY MUDDLE 9–11 (1957); ROBERT TRIFFIN, GOLD AND THE DOLLAR CRISIS: THE FUTURE OF CONVERTIBILITY 145–46 (1960); Robert Triffin, *National Central Banking and the International Economy*, 7 POSTWAR ECON. STUD. 46, 52–53 (1947). The general prob-

much in the way that Keynes proposed central banks must do within domestic economies.¹¹⁹

Keynes believed that the global community would have to address collectively what he foresaw as an ominously looming postwar hoarding problem.¹²⁰ He expected the hoarding in question to take the form of what he and others anticipated would be very large unliquided trade surpluses enjoyed by a few nations—particularly the United States—in relation to the rest of the world once the war ended.¹²¹

More generally, and in the longer term, Keynes's Clearing Union was to function as a central bank for central banks.¹²² 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. 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*.¹²³

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*.¹²⁴ Since the latter in turn was prerequisite to states' capacities to participate indefinitely in a liberalized trading order, something like

lem was foreseen by Keynes and motivated his advocacy for a global unit of account as part of the Clearing Union Plan. See TRACT ON MONETARY REFORM, *supra* note 5, at 163–68. Another who foresaw the general problem was the post-WWI Polish Finance Minister Feliks Mlynarski. See FELIKS MLYNARSKI, GOLD AND CENTRAL BANKS 52–70 (1929).

119. See *supra* Part I.B.1.

120. See 3 ROBERT SKIDELSKY, JOHN MAYNARD KEYNES: FIGHTING FOR FREEDOM 1937–1946, at 205–09 (2000) [hereinafter 3 SKIDELSKY].

121. See *id*; see also *Macro to Micro*, *supra* note 3, at 168. The United States 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.

122. See Asherman, *supra* note 28, at 244 (noting that Keynes's proposed Union was to function as “the world's central bank”).

123. See *id*. at 246 (“[T]o prevent destabilizing speculative flows of capital, Keynes recommended that the Clearing Union also be empowered to control capital movements.”).

124. See *id*.

the Clearing Union was prerequisite to a sustained liberal trading order itself in Keynes's view.¹²⁵ The only alternative would be unsustainable booms and busts within domestic economies, consequent "gaming" of global trade rules by depression-struck states facing effectively no other choice, and hence ultimate collapse of the liberal trading order itself.¹²⁶ There would be, in other words, a return to the world of the 1930s.¹²⁷

That is the short-playing version. The best way to flesh out those further details of the picture that are 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 1919–1923.¹²⁸ 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.¹²⁹ This meant that

125. *See id.*

126. *See id.*

127. Keynes had argued that the conditions of the armistice of the First World War would lead inexorably to economic hardship and renewed hostilities. *See* JOHN MAYNARD KEYNES, *ECONOMIC CONSEQUENCES OF THE PEACE* (1919); *see also* SKIDELSKY, *supra* note 117, at 695. The notion that Keynes was right is a commonplace among at least one school of historians. *See, e.g.,* NIALL FERGUSON, *THE WAR OF THE WORLD: TWENTIETH-CENTURY CONFLICT AND THE DESCENT OF THE WEST* lxxi (2007).

128. Schacht served as Germany's Minister of Economics from 1934 until 1937. BRADLEY F. SMITH, *REACHING JUDGMENT AT NUREMBERG* 11 (1977). He was ultimately arrested by the Nazi regime and sent to a series of concentration camps, including Dachau, because he was suspected of being complicit in an assassination plot against Adolf Hitler. JOSEPH E. PERISCO, *NUREMBERG: INFAMY ON TRIAL* 333–34 (1944). He was prosecuted at Nuremberg, and acquitted. SMITH, *supra*, at 271–82.

129. 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 rosiest 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, JOHN MAYNARD KEYNES, *THE ECONOMIC CONSEQUENCES OF THE*

Germany had to manage its trade relations quite carefully so as to avoid current account deficits with as many trade partners as possible.¹³⁰ 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.¹³¹ 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.¹³² This credit could subsequently be redeemed, in turn, only in the form of a purchase of German goods. Reciprocal credits would be earned, and spent, in Czechoslovakia by German exporters.¹³³ Czech-German trade “cleared” in this way. Such was the scheme in its essence, if not always in its actual operation.¹³⁴

In effect, what Schacht’s arrangement did was 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.¹³⁵ Individual buyers and sellers of course did not barter; they effectively employed credit-money. But nations as wholes in the Schachtian 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

PEACE (1919), which made 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.

130. *See id.* at 187–208.

131. *See* 3 SKIDELSKY, *supra* note 120, at 228–30.

132. *Id.*

133. *Id.*

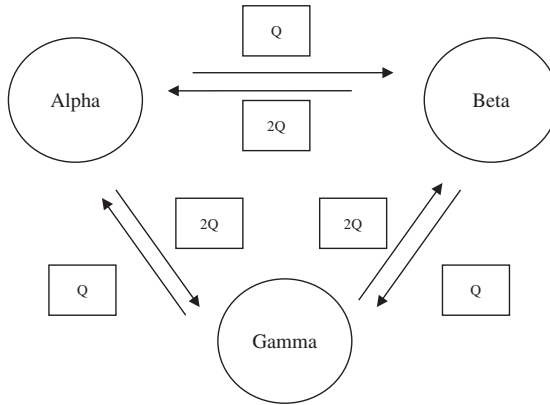
134. There are indications that the German government employed the scheme in a manner that exploited its trading partners in the 1930s, which ought not surprise us in view of the government then in power. *See id.* at 190, 194.

135. 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 in 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 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.

in which Keynesian “underconsumption” is critically associated with *monetary* economies—is rendered particularly transparent in the Schachtian arrangement. It should accordingly not be surprising that Keynes grew to admire Schacht’s clearing arrangements.¹³⁶ Nor is it surprising that Keynes would conclude that something like Schachtian clearing might be well suited, if carefully generalized, to preventing global hoarding after the War.¹³⁷

Keynes improved on Schacht’s system. *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.¹³⁸ 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-à-vis* Alpha by running persistent deficits *vis-à-vis* Gamma, which would thereby compensate for its own persistent deficits *vis-à-vis* Alpha. And so on. Diagrammatically, with “Q” representing a given currency-denominated quantity of goods and services, we would have:

FIGURE I: MULTILATERAL CLEARING



136. See Robert Skidelsky, *Keynes’s Road to Bretton Woods: An Essay in Interpretation*, in *INTERNATIONAL FINANCIAL HISTORY IN THE TWENTIETH CENTURY: SYSTEM AND ANARCHY*, 125, 141 (Marc Flandreau et al. eds., 2003) (“In the 1930s, Keynes took no interest in Schacht’s system of bilateral clearing agreements, which were designed to free the Nazi government’s rearmament program from the balance of payments constraint. It therefore comes as something of a shock to find the early pages of volume twenty-five of the *Collected Writings* dealing with the origins of the Clearing Union plan full of appreciative references to the ‘Schachtian system.’”).

137. See 3 SKIDELSKY, *supra* note 120, at 194–99.

138. See *id.* at 197–99.

So long as each nation *on balance* imported and exported in equal-valued amounts, then,¹³⁹ 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 Schacht'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 Schachtian scheme.¹⁴⁰ 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.¹⁴¹ Keynes exploited both of these prospects in his own plan.

Here, then, is how Keynes fashioned his proposed International Clearing Union, erecting a generalized Schachtian structure upon the foundation of the then existing structure of global transacting itself. To begin with, transactions between parties in nations with distinct currencies, of course, required currency exchanges. It required conversion of one currency into another.¹⁴² 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,¹⁴³ the currency conversion in question would be conducted bilaterally through goods traders' banks.¹⁴⁴ This meant that movements of goods and currencies between trading parties resulted in changes in debits

139. 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.

140. See 3 SKIDELSKY, *supra* note 120, at 205–07.

141. See *id.*

142. This can happen in either or both of two ways. Buyers use their local banks to convert local currencies into the sellers' currencies and then purchase from the seller; 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.

143. Capital controls were gradually reduced during the 1980s and 1990s, to the point that now only a few nations, including, notably, China, continue to impose them. See *infra* Part III. China itself has moved toward loosening its capital controls. See Simon Rabinovich & Robert Cookson, *China Unlikely to Impose "Big Bang" Reforms*, FIN. TIMES (London), Feb. 23, 2012, at 1 (describing the Chinese central bank's plan for a gradual loosening of capital controls).

144. See 3 SKIDELSKY, *supra* note 120, at 205–07.

and credits on accounts held at their banks, and hence ultimately on accounts held by those banks themselves at their home nations' *central* banks.¹⁴⁵ 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.¹⁴⁶ 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.¹⁴⁷

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.¹⁴⁸ 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.¹⁴⁹ 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 19th and early 20th century gold standard.¹⁵⁰ A crucial difference, however, was that the bancor would constitute a "managed currency"—"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.¹⁵¹ Member nations then would deposit subscriptions of their own currencies—or gold—into bancor-denominated accounts held with the Clearing Union, in prescribed amounts

145. *See id.*

146. *See id.*

147. In terms that might be familiar to some of today's international economists, a sort of quasi-governmental "Euroclear" for the world. Other contemporary analogies would include the Fed's Inter-Dealer Settlement Account (IDSA) system, with its practice of debiting and crediting the securities and gold accounts of regional Federal Reserve banks for "cross-border" flows within the U.S. monetary union; and the "TARGET2" system within the European Monetary Union, which allows central banks to clear and settle cross-border transactions in both current and capital account flows. *See infra* Part III, for more on some of these and other contemporary payment and transaction-clearing arrangements.

148. *See* 3 SKIDELSKY, *supra* note 120, at 205–07.

149. *See id.*

150. *See id.* *See generally* *Macro to Micro*, *supra* note 3.

151. Keynes had urged movement to "managed currencies" in his *Tract on Monetary Reform* as well as in many polemical articles during the 1920s and 1930s. *See, e.g.*, TRACT ON MONETARY REFORM, *supra* note 5, at 177–207; J. M. KEYNES, *Auri Sacra Fames*, in *ESSAYS IN PERSUASION* (1931). 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*, at 287–389 (1996).

keyed to their shares of cross-border trading volume.¹⁵² In so doing they would position themselves relative to the Clearing Union much as domestic banks do through subscription of their nations' central banks.¹⁵³ As run by its member central banks, the Clearing Union would also, of course, determine currencies' relative values inter se—using some variant of the familiar purchasing power parity yardstick—and hence their values relative to *bancor*.¹⁵⁴

After receipt of subscriptions, the Clearing Union also would issue *additional* *bancor* by establishing *overdraft* facilities for all participating central banks.¹⁵⁵ 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.¹⁵⁶ 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.¹⁵⁷ 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.¹⁵⁸ Subsequent drafts fine-tuned the formula in various ways that are without consequence for present purposes.¹⁵⁹ 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.¹⁶⁰ And thus as trade grew, so would the global *bancor* supply, in careful correlation.¹⁶¹ The Clearing Union was, then, in effect to manage a globally

152. 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. See 3 SKIDELSKY, *supra* note 120, at 206.

153. 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 around “own”). In this sense, the Clearing Union would constitute a sort of “World Fed” owned by the central banks of the nations of the world.

154. See 3 SKIDELSKY, *supra* note 120, at 206.

155. See *id.*

156. For the statutory basis for the U.S. Federal Reserve Bank's authority to “create” funds in an analogous context, see 12 U.S.C. § 372 (2006).

157. See 3 SKIDELSKY, *supra* note 120 at 206; *Macro to Micro*, *supra* note 3.

158. See SKIDELSKY, *supra* note 117, at 677.

159. See *id.*

160. See 3 SKIDELSKY, *supra* note 120 at 206–09.

161. This is of course very much in keeping with the later prescriptions of “monetarist” followers of Keynes, notably Friedman. See, e.g., FRIEDMAN, *supra* note 51; MILTON FRIEDMAN & ANNA JACOBSON SCHWARTZ, *A MONETARY HISTORY OF THE UNITED STATES, 1867–1960* (1963).

“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.¹⁶² 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 United Kingdom’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 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. Likewise, a persistent surplus of a nation’s account, of the sort that Keynes and others anticipated the United States would enjoy for years after the end of the world, would amount to a persistent net trade creditor status.¹⁶³ During the 1940s, like today, a nation’s persistent trade debtor status tended to be viewed as undesirable, both on symbolic and on more substantial grounds.¹⁶⁴ Persistent deficit seemed to suggest profligacy or decline, hence to portend future retrenchment and sale of domestic assets—in effect, debt-dependen-

162. 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 142.

163. *See Macro to Micro, supra* note 3, at 165; *see also* 3 SKIDELSKY, *supra* note 120, at 210.

164. 3 SKIDELSKY, *supra* note 120, at 182–89.

dence 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 brought on mounting monetary and financial uncertainty, steady cross-border trade contraction, and rising cross-national resentment during the period.¹⁶⁵ Keynes and more orthodox economists alike hoped to avoid a resumption of that state of affairs after the war.¹⁶⁶ 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.¹⁶⁷ 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 worthy of recapturing.¹⁶⁸

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. 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.

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

165. See SKIDELSKY, *supra* note 117, at 676–77, 698–701, 704–05.

166. See *Macro to Micro*, *supra* note 3, at 165–68 (comparing Keynes's Clearing Union plan to Harry Dexter White's more modest alternative).

167. *Id.*

168. See, e.g., TRACT ON MONETARY REFORM, *supra* note 5, at 163–64.

it.”¹⁶⁹ 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.¹⁷⁰ 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.¹⁷¹ The relative values of their currencies were out of sync with those nations’ comparative advantages of production.¹⁷² 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.¹⁷³ 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.¹⁷⁴ 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.¹⁷⁵ 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.¹⁷⁶

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.¹⁷⁷ These in turn functioned as drags upon global growth as a whole. For persistent surpluses vis-à-vis the world as a whole amounted to nothing other than global hoarding. They were to the global accounts just what a huge, uninvested

169. See SKIDELSKY, *supra* note 117, at 676–77 (describing Keynes’s concern that orthodox economists would find his clearing union to be “utopian.”)

170. *See id.*

171. 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. *See Macro to Micro, supra* note 3, at 165–68.

172. *See id.*

173. *See id.*

174. *See id.*

175. *See id.*

176. Such as, for example, currency manipulation of the sort we shall find some nations to be embarked upon now. *See infra* Part II.

177. *See infra* Part II.

bank balance or corporate retained earnings are to national accounts.¹⁷⁸ 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.¹⁷⁹

Here is how the adjustment burdens worked under the Keynes plan. Each member nation's overdraft rights were called its "index quota."¹⁸⁰ A nation's availing itself of these rights, of course, would amount to a deficit relative to the world as a whole.¹⁸¹ If a nation's central bank maintained an *annual* overdraft averaging more than one quarter of its index quota under the Keynes plan, it was to be designated a "deficit bank."¹⁸² 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 five percent at year's end.¹⁸³ If the overdraft average in question reached one half 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 five percent at year's end, or to lower its deficit by paying-in gold.¹⁸⁴ 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.

Paralleling the burdens placed upon persistent debtors under the Keynes plan was a sequenced set of burdens placed upon persistent creditors.¹⁸⁵ Here too the burdens were keyed to each nation's index quota.¹⁸⁶ A nation's central bank that maintained persistent credit bal-

178. 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* Robert Hockett, *What Kinds of Stock Ownership Plans Should There Be?*, 92 *CORNELL L. REV.* 865, 897 (2007). 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.

179. 3 SKIDELSKY, *supra* note 120, at 183.

180. SKIDELSKY, *supra* note 117, at 677.

181. *See generally* *Macro to Micro*, *supra* note 3; *see also* 3 SKIDELSKY, *supra* note 120.

182. 3 SKIDELSKY, *supra* note 120, at 231.

183. *Id.*

184. *See* SKIDELSKY, *supra* note 117, at 676–77.

185. *See id.*

186. *See id.*

ances 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 one-fourth 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 five percent at year's end.¹⁸⁷

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 five percent *interest* on its credit balance in excess of the mentioned one-fourth of its index quota.¹⁸⁸ 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 five percent of the currency of a nation running a surplus averaging one-half of its index quota at year's end.¹⁸⁹ This nation would also be required to pay ten percent interest on any increment of surplus exceeding the mentioned fifty percent of its index quota.¹⁹⁰

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 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.¹⁹¹ It is, rather, more typically a form of globally antisocial behavior in Keynes's view.¹⁹² It is

187. *See id.*

188. *See id.*

189. *See id.*

190. *Id.*

191. This observation does not always hold true. 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. *See infra* Part II.

192. *See generally* 1 SKIDELSKY, *supra* note 51; *Macro to Micro*, *supra* note 3.

effectively to act in beggar-thy-neighbor fashion just as the pre-18th century mercantilists had advocated; it is to play what amounts to a zero sum game.¹⁹³ The only difference is that today's hoarding takes the form of foreign exchange reserves—nowadays mainly the dollar—rather than gold.¹⁹⁴ 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 United States'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.¹⁹⁵ 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.¹⁹⁶ 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.¹⁹⁷ 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.¹⁹⁸ 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 have told a fuller version of the tale elsewhere, and abler

193. See *Macro to Micro*, *supra* note 3; see also *THE GENERAL THEORY*, *supra* note 14, at 303–41.

194. See generally *Macro to Micro*, *supra* note 3.

195. See *id.* at 165–66; see also 3 SKIDELSKY, *supra* note 120, at 199–209.

196. See *Macro to Micro*, *supra* note 3, at 165–74; see also 3 SKIDELSKY, *supra* note 120, at 199–209.

197. Today, this could be viewed as a list of all those things lacking in current Chinese trade and currency practice. See *infra* Part II.

198. See 3 SKIDELSKY, *supra* note 120, at 215–28, 231–32.

historians have told the story in painstaking detail.¹⁹⁹ The short-playing version I will tell here is the same in essentials but, well, short. It is that the United States, 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.²⁰⁰ Nor, relatedly, was it willing to vest global money-creating authority in an international organ, even one in which it would hold veto authority.²⁰¹

In consequence the United States proposed little more than a currency “stabilization fund” designed to “soften the landing” that would be debtor adjustment. Specifically, the United States insisted that a nation in deficit was obligated to decrease imports or increase exports, and to do so in a non-discriminatory way.²⁰² A deficit nation must not, then, raise tariffs or export subsidies.²⁰³ Nor could it be permitted to devalue its currency save with global—read the United States’s—approval.²⁰⁴ A deficit nation 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.²⁰⁵ Recognizing that these forms of adjustment work hardship, however, the United States 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.²⁰⁶ Its proposed “International Monetary Fund” was to serve as that lending facility.²⁰⁷

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.²⁰⁸ Adjustment loans would be extended from out of those pooled funds.²⁰⁹ Decision-making in respect of such lending, for its part, would be by board

199. See generally *Macro to Micro*, supra note 3, at 165–74. For a more thorough historical treatment, see 3 SKIDELSKY, supra note 120, at 173–372.

200. See generally *Macro to Micro*, supra note 3; see also EICHENGREEN, supra note 151, at 395–99.

201. See generally *Macro to Micro*, supra note 3. The veto authority, for its part, is what the United States uniquely enjoys in the IMF.

202. See 3 SKIDELSKY, supra note 120, at 233–55.

203. See *id.*

204. See *id.*

205. See *id.*

206. See *Macro to Micro*, supra note 3, at 160–67.

207. *Id.*

208. *Id.*

209. *Id.*

vote, and voting power in turn would be keyed to contributions.²¹⁰ Consequential decisions, moreover, could only be made by supermajority vote—specifically, by eighty-five percent or more of all votes.²¹¹ This in turn meant that one nation, as the largest contributor by far to the fund, bore a veto.²¹² That nation was of course the United States. 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.²¹³ But we shall return to this in Parts II and III.

Keynes and his British Treasury colleagues were unsurprisingly convinced that the United States 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.²¹⁴ American bankers’ preference for a strong dollar, they reckoned, played a role too.²¹⁵ 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 United States incurred both before and, especially, during the war years.²¹⁶ 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 United Kingdom 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.²¹⁷

The United States 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.²¹⁸ One upshot—Nixon’s suspension of dollar/gold convertibility in 1971—has been mentioned already. Another

210. *See id.* at 182.

211. *See id.* at 189 n.115.

212. *See id.*

213. *See id.* at 167.

214. *See* SKIDELSKY, *supra* note 117, at 732–47.

215. *See Macro to Micro, supra* note 3, at 167.

216. *See id.* at 165.

217. *See id.* at 168.

218. *See id.*

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.²¹⁹ 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 United States in particular have paid, and are still paying, a considerable price for not having gone the bona fide Keynesian route after the War. This Part attributes much of the mischief in global and domestic financial and monetary markets over the past decade and a half to the absence of a Keynesian world central bank.²²⁰ Focusing on the United States, it 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, 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 United States as Case Study*

The performance of U.S. financial and real estate markets over the past fifteen 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 examines the position occupied by the United States and its currency in the current global trading order. I aim to demonstrate why the IMF that Keynes envisaged, or its functional

219. *See id.* at 171.

220. I have previously made a similar argument with respect to past economic conditions. *See id.* at 168.

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.

1. First Phase: The "Tech Stock" Bubble

In Part I.B.1 I 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 when over-levered value investors, and, eventually, asset "flipping" 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. Both of these developments led to investment bubbles and economic recessions that the Fed could not mitigate alone in the absence of the support of a Keynesian global collective agent. I have discussed these bubbles at length in a previous article and will provide a thumbnail sketch of the arguments I have already made.²²¹

Americans were quick to recognize the revolutionary potential of the Internet, and they invested accordingly.²²² Investment in technology stocks, which fed investment in stocks in other sectors, resulted in precipitous increases in the stock market's value.²²³ Prospective "fundamental" value could justify these increases for a time. New computing and communications technologies rendered business firms more efficient, and the firms that made this efficiency possible naturally attracted capital investment.²²⁴

In addition, credit-money was plentiful and cheap to borrow. Aging baby boomers began turning attention to retirement savings, hence to investment options.²²⁵ Moreover, due to a 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

221. *A Fixer-Upper for Finance*, *supra* note 5, at 1223–66.

222. *See id.* at 1245 ("[W]hen Netscape . . . went public in mid-1995, its stock price more than doubled in the first day.")

223. *See id.* at 1245–46.

224. *See id.* at 1246 ("Productivity grew at historically high annual rates in the second half of the 1990s, at over 4%.")

225. *See id.* Changes to the U.S. tax code that incentivized investment and the related mutual fund boom provided additional incentives and ready opportunities for retirement investing.

and 1990s, investors with globally mobile investment capital began to look to U.S. markets as a “safe haven.”²²⁶

As the stock bubble inflated, it was natural for investors to start betting on future increases in asset prices, and that is precisely what happened.²²⁷ In keeping with the Keynesian self-amplification picture, borrowing rates also increased.²²⁸ Investors 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.

In response to such developments, a Keynes-inspired collective agent could have stepped in to modulate market behavior. It could have imposed higher reserve ratios or capital requirements or raised the funds rate charged to lending institutions. It might also have tightened the money supply through open market operations. Finally it might even have ensured or recommended that higher capital gains rates, or even “Tobin taxes,” be levied on rapid turnaround sales of speculative assets. Instead, the Fed championed financial deregulation, kept credit-money cheap, and recommended that taxes be kept low, which they ultimately were. Indeed, the Fed acted to reduce the interest rate and actually began printing *more paper money*.

Beginning in March of 2000, tech stocks suddenly began falling as rapidly as they had risen, in keeping with the model of asset price bubbles and bursts sketched in Part I.B.1.²²⁹ Other stocks soon followed. Between March and May, the NASDAQ lost 47% of its value.²³⁰ Other indexes began dropping too as the year wore on. In the first days of 2001, the S&P 500 dropped ten percent.²³¹ Attempts to resuscitate the stock markets by lowering the lending rate proved futile, and investors looked to real estate as a source of renewed economic growth.²³²

226. *See id.* at 1217 n.7.

227. *See id.* at 1246–47.

228. *See id.* at 1250–51.

229. *See id.* at 1253.

230. *Id.*

231. *Id.*

232. *Id.* at 1253–54. Chairman Greenspan publicly admitted before Congress that growing real estate prices would compensate for the decline in stock prices. *See id.* at 1258.

2. *Second Phase: The Real Estate Bubble*

As the equity bubble inflated over the late 1990s, spillover market-valued wealth spread to the real estate markets, increasing real estate prices.²³³ At first, “fundamentals” could justify these increases. Land is, of course, in finite supply, and the U.S. population continued to grow. Ricardian marginal land rent theory combined with Malthusian population growth theory in public perception to make real estate seem a sure thing.²³⁴ In the long run, real estate prices 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.²³⁵ 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 financial firms began to develop and market more and more new debt products by which to capitalize on the trend.²³⁶ 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. The refinance, for example, helped convert home-value growth into liquid purchasing power.²³⁷ However, many of these products attracted low-income home buyers into highly levered—and

233. *Id.* at 1254. Total mortgage debt had increased by fifty percent between 1995 and 2000.

234. *Id.* at 1239.

235. See Robert Hockett, *A Jeffersonian Republic by Hamiltonian Means*, 79 S. CAL. L. REV. 45, 104–20 (2006) (discussing the development of residential real estate finance in the United States).

236. See *A Fixer-Upper for Finance*, *supra* note 5, at 1254–55.

237. *Id.*

risky—transactions.²³⁸ As long as home prices continued to increase, this increasing of leverage seemed like a rational strategy.²³⁹

The collective action problem schematized in Part I.B.1, in other words, afflicted the real estate market. It became increasingly plausible for each individual to believe she might “refi” her mortgage before higher rates kicked in, on the strength of the ballooning real estate prices.²⁴⁰ Lenders made similar considerations. Against such a backdrop, it could even look individually irrational *not* to join the party. Chairman Greenspan himself, apparently forgetting his role as a collective agent, said that whatever ills had been caused by the debt that had been accumulated, people are still better off.²⁴¹

To make matters worse, the development of mortgage-backed securities (MBS), which granted cash flow rights to certain tranches of mortgage debt, caused an increase in the demand for new mortgage borrowers.²⁴² These three trends led to a Keynesian bubble, as described in Part I.B. By 2005, fully forty percent of U.S. home purchases were investment purchases, bought with the intention of resale—a remarkable rate.²⁴³ 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 United States, in the two years from 2003 to 2005 mortgage debt *grew* by nearly that amount.²⁴⁴

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 2003.²⁴⁵ Subprime lending volume was \$145 billion in 2001.²⁴⁶

238. See CHARLES R. MORRIS, *THE TWO TRILLION DOLLAR MELTDOWN: EASY MONEY, HIGH ROLLERS AND THE GREAT CREDIT CRASH* 67 (2008). A common example of this type of product is the Adjustable Rate Mortgage, which offers a low “teaser” interest rate only to later “balloon” to a much higher rate. See *A Fixer-Upper for Finance*, *supra* note 5, at 1255.

239. See *A Fixer-Upper for Finance*, *supra* note 5, at 1255.

240. *Id.*

241. See, e.g., *Greenspan Says Personal Debt is Mitigated by Housing Value*, N.Y. TIMES, Feb. 24, 2004, at C11.

242. See *A Fixer-Upper for Finance*, *supra* note 5, at 1255–56.

243. See WILLIAM A. FLECKENSTEIN & FREDERICK SHEEHAN, *GREENSPAN’S BUBBLES: THE AGE OF IGNORANCE AT THE FEDERAL RESERVE* 158 (2008).

244. See *id.* 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* 52 (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).

245. See FLECKENSTEIN & SHEEHAN, *supra* note 243, at 158; MORRIS, *supra* note 238, at 69.

It was over \$625 billion in 2005, and accounted for over twenty percent of home lending in the years 2004–06.²⁴⁷ The comparable figure for 1997 was less than three percent.²⁴⁸ Over a third of the subprime loans extended in 2004–06, moreover, were for one-hundred percent or more of home value—in effect, an infinite leverage rate.²⁴⁹

Ordinarily, 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.²⁵⁰ 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,²⁵¹ 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.

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. It was Ponzi growth.

As leveraged home purchasing drove housing prices higher, those who by borrowing were doing the driving grew increasingly exposed. 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.

3. *Final Phase: Global Contagion, Again*

Housing prices reached their inflection point by mid-to-late 2006 because there were no more people willing to enter the real estate market.²⁵² Prices leveled off, then began rapidly to decline.²⁵³ 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.²⁵⁴ That of course began

246. MORRIS, *supra* note 238, at 70.

247. *A Fixer-Upper for Finance*, *supra* note 5, at 1257.

248. *Id.*

249. MORRIS, *supra* note 238, at 69.

250. *A Fixer-Upper for Finance*, *supra* note 5, at 1257.

251. *Id.* at 1275–76.

252. *Id.*

253. See MORRIS, *supra* note 238, at 70–72.

254. See *id.* (recounting the story of Edward Jordan, low-income borrower whose home was put at risk of loss through default).

lowering the market values of mortgage-backed securities.²⁵⁵ And 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.²⁵⁶ Foreclosure rates rapidly mounted in consequence.²⁵⁷ Talk of a “subprime crisis” grew widespread by summer of 2007.²⁵⁸ 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.²⁵⁹ 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 United Kingdom, Australia, and Spain—went through real estate bubbles and bursts of their own during the years just described, and like the United States are continuing to deal with the fallout—Spain especially.²⁶⁰ 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. It is thus 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.²⁶¹

Was the Fed asleep at the switch? Worse yet, was it in the grip of mistaken understandings either of its own proper role or of the nature

255. *See id.*

256. *See id.* at 72.

257. *See id.*

258. *See id.*

259. *See id.*

260. *See id.* at 67.

261. *See* INT’L MONETARY FUND, WORLD ECONOMIC OUTLOOK: CRISIS & RECOVERY xvi (2009) [hereinafter IMF WORLD ECONOMIC OUTLOOK], available at <http://www.imf.org/external/pubs/ft/weo/2009/01/pdf/text.pdf> (predicting a downturn in global activity which will likely lead to the deepest recession since World War II).

of asset price bubbles and bursts as described in Part I? In previous articles, I suggest that this *might* in part be the case.²⁶² Yet, here, I shall argue that the Fed had little freedom to act, owing to the United States'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 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.²⁶³ 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.²⁶⁴

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 United States's global trade position, as partly determined by the role of its currency in the world's economy, that tied them. 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 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

262. See generally *A Fixer-Upper for Finance*, *supra* note 5.

263. See, e.g., FLECKENSTEIN & SHEEHAN, *supra* note 243; JOHN B. TAYLOR, *GETTING OFF TRACK: HOW GOVERNMENT ACTIONS AND INTERVENTIONS CAUSED, PROLONGED AND WORSENE THE FINANCIAL CRISIS* (2009).

264. I argue on behalf of such a "charitable interpretation" at greater length in Robert Hockett, *Bubbles, Busts, and Blame* (Cornell L. Sch. Research Paper No. 11-09, 2011), available at http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID1805930_code1215500.pdf?abstractid=1805930&mirid=1.

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. Exports might accordingly be categorized as investment, in functional Keynesian terms. Exports discharge the same demand-supplementary function, and 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 the 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.²⁶⁵ 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 United States over the past decade and a half. Suppose also that this nation's central bank operates under a mandate, as does the U.S. Fed,²⁶⁶ 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.²⁶⁷ Suppose finally that wealth and income gaps between upper and lower tiers in the distribution are large and still growing in the

265. For an overview of mercantilist thought and its relation to classical theory, see, e.g., *THE GENERAL THEORY*, *supra* note 14, at 333–71.

266. See *supra* Part I.B.1(d); see also *A Fixer-Upper for Finance*, *supra* note 5, at 1283–86 (describing the Fed's role in preventing the emergence and inflation of asset price bubbles).

267. The mandate is laid down in the opening sections of the Federal Reserve Act. See 12 U.S.C. § 225A (2006).

nation in question, as is the case in the United States,²⁶⁸ 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.²⁶⁹ In such case the nation's central bank will be faced with a very difficult task. For the larger the excess of 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.²⁷⁰ 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 shall 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 United States, with China serving both as seller and consumer finance provider (for purchase of Chinese goods) to the United States.

268. On these measures, see, for example Robert Hockett, *What Kinds of Stock Ownership Plans Should There Be? Of ESOPs, Other SOPs, and “Ownership Societies”*, 92 CORNELL L. REV. 865 (2007); Gabriel Palma, *The Revenge of the Market on the Rentiers*, 33 CAM. J. ECON. 1 (2009).

269. For more on the diminishing marginal propensity to consume, see *supra* Part I.B.1.

270. 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, as 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.

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 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 United States 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.²⁷¹ Ben Bernanke has been another,

271. See Alan Greenspan, Chairman, Bd. of Governors of the Fed. Reserve Sys., Remarks to the International Monetary Conference (June 6, 2005), available at <http://www.federalreserve.gov/boarddocs/speeches/2005/20050606/default.htm>.

since shortly before beginning his current tenure in the same post.²⁷² 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.²⁷³ Data compiled by the IMF suggests that world economic growth proceeded at close to a four percent 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.²⁷⁴ Real interest rates, meanwhile, have hovered near two percent.²⁷⁵ And that includes not only short-term, but long-term rates as well.²⁷⁶ 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%.²⁷⁷

The “conundrum,” as Chairman Greenspan put it,²⁷⁸ 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 contrast to the classical picture of “mature” 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.²⁷⁹ 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

272. See Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., *The Global Saving Glut and the U.S. Current Account Deficit*, Sandridge Lecture at the Virginia Association of Economists (Mar. 10, 2005), available at <http://www.federalreserve.gov/boarddocs/speeches/2005/20050414/default.htm>.

273. *Id.*

274. See IMF WORLD ECONOMIC OUTLOOK, *supra* note 261, at 189.

275. *Id.* at 220.

276. *Id.*

277. See Luis Catao & George A. Mackenzie, *Perspectives on Low Global Interest Rates*, 9, 17 (IMF Working Paper WP/06/76, 2006), available at <http://www.imf.org/external/pubs/ft/wp/2006/wp0676.pdf>.

278. *Federal Reserve Board’s Semiannual Monetary Policy Report to the Congress Before the S. Comm. On Banking, Hous., and Urban Affairs*, 109th Cong. (2005) (testimony of Alan Greenspan, Chairman, Fed. Reserve Bd.), available at <http://www.federalreserve.gov/boarddocs/hh/2005/february/testimony.htm>.

279. See IMF WORLD ECONOMIC OUTLOOK, *supra* note 261, at 30–37.

far the highest domestic savers and largest suppliers of cross-border “investment” capital.²⁸⁰

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.²⁸¹ 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.²⁸² These surpluses have been matched by equally massive and growing current account deficits on the part of the United States and, to a lesser extent, the United Kingdom and a few other European nations.²⁸³ 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 will return to this presently.

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

280. *Id.*

281. Bernanke, *supra* note 272.

282. *Id.*; see also INT’L MONETARY FUND, GENERAL AND SPECIAL SDR ALLOCATIONS (2009) [hereinafter SDR ALLOCATIONS], available at <http://www.imf.org/external/np/tre/sdr/proposal/2009/pdf/0709.pdf>; Venkatesan Vembu, *China Cannot Really Dump the Dollar*, DAILY NEWS & ANALYSIS (Mumbai), July 13, 2009, http://www.dnaindia.com/money/interview_china-cannot-really-dump-the-dollar_1273469-all.

283. Bernanke, *supra* note 272; see also SDR ALLOCATIONS, *supra* note 282; Vembu, *supra* note 282.

true that households in China save much,²⁸⁴ 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.²⁸⁵ Meanwhile, China consumes less than half of its GDP,²⁸⁶ 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.²⁸⁷

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 have argued in Part I.B.1 to be necessary if boom and bust cycles are to be smoothened 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 United States. 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.²⁸⁸ The Asian emerging market countries, in turn, accounted for approximately \$1.1 trillion—sixty percent—of the accumulation.²⁸⁹ Within this group, in turn, China alone accounted for nearly a trillion, or about half, of the accumulation.²⁹⁰ 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 2007.²⁹¹ As if this were not striking enough, these additional accumulations actually exceed China's and the rest of East Asia's *current account* surpluses over the years in question. Even a growing portion of *domestically*

284. Nicholas R. Lardy, *China: Rebalancing Economic Growth*, in THE CHINA BALANCE SHEET IN 2007 AND BEYOND 1, 12 (2008) (describing the recent increase in the saving rate of Chinese households to around twenty-five percent since the year 2000).

285. *Id.* at 15–16.

286. *Id.* at 2.

287. *Id.* at 6–8.

288. See IMF WORLD ECONOMIC OUTLOOK, *supra* note 261, at 214.

289. *Id.*

290. *Id.*

291. *Id.*

generated savings, in other words, are going into the hoarding of foreign currency—principally dollars.²⁹²

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 2005–07, while Russia and its Commonwealth of Independent States peers ran about half that.²⁹³ In both cases, moreover, the surpluses and then some were employed to amass large foreign currency reserves.²⁹⁴ 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.²⁹⁵

The next thing to note is the *composition* of this pool of foreign currency reserves. According to Bank of International Settlements (BIS) data,²⁹⁶ 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.²⁹⁷ 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 seventy-five percent of the world's holdings of foreign exchange reserves take the form of dollars; China must then account for the total being so much greater than that accounted for by non-Chinese dollar-accumulators.²⁹⁸

Second, China evidently intervenes in the global foreign exchange markets, in other words, purchasing dollars in order to prevent dollar depreciation relative to the renminbi.²⁹⁹ It apparently does so at least in part precisely because depreciation would increase the U.S. cost of imports from China. This observation takes us straight to the “mercantilist” part of our story, which is possessed of both innocent and, perhaps, sometimes less innocent components.

292. *Id.* at 215.

293. *Id.* at 206.

294. *Id.* at 214.

295. *Id.*

296. For more on the Bank of International Settlements, see *infra* Part III.A.

297. See Philip D. Wooldridge, *The Changing Composition of Official Reserves*, BIS Q. REV., Sept. 2006, at 25, 34.

298. See *id.*

299. See Lardy, *supra* note 284, at 19–20.

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 will call “risk-aversively mercantilist,” the other is what I shall 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.”³⁰⁰ 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.³⁰¹ 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.³⁰² 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.³⁰³ 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.³⁰⁴ For the United States long has been the preferred foreign

300. See W. M. Corden, *Those Current Account Imbalances: A Sceptical View*, 30 *WORLD ECON.* 363, 367 (2007).

301. See generally W.M. Corden, *Exchange Rate Protection*, in *THE INTERNATIONAL MONETARY SYSTEM UNDER FLEXIBLE EXCHANGE RATES* 17 (Richard N. Cooper et al. eds. 1982) (discussing the concept of exchange rate protection).

302. See, e.g., HA-YOON CHANG, *KICKING AWAY THE LADDER* 49–51 (2003) (describing the East Asian “miracle” as the result of macroeconomic policies facilitating export surpluses).

303. David Hume provided the foundational theory of specie flow—of the notion that currency valuations react to the balance of trade between exporting and importing nations—in the classic essay DAVID HUME, *Of the Balance of Trade*, in *ESSAYS MORAL, POLITICAL, AND LITERARY* 316 (Oxford University Press 1963).

304. See, e.g., Masaru Yoshitomi, et al., *East Asia’s Role in Resolving the New Global Imbalances*, in *GLOBAL IMBALANCES AND DEVELOPING COUNTRIES: REMEDIES FOR A FAILING INTERNATIONAL FINANCIAL SYSTEM* 19, 23 (Jan Joost Teunissen & Age

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. It currently produces steel, to take one example, in excess of current domestic needs by an amount equal to the total current production of Japan, the world's second largest producer.³⁰⁵ China thus appears to be exporting what would otherwise be a (presumably temporary) domestic underconsumption problem to the United States, which, as a developed economy, faces underconsumption vulnerability aplenty of its own, for reasons elaborated in Part I.B.1.

On the other hand, the degree and scale of underdevelopment that long has afflicted and still afflicts China—where hundreds of millions of people still remain in dire poverty³⁰⁶—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 United States. Whatever the motives, however, China is following a well-trodden path, and its currency practices reflect that 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 United States likewise massive and growing.³⁰⁷ We

Akkerman eds., 2007) (“East Asian central banks have kept exchange rates low by intervening in foreign exchange markets and purchasing US securities.”)

305. Lardy, *supra* note 284, at 6.

306. See Miguel Nino-Zarazua & Tony Addison, *Redefining Poverty in China and India*, UNITED NATIONS UNIVERSITY (Apr. 10, 2012), <http://unu.edu/publications/articles/redefining-poverty-in-china-and-india.html>.

307. Another possible motive, which I do not explore here, at least bears mentioning. China's hoard of dollars affords it a potential strategic benefit. Were it to dump its massive dollar holdings on the global foreign exchange market, it could wreak sudden havoc on the dollar. (As Lenin 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.

shall 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.³⁰⁸ Surplus capital in this period tended to flow as it historically always has done until recently—from developed regions like the United States, Europe, and Japan toward lesser developed countries like those in East Asia and Latin America.³⁰⁹

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.³¹⁰ But they also enabled the flows to reverse on a dime, so to speak.³¹¹ Fears concerning nepotistic and “crony capitalist” domestic business and financial practices in recipient nations at the end of the 1990s prompted spectacularly rapid “panic” withdrawals of funds from, and calls upon debt owed by firms in and governments of, those nations.³¹² 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.³¹³ 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 2001.³¹⁴ Domestic entities owing dollar-denominated debt were rapidly rendered insolvent as the debts were called in and domes-

308. For more on this recent history, see *Macro to Micro*, *supra* note 3.

309. *See id.*

310. CHARLES P. KINDLEBERGER & ROBERT ALIBER, *MANIAS, PANICS, AND CRASHES* 244 (5th ed. 2005).

311. *Id.*

312. *Id.* at 246–48.

313. *Id.*

314. *Id.*

tic currencies plummeted, wreaking havoc first in domestic financial, then in the “real” economies of the affected countries.³¹⁵

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. 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.³¹⁶ Such gaps suggest either very morbid degrees of risk-aversion vis-à-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.

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.³¹⁷ Within a domestic economy, that means hoarding the domestic currency.³¹⁸ In the world economy, it means hoarding the closest 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 the current U.S. account deficits with the rest of the world. And those trade imbalances in turn worsen U.S. and hence global financial turbu-

315. *Id.* at 246.

316. See Laurence H. Summers, Reflections on Global Account Imbalances and Emerging Markets Reserve Accumulation at the Reserve Bank of India L.K. Jha Memorial Lecture (Mar. 24, 2006).

317. See THE GENERAL THEORY, *supra* note 14, at 166–74.

318. *Id.*

lence itself. In effect, this is a financially-inflected rendition of the bind foreseen by economist Robert Triffin shortly after Bretton Woods settled on a plan for the IMF more like White's than Keynes's.³¹⁹ 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.³²⁰

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.³²¹ 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,³²² 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.³²³ 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 over-

319. See *Macro to Micro*, *supra* note 3, at 168–74.

320. It might more aptly have been named the "Keynes dilemma," or the "Mlynarski dilemma," for reasons cited *supra* note 118. For more on the history of this bind, see *Macro to Micro*, *supra* note 3, at 162–74.

321. See *supra* Part II.B.1.

322. In Triffin's day, domestic financial markets were more tightly regulated than today, and capital controls prevented them from being global in scope. Thus, 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 Federal Reserve Chairman Volcker's successful breaking of consumer price inflation occurred after he raised domestic interest rates to levels around twenty percent 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 Deutschmark and the yen shortly thereafter. For more on this, see *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.

323. 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.

heated 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.

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 United States did in the 1960s and does again now.³²⁴ 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.

III.

BALANCE RESTORED: A 21ST 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 have 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.

324. See Pierre-Olivier Gourinchas & Helene Roy, *From World Banker to World Venture Capitalist: U.S. External Adjustment and the Exorbitant Privilege*, in G7 CURRENT ACCOUNT IMBALANCES: SUSTAINABILITY AND ADJUSTMENT 11, 12 n.4 (Richard Clarida ed., 2007); see also *Macro to Micro*, *supra* note 3, at 171.

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, 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.³²⁵ 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 G8.³²⁶

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 handle month to month, and day to day, challenges posed by global financial and economic affairs, the G20 broadly oversees those affairs. The G20 can be viewed as the "board of directors" of global economic affairs. I shall accordingly have occasion from time to time to refer back to the G20 in the remainder of this Part.

325. See HAL SCOTT, *INTERNATIONAL FINANCE* 48–65 (14th ed. 2010).

326. *Id.*

2. *The Bank for International Settlements*

The Bank for International Settlements (BIS) is widely known only indirectly, through its Basel Committee on Bank Supervision.³²⁷ The Committee, comprising bank regulators from less than thirty nations, meets regularly to discuss issues of common concern and strategies for dealing with them.³²⁸ It produces a series of “capital accords,” which establish common “core” standards for the regulation of bank buffer capital holdings.³²⁹ The most recent accord recommended the optional imposition of new “countercyclical” capital buffers.³³⁰ Characteristically, the Basel Committee thereby outpaced many domestic central banks in recognizing the critical role central banks must play as modulators of credit-rooted financial cycling.

The BIS deserves to be known for much more than the Basel 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 new Clearing Union I shall propose below.³³¹ For another

327. See DANIEL K. TARULLO, *BANKING ON BASEL: THE FUTURE OF INTERNATIONAL FINANCIAL REGULATION* 2–3 (2008) (describing the composition, objectives, and activities of the Basel Committee on Banking Supervision).

328. *BASEL COMMITTEE ON BANKING SUPERVISION, HISTORY OF THE BASEL COMMITTEE AND ITS MEMBERSHIP* 1 (2009), available at <http://www.bis.org/bcbshistory.pdf>.

329. *Id.* at 2–3.

330. Press Release, Basel Comm. on Banking Supervision, Bank for Int’l Settlement, Group of Governors and Heads of Supervision Announces Higher Global Minimum Capital Standards (Sept. 12, 2010), available at <http://www.bis.org/press/p100912.pdf>.

331. 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 [sic] 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).

BIS History—Overview, BANK FOR INT’L SETTLEMENTS, <http://www.bis.org/about/history.htm> (last visited Oct. 28, 2012).

thing, the BIS is the preeminent forum at which those “collective agents” coordinate policies.³³² Finally, the BIS’s secretariat and research support staff consistently track indicators of potential monetary and financial instability—rather than only consumer price inflation—and advocate that central banks act as modulators of such instability.³³³

The BIS thus 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. The BIS allows national banks to act on behalf of *all* whose wellbeing 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 in 1930, the last time the global financial system came to grief in the wake of twin stock price and real estate bubble collapses.³³⁴ However, the BIS came to be perceived as tainted by the roles some of its early personnel, including Hjalmar Horace Greeley Schacht, had played in the German economy once the Nazis took power in 1933.³³⁵ 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.³³⁶ It was the intervention, in fact, of none other than Keynes and his U.K. delegation that ultimately rescued the institution.³³⁷ All the more fitting, then, that I propose the BIS itself as *situs* of the new Clearing Union that I sketch below.

3. *The International Monetary Fund*

As discussed above in Part I.B.2, the IMF emerged, in lieu of Keynes’s Clearing Union, from the very conference 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

332. See Press Release, Bank for Int’l Settlements, Financial Stability Forum Re-established as the Financial Stability Board (Apr. 3, 2009), *available at* <http://www.bis.org/press/p090403a.htm>.

333. See, for example, the many articles written by Claudio Borio and William White prior to 2006, *available at* <http://www.bis.org/>, which do just that.

334. For the relevant history of the BIS, see, for example, GIANNI TONIOLO WITH THE ASSISTANCE OF PIET CLEMENT, *CENTRAL BANK COOPERATION AT THE BANK FOR INTERNATIONAL SETTLEMENTS, 1930–1973* (2005). See *generally* LIAQUAT AHAMED, *LORDS OF FINANCE: THE BANKERS WHO BROKE THE WORLD* (2009).

335. See AHAMED, *supra* note 334, at 59–84.

336. See TONIOLO, *supra* note 334, at 267–71.

337. See *id.*

cleared cross-border transactions. For another thing, the Fund never has served as a significant issuer of global liquidity or as a modulator of global trade imbalances. Instead it has played two principal roles, one of them more prominent for its first thirty years, the other more prominent since.³³⁸

The Fund's first prominent role was to maintain stable currency relations by using the "par value system" that emerged from the Bretton Woods Conference. This system pegged all currencies to fixed exchange rates relative to the U.S. dollar, which in turn was fixed to gold at the rate of \$35 per ounce.³³⁹ 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.³⁴⁰ 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"). To draw from the fund, nations had to meet certain conditions, namely domestic deflationary measures meant to trim appetites for imports.³⁴¹ Should loans from the fund fail to stabilize a nation's currency, the last resort short of expulsion, would be for the Fund to devalue that nation's currency in an orderly manner.³⁴²

The par value system came a cropper in the late 1960s and early 1970s, when the currency that lay at its heart could no longer act as a transnational reserve currency. The United States ran deficits in such profusion that it lost the capacity to defend its currency with gold or foreign exchange reserves, and the Fund lacked sufficient resources to fill the gap.³⁴³ Moreover, the United States was, sensibly enough, unwilling to deflate its economy, which would have been politically unacceptable domestically. Moreover, domestic deflation in this case would quickly have issued in global deflation.³⁴⁴

The United States 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.³⁴⁵ That was the "Triffin dilemma" noted above.³⁴⁶ And, as Part II suggests,

338. See *Macro to Micro*, *supra* note 3, at 166–74.

339. *Id.* at 171.

340. *Id.* at 169.

341. *Id.* at 184–89.

342. *Id.*

343. *Id.*

344. *Id.* at 168–74.

345. *Id.* at 169–72.

346. *Id.* at 168–69.

we are still living with it because we chose the IMF instead of Keynes's clearing agent.

After Nixon upset the par value system by unilaterally suspending the dollar's convertibility to gold, the IMF began to play a second role. It now serves as a forum through which central banking and finance ministers jointly manage the so-called "dirty float" among currencies.³⁴⁷ Currencies are permitted to vary in value relative to one another in response to trading activity on the foreign exchange market.³⁴⁸ That's the float. 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. That's the "dirty" part of it. The Fund facilitates that coordination.³⁴⁹

The Fund also plays several ancillary roles that bear noting. First, its staff, like staff at the BIS and the Financial Stability Forum, track and study both global and domestic monetary and financial developments with a view to emerging problems.³⁵⁰ Its staff also consults with member nations about domestic monetary, financial, and complementary legal and regulatory matters. Second, 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.³⁵¹

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.³⁵² 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 below.

4. *Special Drawing Rights*

As the par value system came under strain in the late 1960s, some members of the IMF recognized that the Triffin dilemma lay behind the trouble.³⁵³ The United States could not supply adequate liquidity

347. *Id.* at 172.

348. *Id.* at 173.

349. *Id.* at 176.

350. *Id.* at 181–83.

351. *Id.* at 184–87.

352. *Id.*

353. *See id.* at 171.

to finance growing volumes of cross-border trade without jeopardizing the value of its currency.³⁵⁴ 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 a member within the Fund.³⁵⁵

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, currently the dollar, the pound, the yen, and the euro.³⁵⁶ As the relative values of those currencies change, so does that of the SDR in terms of each of them. The IMF 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.) Several international organizations, notably the IMF and the BIS themselves,³⁵⁷ 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.³⁵⁸ 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. I shall exploit that fact as well.

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.³⁵⁹ 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, 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

354. *Id.* at 168–72.

355. *See id.* at 171.

356. INT'L MONETARY FUND, INTERNATIONAL MONETARY FUND FACTSHEET: SPECIAL DRAWING RIGHTS (SDRs) 1 (2012) [hereinafter IMF FACTSHEET], available at <http://www.imf.org/external/np/exr/facts/pdf/sdr.pdf>.

357. *Id.*

358. Mar Gudmundsson, *The Choice and Design of Exchange Rate Regimes*, in CENTRAL BANKS AND THE CHALLENGE OF DEVELOPMENT 105, 113 (2006), available at <http://www.bis.org/events/cbcd06h.pdf>.

359. IMF FACTSHEET, *supra* note 356, at 2.

draw in excess of their allocations pay interest.³⁶⁰ Persistent surpluses, in other words, are rewarded rather than penalized, as they would have been under Keynes's plan, while deficits are indeed penalized, as they would have been under Keynes's plan.

The most vitiating blemish on SDRs, however, 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 \$204 billion.³⁶¹ This as compared 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. Since the current crisis began, SDRs have been allocated in much larger quantities than before, and some central bankers, notably Zhou Xiaochuan of the People's Bank of China, have publicly called for the gradual adoption of the SDR as global reserve currency.³⁶² If Mr. Xiaochuan was serious in his praise of Keynes and his *bancor*,³⁶³ 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.³⁶⁴ In fact, however, this market is surprisingly simple and even "old-fashioned" in its operations. Banks themselves engage in foreign exchange transactions, which entail quite literally exchanging currencies with one another.³⁶⁵ They often do so, however, through intermediaries—brokers.³⁶⁶ 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

360. *Id.* Nations that persistently draw from the fund must pay interest on their borrowings.

361. *See* SDR ALLOCATIONS, *supra* note 282.

362. *See* Zhou Xiaochuan, Governor, People's Bank of China, Address before the Bank for International Settlements: Reform the International Monetary System (Apr. 29, 2009), available at <http://www.bis.org/review/r090402c.pdf>.

363. *Id.* The views of Michael Pettis, a respected analyst of People's Bank of China policy, suggest otherwise. *See* Vembu, *supra* note 282.

364. *See generally* SCOTT, *supra* note 325, at 406–17 (detailing matters covered in the next several paragraphs).

365. *Id.* at 407–08.

366. *Id.* at 407. For a general discussion of foreign exchange markets, see MARC LEVINSON, THE ECONOMIST NEWSPAPER GUIDE TO FINANCIAL MARKETS 14–16 (5th ed. 2010).

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.

The process is straightforward. The broker tells banks the rates, in terms of one currency, for which there are firm buyers or sellers available at any given time.³⁶⁷ The transactions can be either for “spot” delivery of the currencies in question, or for “forward delivery” at some later specified date.³⁶⁸ Often banks will negotiate, anonymously, through the broker to arrive at an agreed exchange rate.³⁶⁹ Once a firm agreement is reached and a transaction consummated, the broker reveals the identities of the banks and collects a fee. Brokers also inform banks in general terms the rates at which currencies have been trading. In effect, then, they keep multiple prospective counterparties apprised of the “market prices” of various currencies in terms of other currencies.

Most banks coordinate foreign exchange through brokers, but some banks that have dealt with one another repeatedly in foreign exchange transactions find that they can dispense with brokers altogether.³⁷⁰ They develop good working relations inter se, and their dealing rooms work 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 nearly immediate rise to a global dollar-denominated asset and liability known as the “Eurodollar” bank deposit.³⁷¹ The nature and significance of Eurodollars and, now, other “Eurocurrencies” is best conveyed simply by briefly narrating the tale of their development.

Immediately following the Second World War, American policy was to get dollars quickly into the hands of Europeans for two reasons.³⁷² First, dollars helped Europe to rebuild after the War as quickly as possible, rendering Soviet communism less attractive than

367. SCOTT, *supra* note 325, at 407.

368. *Id.* at 406–08.

369. *Id.* at 407–08.

370. *Id.* at 408.

371. *See id.* at 500–29, (detailing matters covered in the next several paragraphs).

372. For more information on these historical events, see generally *Macro to Micro*, *supra* note 3, at 165–74.

it was then feared it might become.³⁷³ Second, flooding Europe with dollars developed another deep market for American manufactures, as overcapacity loomed as a significant problem as the United States wound-down production after the War. The United States employed two means to achieve this goal. One was to make large cash grants of foreign aid, through programs like 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.³⁷⁴

The massing of European dollar holdings over the course of the 1950s resulted in London banks accepting deposits and offering loans denominated in dollars.³⁷⁵ Increasingly, Europeans could deposit dollars into British banks and retain dollar denomination of those deposits.³⁷⁶ By the same token, British banks began lending dollars directly on the strength of those deposits.³⁷⁷ The resulting “Eurodollar” market, as it came to be called, soon offered certain advantages even to Americans that American bank deposits could not boast.³⁷⁸ 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 United States did not enjoy warm relations—e.g., the Soviet Union in the later 1950s.³⁷⁹ 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.³⁸⁰ 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.³⁸¹

In time, banks generalized the Eurodollar idea. It is now common for banks in one jurisdiction to offer deposits and loans denominated in currencies issued by other jurisdictions.³⁸² There are now, for example, “Euroyen” deposited in and lent by British banks, and indeed “Euroeuro” deposited in and lent by Japanese banks.³⁸³ “Eurocurrency,” in other words, no longer connotes anything necessarily Euro-

373. *See id.* at 169.

374. *Id.* at 169–70.

375. *See id.* at 170.

376. *See id.*

377. *See id.*

378. *See id.* at 170 n.60.

379. *See id.*

380. *See* SCOTT, *supra* note 325, at 500.

381. *See id.*

382. *See id.* at 406.

383. *See id.* at 501.

pean 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 one currency by a bank operating within a jurisdiction that issues a different currency.³⁸⁴ Nevertheless, Eurodollars are by far the largest source of global finance in cross-border transactions today.³⁸⁵ 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 recent development that one-ups (or one-downs) the Eurocurrency markets, a number of small political units have offered their jurisdictions up as low-tax, low-regulation sites where financial firms can do business.³⁸⁶ Originally serving as "tax havens," these jurisdictions, most located around the Caribbean or among the British Channel Islands,³⁸⁷ have in effect become "law havens" more generally. During the first decade of the new millennium, many familiar financial firms began locating subsidiaries offshore to conceal financial activities that they wished to shield from domestic regulatory scrutiny.

Some believe that, as our most recent bubbles inflated, major financial institutions concealed many of their worst practices that dangerously increased their risk exposures by moving them offshore.³⁸⁸ Others note the prevalence of money-laundering on the part of organized crime and terrorist organizations at these centers.³⁸⁹ As such, these centers represent gaping holes in our system of global financial

384. *See id.* at 500.

385. *See Macro to Micro*, *supra* note 3, at 170 (discussing the development of Eurodollars).

386. *See generally* RONEN PALAN ET AL., *TAX HAVENS: HOW GLOBALIZATION REALLY WORKS* (2010).

387. *See generally id.* For additional analysis, see RONEN PALAN, *THE OFFSHORE WORLD: SOVEREIGN MARKETS, VIRTUAL PLACES, AND NOMAD MILLIONAIRES* 49–50 (2003).

388. *See, e.g.*, Nicholas Sarkozy, President of France, Address at the Sixteenth Conference of Ambassadors (Aug. 27, 2008) (decrying investors who use offshore investment to conceal risks, among other practices).

389. *See, e.g.*, Andrew P. Morriss, *Changing the Rules of the Game: Offshore Financial Centers, Regulatory Competition, & Financial Crises* 7, 11 (Ill. Law & Econ. Research Paper Series, Research Paper No. LE09-031, 2009) (describing the complicated relationship between offshore confidentiality, money laundering, and legitimate interests), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1501402.

regulation.³⁹⁰ Although always important in their own right, robust global regulations will be essential for the operation of the Clearing Union. Accordingly, I shall recommend that these places simply be shut down—by robust use of force if need be. Happily, however, the G20 already appears to be on the case. Hence what I shall propose is not apt to be controversial in serious company.

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 co-op based near Brussels under Belgian company law, established a telecommunications network and set of protocols to facilitate rapid and efficient transacting between banks worldwide.³⁹¹ The protocols include codes for particular transaction types, routinized operating procedures, liability rules, and the like.³⁹² 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.³⁹³

Since the 1970s, an ever-growing majority of cross-border interbank communications has been routed through the SWIFT network.³⁹⁴ Banks do not transfer funds or settle accounts via SWIFT, but they do communicate payment orders.³⁹⁵ Banks then make payments via separate correspondent accounts that they maintain with one another.³⁹⁶ The volume of transactions conducted in part via SWIFT has grown very large over the years.³⁹⁷ 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

390. See, e.g., Alfred Schipke, *Offshore Financial Centers: Finding the Right Balance*, IFC REVIEW (Jan 2, 2013), <http://www.ifcreview.com/restricted.aspx?articleId=5673> (describing the regulatory challenges offshore financial centers pose to the global economy).

391. *SWIFT History*, SWIFT, http://www.swift.com/about_swift/company_information/swift_history.page?lang=en (last visited Oct. 28, 2012).

392. *SWIFT for Retail Payment Market Infrastructures*, SWIFT, http://www.swift.com/products_services/by_customer/banking_mkt_infr/low_value_paym_mi (last visited Mar. 31, 2013).

393. *Id.*

394. *Id.*

395. *Id.*

396. *Id.*

397. *Id.*

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, the systems by which banks make payments vary from nation to nation.³⁹⁸ In the United States, the principle wire transfer networks are the Federal Reserve Wire Network, or “Fedwire,” and the Clearing House Interbank Payments System, or “CHIPS.”³⁹⁹ The former is owned and operated by the Federal Reserve System itself, which in turn is partly owned by its member banks.⁴⁰⁰ The latter is owned by its participating banks, rather like SWIFT.⁴⁰¹ Other nations have their counterparts to Fedwire and CHIPS—for example, CHAPS in the United Kingdom and CHATS in Hong Kong.⁴⁰²

Nations’ payment systems also typically include automated clearing house systems that facilitate direct, electronic deposits of payroll moneys or business-to-business payments into bank accounts held by payment recipients.⁴⁰³ The two principal such systems in the United States are the network known simply as “ACH,” governed by the Fed and the National Automated Clearing House Association (NACHA), and the privately owned network known as the Electronic Payments Network (EPN).⁴⁰⁴ 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.

398. See SCOTT, *supra* note 325, at 418–55 (detailing matters covered in the next several paragraphs).

399. *Id.* at 418–19.

400. *Id.* at 423.

401. *Id.* at 426.

402. Acronyms for “Clearing House Automated Payment System” and “Clearing House Automated Transfer System,” respectively. *About CHAPS*, CLEARING HOUSE AUTOMATED PAYMENT SYS., http://www.chapsco.co.uk/about_chaps/ (last visited Oct. 28, 2012).

403. See, e.g., *What is Automated Clearing House (ACH)?*, AUTOMATED CLEARING HOUSE, <http://www.achq.com/resources/what-is-ach.php> (last visited Oct. 19, 2012).

404. See *id.*; *Intro to the ACH Network*, NAT’L AUTOMATED CLEARING HOUSE ASS’N, <http://www.nacha.org/c/Intro2ACH.cfm> (last visited Oct. 28, 2012); *About EPN: Overview*, THE CLEARING HOUSE, <http://www.epaynetwork.com/cms/about/001453.php> (last visited Oct. 18, 2012).

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. I will map the most straightforward route by enumerated reference to the constitutive elements of the architecture described 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 just as private banks within nations typically maintain accounts with their central banks. Now as it happens, the BIS already plays such a role, in part. As noted in the previous Subpart, central banks already keep accounts at the BIS. The BIS differs from a Keynesian Clearing Union in two respects. First, the BIS does not issue global currency or credit. Second, the BIS does not keep global trade accounts in long-term balance through a rules-based system of currency reevaluation.

Note, however, that those two features *are* present, in a rudimentary way, in the IMF, which Keynes played a part in *designing*. The IMF currently does 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 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, 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” (GCU) in honor of Keynes. Then, we must incrementally but steadily augment the functions housed in the new entity. We can do the latter as follows.

First, we use the G20 mechanism to require all cross-border transactions to be cleared by crediting and debiting BIS accounts held by national central banks, just as Keynes proposed. These BIS accounts will of course now be held by the GCU.

Second, we agree that currencies shall be regularly revalued when nations run persistent deficits or surpluses, again along the origi-

nal Keynesian lines. Unlike the IMF's current sporadic reevaluations, the GCU's adjustment mechanism will operate "automatically," according 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—will continue as the unit of account employed by the GCU. Further, we agree that the SDR is to be fully monetized—again along Keynesian lines. Our new Global Clearing Union institution will thus 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 the 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 GCU will of course be critically important and potentially controversial. The GCU will discharge the politically charged credit- and finance-modulatory functions of a global central bank. But this should not cause us all that much worry because 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 the "Board" to the GCU's "officers," considered jointly, just as it currently does to the BIS and IMF considered severally.

Another remaining question would be what to do about the research arms of the BIS and IMF, whose respective functions 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 "Basel" offices, referring to their present locations. In time we might expect fuller merging, but as it

happens there is considerable back-and-forth 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*

SWIFT and the current wire transfer and automatic clearing systems described above can continue to operate as they currently operate because they will not cause any friction between the GCU and lower layers of the economy. 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 already have.

Presumably some change will come to the current infrastructure due to processes already in motion. But such will remain independent of the GCU. We might also find it convenient to employ SWIFT in communicating payment orders among national banks to the new GCU, but nothing critical hinges on doing so. 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 the GCU, 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, should be phased-out or shut down.

The foreign exchange and Eurocurrency markets will no longer be needed once the new GCU is fully instituted. In the case of the foreign exchange market, there will no longer be any need to trade currencies; cross-border transactions will clear at the GCU through the account-crediting and -debiting mechanism. In the case of the Eurocurrency market, banks will no longer have a legitimate need for significant holdings of foreign currencies once the SDR becomes the global reserve currency. Nor, relatedly, will there be any legitimate need to hold large quantities of foreign currencies as hedges against possible changes in other currencies' relative values.

Once the new Clearing Union is operating, the only reasons that people would have for holding foreign currencies or using offshore financial centers would be illegitimate ones. They would be, in other words, either to speculate in a manner that no longer would be necessary to afford liquidity—since the GCU itself will supply that—or to evade 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 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. The very point of the GCU, 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. 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 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 have 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 argument begin.

