Capital in Disequilibrium: An Austrian Approach to Recession and Recovery[1]

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Abstract

The process of recovery starts at the same exact moment as the recession. If all resources were perfectly homogenous and all prices, wages, and interest rates perfectly flexible the recession/recovery process would be a single process which would be quick and practically painless. As resources are released from declining activities they are immediately absorbed into expanding industries. But the decline that we call "recession" in a world with non-homogenous capital and rigidities in adjustment processes is the first phase of the readjustment process, which begins with the realization of errors committed under the illusions projected by easy credit. Concerning normative judgments about the phases of the cycle, a period of booming economic activity is typically considered "good" while the downturn/recession/bust is "bad". But it is the boom times that play host to the plague of malinvestment, and the bust times that bring readjustment and reintroduce sustainable growth, the standard normative judgment is completely backwards: it is the boom that is "bad", and it is the bust that is "good". We can conclude that placing the money supply under the control of a central bank is not nearly good an idea by either the standards of efficiency or stability. It is argued that a central bank brings stability and promotes growth. But we show here that the central bank is the economy's main de-stabilizing force and that the growth that it promotes is inefficient and unsustainable.

Introduction

The most complete part of a capital-based macroeconomics is the Austrian or Mises/Hayek theory of the business cycle. But as Garrison (2001, 240) points out, the theory is a theory of an unsustainable boom, not a theory of recession or depression. An Austrian based theoretical examination of what goes on during the recession/depression

[1] An earlier version of this paper was presented at the Austrian Scholars Conference 10, Auburn, Alabama, March 18-20, 2004.

and the subsequent recovery from the recession phase of a business cycle has never been rigorously attempted. To understand what is happening during a recession and recovery requires a "view of capital that is firmly rooted in individual planning in a disequilibrium world" (Lewin, 1999, 214).

While we do not deny that the phenomena that is often referred to as a recession can originate in other ways[2], the paper will focus on the recession/depression and recovery phases following a period of unsustainable growth – a recession generated by a boom-bust business cycle. The rest of this paper is organized in four sections, recession, recovery, policy, and conclusions.

What is a recession?

What is a recession? An oft-repeated notion is two consecutive quarters of declining real GDP. The National Bureau of Economic Research offers this definition, contrasting recessions against expansions:

> A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales. A recession begins just after the economy reaches a peak of activity and ends as the economy reaches its trough. Between trough and peak, the economy is in an expansion. Expansion is the normal state of the economy; most recessions are brief and they have been rare in recent decades.[3]

NBER then goes on to describe the various statistical measures they use to determine the official dates of US business cycle turning points. In addition to real GDP, measures of personal income, employment, industrial production, and wholesale/retail sales are taken into account. Among the public, understanding of measures such as real GDP is poor, while more visible and intuitive measures such as the unemployment rate and the behavior of the stock market are paid attention to, as well as the jawboning of politicians and journalists. But these are all symptomatic definitions, akin to defining the common cold in terms of sneezing and coughing. What is needed is a causal definition; the true nature of a cold is a viral infection, what is the nature of a recession?

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[2] Recession like phenomena and rising unemployment may accompany any 'large' shift in production (Rothbard 2000, 14).

[3] See "NBER's Recession Dating Procedure, October 21, 2003" at http://www.nber.org/cycles/recessions.html.

A capital-based macroeconomics provides a partial answer. In a modern industrial economy with fractional reserve banking and a central bank, recessions are the economy's reaction to resource misallocations arising from a prolonged period of credit creation and money supply expansion. During the unsustainable boom, too many resources have been allocated to the wrong industries. As expressed by Hayek (1979, 8), "The true, though untestable, explanation of unemployment ascribes it to a discrepancy between the distribution of labor (and the other factors of production among industries (and localities) and the distribution of demand among their products." Because of this credit induced distortion of the capital structure, "(t)he recession periods of the business cycle then become inevitable, for the recession is the necessary corrective process by which the market liquidates the unsound investments of the boom and redirects resources …" (Rothbard 2000, xxvii).

But in a disequilibrium world, some business plans are constantly being revised as new information is discovered and transmitted. The question then arises, misallocated relative to what? The answer depends on a correct understanding of monetary calculation, planning, and the capital accumulation process. A capital structure for an economy is the result of a planning/calculation process. Lewin (1999) suggests that this value creation process depends on the decision-making environment which includes the institutions of the economy and the knowledge of the decision makers. This suggests a:

> View of capital as a structure not a stock. In the first instance, the capital of an economy is embodied in a largely undersigned network of capital combinations of individual capital goods and human resources. This structure operates within a superstructure of (many undesigned) institutions like the institutions of money, of private property, commercial law, crucially the private firm. Within the private productive organization that we refer to generically as the firm, capital combinations get made and changed against a backdrop of shared "ways of doing things" that serve to coordinate individual actions by harmonizing their expectations. (Lewin 1999, 214)

Successful planning requires monetary calculation with profit loss feedback. A given business or entrepreneurial plan implies a time structure of production for the individual enterprise—a pattern of inputs (capital goods, labor and natural resources or land) applied

at earlier dates followed by a pattern of outputs sold at later dates. Groupings of entrepreneurial plans imply a time structure of production for the economy as a whole made up of interconnected/complementary plans and competitive plans. Monetary calculation (forward looking capital valuation) and the continuous feedback from profits and losses prod entrepreneurs to continuously adjust plans toward the provision of goods and services most valued by consumers—toward solving the basic economic problem. Without market (money) prices, and especially market prices for the means of production, there can be no monetary calculation. Without private ownership of the means of production, there can be no markets for resources, no money prices for resources, and thus no monetary calculation and no capital. Without capital the economic problem is neither calculable nor solvable. Money and credit creation makes planning and calculation much more problematic.

A more detailed description of the processes underlying the boom will assist in understanding the nature of the bust. The following is a relatively brief description of the Austrian theory of the boom which is based on Garrison (2001, p. 33-58).What sets in motion the boom-bust cycle, is credit creation by the central bank. The central bank injects money into the economy through financial markets. This new money flows through the financial markets, leaving lenders with excess liquidity. They will seek to earn a return on this new money by extending loans, but to do this they must lower their price, that is the rate of interest they charge. As market rates of interest falls below the natural rate, firms are led to invest more and individuals to save less (and consume more). Thus is the boom set in motion. If the credit creation begins from a period of high employment, the economy temporarily moves *beyond* its production possibilities frontier. If this was the only effect, there would not be much cause for concern. Barring the case of accelerating money growth (which would end in hyperinflation), the boom would slow to an end as inflationary expectations caught up with the inflation. The only other item of concern would be Cantillon distribution effects: the allocation of resources would be shaped by the short-run non-neutrality of money. If this was the entirety of the matter, there would be reason to believe that the boom would end in a “soft landing” as the distortions introduced by money expansion corrected themselves, leaving the economy essentially where it started.

To understand why that does not happen, we must return to the issue of time preferences and the role of interest rates as transmitters of information. Lower interest rates not only communicate to firms that they should invest more, but that they should invest in a different *structure of production*. If the interest rate had declined due to a shift in the preferences of savers, it would indicate that people had become more future-oriented, and were willing to sacrifice more current consumption to finance more time-consuming and longer production processes. This more capital-intensive production structure would then be able to satisfy that greater demand for future consumption. But with a credit expansion relative reduction in the interest rate, producers are attempting to lengthen the production structure while consumers are attempting to shorten it. Long-term investment is booming at the same time as demand is growing for final consumption. Available resources are not sufficient to sustain both processes—individual business plans made in response to the interest rate change and the new pattern of consumer spending set up the problem of the 'dueling production structures' (Cochran 2001, 19). Thus the expansion in the money supply brings about *unsustainable growth*, characterized by a pattern of over consumption and over investment accompanied by *malinvestment*, investment inconsistent with consumers' time preferences. The concept of malinvestment illustrates how this credit-driven boom has extremely limited potential for a "soft landing", as the economy is developing a structure of production that is inconsistent not only with preferences but with itself. The transition from boom to bust begins as the plan inconsistencies become apparent either through bank induced reductions in money and credit expansion and rising interest rates or through changing relative prices and relative scarcities.

As long as the central bank continues to increase the money supply at an accelerating rate, the structure of production will continue to be stretched at both ends. But this too is unsustainable, as hyperinflation is the inevitable consequence of accelerating money growth. At some point, inflationary worries will lead the monetary authority to slow the rate of money growth, which in turn will lead to rising interest rates. Investment projects including those in startup firms whose profitability (or eventual profitability) was predicated on low interest rates start "feeling the crunch" as increasingly expensive credit erodes their margins. Also at this time booming demand

for consumer goods leads to rising input costs as the early and late stages of production bid against each other for scarce real resources. Furthermore, because these business plans were also predicated on an assumption (incorrect) of a pattern of future demand, it is likely that demand for the goods these firms in the new earlier stages of production are producing will fail to materialize. As interest rates and input prices rise while demand fails to meet expectations, firms and projects begin to fail; the recession begins. As firms reduce costs or go bankrupt, they adjust their plans to current conditions and cease or cut back production. These adjustments account for much of the observed decline in real GDP, industrial production and employment. Clusters of business failures and declining profits drive stocks into a free-fall.

In summary whenever economic growth is augmented by credit creation, a clear crisis will eventually develop in the economy, because of inconsistent production plans. Those attempting to lengthen the structure find that demand does not materialize in the necessary later stages as those attempting to shorten the structure (those responding to rising consumer demand) demand a different capital/resource mix than the mix being provided by the developing longer structure. In addition to a slack demand in some sectors, input prices are likely to increase due to the increased competition from early stages. Malinvestment becomes apparent as some businesses are caught in this squeeze between a slack demand for output and higher input prices. Plans cannot be completed as anticipated. Production may be cut back or discontinued altogether. During this correction phase, resources are released for other potential uses. However, those businesses attempting to respond directly to higher consumer demand may find their plans thwarted by a lack of needed complementary resources. Labor released from the declining early stages may not be easily absorbed into the expanding later stages of production as the necessary complementary capital goods may not be readily available, if, as is likely, some of the capital goods created during the boom are not immediately useful in the expanding industries. Thus starts the process of readjustment that eventually results in “recovery”.

What is a recovery?

Conceptually, the process of recovery starts at the same exact moment as the recession (inasmuch as either has a true starting moment at all). In fact, if all resources

were perfectly homogenous and all prices, wages, and interest rates perfectly flexible the recession/recovery process would be a quick and practically painless—as resources are released from declining activities they are immediately absorbed into expanding industries. But the decline that we call "recession" is simply the symptom of the first phase of the readjustment process, which begins with the realization of errors committed under the illusions projected by easy credit. Rising interest rates, investors demanding to see profits as well as growth, increasing resource scarcities, and rising demand for lower-order goods all signal to firms that over-expanded or whose very existence rests on easy credit, that they are overextended and losses are coming. These firms' managers enter a "panic" phase, wherein the looming realities of the market begin to show them their own non-viability. As the recession begins, firms that are obviously unprofitable are liquidated, and sounder firms reorganize and re-evaluate, desperately trying to optimize prices and inventories, and to cut costs, usually by reducing their payrolls.

These error realization processes occurring internal to the firm often operate in a feedback loop with the stock market. Internal panics trigger stockholder panics and vice-versa. During the bust times, a collapse in asset prices is to be expected. The prices of stocks will be systematically excessive for some combination of two main reasons. The first is over-valuation owing to the distorted perceptions induced by the credit expansion. Firms and projects which, under market rates of interest accurately representing time preferences, would have been seen as excessively risk or simply foolhardy were perceived as being viable, even super-profitable ventures. The second reason is asset price inflation. Monetary expansion puts inflationary pressure on prices, as more demand tries to be financed by the same pool of real resources, but this pressure isn't always felt by all prices. Fantastic returns on equity investments, particularly compared to the low returns generally available under depressed interest rates, may draw excess monetary demand into the stock market, pushing prices up further. We can then identify two basic possibilities for the magnitude of the stock "crash". If the inflationary pressure of the original monetary expansion resulted in a general rise in prices, the stock slump should be relatively mild, simply reflecting the market's realization that firms were over-valued. But if the economy also experienced asset price inflation with little or no commodity price inflation, the stock correction ought to be quite severe, as the prices of stocks fall to

reflect not only more realistic valuations of firms but also drastically lower demand for stocks. Supra-normal demand for equity investments was propped up by easy credit and spurred on by its effects, now demand has declined by that excess amount plus a panic discount, as investors who would otherwise have kept their money in stocks pull it out due to an increased in perceived risk. Once the period of heightened risk accompanying mass liquidation passes, investors will begin to see that stocks are now undervalued, and buy in again. This post-panic resurgence of equity investment will be a signal that the readjustment process is essentially complete, and normal economic growth is resuming.

As firms liquidate and contract, an excess of non-optimal capital is revealed. Firms have invested in various forms of plant and equipment the true value of which, in terms of their capacity to produce goods that fit the pattern of consumer preferences, is now realized to be much less than expected. Another aspect of recovery consists in reallocating this capital to more productive uses, and one dimension of the losses of a recession is the extent to which resources have been wasted on capital that has a high or full opportunity cost, that is plant and equipment that has low or zero value second-best uses. Some capital goods, such as computers and office buildings, have myriad alternative uses and well developed secondary markets, and should end up in the hands of productive owners rapidly and with low transaction costs. On the other hand, there are other capital goods such as factories, mining facilities, custom dies and molds, and embedded software that have few or no alternative uses or inefficient secondary markets, and may languish unused for some time, be auctioned off for pennies, or even be scrapped or abandoned. And of course, there is an infinitely varied spectrum between these extremes. The fact that this process of reallocation consumes time and resources is one of the chief reasons that the period of recession and recovery takes on a significant time dimension.

Another reason that the bust period lasts a considerable length of time is the process of reallocating labor. The reallocation of labor develops in much the same fashion as the reallocation of capital. Firms realize they have employed labor in a pattern inconsistent with consumer preferences, and this labor is then liquidated (i.e.: workers are laid off). It must be remembered that labor has specificity just like capital does, and it likely will not do to offer workers pay cuts when the type of labor services those workers

provide is realized to be wholly inappropriate (viz. consumer preferences). It may also be true that for a variety of reasons – official dating of the recession not being pronounced for several months, persistent optimism of commentators and analysts, jawboning by the Federal Reserve, the fact that error realization is a process and not an event – that workers would even refuse such pay cuts, and quit under the belief that they could find a position elsewhere at their current pay. Unfortunately for workers, it is difficult for the economy to reallocate labor until it has already reallocated capital. That is, though firms are realizing their errors and adjusting production plans to once again coincide with consumer preferences, labor employment in sectors towards which activity is being directed is not likely to be strong until the necessary capital is in place to complement it. Conventional theories which ignore the specificity of capital and labor predict either that there should be a decline in pay but not available jobs, or that the lack of jobs is caused by the unwillingness of workers to accept lower pay. Taking into account the heterogeneity of the resource base, we see that the jobs workers want simply do not yet exist at any rate of pay.

But neither capital nor labor can be reallocated until firms and entrepreneurs shed their easy credit-induced illusions and begin to correctly perceive the pattern of consumer preferences. The process of capital liquidation that proceeds during the bust not only drives the reallocation of capital resources, it sends powerful signals to entrepreneurs. Those who undertook projects that are now being liquidated are being signaled that their forecasts were wrong, and that the resources they employed have better uses in other hands. Current entrepreneurs considering or planning projects are signaled which sectors not to go into (because too much capital is already invested there) and what risk level is really acceptable (by new interest rate patterns that are making past projects unprofitable). Most importantly, they are being reminded that the economy will not tolerate loss-earning ventures indefinitely.

None of this is to say that the readjustment process is simple and automatic. The readjustment of bust times, like all economic processes, is an emergent phenomenon resulting from the net effects of the decisions made by every economic actor. In order for the savings & investment market to re-equilibrate, individuals must respond to rising interest rates by saving more, and businesses by investing less (and in a shorter structure

of production). On the other hand if businesses decrease investment by too much, recovery will be delayed. Unemployed workers must cease holding out for work in their old field at their old pay; the positions and pay rates that arose from the boom are not coming back. Investors in the stock market must return to sane expectations regarding the pricing of new and risky ventures, especially ones that experience rapid growth with no profits. In essence, the economy must return to being driven by undistorted market processes. Which begs the question, what are the effects of attempts at counter-cyclical policy efforts?

What about policy?

In an unfettered market economy, the processes of readjustment proceed without undue impediment. The natural incentive structure presented by a functioning market system leads individuals to pursue courses of action that will restore the economy to a relatively stable growth path consistent with preferences. However, we don't live in an unfettered market economy. Real economies are subject to the influence of a variety of policy tools, each of which may help or hinder the readjustment process. The question then becomes, of the standard policy "solutions" to a recession, what helps and what hurts, and are there any unexplored alternatives?

The first item that commands our attention is monetary policy, because it is the favored policy tool of recent years and is the chief means by which the current (recent?) recession is being combated. Typically, the height of the cycle is coincident with moderate and rising interest rates. It is these higher rates of course that spurred the error realization process that triggered the recession. If these rates persist, particularly if they by luck approximate "natural" rates (i.e.: rates consistent with time preferences), they will aid the readjustment process by disciplining entrepreneurs. But what would happen if the central bank were to rapidly cut rates in response to the emergence of recession? Conventional macro theory, which holds that recessions arise from falling demand, would conclude that such an aggressive response from monetary policy could do a great deal of good. By stimulating investment and consumer durables spending, an under-consumption recession could be mitigated. We have already established, however, that malinvestment brought on by distorted interest rates planted the seeds of the crisis in the first place. Therefore, if the monetary authority quickly resumes rapid money supply

growth in pursuit of lower interest rates, it may succeed in stemming the tide of recession but in so doing it halts the processes of readjustment.

The issue is more complicated than is suggested at first glance. One might guess that resuming credit expansion would simply result in a continuance of the unsustainable growth pattern that emerged from the boom proper. But to conclude this would be to forget that some of the different readjustment processes proceed sequentially rather than in parallel. If credit expansion is resumed at the first signs of recession, it is likely that the original unsustainable pattern would simply continue. But if significant liquidation has already begun, then some errors have been realized and a resumption of credit expansion may have strange consequences. The progression of a downturn is likely to impact business optimism, so firms may be reluctant to resume investing in new capital despite falling interest rates. If the downturn has put a dent in consumer spending, this effect will be further exaggerated. Businessmen and consumers may be yet more reluctant to invest and spend if they perceive that the central bank won't keep interest rates stable, or worse, that it doesn't have a plan at all or anything resembling "control" of the situation. If the monetary authority recommences growing the money supply later in the downturn, after most malinvestments have been liquidated but before the pattern of investment has significantly begun to match the pattern of preferences, the results are likely to be a mix of these two cases. Parts of the economy will remain cautious due to heightened uncertainty, while other parts will begin along a new unsustainable growth path.

Another often-tried medicine for recession is deficit-financed increases in government spending. Though this is a popular solution with many cheerleaders, casting our discussion in terms of a macroeconomics that considers time and capital provides a prima facie case that it will not work. As mentioned earlier, suggesting deficit spending as a countermeasure for economic malaise rests on the assumption that the problem is insufficient demand, economic activity has declined in response to underconsumption or insufficient aggregate demand. To accept this assumption is to confuse the symptom with the cause. It is true that businesses have closed and workers become unemployed because they could not find sufficient buyers for their produce. But this state of affairs is in turn due to the fact that that produce was inconsistent with consumer preferences.

Simply put, firms eventually encountered insufficient demand because they were led by monetary distortions to produce goods that consumers didn't want enough to pay a profitable price for. As a corollary, the workers employed in producing those unwanted/un-saleable goods will find their labor services now un-saleable as well, resulting in their unemployment. The underlying problem is essentially a distortion in the pattern of relative prices (Hayek 1979, p. 8). It is clear then that propping up consumption through deficit spending does not address the true problem – resource misallocation – and may indeed make it worse. After all, government spending is not subject to market discipline. A government pressured to spend the economy out of recession is not likely to pay much heed to cost/benefit analyses, leaving taxpayers and bond buyers footing the bill for glorified ditch-digging projects (Powell 2002, p. 39-40). Furthermore, deficit spending crowds out private savings and investment and substitutes for them wasteful consumption. This shifts the savings/consumption mix towards consumption, the opposite of the needed adjustment, thereby prolonging the recession and inhibiting the recovery (Rothbard 2000 [1982], p. 20).

In the same vein as deficit spending is a policy of tax cuts. Interestingly, this may be an effective policy, in a case of being right for the wrong reasons. Here again the assumption is that the problem is insufficient demand, and "putting more money in people's pockets" by reducing tax rates or creating special tax credits will remedy that problem by stimulating consumption spending. That stimulus is likely to occur, but as above this is a non-solution because the problem has been misidentified. Additional spending resulting from tax cuts, like deficit spending, will not do anything to correct the pattern of malinvestment that brought about the recession in the first place. However, if the tax cut is structured to encourage savings, investment, and production, it may help speed up the recovery process. It should be realized though that such a tax cut has the potential to increase growth no matter what stage of the business cycle greets its arrival. It's also important to acknowledge that if the tax cut is not accompanied by a corresponding spending cut, possible negative effects of government deficits may erase the cuts' positive direct effects. The safest and most effective plan then would be to cut spending alongside taxes, freeing more resources for use by the private sector without conjuring the specter of deficits.

Conclusions & Prescriptions

The ultimate question is, as always, "so what?" What practical conclusions can we draw from this exposition of the nature of boom, bust, and recovery? Chiefly, we see that blame for the recession, indeed for the entirety of the business cycle phenomenon itself, lies with the policy makers of the central bank. When they undertake a credit expansion they set in motion the boom, but also inevitably the bust as well.

We also see that there is no scope for monetary policy to help the economy out of a recession, since it was that same policy that brought the economy to recession in the first place, and the further application of which will do no more good (and likely more harm) during a downturn than it can during an expansion. Such a "re-inflation" prevents necessary corrections within the economy, potentially making the contraction less severe but prolonging it. The persistent recessionary state of the Japanese economy during the 1990's provides strong evidence for these ideas. Japan experienced a credit-driven boom in the late 80's, which began to collapse in 1990 when the Bank of Japan halted credit expansion (Powell 2002, p. 42-3). In attempts to pull Japan out of the recession, "The [Bank of Japan] has tried to re-inflate, which has only further distorted the interest-rate price signals, slowing the market's ability to correct." (Ibid., p. 45). The ongoing experiences of Japan and the United States with money-driven booms, the resulting busts, and various policy attempts could be considered textbook cases of "Austrian" business cycles.

Nor is fiscal policy likely to do much good. Increases in government spending stimulate consumption without addressing the true problem of malinvestment, and hinder the adjustment process by shifting the savings/consumption mix in the wrong direction. Such spending sprees also often give rise to deficits, with their attendant higher future taxes and/or inflation. Tax cuts are helpful to the extent that they stimulate savings & investment and reduce the role of government in the economy, but implementing them as a means to stimulate consumption is a wrongheaded approach. In addition to the structural ineffectiveness of fiscal solutions, the fact that their design and implementation are driven by pure politics nearly guarantees that such policies will not be economically sound.

Though these conclusions are the most practical, there are others that are more fundamental. Concerning normative judgments about the phases of the cycle, a period of booming economic activity is typically considered "good" while the downturn/recession/bust is "bad". Clearly, by the standards of efficiency and stability these are poor judgments. The increases in both production and consumption were inconsistent with consumer preferences. By an efficiency ethic, they are equivalent to increases in production brought about by trade barriers or increases in consumption brought about by transfer payments. Furthermore, these temporary gains come at the cost of inevitable crisis and contraction. Indeed, insofar as it is the boom times that play host to the plague of malinvestment, and the bust times that bring readjustment and reintroduce sustainable growth, the standard normative judgment is the nearly completely backwards: it is the boom that is "bad", and insofar as the boom is already a given it is the bust that is "good". We can also conclude that placing the money supply under the control of a central bank is not nearly so good an idea, again by the standards of efficiency and stability, as is often thought. It is argued that a central bank brings stability and promotes growth. But we have shown here that the central bank in fact is the economy's main *de*-stabilizing force and that the growth that it promotes is inefficient and unsustainable.

These conclusions then form the basis of a general direction for policy reform. In light of the revelation that the policy actions of the central bank are the causes of instability, the proper policy for the bank to assume is one of *inaction*. Taking the particular case of the Federal Reserve as representative, a central bank has 3 policy tools: setting required reserve ratios, setting the discount rate, and conducting open market operations. It has long been understood that altering the RRR's is too drastic a tool to be of much practical use, so they can safely be ignored by this discussion. The main object of concern is the conduct of OMO's. The solution made obvious by this theory is simple: halt all OMO's permanently. No more purchases or sales of treasury securities should be conducted. Murray Rothbard reached this same conclusion from his study of business cycles, and in particular the Great Depression (2000 , p. *xxi-xxii*). This will set the magnitude of the monetary base at an essentially constant level. The federal funds rate, indeed all rates of interest, would be determined in the market like any other price. The

only minor sticking point then is the discount rate, which could still potentially be used to futz with the money supply. There are a number of potential solutions, such as doing away with the discount window altogether, or automatically setting the discount rate to the prevailing federal funds rate. At any rate, once open market operations have ceased, the central bank is not likely to be able to wield much influence through the discount rate alone, so its particulars are relatively unimportant to this discussion. What really matters is the abolition of activist (not just discretionary!) monetary policy. There is a strong case for believing this would put a systematic end to cyclical fluctuations and unsustainable growth patterns.

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