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**STRATEGIC ECONOMIC DECISIONS**

Leaders in the Economics of Uncertainty

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**“OUTSIDE THE BOX”?**

**NOPE. THERE NO LONGER IS A BOX**

**– The Truth about 2010 and Beyond –**



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**“OUTSIDE THE BOX”?**  
**NOPE. THERE NO LONGER IS A BOX**  
**– The Truth about 2010 and Beyond –**

*The year 2010 is the year when the bond market, the currency market, and the public awoke to a reality that will politically and economically bedevil the West for at least fifty more years: The prevailing incentive structure has made it rational for bankers, citizens, and politicians alike to mortgage the future in a manner that is completely unsustainable. Neither the politics nor the economics of the West will be the same as a result of this reality.*

*Politicians are currently attempting to blame “irrational markets” for overreacting to the debt crisis, thereby making matters worse than they should be, given the fundamentals. But this is poppycock. It is the fundamentals themselves that are the real culprits, including worsening demographics, and excessively leveraged public and private sectors. In the longer run, we can be thankful that bond markets have awoken from their long slumber, and are finally alerting us all to the true threats that lie ahead unless proper policies are adopted. Frustrating as they may be to politicians, bond market vigilantes may be our only saviors.*

*Nonetheless, proper policies are not even being discussed as of this writing. Too much attention is being paid to how to “contain the euro crisis” and reduce the US deficit in the short run, and too little is being paid to the reality that citizens in the West have been promised a standard of living and levels of benefits over the next five decades that are simply not feasible. To date, the new British government is the only one to have attempted to awaken its citizens to what really lies ahead.*

What a year! So much conventional wisdom has been stood on its head that no “consensus” is extant about prospects for future bond yields, for the economy, for currencies – and whether the euro has a future, for foreign policy, and even for elemental long-run issues such as whether many sovereign states of the West confront long-run bankruptcy. Moreover, not only do beliefs differ *between* different investors and commentators, but most individuals’ *own* beliefs are mutually inconsistent and therefore, frustrating. In short, this is an era of widespread “cognitive dissonance,” to borrow Festinger’s celebrated term.

Our earlier prediction that the year 2010 would be a page-turner in modern history came true, but for reasons that are neither widely understood nor in the news. In Part 1 of this year-end **PROFILE**, we briefly review five ways in which reality has been stood on its head in 2010 (*Pace* the looking glass in Alice in Wonderland!). In Part II, we zero in on *one* of these five structural changes, namely, The Reinvention of Macroeconomics. More specifically, we present two different Socratic Dialogues. The first centers on the reinvention of *fiscal* policy, and clarifies exactly what the US (and certain other economies) should do in order to restore growth in output and in employment while not upsetting the bond market. The second Dialogue focuses on the reinvention of *monetary* policy, and, in particular, on misunderstandings about Quantitative Easing.

**NOTE ON THESE DIALOGUES:** Our first essay proposing a forthcoming breakdown of macroeconomics was published fifteen years ago (“Beyond the Volcker Era” in May 1995). We expanded upon this in two subsequent publications. In April of this year, the author then rediscovered the sweeping reconstruction of the theory of fiscal policy set forth by economists Kenneth Arrow and Mordecai Kurz of Stanford University back in 1970. He drew upon it to propose a solution for today’s “Lost Decade” malaise in the US. Please recall our July 2010 On-Demand lecture, “Squaring the Circle.” As for the reinvention of the theory of monetary policy, and indeed its practice, we have hitherto had little to say. But this is no longer the case. For in November 2010, just a month ago, two eminent macroeconomists made clear how a far-reaching reconstruction of the theory and the practice of monetary policy is now underway. About this, we shall have much to say in our second Dialogue.

**RELEVANCE:** While the theoretical dimension of these reinventions of both fiscal and monetary policy is fascinating in its own right, it is *the practical application* of both that is dynamite, as persevering readers will learn. The generalizations of monetary and fiscal policy that we propose are absolutely central to solving the current problems of the US and other nations, thereby restoring growth and preventing trade wars.

This is precisely the kind of essay that we at SED attempt to publish from time to time when very serious issues arise. And the problems confronting the US today are dire both in the short-term (a growing unemployment rate properly measured *after* the easiest fiscal and monetary policy on record) and in the long term, when “entitlements” issues will loom ever larger. Moreover, this essay utilizes *deductive logic* in a manner familiar to many of our clients. For as

usual, we clarify and explain very important issues from First Principles, drawing upon the very best of economic theory to do so. The latter implies a willingness and ability to go to the source of leading-edge theory.

*What enterprise could be more useful, if unfashionable, at a time when investors are making bets on the future based upon completely incorrect assumptions, ranging from “Deficits are bad – the bond market vigilantes will get us!” to “Quantitative easing pumps money into the economy and is, by definition, inflationary in the longer run.” In what follows, readers will learn the deeper truths about such propositions, will accordingly become much less wrong in their forecasts, and will sound smart to others – their own clients, first and foremost.*

**Acknowledgments:** The author is extremely indebted to Professors Arrow and Kurz at Stanford University as regards their remarkable unification and mathematization of fiscal policy dating back to the early 1970s, and to Benjamin Friedman at Harvard who, along with Kenneth Kuttner at Williams College, is responsible for their important new breakthrough in our understanding of monetary policy, published less than a month ago<sup>1</sup>. All three of these scholars have been mentors to the author for decades, permitting him to grow in his understanding of intrinsically difficult topics, and to make less of a fool of himself than he otherwise would.

## **PART 1: FIVE NOTABLE DEVELOPMENTS DURING 2010**

An important discovery in the Economics of Uncertainty and Information was that there are two quite different kinds of “news” that can impact markets. *First*, there is hard news, e.g., the tearing down of the Berlin Wall during the collapse of communism two decades ago. Think of the photo ops this generated! *Second*, there is “softer” news, in which average people change their views about existing information – whether old or new. That is, the Belief Structure of society shifts significantly. Whereas the year 1990 was a classic example in which hard news prevailed to create a page-turner (communism collapsed both ideologically and politically in a dozen nations), the year 2010 is one in which there was surprisingly little hard news, yet widespread perceptions about the world and its future changed notably. And the perceptions involved were not only those of the elites (who usually get things wrong), but of average people from Greece, to California, to Washington, to Westminster, to Paris, and to Berlin. And never forget: it is when the beliefs of *average* people shift that changes occur in markets and indeed in society.

To wit, “I no longer trust municipal bonds, and am becoming dubious about federal debt too”; “Maybe buying a house isn’t a good long-run investment after all”; “I guess my family should triple its savings rate given the adverse future we all now confront”; “I notice there has been a

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<sup>1</sup> Friedman, Benjamin, and Kuttner, Kenneth, “Implementation of Monetary Policy: How Do Central Banks Set Interest Rates?” NBER Working Paper #16165, November 19, 2010, 94 pages.

sharp increase in the number of Americans who believe that their children will live worse than they have”; and “I guess we will all probably work until age 70 when all is said and done – regardless of whether the government raises the official retirement age. After all, who wants to retire on a diet of cat-food soufflé – the likely alternative to *not* continue working?”

What follows are five recent developments that either originated in 2010, or else began to foster a new awareness on the part of millions of normal people.

## 1. Eruption of the Sovereign Debt Crisis in the West

Before 2010, we can recall no serious cover story in any major publication about the potential bankruptcy of any G-27 nation. In contrast, during the current year, well over 20 cover stories on this topic have appeared in the FT magazine, *The Economist*, *TIME*, *Newsweek*, *Business Week*, and in myriad other non-English-language publications. What is remarkable is the degree to which – from Greece to California – the reaction to this story by average people has been uniform: “My government has been running a Ponzi scheme. We have been scammed. *My pension will be both later and lesser than I was promised.*”

It is interesting that people do not blame greedy bankers for this state of affairs. Nor do they blame capitalism *per se* (after all, we all buy better products for less every year). Rather, they view politicians as the source of their troubles, as buffoons who have mortgaged our futures. Everywhere. This assignation of blame is spot on, except that politicians are not solely to blame. After all, they can retort: “The only way we can get elected is to promise voters what they most want, namely ever more benefits without any more taxes to pay for them. So please don’t blame us alone. We simply respond to the system as it is.” The point being made here is an important one: it is the *political system* that is the source of our problems in the West today, and not capitalism proper. Of all the realizations of 2010, this may have been the most salient.

The link between this story of ever-rising debt on the one hand and prospects for investors on the other is the bond market, in particular the market for government securities. For reasons due to the recent recession and a “flight to safety” on the part of many traditional investors, government bond yields have remained surprisingly low, except in nations hit by recent currency crises. But very few people expect this state of affairs to continue for long. Investors as a whole expect that “sooner or later” bond yields will soar just as they have in Greece, Ireland, and Spain – and for the same reasons: worries about future national insolvencies, and “haircuts” for future bondholders. Indeed, the German government has recently urged that, starting in 2013, *private* bondholders must share in any future losses stemming from the kinds of sovereign debt crises we are experiencing in 2010. For this reason, an increasing number of investment managers will be telling clients to avoid government bonds – bonds that will no longer have triple- or double-A ratings, and will increasingly mimic corporate bonds in their behavior.

**Sovereign Debt Ratios in Historical Perspective:** There are those that argue that today's rising national debt-to-GDP ratios should not, in and of themselves, be a source of undue concern. They cite historical data showing that, once debt ratios rise to disturbing heights, they usually fall back to earth. And they are right. Financial crises end. Wars end. Thus, the British debt ratio soared to 2.8 by the end of the bankrupting Napoleonic Wars, but then fell right back to normal as the Second Industrial Revolution took place. But this time is different, and the reason why should be understood by all investors. As we stressed in our April 2009 **PROFILE**, "The End Game Draws Nigh," most G-27 societies confront a *two-stage game* for the first time. The Stage 1 game is that in which we are mired at present – a political game marked by high deficits and soaring debt-to-GDP ratios due to the global financial crash and the severe recessions that followed.

Now suppose that the global recovery continues, and that the deficits of the past three years subside. Will our debt ratios then revert to normal as they often have in the past? The answer is no, due to the Stage 2 game that follows today's Stage 1 crisis. While there should be a temporary improvement between 2013–2018, a return to soaring debt ratios beyond 2020 is likely due to demographics, most notably, the retirement of baby boomers. The US government itself computes unfunded entitlements liabilities in the range of \$40–\$60 trillion, running out to 2050 and beyond. In this regard, the US is rare in *computing* its unfunded liabilities. It can do so because it has a pool of money (the OASI Trust Funds) set aside to pay for future benefits. Given the magnitude of this pool, it is possible to compute how much it is underfunded.

In most other nations, however, there is no such pool of money. Many content themselves with a pay-as-you-go system. Of course, when there is no such pool of funds, there is no "unfunded liability" *per se*. In this case, the correct way to proceed in assessing future solvency is to ask: "Given the current promises made to future elderly people for retirement and medical expenditures, what will future *tax rates* have to be on future workers to fund all these promises?" The answer in the case of Germany is about 84%, according to one analysis we noted. Such Pharaonic enslavement of future workers will not happen, but the egress from such a state of affairs will be extremely unpleasant, and quite possibly bloody.

**Critical Role of Policies:** The good news is that such problems can be avoided with the adoption of proper policies now, as we have stressed in previous essays. Recall in particular our solution to the US Medicare and Medicaid bankruptcies, our country's worst long-run fiscal challenge: Adopt far-reaching policies that shift the supply curve for medical services outward at a faster rate than the demand curve is shifting outward. If this is done (and the Obama-care legislation was moot about supply!), then all citizens can have medical coverage, and the medical share of

GDP can not only not explode, but can actually fall.<sup>2</sup> Solutions to Social Security pension reform are also at hand, including a shift in the incentive structure for those who work until age 70.

The bad news is that the right policies may well *not* be adopted, most probably for short-term reasons stemming partly from political polarization, and partly from entrenched special interests. In this regard, the late and great political scientist Mancur Olson demonstrated in his epochal “The Rise and Decline of Nations”<sup>3</sup> that the common source of decline in almost every empire in history was the *growth* of entrenched interest-group power during the period when empires became rich and powerful. If wrong policies get adopted, and the proverbial can is forever kicked down the alley, then radical and divisive politics will follow. Just consider how the US witnessed a nascent Tea Party in 2010 lead to an unprecedented 62-seat sweep of Democrats from the House of Representatives. And this is *before* any demographic pressure! And in both the UK and Australia, very strange coalitions emerged, coalitions whose life spans may prove short. In countries with much greater problems such as Ireland, governments nearly collapsed.

**The European Debt and Currency Crises:** A final point about the sovereign debt crisis is what it has already begun to do to the currency markets of the West. The currency and bond-yield crises of March and November 2010 were due to public-sector debt problems (e.g., Greece) as well as to private-sector bank insolvency issues (e.g., Ireland) – each morphing into the other given the role of over-leveraged banks in a world of debt-saturated sovereign states, and given the mutual inter-dependence of banks and governments. This is a voyage into largely uncharted waters, with nothing less than the future of the euro at stake. We shall discuss the European debt crisis and the euro in a forthcoming **PROFILE**. A footnote below suggests our current views.<sup>4</sup>

At this writing, the authorities in Frankfurt are reinventing the role of central banking in Europe, just as US Fed Chairman Bernanke was forced to do during the crisis of 2008. Also, keep in mind the thrust of our 2009 “End Game” essay: the last cohort of baby boomers do not retire until 2031, suggesting that demographic crises far more serious than banking crises will be with us until at least 2060 when boomers are gone for good!

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<sup>2</sup> See SED’s September 2009 **PROFILE**, “The US and Global Economy, and US Health Care Reform,” and SED’s December 2009 **PROFILE**, “How to End Today’s Dialogue of the Deaf, and Policy Gridlock: A New Paradigm with an Application to the US Health Care Debate.

<sup>3</sup> *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*. Author: Mancur Olson, Yale University Press, 1982.

<sup>4</sup> For the moment, we find David Roche’s insights on this matter the most compelling. He pointed out in a *Financial Times* column (December 1, 2010) that the current European Central Bank proposal for expanding its bond-purchasing scope is a non-starter in the quest for a *true* sovereign debt crisis circuit-breaker. He recommends instead that the ECB offer unlimited liquidity at low interest rates to eurozone banking systems in an expanded European Financial Stability Facility, or equivalently offer a large credit line to the EFAF of up to two trillion euros, thus tripling its current capacity. A host of tricky issues attend his and other recommendations. The author, frankly, is not on top of these at this writing.



Given that the crisis of 2010 is only the first of a series of future crises involving banking, demographics, and politics, the future of the euro is certainly at risk. And a collapse of the euro would be much more onerous for the world economy than is generally recognized. “If the euro fails, then Europe will fail as well,” stated German Chancellor Angela Merkel on November 28, 2010. And as we argued in a previous report, the world as a whole truly needs a euro, even if it is a Northern euro representing a smaller European Monetary Union.

*More formally, with four currencies as gatekeepers of the four major economic blocs in the world (namely Europe, the US, China, and Japan), then the world requires  $N \times (N-1) / 2 = 6$  pairs of bilateral exchange rates (e.g., the euro/dollar, renminbi/yen, etc.) if global resources are to be optimally allocated. [Here  $N$  denotes the number of major currencies, namely 4.] And the more we live in a globalized world with everyone trading with everyone else, the more important this fundamental observation becomes, even if it is neither discussed nor appreciated. Should the renminbi remain tethered to the dollar, and should the euro cease to exist, then we are left with a single exchange rate, the yen/dollar (as  $N \times (N-1) / 2 = 1$ , not 6!) when  $N = 2$ . In this event, pernicious trade wars and resource misallocations will be widespread.*

Yes, it was the year 2010 when all of this began to seep into the consciousness of average people as well as the elites. The latter should have foreseen most of these developments years ago, in particular, the prospective bankruptcy of several Welfare States, but they did not. The windows of their limousines shuttling them from conference to conference had perhaps been too tightly sealed for too long.

## **2. Redefinition of “Safe” Investments**

### **– When Companies Became Countries, and Countries Became Companies –**

When the author’s parents became old, and sought safety in their assets, they bought either municipal or federal bonds, depending upon the tax rates they confronted. Tax-free municipals were always favored in the trust funds of old. While stocks were always modestly attractive (at least in the US), they were considered a bit risky for older people who tilted toward bonds as they aged. The yield of municipal bonds had the advantage of being both tax free and safe. What, by comparison, is “safe” today? Here is a sketch of a new viewpoint we will discuss in a 2011 essay.

In a world where much conventional wisdom is being stood on its head, we believe that stable, nimble, cash-rich, diversified, dividend-paying multinational companies (Nestlé, J&J, 3M, L’Oréal, Coca Cola, John Deere, P&G, etc.) will prove more secure than either federal or municipal bonds in the decades to come, given future insolvency risks. If we never again

possess “riskless assets” in the sense of textbook finance, a portfolio of such companies may prove the best approximation to risklessness that is available.

Importantly, such firms are always free to migrate to where the weather, and indeed the growth rate, is better. Indeed, they are already doing this, as can be seen in the sharp rise in the *share* of earnings coming from foreign and, in particular, emerging economies. The flexibility that such firms inherently possess will be the envy of governments who cannot alter their aging demographic structures, and thus, cannot prevent their credit ratings from deteriorating. Governments are simply not free to migrate anywhere else.

*While an investment of this kind is not riskless, since stock markets can and will decline periodically, such an investment is unlikely to impose one-time and permanent “haircuts” on wealth of the kind that await government bondholders in the future. Stocks both decline and recover. Additionally, whereas such companies could conceivably go broke, and our putative portfolio could lose all its value, the reasons why this could happen also make it likely that an equivalent portfolio of “safe” sovereign bonds will also have lost its value. This is radical!*

*Finally, a portfolio of this kind would, in principle, protect investors from both inflation and deflation. Alternative safe investments such as gold may not fare well in a deflationary period, and, of course, pay no dividends, which is a requirement of “safe” investments for the elderly.*

In sum, “safety” in asset management is becoming as relativistic as space-time is in physics. This is new. And it is ironic that companies operating across many borders could end up safer than their host governments!

### **3. Sunrise in the East, versus Sunset in the West – And a Lurking Paradox –**

The year 2010 also witnessed a heightened awareness of the stark contrast between the Sunset in the West, and the Sunrise in the East. What transpired was partly economic and partly political. We discuss the economic dimension of this transformation in this section, and the political in the next. To begin with, it is increasingly recognized that “emerging markets” no longer refers to the East proper, but to the Middle East and Latin America (especially Brazil) as well. Investors should think less about China and India, and more about the opportunity to invest in a portfolio of some fifteen different emerging nations. Since the GDP and productivity dynamics *within* this grouping are not particularly correlated, the economic rise of this multiplicity of nations is particularly exciting. The opportunities for diversification are much greater than those presented by “Chindia” only a decade ago.

In the longer run, the West will benefit enormously from this transformation. To be sure, the share of global GDP accounted for by emerging versus demerging economies will rise without limit over the longer run, and will rise rapidly. In that sense, investors are coming to realize that yesteryear's question of "When will China's economy be larger than that of the US?" is not very interesting. It misses the essential point that nearly four billion people in some *fifteen* nations are being released from longstanding economic bondage. As some two billion of these will join the global middle class over the next quarter century (Goldman Sachs now estimates that 71 million people a year will now be joining this group), and as the share of services (as opposed to manufactured goods) will rise to about 75% of GDP, *a paradox will occur*.

On the one hand, the output of the demerging nations will be eclipsed by that of the emerging nations. Yet on the other hand, the diminished West will have much more to offer the New World than it will have to offer us, as we excel in services (especially education, tourism, luxury goods, and other high-earning sectors), whereas most emerging nations do not. As a result, the terms of trade between the East and West will depart radically from the pattern of the past fifty years: The West needed cheap manufactured goods from the East more than the East needed our Boeings, giving rise to a cumulative \$5 trillion trade imbalance between the West and the East during 1960 to 2010. *This imbalance should swing in a reverse direction, enormously benefiting the West*. For the West will excel in services that 2 billion new middle class consumers will want.

Additionally, the US (and probably other mature economies) will find manufacturing coming back home from overseas for three reasons, as foretold by the April 2010 announcement of the return of Caterpillar's manufacturing base to the US. First, over the next twenty years, both the currencies and the domestic wage rates will rise sharply in the developing world. Thus, the *dollar* price of an hour of "cheap" emerging market labor could easily rise *tenfold*, making such labor much less attractive. Second, the accelerating substitution of capital for labor (a century-old trend) will ensure that "cheap labor" will be increasingly less important to manufacturers. A robot bought anywhere can function as well in Iowa as in China or India. Third, the "green" movement sees vast shipments of containers from Asia to the US as environmentally unfriendly in the extreme. This sentiment will probably get stronger as time goes on.

#### **4. Bullies on the Block: China, Iran, North Korea, and Others – Time for Just Desserts –**

On the political front, what has been most notable about the Sunrise of the East has been the increasing assertiveness of China – in stark contrast to the behavior of India and most other emerging nations. In 2010, China emerged as the bully-on-the-block in many ways. Contacting 186 embassies and consulates worldwide, and ordering diplomats of all stripes to boycott the Oslo Nobel Peace Prize dinner is perhaps the most egregious example. Recall that the 2010 Nobel Peace Prize was awarded to the much-deserving and non-violent Chinese dissident, Liu

Xiaobo, who is now imprisoned and being treated brutally on all accounts. Equally outrageous was China's refusal to sell rare-earth commodities to Japan because of the errant Chinese ship captain stalemate. The World Trade Organization explicitly forbids the use of economic sanctions of this kind for political reasons.

On the currency front, China's refusal to budge during 2010 finally converted almost every commentator and even politician to the view that China has manipulated its currency to an extent never before witnessed in modern times. As the eminent *Financial Times* columnist Martin Wolf recently pointed out with his usual perspicacity and wit this past November, "If spending an amount equal to half of the world's second largest GDP to buy up foreign currencies is not currency manipulation, then what is?" Of course, there remains the small minority who blame the US and not China for all problems including the exchange-rate dispute.

*While the US certainly shares the blame for what has happened, especially due to its years of over-consumption and its failure to demand China's expulsion from the WTO to fight fire with fire, such arguments are usually misplaced. They confuse arguments about the origins of "imbalances" with the proper role of currencies as relative prices that must adjust in order to permit an optimal allocation of resources. Such an adjustment is required to prevent growing trade imbalances from morphing into trade wars in the future. Or worse!*

China is not alone in this rogue's gallery. There is the bullying by Iran – a nation that can no longer be dubbed "emerging" since its government is destroying its economic future. *Ibid* for North Korea. Israel is also culpable because of its disturbing West Bank settlement policy. Perhaps the best cartoon of the year appeared in the *New York Times* a month ago: A car driving within Israel passed a sign saying, "Welcome to the West Bank – the Only Expanding Housing Market on the Planet."

What can be done about the role of bullies? What *should* be done, and according to what theory? We discussed this in our September 2007 **PROFILE**, "Res Politica versus Res Economica." In this essay, we contrasted pure economics with pure politics. In economics, the assumption of perfect competition (Adam Smith's market of price-taking wheat farmers) amounts, at a much deeper level, to the assumption that no producer or consumer has *any* bargaining muscle. No one makes threats. All take prices as given by "an invisible hand," and no agent can collude with any other agent to influence prices.<sup>5</sup>

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<sup>5</sup> The Nobel Laureate Robert Aumann of Hebrew University proved all this for the first time in a celebrated 1975 paper. He did so by establishing an isomorphism between a bartering game with no prices and a market exchange game *with* prices. The allocations awarded to agents in each game converge to the same consumption bundle for each agent if and only if the number of agents is large enough in the bartering game so that it is futile for any one agent to collude with any other. Very heavy mathematics! Super deep!

In politics on the other hand, the outcome is all about who has how much power over whom. Figure 1 summarizes the sources and nature of “power,” and also puts the US–China conflict into better perspective. The underlying theory here was awarded Nobel Prizes to both John F. Nash, Jr. and John Harsanyi in 1994. The basic point we made in our earlier essay was that, in situation after situation, the Western powers, and most notably the US, have failed to constructively utilize the power they possess to arrive at optimal bargaining compromises with China, and indeed with other antagonists. Or as we aptly summarized matters, “The US gets an **F-** in its course in Bargaining Theory 101, while the Chinese and the Iranians get an **A+**.” They act with complete impunity, and almost always get their way. The West for its part is ever more supine, and its incompetence in bargaining is disturbingly reminiscent of that of Chamberlain and other ministers discussed in a spellbinding new book, *Munich, 1938*.<sup>6</sup>

### **FIGURE 1: NEW BULLIES ON THE BLOCK What To Do?**

#### **The Four Sources of Power (The Nash-Harsanyi Theory):**

- 1. Willingness to take risk, or equivalently intensity of desire**
- 2. Resource Endowment**
- 3. Threat Power**
- 4. Coalitional Muscle**

**In the US versus China bargaining game, the US possesses great advantages in attributes 2, 3, and 4 but is deficient in its Willingness to Take Risk—or else it is irrational!**

**Required Action: Suitable coalitions must form and issue *credible* threats.**

In our view, the time has come when either the US alone or a coalition of the US and others must issue what Nash and Harsanyi called “optimal, binding, and credible threats.” The greatest such threat in history was the Doomsday Machine, which helped to prevent thermonuclear catastrophe during the cold war, and during the Cuban Missile Crisis in particular. Making credible threats is, of course, completely out of fashion, as is clear from the vague threats and the excessively polite language used by US Secretary of State Hillary Clinton and most other diplomats in the West. While our diplomats talk tough from time to time, they never issue binding and/or credible threats.

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<sup>6</sup> *Munich, 1938: Appeasement and World War II*. Author: David Faber, Publisher: Simon & Schuster, 2008.

*The irony here is palpable. For as Nash and Harsanyi brilliantly demonstrated, the role of threats is not to create conflict, but rather to prevent it. When threats are mutually credible, then neither side has an incentive to do battle knowing what will happen to them if they do. Rather, each has a very strong incentive to reach a compromise and to avoid conflict.<sup>7</sup>*

## 5. The Reinvention of Macroeconomics

Part 2 of this essay now focuses on this fifth and final way in which 2010 has been a watershed of sorts. Please turn to the two Socratic Dialogues that commence on the next page.

Please persevere. The remarkable new discoveries of Ben Friedman and Ken Kuttner on Quantitative Easing appear at the very end.

### PART 2: THE REINVENTION OF FISCAL AND MONETARY POLICY – Both in Theory and in Practice –

#### A. First Socratic Dialogue: Fiscal Policy

**The President:** What a mess the nation is in! We have eased fiscal and monetary policy as much as any time since the Second World War. Moreover, an incipient recovery is well underway. But the job market has gotten worse, not better, even though GDP growth has been positive for almost two years. This doesn't make sense.

**Economist:** Judged from the standpoint of historical data, you are right that the current data are both unusual and disappointing. However, this does not mean that what we are experiencing is *logically* problematic. For it is perfectly possible to have an ongoing recovery in GDP along with a failure of the unemployment rate to drop. Indeed, under the right circumstances, this situation can go on for years.

**President:** Really? How and why could this happen?

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<sup>7</sup> The case of North Korea may be an exception here. If the regime really has nothing to lose, and does not care if several million of its people are nuked, then the standard logic of threat-induced cooperation may not hold true. But is the regime that crazed and desperate? We certainly do not know.

**Economist:** It's simple. Labor markets differ from product markets in exhibiting what scientists call "hysteresis." When you turn off a turntable so that there is no more power, the turntable keeps rotating. In the labor market, the number of workers seeking jobs grows every year regardless of the economy: new students graduate nonstop from high schools and colleges, and immigrants keep entering the workforce. In the product markets, by contrast, it is possible to stop the production of new widgets whenever desirable, thus facilitating a re-equilibration of supply and demand when the cycle turns and the recession ends. Because of this difference between these two markets, GDP growth must increase well *above* its so-called trend growth rate of about 3.3% if it is not only to absorb new workers graduating (or immigrating into the US) during a recession, but also to rehire older workers idled by the downturn.

**President:** By trend growth, I assume you mean the GDP growth rate equal to the sum of labor productivity and the annual growth in the workforce, correct?

**Economist:** Yes, that is the standard definition. To reinforce my point just above, if you look back at the strength of recoveries between 1900 and 2000, you will find that the average GDP growth during the first two years of recovery was nearly 7%. In many instances, growth was in excess of 10%. But in the present case, growth is hovering around 2%. That is the rub!

**President:** But growth was also quite slow early in the 1991 and 2001 recoveries, wasn't it?

**Economist:** Yes it was, but the magnitude of the recession (and hence of job losses) was much lower than it was this time around. Indeed, the economy lost some 6% of output this time around, many times greater than the losses of the 1990 and 2000 downturns.

**President:** So in order to get the unemployment rate down – properly measured to include not only the official rate but also the increase each quarter in the stock of "discouraged workers" who give up looking for a job – we absolutely must grow at 5%, and preferable higher, yes?

**Economist:** Yes, and those advising you insistently claim that this cannot be done in the present circumstances – especially because of depressed "animal spirits" and lackluster growth in the private sector. Incidentally, this condition may linger on for years for two quite different reasons: first, the lack of any foreseeable technology/investment boom of the kind that drove the economy's private sector during the 1990s; and second, the degree to which households leveraged up too much during the 1980-2007 boom in consumption and then in housing, and then saw their net worth shrink by nearly \$20 trillion since 2007.

**President:** Yes, it is very depressing. And what can I do? On the one hand, experts such as Paul Krugman of Princeton University and financier George Soros claim that the federal government must stimulate the economy much more aggressively than it has to date. They want another large stimulus bill, and caution that this is the wrong time to worry about either the size of the fiscal deficit or about bond market vigilantes. On the other hand, deficit hawks like Professor Niall Ferguson of Harvard and European Central Bank Chief Trichet are lecturing me on the sins

of further deficit spending. They argue that additional spending amounts to throwing good money after bad, and that if we fail to slash today's huge deficit of 9.2%, then the bond market will eat us alive in the near future.

**Economist:** Yes, and they point out that, while it is very difficult to know when bond markets decide to “short” the sovereign debt of any given nation, they can do so both rapidly and viciously as we have seen within the Eurozone these past two months. In this, they are right.

**President:** The message I am getting from everyone is pretty alarming. On the one hand, you are agreeing that GDP growth must increase much more rapidly than it is now. On the other hand, the conflicting messages from deficit doves and deficit hawks tell me that I am doomed to fail no matter which course of action I select. More specifically, should I be able to gain the support of a very divided Congress to spend more, I could speed up the economy in the shorter run via dramatically increased government spending. But this will kill growth in the longer run, once the bond market goes on strike and the cost of refinancing today's \$14 trillion of US debt becomes insupportable.

What would *you* do as an independent-minded thinker? Didn't I hear that you believe there is a way out of this mess, a strategy that, in principle, could please everyone, from deficit doves to hawks, and even to the unemployed?

**Economist:** Yes, Mr. President. I do see a way out. There is one strategy – and only one – that will permit much more rapid growth in output and employment *and* a much-reduced fiscal deficit, thereby pleasing the bond market *and* even a boost to national productivity growth, and hence, to the standard of living. But to understand this strategy and put it into proper perspective, you must appreciate that much advice you have been given is *wrong*, and that conventional macroeconomics has reached its limits of applicability. In particular, Keynesian *fiscal* macroeconomic theory must be “generalized” to a new and more powerful theory that can cope with today's bedeviling realities.

**President:** By a theory that is “generalized,” do you mean “replaced”?

**Economist:** Not exactly. It means that classical fiscal theory must be “extended” to new domains where classical theory fails to work any longer. The concept of generalizing a theory rather than replacing it is an old one. Recall from physics how Galileo's theory (in which feathers fell at the same rate as a lead ball in a bell-jar vacuum) gave way to the broader theory of mechanics developed by Newton, Lagrange, and others. Whereas Galileo's theory would not work outside his celebrated bell jar, the newer theory worked both within *and* without the bell jar. But as became clear early in the twentieth century, Newtonian mechanics itself failed to work in domains near black holes, near the speed of light, and in accelerating frames of reference. So it was generalized by Einstein, who discovered a theory that seemed to work almost everywhere in space-time.



**President:** I got it. Didn't something along these lines happen in microeconomics a half-century ago when the phenomena of risk and uncertainty became incorporated into standard theory?

**Economist:** Yes. The Stanford economist Kenneth Arrow showed in a celebrated 1953 paper how the classical model of supply and demand and market efficiency previously developed in a world of certainty about the future *could* be extended to conditions of uncertainty about the future. In his model, not only was the future unknown (i.e., no one knew where the "true" supply and demand curves for, say, wheat, would lie in the future), but such uncertainty was *subjective* in that different people had *different* views as to the probabilities of different futures.<sup>8</sup>

**President:** So where exactly did classical *fiscal* theory go wrong, or at least become inadequate for proposing solutions to today's problems? What has broken down?

**Economist:** Here is what happened. John M. Keynes (who is credited with introducing "fiscal pump priming" to stimulate growth in a recession) failed to distinguish between two real-world settings in which politicians might apply his theory. First, you have the standard case where the advent of increased deficit spending for cyclical reasons does not cause interest rates to rise. In a very simple supply/demand setting, the cyclical increase in government borrowing prescribed by Lord Keynes is offset by reduced private-sector borrowing during the slowdown. Thus, there is no reason to expect interest rates to rise, and they almost never did.

**President:** And the other case?

**Economist:** Second, suppose now that fiscal policy has been too loose for a long time – both in good and bad times – and the overall *stock* of debt has risen to "uncomfortable" highs. In this case, when the next recession arrives, the overall stock of debt will rise even further, setting off alarm bells in the bond market. Investors may well seek increased risk premiums for holding government paper, either because of the prospects of long-run inflation, or of outright debt default. In this case (which resembles the state of many nations today), the act of increased fiscal stimulus can drive rates up and hurt, rather than help, the economy.

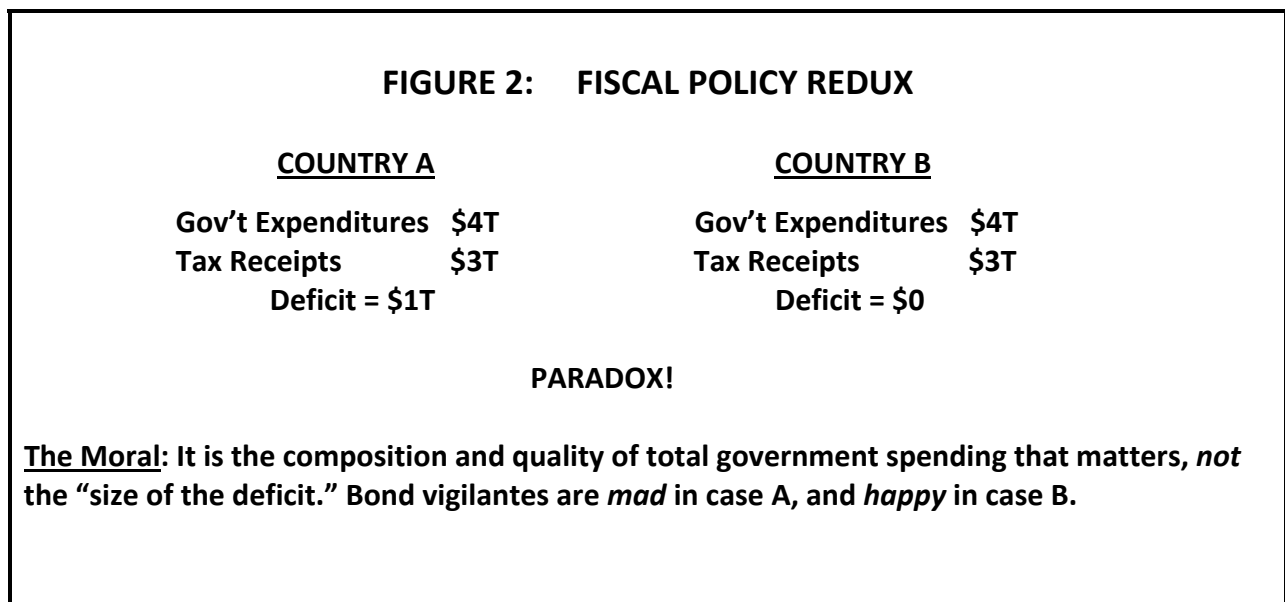
**President:** Yes, this is indeed the fear of deficit hawks who oppose my policies. And I suppose that this fear is well-grounded when you look at what has happened to interest rates in Greece and Ireland due to their sovereign debt crises in recent weeks. What then is the way out?

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<sup>8</sup> Arrow showed that the celebrated results of classical theory carried over to the case of uncertainty provided a slew of *new* markets (markets either in "contingent commodities" or futures market securities) was introduced, namely markets making it possible for all producers and consumers to hedge all their uncertainty about the future. Steven Ross at Yale University would show twenty years later that what we now call "derivatives" (specifically options) could be used to replace Arrow's futures securities in a highly streamlined manner. During the following year, in 1974, Black and Scholes introduced their famous "options pricing model" (previously no one knew how to price options), and much of modern finance soon came into being.

**Economist:** The way out is first to understand the paradox set forth in Figure 2. In doing so, you will discover that the concept of “deficit” as currently used has little meaning, and confusion about this term is at the heart of the Dialogue of the Deaf between deficit hawks and doves. The situation is broadly analogous to that within physics around 1900 when a failure to properly understand the concepts of “space” and “time” led to heated disagreements between the best physicists in the world. In 1905, Einstein clarified everything with his theory of Special Relativity, and these debates ceased. The interested reader can discover exactly what I am referring to in a footnote.<sup>9</sup>

Note that both nations A and B have the *same* levels of government spending, and the *same* tax revenues. But they do not have the same fiscal deficits of \$1 trillion as might be expected. For in the all-important eyes of the bond market, nation B has no deficit at all!



**President:** How can this be?

**Economist:** Because what matters in generalized Keynesian theory is not the size of the deficit, but the quality and composition of the government spending that gives rise to it. This is what the bond market cares about. In country A, we assume that all \$4 trillion of spending is on

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<sup>9</sup> One of the most heated debates concerned the nature of the “ether” through which light supposedly had to travel. More fundamentally, Maxwell had argued forty years earlier that a “vibration of the ether” was required for the propagation of an electro-magnetic field in space. But data from the Michelson-Morley experiments was inconclusive on this matter, and a heated debate ensued. Einstein resolved the debate when he noted in his Special Relativity paper that the entire concept of an ether was redundant, and not required at all. The debate ceased, and the concept of an ether dropped out of science just as the concept of the Phlogiston as the source of fire disappeared after Joseph Priestly discovered oxygen in 1751. All these examples signal how wrong the Best and the Brightest often are.

defense and transfer payments, as well as on the cost of administering government agencies. In this case, whatever debt is incurred will be added to the debt that today's children will one day have to repay, or at least to service. In country B on the other hand, we assume that \$1 trillion of the total government \$4 trillion is spent on capital investments, *with positive rates of return on the borrowed capital invested*. The \$1 trillion spent on such projects will be viewed by the bond market as *benign* borrowing: for the projects will be self-funding down the road (e.g., toll ways or bullet trains), and the funds invested will never have to be repaid by future bondholders out of future tax revenues.

**President:** I see where you are going. You are claiming that, in the case of country B, the bond market will see only \$3 trillion of *non-benign* spending. And since current tax revenues are \$3 trillion then there will be no "bad deficit" for the deficit at all.

**Economist:** Precisely. And as you surely know, this issue would not even arise in the context of a private corporation. For capital expenditures would never be treated as an "expense" (which would lower earnings accordingly) in the first place, but rather as an off-income-statement capital investment. The only cost that would appear on the firm's income statement would be the amortized portion of the cost of the new asset. The lower the interest rate is, and the longer the duration of the investment, the smaller this annual cost would be. It is in fact a scandal that most nations today do not distinguish between spending that is long-term investment and therefore depreciable, and spending that is not. Of course, some do.

**President:** And once the asset is built and comes into service, it presumably will generate more than enough returns to cover, and indeed exceed, the annual amortization cost. So it really does not contribute to a "deficit" in any meaningful sense. And in this case, the bond market will not penalize me for "more government spending," even though the government would be spending the same amount in total as it does now.

**Economist:** *Yes. And this is the essential point. What you are facing is a traditional policy issue, but one that is constrained by completely new circumstances: You must attempt to stimulate a very weak economic recovery through higher growth while not disturbing the bond market. Additionally, government must take the lead here via ongoing public spending, and thus at the cost of sustained or even higher deficits – deficits of about 10% of GDP. You are the first president to confront this newly constrained policy reality. But if you spend government money in the right way, you can have your cake and eat it too. Everyone can come out ahead.*

**President:** I have read virtually nothing about such a strategy in the press, notwithstanding my advocacy of more infrastructure spending from the start. Why has your strategy not been part of the public debate? What might critics have to say about it?

**Economist:** Before discussing these issues, let me first conclude with a discussion of the *benefits* such a program offers. First, let's be clear on exactly how this program would boost GDP and employment in the economy. Normally, a recovery is accompanied by "fiscal

contraction” – the flip side of a fiscal stimulus during a recession. More specifically, as the economy improves, many recessionary forms of spending (e.g., unemployment benefits) are reduced. Additionally, tax revenues rebound as the private sector rebounds. Thus, the government stimulus term ( $G - T$ ) in the definition-of-GDP equation *contracts* since government spending  $G$  contracts and tax revenues  $T$  expand.

This cyclical contraction (traditionally in the range 3% of GDP spread over two or three years) would cause a *reduction* in GDP, were this not more than offset by an increase in the other three terms in the definition-of-GDP equation, namely  $C$  (consumption),  $I$  (private investment), and  $X$  (net exports). Under my proposal, however, the “stimulus” term ( $G - T$ ) would *not* shrink, but rather would be kept as large if not larger than it was during the recession. More specifically, the ( $G - T$ ) term would remain at 10% of GDP. And GDP itself would remain higher, which is precisely what is needed for employment.

**President:** Wouldn't that shock those vigilantes who call for a sharp reduction of ( $G - T$ ) to a “sustainable” level of 3%, as opposed to the 6.5% that is my administration's current target by 2015?

**Economist:** Of course it would shock them given prevalent confusions. But should the share of GDP accounted for by high-return capital investments be in the range of 7% of GDP, or about \$1 trillion, then the properly calculated “true” deficit of concern to bond markets would be about 0% of GDP: for tax revenues would then equal all *non*-investment government expenditures.

**President:** I do see this, and it makes sense assuming it is possible to mobilize resources on the scale you are suggesting. But wait a moment. Wasn't I sent an article recently by that superlative financial commentator Martin Wolf of the *Financial Times* who proposed a similar plan?

**Economist:** Yes, although Wolf proposed no plan *per se*. In particular he did not discuss profitable versus non-profitable investment spending by governments — a very important distinction discussed below. But his brief commentary aptly pointed out that “government borrowing” need not be a problematic if, as a result of such spending, the stock of the nation's assets increased. An economist would say that Wolf was discussing the “stock” of assets, not the “flow” of national income known as deficits. And his point was completely valid.

**President:** Are there other benefits from our proposal that you have not cited?

**Economist:** Yes, four others to be exact. To begin with, increased capital investments of the kind I propose (partially replacing temporary transfer payments introduced during the

recession) will trigger a much larger “multiplier effect” in the job market than any other kind of spending.<sup>10</sup> And this is just what the doctor ordered for the employment market.

Additionally, assuming that my proposed plan is implemented in full – which requires a US Marshall Plan lasting one or two decades – then the *composition* of US GDP will change over the decade in a manner long recommended by economists: It will shift from today’s 70+% consumption share contrasting with paltry private and public sector investment (*net* US investment in 2009 was actually negative!), to robust investment with consumption spending falling to 65% of GDP, or even less. This inter-sectoral rebalancing is long overdue.

Finally, given the intended scope of my plan, then the pattern of US employment would be shifted over time, with a much greater emphasis on workers who “make things,” on engineering, on advanced material sciences (e.g., those nano-technological breakthroughs now beginning to be utilized in applied engineering), on human capital, etc.

**President:** And all this will in turn increase national productivity growth, which in turn will boost GDP even further.

**Economist:** Yes, and living standards as well. These are the third and fourth benefits.

**President:** What about the difficulties of *implementing* this US Marshall Plan whose potential benefits you have well summarized. First of all, why are you proposing such a large capital spending program? My own infrastructure initiative was a mere fraction of what you are proposing.

**Economist:** Yes it was, and to speak bluntly, yours was *much* too small. To understand why, recall that the nation has *two* crises that mesh together at present. On the one hand, you have the likelihood of a “lost decade” of weak growth and an unprecedentedly high level of structural unemployment. With the onset of the retirement of the baby-boomer generation, and what *this* will do to the longer-run fiscal deficit, a lost decade would be a disaster. Second, the nation has deferred public investment spending of almost every kind for forty years. The National Academy of Engineers has computed that over \$5 trillion will be needed to repair roads and bridges alone over the next decade. But this just scratches the surface! I personally believe it is a mistake to equate this kind of spending with “infrastructure.” For much more is needed so that the nation is prepared for its long-run future: at least ten bullet trains connecting ten major corridors; two or three new energy grids; ten nuclear plants; shale gas distribution networks serving our need for greener energy and less reliance upon foreign energy sources; human capital investment in the pure and applied sciences in which the US once had a lead; and, of course, the repairs and improvement to *existing* infrastructure (roads and bridges) that you have stressed yourself.

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<sup>10</sup> Recall the classic work of Nobel laureate Sir John Hicks, and others, on “multiplier and accelerator effects” from investment spending.

**President:** So you see the need for a \$10 trillion expenditure (or \$1 trillion per year) over at least ten years?

**Economist:** Yes, perhaps even \$20 trillion spread over the next quarter century. It is important to understand that this represents not merely an antidote to a possible lost decade, but the willingness to provide the infrastructure of the future needed by our children and grandchildren. Interestingly, note that Japan could not utilize my strategy. It already did its infrastructure spending!

**President:** You have said nothing about *financing* such a project. How exactly do you evaluate a very large number of potential projects to arrive at “winners” that earn a positive return on capital – as you say is required to please the bond market?

**Economist:** I would want a special investment bank created that would disburse funds as appropriate. Some 500 or 1,000 sharp analysts would be hired and very well compensated. Their job would be quantitatively to identify winning projects in the precise sense that each proposed project would satisfy the Arrow-Kurz inequalities that *define* what it means for a public investment replete with non-market “externalities” to be a winner, earning a positive risk-adjusted expected rate of return.<sup>11</sup> A non-partisan management team would be charged to ensure that moneys would be spent on projects in order of their calculated rates of return – kicking off with the highest. There would be total transparency. Additionally, the *managers* of each project would be hugely rewarded for on-time and on-budget performance, and penalized for the converse.

**President:** Am I to understand that there really are enough such projects meeting these Arrow-Kurz profitability benchmarks to utilize the \$10 trillion you are proposing?

**Economist:** Absolutely. It is very difficult for non-experts to understand how much payoff or “return” can be reaped from large public projects. For example, subways and commuter trains do not pay for themselves via ticket sales – for which reason they are usually viewed as “losers.” But this is wrong. Their benefit lies not only in ticket sales, but more importantly in the government tax revenue raised on the increase in taxable GDP that results from people being able to get to work in much less time than would otherwise be possible. In this vein, it has been asserted that India’s GDP could be 23% higher if its workers enjoyed proper public transportation. People would spend their time generating taxable income rather than wasting time on train platforms. And government would gain some 30% of such income in extra tax revenues.

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<sup>11</sup> See the discussion on public finance and on the way to quantify “return on capital” in public investments appearing in *Public Investment, Rate of Return, and Optimal Fiscal Policy* by Kenneth Arrow and Mordecai Kurz, Resources for the Future, 1970.

**President:** Didn't the eminent financier Felix Rohatyn write a book nearly two years ago on a similar topic?<sup>12</sup>

**Economist:** Yes. It was a very informative book thick on history, if thin on analytics. Rohatyn pointed out there would have been no Erie Canal system, no railroads across the nation, no interstate highway system, and not even the Internet without direct government participation. And without these massive investments, the US as we know it would not exist. Yet at the time, each such effort was considered "unduly expensive." Frankly, it is hard for people and politicians to contemplate the huge future revenue streams that can result from public investments. Happily, it is now possible to quantify these hidden dimensions of the true "return" from such investments.

**President:** So far, all this makes imminent sense. But are the resources available with which to tackle such projects?

**Economist:** For starters, there are some fifteen million workers seeking work. Among these are 1,700,000 laid-off engineers and construction workers. Moreover, the likelihood that construction in both residential and commercial real estate will be sluggish throughout this decade-of-deleveraging suggests that plenty of such resources will be available for an extended period. More generally, there is a lot of nonsense being generated about "mismatched skills." As GE's Jack Welch once pointed out, and so did McKinsey & Co.'s Global Institute, much if not most training is on-the-job, and not in school. At a theoretical level, this point was made in 1962 by Kenneth Arrow in his frequently cited paper, "The Economic Implications of Learning by Doing." Mismatches can be remedied, especially in emergencies. Finally, as for the availability of capital, note both in theory and in practice that there has never been a lack of capital assuming good returns can be generated.

**President:** If the projects you propose will be self-financing in the long run, earning a positive return in the appropriate sense, then couldn't we attract *foreign* investors to participate in this American Investment Renaissance?

**Economist:** Absolutely. *We could and we should.* It would help with our domestic politics if representatives of foreign investors – especially sovereign wealth funds – were on the board of the proposed investment bank. They would demand transparency and quality project assessment and management, and this could only help matters.

**President:** Let me return to my earlier question. *What are the greatest obstacles to success in pressing for this programme?*

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<sup>12</sup> "Bold Endeavors, How our government built America, and why it must rebuild now." Author: Felix G. Rohatyn, Publisher: Simon & Schuster, 2009.

**Economist:** There are five main obstacles:

*First*, you and other national leaders must awaken widespread awareness that a strategy exists for solving many of our problems. If you were to ask most observers today whether the nation can pare its true fiscal deficit to zero while massively stimulating employment, the answer would be: “What are you smoking? Of course no such strategy exists. This is not Alice in Wonderland.” As you said before, with the exception of the comment by Martin Wolf this past November, no columnist or pundit has proposed a strategy along these lines. It is you as president who must point out that there is in fact a North Star, and that this is worth reaching at all costs.

*Second*, there is the treacherous NIMBY (Not-In-My-Back-Yard) syndrome that you yourself experienced during your first year in office. I understand you were told not to pursue an energy grid project because of the log-jam of “local politics.” This NIMBY syndrome is powerful, and utilizing the newly constitutional provisions of eminent domain, the Federal government must act decisively to enable projects of national importance to proceed regardless of local opposition.

*Third*, you must stress to the public the point made so well by Felix Rohatyn: government investment spending can be and has been a force for the good.

*Fourth*, you must sell this proposal as win-win in nature. Co-opt the Left by pointing out: “This is a victory for Big-Government-to-the-Rescue.” Co-opt the Right by stressing that, for once, government spending will be funneled through a quasi private/public investment bank, whose highly paid analysts will prevent boondoggles from occurring. Nothing will be undertaken that is not “for profit” in the sense appropriate for public sector investments possessing externalities.

*Fifth* and finally, you must stress to Democrats and Republicans alike that, *unless* a strategy of this kind is adopted, the jobless rate (properly measured) may well continue to rise for a number of years. If this happens, all you rascals will be thrown out of Congress by an infuriated electorate as the middle of the decade draws near. By then, the failure of current policies being proposed will have become starkly clear.

**President:** I guess I have my hands full! One final question. You have given me much to chew on, as well as new hope that there really is a way out of today’s political and economic impasse. When I am challenged on your proposals by others, is there a deeper analytical foundation supporting your proposals that I can cite? Or have you just expressed your own opinions?

**Economist:** Yes, indeed there is. It is implicit in the equations of the Arrow-Kurz book that I cited earlier. Regrettably, despite its widely acknowledged importance in unifying all of fiscal theory, the work is extremely mathematical and difficult to read, for which reasons it is almost



never cited. In a separate note, I shall sketch how their theory logically implies and indeed justifies the approach I have taken in this discussion with you today. For the interested reader, please read the footnote below which sketches this matter more rigorously.<sup>13</sup>

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<sup>13</sup> Consider an economy with public goods and externalities of the A-K (Arrow-Kurz) variety. Suppose private consumers and investors and their government watchdogs have the objectives of selecting state-dependent policies over time that maximize the utility function (level of well-being) of themselves as individuals, and that maximize the “felicity” of all members of society taken jointly. In particular, suppose the policy criterion to be applied is that of “maximal efficiency” (equivalently “no waste”) in the allocation of *all* resources – public and private – over time.

Suppose furthermore that we introduce two “cycles” into this optimization model. The first cycle is a Markov process consisting of two dominating states, **A** and **B**. Let state **A** denote a world in which all consumers possess a McMansion, yet transportation is so dilapidated that citizens living in these dream houses cannot get to work without an undue waste of time and energy. In state **B**, the situation is reversed and recalls Japan in 1968 when the author first visited that nation: There were bullet trains galore, but the Japanese lived in unpleasant small houses lacking basic amenities. Then the solution to the A-K optimization problem will be to shift resources from the private to the public sector when the system is in state **A** and transportation is needed, whereas private housing is not. And this transfer will be reversed when the system is in state **B** and private housing is most needed.

Now let us add a simple two-state Keynesian business cycle to the model wherein state **C** denotes flagging “animal spirits” and recession (slack private demand), whereas state **D** represents robust animal spirits and a private-sector boom. [Note that there is no such business cycle in the A-K model.] We can then construct an *n*-th order Markov process consisting of the investment-cycle state *and* the animal-spirits state. In this model, the system will migrate at any point in time to one of four joint states **AC**, **AD**, **BC**, and **BD**. When this A-K model is suitably constrained and optimized over the space of policy functions, utilizing a generalization of the Pontryagin Maximum Principle from optimal control theory, *then welfare will be maximized by running very large fiscal deficits when joint state **AC** is at hand (high need for public transport investment and low level of animal spirits in the private sector), whereas a very large fiscal surplus will be optimal when joint state **BD** is at hand (high need for private-sector housing investment and high animal spirits).*

This provides completely new support to the concept that large fiscal deficits are indeed optimal in certain environments, and are required for investment-cycle reasons far transcending Keynesian animal-spirits reasoning. Importantly, there is a duality whereby, in some states of the system, the household will be a net borrower (as when everyone needs a mortgage after a war to buy a house in which to raise a family), and in other states the household will be a net lender. But the same is true of the public sector, which itself will run deficits in states where it is utility-maximizing to do so, and surpluses in other states. In this regard, the great achievement of the A-K contribution in my eyes was to dissolve the putative difference between “macro” (fiscal) and “micro” economics, and to show how there is one and only one fundamental problem in *all* of economics: *identifying and implementing an optimal allocation of resources across time to maximize public well being*. Given today’s tone-deaf discussions about deficits being inherently “good” or “evil,” this finding remains revolutionary. The author has never seen *any* of the points made above adopted by *any* commentator writing for *any* publication.

## B. Second Socratic Dialogue: Monetary Policy

In this next dialogue, we confront the question of quantitative easing (QE) and how to interpret it. We also discuss the revolutionary new research by Benjamin Friedman and Kenneth Kuttner discussed at the outset. In the latter case, a mere overview of the new work is presented, and we expect to write more about this during 2011. In this second Dialogue, we have chosen a “goldbug” as our antagonist since this group of investors are both very vocal in their denunciation of QE, and also quite wrong in much of their analysis, but not in all of it.

**Goldbug:** So you plan to lecture me on why we goldbugs are economic analogues of Tea Party-ites. You economists believe gold to be a “barbaric relic,” and those who champion it as naïf and unsophisticated. Well, now that the Fed has adopted full-scale QE, *aka* money printing, you will find it harder than ever to convince me that we are wrong.

**Economist:** To begin with, let me point out that I happen to own some gold, and view it as one – but only one – good hedge against the long-run inflation that is indeed possible. I do not view it, however, as a good hedge against *deflation*. But the purpose of this Dialogue is not to discuss gold, with all due respect, but rather the link between QE and inflation. This is a complex matter, and it may help you to learn more about it, regardless of your faith in gold. You already agreed in past discussions that inflation is a difficult subject. Recall how the greatest inflation of the past century (that of the 1970–1981 era) was not due to money printing but rather to OPEC cartel restrictions on oil output, which led not only to high oil prices, but more importantly, to the celebrated “wage-price spiral” that drove the CPI to double-digit levels at the end of this period.

**Goldbug:** OK, to start off, please explain exactly what QE refers to. I *think* I understand given how much discussion there has been about this in the press, but it remains a bit murky.

**Economist:** To begin with, let’s distinguish between two usages of the term that are often confused. First, suppose the Fed (or any such bank) has driven short-term interest rates (the rates it controls) down to its “floor” of nearly zero. And suppose it wants to further stimulate a weak economy. Well, one way it can do so is to buy in securities on the open market, adding these as new assets appearing on the Fed’s now expanded balance sheets. One purpose of doing so may be to lower *longer*-term interest rates thereby further assisting the economy.<sup>14</sup> In this particular context, QE is viewed as “what the Fed can do *after* it has exhausted its interest rate targeting objective of driving the Fed funds rate to zero.” Note that there is, in principle, no limit as to how many securities the Fed can buy in under this QE regime. I know this bothers

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<sup>14</sup> As you are witnessing at this moment, however, it can sometimes be difficult for the central bank to significantly influence intermediate and longer-term bond prices. “More demand” for such securities by the Fed may *not* cause prices of such securities to rise (and yields thereby to fall), especially if such purchases give rise to fears of future inflation – precisely the fear you goldbugs harbor.

you, as you believe that the more money it “prints” in paying for these asset purchases, the worse inflation will become, and the lower the dollar will fall.

**Goldbug:** Then what is the second context in which QE can occur?

**Economist:** It occurs when the Fed buys in securities and adds these assets to its balance sheet *regardless* of the level of short-term interest rates. The European Central Bank (ECB) for example, has recently altered the size of its balance sheets when the short-term interest rate was not zero.

**Goldbug:** Is this difference very important? It doesn’t seem very interesting.

**Economist:** Yes, it is very important, as will be seen when we discuss the new research by Friedman and Kuttner. But for now, let’s just suppose that the Fed has short-term interest rates where it wants them, and undertakes a program of significant QE.

**Goldbug:** As an aside, by increasing its holdings of assets (mortgages and treasury securities) from \$800 billion – the normal size of its balance sheet in constant 2009-dollar terms during the fifteen years before 2007 – to over \$2 trillion since 2007, hasn’t the Fed’s QE program been huge – and surely inflationary in the longer run?

**Economist:** Massive yes, but inflationary no. *Or rather not necessarily inflationary.* As will be seen, large QE can *enable* rapid future inflation if and when the central bank chooses for inflation to occur. But QE in and of itself need not be inflationary.

**Goldbug:** This is where I tune out. Please explain yourself.

**Economist:** The most common source of misunderstanding lies in a failure to understand how the Fed “pays” for its acquisition of new assets. It is blithely assumed that the Fed must “print money” to finance the expansion of its balance sheet.

**Goldbug:** But it must print money. Otherwise, how could it pay for the securities it buys?

**Economist:** Here is how. When the Fed buys in these new securities, they become new assets on the Fed’s balance sheet. But as always, if assets increase, so must liabilities. The liabilities record *how* the Fed pays for its new assets. Now, what do you think the Fed’s liabilities are?

**Goldbug:** If you push me, the truth is that I don’t really know. It is never discussed.

**Economist:** Well this is very important to understand. The liabilities divide into two types: first you have “currency.” Think of this as outstanding “cash” that has been printed for the Fed by the Treasury. It represents about 42% of the total liabilities.

**Goldbug:** What is the remainder?

**Economist:** It is (electronic) bank reserves on deposit with the banks that comprise the US banking system. Remember that we live under a so-called “fractional reserve” banking system. For any extra \$1 of free reserves, a private bank can extend approximately \$10 in new loans. This fraction is called the Fed’s *reserve ratio requirement*. It varies both by type of loan and by date, but let’s stick to \$10-to-\$1 for simplicity.

**Goldbug:** So you are saying that the Fed can choose whether to issue new currency to pay for its new assets or to issue new reserves, correct?

**Economist:** Yes, and what do you think our Fed does, and always has done?

**Goldbug:** I don’t know. Issue a mix of both?

**Economist:** No. We never “print money” (increase Fed liabilities in the form of currency) other than to meet the slow-growing demand for cash – much of this coming from drug dealers. But the Bank of Zimbabwe did do so. It literally turned on the printing press so that the country could pay its bills. Inflation went up to millions of per cent per year.

**Goldbug:** OK, so our Fed settles its accounts by issuing reserves. What’s the big difference?

**Economist:** The difference is all-important. Here is how it works: When the Fed goes to the open market to acquire securities, it must buy them from so-called primary dealers like Citicorp. Each such dealer must by law have a reserve account with the New York Fed that manages the open market for the Fed in Washington. When the Fed has the New York Fed acquire a trillion dollars of securities, or whatever, it pays for these *not* by printing money (currency) but rather by crediting the banks’ reserve accounts with an extra trillion of new bank reserves. This is all done electronically so that the reserves are sometimes called “electronic reserves.”

**Goldbug:** *What then is the exact linkage between the surge in bank reserves and inflation?*

**Economist:** This was the focus of our August 2009 report, “The Inflation/Deflation Debate: What Will Happen, and Why.” The best way to think about reserves is to view them as *contingent money*. When and only when Citicorp or some other bank utilizes its reserves to make loans to you and me, only then do the reserves become “money.” When the loans to us are actually made, we receive demand deposits in our checking account. This is true “money” we can spend in the form of credit extended that shows up in the various money measures like M1 and M2. And there is an *incentive* for the banks to make loans: doing so is profitable, especially since they can make \$10 trillion of profitable new loans given their new \$1 trillion of reserves. But in doing so, private banks will create an awful lot of extra “dollars” chasing the same number of widget.

**Goldbug:** So with all this new money in the system, the dollar price per widget *will* go way up, and inflation is the result. You are saying to visualize the new reserves as “inert money” until they are “actualized” by being lent out by the banks. Specifically, it is the private banks that create the money and cause the ensuing monetary inflation.

**Economist:** Yes, but don’t forget that there can be other types of inflation as we saw so spectacularly during the late 1970s. Now as we stressed in our 2009 report on inflation cited above, there are five things that can happen – three are choices of the Fed – that can *prevent* inert money (new bank reserves due to monetization) from ever entering the economy as actual money that generates a monetary inflation. Importantly, any *one* of these five can in principle forestall inflation.

**Goldbug:** *So it is the joint probability of all five not happening that is the probability of a monetary inflation given QE. True?*

**Economist:** Exactly, and that was the main point of our earlier study. Recall that, given QE, the five brakes on money creation are:

*First*, suppose that the private banks in question are in a state of distress and must write down a lot of bad assets. Then they need new reserves so that their own balance sheets will meet so-called “capital adequacy” standards. If their balance sheets end up no stronger than before with the new reserves, then they cannot increase their own assets by booking any new loans. In this instance, the Fed’s role is passive. It simply relies upon the brake of capital requirements to curtail credit extension.

*Second*, the Fed can increase the amount (currently 0.25%) it pays banks on the reserves they hold. If it raises that remuneration to, say, 4%, then the CEOs of banks will be happy to retain their reserves in-house and book risk-free profits rather than lend them out to risky you and me. The ECB for its part does alter its remuneration payments for reserves in this manner. But as long as private banks sit on reserves, no money proper ever enters the system.

*Third*, the Fed can arbitrarily raise the reserve ratio of the banking system. If on the one hand they add reserves to the private banks but on the other increase the reserve requirement ratio by the right amount, then the banks will be unable to extend any net new loans at all, and the money supply will not expand.

*Fourth*, you and I (like the Japanese after 1990, and many Americans today) may simply wish to not take on more debt due to a cultural “gestalt,” or to hardships of our own. As a result, all the new reserves will remain inert and no new money enters the system.

*Fifth*, and finally, the Fed can always “reverse” its QE by re-selling all the securities it previously bought in on the open market. Doing so will of course *drain* bank reserves by a like amount.

**Goldbug:** So assuming that these events are independent of each other (a first approximation), then the probability of inflation will be the joint probability of all five not happening. In particular, if the chance of each event (e.g., raising the reserve requirement) *not* happening given incipient inflationary pressure is **.25**, then the probability of inflation is **.25** to the fifth power, or negligible, correct?

**Economist:** Yes, assuming the five developments are mutually independent so that simple multiplication is valid.

**Goldbug:** And is this what you meant earlier when you claimed that, while QE *can* enable inflation to result, no respectable central banks would either *want* or permit this to happen?

**Economist:** Almost, but not quite. I have not ruled out what you goldbugs fear most: An active decision by the government and/or by the central banks to deliberately create inflation. Bernanke rightly points out that, in a debt-burdened society, deflation must be stopped. For deflation is not about “commodity prices,” concerning which you goldbugs are monomaniacal, but also about people’s wages and salaries. When prices of *everything* drop – except for the stock of debt you and I have incurred – chaos and societal bankruptcy can be the result.

Now there is a second reason why the government might wish to create higher inflation in the future, but one Bernanke does not and cannot openly discuss. This second motivation would be to silently default on today’s already massive stock of debt. It is well-known throughout history that inflation can be the politically least painful way of declaring a default without actually defaulting. To the extent this action is likely, then you and I should own some gold or other hard assets as a hedge.

**Goldbug:** But whereas we goldbugs are quite certain that our government will choose inflation for this purpose, you think it is unlikely.

**Economist:** Unlikely during the next ten years. After that, de-indexing entitlements while raising inflation may be the only way out of the morass that lies ahead.

## The Startling New Friedman-Kuttner Research Results

In concluding this essay, we shall summarize the remarkable new findings of Ben Friedman and Ken Kuttner referred to and formally referenced above. We shall see that the scope and nature of monetary policy is currently being re-thought from scratch. Both the tools available to the central bank and the range of problems that it can address have expanded. And this is all for the good. The more “macro-controllability” there is, especially in times of crisis, the better. A more extensive discussion will appear in a 2011 report. *The importance of this discussion for the current essay is that it sheds completely new light on the concept of QE as a policy tool.*

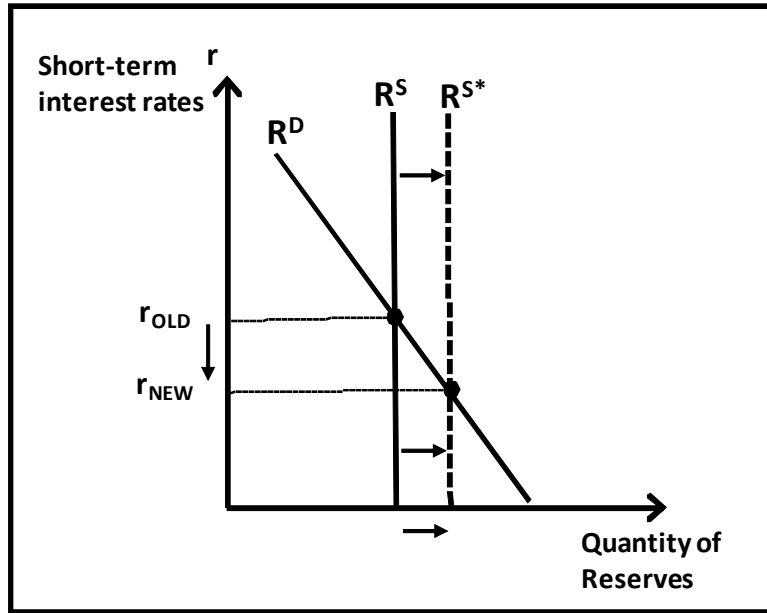
**Goldbug:** What is the bottom line of this new research? What does it boil down to?

**Economist:** Traditionally, central banks had to choose whether they would target short-term (overnight) interest rates, or else the magnitude and composition of their balance sheets. It was a choice between price or quantity, but not both. More specifically, as shown in Figure 3, if the Fed wished to lower (or raise) the interest rate, which is what it always did in classical “interest rate targeting regimes,” then it has *no control* at all over the size of its balance sheet, (i.e., its liability of reserves). Or *vice versa*, should it wish to focus on the size of its balance sheet for some reason, then it would have no control over what would happen to interest rates. Of course, the latter situation virtually never arose in recent decades: why would the Fed abandon its all-important focus on interest rates simply to adjust its balance sheet? It wouldn’t make much sense. At least, that was what we used to think up until this latest crisis!

But new, and quite technical, arrangements now make it possible for the Fed (and indeed the central banks) to control *both* the short-term interest rate *and independently* the size and composition of its balance sheet. Moreover, this bonus of possessing two as opposed to one “control variables” is not unimportant: In the context of the unprecedented bust of the past three years, it was critical to the economy’s survival that the Fed *could* step in and support the US mortgage market by buying up a trillion dollars worth of mortgages (without impacting interest rates) when no one else would.

This is the authors’ arresting bottom line, and they econometrically tested their theory in the context of the US Fed and the ECB and the Bank of Japan. It held up nearly perfectly in the case of the US and Europe, and well, but not perfectly, in the case of Japan. In this extensive research, all *i*’s were dotted and *t*’s crossed, as you would expect from scholars of this rank.

**FIGURE 3: OLD CENTRAL BANK PARADIGM**



**Moral: The Fed Can Control Price or Quantity**

**Goldbug:** I think I get the main point, but you are losing me a bit. If your graph is supposed to make all this clear, please explain it step-by-step.

**Economist:** As was explained above, what the Fed controls via its ability to buy and sell securities on the open market (and accordingly to increase or decrease the stock of private bank reserves) is the market in *reserves*. Our figure depicts this market in a very simple manner.<sup>15</sup> First, note that the demand curve  $R^D$  for reserves is downward sloping as you would expect: the lower the interest rate, the more public demand there will be for credit. And for a predetermined reserve requirement ratio, this implies a greater demand for bank reserves, since reserves enable the extension of credit.

<sup>15</sup> Given the role of reserves in the potential creation of money and credit, you can also interpret the horizontal axis as being “money” or “credit”; but this is misleading since the Fed itself does not control the growth of money and credit *given* the reserves it has created at any one point of time. Other factors enter in.



**Goldbug:** I think I now get it: So facing a fixed public demand curve, which the Fed does not control, and given a decision to lower short-term interest rates as indicated on the vertical axis, then the Fed has no choice but to add the exact amount of reserves to the banking system (by buying in a corresponding amount of securities) required. This is the way it achieves its targeted new interest rate. This required increase in supply is represented by the outward shift in the supply curve in your figure. The supply curve  $R^S$  is, of course, vertical (“price inelastic”), since the Fed pays no attention to interest rates when its mandated job is merely to increase or decrease reserves. Is this correct?

**Economist:** Yes, it is. In macroeconomic jargon, if the interest rate is controllable, then the quantity of reserves is not. And *vice versa*. Incidentally, it was Swedish economist Knut Wicksell who introduced this classic logic of central banking in 1907. The same model is taught to students of macroeconomics today over a century later.<sup>16</sup> It is alluringly simple. The problem is, it no longer describes how central banks actually work, for reasons we now discuss.

**Goldbug:** So what happened to permit the expansion of Fed power you cited just above whereby the Fed can *independently* target *both* the interest rate and the quantity of its assets – in the latter case impacting the size of its balance sheet?

**Economist:** That is indeed the sixty-four-thousand-dollar question. We shall summarize the answer graphically, but postpone a causal explanation of this logic until a forthcoming report. Please now consult Figure 4 below. All that differs from the previous figure is that the demand curve is horizontal, and as we shall see that it can be moved by the Fed itself. At a deeper level, the graph represents a new reality in which, *because of these horizontal and vertical slopes*, the Fed can independently alter both price and quantity and end up with any mix of the two it desired. By sketching graphs with alternative slopes on a paper napkin, you will see that any other set of slopes will not permit this independence.

**Goldbug:** *You are saying that the Fed can now shift the demand curve for reserves as well as the supply curve – and can do both independently at the same time.* How could it possibly do so? Didn't you say above that this demand curve represented the *public's* interest rate sensitive demand for reserves (and by extension for credit), and that the Fed had to take this “as given”?

**Economist:** I did, but this is exactly what has changed. When viewed from the *short-run* period of a few days to a few weeks, what matters to the market in reserves is not the public's demand (or change in demand) for reserves, but rather the banking system's own demand. Banks are legally required to adjust their reserve holdings every two-weeks-by-two-weeks (or whatever the “reserve averaging time horizon” may be). In the short run, for a host of very technical reasons, banks' aggregate demand curve can be approximated as horizontal in slope.

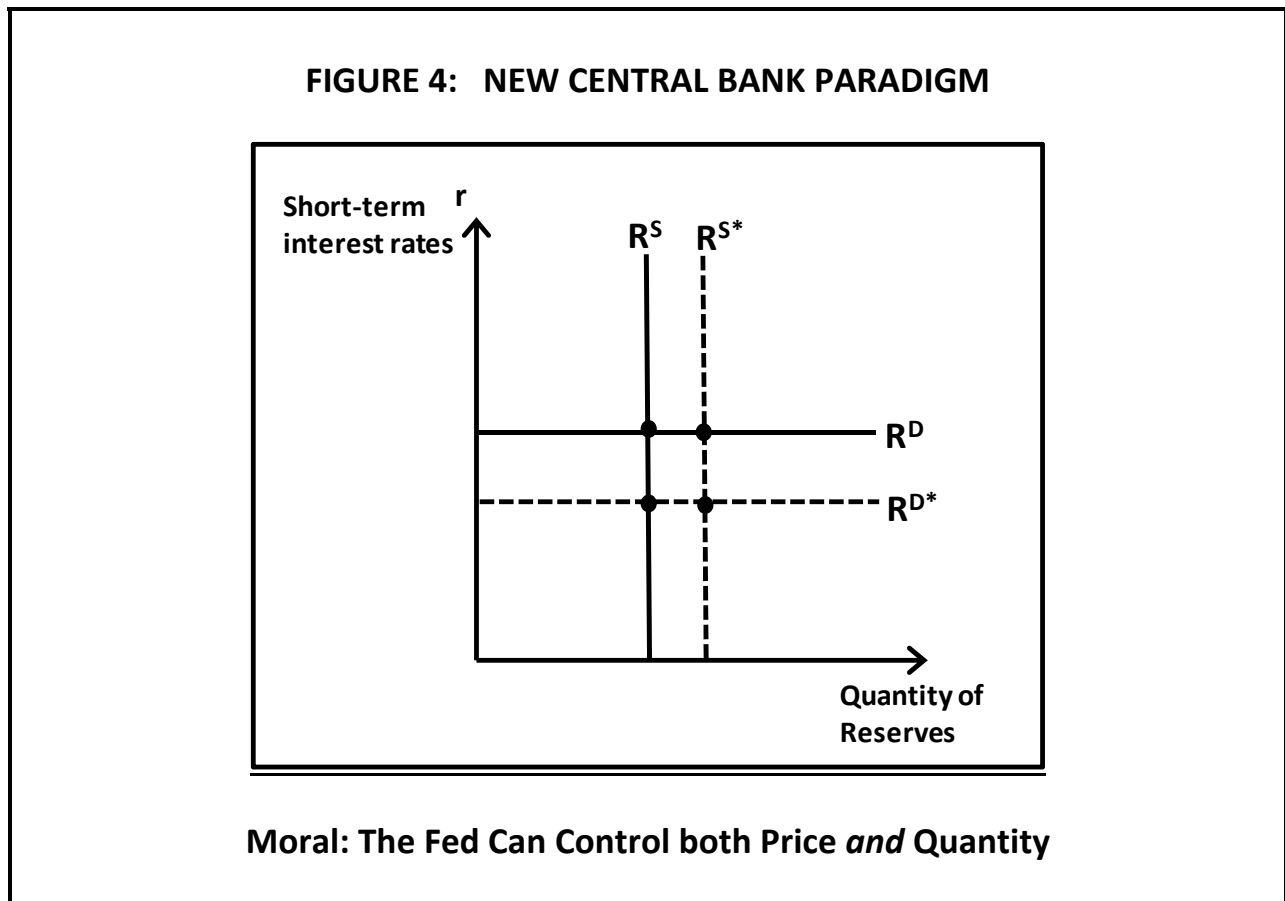
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<sup>16</sup> Wicksell, Knut, “The Influence of the Rate of Interest on Prices”, *The Economic Journal*, 17 (66), pp. 213-220, 1907.

More importantly, the Fed can cause the banking system's demand for reserves to shift up or down merely by "signaling" changes in future policy interest rate levels. That is, the Fed can cause the demand curve to jump in whatever way it wants by means of its "announcement effects" on banks' demand for reserves. Doing so changes the interest rate to the desired extent regardless of the supply of reserves, as the graph makes clear. In sum, the Fed can achieve its own targeted changes in interest rates *without* changing its own balance sheet via open market operations.

**Goldbug:** While this is interesting, it is somewhat complex.

**Economist:** Yes, and in a footnote below where we quote from the Friedman-Kuttner paper, you will see how subtle the issues are that arise here. We have only scratched the surface.<sup>17</sup>



<sup>17</sup> "As the discussion above explains, the apparent puzzle that movements in the central bank's policy interest rate require little or no change in reserve supply is, in the first instance, a consequence of arrangements, like lagged reserved accounting and averaging over the reserve maintenance period, that make banks' demand for reserve highly interest inelastic on a day to day basis, but elastic over longer run." [We have quoted from p.60, with the last five words taken from p.64.]

**Goldbug:** You often will read: “Having hugely expanded its balance sheet during the recent financial crisis, the Fed will have to ‘shrink it back’ to its traditional \$800 billion size to avoid inflation in the longer run?” Doesn’t your new message suggest that this may not be the case?

**Economist:** Yes, and you make a very perceptive point. Provided the Fed uses several or all of the *other* tools at its disposal that we have cited earlier in this Dialogue, then it does *not* in fact need to contract its balance sheet at all. [Traditionally, it would do so by simply selling back to the public in the open market all those securities it has bought in.] In short, it can hold for many, many years the securities it now holds (like \$1 trillion in mortgage securities) and do nothing with them, and this will not impact inflation *assuming* that the Fed controls money growth in those several other ways detailed above. Equivalently, banks can go on holding masses of “inert” reserves on their balance sheets, and this will not matter either.

**Goldbug:** You certainly have stood much conventional wisdom on its head! Any final takeaway on all this that matters to us real-world guys?

**Economist:** Yes. I can do no better than to cite the closing lines of the Friedman-Kuttner paper (p. 64):

*The changes in monetary policy implementation triggered by the 2007–2009 financial crisis suggests that the extraordinary actions taken by central banks during this period could open the way for new forms of policy in the future. Most importantly, the ability to chose the level of its policy interest rate and the size of its balance sheet independently, over time horizons long enough to matter for macroeconomic purposes – in effect to fix not only the interest rate or the quantity of reserve but the interest rate and the quantity of reserves – represents a fundamental departure from decades of thinking about the scope of central bank action.*

If this is not an important point, then what is? If central banks had been constrained by the old Wicksell paradigm, and had not been able to adopt bold new policies during the financial crisis, then the entire world would probably be mired in a Great Depression at this writing.<sup>18</sup>

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<sup>18</sup> There is one final technical point to be made, and it concerns the definition of QE. When QE-1 took place, the media explained that it would only work assuming that the Fed funds rate had already reached its floor of 0%. In terms of our first graph, once interest rates are zero and cannot go lower, then the Fed is indeed free to buy in securities and to quantitatively ease without limit. Graphically, note in Figure 3 how you can shift the supply curve out to the right indefinitely with no impact on rates *only* if the starting rate is 0%! What was never pointed out in public discussions was that, because of the new story told above, the Fed can now implement QE even when the funds rate is *not* zero via the logic in Figure 4. QE thus takes on a new life of its own, as the authors suggest in the citation above. For an example, consider that the European Central Bank has been able to buy in large amounts of bonds without changing interest rates – and has done so when the interest rates were *not* zero, as in America. This is the important point, and it redefines what QE really means.