

International Journal of Political Economy, vol. 38, no. 2, Summer 2009, pp. 45–68.
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ISSN 0891–1916/2009 \$9.50 + 0.00.
DOI 10.2753/IJP0891-1916380202

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Asset Bubbles, Debt Deflation, and Global Imbalances

Ever since we responded to the worldwide stagflation crisis of the 1970s and early 1980s by deregulating banks and letting them reshape the workings of our economy, we have lived in a system dominated by finance. Representing a new accumulation regime in the sense developed first by the originators of the French Regulation School (Aglietta 1976; Boyer and Sillard 1995), finance-led capitalism has spread its relentless logic of free-market regulation and shareholder value maximization across all corners of the world.¹ Over the past quarter of a century, its propagation has helped the integration of half of the planet's human race into our private market economy, financed a new technological revolution, and pushed along the globalization process at a rapid clip. By organizing new ways to fund debt, we have been able to smooth out the business cycle and accommodate much larger external imbalances between countries, major achievements in our perennial stabilization efforts.

But this system is now in crisis. True, finance-led capitalism has always had a propensity for financial crises at key moments of its territorial expansion when bringing hitherto state-run economies into the orbit of market regulation, as was the case with the less developed country (LDC) debt crisis of the 1980s, the Mexican peso crisis of 1994/95, and the turmoil hitting emerging markets—from Thailand

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to Argentina—in the late 1990s. But those crises were passing affairs, mechanisms of reequilibration for integrating those countries into the world economy.

The current crisis, however, is different. Not only has it emanated from the center rather than hit somewhere at the periphery but it also has revealed deep structural flaws in the institutional architecture of contracts, funds, and markets that have made up the new, deregulated system of finance. In other words, we are facing a *systemic crisis*, always an event of epic proportions and lasting impact. We want to shed light on this significant moment.

Finance Transformed

Finance has been profoundly transformed by a combination of deregulation, globalization, and computerization (Guttman 1996; Plihon 2008). This triple push has changed our financial system from one that was tightly controlled, nationally organized, and centered on commercial banking (taking deposits, making loans) to one that is self-regulated, global in reach, and centered on investment banking (brokerage, dealing, and underwriting of securities). The preference for financial markets over indirect finance using commercial banks has been greatly facilitated by the emergence of funds—pension funds, mutual funds, and, more recently, hedge funds and private equity funds—as key buyers in those markets. These structural changes of our credit system have been very much shaped by financial innovation on a massive scale. Key innovations, although making the overall credit system more flexible and responsive to the needs of both creditors and debtors, have also encouraged asset bubbles, underestimation of risks, and excessive leverage. Now that these destabilizing tendencies have combined into what may arguably be the most serious financial crisis since the Great Depression of the 1930s, we need to trace back how we got here before we can claim to know how we can go forward.

The Formation of Financial Groups

The postwar regulatory regime for money and banking—best characterized as a system of nationally administered credit money based on low interest rates, fixed exchange rates, tight regulation of banking activities, and bank loans as an engine of money creation—came undone when its international framework, the dollar-based Bretton Woods system (1945–71) fell apart in a series of speculative attacks against an overvalued dollar. Those attacks were mobilized on an unprecedented scale by the Eurocurrency market. That major innovation emerged during the early 1960s when excess injections of dollars into international circulation via steadily growing U.S. balance of payments deficits looked for a new absorption circuit. Consisting of bank deposits and loans in key currencies located *outside* their country of original issue (e.g., dollar-denominated deposits in Paris, euro-denominated loans originating in London), this global banking network bypassed the reach of central banks.

With the help of two computer networks (SWIFT, CHIPS), the eurocurrency

market made it easy to move funds into and out of countries and currencies as a conduit for currency speculation.² It also enabled banks and their clients to circumvent many domestic regulations like U.S. controls on capital outflows and interest rate ceilings. Add to this a deepening clash after 1969 between intensifying stagflation, a new form of structural crisis, and the postwar regime's pillars of low interest rates and fixed exchange rates.

The eurocurrency market exploded this contradiction in spectacular flights out of the dollar (March 1968, July 1971, February 1973), which led to the suspension of the dollar's convertibility with gold in August 1971, the dismantling of fixed exchange rates in March 1973, two oil price shocks calibrated by sharp declines of the dollar (October 1973, March 1979), and finally the end of America's low interest policy in October 1979.

All this occurred before the conservative counterrevolution of U.S. president Ronald Reagan and Britain's prime minister Margaret Thatcher, which in the 1980s pushed the free market doctrine across the world to make privatization and deregulation politically viable elsewhere. Deregulation of banking spread from the United States to continental Europe (via the Single European Act of 1987 and the Second Banking Directive of 1989), to many developing countries forced to reform their banking sectors in the aftermath of the LDC debt crisis of 1982–87, and finally to emerging market economies (Russia and the Asian "tigers" of the Pacific Rim from Thailand to Korea) in the wake of their currency and banking crises of the late 1990s.

This global process included an International Monetary Fund (IMF) push for worldwide liberalization of capital movements during the 1980s and early 1990s (Eichengreen and Mussa 1998), a global "reciprocal access" accord in 1997 on financial services under the auspices of the World Trade Organization, and—still being pushed by the United States but heavily resisted elsewhere—a multilateral accord on investments.

U.S. banks, in the meantime, faced the new world of deregulated money prices by investing heavily in foreign exchange trading and competing for funds with higher deposit rates. Resuming price competition for the first time since the Great Depression, they sought to compensate for costlier funds by seeking higher yielding assets and pushing into fee-generating activities that would leave them less exposed to interest rate risk and less dependent on interest income. They were greatly helped in this diversification push by ambiguities and loopholes resulting from a rather chaotic regulatory structure in the United States.³

Long-standing barriers to the geographic reach and range of permissible activities were thus gradually undermined while policymakers spent a decade arguing about what new structure to give the American financial services industry. That debate was resolved in 1999 with the passage of the Financial Services Modernization Act, also known as the Gramm–Bliley–Leach Act, which repealed the bank activity restrictions of the Depression era Glass–Steagall Act.

Deregulation has enabled banks to expand into new geographic areas as well as widen the range of their services. Although there remain many specialized niche players across the entire spectrum of financial services, the world's leading financial institutions have all become huge conglomerates keen on integrating different types of services, instruments, and markets. Typically, they combine several financial functions—commercial banking, investment banking, fund management, private wealth management, and insurance—under one roof, hoping to enjoy significant scale, scope, and network economies in the process.

There are perhaps four hundred or so of those “do-it-all” financial groups, and their transnational organization is what makes finance a truly global industry. Their multiproduct approach to finance has also accelerated a certain convergence of once diverse national financial structures, as concerns the relative importance of financial markets, the interaction between banks and those markets, and the degree of concentration in the provision of banking services (see Aglietta and Berrebi 2007; Pastré et al. 2007; Plihon et al. 2006).

In addition to the worldwide market presence of the leading transnational banks, financial globalization includes globally diversified portfolios of (mutual, pension, and hedge) funds, cross-border hookups of securities exchanges (e.g., NYSE [New York Stock Exchange] and Euronext), the emergence of truly international capital markets like Euromarket notes, bonds, and shares (Cartapanis 2004), and phenomenal increases in international capital flows following their widespread liberalization during the 1990s. Thanks to technology, it has become much easier to organize financial markets via electronic trading platforms connecting a global community of investors and issuers seeking their funds.

The era of electronic money and banking is upon us (Guttmann 2003). The thrust of this technological progress, centered on much improved information processing and communication capacities within planetary networks (the Internet, SWIFT, CHIPS, etc.), lends itself to webs of financial transactions and money transfers beyond national boundaries. Given money's inherent mobility, the cross-border push of finance has spearheaded the broader globalization process.

One can easily justify this expansion process in terms of economies of scale, the efficiency gains that come with increased size. This is a particularly relevant factor during periods of rapid technological change when automation creates larger overhead costs that need to be spread over bigger production volumes. But what has driven the postderegulation formation of financial groups even more are two lesser known, yet equally decisive sources of efficiency gains. By connecting once separated financial services (e.g., commercial banking, investment banking) thanks to deregulation, banks managed to reap important synergies in product development when introducing new financial service products with proportionally much larger value added.

Such economies of scope are perhaps most easily identified when looking at how these financial services conglomerates built new markets from scratch. They would launch new securities by buying them at first from each other, control the

supply of those as underwriters, manage portfolios of clients who they could thereby turn into potential buyers, and lend to other buyers. These market-making activities would end up earning them a variety of parallel income streams—trading profits, interest, fees, commissions, and so on. In the process banks would also go after network economies, blowing up trading volume through credit extension to make those new markets more liquid, more profitable, and hence more useful to each participant.

Financial Innovation

The deregulation and computerization of finance have dramatically improved the system's ability to innovate. In contrast to the creation of tangibles in industrial innovation, financial innovation concerns mostly implementation of contractual arrangements, which meet the funding or portfolio management needs of borrowers, lenders, and the financial intermediaries bringing those two sides together. That kind of activity is much more easily implemented than industrial innovation but also more readily copied and devoid of protection by intellectual property rights, hence endowed with a much shorter life cycle. These characteristics explain the frantic pace of financial innovation as well as its tendency toward complexity and customization, both of which make the end result more difficult to imitate. Innovators also have an interest in a certain degree of opacity, which provides asymmetric information advantages that can be exploited profitably.

Another determinant aspect of financial innovation is its relationship to regulation. Key innovations over the past three decades circumvented prevailing regulatory restrictions, which in the process ended up weakened to the point of no longer performing as intended. Such successful demolition of existing regulations occurred early on, during the 1960s, when U.S. banks introduced a series of new money market instruments (e.g., federal funds, commercial paper, negotiable certificates of deposit, bankers' acceptances), which they used to fund credit expansion beyond their Fed-controlled deposit base.

One such so-called *borrowed* liability then coming into vogue was the eurodollar deposits that U.S. banks used to help their corporate clients escape the Fed's interest rate ceilings on domestic deposits or controls on capital outflows.⁴ Another important example of regulation-evading innovation was the use of securitization and credit default swaps by banks to readjust their loan portfolios in response to the 1988 Basel Accord's capital requirements by selling off low-risk loans and insuring high-risk loans they wanted to keep.

That last example points to an even more complex relationship between innovation and regulation, described by Kane (1981) accurately as regulatory dialectic. The aforementioned Basel Accord of 1988 was itself the result of a global effort, under the auspices of the Bank for International Settlements, to regulate the hitherto unregulated eurocurrency market after it had triggered the LDC debt crisis of 1982–87. And to the extent that banks used securitization and credit default swaps

to thwart that accord, they forced a reform of the latter, now known as “Basel II.” Banks use innovation to undermine existing regulations only to drive their newly found freedom too far, create conditions of crisis, and so invite reregulation in response.

The most important financial innovations in this regard are those creating new networks of financial intermediation, which have moved our credit system beyond the confines of traditional commercial banking. Able to escape government regulation and supervision, these alternative intermediation channels lack prudential transparency and have for this reason been aptly characterized as shadow banking networks (a phrase first coined by PIMCO’s [Pacific Investment Management Company] Paul McCulley in 2007). We have so far had four of those, each one playing a crucial role in altering the growth dynamic of the global economy.

- The introduction in the 1960s of money market instruments, so-called borrowed liabilities (e.g., commercial paper, negotiable “jumbo” deposits, an interbank market in excess reserves), freed banks to pursue much more aggressive lending than had been the case when they depended just on deposit liabilities as source of funds. Later on, these money market instruments became the primary funding source for nonbank lenders (e.g., finance companies).
- One such borrowed liability, eurodollars, has given rise to a truly supranational banking network beyond the jurisdiction of any national central bank.
- Yet another intermediation alternative, this one initially in direct competition with commercial banks, reached critical mass in the 1980s when mutual funds and pension funds became popular vehicles for household savings, which they invested in securities. These so-called institutional investors provided liquidity to many financial markets whose growth they greatly boosted as a result. Banks met this challenge by setting up their own mutual funds, taking over management of pension funds, and helping to launch hedge funds.
- Banks then developed yet another lucrative income source with securitization, the repackaging of loans into securities backed by the income flows generated from those loan pools, which took off in the 1990s when such loan-backed securities began to attract an ever-growing number of investors across the globe.

From Loans to Securities

Those four alternative intermediation networks contributed to a historic shift in the preferred form of credit from loans to securities. We can see this trend take hold with the spread of money market instruments into a gigantic interbank market at the center of the world economy, with the gradual extension of the Eurocurrency market beyond deposits and loans toward a fully developed, truly international

capital market, with institutional investors helping to launch financial markets in emerging market economies, and above all with the securitization of loans. Add to this the success of high-yield (“junk”) bonds, which have given many smaller firms a welcome alternative to bank loans. The trend toward market-based finance has also been reinforced by derivatives, such as futures, options, forward, and swaps. These instruments help reduce different types of risks associated with finance yet also serve as excellent tools of speculation.⁵

Securities compare favorably to loans for several reasons, depending on which side of the transaction we are considering. Suppliers of funds like them better because these instruments give them an exit option whereas loans do not. Users of funds find them less costly than loans, with larger amounts available all at once. They also may prefer the formal information disclosure rules associated with securities over the informal, often too intimate relationships with nosy loan officers. The switch from loans to securities as the principal form of credit has been greatly facilitated by the parallel shift from bank deposits to funds as principal savings outlets, which has generated a huge demand for securities.

It has, of course, also benefited the investment banks and their brokerage, dealership, and underwriting of securities. Commercial banks, facing a potentially lasting decline of their traditional intermediation function, reacted to this threat by getting into the fund business themselves. They have also taken over the creation of informal and decentralized over-the-counter (OTC) markets in which many of the new derivatives and securitization instruments have come to be traded. This market-making activity earns them large sums of fees. Finally, banks also provide liquidity to these markets with broker loans, emergency lines of credits, and other funding facilities, all of which generate additional interest income.

One of the consequences of this shift from loans to securities as a preferred conduit of credit has been the growing importance of financial markets and the trading activity in them. Even though this aspect of our economy barely shows up in official national production and income statistics, it has had a significant impact on how our economy works. Securities trading engages an ever-growing range of actors trying to profit from the difference between prices at the time of the purchase and those prevailing at the time of selling.

Such capital gains have become the dominant motive of investors. They can be earned rapidly and, depending on the prevailing state of the markets, also far more extensively than other forms of capital income (e.g., profit, interest, dividends) while often being in addition taxed more lightly. We have thus created a new type of financial system that has become much more prone to speculation, the chase for capital gains arising from the buying and selling of assets.⁶

Speculation and Asset Bubbles

As banks get vested significantly more in securities than they used to, a lot of their money creation gets directed toward financial markets where it boosts trading vol-

umes and asset prices. Because such speculative activity creates a lot of new money while not showing up in the gross domestic product (GDP) data (except for a small fraction representing service-related income to financial institutions), the velocity of money declines—as it has persistently in the United States and the European Union since 1980 (Plihon 2008: 48). Much of this funding of speculative activity does not even show up in the financial statements of banks, having been moved off their balance sheets to avoid taxes or capital requirements. But its very opacity, implying relative disassociation from the “real” world, is also what makes speculation so attractive. Unlike physical capacity constraints pertaining to plant and equipment, financial markets are limited only by the collective imagination of their users, the traders. And whereas other types of financial income such as interest or dividends are directly deducted from industrial profits, capital gains face no such restraints provided asset prices continue to climb. And climb they do, as long as widespread euphoria directs a lot of liquidity toward these assets and their markets.

The Leverage Effect

In light of its attractive growth potential, banks have turned speculation into a major economic activity by building a multilayered financing machine feeding its growth. Their injection of liquidity extends beyond purchases of securities to funding support for other investors, such as hedge funds, so that those may boost their trading capacity and portfolio size considerably. Many speculators are willing to take on a lot of debt to magnify their gains, thus benefiting from the so-called leverage effect. A higher level of debt keeps down one’s own investment of capital, enabling speculators to boost their rate of return on capital for any given movement of asset prices in the right direction.⁷ Banks have directed a lot of credit toward asset buyers to finance their speculative trading with a high degree of leverage and thus on a much enlarged scale.

With all this liquidity boosting the number of speculative players and the scale of their trading activity, financial markets have experienced strong growth and price appreciation. Such expansion can easily become self-feeding, as success breeds an inclination for greater risk taking. That same success also boosts speculators’ capacity to borrow, not least by using higher-valued assets as collateral. Highly leveraged speculators have thus shown a growing capacity to launch self-feeding processes of asset inflation in strategic markets—commodities, real estate, and financial claims.

The Bubble Economy

In recent years we have seen this phenomenon play out recurrently. Just as we have elevated speculation to a core economic activity, so have we created a bias in our economy toward asset bubbles, a key characteristic of today’s finance-driven economy. Even though each bubble had its own unique features, they also had certain

behavioral characteristics in common.⁸ For one, each bubble arose in the context of excessive stimulation where the Fed, worried about greater risks of deflation in the aftermath of recessions (1979–82, 1990/91, 2000/2001), kept interest rates very low a couple of years into recovery. Moreover, these bubbles were driven forward by financial innovations that proved very effective in mobilizing a lot of additional financing for purchases of booming assets. Finally, we have also learned that what goes up must come down, confirming the financial instability hypotheses of Kindleberger (1978) and Minsky (1982, 1986), according to which speculative bubbles inevitably triggered spectacular financial crises sooner or later.

Over the past quarter of a century, we have had three such bubbles:

- The first arose in the mid-1980s when a group of powerful investors, known as corporate raiders, attacked undervalued corporations with hostile bids to force their reorganization. These takeover attempts were financed by a new funding tool, so-called junk bonds, which carried attractively high yields, whose success made even the largest U.S. companies vulnerable to attack. The stock market was thus turned into a market for corporate control, where the anticipation of further bids with ever-higher premiums eventually nourished a historic bull market during the mid-1980s. In the wake of this bubble, which seemed to validate the ideological shift toward laissez faire capitalism following of the so-called Reagan Revolution, shareholder value maximization and ruthless restructuring established themselves as key pillars of a new corporate governance regime that also included a revolution in executive pay driven by stock options and the use of shares as currency in mergers and acquisitions. The bull market lasted until the stock market crash of October 1987.
- A second bubble arose in the late 1990s directly following the “Internet Revolution,” which from its inception promised numerous profitable business opportunities online. An ever-growing number of entrepreneurs used an aggressive funding machine, combining venture capitalists, initial public offerings, and a newly reconstituted high-tech stock market known as NASDAQ, to launch e-commerce sites that they hoped to turn public in a hurry at great personal profit. This so-called dot-com bubble had the beneficial effect of accelerating the insertion of the Internet as a productive economic force into our society, but did so with a tendency toward excess typical of bubbles. In this case the leap into unsustainable overextension occurred in preparation for the “Y2K bug,” shortly after which the bubble burst with the collapse of the NASDAQ index (suffering a 70 percent decline, from its peak of 5,048 in March 2000). The ensuing recession, punctuated by a series of scandals among high-tech firms (Enron, Tyco, WorldCom), was complicated by the shock of the September 11, 2001, attacks. Worried about imminent deflation, both U.S. monetary policy and fiscal policy turned sharply more expansionist to set the stage for the next big bubble.

- The housing bubble, which took off in 2003 after the Fed had kept interest rates at historically very low levels for a couple of years, was also moved forward by a crucial financial innovation, in this case securitization whereby pools of new loans were bundled and transformed into securities. The overextension of this bubble, with its increasingly strategic position in the growth dynamic of the world economy and its funding on the basis of an ultimately fragile shadow banking system, has created the most severe crisis since the Great Depression of the 1930s.

A Deflationary Shock

The U.S. housing bubble took root in the heart of global capitalism, among American consumers turning their appreciating homes into automated teller machines. It then blew up to an amazing degree of overextension by connecting to a new shadow banking system that engulfed the entire planet. The process bubble fed America's excess spending so that the rest of the world could launch export-led growth strategies and recycle a growing balance of payment surpluses to the voracious American consumer.

We came to organize a global growth dynamic around a speculative boom whose collapse was bound to shake the entire world. This particular bubble was unusually wide, in terms of how many actors—and, ultimately, countries—it drew into its irresistible stimulation. It was also very deep, considering how many layers of financing arrangements it spawned to mobilize a huge amount of capital and the degree to which it thereby let imbalances accumulate before they exploded. Following the two-step collapse of the bubble (first in August 2007 then in September 2008), we are now in the midst of the first globally synchronized depression since the 1930s. How and when we get out of this systemic crisis depends on how we respond to its unfolding dynamic.

The Collapse of Securitization

The burst of the U.S. housing bubble began during the summer of 2007 when a wave of defaults among high-risk “subprime” mortgages triggered rating downgrades of mortgage-backed securities (MBS) that rendered those difficult, if not impossible, to value accurately.⁹ In the absence of effective price recovery following a shock, the globally organized OTC market for MBS simply dried up in a matter of just a couple of months. The disruption did not stop there. In the later phases of the boom, from 2005 onward, a lot of MBS had been bundled into collateralized debt obligations (CDOs), a structured finance product designed to maintain triple-A ratings for higher risk loan pools. Those, in turn, had been allowed to mushroom into synthetic variants (CDO², CDO³). Hedge funds, structured investment vehicles, and other off-balance-sheet entities set up or funded by banks had issued asset-backed commercial papers (ABCP), which are short-term bonds backed by

pools of credit card debt, car loans, or student loans, to finance their purchases of CDOs and MBS.

The default wave among subprime mortgages during mid-2007 thus triggered a chain reaction of collapsing securitization markets (MBS → CDO/CDOⁿ → ABCP) that, once it had hit their short end, unsettled the crucial commercial paper market. That center of money markets is backed by standby lines of credit from banks, which were activated in this emergency situation. The sudden wave of funding calls overwhelmed the vital interbank market at a moment of collapsing confidence among banks, causing a paralysis that had to be met by massive and coordinated interventions of the world's leading central banks—starting with the unprecedented €5-billion-liquidity injection by the European Central Bank on August 9, 2007.

The world's leading banks now had a big problem on their hands. They had just suffered a huge loss, possibly a trillion dollars worth, from the sudden disintegration of four intertwined securitization layers. That loss had hit them unprepared, with far too little capital on hand. They were undercapitalized because, having won the freedom under Basel II to set their own capitalization levels, they had systematically underestimated risks and thus not provided enough capital to cover those. It certainly did not help that the hit they took from the subprimes bullet had done especially great damage in the shadow banking networks off their balance sheets for which there was no capital allocated whatsoever.

The opacity of the instruments and the complexity of the market connections involved made it impossible to pinpoint the losses, to know when they would hit, where they would materialize, and how large they would be. This uncertainty made banks unwilling to lend to each other. Each bank knew that its loss, irrespective of precise amount and timing, was going to be bad yet assumed that other banks were perhaps going to suffer even worse. Many banks in the United States, Europe, or Asia thus faced a double squeeze. They had to cope with rapidly deepening losses while being deprived of a well-functioning interbank market as their trust in each other eroded. Time pressed because new international accounting rules, known as the International Financial Reporting Standards, required banks to mark down asset values to the current market price continually and so recognize any market-related losses early on.

A New Type of Run on Banks

Across the world, banks began to declare significant write downs of asset values during the last trimester of 2007. However, their inability to price MBS and CDOs accurately in the absence of a well-functioning market for these securitization products gave banks a high degree of flexibility in terms of estimating their losses. Mark-to-market accounting rules for losses were thus turned into “mark-to-model” (and largely underestimated) losses that, quarter for quarter, were declared at the same time as new injections of capital of similar size with which to write off those losses. This gradualist strategy of stretching out losses over several quarters and

matching those each time with new capital for coverage seemed to work at first, even though it required massive capital infusions from controversial sources like sovereign wealth funds from the emerging market economies or private equity funds. Those investors, of course, suffered losses soon thereafter as banks inevitably declared a new round of asset write downs three months later. Growing resistance to put up new capital nudged the most vulnerable banks, those with large de facto losses on their asset side or excessive reliance on nondeposit sources of funds borrowed from the money markets, closer to the brink.

When the rescue of Bear Stearns, America's fifth largest investment bank, wiped out its shareholders in March 2008, the signal sent by the U.S. government to potential suppliers of new bank capital was utterly dissuasive. Thereafter the banks' efforts to mobilize new capital infusions became tangibly more difficult. In late July 2008, the administration of George W. Bush faced its next intervention dilemma, having to save Fannie Mae and Freddie Mac.

These two government-sponsored banks, whose losses had mounted in the wake of the deepening housing crisis, could not be allowed to go under because of their huge role in funding mortgages for American homeowners and also because of the rest of the world's massive exposure to the so-called agency securities that Fannie Mae and Freddie Mac had issued to finance their operations. Their subsequent \$200 billion nationalization on September 8, 2008 confirmed the unmistakable message gripping the markets ever since the Bear Stearns debacle, namely that the crisis was deep enough to bankrupt major financial institution and that shareholders risked being wiped out should such failures materialize. No wonder that confidence in the banking system sagged, thereby dramatically squeezing many other banks.

The failures of first Bear Stearns and then Fannie Mae-cum-Freddie Mac were key moments in the growing realization that the collapse of securitization in August 2007 had severely damaged the global financial system. They also provided investors with a new mechanism to act on this realization by triggering what Soros (2009) so aptly has called "bear runs." Whenever rumors of an imminent bank failure hit the markets, the premiums on the credit default swaps of that bank would shoot up right away.

Such premium hikes not only reinforced market pessimism concerning the bank in question but would also be associated with shorting the concerned bank's bonds. Such a sell-off wave would inevitably extend to the stock market, now hit by accelerating share price declines, which in turn would feed back negatively to the credit default swap (CDS) market for further spikes in premiums. Once the stock of a targeted bank falls below \$5 per share, it typically is no longer bought or held by institutional investors. At that point the end is near. The disappearance of a bank's market valuation renders its needed capital boost impossible and hence its insolvency unavoidable.

What we need to recognize here is the pernicious role of CDS at the center of synthetic finance. Those credit derivatives not only have served as insurance against default but also have enabled execution of speculative trading strategies in securities

that one did not own. Speculators have used CDS in highly pro-cyclical fashion, deploying them, for instance, during the bull market to multiply the issue and trading of CDOs while switching their use during the subsequent panic for shorting the banks. The financial engineers of Wall Street put a highly volatile synthetic finance multiplier of credit derivatives on top of a fragile structured finance layer of securitization, thereby unwittingly setting the stage for a devastating chain reaction at the first signs of stress, which ended up paralyzing the global banking system.

That mutually feeding spiral of short selling described above played itself out with breathtaking intensity during the weeks following the nationalization of Fannie Mae and Freddie Mac, pushing U.S. investment banks in particular over the cliff. In short order, Morgan Stanley and Goldman Sachs transformed themselves into commercial banks able to rely on more stable deposit sources of funds and better access to the Fed's support systems. A teetering Merrill Lynch fled into the arms of Bank of America. Most fateful of all, such a bear run also bankrupted Lehman Brothers, which the Bush administration, worried about the moral hazard produced by its earlier bank rescue operations, then let go under on September 15, 2008.¹⁰

The Collapse of the Money Markets

It is now clear that the U.S. government's failure to save Lehman was a colossal mistake. Its demise destabilized the market for credit default swaps, spelled the end for the world's largest insurer, AIG (rescued two days later with a \$85 billion loan from the Fed), imposed huge losses on corporate bonds, and—most fatefully—led the nation's oldest money market fund, the Primary Reserve Fund, to announce a loss that “broke the buck” (net value of \$1 per share). This triggered a wave of redemptions from the money market funds, which froze the commercial paper market and destabilized other money market segments. A very large number of financial institutions relying on the money markets to finance their longer term asset holdings—investment banks, aggressively managed commercial banks, hedge funds, finance companies, etc.—were now deprived of funding support and so were obliged to dump their assets. All financial markets, except the safe haven market of U.S. Treasury notes, suffered huge price declines in the months following the Lehman bankruptcy.

Bank failures continued to mount amid a series of devastating bear runs of the kind described above, whether in the United States (e.g., Washington Mutual, Wachovia, Citibank, Bank of America) or Europe (e.g., Fortis, Nataxis, UBS, HBOS/Lloyds TSB), forcing ever-larger bailouts. Worst of all, the post-Lehman credit crunch hit economic activity like a hammer on the head. Most economic actors depend on continuous debt financing for realization of their spending plans so that the sudden drought of credit forced them to cut back right away, a reaction further encouraged by an immense destruction of wealth directly following sharp price declines in real estate and financial markets.

The Dangers of Deflation

We have to recognize that the history of capitalism's growth pattern has proven a positive correlation between the intensity of financial crises and subsequent economic downturns depressing income and employment. Given the extent of damage from this particular financial crisis, we can expect a very serious downturn. As a matter of fact, the combination of a collapsed shadow banking system (comprising the four securitization layers) and severely disrupted money markets is tantamount to an extremely severe deflationary shock, in response to which a very large number of economic actors are forced to cut back spending, reduce debt levels, and sell off assets—as has been happening since the explosion of mid-September 2008.

Luckily, the shock occurred at a moment of elevated inflation levels and expectations, thanks to a last-gasp bubble in the commodities markets over 2007/8 that had pushed oil prices, for instance, from \$50 per barrel to \$145 per barrel in a little over a year. That meant that it would take a while before investors and consumers switched their expectations and, even more importantly, before any such switch could drive down output and cost prices to dangerously low levels.

Still, the pace of price declines over the last six months has been alarmingly fast, raising the prospect of imminent deflation. And we have known ever since Fisher (1933) that the mutually feeding interaction of excessive debt burdens and forced selling of assets or excess inventories, designed to generate cash at all costs to avoid debt default, can get out of hand. This is an extremely dangerous prospect that must be avoided at all cost.

Once you have generalized deflation, you have moved from a relatively short-lived recession to a much more serious and persistent depression. At that point, there are at least four drag-down factors at work that make it very difficult to get out of the crisis. For one, when expectations of future price declines have firmly taken root, purchases often get postponed to possibly take advantage of lower prices later. Such deflationary expectations can thus be strongly self-reinforcing.

Deflation also threatens to render monetary policy ineffective. Once relevant interest rates have fallen to zero, the central bank is deprived of its most convenient policy tool. And at 0 percent nominal rates, a deflation rate of -2 percent or more would amount to such a high "real" (i.e., inflation-adjusted) rate of interest that production and consumption activities would be choked off and so kept below their "natural" growth rate for an extended period of time. Finally, deflation makes the burden of debt that much harder to bear because the principal owed will now have to be repaid with higher valued dollars. The same nominal amount becomes bigger in real terms over time, when prices go down.

A Unified Policy Response

The intensity of the post-Lehman shock to the financial system prompted an immediate response of policy makers worldwide. It took only a few weeks for

governments in all industrial nations and many emerging markets to come up with a monetary and fiscal policy response designed to avert the deflation disaster. Although the U.S. government has arguably taken a leadership position as the center of finance-led capitalism and origin of the crisis, others have followed suit and at times even shown more courage or foresight than the Americans. Be that as it may, the simultaneous and similar nature of government interventions across the world is tantamount to having formulated a de facto coordinated response—and that is certainly something worth applauding.

The policy response to the deflationary shock of September 2008 has consisted of four distinct pillars, each still being refined and extended everywhere:

- Central banks have lowered interest rates under their control quite aggressively, thereby rendering real rates negative for stimulation purposes, to pull down elevated spreads and to let paralyzed banks at least enjoy the benefits of profiting from a steeply positive yield curve in their day-to-day operations.
- With impaired banks incapable and unwilling to maintain normal credit conditions, monetary policy has had to go beyond rate cuts and find ways to revive clogged funding channels. In this regard, the Federal Reserve under its chair, Ben Bernanke, has proved especially innovative, building a whole new infrastructure of lending facilities based on asset swaps and loan guarantees to fill the void created by a suddenly severely damaged banking system. In many instances the Fed has become the lender of sole resort, thereby preventing a more far-reaching collapse of credit extension.¹¹ Such credit easing becomes even more crucial when key interest rates have reached zero, prompting a shift of policy from price to quantity, from the liability side of central banks (reserves) to the aggregate and composition of their assets. The Fed has already reached that point, blazing a trail for other monetary authorities.
- In country after country, finance ministers and central bankers have had to intervene recurrently as lender of last resort to save major financial institutions considered too big to fail. Although these interventions still maintain a case-by-case approach, they were early on packaged into more systematic bank rescue initiatives in recognition of the systematic nature of this crisis. These packages, such as the \$700 billion Troubled Asset Relief Program (TARP) of the U.S. Treasury, typically combine capital injections, loss-sharing agreements, debt guarantees, and impaired asset purchases. To the extent that they have failed to repair the banking system, they will be followed by more far-reaching interventions currently being debated—mostly as a choice between setting up “bad banks” to allow banks unload their toxic assets or nationalizing them outright, if only temporarily.
- With monetary policy less effective amid zero interest rates and disrupted bank lending, fiscal policy has become strategically more important.

Everywhere governments are launching fiscal stimulation, in the form of infrastructure investments, subsidies, or tax reductions. Once again, the United States—in this case the new administration of Barack Obama—has proved a path breaker, pushing a multifaceted stimulus package that also aims to strengthen the domestic economy's productive capacities (e.g., alternative energy, broadband access, school renovation, health care modernization) in the long run.

These responses have been fairly rapid and ubiquitous, a crucial lesson learned from the Great Depression of the 1930s. But they may not suffice to turn things around. The post-Lehman decline in economic activity, among all private sector components (consumption, business investment, foreign trade), has been so massive across the entire globe that it seems at this point (February 2009) to overpower the stimulation efforts of governments. One reason for the intensity of the decline in production and employment since September 2008 lies in the severity of the financial crisis preceding it, a correlation proven in the 1873–79, 1929–39, and 1979–82 downturns. Another reason, perhaps even more relevant, is its global dimension. Its worldwide nature makes this crisis not only worse but also more difficult to get out of.

Toward a New Global Framework

The synchronized nature of the downturn across all corners of the planet reflects a globally organized growth dynamic that has now broken down. The degree of globalization has in that sense reached a stage of advanced evolution where it renders the whole greater than the sum of its parts. In its relentless postwar march toward ever-higher levels of transnational organization of economic activity the (now significantly globalized), the world economy has developed its own dynamic, shaped by its unique features. Those consist of hierarchically structured power relations among nation-states, asymmetric distribution of adjustment burdens and development options, the absence of an international state authority in the face of increasingly needed global governance, different degrees of mobility among the various dimensions of capital (labor, production, finance, and money), and the two-step nature of any cross-border transaction necessitating an exchange of currencies.

All these characteristics play themselves out in ways that render the world economy more than just the sum of all national economies. We are thus today forced to confront a dilemma like that faced by Keynes during the Great Depression. Realizing that a national economy was more than just the sum of its markets, Keynes (1936) had to develop a macroeconomic theory to highlight the behavior of the economy as a whole. We need the same leap in thinking today with regard to a metaeconomic framework that moves our understanding of the global economy beyond the orthodox method

of linear aggregation whereby we simply sum up national economies by connecting them through their respective balance of payments and exchange rates.

The Seigniorage Bias

Any such metaeconomic alternative will have to account for the institutional imbalance caused by the use of national currencies as international media of exchange. Ever since 1945 this bias has given the United States a privileged position at the center of a dollar-based international monetary system. Having to supply other countries with dollars for their cross-border payments (e.g., Italy buying oil from its cross-sea neighbor Libya), the United States must run chronic balance-of-payments deficits to maintain steady outflows of dollars to the rest of the world. These external U.S. deficits are financed automatically by all non-American actors using dollars as the international medium of exchange or store of value. Thus the only country in the world not to face an external constraint, the United States can run far more stimulative economic policies than anyone else without having to worry about its external position, the level of its foreign-exchange reserves, or exchange rates—a huge advantage, which I have termed elsewhere “global seigniorage” (Guttman 1994: chap. 15).¹² That advantage extends to having much of the world’s financial capital denominated in U.S. dollars, an asymmetry that helps the United States more easily maintain the deepest and most liquid financial markets.

This privileged position has propelled the United States into the role of “locomotive” for the world economy ever since the end of World War II. During the Bretton Woods phase (1945–71), the United States acted as global stimulator via overvaluation of its currency and capital exports that helped fuel the catching-up process of other industrial nations (Germany, Japan, etc.) around export-led growth strategies. This process broke down in the late 1960s when our partners had basically caught up with us while we were pumping more and more dollars into the system, a situation that made the postwar regime of fixed exchange rates untenable. Following the collapse of Bretton Woods in August 1971, the United States tried to regain competitive advantage by letting the dollar slide (1971–79) but was forced in October 1979 to stop that mechanism for global transmission of inflationary pressures.

Following dramatic shifts in its policy mix that broke the stagflation dynamic (1979–82), the United States resumed its locomotive role, thereby safeguarding the privileged role of its currency as world money. The launch of consecutive domestic asset bubbles stimulated demand at home, which spilled over to the rest of the world via rising U.S. trade deficits.

New dollar-based shadow banking systems—the eurocurrency markets, funds (pension, mutual, and hedge), and securitization-based structured finance—spread capital across the globe, especially to newly industrializing countries, which in the process turned into emerging market economies of high-growth potential (east Asia, Latin America, Central and Eastern Europe). At the same time, the rest of the world

used its balance of payments surpluses to finance U.S. deficits, often propelled to do so in defense of currency pegs, which necessitated continuous purchases of dollar-denominated securities.

For two decades, from 1982 to 2002, the world economy was thus helped onto a faster growth path by high U.S. consumption and foreign investment levels while the United States enjoyed an additional global seigniorage benefit from a positive rate-of-return differential between its private investments abroad and the rest of the world's public investments in U.S. Treasuries notes.

This propitious growth pattern was put at risk after 2002, when the U.S. banking system adopted a much more aggressive securitization strategy to fund mortgage lending and so launched a globally financed housing bubble in the United States.¹³ Able to draw more and more cash out of their rapidly appreciating homes, U.S. home owners became the world's "consumers of last resort." Their debt-financed excess consumption was supported by growing trade surpluses of the rest of the world being recycled as capital exports to America. By late 2006 the U.S. trade deficit had grown to an astonishing 7 percent of GDP, with Americans absorbing about half of the world's savings while running a negative savings rate of their own.

This configuration not only helped drive the U.S. housing boom to unsustainable levels, but also made sure that the rest of the world would get hit hard when that bubble finally burst in early 2007. Many foreign banks suffered even larger losses from the collapse of securitization than their American counterparts. With the U.S. economy slipping into recession after December 2007, export-dependent economies saw their primary foreign market shrink and so experienced their own deceleration.

The post-Lehman credit crunch triggered massive capital outflows from many emerging market economies, a combination of the world's leading financial groups withdrawing to their home base, foreign investors shunning risky engagements, and domestic capital fleeing to safer havens. Emerging market bonds and currencies thus came under immediate pressure. The negative multiplier effects of shrinking cross-border trade and capital flows risk were reinforced by protectionist pressures arising from bank bailouts, fiscal stimulus packages, and new import barriers.

The Global Coordination Challenge

Such protectionism must not be allowed to spread. The declaration by the leaders of the world's twenty largest economies at the conclusion of their hastily arranged meeting in mid-November 2008 in Washington shows that they have understood the potential dangers of such a mercantilist response. Still, many of their actions to the contrary since then have also shown the difficulties governments have resisting temptations to "go it alone."

This is why the upcoming series of Group of Twenty (G20) meetings for global financial and monetary reform will be so crucial. Inherently unwieldy and messy, global policy coordination is additionally rendered more challenging by govern-

ments' jealous guarding of national sovereignty. This attachment is not surprising because it is ultimately up to governments to manage the crises in their respective home countries and do so in the face of enormous domestic political pressure. That makes them, unfortunately, more inclined to act against each other, rather than with each other in the interest of a greater common good. Yet if they do not coordinate, they risk first making the crisis progressively worse and then not having a way to get out of it.

To the extent that the dramatic unraveling of the world economy's growth dynamic threatens to spiral out of control, the G20 may yet produce a meaningful reform process. There will be extensive discussion concerning the reregulation of finance. A meaningful solution to this question should include a code of conduct for the transnational financial groups composing global finance, stricter transparency standards for a broad swath of financial institutions and markets, as well as countercyclical reorientation of loss accounting rules, capital adequacy standards, and leverage ratios to slow down the credit cycle.

It would also help if financial innovations were stress tested at their inception, licensed by regulators (with minimum standards, such as a requirement for trading in public exchanges rather than OTC markets prone to breakdowns), and then closely observed in their evolution. Obviously, to the extent that the leading financial institutions and strategic financial markets operate beyond national boundaries, they will have to be supervised and regulated by supranational regulatory mechanisms, such as Britain's prime minister Gordon Brown's "college of supervisors."

The Financial Stability Forum may eventually come to play a crucial role here as the platform for international cooperation pertaining to the regulation of global finance. Most crucial will be to put into place a systemic crisis assessment structure among the world's leading central banks, based on global data collection of financial conditions and early warning benchmarks triggering coordinated policy action.

International Monetary Reform

Even assuming realization of these ambitious regulatory reform initiatives, on top of having cleaned up the debris of a de facto collapsed banking system through various "bad bank" or nationalization schemes of loss absorption, we may still not be out of the woods. The endgame of this historic crisis may involve a sudden collapse of confidence hitting the vehicle currency and its issuer.

If the Obama administration, after having committed trillions in a series of stabilization schemes, approaches the onset of baby boomer retirement (2012) without having reformed America's inefficient tax system, super-expensive health care system, and stressed Social Security system, it risks raising intensifying doubts among the global community of investors and governments holding U.S. debt. Such doubts would set off sharp declines in the dollar's exchange rates at the same time raising U.S. interest rates—a deadly combination.

We may face such a squeeze earlier, albeit in more moderate fashion, when

investors overcome their extreme risk aversion and start moving their funds out of safe haven dollars. Perhaps such late inning scenarios of international monetary turmoil will focus first on the euro instead. Although providing a useful buffer for smaller and more vulnerable EU countries, the euro is not yet a finished institutional construct. Monetary policy is unified on the EU level of the eurozone, but fiscal policy and banking supervision remain in national hands. This makes for a messy and imperfectly integrated policy mix.

Rigid policy rules, notably the 2 percent inflation target and the 3 percent budget deficit target, may constrain the European Union's crisis management capacity at a time when the crisis itself threatens to widen macroeconomic performance differences among the sixteen members of the eurozone. No longer able to affect interest rates or exchange rates, individual eurozone members face more difficult adjustment options. Any of these institutional constraints may trigger market runs against the euro as pressures within Europe mount. These tensions have already become manifest, not least fueled by major signs of trouble from recent EU entries not yet in the eurozone (e.g., Hungary, Latvia) and their divergent effects on different members of the zone.

Be that as it may, the prospect of systemic instability roiling the dollar or the euro points to the limits of our international monetary system as currently constituted. Sooner or later circumstances will oblige us to reform this imperfect system more fundamentally—away from national or regional currencies as international media of exchange. Our globally integrated economy needs a properly constituted supranational money form whose insertion, circulation, and valuation (in the hands of an international clearing union) makes for a better balanced and more fairly distributed growth pattern, along the lines of Keynes's Bancor Plan of 1943.

A useful step in that direction consists of upgrading the use of special drawing rights (SDRs), an official settlement and reserve asset that has been issued sporadically in very limited fashion by the IMF since 1968. The reform I have in mind would let the IMF issue SDRs against central banks' swap allocations, in proportion to the respective shares of their currencies in the underlying currency basket against which the rights get drawn, rather than the current practice of issuing them only on the basis of budget allocations by basket members, which gives the U.S. Congress and other national parliaments a veto right.

And the SDRs would now also be allowed broader use and wider circulation, being earmarked for a variety of useful purposes (intervention capacity of multilateral lenders, pursuit of environmental sustainability and other global public goods, and local development projects of nonprofit sector). Once established in connection with funding a new pillar of growth, the SDRs could be used for substitution accounts replacing key currencies in international circulation or as a mechanism for improved global policy coordination. It could thus serve as a powerful tool of meaningful transition to a better functioning world economy.

Whether or not the SDR reform suggested here will ever see the light of day is not yet clear. But a deep structural crisis, as prevails now, justifies a search for

creative solutions to our constraints. Crucial here is the mobilization of an alternative growth pattern, away from the dominance of finance and away from the latter's short time horizon and exclusively self-centered priorities.

Notes

1. The concept of finance-led capitalism, together with the concept of financialization, indicating the disproportionately rapid expansion of financial assets (and liabilities) relative to other assets, has recently become an accepted characterization of contemporary capitalism in heterodox economic theory. This holds for France's "Regulationists" (Aglietta 1998; Aglietta and Reb[^]erious 2004; Boyer 2000) just as much as it does for post-Keynesians (Hein and Van Treeck 2007; Lavoie 2007; Stockhammer 2004, 2006, 2007) or America's Union for Radical Political Economics radicals (Epstein 2005; Foster 2007; Krippner 2005; Palley 2007; Tabb 2007).

2. SWIFT, responsible for data communication between banks, stands for Society of Worldwide Financial Telecommunications, whereas CHIPS is a wire-transfer system for large sums and stands for Clearing House Interbank Payment System.

3. Depending on its precise status, any of the nation's 7,500 banks is subject to at least two, if not three, different regulators—including the state banking commissions, the Fed, the Federal Deposit Insurance Corporation, or the Treasury's Comptroller of Currency. See Guttman (1997: 133–88) for more.

4. Corporations would simply deposit their funds abroad in eurodollar accounts, which carried market yields that were above the Fed's ceilings on domestic deposit equivalents. Banks would then borrow those funds from their foreign affiliates.

5. Derivatives are financial instruments whose value changes in response to changes in underlying variables to which they are linked (e.g., commodities, equities, bonds, interest rates, and exchange rates).

6. Speculation has been analyzed in several classic contributions, notably Keynes (1936: chap. 12), Kaldor (1939), and Friedman (1953). But there is still a cyclical phenomenon, an irresistible byproduct of an overheating economy generating inflationary pressures for sustained price increases among commodities and assets. Today we have turned speculation into something even more profound—a normalized profit center that thrives in all phases of the cycle as long as there is market volatility.

7. If I pay down 5 percent of a contract's face value out of my own pocket (while financing the remaining 95 percent with a loan from my broker), then a change in the market price by just 1 percent—from, say, \$1,000 to \$1,010—would yield me a rate of return on my capital of 20 percent (i.e., 10/50). If I pay down just 3 percent of the contract's face value, then the same price movement of 1 percent would give me a 33.33 percent return (i.e., 10/30).

8. In this context it is worth noting the general consensus among economists that speculative bubbles affect the overall economy through certain mechanisms of stimulation. Two examples are the so-called wealth effect (see Federal Reserve Bank of San Francisco 2007), whereby rising asset prices make people feel wealthier and thus inclined to spend more, and higher business investment spending prompted by a rise in the market value of the firm relative to its book value (the so-called Q ratio of Tobin 1969).

9. Useful sources tracing the U.S. housing bubble and its funding infrastructure are Dodd (2007), Dodd and Mills (2008), Guttman (2007), and Kregel (2008).

10. The moral hazard, an insurance term, refers to the tendency of insured actors to take more risks, and hence face a greater chance of failure, because they know they will be bailed out. This perverse effect of government intervention as insurer against market failure is of particular concern to the Republicans, who would therefore rather not engage in such risk-

feeding assistance by the government. For an excellent account of the Lehman bankruptcy, see Van Duynes et al. (2008).

11. Detailed information on each of the Fed's "credit-easing" initiatives, such as the Term Auction Facility, the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility, the Commercial Paper Funding Facility, the Money Market Investor Funding Facility, the Primary Dealer Credit Facility, the Term Securities Lending Facility, and the Term Asset-Backed Securities Loan Facility, can be found on the New York Fed's Web site under "Funding Programs" (www.newyorkfed.org). See also Hilbenrath and Salomon (2008) for a useful summary on these programs.

12. See also Schulmeister (2000).

13. This acceleration in securitization came about in 2002/03 when the government-sponsored Fannie Mae and Freddie Mac were hit by an accounting scandal, giving their private competitors an opportunity to fill a large vacuum in a hurry. Commercial banks did so by adopting looser loan-pooling and securities-underwriting standards. See Godley et al. (2005) and Guttman (2008) for the implications of this shift on the global growth pattern.

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