

OUR CLASSICAL MACRO HERITAGE

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ABSTRACT: The great recession that lingered after the meltdown of 2007–2009 brought macroeconomic theory into disrepute. Although the profession’s fascination with macro models deserves criticism, the fundamental evolutionary principles of macroeconomics remain sound. This paper briefly addresses the key shortcoming in the world of macro modeling, but its main purpose is to recount, from a history-of-thought perspective, the reasoning behind the heart and soul of macroeconomic theory, which rests largely on the insights that have evolved on the impact of hoarded savings, the distinction between nominal credit and real credit, and full-employment restoration problems after a contractionary shock. A secondary purpose of the paper is to note (but not explore deeply) that our most recent recession was not a product of a decline in aggregate demand caused by traditional Keynesian factors, but rather was instigated by a purely micro factor internal to the commercial banking system.

KEYWORDS: history of economic thought, general equilibrium, disequilibrium, consumption, savings, financial markets, Keynes, business fluctuations, central banking policy, banking

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Errors of fact or logic are mine alone. The ideas herein came to mind while preparing a book-length manuscript on the post-2007 macro events; it is entitled *Vortex of Moral Hazard: The Meltdown’s Brewing Cauldron*. Submissions to publishers are pending.

INTRODUCTION: THE KEYNESIAN TRANSFORMATION

The last few years have not been kind to the public reputation of economists (Oster, 2011, p. 719).

During the 1930s John Maynard Keynes wrote a book which he believed would, within a decade, “largely revolutionize... the way the world thinks...” (Keynes, in DeLong, 2002, p. 157). And it did. Keynes thereby became “the founder of the half-science, half-witchcraft discipline of macroeconomics”; moreover, his “arguments and theories still shape how we think about the determinants of production, unemployment, and inflation” (DeLong, 2002, p. 155). And, lest we forget, Keynes ardently believed that his research project was highly pro-capitalist, not anti-capitalist. Although he called for “a large extension” of the role of the State—whenever necessary to ensure sufficient investment to maintain full employment (1936, pp. 378–381)—he saw this not as poisonous to a free-enterprise economy, but rather as a tonic that was needed to save the only economic system that protected “individualism,” “the advantages of decentralization[,] and the play of self-interest” (1936, p. 380), all of which he prized because they jointly comprised “the goose that lays the golden eggs,” namely, personal autonomy and social prosperity. Hence this was a goose which in 1930 he had warned his countrymen “not to starve” (Keynes, 1971, p. 12). Furthermore, Keynes viewed the idea of fairness not through Rawlsian lenses (a theory of redress for unequal outcomes), but rather through “Burkean (or Hayekian)” lenses; that is, he interpreted justice as did the Scottish-Enlightenment writers, as procedural consistency or impartiality (Smith, 1982, p. 83), specifically, an

absence in law or policy of “artificial discrimination in regard to individuals or to classes.” It is primarily in this sense that Keynes deploys the term “social justice” in his mature writings (Skidelsky, p. 62; the quotes are from Keynes).

Keynes likewise employed Hayekian language to praise the advantages of unfettered, dollar-vote-driven decisions on “what...is produced,” how “to produce it,” and to whom it “will be distributed” (1936: 379). Despite the expansions in government spending he envisioned as occurring when “effective demand is deficient” (1936:

380), he did not worry about the possibility of death over time from a thousand paper cuts. Rather, he believed that the broadly-free aspects of a market economy will remain robust, providing

the best safeguard of the variety of life which emerges precisely from [an] extended field of personal choice, ...the loss of which is the greatest of all the losses of the homogeneous or totalitarian state. [Market-assured] variety preserves the traditions which embody the most secure and successful choices of former generations; it colours the present with the diversification of its fancy; and, being the handmaid of experiment as well as of tradition and of fancy, it is the most powerful instrument to better the future (1936, p. 380).

A decade later Keynes reaffirmed this perspective in an article published posthumously:

I find myself moved, not for the first time, to remind contemporary economists that the classical teaching embodied some permanent truths of great significance, which we are liable today to overlook because we associate them with other doctrines which we cannot now accept without much qualification. There are in these [classical] matters deep undercurrents at work, natural forces, one can call them, or even the invisible hand, which are operating [salubriously for society]. If it were not so, we could not have got on even so well as we have for many decades past....

...[We must] use what we have learnt from modern experiences and modern analysis, not to defeat, but to implement the wisdom of Adam Smith (Keynes, 1946, pp. 185, 186).

I have recounted this sometimes-unfamiliar side of Keynes's writings to neutralize any preconceived bias that may have existed against Keynes as a supposed opponent of market institutions. Whatever objections one may have to Keynes's technical prescriptions, they can be comfortably divorced from any apprehensions one may have had about his sociopolitical philosophy, for in general he was certainly not unfriendly to the sociology of market-based outcomes. We shall now proceed to Keynes's interpretation of the past and his recommendations for the future, which will be interspersed at relevant points throughout the first two-thirds of this article.

As a result of the legacy of Keynes's *General Theory*, changes in *aggregates* became the key to understanding macroeconomic health. The profession's wide acceptance of this analytical framework is

what had prompted Milton Friedman's 1965 comment, miscontextualized in a *Time* magazine quote, that "We're all Keynesians now" (Wapshott, 2011, p. 217; and Barro, 2007, p. 131). Within a Keynesian mindset, subcomponents of the economy were perceived as independent microeconomic variables that could *not* set in motion systemic forces capable of overturning the entire apple cart. As long as the *total* of all investment, consumption, etc., showed no signs of suffering a downturn, our models issued no alarms (Higgs, 2012, p. A11).

NON-KEYNESIAN CONTRACTION

Prior to the meltdown there had been no signs of a Keynesian, recession-inducing rise in uninvested savings, that is, no appearance of a gap between total savings (S_T) and the intentional (direct) subcomponent of total investment (I_T), a gap traditionally evidenced by an unwelcome accumulation of inventories, the recessionary escape outlet for satisfying the $S_T = I_T$ accounting condition, an identity that "must be fulfilled," and, despite its tautological nature, " [should] not be scorned" (Leijonhufvud: 63; also see Keynes, 1936, pp. 61–65). Consequently, most economists were "completely surprised" by the Great Recession of 2007–2009:

Up until then we had concentrated on macro-economics with a capital M.... Few foresaw the central role the housing market and mortgage securities would play in the crash (Geanakpolos *et al.*, 2012, p. 53).

Of course, Manhattan's investment banks¹ did attempt to manage their own exposure to danger, but they relied on models

¹ The investment banks on Wall Street assist the launching of new firms through first-time stock-share offerings. They also facilitate borrowing from the general public by corporations and other large organizations by brokering their bonds. But they do not accept deposits or make loans, as do the commercial banks of so-called Main Street (Kohn, 1991, pp. 46, 493–494). In the 1990s investment banks became active in the indirect reselling of home loans purchased from lenders. This they accomplished by bundling the growing volume of subprime mortgages into mortgage-collateralized mega securities, which were purchased not only by pension funds, but also by banks to hold as part of the latter's required equity reserves, also known as the capital reserve, the ratio of which (to loans) is determined by an international protocol known as the Basel Accord. The first mortgage-backed security was created in 1970 by a subdivision of Fannie Mae (Kolb, 2011, p. 19).

that merely “gave the appearance of... control of risk,” which led to “risk-management hubris” (Kolb, 2011, pp. 227, 234, 237). Those who employed the sophisticated computer models commissioned by Wall Street were afflicted by the common illusion that the word quantitative ensures objectivity and hence somehow also infallibility (Byers, 2011, pp. 61–62, as recounted in Borders, 2011, p. 13). Such behavior brings to mind Keynes’s rebuke of those “whose common sense has been insufficient to check their faulty logic,” yielding “disastrous” results (Keynes, 1936, p. 349). More generally on the same theme, MIT’s Ricardo Caballero has reminded us that the policy-making usefulness of nearly all modern macro modeling suffers from the Hayekian “pretense-of-knowledge” problem (Caballero, 2010, pp. 85–87), the malignant effects of which are magnified by the futile quest for certainty, for which all “[h]uman beings have a basic need” (Byers, 2011, p. 59).

The prosperity of the pre-meltdown period, 1992–2007, “a golden age” (Goodhart, 2010a, p. 55), reinforced our approach to macro modeling. Hence we dropped our guard completely with respect to the likely GDP threat from a massive suspension of trading on any particular financial instrument, such as deceptively-rated subprime mortgage securities or woefully undercapitalized derivative insurance contracts on same—undercapitalized *because* the securities against which they were issued had been highly overrated by evaluators who were afflicted with State-policy-injected moral hazard, which induced them to accept, without resistance, the unrealistic projections by Wall Street’s influential whiz kids of a very low default rate among the growing number of subprime mortgagees.

Non-quantitative analytical warnings had always existed in the sidestreams of economics (see, e.g., Desai, 2010, pp. 62–66, and the analysis of Minsky,² both mentioned in Goodhart, 2010a, pp.

² The thesis put forward separately by Hyman Minsky and Irving Fisher, concerning the macro-depressive impact of a heavy and expanding level of aggregate debt, has gained renewed attention in light of the realistic spectre of the ants-vs.-grasshopper problem of Aesop’s Fables fame (see Lawrence, 1997, p. 23). In generous welfare-state economies, the growing number of grasshoppers (wards of the State) is creating a federal-deficit situation that is uncorrectable and hence unsustainable without imposing a suffocating level of taxation on the ants. (See Fisher, 1933, pp. 337–357; Keen, 1995, pp. 607–635; Scarborough and Sachs, 2013, p. A15.)

55–56); however, the esteem³ of “a bad but rigorous [mathematical] model tends to beat a correct but literary exposition” (Goodhart, 2010a, p. 55). It is also noteworthy that more than a century ago a non-economist, one of the fathers of sociology, fully appreciated the vulnerability of a modern market economy, whose complex, interconnected web of exchange can come unhinged if a few key specialized threads are cut. In “highly evolved societies,” wrote Herbert Spencer, “general perturbation is caused by derangement of any portion”, because the “different functions [are] dependent on one another, so that injury to one hurts others” (Spencer, 1876, pp. 139–140; also see 45, 50, 54–55, 58, 123–124).

The prior “conceit” of financial economists (and macroeconomists) over the supposedly-scientific nature of their methods has produced “a terribly frustrating” state of reassessment (Lo: 173). Yet the hallowed perspective toward empirical techniques as predictors is not a new problem, nor is it unique to economists, as illustrated by novelist Fyodor Dostoevsky’s 1864 observation on the propensity of scientists (and philosophers) to reject whatever compelling commonsense instincts from experiential wisdom happen to contradict their model’s analytical conclusions: “[M]an has such a predilection for [numerical] systems...that he is ready to distort the truth intentionally”; that is, “he is ready to deny the evidence of his senses only to justify his logic” (Dostoevsky: 198, 200, 203). In other words, as one contemporary mathematician has quipped, “We create models of reality and then insist that the models *are* reality” (Byers: 59). The apprehension of Dostoevsky and Byers is shared by Professor Caballero:

What... concern[s] me about my discipline is that its current [macro] core—by which I mainly mean the [idealized mathematical modeling] approach—has become so mesmerized with its own internal logic that

³ “The math-econ [members of the econ tribe have acquired, perhaps undeservedly,] the ‘priest’ label..., but it is... easy to understand why the early travelers came to regard them in this way.... [They] make exquisite modls finely carved from bones of walrus. Specimens made by their best masters—[especially] the crudely carved totems of the Macro—are judged unequaled in both workmanship and raw material by unanimous Econographic opinion. If some of these are ‘useful’—and even Econ testimony is divided on this point—it is clear that this is purely coincidental in the motivation of their manufacture.” (Agglomerated from Leijonhufvud, 1973, p. 327 and 333–334, including fn. 7; “modls” in the original.)

it has begun to confuse the precision it has achieved about its own [mathematical] world with the precision that it has about the real one... (Caballero, 2010, p. 85).

A perfect example of that to which Prof. Caballero is referring is the mainstream's treatment of bubbles. Critics of a market system are dismissive, "[c]haractering [such] asset price fluctuations as reflecting irrationality"—David Hume's animal spirits gone haywire—but this, says Prof. Stephen LeRoy of U.C. Santa Barbara, "amounts to agreeing not to try to explain [them rigorously]." On the other hand,

Committing to the full neo-classical paradigm produces an argument against bubbles that, although logically air-tight, is simply not plausible. It is a testament to economists' capacity for abstraction that they have accepted without question that an intricate theoretical argument against bubbles has somehow migrated from the pages of *Econometrica* to the floor of the New York Stock Exchange (LeRoy, 2004, p. 801).

Incidentally, the bubble comments of Prof. Eugene Fama to the *New Yorker* are instructive. He noted that it is easy to ascribe bubble behavior to a previously-favored asset whose price has just suffered a dramatic decline. In this sense, "most bubbles are [products of] twenty-twenty hindsight...." Naysayers, he said, are constantly warning that this or that asset is overpriced. "When they turn out to be right, we anoint them." But when they are wrong, "we ignore them" (Fama, in Henderson, 2013, p. A19).

The most recent scenario of model-induced blindness had enormous social costs. To wit, the unexpected *lack* of a high rate of foreclosure on subprime mortgages in the 1990s—due to the unprecedented ease of serial refinancing at successively easier terms⁴ (Edmiston, 2009, p. 51; Jarusilic, 2010, p. 8; Mian and Sufi, 2011, pp. 2132-2134)—tricked the modelers' mathematics into predicting low subprime default *as the norm* for these previously non-existent home loans, despite a long stream of contrary experience from mortgages granted to borderline-creditworthy borrowers insured by the Federal Housing Administration and the Veterans

⁴ Lower interest rates increase the capital intensity of nearly all output, including consumer goods via higher quality that otherwise would not be chosen (Johnson and Roberts, 1988, p. 105–115).

Administration (not to mention the model's failure to incorporate plain common sense, for 99 percent of the new subprimes were awarded to people who were downright *uncreditworthy*). The artificially-induced low subprime default rate was used to justify, first, the State's opening more widely the floodgates to the issuance by banks of initially-coerced, "affordable" mortgages to previously "underserved" (and totally unqualified) borrowers,⁵ and second, the bestowal by rating agencies of an undeserved AAA imprimatur to the hollow-value securities that were being collateralized with these toxic, newly created subprime home loans.

Called "liar loans" by insiders, these smelly mortgages were sanitized by being embodied within instruments that were compiled not only by prestigious Wall Street firms, but also in large volumes by Government Sponsored Enterprises Fannie Mae and Freddie Mac. The latter's Congressionally-authorized warranties were presumed by security buyers (and by the big-three rating agencies) to be implicitly backed by the U.S. Treasury, a supposition that turned out to be correct, despite explicit, early-on and repeated public denials by key Congressional promulgators of the subprime program. Incidentally, the massive issue of unregulated derivatives was not the root cause of the financial crisis. The *seminal source* of the meltdown was the plethora of *State-encouraged* subprime mortgages, period. The undercapitalized derivatives that followed (to either hedge or bet against subprime securities)⁶ were merely fruit of the poisoned tree. The underfunding by derivative suppliers is traceable to the AAA ratings that had been thoughtlessly assigned to subprime securities (based on the risk model's highly inaccurate forecast of low subprime mortgage failure). This entire process, which began with the Community Reinvestment Act of 1977, has been traced in a comprehensive, highly interdisciplinary fashion in

⁵ The pair of cunning, Orwellian "newspeak" adjectives in quotes were coined by unknown members of the politically-correct, victimology-oriented intelligentsia, who stood at the forefront among the supporters of Washington's subprime goals.

⁶ Security *owners* who purchased derivatives to insure their investments were hedging. *Non-owners* who bought derivatives were wagering (with confidence) that the debtor mortgagees *were* going to default, enabling lucrative payouts (to these security non-owners) from the derivative providers (*if* the latter held sufficient capital to back-up their counter bets: which they did not). For the speculative group, derivatives served as a long-term short sale.

my book-length examination of the meltdown (forthcoming). The bottom line for our purposes here, in brief, is that not until 2006 did many in the financial community finally come to realize that the triple-A ratings of subprime securities were unjustified. This led in 2007 to an accounting-standard markdown of the subprime component of commercial banks' equity reserves (distinct from their Fed-required cash reserve).⁷ The mark-to-market earthquake induced a compensatory selloff of banks' healthy equity-reserve items, on which untapped paper capital gains had existed. This sale was an attempt to capture these gains in order to apply them toward rebuilding their equity-capital reserves. However, the resultant massive simultaneous selling (by all banks) presented the spectre of the fallacy-of-composition dilemma,⁸ which ignited a meltdown of their *non*-subprime assets, thereby evaporating the hope of equity-reserve restoration. Consequently, banks were forced to curtail lending until more equity reserves could be accumulated (a protracted task), which contributed to the extended wimpiness of the recovery following the huge contraction that had been brought-on by the financial crisis.

This episode inflicted serious damage on the credibility of the entire body of knowledge known as macroeconomic theory. Unfortunately, the justifiable doubts which have arisen about modern modeling have been unfairly extended, in the layman's mind, to all macro-reasoned claims, an attitude that threatens to soil the profoundly valuable pre-1900 insights bestowed by the giants of our profession. Therefore, it will be therapeutic, especially in this post-meltdown period of gloomy skepticism, to reflect, in a non-partisan manner, on the evolutionary legacy of the time-tested macroeconomic principles which we still teach, without apology, in today's undergraduate courses. Specifically, this paper will examine, from a history-of-thought perspective, three central ideas: Say's Law, hoarding, and the meaning of the word credit. Since the first two of these are tied to the concept of demand, this is where we shall begin.

⁷ For more on the macroeconomic implications of this particular microeconomic phenomenon, see O'Driscoll, 2009, p. 9; Goodhart, *et al.*, 2012a, p. 74, 75; and the 82nd *Annual Report* of the Bank for International Settlements, which warned that "monetary policy... cannot solve underlying solvency problems" (Caruana, 2012, p. 34).

⁸ "The early bird gets the worm," says the proverb, but only if all the other birds sleep in.

PRELUDE: EFFECTIVE DEMAND

Although it was John Maynard Keynes who gave us the pivotally-important concept of aggregate demand (with its *fungible* components of spending by households, firms, government, and foreigners)—a concept which became the bedrock of macro reasoning—it was Adam Smith who fathered the notion of effective demand. In short, said Smith, firms will produce (within their capacities) whatever people want *and can afford to buy*, but firms will not produce that which people cannot afford and hence cannot buy. Smith did not, however, address the consequences of a situation in which people indicate, by suddenly withholding some of their spending power, that they simply no longer wish to continue purchasing at the same rate, usually due to a particular set of anxiety-laden circumstances that have arisen.

The market price... is regulated by... the quantity which is actually brought to market [jointly with] the demand of those who *are willing to pay* the natural [equilibrium] price.... Such people may be called the effectual demanders, and their demand the effectual demand, since it may be sufficient to effectuate the bringing of the commodity to market (Smith, 1937 [1776], p. 56; italics added).

In a nation with a balanced budget and a closed economy (thereby precluding leakages from either a fiscal surplus or a trade imbalance), aggregate demand will be sufficient to prevent cutbacks in production only if no one hoards cash. In this framework I am defining savings in the Keynesian sense, as *all* abstention: All disposable income that is not spent *by its recipients* (Keynes, 1936, pp. 61–65). Most savings are fertile because they are redirected to others through the credit system. The savings that are not made available for lending are sterile because they are being hoarded, either by those who earned the dollars or, more likely, by banks who elect not to lend them (in modern terms: to hold them at the Fed in their accounts of excess cash reserves). We will later discover that Smith unambiguously implied that none of society's saving is hoarded. This became the target of Keynes's wrath, a wrath which, we will soon learn, was unjustifiably extended to all classical writers.

John Stuart Mill, by way of contrast to Smith, defined savings in a more limited manner, namely, as *only* that part of income which,

though “not consumed by the person who saves it,” nonetheless does end up being consumed, *entirely*, by others, called borrowers. Hoards, therefore, were not classified as part of total savings by Mill, because they are being withdrawn from the financial recycling process. Hence Mill’s conception of saving is at odds with its treatment in modern national income accounting.

Hoards, said Mill, are “merely [held] for future use” (Keynes’s speculative demand for money), and thus, until spent or invested at some later date, are “not consumed at all” (from his *Principles*, in Kates, 1998, p. 70). Keynes added a further twist: He mischaracterized all *boosts* in saving as highly apt to be hoarded, a supposition that enabled his paradox of thrift, namely, a recession brought on by a decline in aggregate demand caused by a rise in hoarded savings. So in Keynes every additional dollar saved became a likely source of leakage *unmatched* by additional injections of investment (Ahiakpor, 1995, pp. 16–33). As Keynes put it,

there has been a chronic tendency throughout human history for the propensity to save to be stronger than the inducement to invest. [This] weakness...has been at all times the key to the [macro] economic problem (Keynes, 1936, pp. 347–348; also see 373).

Following a jump in savings, a deficiency in direct capital purchases caused by a shortfall in southeasterly movement along the investment-demand function (due, hypothetically, to a downwardly-resistant interest rate⁹) would produce credit-market disequilibrium, thereby yielding the Keynesian curse of savings greater than business outlays on plant and equipment, which in turn results in a contractionary, unplanned rise in reluctant “spending” on surprise inventory build-ups.

So if no factor had been at work to push the investment schedule rightward concomitantly with the presumed rightward shift in savings supply, Keynesian interest-rate stickiness can result in an aggregate quantity demanded ($C + I_i + G + X_p - M_p$) that is insufficient to purchase total output, where I_i is intentional (premeditated) investment. Global capital flows, for simplicity,

⁹ For helpful loanable-funds diagrams, see Makinen, 1975, p. 28 (Figures 5.1 and 5.2), plus 39–41.

are assumed here to be zero. Suffice it to say that when it comes to grappling with savings' role in maintaining (or enlarging) a production-possibilities frontier, versus pushing an economy back inside it, the contrasting portrayals in Mill and Keynes of the hoarded component of savings become pedagogically fruitful. On this point, Keynes scores highly; however, we will soon learn that Mill and several others of his era were well aware of the harmful macroeconomic consequences of a rise in hoarding. Therefore, the eminent Prof. Richard Posner—whose field is not macroeconomics and who thus will not be held accountable for misleading his readers—was mistaken in crediting Keynes with “[a]n important advance...over [his] classical [predecessors],” namely, his “recognition” that in times of rising uncertainty, “people want to *hold* [more] money,” thereby “slow[ing] the economic wheels...” (Posner, 2011, p. S38; italics added). One of Leijonhufvud's contributions was to warn us of “the analytical abuses of [the zero-hoarding assumption of] Say's Law *to which Keynes regarded everybody but himself addicted*” (Leijonhufvud, 1968, p. 280; italics added). In particular, “Keynes' statement [1936, p. 19] that ‘Nevertheless, [Say's Law] underlies the whole classical theory, which would collapse without it,’ is simply incomprehensible” (Leijonhufvud, 1968, p. 101).¹⁰

RECESSION PREVENTION

As we shall see shortly, I believe we can impute to Adam Smith the unwitting establishment of our now-central condition for precluding contractions, namely, that society's savings (all income not spent by its recipients) must be totally absorbed by the direct purchase of machinery, land, buildings, and *desired* inventories, the sum of which is known as intended investment, I_i . Unintended investment, I_u , is defined as any accumulation of *unwanted* inventories—excess to the needs of firms—whose rueful existence is due to production based on overly-optimistic projections of sales, described by J.S. Mill as entrepreneurial “miscalculation” (see Kates, 1998, p. 65).

¹⁰ The 1964 reprint of Keynes's *General Theory* did not contain a comma following “Nevertheless.”

Given $X_p = M_p$, $T = G$, and balanced (or absent) international capital flows, domestic equality between total savings and *intended* investment represents the only state of affairs wherein aggregate demand is large enough to fully purchase the aggregate quantity being supplied. In other words, the absence of hoarding *ensures* the absence of unintended investment (manifested as an unwanted stock of unsold goods). Of course, the $S_T = I_T$ accounting identity always holds, with $I_T = I_i + I_u$, and $I_u = 0$ as the hoped-for contraction preventer. If $\Delta(I_u) > 0$, a recession ensues, whereas if unwanted inventory *depletions* occur, causing $\Delta(I_u) < 0$, GDP expansion is spurred. Thus $I_u = 0$ yields the steady state.

The $S_T = I_i$ condition was implicitly ascribed as the norm in Smith by his postulating, unjustifiably, that *every* penny saved is lent and hence spent, which conflicts with the savings-channel vision underlying the paradox-of-thrift scenario. In short, the real-world macroeconomic scourge—namely, a rise in hoarding (i.e., a growth in *unlent* savings), which causes a decline in velocity¹¹ and hence a debilitating shortfall in aggregate demand (Mill, 1974 [1844], p. 72, in Kates, 1998, p. 64)—was conveniently assumed away in Smith’s analysis. Yet he provided no rationale for his zero-hoarding condition:

Whatever a person saves from his revenue he adds to his [nation’s] capital, and either employs it himself... or enables some other person to do so by lending to him... What is annually saved is as regularly consumed..., and *nearly in the same time too*; but it is consumed by a different set of people...[:] by laborers, manufacturers, and artificers... [as] food, clothing, and lodging, [via the funds borrowed by producers to pay their inputs]... (Smith, 1937 [1776], p. 321; italics added).

SAY’S LAW

A man who applies his labor to the... creation of utility of some sort cannot expect such a value to be appreciated and paid for unless other men have the means of purchasing it. Now, of what do these means consist? [:] Of [the income from selling *their*] products.... Which leads

¹¹ Curiously, Keynes advocated excluding cash hoards from the calculation of velocity (Keynes, 1930, pp. 20–22).

us to a conclusion that may at first sight appear paradoxical, namely, that it is [one's consumption motive that spurs one's] production, [the revenue from] which opens [his or her *effective*] demand for [others'] products (Say, 1836 [1803], p. 133, antiquarian commas deleted).

An anonymous referee for another journal severely criticized my inclusion of Say's Law as a key explanatory component of the macroeconomic problem as currently understood. He/she characterized Say's Law as a "worthless piece of economic dogma," adding that "the only way in which Say's Law has shaped the corpus of macro theory is by being comprehensively rejected by Keynes and everyone else to come since." Nevertheless, a modern-day disciple of Keynes recently conceded that "mainstream macroeconomics remains conflicted about the reintroduction of Say's Law" (Lance Taylor, in Epstein, p. 540), a statement that indirectly seems to concede that the New Classicals (Barro, Lucas, Sargent, etc.) have had an impact that is displeasing to those who, like the aforementioned anonymous referee, would prefer to throw Say's Law down George Orwell's knowledge-eradicating "memory hole" (from 1984).

Ironically, it was Keynes himself who was "primarily responsible" for the resurrection and heightened status of Say's Law. By attacking it, Keynes instigated a reassessment that ultimately propelled the pedagogical importance of its implications (Formaini, 2006, p. 4). Moreover, the reexamination enabled the profession to realize that Keynes had not appreciated that his leading predecessors, contrary to his indictments, did in fact possess a solid grasp of the insights flowing from Say's Law.

What Keynes rejected was not Say's logically-flawless claim that, in an implicitly barter world (or a money world with, *hypothetically*, zero hoarding), aggregate demand *must* always equal aggregate supply because the *prior* existence of a desire to consume is what motivates the need to produce one's specialized product (thereby ensuring a perpetuation of an initial level of full employment). What Keynes heaped scorn upon was the idea (in his suppositional mind) of an uncritical classical embrace, *as reality*, of the zero-hoarding assumption *itself* (that had indeed begun with Smith), from which followed, Keynes erroneously believed, a 150-year-long conclusion by all the successors of Smith and Say that "if people do not spend their money in one

way they will spend it in another" (Keynes, 1936, p. 20), which includes, Marshall had said, "spending" it indirectly through the use that will be made of savings by those who, inferred Keynes (incorrectly), *presumably* borrow *all* of same (based on a Marshall passage in Keynes (1936, p. 19).

Keynes objected to Marshall's presentation because it was, claimed Keynes (1936, p. 21), contaminated by Say's defective zero-hoarding logic, namely, that the *ex ante* equality of AD and AS will always prevail *ex post*. Consequently, Keynes asserted (wrongly) that the later classicals taught that all output *will be* sold; that is, no inventories will disappointedly appear to cause firms to unplug machines and lay off workers. Yet he concluded, correctly, that the zero-hoarding caveat is a modeling convenience that is "equivalent to the proposition that there is no obstacle to full employment" (Keynes, 1936, p. 26). I believe, therefore, that Keynes's treatment of the core of classical macro theory, while deficient, was not as deficient as some critics have suggested. (See, for example, Laidler, 2012, p. 96.) Keynes mistakenly ascribed to the successors of Smith and Say an elevation of the likelihood of the zero-hoarding condition from usual to always, an elevation that Keynes saw as unjustified and misleading. In his eyes, it was a convenient assumption that enabled them not to have to confront and account for recessionary unemployment, and he therefore severely criticized his predecessors and contemporaries (without warrant), creating an infamous red herring in the history of economic thought. In short, Keynes was motivated by his baseless belief that an absence of hoarding was a basic datum among a broad swath of classical and early neoclassical economists.

Viewing the history of thought through this lens makes the inclusion of Say's Law imperative in every treatment of macroeconomics. So to recap: Say continued the Smithian tradition, adding that people produce *only* so that they can either consume, or personally invest, or lend their savings to facilitate capital acquisitions by others.¹² Since the act of supplying is always (for

¹² For the very best explanation of Say's Law and its comprehensive, modern-day relevance to the markets for goods, bonds, and money, consult Beard (1981, pp. 63–64 and 69–74). Beard's well-organized, clearly written, fully integrated soup-to-nuts treatment is a pedagogical masterpiece on a still highly misunderstood subject.

the classicals) a vehicle for *purposely* enabling (effectualizing) an equal act of demanding, aggregate supply will be matched by an equal level of aggregate demand, thereby precluding a general advent of unwelcome inventory accumulations—but only if all consumption / investment intentions are carried out (Say, 1836 [1803], p. 133; also see Marshall, 1920 [1890], p. 710, as well as Clay's 1916 text excerpts in Kates, 1998, p. 104). This interpretation is endorsed in Leijonhufvud (1968, p. 84), who wrote that, due to the possibility of *precipitous* hoarding, "Say's Law," as an *ex post* descriptor of events, "is irrelevant to a monetary economy" (1968, p. 99), a fact of which the later classicals were fully aware. They did not expect Say's $AD = AS$ identity to always hold *ex post*. But they did affirm that it held *ex ante*. And the potential difference between the two was the key to explaining the good or ill of macroeconomic events.

The notion of an *ex-ante* macro demand deficiency, therefore, was characterized in Mill's *Principles* not only as a "chimerical supposition," but worse, as a "fatal misconception" (in Kates, 1998, pp. 67, 68). Mill had undoubtedly based his conclusion on the following logic: Since people do not earn money simply to burn it, they were resolved, during the design and initial execution stages of production, to spend/invest all their income from goods sales and/or labor. In addition, banks had originally planned to lend all their deposits (beyond their internally-established level of cash reserves). Consequently, aggregate demand and aggregate supply, *ex ante*, were *necessarily* equal. But the best laid spending plans of mice and men will be revised downward in response to new, worrisome information, causing end-state aggregate demand to shrink due to unplanned hoarding either by individuals or banks. A fear-motivated growth in excess reserves is the big danger, as occurred during the mid 1930s (Friedman and Schwartz, 1963, pp. 520–532), and again following the meltdown of 2007–2009 (Goodhart, 2010b, pp. F75–F77).

In such cases the equality between AD and AS that existed *ex ante* will falter *ex post*, spurring production cutbacks (reductions in aggregate supply) until the new, contracted AS is *again* equal to AD, but to an AD lessened by the appearance of hoarding, yielding, thereby, a new, inferior macroequilibrium that is characterized by lower national income and higher unemployment. This

is consistent with *The General Theory*: “[E]ffective demand, instead of having a unique equilibrium value, [has] an infinite range of values all equally admissible;” and with each will be associated an “indeterminate” level of equilibrium employment (Keynes, 1936, p. 26). Only one of these potential equilibrium levels of $AD = AS$ will generate the macroeconomic bliss point characterized by what is known as full employment combined with a stable CPI and sufficient net investment to sustain full employment and hopefully enable growth as well.

CLASSICAL AWARENESS

J.S. Mill “fully recognize[d] that recessions regularly¹³ occur” (Kates, 1998, p. 73), and for two distinct reasons. If an economy begins at full employment it will remain there only if, first, no discombobulating liquidity crisis arises due to an exogenous or endogenous shock, and if, second, most firms have correctly anticipated *the types* of goods and services that customers want, enabling a frictionless meshing of production and consumption. Serious coordination errors, said Mill and his numerous contemporaries, will effect a recession, but in such cases the downturn is not from a shortfall in total demand; rather, *these* lay-offs occurred because output was ill-suited to the otherwise sufficient volume of demand. (See the quotes from various classical writers in Kates, 1998, pp. 65–66, 76–77, 79–80, 84, 104–107, and 223–224.)

Say had not precisely addressed either of these two difficulties, but James Mill, five years after Say’s first French edition was published, did address the latter source of recessions, stressing that macroeconomic tranquility requires that the composition of GDP “should be adapted” to consumers’ preferences, a point that was reemphasized by his son, J.S. Mill. (See the quotes from both men in Kates, 1998, pp. 28, 65–66.) In this respect the elder Mill’s treatment, wrote Prof. Hollander, “stands far above that of Say” (in Kates, 1998, p. 28, fn. 17), a piece of praise with which I disagree, because it signals agreement with the idea that market economies frequently misread consumers’ dollar votes so badly that a subsequent adjustment is

¹³ But more irregularly than regularly, per the empirics in Reinhart and Rogoff (reviewed in Taylor, 2012, pp. 1092–1104).

seriously impaired. Yet my reservation over Hollander's conclusion in no way diminishes my esteem for the analytical prowess of the younger Mill. My admiration of the son is based on his assessment of the former of the two threats to macro stability, namely, the dilemma of a liquidity crisis, on which he was indeed brilliant. He explained that if people suddenly prefer to "possess money [more] than any other commodity," that is, if "money is collected in masses, and hoarded," then "commodities [will] become unsalable..." (Mill, 1974 [1844], p. 72, in Kates, 1998, p. 64). Leijonhufvud chided Keynes for not paying attention to all of Mill's analysis, for Mill had written that hoarding—"a dearth of money" due to an unanticipated decline in velocity—will cause "a glut of commodities" (J.S. Mill, in Leijonhufvud, 1968, p. 101, fn. 29).

Mill therefore explicitly recognized that an overstocked-inventory state of affairs can be caused, not by a failure in the assumptions about *ex ante* human motivation embodied in Say's Law, but rather by a sharp, unexpected change in people's desire to spend the receipts from the goods and labor they have recently supplied. In other words, people had not originally planned to hoard; they had implicitly intended that their total spending (plus their saving for borrowings by investors) would be equal to the total income from everyone's productions. In the recession scenario, however, all plans are altered in response to some unanticipated, desultory event (unspecified in Mill) that incites trepidation, making people become abnormally cash-hungry, causing the demand for goods and capital, across the board, to fall far below the supplies that are sitting on the shelves, the input payments for which *have already been disbursed* to those who are now clinging to part of same (Beard, 1981, pp. 67–72; also see Sowell, 1974, pp. 46–63). Of course, due to the quandary created by the fallacy-of-composition issue (McEachern, 1988, p. 14), *everyone* cannot increase the liquidity of their portfolios unless the central bank accommodatingly intervenes.¹⁴ So those

¹⁴ I use the term central bank loosely. In the mid 1800s the idea of a central bank in the modern sense, i.e., as being responsible for systematic anti-recessionary policy, was still largely only an idea. Yet our forefathers presciently recognized the need for central-bank responsiveness to a rise in hoarding (a decline in velocity). See, for example, the following: Sismondi, 1991 [1819], p. 262 and fn. 3 on p. 269; Scrope, in Blaug, 1991, p. 25; the policy recommendations of several circa-1840 British writers, in Mints, 1945, pp. 23, 55, 118–121, 191, 193–197; and Walter Bagehot's endorsement of the unusually flexible asset-purchase policy of the Bank of England during the

who are most intensely desirous of becoming more liquid must sell their physical assets—at depressed (meltdown) prices—to those who are obligingly willing to shoulder the growing risk of becoming less liquid, for which the latter group, known as speculators, will be vilified by the press and general public, who will wrongly accuse them of being the progenitors of the contraction.

Sharp declines in asset prices will be tempered but not totally obviated by central-bank intervention, because the central bank's emergency purchases will be carried out at various rates of discount, some heavy. Of course, the existential definition of a truly severe financial panic, as one writer explained in 1832, is a state of affairs wherein "nothing is liquid" (Mints, 1945, p. 196); therefore, the more intense the public's thirst for cash, the more compelling the case for central-bank buying to prevent macroeconomic paralysis.

Mill's predecessor, J.B. Say, saw the macroeconomy as Smith had seen it, namely, as a network of production and trade within which money was useful only as an exchange instrument; that is, since it was universally accepted, it enabled the acquisition of goods and services without barter. Money was not contemplated as an anxiety ameliorant. For Say, therefore, a "great glut of commodities in the market" could indeed occur, but *not* due to hoarding. From the instant a product is created, he wrote, the seller is "most anxious to sell it"; and, more importantly for our macro analysis, the seller is also "[equally] anxious to dispose of the money he... get[s] from it..." Therefore, the "creation of one product *immediately* opens a vent [a demand] for other products" (Say, 1836 [1803], pp. 134–135; italics added). So unwanted inventory accumulations in Say result only from an inability or unwillingness of the profit system—due primarily to governmental malpractice of some sort—to induce labor and capital to shift from areas of surplus to areas of relative scarcity. Coordination failures, according to Say, "must" be attributable to either

a political or natural convulsion [severe earthquakes] or the avarice or ignorance of authority.... No sooner is the cause of this political disease removed than the means of production feel a natural impulse [to

U.K.'s liquidity crisis of 1825, highlighted in Friedman and Schwartz, 1963, p. 395. Also see the Bank of England's responses to the panics of 1857 and 1866, in Bagehot, 2000 [1873], pp. 65–67, 69, 75–76, 78–79, 123, 128.

reallocate themselves], ...which restores activity to all [channels] (Say, 1836 [1803], p. 135).

The possibility that aggregate demand could decline, *ex post*, due to a change in plans *not* originating in a public-policy failure was never considered by Say. Yet to his credit he assumed, contrary to the rest of the classicals, that relatively frictionless *ex-post* amendatory reactions by firms (to their *ex ante* mistakes in forecasting demand) should be the presumptive norm, thereby precluding the attribution of recession to some type of purely market-based rigidity that supposedly suppresses, necessarily on a grand scale, the reallocations of capital and labor from overstocked sectors to ultra-high demand (yet relatively undeserved) areas, shifts that are needed to minimize the accumulation of unwanted inventories in the former and shortages in the latter. The successful execution of these types of harmonizations is *the* distinguishing feature of a regulatorily-unencumbered market economy, as typified by America's massive, surprisingly-smooth transformation from wartime production to peacetime production in 1945–1950 (accomplished without a recession). None of the classicals, except Say (tacitly), seemed to have appreciated this point, perhaps because the rest, located on the British isles, had witnessed Britain's pain due to the overflowing warehouses of unsold goods caused, not by entrepreneurial stupidity, but by the trade disruptions engineered by Napoleon during his wars of conquest to achieve European economic unification (Davis, 2006, pp. 128–133; and Schroeder, 1994, pp. 412–413).

It is as though Mill and his contemporaries had believed that an inexplicable suspension of the market's greatest attribute—its ability to quickly mesh inter-industry supply with unforeseen changes in *the pattern* of demand—was a plausible occasional explanation for recession; yet, unlike Say, they seemed to have given relatively short shrift to macro-systemic causes such as those linked to government failure (not market failure), such as any of the following metaphoric hypotheticals: a financial collapse brought on by widespread damage from antisocial conduct incentivized by State-induced moral hazards; or substantial capital obsolescence and division-of-labor losses caused by the unexpected erection of draconian tariffs or embargoes that severely shrink the extent of the market; or a more likely devil: old-fashioned monetary mismanagement leading to a run on banks.

To clarify the apparent analytical incognizance of the classicals to which I am pointing, consider the indented description below of a free market's inherent process of incessant error-correction, as ably formulated by Peter Boettke and Frederic Sautet (2011). As a comparative foil to the reasoning put forth by Boettke and Sautet, it is worthwhile to note that, for those whose livelihoods are earned as federal legislators, the fear of bankruptcy is highly mitigated by their heavy investment in financially-invulnerable political capital (instead of business capital). This fact, when combined with the very high reelection rate of Congressional incumbents, creates a moral hazard on Capitol Hill that inhibits even the concession of errors, much less their correction. Harmful public policies, therefore, are difficult to modify. In the private sector, on the other hand, the lure of 'obscenely' high dividends, combined with the dread of ruinous red ink (Hobbes's "fear of death"), prompt a never-ending search by top executives for get-well and do-better prescriptions, the success of which is ultimately constrained only by that subset of their ignorance which is irremediable as long as they themselves remain unaware¹⁵ of its existence (Boettke and Sautet, 2011, p. 12; see also the brief discussion of "known unknowns" versus "unknown unknowns," in Rousanov, 2012, p. 195). The eventual recognition and eradication of such blind spots on management's radars leads to the revelation of previously "unfathomed knowledge" (see Machovec, 1995, pp. 170–172). Hence the quest by firms to expand their horizons is ceaseless; moreover, it shifts into high gear whenever a disconcerting

discrepancy [arises] between the ex ante expectations set by the array of prices at the moment of decision, and [an] ex post realization of... loss [, putting] in motion the [entrepreneurial] discovery of better ways to arrange economic activities. These discoveries are made either by the original parties to the transaction or by new parties who enter the fray and bid resources away from the earlier actors. It is through the... constant adjustments of relative prices that economic coordination and continual learning occur (Boettke and Sautet, 2011, p. 6; also see Machovec, 1995, pp. 33–45, 82–83, 180).

¹⁵ "The problem with [so-called financial] experts is that they do not know what they do not know" (Taleb, 2010, p. 147).

BUMPY VS. SMOOTH P-P FRONTIER

It is impossible to have a perfectly seamless adjustment to *ex post* conditions that have diverged substantially from *ex ante* expectations, because capital is *not* homogeneous. Since much of capital is customized, i.e., designed to be situation-specific, it is not easily adaptable to other uses. This is the soft-putty vs. hardened-clay parable (Baumol, 1977, p. 641). Thus when production plans “prove inconsistent,” a new structure of capital comes into being, causing “old combinations [to] disintegrate”: “Every day the network of production plans is torn, every day it is mended anew.” Common sense tells us that, to the extent that capital is heterogeneous, some idled units lack the ability to serve as an adequate substitute for those highly dissimilar types that have unexpectedly come to be in short supply; therefore, “underutilized capital resources” will be an ineradicable characteristic of a non-static world (Lachmann, 1947, p. 13). And some capital will be rendered completely useless, a process characterized by Joseph Schumpeter as “creative destruction,” a term he coined in 1942 by drawing on the ideas—and direct semantics—of several classical writers. (See the evidence in Machovec, 1995, pp. 43, 46–49, plus Say, 1836 [1803], p. 139. For a philosopher’s defense of the premise that a Schumpeterian process is not immoral, see Ferré, 1996, pp. 18, 360.)

Since the classicals *originated* the concept of creative destruction, they certainly understood that capitalism generates perpetual apprehensiveness, precisely because its dynamics are inherently disruptive. “In this fact lies the ultimate reason,” wrote Ludwig Lachmann in 1947, for capitalism’s instability (a pejorative born of an attribute), and hence the general distaste associated with a market economy (Lachmann, 1947, p. 115), a distaste that is especially acute among members of “the hostile intellectual class” (Schumpeter, 1947 [1942], pp. 143–144, 152–155). And not only intellectuals. The market’s “[c]onstant revolutionizing of production,” causing “[a]ll that is solid [to] melt... into air” (Marx and Engels, 1985 [1848], p. 85), has consequences which personally dishearten every individual who attempts to seek solace by physically recapturing some of the joys of his or her past, a frustrating task that was poignantly described in 1934 by novelist Thomas Wolfe:

[T]he [social] womb from which we emerged... forever pulls us back—but you can't go home again.

...You can't go back home... to places in the country, ...away from all the strife and conflict of the world, back home... to the old forms and systems of things which once seemed everlasting but which are changing all the time—back home to the escapes of... Memory (Wolfe, 1942 [1934], p. 706).

That which “so many deplore and so few understand” is simply this: “[T]here can be no major change which leaves the existing structure... of capital” (and hence labor) “intact.” Brutally, inputs which totally lose their ability to provide utility must be retooled or they will be “discarded” and tossed onto society’s “scrap heap” (Lachmann, 1947, pp. 115, 117–118). Fortunately, men and women have displayed amazing resilience and flexibility in remaking themselves career-wise, *and* in finding ingenious ways to retrofit their capital and thereby extend its ability to serve human wants.

Nevertheless, “all unforeseen change throws our system into disequilibrium,” the reaction to which “entails more or less extensive regrouping,” whose accomplishment is far from instantaneous (Lachmann, 1947, pp. 112, 113). This state of affairs, however, does not merit labeling a market economy as unacceptably deficient. As Voltaire reminded us, “the best is the enemy of the good” (in Allen, 1935, p. 63). Too often, added Hume, we unjustifiably flagellate ourselves by measuring our performance against a humanly-unattainable exemplar (Hume, 1777 [1987], pp. 82–83). Since much capital has demonstrated itself to be surprisingly more soft-putty like than hardened-clay like, we should not allow ourselves “[to] be misled” by overly-pessimistic analyses whose emphasis on the capital-specificity issue causes us to “lose... sight of the capability of resources to [adapt and hence to] move to more profitable uses.” Auspiciously, for nearly three centuries this more-encouraging path has been “the fundamental equilibrating mechanism of the competitive process...” (Baumol, 1977, pp. 641–642).

Yet dismal, exceptional cases do materialize, and some have been extensive enough to have had deleterious macroeconomic consequences. Most recently, for example, the United States was faced for several years with a massive glut of malinvested

residential-housing capital that had been diverted, for politically-expedient motives, from other, more socially-salutary alternatives, by State incentives during the subprime mortgage experiment of 1992–2007 (Sowell, 2009, pp. 36–56; Kolb, 2011, pp. 151–159). These vacant homes and empty condominium units had virtually no other uses, especially in cities with zoning laws. This dragged out their absorption period, prolonging the economy’s post-meltdown sluggishness, which was worsened by the continued pessimism, anxiety, and negative wealth effects bred by the large real-estate overhang’s impact on the suppression of property values—to say nothing of the massive sunk costs, that is, the extensive superior opportunities foregone by society due to “the squandering of scarce [savings]” through 15 years of federally-induced misallocation into housing stock made ghostly by the foreclosures caused by the meltdown-bred recession. The resultant abandonment of homes provided a starkly apparent example of a situation that truly warranted the term “waste”, meaning a man-made product that yielded zero utility (Rothbard, 2004 [1962], p. 1004; and Garrison, 2001, pp. 81, 201). Or, more correctly, the outcome was worse than waste, for after accounting for the costs of repossession, plus the pernicious personal psychological costs of higher unemployment (exclusive of lost output), the net impact of the government’s so-called fair-lending initiative was one of enormous disutility to the intended beneficiaries as well as to everyone else.

HOARDING: THE FLY IN SAY’S OINTMENT (ONCE MORE, OVER LIGHTLY)

As J.S. Mill had noted in his essay on the unsettled questions of political economy, macroeconomic affairs don’t always turn out like we had expected. But if no one intends to throw their future earnings into the ocean, then, argued Mill (in support of Say), the *aggregate* demand for consumer goods and capital goods—a demand that was *planned* in year (t-1) for year t—*cannot* be less than the *target* aggregate supply, the source for providing demanders with their desired incomes, the production of which was organized in year (t-1) for execution in year t. In terms of Say’s Law, an identity exists: If we “double the supply of commodities in every market,” wrote Mill in his 1848 principles text, “everyone

would have twice as much to offer in exchange," so "everybody would *be able* to buy twice as much..." (italics added). Therefore, people *could* "bring a double demand as well as supply" (Mill 1888 [1848], pp. 366–367). But something untoward might happen in the meantime to make many people unwilling, for an extended period, either to purchase and invest *at the same level* as previously intended, or, in the case of banks, unwilling to relend, to the same degree, the savings that have been lent to them by their depositors, savings which, in anxious times, are likely to be rising. In such a case, said Mill (1888 [1848], p. 367), "it is not the ability to purchase, but the desire to purchase, that falls short."

After restating Mill's explanation of Say's Law, Marshall endorsed Mill's conclusion on the impact of idle savings. When hoarding arises, wrote Marshall in 1890, it ushers in a contagion that spells macroeconomic hell:

[T]hough men have the power to purchase they may not choose to use it. For when confidence has been shaken..., capital cannot be got to start new companies or extend old ones. Projects for new railways meet with no favour, ships lie idle, and there are no orders for new ships. There is scarcely any demand for the work of navies, and not much for the work of the building and the engine-making trades. In short....[,] disorganization of one trade throws others out of gear...

The chief cause of the evil is a want of confidence. The [recession] could be removed almost in an instant if confidence could return, touch all industries with her magic wand, and make them continue their production and their demand for the wares of others. If all trades which make goods for direct consumption agreed to work on, and to buy each other's goods as in ordinary times¹⁶, they would supply one another with the means of earning a moderate rate of profits and of wages....¹⁷ Confidence by growing would cause itself to grow; credit would give increased means of purchase, and thus prices would recover.... *There is*

¹⁶ But such concerted action is difficult to arrange and impossible to police, thus "he that performeth first has no assurance the other[s] will perform after, because the bonds of words [alone] are too weak to bridle men..." (Hobbes, 1985 [1651], p. 196).

¹⁷ For a different type of coordination problem that had similar consequences, consider the asymmetric nature of the price declines that afflicted France during its great deflation of 1724 (Velde, 2009, pp. 591–592, 620–621), which revealed the ground-level source of the non-neutrality of a substantial cut in the money supply, a piece of empirical history that undermines Smith's neutrality supposition with respect to a money-supply reduction (Smith, 1937 [1776], p. 399).

of course no formal agreement between the different trades to begin again [at the same time]..., and [thus] to restore a market for each other's wares. The revival of industry comes about through the gradual and often simultaneous growth of confidence among many various trades; it begins as soon as traders think that... a revival of industry [is imminent] (Marshall 1920 [1890], pp. 710–711; italics added).

Marshall's treatment of withheld spending was unfairly dismissed by J.A. Hobson,¹⁸ who in 1902 claimed that Marshall had associated hoarding only with "periods of 'crisis,'" an assessment which Keynes accepted (Keynes, 1936, p. 19, including fn. 2). By subscribing to Hobson's interpretation of Marshall, Keynes was agreeing that serious shortfalls in aggregate demand were the norm (Keynes, 1936, p. 381), not the exception as taught by the classicals and affirmed by the 800-year study by Reinhart and Rogoff, who concluded, wrote a reviewer, that "[c]rises, and... large recessions..., occur at quite a low frequency/ They are rare events... for most countries..." (Taylor, 2012, pp. 1092, 1093).¹⁹ Keynes failed to recognize that Marshall was simply carrying on the classical tradition, a tradition that Keynes had misread as being in denial about the existence of occasional bouts with unemployment due to hoarding. In any event, even if Keynes had interpreted the classicals correctly, he would have objected to the adjective occasional, replacing it, at a minimum, with regular, and more likely with the adjectival phrase nearly perennial.

Although Marshall incorporated the classical understanding of the antisocial consequences of a rise in hoarding, he did not speculate

¹⁸ Hobson fathered the proposition, later embraced by Lenin, that systematic underconsumption in advanced industrial economies required imperialist exploitation of third world nations in order to create dumping grounds for capitalism's overproduction (Hobson, 1965 [1902], pp. 81, 367). Also see Keynes's praise of the Malthusian roots of Hobson (in Keynes, 1936, pp. 364–367). In 1848 Marx and Engels had pointed to "the epidemic of overproduction" as capitalism's chief, recurring "crisis"—alleviated "by the conquest of new markets..." (Marx and Engels, 1985 [1848], p. 86). Finally, Hegel had lectured in the mid 1820s that colonization "is due in particular to the appearance of a number of people who cannot secure the satisfaction of their needs by their own labor once production rises above the requirements of consumers" (Hegel, 1942 [1821], p. 278, §150).

¹⁹ In any case, for various systemic reasons the prevailing rate of unemployment throughout the mercantilist era was much worse than what was experienced during the 1800s (Letiche, 2014, pp. 238–242, 245–247).

as to how to solve the who-goes-first problem of speeding up the restarting of production, and hence of beginning the restoration of aggregate demand by resuming the payrolls of the laid-off workers who are rehired during the initial, kick-off round of recovery—the signaling and multiplier effects from which presumably will inject a dose of anti-pessimism serum that will encourage other firms to do likewise. Tackling this issue fell to his illustrious student, whose novel recipe of State pump-priming served to energize the adjective that is housed within the term political economy²⁰.

At this juncture the joint Say's Law/hoarding segment of our story ends, for the territory of this paper was pledged not to extend too far beyond the realm of the contributions of the old classicals and the immediate modern-day links thereto. For those who want an excellent survey of the rival non-Marxian neoclassical macro theories—monetarist, Austrian, and New Classical—see the 1986 colloquium pieces by Yeager (1986, pp. 369–395) and Leijonhufvud (1986, pp. 409–419).

Only one short leg of our journey remains: An investigation of the macro-policy implications of how one interprets the word *credit*. The performance of a market economy is inextricably tied to the incessant reallocation among specialists of its capital;²¹ therefore, a section devoted to the institution known as credit is indispensable to any treatment of the key dimensions of our classical macro heritage.

²⁰ Prof. Christine Romer, former Chairman of President Obama's Council of Economic Advisors, in an address in November 2011, said that her one "disillusion[ment]" had been the source of the deep and on-going disagreements that became manifest during the national "discussion of fiscal policy," on which "[p]olicy makers and far too many economists seem to be arguing from ideology rather than evidence" (Romer, 2011, p. 24). Romer should have anticipated that the dispute over President Obama's enlargement of the budget deficit (to hopefully stimulate growth) was predestined to be suffused with the conflicting metaphysical visions that lurk behind *every* public-policy debate. See Myrdal, 1969 [1929], pp. vii, x–xiv, 1–2, 5, 11, 13, 14, 16, 18, 24, 192–198, 205, 215–217; also see Sowell, 1987, pp. 13–75.

²¹ "Capital goods are products of the human mind, artefacts, produced in accordance with a plan" (Lachmann, 1947, p. 112); "capital...includes plant, machinery,..., and even [adequate] inventories of finished commodities which must be on hand to make it possible to fill orders as they come in" (Baumol, 1977, p. 640).

MONEY VS. CREDIT

Capitals are increased by parsimony [postponement of consumption]... Parsimony... is the immediate cause of the increase of capital... [W]hatever [new machinery and buildings that the borrowers of others' thrift] might acquire, if parsimony [had] not first save[d] and store[d] up [their source of funding], ...capital would never [have been] the greater (Smith, 1937 [1776], p. 321).

Directly related to the debate over the real variables within the framework of Say's Law is the classicals' insistence that well-being in a fully-employed economy cannot be boosted through increases in money income alone. In an economy with few idle resources, boosting apparent demand through expansions of the money supply merely abets the bidding for that which, without a boost in capacity, cannot be obtained: "[F]or the difficulty lies in supplying the means [of consumption]...; and...production alone furnishes these means" (Say, 1836 [1803], p. 139). Closely allied to this line of thinking is the analogous classical distinction between two oft-conflated phenomena: money and credit. From remarks he made in 1877, we can confidently infer that Senator John Jones of Nevada understood that the price of borrowing credit's veil, money, can be temporarily driven down by issuing more of it, but the price of acquiring credit itself, whose value is determined by the marginal physical product of machinery, land, etc., cannot be affected by the rate of money creation:

[F]anciful and erroneous is the proposition that the rate of interest... can be lowered by increasing [the] quantity... of money... The [real] rate of interest... [is] merely an expression of the rate of profit which could be made through the use of [an additional unit of] borrowed capital (in Krooss, 1974, pp. 247–248).

Jones's analysis echoed the capital-as-parsimony principle laid down by Adam Smith, and more so by Smith's protégé, David Hume, who had written that "money, however abundant, ... [cannot reduce the real rate of interest, which]... must proceed from an increase of... frugality" (Hume, 1987 [1752], p. 299). J.S. Mill reaffirmed the position of his two illustrious predecessors—and insightfully broadened its dimensions:

Credit... cannot make something out of nothing.... [C]redit being only permission to use the capital of another person, the means of production cannot be increased by it, but only transferred....

[*However*], though credit is never anything more than a transfer of capital from hand to hand, it is... a transfer to hands more competent to employ the capital.... [due to superior] skill and knowledge.... [T]herefore, the [resources] of a country are... called into a more [efficient²²] state of productive activity [through credit-enabled redeployments] (Mill, 1888 [1848], pp. 325–326).

Frédéric Bastiat, whose monetary thought was heavily influenced by Turgot (see Clark, 2003, pp. 554, 556), warned in 1850 against “pretending” that borrowed cash itself is credit. To end the prevailing “confusion” on this issue, he highlighted the dichotomy between nominal (monetary) “credit” and real (physical) credit. The latter is advanced by lenders *through* the convenience of the former, but only the latter has substance; the former is hollow and thus misleading. To make his point, Bastiat asked his readers to concentrate on “the actual [ultimate] objects of [a] loan”:

[W]hen a farmer borrows 50 francs to buy a plough, it is not, in reality, the 50 francs which are lent to him, but the plough.... [N]o one borrows money for the sake of money itself; money is only the medium by which to obtain the possession of products....

Peter may not be disposed to lend his plough [to William], but James may be willing to lend his money. What does William do in this case? He borrows the money of James and with it he buys the plough of Peter (Bastiat, 2007 [1850], p. 34).²³

As William repays James’s money, he is, *in effect*, returning, in piecemeal fashion, the plough he indirectly “borrowed” from Peter

²² Mill, unlike many in the profession for a century thereafter, tacitly appreciated that society’s *legal basis* for property rights (private vs. collective) is a separate factor affecting the ratio of output’s utility per unit of input, otherwise known as bang per buck. A history of thought on the ownership-indifference postulate, which claimed that the basis of ownership was a neutral factor, can be found in Machovec (1995, pp. 5–7, 69–85). For Mill’s impressions, see Machovec (1995, pp. 29–31, 151–157). Also see the novel insights of Ludwig von Mises and Armen Alchian on the technical (not psychological) reasons for the non-neutral relationship between productivity and the *nature* of capital ownership, in Machovec (1995, pp. 85–87).

²³ The indented quote was constructed by resequencing sentences from several of Bastiat’s paragraphs (a privilege of artist’s license).

(at the cost of a user's fee: the interest paid to James). And through the higher crop yields generated by the borrowed plough, William will become, upon restoration of the principal, the fully-titled owner of his own plough, freed from the original loan-collateral obligation to James (of one plough). The interest received is the lender's gain, while the virtually perpetual annual harvest enlargements constitute the borrower's gain. The bottom line here is that the loaned money merely *represents* the capital advanced by the ultimate lender (savers), whereas the plough *is* the capital that was actually (though invisibly) advanced by the bank (in the form of money).

At any given point in time, explained Bastiat, "there is only a certain amount of [real] capital available, and... the State... has no power to increase [it]..." (Bastiat, 2007 [1850], pp. 36–37). An augmentation of fiat currency by the central bank, therefore, is an "optical illusion"; it cannot serve as a substitute for a shrinkage in the disciplined parsimony of Smith: "Whatever may be the amount of [money] which is in circulation, the whole of the borrowers cannot receive more [tangible credit—] ploughs, houses, tools, and raw materials [—] than lenders altogether [want to] furnish" (Bastiat, 2007 [1850], pp. 34, 35).

To clarify Bastiat's point, let's assume that the annual amount of saving, the source of real credit,²⁴ remains unchanged. However, suppose also that, simultaneously, artificial bank credit is increased through a monetary expansion that exceeds the percentage change in national output. Then, to use Bastiat's illustration, after an initial, temporary drop in the interest rate, which puts additional cash borrowings in people's hands, the demand for using others' ploughs will rise faster than the number being made available for such a purpose, hence the nominal (but not the real) interest rate for borrowing ("renting") ploughs will be pushed up, along with the selling prices of all goods and services (Smith, 1937 [1776], p. 399; and Hume 1987 [1752], pp. 281, 284–287²⁵). In other words, an inflationary increase in monetary 'credit' cannot cause the volume

²⁴ Recall that real credit represents physical output that is not consumed by its original producers, but instead is made available (through their savings) to others who can then freely employ the borrowed items in *their* projects.

²⁵ In terms of short-run/long-run macroeconomic analysis, Hume's treatment is ultra-modern.

of actual credit to grow faster than the growth rate of real gross domestic product—unless people are hypnotically induced, by the mere creation of newly added money, to supply more real credit by saving proportionately more, thereby allowing others to borrow a larger fraction of savers' current outputs than in previous periods.

To be sure, the macro dichotomy story is more expansive than the issue of nominal vs. real credit, but delving into the larger context would take us far beyond the contributions of the old classicals. In passing, however, we shall briefly genuflect to the magisterial (and majesterial) John Stuart Mill, recounting his claim that real economic growth could not be *sustainably* enhanced by boosting the expansion rate of the money supply—a contention that sparked a great debate among postwar macroeconomists. The first step of Mill's explanation was logical, easy to grasp, and therefore widely accepted for a long time; but, as we will learn momentarily, it was not his only contribution to the neutrality debate, nor his most significant.

The farmer pays his laborers [with money]...; but their real income is their [implicit physical-wage] share of his corn, cattle, and hay, and it makes no essential difference whether he distributes it to them [or] gives them the [cash proceeds].... [Money] is [simply] a machine for doing quickly and commodiously [the exchanges that] would be done, though less quickly and less commodiously [through pure barter] (Mill, 1888 [1848], p. 293).

It fell to relatively recent writers to explain the real costs engendered by inflationary/deflationary changes in the money supply, costs that emanate, for example, from the disruption of contracts (Ackley, 1978, pp. 149–153 and Mises, 1996 [1949], pp. 500, 784–785), as well as from labor-market effects due to the creation of *asymmetric* new knowledge in product vs. factor markets, the latter of which became reflected, model-wise, in the transitional (and hence temporary) *non-verticality* of the modern *short-run* aggregate supply curve (Miller and Pulsinelli, 1986, pp. 332, 347–350; for a superb discussion of the non-neutrality case, see Makinen, 1975, pp. 375–382). A less important non-neutrality issue (macroeconomically but not politically) is who gets first use of newly-printed money, a potential asymmetry that can result in a change in the structure of prices (and hence in the composition of production), as noted by Ludwig von Mises in 1940 (Mises, 1996 [1949], pp. 412–413).

On the geometry of the aggregate supply function, it is noteworthy that J.S. Mill, even more accurately than Hume, had described, employing an information-lag framework, the favorable short-run impact on real GDP—and its dissipation in the long run—not only of an unexpected inflation, but also of an unanticipated rate of acceleration in inflation (Humphrey, 1982, pp. 108, 209, 214; condensed in Machovec, 1995, p. 145). Mill's insights were reintroduced to the literature 50 years ago through the independent Phillips Curve critiques of Milton Friedman and Edmund Phelps, neither of whom apparently had been aware of Mill's pioneering analysis (Friedman, 1968, pp. 8–11; Phelps, 1967, pp. 4–5, 25).

SUMMARY

The objective of this paper was not to instigate an argument over what our forefathers 'really' meant, nor to advocate any specific macro policy perspective as being infallibly correct, for no idea, no matter how solid it seems, is impervious to being undermined by fresh perceptions. My goal was two-fold: first and foremost, to fully describe the pre-1900 evolution of three of the foundational concepts that have shaped the corpus of macroeconomic theory, namely, Say's Law, hoarding, and credit. My second purpose was to draw attention to the fact that the most recent recession was not sparked by the type of aggregate-demand failure that has accounted for past macro downturns. Rather, it was fathered by a set of long-simmering, policy-induced moral hazards within the financial sector that incentivized antisocial conduct, particularly the overrating of subprime mortgage securities, which constituted a large part of banks' equity-reserve portfolios, thereby sewing the seeds of their value collapse as reality intruded. A detailed analysis of all of this lies outside the ken of this paper. The profession most recently has been diligently applying itself to these particular causative factors—subsector issues that had sufficient systemic impact to create a macro implosion. Yet none of them, even collectively, negates the continued value and hence relevance of the trio of classical insights described herein.

The breadth, depth, rapid, and totally unexpected onset of the financial paralysis of 2008–2009 brought the modeling/forecasting

component of macroeconomics under fire, and the resultant hostility threatens, undeservedly, to taint everything with a macro label. Hopefully this paper will sharpen our knowledge of classical reasoning, including the errors, and thereby fortify our confidence in the macroeconomic wisdom that has flowed from the century and a half of reflection that occurred between Smith and Keynes, as supplemented by the insights sparked by the subsequent work of Friedrich Hayek and Milton Friedman. Differences among our founding ancestors on macro topics were certainly as spirited as those of the 1930s, 1960s, and beyond. All the fruit harvested from these debates has enriched our discipline, and future disagreements will continue to ameliorate our ignorance. It is in the nature of our species to behave thusly; moreover our

diversity of tastes and talents, and variety of intellectual points of view, ...not only form a great part of the interest of human life, but by bringing intellects into stimulating collision and by presenting to each innumerable notions that he would not have conceived of himself, are the mainspring of mental and moral progression (Mill, 1888 [1848], p. 160).

REFERENCES

- Ackley, Gardner. 1978. "The Costs of Inflation," *American Economic Review* 68, no. 2: 149–154.
- Ahiakpor, James. 1995. "A Paradox of Thrift or Keynes's Misrepresentation of Savings in the Classical Theory of Growth?" *Southern Economic Journal* 62, no. 1: 16–33.
- Allen, Mozelle Scaff. 1935. "Poe's Debt to Voltaire," *Studies in English*, No. 15, 8 July.
- Bagehot, Walter. 1873. *Lombard Street: A Description of the Money Market*. Lexington, Ky: Batoche Books, 2000.
- Barro, Robert J. 2007. "Milton Friedman: Perspectives, Particularly on Monetary Policy," *Cato Journal* 27, no. 2: 127–134.
- Bastiat, Frédéric. 1850. "That Which Is Seen, and That Which Is Not Seen." In *The Bastiat Collection*, Vol. I, Auburn, Ala.: Ludwig von Mises Institute, 2007.

- Baumol, William J. 1977. *Economic Theory and Operations Analysis*, 4th ed. Englewood Cliffs: Prentice-Hall.
- Beard, Charles W. 1981. *Elements of Macroeconomics*, 2nd ed. St. Paul: West Publishing Co.
- Blaug, Mark, ed. 1991. *George Scrope (1797–1876), Thomas Attwood (1783–1856), Edwin Chadwick (1800–1890), John Cairnes (1823–1875)*. Aldershot: Elgar.
- Boettke, Peter, and Frederic Sautet. 2011. "The Genius of Mises and the Brilliance of Kirzner." Unpublished manuscript. Available at <http://ssrn.com/abstract=1735649>.
- Borders, Max. 2011. "Scientism and the Great Power Nexus," *The Freeman* 61, December.
- Byers, William. 2011. *The Blind Spot*, Princeton: Princeton University Press.
- Caballero, Ricardo J. 2010. "Macroeconomics after the Crisis: Time to Deal with the Pretense-of-Knowledge Syndrome," *Journal of Economic Perspectives* 24, no. 4: 85–102.
- Caruana, Jaime. 2012. *Bank for International Settlements 82nd Annual Report*, Basel, 24 June. Available at <http://www.bis.org/publ/arpdf/ar2012e0.pdf>.
- Clark, Henry C. (ed.). 2003. *Commerce, Culture, & Liberty: Readings on Capitalism Before Adam Smith*. Indianapolis: Liberty Fund, 2003.
- Davis, John. 2006. "The European Economies of the Eighteenth Century." In Antonio Di Vittorio, ed. *Economic History of Europe: From Expansion to Development*. Abingdon: Routledge.
- DeLong, J. Bradford. 2002. "Review of Skidelsky's *John Maynard Keynes: Fighting for Britain*," *Journal of Economic Literature* 40, no. 1: 155–162.
- Desai, Meghnad. 2010. "Hayek: Another Perspective," In Robert Skidelsky and Christian W. Wigström, eds., *The Economic Crisis and the State of Economics*. New York: Palgrave Macmillan.
- Dostoevsky, Fyodor. 1864. *Notes from the Underground*. In Avrahm Yarmolinsky, ed., *Three Great Novels by Dostoevsky*. Garden City: Anchor Books, 1960.

- Edmiston, Kelly D. 2009. "Characteristics of High-Foreclosure Neighborhoods in the Tenth District," *Economic Review of the Federal Reserve Bank of Kansas City* 94, no. 2: 51–75.
- Epstein, Gerald. 2012. "Review of *Maynard's Revenge: The Collapse of Free Market Macroeconomics*," *Journal of Economic Literature* 50, no. 2: 532–541.
- Ferré, Frederick. 1996. *Being and Value*. Albany: State University of New York Press.
- Fisher, Irving. 1933. "The Debt-Inflation Theory of Great Depressions," *Econometrica* 1, no. 4: 337–357.
- Formaini, Robert L. 2006. "Jean-Baptiste Say: Foundations of France's Free Trade Tradition," *Economic Insights*, 11, no. 1: 1–4.
- Friedman, Milton. 1968. "The Role of Monetary Policy," *American Economic Review* 58, no. 1: 1–17.
- Friedman, Milton, and Anna J. Schwartz. 1963. *A Monetary History of the United States, 1857–1960*. Princeton: Princeton University Press.
- Garrison, Roger. 2001. *Time and Money: The Macroeconomics of Capital Structure*, London: Routledge.
- Geanakoplos, John, Robert Axtell, J. Doyne Farmer, Peter Howitt, Benjamin Conlee, Jonathan Goldstein, Matthew Hendrey, Nathan M. Palmer, and Chun-Yi Yang. 2012. "Getting at Systemic Risk via an Agent-Based Model of the Housing Market," *American Economic Review* 102, no. 3: 53–58.
- Goodhart, Charles A.E. 2010a. "Macro-Economic Failures." In Robert Skidelsky and Christian W. Wigström, eds., *The Economic Crisis and the State of Economics*, New York: Palgrave Macmillan.
- . 2010b. "Money, Credit, and Bank Behavior: Need for a New Approach," *National Institute Economic Review* 214, no. 1: F73–F82.
- Goodhart, Charles A.E., Pojanart Sunirand, and Dimitrios P. Tsomocos. 2011. "The Optimal Monetary Instrument for Prudential Purposes," *Journal of Financial Stability*, 7, no. 2: 70–77.
- Hegel, Georg W.F. 1821. *Philosophy of Right*. T.M. Knox, trans., ed. Oxford: Clarendon Press, 1942.

- Henderson, David R. 2013. "A Nobel for the Random Walk of Stock Prices," *Wall Street Journal*, 15 October.
- Higgs, Robert. 2012. *Delusions of Power*. Oakland: Independent Institute, quoted in *The Wall Street Journal*, 6 September 2012.
- Hobson, John A. 1902. *Imperialism: A Study*. Ann Arbor: University of Michigan Press, 1965.
- Hobbes, Thomas. 1651. *Leviathan*. C.B. MacPherson, ed. London: Penguin Books, 1985.
- Hume, David. 1752. "Of Money." In Eugene Miller, ed., *Essays Moral, Political, and Literary*, revised ed. Indianapolis: Liberty Classics, 1987.
- . 1777. "Of the Dignity or Meanness of Human Nature" In Eugene Miller, ed., *Essays Moral, Political, and Literary*, revised ed. Indianapolis: Liberty Classics, 1987.
- Humphrey, Thomas. 1982. "Two Views on Monetary Policy: The Attwood-Mill Debate Revisited." In *Essays on Inflation*. Richmond: Federal Reserve Bank of Richmond.
- Jarusilic, Marc. 2010. *Anatomy of a Financial Crisis*, New York: Palgrave, Macmillan.
- Johnson, Ivan C., and William W. Roberts. 1988. *Money and Banking: A Market-Oriented Approach*. Chicago: Dryden Press.
- Kates, Steven. 1998. *Say's Law and the Keynesian Revolution: How Macroeconomic Theory Lost its Way*. Cheltenham: Edward Elgar.
- Keen, Steve. 1995. "Finance and Economic Breakdown: Modeling Minsky's 'Financial Instability Hypothesis,'" *Journal of Post Keynesian Economics* 17, no. 4: 607–635.
- Keynes, John Maynard. 1930. "The Question of High Wages." In Donald Moggridge, ed., *The Collected Works of John Maynard Keynes*, vol. 20. Cambridge: Macmillan and Cambridge University Press, 1971.
- . 1930. *Treatise on Money*, vol. 2. New York: Harcourt, Brace and Co.
- . 1936. *The General Theory of Employment, Interest, and Money*. New York: Harcourt Brace Jovanovich, 1964.
- . 1946. "The Balance of Payments of the United States," *Economic Journal* 56, no. 222: 171–187.

- Kohn, Meir. 1991. *Money, Banking, and Financial Markets*. Chicago: Dryden Press.
- Kolb, Robert W. 2011. *The Financial Crisis of Our Time*. New York: Oxford University Press.
- Krooss, Herman E. 1974. *American Economic Development*. Englewood Cliffs: Prentice Hall.
- Lachmann, Ludwig M. 1947. "Complementarity and Substitution in the Theory of Capital," *Economica* 14: 108–119.
- Laidler, David. 2012. "Competing Monetary Explanations of Macroeconomic Instability Before 1936." In Hagen Krämer, Heinz D. Kurz, and Hans-Michael Trautwein, eds. *Macroeconomics and the History of Economic Thought*. London: Routledge.
- Lawrence, Jacob. 1997. *Aesop's Fables*. Seattle: University of Washington Press.
- Leijonhufvud, Axel. 1968. *On Keynesian Economics and the Economics of Keynes*. New York: Oxford University Press.
- . 1973. "Life Among the Econ," *Western Economic Journal* 11, no. 3: 327–337.
- . 1986. "Real and Monetary Factors in Business Fluctuations," *Cato Journal* 6, no. 2: 409–420.
- LeRoy, Stephen. 2004. "Rational Exuberance," *Journal of Economic Literature* 42, no. 3: 783–804.
- Letiche, John M. 2014. "High Levels of Unemployment in the Mercantilist Era," *Journal of the History of Economic Thought* 36, no. 2: 237–251.
- Lo, Andrew. 2012. "Reading about the Financial Crisis: A Twenty-One-Book Review," *Journal of Economic Literature* 50, no. 1: 151–178.
- McEachern, William. 1988. *Economics: A Contemporary Introduction*. Cincinnati: Southwest Publishing.
- Machovec, Frank M. 1995. *Perfect Competition and the Transformation of Economics*, London: Routledge.
- Makinen, Gail E. 1975. *Money, the Price Level, and Interest Rates*. Englewood Cliffs: Prentice-Hall.
- Marshall, Alfred. 1890. *Principles of Economics*, 8th ed., New York: Macmillan, 1920.

- Marx, Karl, and Friedrich Engels. 1848. *The Communist Manifesto*. London: Penguin Books, 1985.
- Mian, Atif, and Amir Sufi. 2011. "House Prices, Home-Equity-Based Borrowing, and the US Household Leverage Crisis," *American Economic Review* 101, no. 5: 2132–2156.
- Mill, John Stuart. 1844. "Of the Influence of Consumption on Production." In *Essays on Some Unsettled Questions in Political Economy*, 2nd ed. Clifton: Augustus Kelley, 1974.
- . 1848. *Principles of Political Economy*, 6th ed., abbreviated, J.L. Laughlin, ed. New York: D. Appleton and Co., 1888.
- Miller, Roger LeRoy, and Robert Pulsinelli. 1986. *Macroeconomics*. New York: Harper and Row.
- Mints, Lloyd W. 1945. *A History of Banking Theory*. Chicago: University of Chicago Press.
- Mises, Ludwig von. 1949. *Human Action*, 4th revised ed. San Francisco: Fox and Wilkes, 1996.
- Myrdal, Gunnar. 1929. *The Political Element in the Development of Economic Theory*, Paul Streeten, trans. New York: Simon and Schuster, 1969.
- O'Driscoll, Jr., Gerald. 2009. "The Financial Crisis: Origins and Consequences," *The Intercollegiate Review* 44, no. 2: 4–12.
- Oster, Sharon. 2011. "Review of *The Economist's Oath: On the Need for and Content of Professional Ethics*," *Journal of Economic Literature* 49, no. 3: 719–722.
- Phelps, Edmund. 1967. "Expectations of Inflation and Optimal Unemployment over Time," *Economica*, N.S. 34, no. 135: 254–281.
- Posner, Richard A. 2011. "Keynes and Coase," *Journal of Law and Economics* 54, no. 4: S31–S40.
- Romer, Christina. 2011. "What Do We Know About the Effects of Fiscal Policy? Separating Evidence from Ideology," Hamilton College, 7 November. Available at <http://eml.berkeley.edu/~cromer/WrittenVersionofEffectsOfFiscalPolicy.pdf>.
- Rothbard, Murray N. 1962. *Man, Economy, and State*, Scholar's Edition with *Power and Market*. Auburn: Ludwig von Mises Institute, 2004.

- Roussanov, Nikolai. 2012. "Review of *Pandora's Box: Uncertainty at the Core of Finance*," *Journal of Economic Literature* 50, no. 1.
- Say, Jean-Baptiste. 1803. *Treatise on Political Economy*, 4th ed., C.R. Prinsep, trans. Philadelphia: Grigg and Elliot, 1836.
- Scarborough, Joe, and Jeffrey D. Sachs. 2013. "Paying for Our Priorities," *Washington Post*, 8 March.
- Schroeder, Paul W. 1994. *The Transformation of European Politics 1763–1848*, Oxford: Clarendon Press.
- Schumpeter, Joseph. 1942. *Capitalism, Socialism, and Democracy*, 3rd ed. New York: Harper and Brothers, 1947.
- Sismondi, Jean Charles Léonard Simonde. 1819. *New Principles of Political Economy*. R. Hyse, ed., trans. New Brunswick: Transaction, 1991.
- Skidelsky, Robert. 1992. *John Maynard Keynes*, vol. 2, London: Penguin Press.
- Smith, Adam. 1759. *Theory of Moral Sentiments*, D.D. Raphael and A.L. Macfie, eds. Indianapolis: Liberty Classics, 1982.
- . 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Edwin Cannan, ed., 1937.
- Spencer, Herbert. 1876. *Principles of Sociology*. Excerpted from J.D.Y. Peel, ed., *Herbert Spencer on Social Evolution*. Chicago: University of Chicago Press, 1972.
- Sowell, Thomas. 1974. *Classical Economics Reconsidered*, Princeton: Princeton University Press.
- . 1987. *A Conflict of Visions*. New York: William Morrow.
- . 2009. *The Housing Boom and Bust*. New York: Basic Books.
- Taleb, Nicolas Nassim. 2010. *The Black Swan: The Impact of the Highly Improbable*, 2nd ed. New York: Random House.
- Taylor, Alan M. 2012. "Global Financial Stability and the Lessons of History: A Review of Carmen N. Reinhart and Kenneth S. Rogoff's *This Time It's Different: A Century of Financial Folly*," *Journal of Economic Literature* 50, no. 4: 1092–1105.
- Velde, François R. 2009. "Chronicle of Deflation Unforetold," *Journal of Political Economy* 117, no. 4: 591–634.

Wapshott, Nicholas. 2011. *Keynes Hayek: The Clash that Defined Modern Economics*. New York: W.W. Norton.

Wolfe, Thomas. 1934. *You Can't Go Home Again*. New York: Sun Dial Press, 1942.

Yeager, Leland B. 1986. "The Significance of Monetary Disequilibrium," *Cato Journal* 6, no. 2: 369–399.