sanity, humanity and science

post-autistic economics review

Issue no. 44, 9 December 2007 back issues at www.paecon.net

Subscribers: 9,590 from over 150 countries

In this issue:

Economics for a Warming World

Frank Ackerman* [Tufts University, USA]

It is the ultimate challenge for public policy: the fate of the earth quite literally depends upon how society, in this generation, responds to the threat of climate change. As temperatures and sea levels continue their inexorable rise, as increasingly violent extremes of weather besiege communities and ecosystems, as accelerating environmental degradation threatens future supplies of food, water, and other necessities of life, how should the appropriate policies be chosen and implemented? What theories and analytical frameworks offer effective guidance for these crucial decisions? Economics seeks to provide systematic approaches to developing public policies; climate change is the final exam, the test that counts for any theory of policy formation. So far, unfortunately, the discipline is not headed for a very impressive grade.

This paper argues that new assumptions and analyses are needed in economics in order to comprehend and respond to the problem of climate change. Part I briefly introduces the reasons why climate change requires new and different policy analyses. Part II examines the ways in which aspects of established economic theory impede rather than encourage solutions to climate change. Part III concludes with recommendations for a revised approach to public policy.

1. The Problem(s) of Climate Change

Current patterns of fossil fuel combustion, deforestation, and other causes of greenhouse gas emissions will, within 50 to 100 years (if not sooner), cause massive melting of glaciers and ice sheets, extinctions of many climate-sensitive species, widespread droughts in (at least) South Asia, Africa and western North America, declines in global food production (even as population grows well beyond today's levels), and more destructive extreme weather events along the lines of the Gulf Coast hurricanes of 2005 and the European heat wave of 2003. And the news will only continue to worsen as atmospheric carbon dioxide levels rise.[1]

Three fundamental features of the climate problem challenge traditional assumptions and require new approaches in economics. Each is involved, to some extent, in other contemporary policy problems, but each is central to an understanding of climate change.

A. The Status Quo Is Not an Option

The urgency of the climate problem, the ever-increasing scientific certainty that "business as usual" will lead to irreversible, unacceptable outcomes, undermines the deep-

* Global Development and Environment Institute (GDAE), Tufts University. E-mail Frank.Ackerman@tufts.edu . This paper is excerpted from Lisa Heinzerling and Frank Ackerman, "Law and Economics for a Warming World," forthcoming in *Harvard Law and Policy Review* (2007).

[1] Support for these assertions about the nature of the climate change threat can be found in *Intergovernmental Panel On Climate Change, Third Assessment Report* (2001), *and Intergovernmental Panel on Climate Change, Fourth Assessment Report* (2007), both available at http://www.ipcc.ch .

seated analytical presumption in favor of the status quo. What climate science tells us, above all, is that the status quo is not going to remain one of the available options.

This is not an isolated externality in an otherwise perfect market system, nor a simple harm with a straightforward remedy. The traditional, often implicit assumption of a higher burden of proof for those who want change than for those who oppose it may be obsolete if the world is in fact headed rapidly for a cliff. *Something* new and different has to be done; the remaining points illustrate the difficulties in deciding exactly what to do.

B. Causal Links Between Actions and Impacts Extend Across Centuries

The science of climate change involves causation across extraordinary spans of time. Carbon dioxide, the most important greenhouse gas, has a half-life in the atmosphere of a little over a century. Other processes are even slower: when the temperature of the atmosphere changes, several centuries are required for the depths of the oceans to reach a new thermal equilibrium. For this reason, it has been estimated that even if greenhouse gas emissions dropped back to pre-industrial levels today, sea levels would continue to rise, primarily due to thermal expansion of ocean water, for another 300 years. As bad as some of the near-term changes in climate may be, the greatest damages, arising from today's carbon emissions, will occur more than one lifetime into the future.

C. The Consequences and Probability of Climate Change Are Incalculable in Detail

Looking farther into the future yields forecasts of climate change that become increasingly dire in general, but also increasingly uncertain in detail. To some extent this growing uncertainty is an inevitable feature of forecasting, as the cumulative effect of small errors and unexpected events makes any prediction become fuzzier as it looks farther ahead. But there are additional sources of uncertainty that are specific to climate change: even in the short run, climate models predict increasingly variable weather, with more frequent and intense storms, droughts, floods, and heat waves. Yet in the foreseeable future there will not be any possibility of predicting even next year's hurricanes, let alone the pattern of hurricanes over time, in any useful detail. Nevertheless, increasing climate variability will, in the near term, be a greater problem than the gradual, predictable increases in average temperatures and sea level.

Even more uncertain is the risk of an abrupt and effectively irreversible catastrophe. Possible climate catastrophes include the melting of major Greenland or Antarctic ice sheets, causing much greater sea level rise; the sudden release of large amounts of methane from tundras or other regions, leading to an acceleration of warming; and the disruption of thermohaline circulation, turning off the Gulf Stream and rapidly cooling the North Atlantic. Climate models now predict that these and other catastrophic events *could* be triggered by enough warming and associated physical changes. However, the exact causal mechanisms remain too uncertain to identify a specific threshold at which such events will occur. At present it is only possible to say that the probabilities of various catastrophes, while still relatively low, will increase rapidly with rising temperatures and carbon dioxide levels.

Both the prediction of increasingly variable weather and the uncertain but growing risk of catastrophe defy attribution of specific harms to specific causes. The frequency of extreme weather events was not zero before climate change began. So even if heat waves and hurricanes are now occurring more often as a result of climate change, there is no way to

determine whether any one particular event is due to climate change. Even harder to determine is the probability of a global climate catastrophe that has never yet occurred; one can be certain that the probability is increasing due to global warming, without knowing precisely what the probability is.

2. Implications for Economics

Standard economic theory is poorly positioned to deal with a problem like climate change. Conventionally, economics prefers nonintervention in markets; it trivializes the future; and it takes a narrow, reductionist approach to environmental impacts, or "externalities." The result, all too often, is an analysis that calls for doing almost nothing about climate change, because the costs of doing more would exceed the (discounted, monetized) benefits. The economic case for inaction appears less controversial, and thus more powerful, than the arguments of the climate skeptics; economists can recognize the seriousness of the latest scientific findings and still maintain that the optimal policy is to move very slowly and timidly. Yet the economic theories behind these analyses do not withstand scrutiny.

A. Inaction as Equilibrium

Neoclassical economic theory reflexively shuns intervention in private markets. The status quo is thought to represent a market equilibrium, a state of affairs that cannot be improved upon without hurting someone. Even though few economists would argue that the world currently reflects this utopian ideal, many do assume that we are close enough to it that only small intrusions in the market, in the nature of tidying-up rather than major renovations, are required. This theory does not come close to describing the world we live in, and it arises from highly contestable normative assumptions about the importance of free markets to human freedom.

The starting point for neoclassical economic theory, the basic model to which other situations and policy options are compared, is a system of perfectly competitive markets, populated exclusively by small producers and atomistic consumers, all possessed of very broad information and very narrow motives and desires. In such an economy, under long lists of unrealistic assumptions, the well-known "fundamental theorems of welfare economics" demonstrate that a market equilibrium always exists, and is Pareto-optimal -- that is, that any deviation from that state of affairs will make *someone* worse off. The same theorems also posit that any Pareto optimum is a market equilibrium, for some initial distribution of resources. Environmental problems appear only as an afterthought, in the form of externalities: unpriced damages imposed by one party on another. Externalities, it is assumed, can be given prices and internalized, whether through Pigouvian taxes, Coasian negotiations, or the invention of markets for pollution rights. With externalities correctly internalized, the optimal properties of market equilibrium are restored.

No one, presumably, views this as an accurate description of any large part of our twenty-first century world. For some economists, the Pareto optimality of general equilibrium is an ideal worth striving toward. More common is the claim that this apparatus is analytically useful: the implications of the perfect-market model can be worked out with mathematical precision, and then reality can be understood in terms of its (minor) deviations from the model.

The centrality of equilibrium to economic theory is obvious from the following passage from a textbook on microeconomic theory (based on the course taught to Harvard graduate students):

> "A characteristic feature that distinguishes economics from other scientific fields is that, for us, the equations of equilibrium constitute the center of our discipline. Other sciences, such as physics or even ecology, put comparatively more emphasis on the determination of dynamic laws of change."[2]

Ironically, the "equations of equilibrium" in economics arise from models borrowed from the physical sciences of an earlier era. The general equilibrium of a system of perfect markets bears more than a passing resemblance to the thermal equilibrium of an ideal gas. This is no coincidence; the late nineteenth-century founders of neoclassical economic theory were impressed by, and explicitly relied on, the accomplishments of nineteenth-century physics, including equilibrium thermodynamics.[3] The analogy to equilibrium thermodynamics was proudly acknowledged in the mid-twentieth century work of Paul Samuelson, who did so much to formalize the mathematical treatment of economic theory.[4] Yet the analogy between physics and economics was flawed and incomplete. The same analytical framework that worked so well in physics was much less fruitful when applied to economics.[5]

Equilibrium in the natural sciences has become a complex notion with multiple shades of meaning, some of them inconsistent with standard economics usage.[6] Moreover, economics has barely been touched by the twentieth-century development of disequilibrium theories, in thermodynamics and elsewhere in science, and the rise of complexity theory, which provides at least a heuristic mathematical explanation of long-lasting patterns of disequilibrium.[7]

The commitment to equilibrium theories in economics may reflect the fact that equilibrium in social sciences has normative as well as analytical significance. Thermodynamic equilibrium and disequilibrium are states of nature, with, presumably, the same neutral meaning to physicists of left-wing and right-wing political views. In contrast, equilibrium in the economic model of perfect markets is Pareto-optimal; within that model, market equilibrium maximizes efficiency, a desirable social goal. It has thus become bound up with advocacy of laissez-faire policies, seen by some as the route to political as well as economic freedom. In the words of Milton Friedman, "[T]he central feature of the market

---

[2] Andreu Mas-Colell, Michael Whinston, & Jerry Green, *Microeconomic Theory* 620 (1995).

[3] Philip Mirowski, *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics* 193-353(1989).

[4] Paul Samuelson's classic *Foundations of Economic Analysis* x, 21, and 70. (Atheneum Press 1965) (1947) has a title page epigram--"mathematics is a language"--quoted from nineteenth-century physicist Willard Gibbs, and mentions the parallel of Samuelson's economics to Gibbs' thermodynamics.

[5] Mirowski, at 354-401; *see also* Frank Ackerman, "Still Dead After All These Years: Interpreting the Failure of General Equilibrium Theory", 9 *J. Econ. Methodology* 119 (2002).

[6] *Equilibrium in Economics: Scope and Limits*, 1-73 (Valeria Mosini ed., 2006).

[7] On disequilibrium thermodynamics, *see, e.g.,* Ilya Prigogine, *From Being to Becoming: Time and Complexity in the Physical Sciences* (1980); on complexity theory, *see* Stuart Kauffman, *At Home in the Universe: The Search for the Laws of Self-Organization and Complexity* (1995); M. Mitchell Waldrup, Complexity: *The Emerging Science at the Edge of Order and Chaos* (1992).

organization of economic activity is that it prevents one person from interfering with another in respect of most of his activities. . . . Underlying most arguments against the free market is a lack of belief in freedom itself."[8]

There are at least two major problems with this perspective. One is that the world of perfect markets, with only small, competitive businesses in every industry, is clearly unattainable in reality. Friedman and other advocates of laissez-faire tend to take it for granted that incremental movement toward an unregulated competitive market is desirable, since it brings the real world closer to the ideal. However, the "theory of the second best," established long ago by Richard Lipsey and Kelvin Lancaster, proves that if one of the requirements for Pareto optimality cannot be achieved, the best attainable (or "second best") outcome may require deviating from all the other aspects of the unconstrained optimum.[9] This simple, powerful idea undermines the significance of the competitive market model as a normative goal; since the goal is not, in its entirety, attainable, there is no guarantee that getting a little closer to it is on balance a good thing.

Second, Friedman's vision is of a world without important externalities: the normal operation of the market "prevents one person from interfering with another" in most of life's activities. The climate crisis consists precisely of the problem that market activities, and the resulting greenhouse gas emissions, are going to interfere rather totally with other people's lives. This is not a single, easily internalized externality; rather, climate change is a pervasive consequence of modern market activity, which ultimately threatens to undermine the continuation of the market economy which created it.

There have been economic theories that assumed a world in disequilibrium--or at least, did not assume the competitive, Pareto-optimal equilibrium of conventional models. The macroeconomics of John Maynard Keynes analyzed the phenomenon of persistent, involuntary unemployment, as did early theories of the business cycle (now largely ignored).[10] Outcomes that are far from Pareto-optimal also result from contemporary theories of asymmetric and limited information, and from new behavioral models that deviate from the traditional, selfishly rational *homo economicus.*[11] These theories, however, do not imply any inherent dynamic instability. In contrast, the climate crisis leads to a sense that normal market activity will ultimately undermine its own continuation.

A deeper sense of internal contradiction and instability was present in two very different branches of nineteenth-century political economy, in the writings of Marx and of Malthus. Of the two, Malthus was one step closer to the broad outlines of the climate problem; he was describing a way in which market activity would inevitably lead to environmental degradation, and thus ultimately to loss of incomes. However, the particular mechanism of Malthusian crisis, prosperity leading to population growth and rising demand for food, which eventually overwhelms the naturally limited productivity of agriculture, does not correspond

[8] Milton Friedman, *Capitalism and Freedom* 14-15 (1962).

[9] Richard G. Lipsey & Kelvin Lancaster, "The General Theory of Second Best", 24 *Rev. Econ. Stud*. 11 (1956). By way of informal analogy, imagine that the fastest way to drive across a city is blocked by construction. The second-fastest option may be to take an entirely different route, not to stay as close as possible to the unattainable, normally fastest route.

[10] For the history of economic thought on this and other questions, *see* Mark Blaug, *Economic Theory in Retrospect* 14-15 (1997).

[11] *See* Joel Sobel, "Interdependent Preferences and Reciprocity", 43 *J. Econ. Literature* 392 (2005); Samuel Bowles, "Endogenous Preferences: The Cultural Consequences of Markets and Other Institutions", 36 *J. Econ. Literature* 75 (1998).

closely to the major causal mechanisms of climate crisis. Something akin to the Malthusian crisis may be one of the consequences of climate change, as global warming is expected to reduce agricultural productivity relatively soon in the tropics, and perhaps after a few decades in temperate zones--but this is only part of a broader problem.

Natural constraints on economic growth have been raised more recently in ecological economics. This school of thought, drawing on the work of Herman Daly and others, has emphasized that the economy is embedded in the earth's ecosystems, which impose fixed limits on the sustainable scale of production and emissions. While this represents a promising contribution, with obvious relevance to climate change, it has yet to develop a comprehensive new synthesis -- and it has not had any significant influence on economic theory in general.

The challenge of climate change makes the traditional vision of perfect markets even less appropriate and useful. A world in which business as usual threatens to cause disaster in a century or less -- i.e., the warming world which we do inhabit -- is not usefully modeled by theories in which stable, optimal equilibrium is the normal state of affairs. Yet the notion that the market economy is or could easily be at equilibrium permeates economic theory; market equilibrium is generally taken to be desirable, and implicitly assumed to be sustainable. Indeed, if conventional theories of optimal market outcomes encourage a public policy of inaction on climate change, these theories may ironically hasten the arrival of a decidedly suboptimal, disequilibrium state of affairs.

B. Dismissing the Future

As every economics student learns, the standard approach to future costs and benefits is to convert them to the equivalent present values. At a fixed annual interest rate of 5 percent, $100 placed in a savings account today will, after 10 years, be worth $162.89. On the other hand, if you have to wait ten years before receiving the $100, it is worth only $61.39 today; that is, $61.39 is the amount of money you would need to put in the bank today, at 5 percent interest, to end up with $100 ten years from now.

For purely financial decisions covering a few years or decades, the logic of discounting is unimpeachable (if interest rates remain fixed), and indeed essential for understanding loans and other contracts. But when stretched across generations or centuries, the same techniques of discounting lead to the paradoxical conclusion that the future doesn't much matter. The traditional calculation of present values now faces the climate challenge: how can the logic of discounting be squared with the importance of avoiding disasters far in the future? Losses of trillions of dollars due to climate change, in future centuries, have such a small present value (at conventional discount rates, such as 3 percent or higher) that it is scarcely "worth" spending anything today to prevent the most drastic far-future harms.

While fixed-rate discounting is ubiquitous in economics today, its origins are modest: a six-page paper published by Paul Samuelson in 1937.[12] Samuelson introduced fixed-rate discounting tentatively, as a mathematical simplification of a complex problem, expressing doubts about its universal validity. Among his assumptions, he included:

> *The individual discounts future utilities in some simple regular fashion which is known to us.* For simplicity, we assume in the first instance that the rate of

[12] Paul Samuelson, "A Note on Measurement of Utility", 4 *Rev. Econ. Stud*. 155 (1937). On the history of discounting, *see* Shane Frederick, George Loewenstein, & Ted O'Donoghue, "Time Discounting and Time Preference: A Critical Review", 40 *J. Econ. Lit*. 351 (2002).

> discount of future utilities is a constant . . . . [This assumption] is in the nature of an hypothesis, subject to refutation by the observable facts . . . .[13]

After completing the mathematical analysis, he observed,

> Our task now is to indicate briefly the serious limitations of the previous kind of analysis, which almost certainly vitiate it even from a theoretical point of view. In the first place, it is completely arbitrary to assume that the individual behaves so as to maximize [the present value of lifetime utility]. . . . [14]

Samuelson's formula spread quickly through the economics profession, while his doubts and qualifications were largely ignored. Several attempts were made to provide axiomatic foundations for discounting, of which the best known was by Tjalling Koopmans in 1960.[15] Koopmans proved that, under five seemingly innocuous assumptions, people act as if they are discounting the future at a fixed, positive rate. Among these assumptions was the idea that preferences are stationary, in the sense that if *A* is preferred to *B* at any one point in time, then *A* is also preferred to *B* if both are moved an equal distance forward or backward in time.

Survey research, however, has repeatedly found that preferences are *not* stationary, in Koopmans' sense; on the contrary, people exhibit "preference reversal" or "hyperbolic discounting," with lower implicit discount rates for choices and events farther in the future.[16] The fixed-rate model is also incompatible with the empirical findings that losses are discounted more slowly than gains, and that large amounts are discounted less than small amounts; since climate change involves the threat of very large losses, it would tend to be discounted more slowly -- at a lower rate -- than many other phenomena.

Nonetheless, many economists have continued to use the classic, fixed-rate formulation, perhaps assuming that its computational convenience outweighs its empirical inaccuracy. Others have embraced a newer modification (described below) that allows varying, usually declining, discount rates.

One response -- which increases the present value, and hence importance, of far future outcomes -- is to argue for a very low discount rate. The Stern review of the economics of climate change, conducted by Nicholas Stern for the British government, used a discount rate that varies by scenario, averaging 1.4 percent;[17] analyses by William Cline have used a similar rate of 1.5 percent.[18] Cline's own sensitivity analyses show that his cost-benefit

---

[13] Samuelson, *4 Rev. Econ. Stud*. at 156 (emphasis in original).

[14] *Id.* at 159.

[15] Tjalling C. Koopmans, "Stationary Ordinal Utility and Impatience", 28 *Econometrica* 287 (1960). For a response adding an axiom about concern for the future, and deriving a form of hyperbolic discounting, *see* Graciela Chichilnisky, "An Axiomatic Approach to Sustainable Development", 13 *Soc. Choice & Welfare* 231 (1996); Geoffrey Heal, *Valuing the Future: Economic Theory and Sustainability*, 69-75 (1999).

[16] This and the following discussion of empirical evidence on discounting anomalies are based on Frederick et al., at 360-65.

[17] Nicholas Stern et al., *Stern Review: The Economics of Climate Change* (2006), *available at* http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

[18] William R. Cline, *The Economics of Global Warming* (1992); William R. Cline, "Climate Change", in *Global Crises, Global Solutions* (Bjorn Lomborg ed., 2004).

justification for active climate policy diminishes rapidly with higher discount rates, and essentially vanishes at a rate of 3.5 percent or more.[19] Another economist, Richard Howarth, argues that if discount rates should be based on market interest rates, the appropriate rate to use is the after-tax return on risk-free investments, which averages close to zero in real terms.[20]

A second alternative is to employ hyperbolic, or declining, discount rates. Under hyperbolic discounting, far-future events may be discounted rapidly in the first few years, when discount rates are high; but the process is bound to slow down, as the discount rate drops toward zero over time. In addition to the empirical evidence that preferences are not stationary across time, there are two distinct theoretical arguments for declining rates -- one based on each of the major approaches to the choice of a social discount rate.

The "descriptive" approach to discounting assumes that interest rates and capital markets reveal society's time preferences.[21] In an idealized market economy, the equilibrium between the supply of private savings and the demand for funds for investment, which determines the interest rate, would also reflect individuals' tradeoffs between present and future consumption. Despite Howarth's argument for a low discount rate, noted above, many economists have concluded that average interest rates are much higher, sometimes 5 percent or more.[22] This is easily high enough to rule out all but the most trivial climate initiatives.

However, a new wrinkle on the descriptive approach analyzes uncertainty about future interest rates, thereby demonstrating that the effective discount rate should decline over time. There are multiple possible scenarios for future interest rates, each implying different present values for future events; if probabilities are assigned to these scenarios, the average present value can be calculated. As time goes on, the average is increasingly influenced by the lowest interest rate scenarios; so the effective discount rate is steadily declining.[23]

The alternative, "prescriptive" approach seeks to deduce the appropriate discount rate from ethical and philosophical principles.[24] In a framework that dates back to early work by Frank Ramsey,[25] the social rate of discount for long-term decisions is assumed to be the sum of the rate of pure time preference, or impatience, which would prevail if all generations

---

[19] *Id.*

[20] Richard B. Howarth, "Discounting and Uncertainty in Climate Change Policy Analysis", 79 *Land Econ*. 369-38, (2003).

[21] The categories of "descriptive" and "prescriptive" approaches to discount rates were introduced in Kenneth J. Arrow et al., *Intergenerational Equity, Discounting, and Economic Efficiency*, in James P. Bruce, Hoesung Lee, and Erik F. Haites, eds., Climate Change 1995: Economic and Social Dimensions of Climate Change (IPCC Working Group III, 1995), 125.

[22] *Id.*

[23] Martin L. Weitzman, "*Why the Far-Distant Future Should be Discounted at Its Lowest Possible Rate",* 36 *J. Envtl. Econ. & Mgmt*. 201 (1998); Richard G. Newell & William A. Pizer, "Uncertain Discount Rates in Climate Policy Analysis*",* 32(4*) Energy Pol'y* 519 (2004).

[24] Arrow et al.. note 21.

[25] Frank P. Ramsey, "A Mathematical Theory of Saving*"*, 38 *Econ. J*. 543 (1928).

had equal per capita incomes, plus a component due to the expected growth of incomes.[26] The latter, which has been less controversial, rests on the common assumption that future generations will likely be richer than the present, reducing the urgency of investing today's scarce resources on their behalf.

Most of the debate has centered on the rate of pure time preference. It has often been argued on ethical grounds that this rate should be zero: with equal resources, present and future persons should be of equal worth.[27] On the other hand, many economists have argued that a zero rate of pure time preference implies an absurdly high rate of savings: if incomes were not growing -- so the social rate of discount was zero -- then any gain for future generations that will last indefinitely, no matter how small, would justify large additional sacrifices in the present.[28]

It is not clear how, if at all, the rate of pure time preference would be expected to change in the future. The income-related component of the social discount rate, though, could easily vary. The flip side of the usual optimistic story about richer future generations is that, if our actions or omissions (failing to restrain carbon emissions) make future generations poorer, the discount rate should drop to reflect the growing urgency of providing for our descendants. That is, environmental crisis could itself cause declining discount rates. In extreme cases it could even lead to negative discount rates, i.e. valuing future outcomes more heavily than the present because future generations will be poorer than the present.[29] As Partha Dasgupta has pointed out, economists' judgments about the severity of climate change can influence their choice of discount rates: those who anticipate more limited climate damages will project faster income growth, less impeded by environmental constraints--and hence higher discount rates, which tilt the analysis toward "proving" that not much needs to be done.[30]

In sum, discount rates could be declining because that's how people empirically think about the future, because uncertainty about future interest rates makes the lowest-rate scenarios most important as time goes on, and/or because climate change itself will reduce future incomes, making our descendants less able to provide for themselves. One might hope that any or all of these stories would eliminate the paradox of discounting and validate future-oriented policies.[31] Unfortunately, the paradox is more stubborn than that: if discount rates start high enough, their impact in the early years can shrink the present value of far-future outcomes to insignificance; declining discount rates thereafter have only negligible effect. As a result, the calculation of costs and benefits in the near term assumes disproportionate importance. While much of climate science addresses very long-term concerns, hypotheses about costs and benefits in the first few decades can be decisive for calculations based on

---

[26] *See* Frank Ackerman & Ian J. Finlayson, "The Economics of Inaction on Climate Change: A Sensitivity Analysis", 6(5) *Climate Policy* (2006).

[27] See Heal, at 12, and sources cited there.

[28] *See e.g.*, Kenneth J. Arrow, "Discounting, Morality, and Gaming", in *Discounting and Intergenerational Equity* 13 (John P. Weyant & Paul R. Portney eds., 1999).

[29] Partha Dasgupta, Karl-Goran Mäler & Scott Barrett, "Intergenerational Equity, Social Discount Rates, and Global Warming", in *Discounting and Intergenerational Equity*, at 51.

[30] Partha Dasgupta, *Human Well-Being and the Natural Environment* 183-86 (2001).

[31] This was the view of David Pearce and his coauthors, in David Pearce et al., "Valuing the Future: Recent Advances in Social Discounting", 4 *World Econ*. 121, (2003).

present values.[32] Thus cost-benefit calculations, based on present values and heavily influenced by the very short run, are answering a different question from the one that most people are asking about the ominous long-range implications of climate change.

C. Beyond Externalities

Mainstream economic theory insists on looking for evidence of market failure before sanctioning government intervention in the market. One of the signs of market failure is the presence of externalities. While the field of environmental economics recognizes the importance of externalities and rejects simple laissez-faire policy prescriptions, the prevailing understanding of externalities is inadequate to handle the challenge of climate change –- or other serious environmental problems.

The framing of the concept of externalities can be faulted on three grounds: the assumptions of separability, predictability, and monetizability all fail to convey the extent and intractability of environmental crisis.

Externalities, as described on the blackboard and in textbooks, happen one at a time; each one has a distinct cause, and is eligible for its own policy response. This assumption of separability may be helpful for introductory exposition, but it does not correspond well to the bewildering complexity of multiple, dissimilar impacts that will result from climate change. Yet the entire theory of externalities treats them as separable. From Pigou's original formulation to contemporary versions of environmental economics, an externality is understood as a single effect of a single cause.

Closely related is the implicit assumption that externalities are not very numerous; clear up a few of them and the market will presumably be back to its optimal self. The development of policies for individual externalities, whether based on taxes, negotiations, cost-benefit analyses, or creation of new markets in emission allowances, is a relatively costly, time-consuming process. Months, if not years, of Congressional and regulatory attention, combined with lengthy, controversial cost-benefit analyses, have been required to address individual pollutants such as arsenic in drinking water. For that reason, the presumption that externality pricing is feasible, without discussion of the time and resources consumed in the pricing process, must imply that the process is also relatively rare. The efficiency of the private market rests on its ability to calculate and communicate commodity prices, with little or no information costs; in contrast, the construction of hand-crafted prices for individual externalities appears anything but efficient.

Realistic environmental economics, in a world of entangled, multiple impacts from common causes, requires the development of policies that address the common causes, such as climate change. To be feasible, this needs to be done without the long detour through separate calculation and valuation of each of the individual harms.

Externalities are also assumed to be predictable; a well-defined harm is assumed to be associated with a specific cause. Economists have extended this analysis, to allow for uncertainty based on known probability distributions; in such cases it is possible to calculate the expected value of the uncertain outcomes. However, climate change, as noted above, is not predictable in any detail. This is only partly because knowledge of climate change is incomplete; there has rarely, if ever, been a scientific problem that was so well researched.

[32] For example, the weakly supported assumption of large near-term benefits of moderate warming in DICE, a well-known climate economics model, is analyzed in Ackerman & Finlayson.

Rather, the unpredictability often results directly from what *is* already known about climate science.

In particular, the earth's climate is known to result from a complex, highly non-linear system of physical interactions, with numerous positive and negative feedback loops. Models of such systems involve the mathematics of chaos and complexity theory, which are inherently unpredictable in detail; in some cases, only the average behavior of the system, or the maximum and minimum possible results, may be known. Indeed, "sensitive dependence on initial conditions," [33] a hallmark of chaotic dynamics, first became well known through the work of Edward Lorenz with a simplified model of the atmosphere.[34]

In a world of chaotic dynamics and sensitive dependence on initial conditions, econometric forecasting is of limited value; identification of specific expected outcomes, or even known probability distributions for specific future harms, will typically fail. Thus, it becomes meaningful to say that extreme weather events, for example, are known to be getting worse as a result of climate change, but it is impossible to say exactly how much worse, and how fast. The devastating Gulf Coast hurricanes of 2005 were followed by a very mild hurricane season in 2006; there is no way at present to anticipate how bad a single year's hurricanes will be. In this realm, policy formation based on prediction and calculation of expected harm is no longer relevant; the only coherent response to a situation of chaotically worsening outcomes is a precautionary policy, seeking to protect against the credible worst case events that might occur.

Finally, externalities are assumed to be monetizable; internalization of externalities requires quantitative estimates of monetary value. Lisa Heinzerling and I have written at length on the logical flaws, paradoxes, and absurdities of this process; interested readers should examine our previous discussion of the monetary value of human life, health, and nature.[35] Many economists engaged in valuation of externalities share some of these concerns, and express thoughtful qualifications surrounding their quantitative estimates; the Stern Review is exemplary in this regard.[36] Even the most rigorously quantitative analysts might have occasional qualms about assigning dollar prices to human life: should the value of life be based on wage differentials for risky jobs, on survey research about simplified, hypothetical risks, or something else entirely?[37] Should it be the same in Bangladesh as in Switzerland?

Yet these questions and qualifications, like Samuelson's doubts about the simple discounting formula that he unleashed on the world, are soon forgotten, as readers and policy makers rush to the "bottom line." Conventional economics offers results that are comfortingly definite: market outcomes are optimal and stable; discounted present values are the

[33] This is the phenomenon sometimes described as the "butterfly effect": small initial changes can lead to much larger changes over time, so in theory a single butterfly flapping its wings could have visible effects on the weather on the other side of the world.

[34] See the Wikipedia entry on chaos theory, http://en.wikipedia.org/wiki/Chaos_theory

[35] Frank Ackerman & Lisa Heinzerling, *Priceless: On Knowing the Price of Everything and the Value of Nothing* (2004).

[36] This question is discussed repeatedly throughout Chapter 6 of the *Stern Review*, which summarizes the analysis of the costs of climate change. *Stern Review*, 143-167.

[37] As explained in *Priceless*, both wage differentials for risky jobs and survey responses about hypothetical risks have been used to value life, by EPA analysts under the Clinton and Bush administrations, respectively.

appropriate measure of future costs and benefits; externalities are easily evaluated and internalized. Seen through the lens of the climate crisis, these definite answers are definitely wrong.

3. Steps Toward Solutions

Embracing the status quo, dismissing the future, and ignoring consequences that cannot be described with absolute precision do not make for a good response to the problem of climate change. This final section offers three ways in which underlying principles and attitudes in economics must change if we are to act responsibly in the face of this threat. First, the development of climate change solutions requires a more optimistic and expansive vision of the role of the public sector. Second, it requires a different attitude toward regulatory costs, one that recognizes their potential to serve important public goals rather than simply their potential to drain private pocketbooks. Finally, addressing this problem requires a more sensible approach to considering the benefits of government action. The problem is real and imminent; the solutions are, in many cases, straightforward. Despite occasional claims to the contrary, nothing in economics requires us to ignore common sense and fail to protect ourselves and our descendants.

A. Public Choice and Government Competence

As a really big problem, climate change requires really big solutions. New technologies for energy production and use will be needed, including changes in power plants, transportation systems, building design and construction, major appliances, and more. These will entail massive investments in research and development, and coordinated changes in infrastructure. There will be a need for sweeping changes in other sectors with significant impacts on greenhouse gas emissions, such as agriculture, forestry, and waste management. National and international coordination is essential, since climate change is a global problem, driven by the global total of greenhouse gas emissions.

The imperative of large-scale responses clashes with the current fashion of seeking to minimize the role of the public sector. Academic theory now almost dismisses the possibility that public policy and expenditures represent the public interest. A cynical and misnamed “public choice theory” suggests that narrow personal self-interest explains the behavior of government officials, elected decision-makers, and everyone else involved in the public policy process. Discussion of “rent-seeking” in the public sector, and the resulting problem of “government failure,” parallel to market failure, creates the impression that private action and market competition are the only ways to organize society and allocate its resources. A new, conservative brand of “political economy” seeks to deduce public preferences and actions exclusively from private economic interests and the hypothesis of universally narrow, self-interested behavior.

Likewise, the current fascination with market-based policy instruments has led to widespread discussion of a “cap and trade” system of carbon emissions trading. A trading scheme could undoubtedly play a role in efficiently reducing emissions, but there is no reason to think that it is the only option, or is capable of solving the problem alone -- no reason, that is, unless the government is assumed a priori to be incompetent. Otherwise, one might easily stray into thinking about the potential contribution of fuel efficiency standards for motor vehicles, government promotion of renewable energy technologies, stricter appliance and lighting efficiency standards, support for mass transit, better low-income housing insulation, and countless other forms of “interference” with the market. None of these initiatives would be

likely to succeed, of course, if, in the succinct words of former Republican Congressional leader Dick Armey, "The market is rational; the government's dumb."[38]

Economics will have to move well beyond that simplistically market-oriented level to help guide the development of effective climate policies -- beginning with a better understanding of choice and preferences. There is no formula for optimal public decision-making; instead, a deliberative process of discussion is required.[39] Public choices cannot be deduced from isolated, individual preferences; as Amartya Sen has observed, if your willingness to pay for a major environmental project is independent of everyone else's actions, you may not have understood the question (because a modest willingness to pay for a major project is potentially useful if everyone else is paying similar amounts, but guaranteed to be ineffective if no one else is contributing). Rent-seeking is far from universal in public service, and the haste to privatize public functions and deregulate markets has arguably allowed the colossal rent-seeking of the likes of Enron and Halliburton, beside which the greed of individual bureaucrats pales by comparison. Self-interest is not the only relevant motive, and is not a useful guide to public choice in matters affecting the entire globe over a multi-century time frame.

In short, an entirely different conversation about public goods and priorities is needed, one that respects the importance of the underlying values - and one that includes, but is not always dominated by, the best available information about costs. It is a conversation which, sadly enough, Americans have been able to have in recent years only about national security, protection against terrorism, and military spending. The empirical content of that conversation has remained controversial; recall the search for Iraq's alleged weapons of mass destruction. Unfortunately, while confidence in the public sector and its unquestioned responsibility for our collective welfare is alive and well in decisions about the military, it has wasted away in civilian life.

Climate change is a real threat to our national security; this time the weapons of mass destruction have been unequivocally found, not least in our own cars and power plants. If the public sector, despite rent-seeking and all the rest, can fight a ferocious, years-long war based on dubious intelligence, how much more should we able to do for the real thing?

B. Environmental Costs and Economic Development

The economic case for inaction on climate change rests on the belief that the costs of action outweigh the benefits. Much of the critique of this argument has turned on the treatment of benefits--i.e., the benefits of avoiding or limiting climate change. Those benefits turn out to be massive and growing, but, as we have seen, they are often located well into the future, incalculable in precise detail, and inherently priceless. The costs of climate policy, in contrast, will occur sooner than the benefits, and are more predictable market expenditures, with well-defined price tags. Despite this difference, the cost side of the ledger is often misunderstood: large expenditures on technologies and other means to address technology may turn out to be "benefits," not "costs."

The concern about the costs of climate policy, or of environmental protection in general, stems from the notion that the status quo is worth preserving, and possible to

[38] Representative Dick Armey, Speech at the Pacific Research Institute (May 29, 1998) available at http://www.cbe.csueastbay.edu/~sbesc/trans.html.

[39] The impossibility of a formula for optimal decisions is established by Arrow's Impossibility Theorem. *See generally* Kenneth Arrow, *Social Choice and Individual Values* (1951).

preserve. If current market outcomes were Pareto-optimal, every new regulation or program would make someone worse off, representing a loss of welfare; under this framework, the concern about regulatory costs, whatever its empirical merits,[40] would at least stand on firm theoretical ground. Yet as discussed in Part II, economic theory establishes the optimality of market outcomes only in an unrealistic model of impossibly perfect markets; since it is impossible to achieve "perfection" in this respect, the theory of the second-best shows that it may not be worthwhile trying to get a little closer. In a world that is inescapably second-best from a laissez-faire, perfectly competitive perspective, how should regulatory costs be interpreted?

The abstract theory of perfect markets threatens to distract attention from the central role which government policy has always played in economic growth and development--and will play again, as the world combats climate change. In the past, industrialization has relied on active government intervention, planning, and leadership, in virtually every one of today's high-income, developed countries.[41] Consider, for example, the (no longer fashionable) strategy of protecting infant industries from world trade until they have reached a scale that makes them internationally competitive. This was nearly universally applied in the past, including in England in the years just before the Industrial Revolution and in the U.S. throughout the nineteenth century.[42] If markets were perfectly competitive, protection of infant industries would simply result in welfare losses to consumers, outweighing the gains to producers. However, if markets are imperfect, with significant economies of scale, skillful assistance to infant industries can work well, nurturing them until they have reached adulthood and can take care of themselves. It is all the more essential if industrial development is path-dependent, creating a potentially permanent advantage for the first producer to achieve large scale and low costs.[43]

Government intervention continues to shape the U.S. economy; major industries do not always arise spontaneously through private innovation. Spin-offs from the massive military expenditures of the Cold War era include commercial aircraft, and hence the airline industry; personal computers, and consumer electronics in general (which became possible only after decades of military procurement of advanced and miniaturized electronics); the Internet (which began with a Defense Department research network); and, for better or worse, nuclear power. As the latter example suggests, not every spin-off is equally successful.

Was the government expenditure that led to these new technologies a cost or a benefit to the economy? Millions of jobs and associated incomes were created, not only in the military and its direct suppliers, but also in the spin-off industries that were based on the new technologies. It is difficult to imagine that private markets on their own would have come up with better or cheaper alternatives if the world had been more peaceful and the U.S.

---

[40] For an argument that the costs of environmental protection are empirically quite small, *see* Frank Ackerman, "The Unbearable Lightness of Regulatory Costs", 33 Fordham Urb. L.J. 1071 (2006). This article does not address the costs of climate protection.

[41] *See generally* Alice H. Amsden, *The Rise of "The Rest": Challenges to the West from Late-Industrializing Economies* (2001), and Ha-Joon Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (2002).

[42] Frank Ackerman, "An Offer You Can't Refuse: Free Trade, Globalization, and the Search for Alternative", in *The Flawed Foundations of General Equilibrium: Critical Essays in Economic Theory*, 149 (Frank Ackerman & Alejandro Nadal eds., 2004).

[43] *See generally* Brian Arthur, *Increasing Returns and Path Dependence in the Economy* (1994).

government more firmly committed to laissez-faire throughout the second half of the twentieth century.

Just as the military, in contemporary political discourse, provides the remaining avatar of public competence and responsibility, so too in economics, it provides the best surviving American example of the positive, leading role of the public sector in industrial development. A twenty-first century war on climate change, if the nation and the world should choose to fight it, will create a new round of technologies and industries, initially dependent on government support, but ultimately achieving independent profitability. The U.S. started down this road once before, promoting conservation and renewable energy technologies in the response to the energy crises of the 1970s. In that era, initiatives by the federal government and by California launched the development of wind power. Although U.S. support waned in the 1980s, European governments provided additional assistance; today, wind power is a rapidly growing industry, which is competitive with other energy sources in appropriate locations, without preferential treatment or subsidies.[44]

The "costs" of combating climate change will have to include the development and commercialization of many more energy-saving and emission-reducing technologies. If they follow the path of wind power, or of civilian aircraft or computers, they may need decades of support and development before they take off on their own. Success is not guaranteed, as the travails of nuclear power demonstrate; it is of course necessary to spend public money wisely, to do everything possible to pick winners and avoid (or pull the plug on) losers. But the people employed in building and installing wind turbines, and the people thereby spared from inhaling power plant emissions, do not experience the 1970s subsidies to wind power as a cost. In a world of imperfect markets and path-dependent development, government initiatives may amount to choosing a path forward, not forcing a step backward.

C. The Mismeasure of Disaster

The relentless pressure for numerical measures of harm has led to studies seeking to monetize as much as possible of the damages expected from climate change. The Stern Review is one of the latest and greatest of these endeavors, estimating that business as usual will lead to annual climate-related global impacts of trillions of dollars of damages, or 5 percent of world GDP.[45] Much of the commentary on the Review, positive and negative, has seemed to assume that at last, there is a genuinely large number on the table.

On the one hand, it is significant that the "bottom line" damages estimate is several times larger than the cost of climate mitigation.[46] Assuming that the damages were all meaningfully calculated (the more obviously speculative estimates in the Stern Review were reported separately, and led to even bigger numbers),[47] this would be sufficient--but, we believe, not necessary--to justify immediate, large-scale mitigation efforts.

---

[44] *See* Am. Wind Energy Ass'n, *Comparative Cost of Wind and Other Energy Sources* (2001), http://www.awea.org/pubs/factsheets/Cost2001.PDF. (Showing wind and fossil fuel electricity generation costs, without subsidies, to be roughly comparable based on 1990s California and federal studies; wind power costs have continued to drop since then.)

[45] Stern Review, 163.

[46] Most of the damages identified in the *Stern Review*, valued at 5 percent of world GDP (or more, in variants on the basic calculation; see note 93 below) can be abated at a cost of 1 percent of world GDP. *Stern Review*, 163, for damage costs; *Stern Review*, 232, for abatement costs.

[47] Other factors that raised the damage cost estimates were the assumption of higher climate sensitivity

On the other hand, that is the only significance of a huge monetary damage estimate. It is not a helpful estimate of what climate change as a whole will mean, and it should not be necessary to motivate active climate policy. It seems likely that many people do not know how big a trillion is (it has twelve zeros; it is a million million); a number of such unfamiliar and enormous magnitude loses its informational content not only for the general public, but for policymakers as well.

With numbers this large, it is almost impossible to grasp their meaning without a standard of comparison. Rather than focusing on trillions of dollars, it is easier to think about the Stern Review's projected five percent loss of GDP. This is certainly a large amount of money and resources, which is worth considerable effort to preserve. However, a five percent loss of GDP "now and forever" (the Stern Review's phrase)[48] is not a qualitative change of state. In a country growing at 2.5 percent per year, which is close to recent U.S. experience,[49] it is equivalent to stopping growth for two years, then resuming. In a country growing at well over five percent per year, as India and particularly China have been,[50] it is equivalent to stopping growth for less than twelve months, then resuming. Such a brief hiccup in economic growth is not at all comparable to the real losses anticipated from climate change.

By way of analogy, consider the damage to New Orleans and surrounding areas from Hurricane Katrina. Property losses amounted to $125 billion in some estimates,[51] many times the cost of building adequate levees that would have protected the city. It appears that Louisiana as a whole lost 15 percent of state income in the four months after the hurricane.[52] These facts, while significant, are not serious candidates for being the most memorable or disturbing aspects of the tragedy of New Orleans. The video footage and newspaper photos of flood waters and devastation, the vivid descriptions of the loss of communities, the destruction of a way of life, and the needless loss of so many lives -- these are the impacts that everyone remembers. They are not well conveyed by the statistics on economic loss; at

---

to CO2, an estimate for the value of non-market damages, and an estimate of the effect of equity weighting of outcomes. Combining all of these factors produces damage costs as high as 20 percent of global GDP. *Stern Review*, 163.

[48] The first of the *Stern Review*'s numerous uses of the phrase "now and forever" (describing annual, indefinitely recurring costs or benefits) occurs on 55.

[49] From 2001 to 2005, the U.S. had an average growth rate of real GDP of 2.4% per year. Bureau of Econ. Analysis, http://www.bea.gov/national/index.htm#gdp (last visited Mar. 4, 2007).

[50] From 1990 to 2004, GDP grew at an average annual rate of 10 percent in China and 6 percent in India. "World Bank, World Development Indicators 2006" at Table 4.1 (2006), http:/ /devdata.worldbank.org/wdi2006/contents/Section4.htm.

[51] Estimate by Swiss Re, a leading reinsurance company. See http://www.swissre.com.

[52] Louisiana was the only state in which gross state product (GSP) declined in 2005. Louisiana GSP dropped by $2 billion, whereas if it had grown at the same rate as the rest of the U.S. in 2005, it would have grown by $5 billion. Thus it apparently suffered a loss of $7 billion, or five percent of state income for the year. This loss presumably happened in the last third of the year, since Katrina struck on August 29. So the loss amounts to fifteen percent of state income for the post-hurricane months. Calculations based on Press Release, Bureau of Economic Analysis, Services and Goods Sectors Contribute to Strong Growth in Gross Domestic Product (GDP) by State in 2005 (Oct. 26, 2006) *available at* http://www.bea.gov/ bea/newsrel/GSPNewsRelease.htm. All incomes are measured at 2000 prices. Both the Texas and the Southeast region as a whole grew faster than the national average in 2005, as did Louisiana in 2004; thus it seems likely that Louisiana would have grown at least as fast as the national average in 2005, in the absence of hurricane damages.

best, those statistics form small supporting details, helping to fill in the broad image of disaster.

Climate change will mean, among other things, more Katrina-like events. Alongside the staggering human and environmental losses, it will also have a large price tag, undoubtedly in the trillions. But the urgency of doing something about climate change does not stand or fall on a conjectural cost-benefit analysis, placing those trillions on one side of the scale. The impacts that matter most are the potential loss of communities, ecosystems, a way of life, and human life itself -- impacts that are priceless. The climate externalities that need to be internalized are deeper and more dangerous than prices can measure.

Despite their failings, studies like the Stern Review nonetheless serve a purpose in developing responses to climate change. There are people who pay attention only to numbers, and especially to numbers with dollar signs in front of them; massive cost estimates for climate damages speak to this population in a way that more qualitative descriptions of harm do not. Even for the rest of us, stories about the large costs of doing nothing about climate change can offset, to some degree, the unending stories about the large costs of doing something about it.

Economic analysis of the benefits of government action can thus play a catalytic role in addressing the problem of climate change. It cannot describe all of these benefits, nor even some of the most important ones. It cannot tell us what we should or should not do, nor can it overrule common sense and scientific urgency. It can start a conversation, but not end it.

In conclusion, how should we respond to emergencies, large and small? Our culture celebrates those who risk their own well-being to ensure the safety of others, without checking their watches or wallets; we applaud those who rush accident victims to the hospital, not those who check their health insurance status before admitting them. How differently should we react when all of us and our children are at risk, when the earth and its ecosystems are the potential victims of an accident waiting to happen? What is the purpose of our wealth and our institutions if not to protect our common future in the face of global threats? Theories that suggest otherwise, claiming that ancient academic precepts now counsel inaction, are theories in urgent need of replacement.

SUGGESTED CITATION:
Frank Ackerman, "Economics for a warming world", *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 2-18, http://www.paecon.net/PAEReview/issue44/Ackerman44.pdf

Climate change, global ethics and the market

Jorge Buzaglo [Sweden]

> The sun shall be darkened, | earth sinks in the sea,
> Glide from the heaven | the glittering stars;
> Smoke-reek rages | and reddening fire:
> The high heat licks | against heaven itself.
> *The Edda* (LI. Frá Ragnarökum)

As diverse factors as the Hurricane Katrina, the IPCC (2007) report, Al Gore's film (*An Inconvenient Truth*), and the Stern (2007) review, have dramatically increased world awareness about the dangers of global heating. Different approaches to a possible solution are beginning to surface in the public debate. In Scandinavia, for instance, the ecologists' radical vision of a simpler life close to Nature and away from the Market confronts the dream of a high growth, innovative capitalism, where the magic of technology solves all problems. These are often imaginative visions, but what is still lacking in all of them is a clear and explicit acknowledgment of the strictly global character of the climate change problem. What is lacking in the debate is the overt acceptance of the fact that in the global warming problem "we are all in the same boat," that is, all of the globe's population. Global problems need global solutions. A solution to global warming poses from the start the problem of the extremely biased world income and wealth distribution. A realistic solution should necessarily incorporate global redistributive mechanisms, including market mechanisms.

The essence of the problem can be grasped through the simplified situation of an imaginary island economy. Thriving inhabitants and successful consumers are expanding the island garbage dump at a high and increasing rate. The poisonous substances in the garbage seep into the ground and infect the underground water. Careful study of the situation by experts concludes that the explosive growth of the garbage dump must stop. The amount of waste produced cannot continue to grow. The question for the islanders is how to achieve that. One islander proposes a straightforward solution: nobody can increase his/her present amount of waste. (It happens to be a rich islander who produces a high amount of garbage.) Another islander, a small waste producer, thinks that the allowed amount of waste anyone can leave must be equal for all. Shall big polluters be rewarded with prolongation of their privilege? No Sir, all islanders have the same rights, he says. After long discussions, there is a vote. The supporters of equal waste quotas win the referendum with wide margin — high waste islanders are a small minority. From now on, all islanders have the right to dump the same share of the permissible/sustainable amount of garbage.

But wait a moment, says an island-economist of post-autistic conviction. The market can help us to find a better solution to the problem. We do not need rigid regulations fixing the amount of waste everyone is allowed to produce. We can create a market in which the equally allotted waste rights can be exchanged. Those who do not use all their allotted rights can sell their surplus to those who want to dump more waste that the allotted quantity, and are able to pay for it. This is a preferred solution for all those whose waste production is different from the allotted quota. Moreover, the system has a bonus: it reduces income inequalities.

According to climate scientists (IPCC, 2007) our cosmic island is in a similar condition — yet much worse. Global greenhouse gases must be *halved* by 2050. What can be done? Shall every country reduce their emissions by 50 percent, as in the rich islander's proposal (

”grandfathering”)? Shall the U.S. halve its carbon dioxide emissions from present 20 metric tons per capita to 10 tons in 2050, while Vietnam halves its only ton (latest data from the World Bank, for 2005)?

This does not look like a convincing solution for the 84 percent of the world’s population not living in high income countries. They produce only 2 tons per capita in average — less than a sixth of what is produced by the inhabitants of the rich world. Had the world a democratically elected parliament, or should a world referendum take place, the poor islander’s principle of equal rights should win by a large margin.

One could also say with Kant that equal emission rights for all is the only *rational* choice for every individual in the planet. If everybody is allowed to emit as much as I can, I should not produce more than the globally sustainable average. That is the only sustainable way in which my individual action can be universal law (Kant’s *categorical imperative*). Also for Spinoza, “men who are governed by reason — that is, who seek what is useful to them in accordance with reason — desire for themselves nothing, which they do not also desire for the rest of mankind.” (*The Ethics* IV, Prop.18, Note)

Equal emission rights for all would imply that all rich countries must at once limit their carbon emissions to the world average of 4 tons per inhabitant, and then gradually reduce them till 2 ton year 2050. For low polluters such as Sweden or Switzerland, which emit 6 tons per inhabitant, this does not look like an impossible undertaking or a catastrophic welfare loss. But it would certainly be for most other rich countries.

Here comes the island-economist’s market solution to our rescue. Rich countries do not need to drastically and immediately reduce their emissions to 4 tons per inhabitant. They can buy emission rights from low-polluting countries such as Vietnam or Guinea. They can so reduce their emissions cost-efficiently, only to the level at which the unit cost of emission-reducing measures is higher than the market price of a unit emission permit. Poor, low-polluting countries, on the other hand, would gain large incomes from their sales of emission permits. Böhringer and Welsch (2006) simulated the effects of different ways of sharing the costs of lowering global greenhouse gas emissions. An equal allocation of emission permits in proportion to population would give Sub-Saharan Africa and India the greatest gains. Smaller benefits would accrue to the Middle East and North Africa, and even smaller so to Latin America. China is more or less unaffected by the scheme. The costs are mainly disbursed by the rich countries and Eastern Europe/ex-Soviet Union.

Achieving this type of market-based solution to climate heating would involve of course grand institutional innovations. The point of departure of Peter Barnes (2006) institutional analysis is the “tragedy of the commons.” That which is common to the greatest number has the least care bestowed upon, as Aristotle once formulated the problem. Resources without clearly defined ownership tend to be overexploited and eventually exhausted. If, for instance, the atmosphere were owned by a Waste Management Inc., it would charge dumpers a fee and limit emissions.

However, even for neoliberals, a privately owned atmosphere is unthinkable. Barnes suggests instead endowing the management of the atmosphere to a trust. If instead of Waste Management Inc. a trust owned the sky there’d be a bonus: every citizen would get a yearly dividend check. This is not just a dream: since the 1980s such an institution, the Alaska

Permanent Fund, manages that state's oil resources and distributes dividends among its inhabitants.

The solution is thus to develop strong institutions that have ownership rights over common resources. This is an important insight, but ignores the fact that global warming is a global problem. The atmosphere is a global good, and the tragedy is being played out on world stage. A system whose rules are followed by just a few and whose legitimacy is not recognised by all is not an effective system. Think if the world's three billion poor find it legitimate for them to achieve the same greenhouse gas emission levels than the rich…

Also the ecologists' radical visions often suffer the same lack of a global ethics perspective. A recent study by the Dag Hammarskjöld Foundation in Uppsala (Lohman et al., 2006), for instance, strongly chastise all market-based attempts to solve global warming, such as emission rights trading. It pleads instead for locally-based, climate-friendly, planned economies. But the problem with the approach is that a climate-friendly economy, even a planned such, is almost by definition a *global* planned economy. And of course, also within a global planned economy are the global distributive problems fundamental and unavoidable.

It must be recalled that the Kyoto protocol is not global either. It covers at present not more than 30 percent of global emissions, and much less of the global population — neither the US nor the developing countries participate. William Nordhaus (2006) thinks that the Kyoto agreement is already seriously ill, or even terminal. And the effective part of the EU's emission rights system represents only 8 percent of global emissions.

Management of global resources requires of necessity global instruments. Even if ineffectual if partially implemented at the local or national level, Barnes' idea of a climate trust fund might be a powerful initiative at the global level. What could indeed be effective is an atmosphera.org, a global trust fund with the mandate of managing the atmosphere on behalf of future generations and of investing its revenues in social programs and environmental projects worldwide, according to the equal rights principle.

This type of scheme would attract the developing countries, and also answer to two common objections raised from the rich countries. First, it is suggested that a large share of the incomes accruing to poor countries could end in the pockets of corrupt officials and politicians. Second, it could also be possible that these incomes, even in the absence of corruption, should not benefit the poor — in many countries public expenditures only increase the bias of an already unequal income distribution. A global, independent trust with clear mandate, power and accountability should see to it that the scheme is free from corruption and that its revenues benefit the "carbon-poor."

Let us summarise. The global nature of the climate problem imposes global solutions. The equal rights principle is a natural and rational ingredient of a solution which aims to effectively include all countries. There are two main, economically equivalent instruments, which can also be combined in different proportions. One is to create a global market for greenhouse gas emission rights allocated to countries according to their population. The other is to introduce global emission taxes/fees, whose revenues accrue equally to all. To implement these ideas a new, global institution is needed, whose rules and mechanisms are considered effective and credible by both rich and poor countries. A global climate trust fund could be such an institution. The objective for a new, all encompassing Kyoto should be to

arrive to these types of institution, rules and mechanisms. Not only the atmosphere, but also the billions of the world's poor would be grateful for it.

References:

Barnes, P. (2006) *Capitalism 3.0. A guide to reclaiming the commons*. Barret-Koehler Publishers, San Francisco.

Böhringer, C. och H. Welsch (2006) Burden sharing in a greenhouse: egalitarianism and sovereignty reconciled, *Applied Economics* 38, 981-996.

Intergovernmental Panel on Climate Change (IPCC) (2007) Climate Change 2007: The Physical Science Basis, Geneva. [http://www.ipcc.ch/SPM2feb07.pdf]

Lohmann, L. et al. (2006) Carbon Trading: A critical conversation on climate change, privatisation and power, *development dialogue,* no. 48, September.

Nordhaus, W. (2006) After Kyoto: Alternative Mechanisms to Control Global Warming, *American Economic Review* 96, 2, pp. 31-34.

Stern, N. (2007) *The economics of climate change: the Stern review.* Cambridge University Press, Cambridge.

SUGGESTED CITATION:
Jorge Buzaglo, "Climate change, global ethics and the market", *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 19-22, http://www.paecon.net/PAEReview/issue44/Buzaglo44.pdf

The Global Economy Bubble Equilibrium

Ian Fletcher [USA]

Many of the greatest deficiencies of neoclassical economics follow, logically enough, from its central concept: equilibrium. Attacks on its single-equilibrium assumptions in favor of multiple equilibria, most notably in New Trade Theory, are one response to this. Another is the growing realization[1] that, in Keynes's words, "markets can remain irrational longer than you can remain solvent," an obvious practical fact that has resisted embodiment in theory. Neoclassical accounts of market irrationality tend to treat this irrationality as mere noise, whose systematic mechanisms are at best artifacts of behavioral psychology. But in truth, the mechanisms by which markets can remain out of equilibrium are as profound as those by which they find equilibrium, and the present global economy is a case in point.

Intelligent commentators have been crying "unsustainable" about the value of the US dollar, and its relationship to the rest of the world economy, for nearly ten years now, bringing two facts into collision:

1. The underlying assumptions of these commentators are reasonable, well-accepted ideas about the supply and demand for currencies.

2. The dollar's value and relationship has, in fact, observably been sustained.

Despite the dollar's recent decline, which may have become decisive by the time the reader sees these words, it has still remained above the value that neoclassical assumptions would predict for a very long time. And unfortunately, most rejections of the first assumption above have been implausible.

Some such rejections have been rhetorically wild, but analytically insubstantial, assertions about the New Economy. For example, they have taken admittedly-impressive technologies like the Internet as economic changes in their own right, failing to explain how they abolish technology-independent economic facts like the propensity of competitive markets to deliver zero profit. (Sometimes, they have not even established the relevance of such technologies to foreign exchange at all.)

Some such rejections have been conceptual sleight-of-hand, like the assertion that trade deficits simply don't matter anymore, because national borders are supposedly arbitrary. But even if one concedes this (questionable) premise, it still follows that, under accepted economic assumptions, currencies assigned to the economic activity within arbitrary lines on the map will observe certain relationships with other similarly-defined currencies.

Some such rejections have been sober but still implausible assertions about how the US and world economies have changed, like Allan Greenspan's attempts to justify everything with claims of productivity growth in the US economy. Among other things, this would not explain the current situation, even if it were true.

[1] Something that was obviously realized a long time ago, but seems to have been forgotten and re-learned in decades-long cycles.

The rational response is neither to embrace any of the above pseudo-solutions, nor to ignore the fact that we are confronting a stark contradiction between standard economic assumptions and observed facts. Instead, the key lies in recognizing that while the US and world economies have indeed changed, they have *not* changed into some Alice in Wonderland world in which no rules apply. Instead, they have changed into a world in which the old rules, for clearly-cognizable reasons, have been relaxed or changed, creating new rules – which can potentially be exploited by appropriate trading strategies.

These new rules are defined by something we can call the Global Economy Dollar Mechanism, or GEDM for short. The rational way to construct a model of the new world economy, and the GEDM according to which currencies function inside it, is to begin with the conventional model of the old world economy, identify its key assumptions, and identify which of these no longer hold and why.

Since the observed condition we face is a speculative boom in financial assets, let us begin with the conventional model of how this happens: the money supply expands. Now in the old economy, the natural result of this is inflation, for the classically-stated reason of "too much money chasing too few goods." And yet we observe (or observed until very recently, and mainly due to cost-push problems like Peak Oil) low inflation. So what has changed?

The main thing is this:

The US dollar is no longer just an American currency. It has become WorldMoney.

So the first key assumption of conventional economic models we must relax is the assumed tight connection between national economies and national currencies. This is true both in the case of the US, because the dollar is being used so much elsewhere in the world, and in the case of foreign countries, because their economies are now using dollars, rather than their own currencies, so much. This has two main consequences.

First, the quantity of dollars in circulation is backed not just by the goods production of the US economy, but by the production of all goods bought and sold for dollars anywhere in the world. As a result, the constraint of "too few goods" has been loosened considerably, and the US money supply can expand considerably more than it otherwise could without simply inflating away. (This constraint on dollar inflation in goods prices is buttressed by the constraint on inflation in *any* currency created by the global surge in cheap manufactured goods from China and elsewhere.)

Second, growth in the sophistication, international tradability, and penetration into the non-financial economy of financial instruments has meant that the dollar is not just backed by production of goods, but by production of financial instruments and investable assets (like real estate) as well. So the conventional assumption, that exchange rates are ultimately dominated by trade in goods, with financial factors like interest rates exercising a subordinate influence, can now be reversed. The tail can now wag the dog.

The key is not mainly the increased technical intricacy of these instruments as such, though this does make them more potent. It is their increased penetration into the US non-financial economy. For example, 30 years ago, the wealth embodied in a typical suburban house, or a college education, was not typically converted into financial instruments that could be traded around the world. The same goes for corporate receivables, securitized debt, and many other things. The net result has been that a radically increased percentage of the

wealth in the American economy, in all forms, has been made a tradable part of the financial system.

Furthermore, at the same time as this wealth has been "put on wheels" by financialization, the barriers to pushing claims on that wealth, i.e. financial instruments, across national borders have been coming down – almost continually since 1979. As a result, the quantity of wealth that can flow, the range of places it can flow, and the ease with which it can do so have radically increased. And this is all *before* factoring in the effects of the collapse of communism in 1989.

The result has been a vast increase in the value of financial instruments (debt and various forms of asset ownership) that Americans have available for "export" in exchange for their imports. Because these imports are just the obverse of foreign nations' export-led growth, this has coincided with a boom in the amount of money foreigners have to buy these "exports" with. The final result: the large-scale substitution of financial exports for goods exports by the US that we have empirically observed.

This sounds perverse, upon conventional economic assumptions. But looked at one way, it is well-nigh inevitable, indeed an obvious consequence of taking financialization to its logical conclusion. In principle, the sum total of 300 years of accumulated American wealth has now been made tradable, and the sloshing about of this sum, in the global market for purchasable wealth, dwarfs the mere annual *increment* to this sum constituted by present production. So of course financial exports dominate.

It used to be the case that present production dominated international trade, because of constraints on converting accumulated wealth into financial instruments, and constraints on selling these instruments to foreigners (or constraints in their own countries on their buying them from us, ranging from sheer lack of money to government regulations.) So we came to think of this as the normal state of affairs, especially because it just seems somehow natural that finance should be the tail and the "real" economy the dog. But in fact, it is quite arguably more natural for *finance* to dominate, because finance embraces all accumulated wealth than can be converted to a tradable asset, while the "real" economy embraces only present incremental additions to that wealth.

The oft-noticed, but to the author's knowledge untheorized, consequence of this has been that the financial system has been largely de-coupled from the health and functioning of the US current-production economy. Case in point: in the first quarter of 2007, US economic growth slowed to 1.3%, and yet the Dow rose to an intraday all-time high of 13,284, closing at 13,264 on May 4th. The US current-production economy continues to exert, of course, a heavy influence upon the US financial system, but it is the US financial economy, consisting of America's accumulated wealth, that dominates.

Importantly, the health of the financial economy can deviate substantially from the health of the production economy[2]. After Michael Porter, we can call an economy in which the asset economy is dominant a "wealth economy,"[3] though the radicalization of this

[2] There is also no necessary reason to suppose (especially if we abandon naïve assumptions of perfect markets, but quite possibly even with such assumptions) that those policies which will be best for the one economy, will be best for the other.

[3] Although Porter uses the term in *The Competitive Advantage of Nations* as a pejorative, implying an

phenomenon appears to have outstripped what was observable when he coined this phrase in 1990.

It follows from all this that anyone who wishes to speculate on the value of the dollar needs to identify the true contemporary uses of the dollar, and base their analysis on that instead. It must be understood, above all, that the US's titanic trade deficit is *not* necessarily a peculiar aberration from the normal, equilibrium-reverting, course of world trade. A trade deficit in mere *goods*, when the "trade" in assets is just as big or bigger, is nothing illogical whatsoever. There are good reasons for what is happening, and although it may not be able to last forever (no economic era does), it may not be on the verge of collapse that pessimistic commentators imagine. It is simply *not* necessarily aberrational.

Even if it does represent a deviation from equilibrium, it is entirely possible that it may take a long time for that deviation to be rectified, just as the water level in two connected pools can take an arbitrarily long time to equilibrate, if the pipe connecting them is of small enough diameter, relative to the volume of water in the pools. And if the hypothetical equilibrium changes during this time faster than the "water" can flow to equilibrate to it, the system can conceivably remain *permanently* out of equilibrium.

The Role of Speculative Booms in the GEDM

The key to understanding the constraining rules of the GEDM lies in understanding why the GEDM requires speculative booms to survive. The above-described facts, alone, would not be sufficient to produce the speculative boom we have been living with, intermittently, since the GEDM crystallized[4] in the early 90's. But what needs to be added to the above model is obvious: radical expansion of liquidity. The facts already described have not themselves done this; they have merely made it *easier* for it to happen. However, they have made it so easy that, once the political dimensions are brought into the picture, they have created well-nigh irresistible temptations for liquidity to expand radically.

The first key fact, is that the proliferation of sophisticated financial instruments has simply made it a lot harder for central banks to rein in liquidity. The second, is that the Fed has been expanding the money supply rapidly, and getting away from it. The third, is that because the US runs a huge trade deficit, there $800 billion doesn't get spent buying goods, but on buying financial assets. The US trade deficit is like a giant pump inside the world economy, converting wealth that would otherwise be "flared off" into immediate consumption into financial assets. This endlessly-piling-up wealth, rendered ultra-liquid by sophisticated modern finance, must go *somewhere*. It cannot go into goods prices, so there is nowhere else for it to go, than into the price of debt (including sophisticated repackagings of debt) and assets.

This dynamic is accelerated by a number of factors. First, the availability of easy credit to Americans increases their spending levels. (Selling the bubble-inflated equity in

---

economy in which present wealth-creation is sabotaged by an economy optimized to favor the profitable exploitation of accumulated wealth, no value judgment is intended by this essay, though hopefully the formulation here may bring some clarity to his somewhat-vague concept.)

[4] The author takes no position, concerning whether the GEDM was deliberately designed, or came about by historical accident. The literature is full of accusations that Clinton Treasury Secretary Robert Rubin "engineered" it, but this is not an essay on conspiracy theory.

one's house to a foreign purchaser by means of a second mortgage is the classic example.) And the more Americans spend, the more they import, forcing foreigners to buy more American assets or debt. Then there is the wealth effect, in which an increase in the nominal wealth of American consumers, due to inflated prices for stocks, real estate, and other assets, makes them more willing to spend money. Then there is the fact that bubbles don't operate against a static class of base assets, and bubble-induced rises in the price of an asset class will tend to encourage production of those assets. The obvious example is real estate. Demand for real estate, as a speculative asset, increases the construction of houses. This creates a spill-over into the non-financial economy, heating it up, and producing more spending, more imports, *et cetera*.

Will the Global Economy Dollar Mechanism endure?

The key question, if the above analysis is true, is obviously, "Why *is* the dollar WorldMoney, and what could make it cease to be?" There are two answers:

The most obvious reason is that there are perfectly-good theoretical reasons[5] to expect that an established vehicle currency, once established, will remain so – even if the establishing conditions, like dominance of global GNP or trade, cease to be true. The British pound remained the international reserve currency of choice for decades after Britain had shrunk to a relatively small portion of world GNP.

The second reason is political. There appear to be[6] no *a priori* political reasons for the key foreign economic players to prefer that the dollar be WorldMoney, given their stated postures of rivalry with the US and their apparent belief that the dollar's status increases America's undesired power. There exist, instead, reasons of status quo lock-in which make it advantageous, at least for the time being, for them to continue to support the dollar's status.

For a start, if they ceased to be willing to recycle America's trade deficit into dollar-denominated assets, their trade surpluses against the US would collapse. Conversely, if cheap foreign imports ceased to be readily available to the US, this would trigger a surge of inflation, which would push up interest rates and tip the heavily-indebted US economy into recession.

But why can't China just switch to satisfying internal demand? After all, would it not be more advantageous to the Chinese to get the benefits of both economic growth *and* increased consumption, rather than merely building up their productive capacity satisfying foreign demand? The reason is that the Chinese economy has risen on production of goods suitable for consumption by rich First-World consumers. Despite burgeoning demand by the population of the developed cities along China's coast, China simply does not have a population base that can absorb China's production of fax machines. This mismatched demand base is the price China pays for having embraced an export-led growth strategy, and the ultimate short-term reason for Chinese dependence upon the US.

[5] See Paul Krugman's 1980 article *Vehicle Currencies and the Structure of International Exchange*.

[6] I use the phrase "appear to be" because there are all sorts of rumors about, concerning deals done with various foreign players, like agreeing to defend Saudi Arabia in exchange for OPEC pricing oil in dollars. But this is not an article on conspiracy theory.

Leaving politics aside, and as a purely economic question, there is no absolute reason why this is an unhealthy[7] or unreasonable process, if we assume – as conventional economic assumptions would argue – that the process will not go on beyond the ability of the US economy to assume foreign debt and sell off existing assets to foreigners. If we make this happy assumption, then it follows that the market price of American debt is a rational indicator of America's ability to assume debt, and the market price of America's existing assets likewise. These market prices will not only provide us early warning, of when America may have gone too far, but will tend to naturally choke off the process at that time. The key question, therefore, is whether this happy assumption is, in fact, correct here, or whether the smoothly-adjusting dynamic that they assert is interfered with by anything. Here the plot thickens, as a number of things may do just this.

Most obviously, there we are dealing with asset bubbles, the popping of which can derail the whole process. Asset bubbles are not, of course, exclusive to the GEDM. But they are uniquely destructive under such circumstances, because the entire world economy has now become dependent upon the dollar, as the dollar is now WorldMoney and foreign nations are dependent upon its reliably continuing to fulfill this role.

Under the GEDM, asset bubbles are an almost-irresistible temptation, for a number of reasons. Most obviously: although asset-bubbles are, while they last, self-sustaining, in that the expectation of further price rises props up prices at their present (ultimately unsustainable) level, they almost always require *some* triggering device, which detaches market price expectations from initial moderation. The classic case is unrigorously-formulated but charismatic arguments, like "the Internet changes everything," which enabled the dot-com boom. But arguments are not the only thing that can have this effect: all that is needed, is that there be some factor impinging, which is outside conventional market rationality.

In this case, we have two (which may be arbitrarily reduced to one, analytically, as they are related):

1. The fact that the world economic system as a whole is dependent on the smooth functioning of the dollar machine.

2. The political expressions of the knowledge of the above fact.

In other words, the recycling of America's trade deficit into American debt and asset sales is artificially stimulated by the fact that this activity is not only taking place for the conventional economic reason of paying a positive return to the investors involved. It is taking place in order to sustain the entire global economic *system*. One way to look at it is view the (mediocre) direct returns to the investors as incremented by profits made by the system elsewhere. This relationship is formal, in the case of players like the central banks of Tokyo and Beijing, which accept the mediocre (indeed, negative over the last 5 years, given the

[7] It is only unhealthy for Americans to be financing present consumption by selling off existing assets and assuming debts if we take the ethical position (which is outside economics) that this is an irrational trade-off between present and future consumption. Ian Fletcher explored the economic analysis that follows from this assertion in this paper: "A Neoclassical Hole in Neoclassical Free Trade" (http://www.paecon.net/PAEReview/issue26/Fletcher26.htm)

decline of the dollar) returns they get on US Treasury debt as the fee they pay to stop the dollar from declining even more, and choking off their exports to the US.

The GEDM thus has a firm basis for generating irrational asset prices. Another way of looking at it is to say that because holders of dollars *can't* spend them on anything other than dollar-denominated investments, they keep buying them even when they would otherwise be unattractive. We could even say that the US dollar enjoys monopoly pricing power for itself.

The temptation for the key players to accept asset bubbles in dollar-denominated assets is irresistible, because the more each bubble expands, the larger is the nominal value of dollar-denominated assets (which pleases the holders of those assets abroad) and the larger the absolute size of the pool of dollars that Americans have to sell, which pleases Americans. The asset bubble, by generating nominal returns while it lasts, compensates investors for the problem of buying assets for artificial reasons not justified by their fundamental returns. In fact, a bubble is so perfect a solution to the problem of making the GEDM run smoothly, that there exists a well-night irresistible pressure to find new bubbles.

One way of looking at this is to see the endless blowing-up of bubbles as a way to replace the actual returns that are missing from the system, i.e. the gap caused by the aforementioned biases that cause investors to accept returns on dollar-denominated assets that are artificially low. The whole system *does* balance – does maintain a sufficient equilibrium to sustain the system – despite its underlying inadequacies, and bubbles are key to making it do so.

Based on the above insight, we may conclude that if Allan Greenspan may be assumed to understand (whatever his public pronouncements) the existence and functioning of the GEDM, then this would explain his decision to allow the systematic inflation of several bubbles in succession. (Whether he agrees with the model sketched here, of the mechanism of the GEDM, is an open question. That he knows that something like it is in effect, is clear from his defenses of "dollar hegemony" to the US Congress. Furthermore, any player in his position who understood the GEDM would have an interest in not talking about it.) This would also explain why Greenspan was so explicit (indeed, disarmingly honest, once one grasps the game) about the need to avoid pricking bubbles, and avoid preventing them, preferring to defend the need to avoid a hard crash when they pop.

The natural question then is, will the US economy run out of bubbles to inflate? Given that the economy, and the number of (meaningfully different) tradable asset classes, is by definition finite at any given moment, and a developed economy like the US cannot be expected to expand fast enough to actually keep pace with a bubble, it would seem that at some point it must. Unless, of course, either or both of two possibilities holds:

1. The possibility that bubbles can be recycled, and at some point previous bubbles can be re-inflated. For example, the old tech bubble, based mainly on the Internet, obviously cannot be re-inflated, but a new tech bubble, based on the long-awaited breakthrough of nanotechnology, say, or pattern recognition, into mass commercial viability, could emerge.

2. The possibility that the bubble need not be in American assets as such, but in any assets, anywhere in the world, that are denominated in dollars. If this is true, then the "playing field"

for possible bubbles is four times as large, and insulated from the obvious problems of the US economy.

The Global Economy Dollar Mechanism's Effect on Non-Dollar Currencies

The GEDM explains a number of other things, too. Like why the British pound has been so strong, despite Britain's persistent trade deficit and interest rates not greatly out-of-line with other economies. The strength of the British pound is perfectly easy to understand, if one remembers that pounds are demanded, by definition, not only for British *goods*, but for pound-denominated debt and pound-denominated existing assets. And Britain experiences exceptionally-strong demand for both, due to:

1. Britain's high level of personal and corporate indebtedness, which creates a vast pool of pound-denominated debt available for foreign investors to purchase. But foreigners need to buy pounds in order to purchase this debt.

2. Britain's political decision to make her existing assets, from London real estate to shares in British-owned companies, easy for foreigners to buy. There are far fewer overt and covert barriers to purchasing either than in the case of, say, France or Germany, so demand for British assets is artificially stimulated.

It follows from the above analysis that many common criticisms of current exchange rates are simply laughable. For example, the obsessive political attention given to the charge that China manipulates its currency, which attention is logically predicated upon the assumption that the "free market" exchange rate for its currency would be different, higher, and would (at least help to) redress the US trade deficit with China. Upon GEDM assumptions, China doesn't *need* to deliberately manipulate its currency (beyond the demands, which its government admits, probably honestly, of stability) to obtain the giant surplus it enjoys against the US. The GEDM structurally rigs the game that way, as long as it lasts[8].

SUGGESTED CITATION:
Ian Fletcher, "The global economy bubble equilibrium", *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 23-30, http://www.paecon.net/PAEReview/issue44/Fletcher44.pdf

[8] It follows that bickering over currency manipulation is quite possibly understood to be empty, by the key players on both sides, and is allowed to go on purely to soak up populist dissatisfaction. The great advantage of allowing manipulation to be the focus of dissent is of course that it by definition frames the solution in terms of free markets.

High finance — a game of risk:

Subprimes, ninja loans, derivatives and other financial fantasies*

Frédéric Lordon [Centre National de la Recherche Scientifique, France]

Two centuries after Hegel deplored the chronic failure of states to learn the lessons of history, financial capital seems to be caught in a similar loop, condemned to repeat the same errors, trapped in a recurring crisis. The instruments involved may be new but the current crisis on the credit markets has enormous potential for disaster, and offers another reason to re-examine the "benefits" of capital market liberalisation.

There is something of a religious cult about finance. It sees itself as reality and insists that businesses justify themselves according to the standards of financial reporting, by their quarterly results and longer-term performances. Yet it remains stupidly ignorant of what its own recent history teaches

.

Financial liberalisation has a mixed record. Since it began, there has rarely been more than three years without a serious incident, usually of historic significance. After the 1987 stock markets crash (Black Monday) came the junk bonds scandal and the Savings and Loans crisis, both in 1990, and the 1994 US bonds crash. A financial crisis started in the Far East in 1997 (Thailand, Korea, Hong Kong), before spreading in 1998 to Russia and Brazil. After 2001 the internet bubble burst.

Globalisation, according to a devotee, Pierre-Antoine Delhommais, is "a blessing, but an erratic one" (1). He is astonished by its ability to bounce back, stronger than ever, from potentially fatal disasters. Of course he overlooks the fact that every time the financial markets go wild, ordinary workers have to pick up the tab. The collapse of the markets hits the banks, then has a knock-on effect on credit, investment, growth and employment. Maybe he would like to see his own newspaper taken over by a hard-nosed investment fund. First-hand experience of downsizing might make him more sensitive to the consequences of the financial world's practices. Maybe the knocks he suffered from globalisation's erratic progress might outweigh its blessings.

The current crisis in the US credit market is an ideal opportunity to examine the fatal consequences of unregulated speculation. We can observe distinct stages leading from unfettered speculation to catastrophic collapse and central bank intervention.

Ponzi market tendencies

The best account of the blindness to disaster that characterises the interlinked finance markets was given by Hyman Minsky (2). He examined the activities of Charles Ponzi, a speculator during the 1920s, who separated suckers from their savings by promising incredible returns. Ponzi had no assets and rewarded his initial investors not with the dividends that were never there, but with the capital paid in by subsequent victims. The sustainability of the edifice depended on sustaining the flow of new participants. Apart from this fraudulent element, all bubbles that depend upon a constant inflow of liquidity to sustain a rising market and the illusion that everybody is a winner use a similar mechanism. The trick is

to keep recruiting new investors; and once the initiates have signed up, more ordinary, and less astute, punters are enlisted in greater and greater numbers.

For the US property market to keep growing (ideally for ever), more households have to be press-ganged into mortgages. The appeal of the US property dream made it easy to enlist them, particularly since households damaged by the bursting of the internet bubble were looking for fresh investments. But the reservoir of healthy borrowers was quickly exhausted and brokers began to look further afield for recruits to sustain the market. Problematic borrowers were pronounced fit. House prices exploded. Borrowers and brokers agreed that in the event of default the property could be sold, yielding a profit for borrowers and commission for brokers. They had faith in the indefinite expansion of the market: everyone was fit to borrow. The floodgates of credit burst open, feeding a speculative rise that seemed to justify the process. The result was subprime mortgages: loans to aspiring owners with no credit record or creditworthiness, typified by "ninja" loans (no income, no job or asset).

Inadequate risk evaluation

Everyone assumes that the financial industry has the reserves and expertise to handle risks. It certainly isn't short of ingenuity. It has a secret weapon: derivatives. The problem with any credit, particularly a risky one, is that it stays on the lender's books until it ends well or badly. But in the early 1990s banks realised that they could merge different credits into a line of negotiable bonds. The major advantage of this process, known as securitisation, lay in the fact that these securities could be sold in bundles to enthusiastic (institutional) investors, and risky loans could be wiped off the balance sheets of the issuing banks.

But why were investors so keen to buy something that banks were desperate to get rid of? Partly because they acquired them in smaller quantities; but mainly because the bonds were negotiable and could be sold on. The line of securities derived from the original credits was sliced up into tranches of equal risk. According to their profile and aversion to risk, individual institutional investors could buy their tranche of choice, safe in the knowledge that there would always be some institution (like hedge funds) prepared to take on the most risk-laden, and most profitable, tranche. Assuming everything went according to plan.

Obviously all the rights (financial flows) and risks (of default) attached to the original credits were transferred to these new residential mortgage-backed securities (RMBS), dispersed among many constantly changing bearers to spread the risk globally. The originating bank was no longer left to face the consequences of default on its own; instead, the risk was fragmented among many institutions, each responsible for only a minimal part, just a fragment of its portfolio.

Securitisation had apparently solved the problem of high-risk credit. The process was taken a stage further with the development of a special instrument to dispose of the most unappetising tranches of the RMBSs. Collateralised debt obligations (CDO) are a new form of negotiable security, derived from securities, whose issue redistributes the relevant fraction of the RMBS portfolio into different tranches. The senior, investment grade, tranche shelters its bearers from the first 20-30% of defaults on the original mortgage loans. There is an intermediate, mezzanine, tranche and, at the bottom, an equity tranche that takes the first hit from any default. This tranche is known in the markets as toxic waste: appropriate for

vulnerable CDO products derived from the most risky tranche of RMBSs, which are drawn from the portfolio of original credit. While the housing market soared and households kept up their payments, there was always a taker.

Hedge funds, with their ability to raise money at fairly low rates, have invested in high-risk securities, convinced that they can resell freely in a liquid market. The enormous profit margins turned toxic waste into gold. But the profits concealed objective risks that everybody ignored for fear of killing the goose that laid the golden egg. Meanwhile the mortgage brokers kept adding new recruits.

Structural vulnerability and failure

The illusion that securitisation had dispersed risk to the point of extinction provoked rash behaviour. Having managed to lay off their riskiest loans, mortgage lenders believed they could do anything. At the other end of the chain, the liquidity of the derivatives market persuaded hedge funds to pick the juiciest, but most rotten, CDOs. The dilution of risk encouraged the uncontrolled growth of its overall volume. The situation drifted into the critical zone.

By now, the structural fragility of the edifice had made it vulnerable to environmental changes that would normally seem insignificant. Individual quarter-point rises in the US Federal Reserve's interest rate might seem insignificant; but in August The New York Times reported how one woman had seen her mortgage rate rise from 6.3% in 2005 to 11.25%, and her monthly repayments from $414 to $691, more than she could afford to pay (3). She was one of the 14% of subprime borrowers who defaulted in the first quarter of 2007.

Central bank interest rate rises, however modest, have a twin effect. With new buyers excluded from the housing market, prices fall. Those already on the property ladder face unsustainable repayments; if they realise their asset, they lose financially and increase the bearish pressure on everybody.

In financial crises, there is always a specialised institution whose collapse signals a general turnaround. This time, two failures at the opposite ends of the chain brought the markets down to earth. The US investment bank Bear Stearns was forced to shut down two of its dynamic (perhaps too dynamic) funds after they binged on CDOs.

More alarmingly, since it is not particularly involved in the subprime sector, at the beginning of August the lender American Home Mortgage had to seek Chapter 11 protection from bankruptcy (4).

Catastrophic reassessment of risk

There began to be a whiff of panic. The toxic waste bonds already stank and there was a growing suspicion that even top-level investment grade CDO bonds could not be trusted. How could the industry have committed such monumental errors of judgment? The complexity of evaluating derivative products had something to do with it; credit rating agencies had been assessing CDO and RMBS tranches by the hundred. But there was more to it than honest workers struggling under the weight of the task. The agencies were raking in

money because financial institutions were madly issuing securities for assessment – in 2006, the rating agency Moody's derived 40% of its income from evaluating structured products. There was an obvious incentive to approve products in order to encourage new business.

The rating agencies were supposed to curb the worst excesses of the market; instead they allowed themselves to be infected by it. It is difficult, so close to and dependent upon the financial industry, to warn it, especially with everybody filling their pockets. The agencies, procyclical when they should have been countercyclical, encouraged the bubble, only to make panic revisions as soon as the turnaround kicked in, thus helping precipitate a collapse.

The crisis is probably only beginning. The US home mortgage industry has used attractive teaser rates to lure more borrowers towards the precipice. On a 2/28 mortgage, borrowers repay at a lower interest for the first two years, then revert to the damaging full rate for the remaining 28. We have yet to see the full impact of this on people who took out mortgages at the peak of the property bubble, in 2005 and 2006. But, as with the derivative-stuffed hedge funds, there are bound to be fireworks.

Finance is global; likewise its accompanying idiocies. With hedge funds across the world being tempted by derivative securitisation, the delirium gripping the US mortgage market was unlikely to remain confined to one country. Germany's retail banks, long derided as unimaginative and boring, decided to modernise and to become more active in the markets around 2000. After the Russian financial crisis of 1998 and the internet crash of 2001, over-exposure to the sub prime market has brought the bank IKB to the brink of collapse.

Lateral contagion

Global markets are vulnerable. Derivative products can maintain their delicate balance as long as nobody calls them out – as long as everybody pretends to believe the market is still liquid. But it takes just one institution to try to bale out by selling its CDOs for buyers to disappear. Once liquidity evaporates, the formal negotiability of the bonds becomes meaningless and their value plummets.

In August the French bank BNP-Paribas announced the suspension of three 'dynamic' funds: "The complete evaporation of liquidity in certain market segments of the US securitisation market has made it impossible to value certain assets fairly regardless of their quality or credit rating" (5). Yet only a week previously Baudoin Prot, the bank's CEO, had guaranteed the liquidity of the three funds.

As risky products collapsed and supposedly safe ones wobbled, the contagion spread to other, unrelated, market sectors that had participated in the orgy of lending, specifically the private equity sector.

These investment funds have been the stars of the finance industry over the last few years. They buy up promising companies whole, withdraw them from the stock market, restructure them and sell them on at a huge profit after a few years. They invest little of their own capital, relying instead upon debt, which they repay by milking the companies they purchase. The profits are so staggering that banks, convinced they can't lose, have fallen over themselves in the race to finance these operations. The terms offered include covenant-

light loans, exempt from all the limits on basic financial ratios normally imposed upon borrowers – "whatever you do, we're behind you".

Then there are PIK (payment in kind) and IOU loans, where the interest and principal are not paid in cash, but added to the original debt. As a result, private equity funds have stacked up astronomical levels of debt. But problems can arise when illiquid assets are sold, not as blocks of shares but as entire companies. All it could take is a single problem – for resale to be impossible, delayed or at a loss – for the entire private equity sector to be compromised.

Recent fund-raising operations have struggled because the banks, hitherto relaxed and complicit, have suddenly got cold feet. It is typical of financial crises that the sudden discovery of risks in one sector should raise anxieties in others. Just as Mexico's difficulties in 1994 generated doubts in Thailand — hardly a next-door neighbour — because both were emerging markets, so anxieties about the housing market have spread to the private equity market, although they have nothing in common except dangerous excesses.

Overexposed banks

The fact that the banks managed on the whole to offload their portfolios of property credits through securitisation didn't protect them from trouble. By letting their funds fill up with derivative products, they created a new exposure to mortgage risk. And they came under threat from lateral contagion, particularly through private equity, to which they were directly exposed.

The banking regulations require every bank to maintain a solvency ratio between its capital and its liabilities. If actual or even potential losses loom, something likely now that the credit rating agencies have woken up and started to revise all their evaluations downwards, the banks must make corresponding provision in their accounts; to maintain their ratios they must reduce the denominator (credits granted) in proportion to the contraction of the numerator (the bank's own capital, reduced by the provisions they have made). As always, it is those involved in the real economy, businesses and workers far removed from the evils of speculation, who face credit restrictions they have done nothing to deserve.

Nanny to the rescue

As long as the markets kept rising, the financial masters of the universe despised the nanny state and said so. Now they want and need her comfort. A central bank, which rescues the financiers by lowering interest rates to restore general liquidity, is not a state itself; but it is public institution, outside the market, rejected while profits flood in, appealed to when things turn bad.

Jim Cramer is a no-holds-barred financial pundit on the US business news channel CNBC. On 3 August he was seen screaming at Ben Bernanke, the chairman of the Federal Reserve: "Cut! Cut!" (6). Infuriated by the Fed's delay, Cramer claimed that Bernanke understood nothing because he was an academic (he is a former economics professor). Other fund managers interviewed on the same channel were more soberly dressed and less hysterical. But they all agreed: the readiness of Alan Greenspan, Bernanke's predecessor, to

cut rates rapidly was the mark of a practical man, unencumbered by academic preconceptions, who could read a situation and recognise that it was time to make concessions.

Saner analysts are beginning to recognise that this long monetary tolerance of the financial world's excesses must take some of the blame for the risks now threatening us. Until 17 August, when he did cut the Fed's primary discount rate, Bernanke seemed happy to let the most foolhardy operators take the consequences of their own stupidity. But that was unsustainable once failures spread to constitute a systemic risk. That is the worst thing about the financial system. It is always encouraged to swim further and further out until the authorities can no longer ignore its misfortunes and have to dive in to the rescue. It holds the world hostage.

Notes

(*) This article originally appeared in *Le Monde diplomatique*,

(1) Pierre-Antoine Delhommais, "Une mondialisation heureuse mais heurtée", *Le Monde*, Paris, 9 August 2007.

(2) Hyman P Minsky, *Stabilising an Unstable Economy* (Yale University Press, 1986).

(3) Gretchen Morgenson, "More Home Foreclosures Loom as Owners Face Mortgage Maze", *The New York Times*, 6 August 2007.

(4) Chapter 11 keeps businesses afloat by offering them protection from over-impatient creditors (a moratorium on company debts). It releases employers from their commitments and allows them to renegotiate wage agreements.

(5) Press release; see http://www.bnpparibas.com/en/news/p ...

(6) That is cut interest rates. For the clip see http://www.youtube.com/watch?v=GKZg.; and for a transcript, http://latimesblogs.latimes.com/ la...

Translated by Donald Hounam

SUGGESTED CITATION:
Frédéric Lordon, "High finance — a game of risk: Subprimes, ninja loans, derivatives and other financial fantasies", *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 31-36,
http://www.paecon.net/PAEReview/issue44Lordon44.pdf

Orthodox Economic Education, Ideology and Commercial Interests:

Relationships that Inhibit Poverty Alleviation

James Angresano [Albertson College of Idaho, USA]

Introduction

Since the mid 1940s the vast majority of people in most poor countries have experienced no improvement in their material and social wellbeing. Virtually all these countries, however, have received extensive financial aid and a plethora of development advice, particularly from the Word Bank, International Monetary Fund (IMF) and the United States Agency for International Development (USAID). Former World Bank senior economist William Easterly notes that the "West has spent $2.3 trillion on foreign aid over the last five decades" without appreciably improving the wellbeing of a majority of the poor (Easterly 2006, 4). According to the *World Development Report 2006,* not only have poverty conditions in these countries failed to improve appreciably, but the global inequality gap has been "widening for the slow-growing poorest countries" (Ferreira and Walton, 34). Meanwhile, in China (Angresano 2005), India, and other countries in East Asia that have not followed the World Bank and IMF development "recipes" substantial proportions of the lower income groups have been lifted out of poverty.

Many factors have been cited for the continuing, intractable poverty condition in most poor countries. One is that their governments are unstable, rife with corruption, and unwilling to reform their economies, and menaced with failure when they implement reform efforts.[1] A second actor is the combination of geography - particularly the inhibiting effect of a tropical climate on economic growth and development - and entrenched traditional attitudes that trigger resistance to what orthodox economic advisers argue is "sound" policy advice. Still other analysts (for whom economic growth is a synonym for development) have concluded that the cause of low economic growth is the presence of bad institutions (Rodrik et. al. 2002). A fourth explanatory factor cited as to why development successes "have so rarely [been] achieved" concerns the principal agent problem plaguing the large, bureaucratic development organizations (Martens et. al, xv). In this view, the agents of these organizations responsible for micro level projects are offered incentives that encourage them to act in a manner that serves their careers at the expense of pursuing achievement of the multiple broad objectives their agencies have ostensibly established. Many World Bank staffers are not promoted according to any positive evaluation of a project that indicated their work directly contributed to a reduction of poverty, but rather according to other criteria that include how many loans they facilitate. As such they function more like bankers than as reputable economists. This agent problem is aggravated by the absence of accountability on the part of the development agencies to the voters in the rich countries that provide the aid funds (Martens et. al. 1).

There is considerable evidence documenting each of these four alleged causes. However, there is still another cause that has been insufficiently elucidated. That cause is the combined and iterative impact of three unwholesome relationships: (1) the relationship between the narrow, ideological graduate economic education and the orthodox development

[1] However, even when governments are considered "good" evidence indicates that development will not occur if policies are "bad" (Easterly 2006, 44).

perspective held by the international agencies - a perspective that emphasizes growth of output without emphasizing distribution effects; (2) the relationship between international agency policies and the ideological foreign policy interests of the USA and UK, interests that some argue seek to gain control over poor countries' resources while promoting implementation of a pro-democratic, free market ideology; and (3) the relationship between development policies introduced by the international agencies and the commercial interests of multinational corporations and international banking firms, the interests of which are interlaced with USA and UK foreign policy interests.

This paper will focus on these relationships as a primary cause of the perpetuation of poverty in poor countries. Section Two provides a description of the main features of the typical graduate economics program, highlighting its narrow focus, emphasis on mathematical models, and inordinate faith in free markets reinforced by strong ideological overtones - all of which combine to effectively brainwash students to become staunch defenders of the free market ideology. This narrow education influences, and is influenced by, the orthodox development perspective held by those representing the international development agencies (that is, the people in a position to offer or withhold employment opportunities from the graduates of these programs). It will be argued that the graduate school education, when paired with the lure of a lucrative, prestigious position with the world's most powerful development agencies, tempts economics graduates to become willing participants in the perpetuation of failed orthodox development policies. Section Three examines the ways in which international agency policies are linked to the foreign policy interests of the USA and UK. This section also examines the relationship between the agencies' development policies and the commercial interests of multinational corporations and international banking firms. The next section examines the range of policies introduced by the World Bank (and IMF) over the past five decades, particularly as they appear to have become an instrument of a "free market" ideology designed to promote Anglo-Saxon business interests more than the greater good of the poor. Section Five identifies some significant points of departure from the orthodox program that characterize the heterodox approach to development. This section explains how a heterodox economist would define development and how this definition of development stimulates the advocacy of experimental, pragmatic policies designed specifically to alleviate poverty. Section Six examines the empirical evidence as to which development perspective (orthodox versus heterodox) and which corresponding policies have proven more effective in substantially improving the wellbeing of the poor. The paper concludes with some concluding remarks and a recommendation for graduate school economics program reform.

The Graduate Economics Program

Nearly all economists who work in the field of development received their graduate economics education from the highly ranked economics programs at prestigious universities (e.g., Oxford, Cambridge, Harvard, MIT, Stanford). Some have also participated in a World Bank training program. This education and training instills in recipients a faulty, misguided conception of what it means for a poor country to develop, the process by which development occurs, and the types of policies that are likely to reduce poverty among the impoverished segments of the populations in these countries. Students are also imbued with the view that the USA and UK know how the world ought to be managed, and that the way to manage it must include democracy and a "free market economy." Their education, because it is consistent with the narrow ideology of the orthodox development advocates and the USA-

controlled World Bank, significantly reduces the likelihood that new recruits enter the field with a critical eye or a fresh perspective.

Graduate economics programs are monopolized by a single approach to the field. Nearly all graduate economics students who later work for the international agencies receive a similar education built upon classical and neoclassical assumptions and orthodox growth theories. "[H]aving been thoroughly socialized into the paradigm of neo-classical theory" [the typical graduate economics student] takes assumptions such as rational economic behavior and the universality of competitive product and labor markets for granted when analyzing projects for poor countries (Mancias, 48). The typical graduate economics program is also characterized by a narrow, highly technical focus that emphasizes mathematical models and a fervent faith in free markets. Analysis of societal problems is reduced almost exclusively to their economic components, so that orthodox economists offer outdated advice that is impaired by the "abstract separation of economics from its institutional foundations" (Mehrotra et. al., 359).

A cornerstone of this reductionist approach is the belief that economic growth (considered as being synonymous with development) is "largely being driven by accumulation, by investments in capital, physical and human" (Reinert, 5). Another central tenet of orthodox economics education is that since markets tend to be efficient, the best policy for poor countries is to reduce or eliminate state intervention. Doing so, it is assumed, will automatically promote economic growth while reducing poverty through a trickle-down effect - thereby enhancing societal welfare (Mehrotra et. al., 13, 48). This belief follows from "[t]he premise of neo-classical theory that if the investments are made, the acquisition and mastery of new ways of doing things is relatively easy, even automatic . . . Even more important, the core thesis of standard economics . . . is that economic structure is irrelevant, [since] capital *per se* will lead to economic development regardless of the economic structure into which the investment is made" (Reinert, 6). Unfortunately, this thesis is supported by the fallacious belief that "the 'natural laws' of the market [will] felicitously trump the use of power by the powerful to gain unnatural market rents" (Parker, 30).

Intent on making economics "scientific," complete with determinate solutions, orthodox economists define “scientific research” as research “formulated mathematically” (Lawson, 26). As a result, increasingly formulaic, abstract mathematical models have been brought into play for analyzing these problems. Development policies influenced by this research are long on quantitative detail but short on non economic factors. Since “[e]conomics appears to be mathematical on the surface, but underneath, it is really qualitative" (Gillies, 190), the failure of orthodox development policies to account for non economic factors constitutes a serious flaw which is made manifest in the unfortunate results of these policies.

Orthodox graduate economic education also imbues students with a dichotomous conception of the world’s economies. Adopting a reductive binary scheme, economics professors typically teach their students that only two types of economies exist: "developed capitalist" countries with a "free market economy,” and, at the opposite pole, a rather undifferentiated grouping of countries without a "free market economy," (Angresano 1996 and 1997)[2] described as "socialist", "transforming", or "underdeveloped" economies. Mainstream

[2] Here it is argued that there are no "free market economies" in existence anywhere in the world, extensive rhetoric to the contrary aside. Karl Polanyi identified the contradiction in the free market economy ideal by pointing out that in every society in which working rules establishing free markets

Western economics education considers virtually no alternative to the abstract notion of a "free market economy" for developing poor economies or transforming the formerly command-type economies.

The former Deputy Prime Minister of Poland, who actively participated in Poland's post-1989 reform movement, argues that having begun from a position that allowed for no alternative development policy, supporters of the orthodox perspective became "hostages to this thesis," discouraging any discourse regarding "third way" alternatives (Hausner, 2). Students also become hostages because this instruction traps them in an "over abstracted polarity" predicated on a set of "stylised facts" purported to be relevant to the entire world (Elson, 4). Missing from most graduate economics programs are courses in economic history, economic development, comparative economics, and the history of economic thought (Klamer and Collander).[3] One Harvard professor noted about his graduate economics program, "[m]athematical models and mathematical techniques were our meat and potatoes - and if we learned something about our ancestors [Smith, Marx, Veblen et. al.] it was almost by accident" Parker, 29).

The typical graduate economics program also devotes little attention to analyzing the non economic factors that influence an economy, particularly differences in the respective initial conditions of rich and poor economies (e.g., the wide disparities in political and economic power that are relevant to development policy making). To the extent that any economic history is taught, students are schooled in a distorted version of how the UK and USA developed that omits mention of the heavy protectionist policies (among other state policies) both countries adopted during their respective rapid economic growth periods (see Chang, Nye).[4] Further, required readings for graduate students typically exclude heterodox or culturally sensitive views not in conformity with orthodox views. Consequently, students are not encouraged to acquire an understanding of the ways in which culture,[5] politics, social psychology and social structure interact with the economy.

Some would argue that the simplistic free market economy focus contributes to the absence of critical reasoning skills in graduates whose narrow education inhibits their ability to synthesize relevant development material from many disciplines, and to think holistically. This lack of a critical eye brought to the unfamiliar sorts of initial conditions a development economist would encounter in a poor country can have disastrous consequences. In the case

---

were introduced, special interest groups quickly sought protection from the state from adverse effects of such rules. USA trade policies that have included high steel tariffs and textile quotes support this point.

[3] There is little evidence of such programs requiring a broader range of mandatory reading since this book was published.

[4] Similar protectionist practices are common among rich countries today whose negotiators often take a hard line during recent world trade talks when poorer countries seek reductions in trade barriers richer countries have imposed against products for which poorer countries have a comparative advantage producing (e.g., agricultural commodities and labor-intensive goods). Even worse, poorer countries are given "unreasonable demands for 'reforms' . . . , unsupported by or in some cases counter to historical experiences, strong empirical evidence and theory - reforms which might in fact set development programs back - enhance support for these positions, especially reforms demanded by trade negotiators who otherwise have evidenced little real concern for the developing countries' welfare" (Stiglitz and Charlton, 36).

[5] A mathematical economist who is a member of a school of international studies at a prestigious university once asked me what culture meant and why I thought it was important for development policy making. After I offered a definition and about five examples where development policy making went wrong when it did not account for culture he responded by staring down at his notes and saying nothing.

of Russia one esteemed economist (having completed a study for the World Bank) concluded that "contemporary training leaves economists with a blind spot" regarding the poor country for which they are proposing policies, and that the policies they proposed tended to be based upon faulty assumptions. One such assumption is the belief that people's behavior (e.g., entrepreneurs) will conform to orthodox models and formulas regardless of the country's culture, history or values. Orthodox training, for instance, was a factor in the incorrect assumption that Russian entrepreneurs would conform to the behavioral assumptions posited by Adam Smith's economic growth model - namely, that most profits entrepreneurs earned would be reinvested.

There is a strong free market ideological bias in the orthodox economic graduate program. The systematized body of orthodox theory validates a particular institutional structure (a "free market economy"), and the corresponding values inherent in this structure. "Economics remains caught in a set of assumptions which not only serve enormously important ideological purposes, but also offers little help in understanding the modern world." This ideology is "neo-liberalism." (Mancias, 39). Further, when graduates of orthodox economics programs join one of the international agencies, particularly the World Bank, what they learned in graduate school is reinforced through Bank training programs (Goldman 2005, 231-232). World Bank and IMF economists tend to become ideologically committed to defending the free market economy, and this commitment represents the singular most defining and important form of their self-identification. They become locked into defending an idealized economy that they presume exists in a pure and undiluted state and is superior to any alternative type of economy.[6]

Graduates of economic programs rarely question the end results of failed policies because they agree with the orthodox means used to implement these policies. The lure of a lucrative, prestigious position (either full time or as a consultant) with the world's most powerful development agencies induces them to become willing participants in proselytizing the perspective and corresponding policies of those agencies. The "free market economy" becomes both their goal and their prescriptive design for reforming a poor country's economy, with reforms contained in the "Washington Consensus," purported to be the a priori universal solution. The reforms embodied in this "Consensus" include a set of ten economic policies that became the standard development recipe adopted by the World Bank and IMF. These policies included fiscal discipline, government expenditure reductions, tax reductions, exchange rates determined in open markets, liberalizing trade and foreign direct investment rules, deregulation of industries to establish more market competition, privatization of state enterprises, and property rights legislation reform.

In their capacity as aid advisors they "use their economic theory as a weapon in an ideological crusade" (Hodgson, xi). In the case of Russia, one expert notes that for ideological reasons a "number of Western economists and analysts responded to their sudden overt interest in Western remedies for the Soviet economy with great enthusiasm. One after another they set off (some on their own, some invited) to Moscow to prescribe economic medicine. Bank of Sweden Prize winners like Wassily Leontief, with his input-output analysis, and Milton Friedman, with his emphasis on increasing the role of money and

[6] Orthodox economists appear to have concluded that since the "free market economy" was the key to the successful economic growth and development of the USA and UK that "they not only could duplicate that success abroad but were called by Providence to do so" (Kinzer, 322).

reducing economic fine-tuning by the government, arrived with their own brand of miracle remedies; a younger generation of highly respected economists also offered their particular remedies" (Goldman 1994, 79).

Orthodox education and ideologies tend to become answers waiting for a question. The answer is that policies embodied in the Washington Consensus are the only way to promote development. They recommend and blindly impose this standard World Bank and IMF policy package with the anticipation that a prosperous free market economy will automatically ensue. As such they treat development the way an army cook follows a recipe rather than seeing development as a fascinating chess game requiring finely tuned reactions to ever changing conditions. At its worst, imposition of orthodox policies involves the coercive imposition of free market reforms in poor countries, for instance through the conditionality of World Bank and IMF loans. Further, these policies are proposed, implemented and defended in an arrogant manner. The combination of holding a degree from a prestigious university and working with the two unrivaled international development agencies (World Bank and IMF) enhances arrogant attitudes by spawning "the phenomenon of wunderkind professors in economics . . . who are then unleashed - with the compounded arrogance of youth, academic credentials, and elite associations - into the real world as ersatz 'economic reform experts' " (Ellerman). An “arrogant messianism” is projected by many international agency advisors (Koves, 17). One analyst observes that the “IMF likes to think of itself as the guardian of economic orthodoxy: a priesthood that is open only to people who command a complicated science" (Hutcherson, 106.) It has been argued that "the older men who staff the fund - and they are overwhelmingly older men - act as if they are shouldering Rudyard Kipling's white man's burden. IMF experts believe they are brighter, more educated, and less politically motivated than the economists of the countries they visit" (Stiglitz, 325). The disdain for the culture of one poor country held by one World Bank consultant is apparent from what he told one writer about his living experience there: "[t]he thing that really saves us is the advances in technology, e.g., the satellite dishes . . . We do not have to invest ourselves in the local culture, which we choose not to do" (Bornstein, 235).

Yet another analyst has concluded that "the World Bank is not well regarded in many sub-Saharan African countries not only because of the perception that it has behaved arrogantly toward many of its African borrowers, but also because of the perverse consequences of its advice" (Cornell, 3). The negative African assessment is representative of the widespread recognition that despite their impressive orthodox economic technical skills typical IMF and World Bank advisors have little knowledge of the history or details of the economies they are advising (Stiglitz).[7] This ignorance has not reduced their arrogant belief in their ability to recommend effective, appropriate development advice. The quintessential example of such arrogance is demonstrated by Jeffrey Sachs. He has been criticized by Dani Rodrik, among others, for the "lack of humility," the aggressive and nearly unmitigated rebuff of any alternatives to his way of thinking, and for the "evangelical attitude" that combine to make him a "throwback to the 1950s and 60s" (Evitar). This was the era of the "Big Push," a combination of foreign aid with Western advice and technology that was believed to be a

[7] Stiglitz notes that “[w]hen the IMF decides to assist the country, it sends a mission of economists often lacking extensive experience in that country. They are more likely to have knowledge of its five-star hotels than all the villages in that country. They work hard and look at many numbers, but the task is impossible. They are only given a week or even just a few days to develop a coherent program sensitive to the needs of the country” (Stiglitz 2005, 325).

panacea for poor countries, but that ignored obstacles to development posed by the indigenous cultures of those countries.

Interrelated Interests

A growing body of literature (Ellerman; Easterly 2006; Goldman 2005, Juhasz ; Kinzer; Stiglitz, 2) has identified aspects of the combined and iterative impact of the "set of elite power networks" (Goldman 2006, 12) - that is, the narrow, ideological graduate economic education, the ideological foreign policy interests of the USA and UK, and the commercial interests of multinational corporations and international banking firms - in shaping the orthodox development perspective and corresponding policies held by the international agencies. A summary of these relationships has been offered by an analyst who worked inside the World Bank for years. He argues that the World Bank "is much more than twenty buildings across the road form the White House and the U.S. Department of Treasury. Instead, it should be understood as a productive agent maintained through its interactions in multiple sites (from MIT's economics department to Wall Street investment firms and Cargill's agro-industrial goods division . . . enabling a diverse set of elite projects, with deeply exploitative effects" (Goldman 2006, 12). Taken together these relationships have served to establish and reinforce the ideological basis for World Bank actions that better serve the interests of the Anglo-Saxon governments and their multinational corporations and international banking firms than the poor members of the poorest countries. The common ideology (in favor of free markets and promoting economic growth) held by the wealthy country parties, including economics program faculty, means they all have a vested interest in not questioning or criticizing the World Bank or IMF actions.

Throughout the past six decades the World Bank and IMF have claimed they are apolitical institutions. Critics argue otherwise, arguing that the World Bank and IMF (along with USAID) policies are ideologically-based and effectively facilitate a post-modern form of neocolonialism rather than reducing poverty in the recipient poor countries (see Easterly 2006, Goldman 2005, Perkins). For evidence they point to World Bank and IMF policies and projects in support of sitting governments that are widely and plausibly criticized for corruption and countless human rights violations (e.g., Indonesia, the former Zambia) as being political. Another, more cynical view is that there is a "Bush and that these agencies are the primary vehicles for expanding free trade and expanding USA interests worldwide (Juhasz 2006, 51-52). In the process the USA intervenes in poor Agenda" cloaked in the rhetoric that "free trade will bring freedom, peace, and prosperity to the world" countries as an act of "commercial self interest . . . [in its world-wide] "search for markets, and for access to natural resources" (Kinzer 2006, 321). This view alleges that development of the poor is not the main concern in the allocation of aid agency resources. Rather, foreign aid is influenced by the global interests of the major world powers.[8] Evidence indicates that political allies who support (particularly) USA and UK foreign policy interests are likelier to be rewarded with foreign aid and advice from the international agencies than are countries who do not ally themselves with these interests (Easterly 2006, 192).

[8] It is alleged that during the Carter Administration the search for oil and other resources was supported by World Bank projects. Once oil had been discovered the World Bank financed oil and gas exploration projects. "When oil was found, the World Bank ushered in U.S. oil companies, who then laid their roots and stayed in place. But oil was not the only resource of interest. There were also agricultural products, copper and other ores, timber, labor, capital, land" (Juhasz , 65, 68).

Some of the World Bank and IMF's harshest critics argue forcefully that the concept of development adopted by these agencies' directors and staffers is a reflection of their having become "subservient to. [USA] political interests" (Goldman 2005, 18). As conceived by these international agencies, development "therefore, becomes interpreted as both a set of institutions (e.g., capitalist markets, global organizations) and discourses (i.e., fighting poverty through capital investment) that combine to engender and legitimate the highly exploitative social relations between the world's wealthy and the poor" (Goldman 2005, 23). Little of what is taught in the graduate school economics programs would counter this conception.

Exacerbating the effect of the graduate school education on economists who join the large international development agencies is the location of the IMF and World Bank headquarters in Washington, DC and the continued practice of appointing an American director of this institution. When these factors are combined with extensive USA funding for both agencies, the result is that they are eventually "thoroughly imbued with an American perspective as expressed in the variants of the Washington Consensus" (Ellerman 2005). This view can be corroborated through scrutiny of the process by which a World Bank President is appointed and of the prior work experience of those who have been appointed. The USA exerts substantial control over the selection process, arguing that by tradition an American should hold the position. Unfortunately, the appointed American tends to be someone with virtually no prior education or work experience in the field of development. Rather, the career background tends to be in international relations, trade policy, and international finance. This is illustrated by the recent appointment of Robert Zoellick, who formerly held the positions of vice chairman at Goldman Sachs and U.S. Deputy Secretary of State. Zoellick's predecessor, Paul Wolfowitz, majored in math and chemistry as an undergraduate, political science in graduate school, and then had a career similar to that of Zeollick - but no work experience in the development field. Both of these men, like many orthodox economists, suffer from the arrogance and ambition of hubris, and both men endorse the neoconservative doctrine that the USA has the right to go it alone and impose its will upon poor countries as it sees fit.

That these agencies would play such a role was forecast many decades ago soon after the 1944 Bretton Woods decision to establish the World Bank and IMF. At that time it was argued that "[t]he IMF and World Bank resemble 'much too closely the operation of power politics rather than of international cooperation, except that the power employed is financial instead of military and political" (Juhasz, 53). In this view these institutions created "free opportunity for expansion in foreign markets [that] is indispensable to the prosperity of American business" (Kinzer, 81).

Another critic argues that World Bank policies are an instrument of the ideology that reflects the "values [and interests] "of the owners and managers of financial capital" (Goldman 2005, 148). The argument goes as follows. Modern diplomacy as practiced by the USA and UK has as its chief concern the promotion of economic interests abroad" (Kinzer, 81). The "neo liberal" strategy created in the 1980s and 1990s by the World Bank and IMF is supported by "a whole network of policy elites based in Washington, as well as professional lawyers, economists, business leaders, and technocrats in capital cities like Santiago and Mexico City . . . " (Goldman 2005, 93). Noting who attends the World Bank's annual meeting would provide support for these contentions. As one analyst who did so observes, virtually none of the attendees "spoke the language of charity or of desperately poor third worlders. . . . In fact, they spoke only of business . . . [and it was apparent that] the world's central

bankers and finance ministers . . . were obviously on a shopping spree" for World Bank contracts (Goldman 2005, 47).

Meanwhile the narrow, ideological economic education influences the shape of World Bank development policy making, since the World Bank is staffed with by-products of the narrow education system. In return, World Bank selection of academic economists to whom they offer consulting contracts rewards the same education system for supporting such policies. World Bank staff positions present a lucrative incentive to graduates to select and excel at coursework that will help them obtain employment. In addition, academic economists in search of the substantial consulting contracts awarded by aid agencies will tend to advocate views that are acceptable to these agencies, even though they may become "uncomfortable with the quality of the science they produce, [having] base[d] their assumptions, models, worldviews, and hypotheses on what they learned from their mentors at elite universities" (Goldman 2005, p. 130). Such analysis is more of a rationalization of World Bank policies than valid scientific research. According to MIT's Alice Amsden, much World Bank policy analysis is not close to the level of quality academic research, but rather is "quintessentially political and ideological," and thereby in lock step with the Bank's latest policy stance (Goldman 2005, p. 147).

Orthodox Development Policies

The World Bank and IMF have implemented a range of policies over the past five decades that appear to have become an instrument of a "free market" ideology designed to promote Anglo-Saxon business interests rather than the greater good of the poor. Typically, the policy making process begins with one or more major and ostensibly altruistic goals with a broad, large-scale plan for achieving the goal(s) formulated at the international agency with little input from the targeted poor countries. Analysts who typically are unfamiliar with the local culture recommend a technical solution they assume will be easily introduced and implemented. When these grandiose projects do not result in poverty alleviation, the international agencies have tended simply to continue injecting yet more funds and uninformed advice.[9]

Outside of a small (and marginalized) circle of heterodox scholars and development practitioners, there is no real rival to the World Bank and IMF. The marginalization of heterodox perspectives is largely the result of World Bank and IMF hiring practices and the fact that few economists receive a heterodox graduate education: virtually all the economists they hire have been imbued with the orthodox economic conception of development. Having virtually silenced all dissent, the World Bank and IMF have convinced most of their constituencies that there is no alternative to development other than to their policies.[10] These policies have included requiring poor countries to open their markets in the name of free trade. Unfortunately, "placing free trade as the ideological centerpiece of development policies - to which all other goals become subservient - since the fall of the Berlin Wall has locked the non-industrialized countries into a very sub-optimal equilibrium . . . . [The result

[9] For a full account of how international agency advisors tend to behave like "planners" in formulating and implementing large-scale projects intended to satisfy multiple goals see Easterly 2002.

[10] During a 2004 conversation with the director of the UNDP program for Eastern Europe he informed me that the only way to promote development in the poor Central and Eastern European countries was for them to adopt the Washington Consensus policies.

has been] continuing world policies based on the most simplistic version of mainstream trade theory . . . " (Reinert, 4).

Since the creation of the World Bank, a sequence of four different broad strategies have been adopted for alleviating poverty in poor countries. The first occurred during the late 1940s - late 1960s period. Rich countries initially were interested in expanding trade with poor countries so as to receive a greater volume of primary product exports. During trade talks at Bretton Woods little attention was given to the views of the poor country representatives concerning what policy would be in their best interest. Then the Cold War provided a justification for "defending" poor countries against communism. This ostensibly protective relationship, resembling as it did the relationship between mercantilist nation states and their colonies, evolved to become a colonial one. In an effort to promote "development" (which was considered synonymous with economic growth) foreign aid and advice to poor countries was expanded with an eye toward promoting investment in urban-based industry. Many policies were designed according to the Harrod-Domar growth model. Ironically, Evsey Domar disavowed this model and said he felt guilty it was adopted, arguing that it "made no sense for long run economic growth" (Easterly 2002, 28). The model's quantitative simplicity as well as its reductionist approach toward promoting long-run growth in poor countries appealed to Western educated orthodox economists. They used Domar's model, with its purportedly rigid link between aid, investment and growth, as an opportunistic tool for justifying massive transfers of capital and technical assistance from the developed to the poor countries. In the process this model became the basis for advocating a Marshall-type plan for poor countries. The calamity for poor countries has been that a Domar model, which "was not intended as a growth model, made no sense as a growth model, and was repudiated as a growth model over forty years ago by its creator . . . became, and continues to be today, the most widely applied growth model in economic history" (Easterly 2002, 28). Simplistic binary political ideology was also a factor in the choice of the Harrod-Domar model. Prominent economists such as Walt Rostow, who advised USA presidents, argued that the model should be used to demonstrate to poor countries that Western-style “capitalism” was superior to Soviet communism.

The 1970s saw a modification of World Bank policies with the appointment of "whiz kid" Robert McNamara as president. New economic models were created, stimulated by a fascination with data and a desire to promote wide-scale rapid change in poor countries. One focus was to expand loans to UDCs for infrastructure, agriculture, education. Another innovation was the introduction of the Green Revolution as a technical solution to poverty. The failure to recognize that cultural and political power conditions in poor countries would inhibit the effectiveness of the new miracle seeds (due to the inability of the typical poor farmer to gain access to needed credit, fertilizer, water, and markets) substantially reduced the effectiveness of these new policies in reducing poverty. It could be argued, nevertheless, that up to this point that World Bank policies, however misguided, had been introduced for the most part with good intentions.

The same cannot be said of the 1980s and early 1990s structural adjustment, then shock therapy policies embodied in the "Washington Consensus" where the ideological interests of the UK and USA influenced World Bank development policy making. The introduction of such policies coincided with the philosophical shift led by Margaret Thatcher and Ronald Reagan and their supply-side macroeconomic policies. During the 1980s about 800 "orthodox macroeconomists" were hired to replace budding development economists hired during McNamara's tenure - considered by one World Bank official to be a type of

"economic genocide" for older economists who had been learning about development during the McNamara era (Goldman 2005, 92). The new strategy was to promote economic growth through: privatization of state-owned industries and natural resource rights; reducing price controls to get the prices "right"; and liberalizing domestic markets while opening up poor country markets to rich country imports and FDI. Whether or not "development" was achieved by these policies was measured according to the extent to which structural changes occurred in the poor country's pattern of production. Ultimately the standard package of reform policies became those contained in the "Washington Consensus."

"Conditionality" was imposed, particularly for the heavily indebted poor countries, before loans were granted. Among these new conditions were that the poor country was required to privatize natural resources such as water (a policy many rich countries themselves resisted aggressively) electricity generation, and public transport. In addition, the World Bank rewrote property rights laws. It was also required that governments be downsized, more foreign ownership be permitted, and trade barriers be lowered further (without any simultaneous reciprocity by rich countries to open their markets to poor countries' exports). Finally, the World Bank would define the environmental regulations that would prevail in the country.[11] All of these post 1980s policies were rooted in the orthodox development perspective and vigorously supported by the USA and UK governments. In almost every case there was no strong evidence supporting that the imposition of such a policy in the particular poor country would promote the well being of the poor, nor was their input received from the indigenous population most likely to be affected by the new policies.

The absence of widespread improvement of the economic conditions in virtually all countries where these policies were introduced led to considerable criticism and protests from within and outside of the poor countries, particularly against the environmental damage. By 1990 these mounting criticisms stimulated still another policy shift by the World Bank in favor of "green neoliberalism" that would, it was claimed, achieve "sustainable development." One critic has argued that neo liberalism's emphasis on the environment was a smokescreen, and that the underlying objective of the policy shift was to expand the "audacious political agenda" that embodied Regan/Thatcher values while initiating and perpetuating "aggressive interventions" into poor countries - particularly through capital-intensive projects funded by the World Bank and directed by MNCs that could own the rights to resources they harvested such as gold or hardwood timber (Goldman 2005, 8). That green neoliberalism has become the dominant perspective of the World Bank towards development, is made evident throughout its massive publications and training programs. The World Bank funds an ambitious training program, which is taught not only to its own staff, but also to "parliamentarians, policymakers, technical specialists, journalists, teachers, students, and civil society leaders" in poor countries. In a given year almost 50,000 people from about 150 countries receive such training. The content of the training is imbued with the dogma that the World Bank's version of green neoliberalism is the only development strategy to pursue (Goldman 2005, p. 226).

Evaluations of World Bank proposed projects' feasibility have been alleged to lack objectivity and academic rigor. The World Bank filters all analysis from all feasibility studies and cost-benefit analyses. What appears to occur is that pre-project appraisals are done to appease potential international investors rather than to determine the likelihood of a positive impact on the wellbeing of the poorest members of the country that will be directly affected by the proposed project. Those who critique the methodology are likely either to be marginalized

[11] For an in-depth treatment of these practices, especially as they were introduced in the heavily indebted poorest countries (HIPCs) see Goldman 2005.

in terms of their input into the process, or to have their employment with the Bank terminated. The case of Herman Daly, founder of the ecological economics field and an expert in cost-benefit analysis methodology, is revealing. While employed by the Word Bank he objected to the biased, incorrect methodology that produced conclusions indicating that benefits of proposed projects far exceeded the anticipated costs. First he was threatened with dismissal, and ultimately he was marginalized by being assigned to a staff position not directly involved with such evaluations (Goldman 2005, 140-144).

Post-project evaluations suffer from a number of problems. One is the small quantity of funds devoted to such evaluations. This is not surprising given that the World Bank spends more funds on public relations than on research (Kapur, 349). The World Bank evaluates projects "in terms of their value to the proposed capital investment, and not" their impact on the local country's indigenous poor (Goldman 2005, 171). Orthodox economists who do such evaluations have been taught to measure development according to the extent to which structural change has occurred in the pattern of production as well as how much growth has increased following a project's implementation, rather than focus on the project's impact on the well being of the country's poorer inhabitants.

The evaluation process is seriously lacking objectivity.[12] The World Bank hand picks consultants rather than assigning the responsibility for evaluation to an independent agency staffed by reputable researchers with no ties to the World Bank. The World Bank thus insulates itself from outside criticism and unwelcome advice. During a conversation with a British development specialist who had done some evaluations for the World Bank he informed me that in his experience in the Balkans outside consultants were hand picked by the Bank to evaluate the efficacy of proposed projects so that, in effect, the evaluations are "staged." There were cases when analysts were hired from the local country, well paid, who knew they would very likely not be rehired if their evaluation results were not favorable.

Finally, the World Bank has tended to deny or ignore unfavorable evaluations without fear of criticism,[13] "hav[ing] attained an aura of inevitability" so that anyone who challenges them from within the organization faces being ostracized (Juhasz, 59). The Bank has been accused of refusing to acknowledge publicly the conclusions of some reports written by internal staff that the Bank's policies are not working (Goldman 2005, 120). Worse still, in the face of growing evidence that most of their projects have failed to alleviate poverty, the Bank "keeps doing the same thing over and over again to reach a never-reached objective. Judging from the continuation of past failed policies it can be concluded that the more its policies are ineffective in alleviating poverty in poor countries the greater "the motivation for the West to become even more intrusive" (Easterly 2006, 272).

The Heterodox Development Perspective

Heterodox development economists such as Mohammed Yunus, Gunnar Myrdal, Michael Todaro and Easterly rejected the basic tenets taught by the orthodox graduate

[12] This evaluation critique is based upon an interview with a consultant for the World Bank with extensive experience throughout the Balkan countries, and the experience of a colleague who consulted for the World Bank in Russia.

[13] One analyst hired by the World Bank about 2001to evaluate progress of projects introduced in Russia told me the report he submitted that was critical of the World Bank development strategy and policies would not be published by the Bank (although another publisher later agreed to publish it).

economics programs after they began working in the development field. This rejection occurred after each of these scholars attempted to apply what he had learned in graduate school to a real development experience and then realized that his education left him ill prepared to suggest effective development policies. Yunus, after completing a Ph. D. in economics at Vanderbilt University and assuming a faculty position in Bangladesh came to realize that the study of economic theory had made him "totally blinded" and that the theory was "all fairy tales" (Bornstein, 33-4). Myrdal, having previously published numerous orthodox theoretical works that drew praise from such eminent economists as Irving Fischer, developed his own heterodox perspective, theories and policies when he shifted his career focus to poverty and equality problems. In shifting he decided to "close the account books" of neoclassical economics and cancel once and for all the supposedly inviolable economic principles" he had learned (Angresano 1997, 61). He argued that the orthodox economic perspective and its simplistic closed growth models inappropriately and illogically isolated on economic factors. This artificial disjunction isolated one part of the social system, which in fact integrated, along with economic factors, important non economic factors "which are of much greater importance not only for development, but primarily for growth of production" (Myrdal 1975, 195-6). The process of orthodox analysis, he emphasized, would omit the vital coefficients of interrelations among the various factors determining the movement of the social system as a whole (Angresano 1997, 96). Myrdal argued that by attempting to treat development, especially poverty reduction, solely as an economic problem orthodox economic theory was doomed to failure.

Other heterodox development economists, like Yunus and Myrdal, have recognized the need to adopt a non ideological, eclectic development perspective that is not wedded to any paradigm. Heterodox development economists' experience in the field has led them to emphasize the importance of first learning about the local culture's social system. They caution development specialists to be wary of market failures, believe in the importance of interdisciplinary analysis of the target poor country, and expand their view of development beyond "economic" problems. They consider development to have occurred only when there have been substantial reductions in the incidence of poverty (as indicated by measures such as the Ahluwalia-Chenery "poverty-weighted index of social welfare" (Todaro, 258-61), and improvements in the poor country's Human Development Index value. Some heterodox economists also include greater gender empowerment and the creation of a sustainable environment (as defined by heterodox ecological economists) in their definition of development. Heterodox economists underscore the centrality to development of improving the economic wellbeing of the poorest 60% of the population: not only should their incomes rise, but the typical family needs to have sufficient savings for both their children's education and for inevitable contingencies. Furthermore, housing must be improved and mosquito netting made available. Finally, clean, affordable water must be obtainable and latrines must be sanitary.

Heterodox economists use an inductive methodology for their country-specific analysis. They begin with historical analysis to determine "initial conditions", then identify important non economic factors that serve as impediments to development. These factors could include unique cultural traits and geographical conditions. They are searching for patterns "teased" out of the data - that not only explain the country's previous development experience, but also point to prerequisites for reducing poverty and inequality. This country-specific knowledge is used to devise a package of reform policies, whose focus tends to be on rural development, especially on improving the wellbeing of women and children, who comprise a disproportionate number of the impoverished in poor countries. Acknowledging

explicitly from the outset that no panacea exists, they see it as vital that during the policy creation and implementation process that input be solicited from members of the indigenous population, and feasible suggestions be adhered to. In determining criteria for measuring the efficaciousness of their policies, heterodox economists tend to agree that growth, while necessary, is not sufficient for promoting development. Further, they believe that any policies proposed must be experimental, pragmatic, and measured. Development policy thus resembles a game of chess that is played over many decades.

Heterodox development economists reject preconceived theoretical models purported to be useful for development analysis and policy making. Similarly, they avoid proposing of grandiose capital-intensive projects formulated from well above the local level by visiting "experts." Easterly argues that successful development advisors need to be "searchers" who do not cling to any preconceived development answers. Searchers recognize that (1) poverty is a "complicated tangle of political, social, historical, institutional, and technological factors;" (2) alleviation of many specific problems requires community projects developed through a process of trial and error by members of the indigenous population knowledgeable of the local conditions; (3) foreign advisors can be helpful only if they first study the local culture by talking to the poor to learn about the important "informal social arrangements," and then make recommendations in the form of "piecemeal improvements that work;" and (4) foreign advisors also can assist by designing feedback mechanisms such as surveys, and experimenting with what works in local conditions (Easterly 2006, 6, 33 87, 169, 307).

The quintessential example of a successful heterodox development strategy is Yunus' Grameen Bank project.[14] A similar strategy has been recommended by Paul Harrison based upon his extensive experience studying indigenously created development projects in Sub Saharan Africa (Harrison). This strategy recommends small scale projects, to be introduced after considerable local participation in defining the projects' objectives and means. Such projects must be low cost, and easy to sustain at the local level, provide potentially high benefits for the local beneficiaries, and feature networks that enable the easy dissemination of information concerning successful and unsuccessful aspects projects to nearby villages. Harrison emphasizes that development comprises a learning process that includes regular feedback, flexibility in the project, and local testing of pragmatic pilot projects, with regular evaluation of this feedback. Projects must be flexible so they can be modified as necessary. Finally, the role of foreign aid providers should be limited, although one important contribution should be to guarantee financial backing of specific local projects for at least a ten-year period.

Two other heterodox economists who have offered strong critiques of orthodox economic education and the role played by its graduates in poor countries merit inclusion. Paulo Freire emigrated from Brazil to the USA where he studied the philosophy of education. During the 1970s he developed a theory for teaching poor, illiterate members of society. Freire identified numerous weaknesses in the orthodox economics and the educational programs sponsored by international agencies. He pointed out that international agencies foster the incorporation of ideological indoctrination throughout the entire economics curriculum. This curriculum, he argued, then serves as a means of injustice, oppression, and exploitation by further entrenching a status quo that oppresses the poor class of society. Freire is also critical of orthodox economics ducation for feeding the students only the information that the elite class wants them to learn. Student involvement is limited to

[14] For an excellent presentation of the creation, implementation, administration, and impact of the Grameen Bank's development strategy see Bornstein 2005.

listening, memorizing, and repeating the formulas of orthodox economics. Finally, Freire criticizes this type of education because it fails to engage students in an inclusive dialogue to diagnose and devise policies for development problems. Freire's critiques of economics education offered to students from poor countries are still valid. Development policy makers educated in this system can be expected to apply the standard orthodox development models and policies to deal with their country's poverty problems without first taking into account, much less analyzing the initial conditions of their own country.

Alfred Hirschman's extensive experience throughout Latin America led him to question the effectiveness of the “visiting economist” sent to poor countries on a specialist mission to give development assistance. Hirschman criticized the application of “highly simplified” orthodox economic remedies to Latin America’s complex development problems. He recommended that development analysts and policy makers begin by first doing extensive empirical research of the country in question so as to ascertain its culturally specific institutional, historical, geographical, political and economic conditions (Bianchi, 306-308).

Despite mounting criticism from heterodox development scholars regarding the costs and ineffectiveness (or, worse, undesirable consequences) of their development recipe, most international agency officials have steadfastly rejected proposals for alternative strategies. They still cling to a narrow range of indicators (such as the extent of privatization after their recipe is implemented) to evaluate the success of their policies. As the following section demonstrates this refusal to rethink their development advice is becoming increasingly indefensible to do so in view of the evidence documenting the inadequacies of orthodox development policies.

The Evidence

Mounting evidence indicates that in poor countries "[o]rthodox policies (based on neoclassical assumptions) have almost invariably resulted in no growth advantage, higher volatility, increased inequality, little social progress, higher unemployment and financial crises" (Mehrotra, Santosh & Delamonica, 21). In the typical poor country there is no positive correlation between their having received an increase in such "aid" (defined as a combination of financial aid and the standard World Bank and IMF package [the "Washington Consensus"] and an improvement in either their GDP growth rates or poverty reduction. One study argues “that a higher IMF loan-participation rate reduces economic growth” (Barro and Lee, 1). A high ranking United Nations official points out that empirical evidence indicates the World Bank or IMF "cannot point to any region in the world as having succeeded by adopting the policies that they promote or require in borrowing countries” (Jomo). Easterly reaches similar conclusions. He argues that "[o]ver 1959-2001, countries with below-average aid had the same growth rate as countries with above-average foreign aid. Poor countries without aid had no trouble having positive growth" (Easterly 2006, 39). Some IMF economists reached a similar conclusion, as they "found no evidence that either 'short-impact aid' or any other type of aid had a positive effect on growth" (Easterly 2006, 49). In fact, there are numerous cases (e.g., Angola, Burundi, Liberia, Sierra Leone, Somalia, Sudan, Zaire) where an increase in IMF involvement can be associated with subsequent economic collapse (Easterly 2006, 218). In the case of Africa, most poor countries subject to the international agencies' "structural adjustment" experienced negative or zero growth" (Easterly 2006, 68).

An internal World Bank report released in December, 2006 by its own Independent Evaluation Group reported on some poor countries where the World Bank was active. "Among 25 poor countries probed in detail . . . only 11 experienced reductions in poverty from the mid 1990s to the early 2000s, while 14 had the same or worsening rates over that term. The group said the sample was representative of the global picture" (Goodman, x).[15] One study evaluating the impact of orthodox aid designed to stimulate investment (and thereby promote growth while reducing poverty) in 88 poor countries between 1965 and 1995 concluded that the outcome was rarely positive. In only 17 of the 88 countries did investment increase after the injection of aid was received, and in only 6 countries (each of which received only "trivial aid") did the increased investment as a percentage of GDP equal or exceed the percentage increase in the aid (Easterly 2002, 37-8). Another study completed in 1994 "found no relationship between aid and investment across countries" (Easterly 2002 p. 38).

Further, although studies have indicated that during the 1975-2001 period GDP growth rates for the poor countries did not decline, when the analysis begins around 1985 there is evidence that "the poorest did worse" (Easterly 2002, 40). Growth reversals were not uncommon after 1975, particularly in Latin American and African countries. "Per capita income rose continuously from 2000 to 2005 in only two in five of the countries that borrowed from the World Bank, . . . and it increased for the full decade, from 1995 to 2005, in only one in five" (Goodman). Meanwhile, the Southeast Asian countries that did not adhere entirely to the orthodox development policies were experiencing exceptional GDP growth. Countries (South Korea and Taiwan) which have been put forth as exemplary success stories for the "Washington Consensus" in fact adopted only four or five of the ten elements advocated by the Consensus (Todaro, 538).

Other evidence suggests that there is little or no correlation between the imposition of democracy (one ideological element of the orthodox policies) either improved GDP growth or poverty reduction in the poor countries. There are indications that the extension of democracy is correlated with higher rates of GDP growth in only about one third of poor country cases (Todaro, 546). This has not reduced the zeal of Western powers who cite the need to spread democracy as justification for military intervention in a poor country because democracy will supposedly foster economic development. Typically, however neither is democracy established in the aftermath of these interventions nor poverty reduced. One study analyzed "sixteen American nation-building efforts [by the USA military] over the past century. Only four were democracies after the U.S. military left - Japan and Germany . . . Grenada . . . and Panama" (Easterly 2006, 332

While examples of improvements in the well being of the poorest 60% living in countries that received World Bank and IMF aid are few, there is considerable evidence that Western aid and policies appear to have primarily benefited "political insiders, often corrupt insiders, who . . . vigorously oppose[d] democracy that would lead to more equal distribution of aid" (Easterly 2006, 135). Cambodia is a case in point. Although the World Bank Cambodian Country Director argued that "[m]oney is being made in this country - you can

[15] The Independent Evaluation report criticized the Bank for failing to help cushion poor people against price and currency liberalizations, for focusing on the fiscal sustainability of pension systems to the detriment of the poor, and for promoting the privatization of power industries without thinking enough about wiring up the indigent" . . .[and for] failing to tailor projects to local conditions" (Goodman 2006, x).

now use the word Cambodia and prosperity in the same breath," the World Bank's own report concludes that in the past decade "incomes for the top 20 per cent of Cambodia's 13 m[illion] people rose 45 per cent, those of the poorest 20 per cent [increased] just 8 per cent. About 20 per cent of the population still lives in acute poverty. Most rural Cambodians remain desperately poor" (Kazmin, 6). In Laos most of the benefit of World Bank projects is being reaped by multinational corporations not only at the expense of the indigenous people removed from areas where such projects have occurred, but also to the detriment of the environment (Goldman 2005, 184, 200). In Ecuador multinational corporations have been able to "utilize international financial organizations to foment conditions" that make Ecuador subservient to the international aid agencies and private corporations. (Perkins). One result of this situation is that oil companies receive about 75 per cent of all revenue produced from the extraction of Ecuadorian oil, while less than 3 per cent of this revenue is devoted to programs designed to directly assist poor Ecuadorians.

A more encouraging picture emerges from examining the outcome of heterodox development policies that were implemented during the same period. These policies rejected orthodox theoretical growth or trade models while adopting a gradual development strategy (e.g., slowly reducing trade barriers while controlling the exchange rate, and experimenting with pragmatic policies on a small scale before generalizing their application) so as to avoid or at least mitigate the social and economic costs of rapid structural changes, and soliciting advice from many interest groups in creating pragmatic policies and culturally specific institutions. Finally, heterodox policies advocated maintaining considerable national control over their natural resources.

One example is Japan's whose development strategy (like that of South Korea and China) was not devised by orthodox economists. It is noteworthy that Japan was not subjected to the World Bank development recipe. The same can be said for China and South Korea. Cambridge economist Ha-Joon Chang told a colleague that the architects of South Korea's development strategy were lawyers and engineers who had not received orthodox economic training, but instead acted in a pragmatic manner. He contrasted this to the Latin American experience where ideologically charged, USA-educated economists were instrumental in crafting their countries development strategies.

Botswana's experience is interesting, for the nation's "incomes soared" after foreign aid declined (Easterly 2006, 28). Its leaders gained considerable control over diamond extraction revenue by negotiating a favorable agreement with the De Beers mining company. Another successful case is that of rural Bangladesh, where the Grameen Bank's brilliant microfinance strategy, which defied orthodox principles, has promoted the wellbeing of a majority of the nation's poorest 60%.

Concluding Remarks

The previous section provides substantial evidence that "[t]he poor in developing countries are often better off when their governments ignore the policy advice of the IMF and World Bank. . . . China, India and other countries in East Asia that have not followed IMF economic programs and prescriptions have seen more of their people lifted out of poverty in times of economic growth than have nations that take the advice of the Washington-based lenders" (Jomo). Unfortunately, although the impact of aid programs such as the IMF's structural adjustment loan programs can be likened to the "Flight of Icarus" (Easterly 2006,

65) that aimed for the sun but ended in a sea of failure, the international development agencies steadfastly advocate large-scale market reforms to promote poor countries' development while continuing to justify and propagate their policies through academic indoctrination. What the international agencies fail to recognize, or admit to, is that their orthodox development policies and inherent values "had provided an effective ideological shield during the Cold War, but no nation had ever been built on this type of theoretical framework" (Reinert, 10).

These agencies should have learned from empirical evidence that the successful cases of development have relied heavily on strategies emphasizing self reliance and experimentation with piecemeal policies and institutions. These strategies include borrowing technology (but not values) from the West and grafting it onto the local culture according to decisions made by country citizens rather than foreign experts. Another lesson for orthodox development economists is that rapidly introduced free market reforms have not promoted development. World Bank and IMF policy makers continually underestimate the difficulty of introducing markets into poor countries persist in introducing misguided large-scale plans, many of which entail substantial undesirable consequences. Unfortunately, "the neo-liberal approach carries with it a distinct danger of excessive faith in the market in terms of economic efficiency" (Duquette, 319).

There is a pressing need to dismantle the messiah complex of some World Bank and IMF staffers and to overcome their disdain for other cultures. Further, the role of these agencies in development needs to be dramatically reduced. In addition, reform of graduate school economics education is necessary for a number of reasons. One is that if orthodox economics education and the associated development perspective "is allowed to appear (even by default) as the appropriate economics . . . then any reconstituted 'development economics' will continue to be marginalized, both in the policy arena and in the curriculum (Elson).

How might economics education be reformed so that the development perspective and policies adopted by economists in this field would be likelier to promote development in the poor countries? First, by shifting away from their exclusive focus on economic theory, particularly open macroeconomics, rational expectations and supply-side economics (Jomo). The shift must also include (1) a rejection of the assumption that the Anglo-Saxon model of a free market economy is universally applicable, in view of the "reams" of evidence indicating "that policies that work wonders in one place may have . . . unintended, or negative effects in other places" (Hausmann, Rodrik and Velasco, 12); (2) the recognition that development cannot be prescribed as a cook prepares a recipe, and that development is not limited to GDP growth; and (3) the understanding that transforming cultures is a daunting and multidisciplinary task that cannot be achieved simply by some application of technology.[16]

This shift can be facilitated by adding heterodox development and economic history literature to the curriculum. Methodology courses should incorporate the “qualitative causal” methodology used in the medical field: first acquire in-depth knowledge of the economy in question to discover the root causes of a specific problem within a specific cultural

[16] This will be difficult, as recognized by John Kenneth Galbraith who once argued (in a different context) that economists are highly prone to retain the perspective they were taught in graduate school throughout their professional lives (Noble and Martin).

environment, then use those causes as the basis for introducing appropriate institutions, rules and policies to alleviate the problem (Gillies, 196). Students should be exposed to case studies in which policymakers are shown to have relied on the essence of heterodox development policies to create culturally specific institutions. Including economic history courses is vital so that students avoid historical myths about free market economies. Poor countries need to establish their own studies centers that include an alternative, heterodox development education as well as required field experience to learn about specific local cultures and their respective problems. In the process students will learn that development is a slow, complex process, requiring pragmatic, creative policies specific to the particular local conditions at which it is aimed.

A point that must be emphasized in courses specifically related to development is that policies that are "homegrown" and "market based" have proven more successful in poverty reduction (Easterly 2006, 77) than grandiose plans with multiple broad objectives formulated by foreign "experts" representing the World Bank and IMF. Concerning evaluation of policies, a firm focus on local level problems permits the collection of reliable social and economic benchmark data for use in (obligatory) post project evaluation to measure the particular policy's effectiveness. These evaluations should be carried out by an honest, independent agency not beholden to the policy makers or those funding the project. Adopting these recommended reforms will improve the chances of increasing the well being of the poorest 60% much more than adherence to the stale, ineffective, ideologically charged orthodox development policies currently imposed by the international agencies.

References

Angresano, James. 2007. "Orthodox economic development recipes: The basis for misguided advice that prolongs inequality," chapter in Emma Coleman and Charles Ogletree, eds. *Intergenerational Inequality: The Role of Race in Law, Markets and Social Structures*. New York: Russell Sage, (forthcoming).

_____. 2005. "The Development of the Chinese Economy: Success Through Avoiding Orthodox Economic Advice" *Journal of Socioeconomics* Volume 34, Number 4, pp. 471-498.

_____. 1997. *The Political Economy of Gunnar Myrdal*. Edward Elgar Cheltenham, UK.

Barro, Robert J. and Jong-Wha Lee. 2003. “IMF Programs: Who Is Chosen and What Are the Effects?” *NBER Working Paper No. W8951.*

Bianchi, Ana Maria. 2004. “Would a Latin American Economics Make Sense?” in Edward, Fullbrook, ed. *A Guide to What’s Wrong With Economics*. Anthem, London, 299-309.

Bornstein, David. 2005. *The Price of a Dream*. Oxford: Oxford University Press.

Chang, Ha-Joon. 2004. “What is Wrong with the ‘Official History of Capitalism’? With Special Reference to the Debates on Globalisation and Economic Development,” in Edward, Fullbrook, ed. *A Guide to What’s Wrong With Economics*. Anthem, London: 279-288.

_____. 2002. *Kicking Away the Ladder*. Anthem, London.

Coleman-Jordan, Emma and Angela P. Harris. 2005. *Economic Justice*. New York: Foundation Press.

Cornell University Press. 2002. "Reinventing the World Bank," news release.

http://www.environmentaldefense.org/documents/2328_WorldBankBook.pdf

Duquette, Michel. 1998. "The Chilean Economic Miracle Revisited," *Journal of Socio-Economics*, Volume 27, Number 3, pp. 299-321.

Easterly, William. 2006. *The White Man's Burden*. New York: Penguin Books.

_____. 2002. *The Elusive Quest for Growth*. MIT Press, Cambridge.

Ellerman, David. 2005. “Can the World Bank Be Fixed?”, *post-autistic review*, Issue Number 33, September14, pp. 2-16, http://www.paecon.net/PAEReview/issue33/Ellerman33.htm

Elson, Diane. 2001. "For an Emancipatory Socio-Economics, paper presented at United Nations Research Institute for Social Development Meeting, Cape Town, South Africa, 7-8 September.

Eviatar, Daphne. 2004. Spend $150 Billion per Year to Cure World Poverty, *New York Times*, November 7, http://www.nytimes.com

Ferreira, Francisco H.G. and Michael Walton. 2005. "The Inequality Trap," *Finance and Development*: 34-37.

Fowler, Alan F. 2002. “NGDO-donor relationships: the use and abuse of partnership,” in Vandana Desai and Robert B. Potter. *The Companion to Development Studies*. Arnold, London: 508-513.

Freire, Paolo. 1973. *Pedagogy of the Oppressed*. Seabury Press, New York.

Gillies, Donald. 2004. “Can Mathematics be used Successfully in Economics?” in Edward, Fullbrook, ed., *A Guide to What’s Wrong With Economics*. Anthem, London: 187-197.

Goldman, Michael. 2005. *Imperial Nature: The World Bank and Struggles for Social Justice in the Age of Globalization*. New Haven: Yale University Press.

Goldman, Marshall. 1994. *Lost Opportunity: Why Economic Reforms in Russia Have Not Worked*. W. W. Norton, New York.

Goodman, Peter S. 2006. "The Persistently Poor," *Washington Post*, December 8, http://www.washingtonpost.com

Hausmann, Ricardo, Dani Rodrik and Andres Velasco. 2006. "Getting the Diagnosis Right," *Finance and Development*, Volume 43, Number 1, pp. 12-15.

Harrison, Paul. 1987. *The Greening of Africa*. New York: Penguin Books.

Hodgson, Geoff. 2001. “How Did Economics Get Into Such a State?” p*ost-autistic economics newsletter*, no 7.

Jomo K. S. 2005. “Economic Reform for Whom?: Beyond the Washington Consensus”, *post-autistic economics review*, Issue Number 35, December 5, article 2, pp. 11-18, http://www.paecon.net/PAEReview/issue35/Jomo35.htm

Juhasz, Antonia. 2006. *The Bush Agenda: Invading the World, One Economy at a Time*. New York: Regan Books.

Kapur, Devesh. 2002. The Common Pool Dilemma of Global Public Goods: Lessons from the World Bank's Net Income and Reserves," *World Development* 30, no. 3, pp. 337-54. http://casi.ssc.upenn.edu/about/Common%20Pool%20Dilemma%20of%20GPG.pdf

Kazmin, Amy. 2007. "Stability boosts Cambodia's outlook," *Financial Times*, March 22, p. 6.

Keen, Steven. 2001. “Economists Have No Ears,” p*ost-autistic newsletter*, no. 7.

Kinzer, Stephen. 2006. *Overthrow*. New York: Times Books.

Klamer, Arjo and David and Collander. 1990. *The Making of an* Economist. Westview, Boulder, CO.

Lawson, Tony. 2004. "Modern Economics: The Problem and the Solution." in Edward, Fullbrook, ed.. *A Guide to What's Wrong With Economics*. Anthem, London: 21-32.

Leijonhufvud, A., Craver, E. 2001. "Reform and the Fate of Russia." Document de travail de l'ODCE (Observatoire Francais des Conjonctures Economiques, No. 2001-2003, Paris.

Mancias, Peter T. 2007. "Endogenous Growth Theory: The Most Recent 'Revolution' in Economics," *post-autistic economics review*, Issue Number 41, March 5, pp. 39-53, http://www.paecon.net/PAEReview/issue41/Manicas41.htm

Martens, Bertin, Uwe Mummert, Peter Murrell, Paul Seabright. 2002 *The Institutional Economics of Foreign Aid*. Cambridge, UK: Cambridge University Press.

Mehrotra, Santosh and Enrique Delamonica. 2007. *Eliminating Human Poverty*. London: Zed Books.

Myrdal, Gunnar. 1975. *Against the Stream: Critical Essays on Economics.* Vintage, New York.

_____.1969. *Objectivity in Social Research*. Pantheon, New York.

_____.1968. *Asian Drama: An Inquiry into the Poverty of Nations*, 3 volumes. Pantheon Books, New York.

Noble, Holcomb B. and Douglas Martin. 2006. "John Kenneth Galbraith, 97, dies," *International Herald Tribune*, May 31. http://www.iht.com/articles/2006/04/30/america/web.0430galbraith.php

Nolan, Peter. 1995. *China's Rise, Russia's Fall.* St. Martin's Press, New York.

Nye, John Vincent. 1991 "The Myth of Free Trade in Britain and Fortress France: Tariffs and Trade in the 19th Century," *Journal of Economic History*, 51(1):23-46.

Parker, Richard. “Does John Kenneth Galbraith Have a Legacy?”, *post-autistic economics review*, Issue number 41, 5 March 2007, pp. 29-33, http://www.paecon.net/PAEReview/issue41/Parker41.htm

Perkins, John. 2205. *Confessions of an Economic Hit Man*. New York: Plume.

Polanyi, Karl. 1957. *The Great Transformation*. Boston, Beacon Press.

Pouncy, Charles. 2002. “Stock Markets in Sub-Saharan Africa: Western Legal Institutions as a Component of the Neo-Colonial Project,” *Journal of International Economic Law*, 23:85-117.

Qian, Yingy. 2003. “How Reform Worked in China,” in Dani Rodrik, ed. *In Search of Prosperity*. Princeton University Press, Princeton: 297-333.

Reinert, Erik S. 2005. "Development and Social Goals: Balancing Aid and Development to Prevent 'Welfare Colonialism'," *post-autistic economics review*, Issue Number 30, March 21, article 1, http://www.paecon.net/PAEReview/issue30/Reinert30.htm

Richard, Paul and Linda Elder. 2007. *The Miniature Guide to Critical Thinking*, The Foundation for Critical Thinking, www.criticalthinking.org

Rodrik, Dani, ed. 2003. *In Search of Prosperity*. Princeton University Press, Princeton.

_____, Arvind Subramanian, and Francesco Trebbi. 2002. "Institutions Rule: he Primacy of Institutions over Geography and Integration in Economic Development," NBER Working Paper No. W 9305.

Shorrocks, Anthony and Stanislav Kolenikov. 2001. “Poverty Trends in Russia During the Transition,” *World Institution for Development Economics Research* (May).

Stern, Nicholas. 2002. “New ideas about development models.” *China Daily*, 3 (May 27).

Stiglitz, Joseph. 2005. “What I Learned at the World Economic Crisis,” in Thomas Oatley, *The Global Economy*. Pearson Longman: New York: 323-329.

_____ and Andrew Charlton 2005. Fair Trade for All. Oxford: Oxford University Press.

Todaro, Michael P. and Stephen C. Smith. 2006. *Economic Development in the Third World*, 9th edition. Addison, Wesley, Longman , Boston.

World Bank, *World Development Report. 2006*. Washington DC: The World Bank.

_____. 1996. "Some Lessons from the East Asian Miracle." *The World Bank Research Observer*, Volume 11, pp. 151-177.

Zagha, Roberto, Gobind Nankani, and Indermit Gill. 006. "Rethinking Growth," *Finance and Development*, Volume 43, Number 1, pp. 7-11.

SUGGESTED CITATION:

James Angresano, “Orthodox Economic Education, Ideology and Commercial Interests: Relationships that Inhibit Poverty Alleviation”, *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 37-58, http://www.paecon.net/PAEReview/issue44/Angresano44.pdf

The U.S. Employment Effects of Military and Domestic Spending Priorities

Robert Pollin and Heidi Garrett-Peltier [University of Massachusetts-Amherst, USA]

The U.S. government spent an estimated $572 billion on the military in 2007. This amounts to about $1,800 for every resident of the country. The level of military spending has risen dramatically since 2001, with the increases beginning even before September 11, 2001. In total dollar terms (after controlling for inflation), military spending has risen at an average rate of 10 percent per year from 2000 – 2006, the full years of the Bush presidency to date. By contrast, the overall U.S. economy grew at an average annual rate of 2.7 percent. As a share of GDP, the military budget rose from 3.0 to 4.4 percent of GDP during the Bush Presidency. At the current size of the economy, a difference between a military budget at 4.4 rather than 3.0 percent of GDP amounts to $134 billion.

The largest increases in the military budget during the Bush presidency have been associated with the Afghanistan and especially the Iraq wars. The Iraq war alone now costs an average of $360 million a day (according to the Congressional Research Service), or $138 billion over the 2007 fiscal year. Thus, the $138 billion spent on Iraq in 2007 was basically equal to the total increase in military spending resulting from moving the military budget from 3.0 to 4.4 percent of GDP.

Amid the debates on the political and strategic merits of the Iraq war, one aspect of the current level of military spending by the U.S. government that has been largely neglected is its effects on the U.S. economy. $600 billion is a vast sum of money—greater than the combined GDP of Sweden and Thailand, and eight times the amount of U.S. federal spending on education. It is therefore reasonable to ask what the benefits might be to U.S. taxpayers if some significant share of the $600 billion now going to the military were instead devoted to alternative domestic purposes, such as health care, education, or the environment.

A view is often expressed that the military budget is a cornerstone of the U.S. economy. The Pentagon is often said to be a major underwriter of, and stimulus to, important technical innovations. It is also often cited as a major employer, providing good jobs—jobs that are stable and at least decently paid—to millions of Americans.

At one level, these claims cannot help but be true. If the U.S. government is spending upwards of $600 billion on maintaining and strengthening the military, how could the necessary expenditures on building technologically sophisticated weapons, along with transportation and communications systems, fail to encourage technical innovations that are somehow connected to these instruments of warfare? It is true that investments in military technology have produced important spin-offs for civilian purposes, the Internet being the most spectacular such example. At the same time, channeling $600 billon into areas such as renewable energy, mass transportation and health care would also create a hothouse environment supporting new technologies.

Parallel considerations arise in assessing the impact of the military budget on employment in the U.S. The $600 billion military budget creates approximately five million jobs, both within the military itself and in all the civilian industries connected to the military. And precisely because of the high demands for technologically advanced equipment in the military, a

good proportion of the jobs created by the military budget will be well-paying and professionally challenging. But again, this will also be true when funds are spent in other areas that entail using and developing new technologies, such as for health care, energy conservation, or renewable energy.

Thus, if we want to give a balanced account of the impact of military spending on the U.S. economy, including the employment situation, the only appropriate way to do this is to examine the issue in relative terms—i.e. what is the impact of spending a given sum of money on the military versus spending the same funds on some combination of non-military alternatives?

This study is focused on the employment effects of military spending versus channeling some significant part of the military budget into alternative purposes. We begin by introducing the basic input-output modeling technique for considering issues such as these in a systematic way. We also review the results of earlier efforts to compare the employment effects of military spending versus alternative government spending priorities.

We then present some simple alternative spending scenarios, namely devoting $1 billion to the military versus the same amount of money spent for five alternatives: tax cuts which produce increased levels of personal consumption; health care; education; mass transit; and construction targeted at home weatherization and infrastructure repair. We have included tax cuts/personal con-sumption in this list since it is the most straightforward alternative spending use—that the money freed up from a reduction in military spending goes back directly to taxpayers for them to use as they see fit. We have also, reluctantly, excluded a category for renewable energy investments. This is only because the data now available to us are not adequate to make reliable estimates as to the employ-ment effects of investments in renewable energy projects.[1]1 As a provisional substitute, one can consider the categories of mass transit and construction on home weatherization as constituting investments in energy conservation.

How many jobs are created by each of these alternatives and what is the quality of the jobs being created? Our first conclusion in assessing such relative employment impacts is straightforward: $1 billion spent on personal consumption, health care, education, mass transit, and construction for home weatherization and infrastructure will all create more jobs within the U.S. economy than would the same $1 billion spent on the military.

But this conclusion raises an obvious question: do we create more jobs through these non-military spending targets simply by substituting well-paying jobs associated with the military with poorly-paid jobs associated with the alternatives? In fact, spending on personal consumption does produce a preponderance of poorly-paid jobs, such that the total compensation flowing to workers will be lower than through $1 billion going to the military. However, the opposite is true with edu-cation as the spending target. Here, both the total number of jobs created as well as the average pay are both higher than with the military. The situations with health care, mass transit and home weath-erization/infrastructure construction are less clear-cut. More jobs will be created than with military spending, and the total compensation will also be significantly higher than with military spending. But the average pay for a health-care worker or those engaged in mass transit or construction will be lower than with the military. After presenting these findings, we examine

[1] One of the ongoing projects at PERI is to create a reliable data base showing the employment effects of investments in renewable energy. We expect that we will have such data available by Spring 2008.

them in a broader context —i.e. assessing the overall welfare impacts of the alternative employment outcomes.

We conclude the study with a brief series of summary observations.

Previous Studies of Job Effects of Alternative Spending Priorities

The basic tool for estimating the net overall employment effects of alternative government spending priorities is the input-output model of the U.S. economy, produced every five years and updated annually by the Department of Commerce. The input-output analytic framework was first developed in the 1930s by Nobel Laureate economist Wassily Leontief, with many subsequent refinements by Leontief and others. An input-output model traces through all of the factors—i.e. inputs—that go into producing a given output. For example, we can observe through the input-output model of the U.S. economy how many and what types of workers, how much and what types of equipment, and how much energy (all inputs) are needed to produce a military fighter airplane, tank or warship (outputs). We can also observe what the equivalent requirements would be to keep an existing elementary school or hospital functioning or to build a new school or hospital.

To estimate the overall employment effects of any given spending target, such as a warplane or a school, we have to consider three factors within the overall the input-output model:

1. *Direct effects*—the jobs created by producing the warplane or school

2. *Indirect effects*—the jobs associated with industries that supply intermediate goods for building a warplane, school, or any other direct spending target. These would include the steel, glass, tire, and electronic industries for building a warplane; and concrete, glass, and trucking industries for a school.

3. *Induced effects*—The expansion of employment that results when people who are paid to build a warplane or school spend the money they have earned on other products in the economy.

How could one spending target create more jobs for a given amount of expenditure than another? If we compare, for example, military spending with education, there are three possibilities:

1. The average pay for all of the industries associated with education—including direct, indirect, and induced effects—is lower than the average pay for the military-related industries.

2. The average “labor intensity” of the education-related industries—i.e. number of jobs created per dollar of spending, as opposed to the amount spent on machinery, buildings, energy, land and other inputs—is higher than the labor intensity of military-related industries.

3. The overall job creation effects within the U.S. economy—as opposed to the rest-of-the-world—are higher for education than the military. For example, we roughly estimate that U.S. military per-sonnel spend only 43 percent of their income on domestic goods and services (including import purchases in this calculation) while the U.S. civilian population, on average, spends 78 percent of their income on domestic products.

To enable the input-output model to address specific questions both on the quantity of jobs created, the classification of these jobs by category, and the compensation levels associated with them, we have to then incorporate data from the U.S. labor force surveys into the input-output framework. Operating this kind of economic model clearly entails large numbers of technical manipulations and calculations. At the same time, the U.S. economy is a $13 trillion operation, involving millions of interactions, operations, and innovations on a daily basis. There is no model—input-output model or otherwise—that can capture with precision every detail of what is actually happening on the ground. Still, the input-output model can accurately capture broad parameters of economic reality, including those relating to the question on which we are focusing, the relative employment effects of military versus non-military spending initiatives.

In 1961, Professor Leontief himself used input-output modeling to study the effects of demilitarization on the economy. In his essay entitled, "The Economic Effects of Disarmament," Leontief estimated how employment and overall output would change as a result of a shift in spending from the defense industry to non-defense. He showed that while cutting military spending would eliminate a substantial number of jobs, twice as many jobs would be created in expanding spending on alternative domestic purposes.

Professor Seymour Melman, an industrial economist and engineer, also examined the employment and output effects of military versus non-military spending alternatives in a series of research projects over the 1960s – 1980s.[2] Melman demonstrated repeatedly that the net effects of increasing the proportional share of non-military spending would be beneficial in terms of jobs and overall output. He also stressed that investment in non-defense industries would offer large benefits in terms of encouraging new technologies and raising average living standards in the United States.

In the 1990's, two separate studies were published which used input-output analysis and supplemental modeling techniques to estimate the effects of conversion. One was a 1993 paper by Professor James Medoff, entitled "Smart Stimulus: More Good Jobs." The other was a 1990 study by Marion Anderson, Greg Bischak and Michael Oden entitled "Converting the American Economy."

Medoff used the 1987 input-output model of the U.S. economy to estimate the relationship between different types of spending—for example, military, state government, private investment and consumption—on employment, that is, focusing on the same questions that we are addressing here. Medoff created a number of indices to illustrate the job quantity and job quality effects of alternative types of spending—looking specifically at the number of jobs created through alternative spending targets and the average compensation associated with the various types of jobs created.

Medoff found that personal consumption expenditures had the lowest positive impact on his index that combined both the number of jobs created and the wages and benefits of jobs. Defense spending was the next to last by this combined job quality/quantity index. Medoff found

[2] See, for example, *The Demilitarized Society: Disarmament and Conversion, 1988.*

that spending for education, health care, transportation infrastructure and construction all performed substantially better than military spending by this combined job quantity/quality index.

Anderson et al. use a somewhat different technique than Medoff. They relied on a model developed by the Employment Research Associates and Regional Economic Models Incorporated (REMI) that combines an input-output model with other statistical techniques to estimate the relative employment effects of military versus alternative domestic spending.[3] This study was conducted in 1990, but offers projections of employment effects through 1994. It reports detailed projections of the net job impacts by occupation – both within the military and civilian sectors and also within branches of the military and sectors of the civilian economy. For example, they found that the impact of a gradual reduction in military spending, starting with $35 billion in 1990 and reaching $105 billion in 1994, would produce a net gain of 477,000 jobs within the U.S. economy.

Employment Effects of $1 Billion in Spending for Alternative Purposes

We present in Table 1 our estimate of the relative effects of spending $1 billion on alternative uses, including military spending, health care, education, mass transit, and construction for home weatherization and infrastructure repair. Our estimates are derived from the 2005 U.S. input-output model, along with other data sources on national income and employment within the United States. We show the full list of our data sources in the Appendix.

[3] In principle at least, the approach of the REMI model addresses a significant limitation of the input-output model. This limitation is that the input-output model assumes that the overall structure of the economy will remain the same despite any changes in the level of spending. For example, if spending on the military were to decline and construction spending increase, it is likely that, in reality, prices of construction materials would rise as a result. Wages for construction workers could also rise. Such effects are not incorporated into the input-output model. The input-output model rather works from a simplifying "fixed coefficient" assumption, meaning that the model assumes the basic price and wage relationships would stay fixed despite changes in spending. The REMI model is among the type of models that tries to incorporate such effects. In principle, the REMI-type model provides a fuller picture of what actually happens when spending priorities in the econ-omy change. In practice, these changes are very difficult to model accurately. As such, in many cases, the simpler input-output model provides as good as approximation of the overall effects as one is likely to generate from this sort of exercise.

Table 1. Overall Employment Effects of Spending $1 Billion for Alternative Spending Targets in U.S. Economy, 2005

	(1) # of jobs created	(2) # of jobs relative to defense spending	(3) average wages and benefits per worker	(4) average wages and benefits relative to defense	(5) total wages and benefits from employment in millions	(6) total wages and benefits relative to defense
spending targets						
1. defense	8,555	---	$65,986	---	$564.5 million	---
2. tax cuts for personal consumption	10,779	+26.2%	$46,819	-29.1%	$504.6 million	- 10.7%
3. health care	12,883	+50.2%	$56,668	-14.2%	$730.1 million	+29.3%
4. education	17,687	+106.7%	$74,024	+12.2%	$1,309.3 million	+131.9%
5. mass transit	19,795	+131.4%	$44,462	-32.6%	$880.1 million	+55.9%
6. construction for home weatherization/ infrastructure	12,804	+49.7%	$51,812	-21.5%	$693.7 million	+22.9%

Sources: See Appendix

The table first shows in column 1 the data on the total number of jobs created by $1 billion in spending for alternative end uses. As we see, defense spending creates 8,555 total jobs with $1 billion in spending. This is the fewest number of jobs of any of the alternative uses that we present. Thus, personal consumption generates 10,779 jobs, 26.2 percent more than defense, health care generates 12,883 jobs, education generates 17,687, mass transit is at 19,795, and construction for weatherization/infrastructure is 12,804. From this list we see that with two of the categories, educa-tion and mass transit, the total number of jobs created with $1 billion in spending is more than twice as many as with defense.

We next consider the differences in the compensation in the jobs associated with our alter-native spending targets. If the only way that more jobs are created is by lowering pay levels, then we can question whether the net job impact of an alternative use of funds is superior to spending on defense. As we see in columns 3 and 4 of Table 1, the average wages and benefits from defense spending are higher than all the alternative uses other than education. The average overall compen-sation for defense, at $65,986, is almost 33 percent higher than for mass transit, 29 percent higher than for personal consumption, 22 percent higher than for home weatherization/ infrastructure construction, and 14 percent higher than health care. Education is the only spending target generating a higher average compensation level, at $74,024.

Is it better for overall economic welfare to generate more jobs, even if they are low-paying, or a fewer number of well-paying jobs? There isn't a single correct answer to this question. It would depend on the magnitude of these differences—i.e. how many low-paying jobs

are being generated, and how bad are these jobs? How many high-quality jobs would be sacrificed through a transition out of the military, where, as we have seen, at least, the average wage is generally high?

One simple standard is to compare the total amount of compensation that is received by workers through these alternative end uses. This would simply be the figure generated by the total number of people employed by each of the end uses multiplied by the average total compensation package for each job.[1] We see these figures in columns 5 and 6 of Table 1. As we see, the total compensation from $1 billion in defense spending generates $564.5 billion in total compensation. Personal consumption is the only spending target that is lower than defense in overall compensation, at $504.6 million. In other words, with personal consumption spending, even though it creates 26 percent more jobs than defense, because the average compensation is 29 percent lower, the effect for the overall economy is 10 percent less in total compensation.

The picture is reversed with the other alternative spending targets. With all four of these, the total amount of compensation generated ranges between 23 – 132 percent more than the $1 billion spent on defense. Education has the strongest overall effect, generating $1.3 billion in total compensation from the 17,687 jobs created.[2]

Beyond looking at average and total compensation for each spending category, it will also be useful to consider more fully the specific types of jobs that are linked to each of the spending areas and the proportions of poorly-paid and highly paid jobs in these various areas.

In Table 2, we show the breakdown of the distribution of jobs that will be generated through $1 billion in spending in each of the targeted areas. These job effects are broken down into 15 separate industries within the U.S. economy. We can also observe the same effects through a more fine-grained, 65-industry breakdown. But for our purposes here, the 15-industry categories are sufficient to show overall patterns. We will refer below to some of the more specific figures from the 65-industry breakdown.

[1] This is the basic standard considered by Medoff in developing his "relative job quality" index. In fact, Medoff's terminology here is a bit misleading, since the relative job quality index is actually the product of multiplying total number of jobs created by total compensation—i.e. it combines a quantity and quality measure. It is not a quality measure alone.

[2] How is it possible for $1 billion in new spending to generated more than $1 billion in total compensation? The answer is that we have to recognize again that the overall employment effects combines three factors—the direct spending increases within the targeted industry itself; the indirect spending increases from industries that supply inputs to the target industry; and the induced increase in spending, generated by those who are newly employed spending their wages in the economy. It is through the combination of direct, indirect, and induced spending injections that, for the direct $1 billion increase in education spending, the overall effect on increased compensation will be $1.3 billion.

Table 2. Jobs Created through $1 Billion in New Spending: Comparison of Alternative Spending Targets

	defense	tax cuts for personal consumption	education	healthcare	mass transit	construction for home weatherization/ infrastructure
total jobs	**8,555**	**10,779**	**17,687**	**12,883**	**19,795**	**12,804**
agriculture, forestry, fishing, and hunting	24	237	32	52	18	172
mining	18	41	13	16	46	64
utilities	13	58	15	17	10	15
construction	193	83	192	69	27	7,715
manufacturing	1,240	1,219	396	537	675	1,700
wholesale trade	218	424	113	148	333	340
retail trade	38	1,391	50	52	76	651
transportation and warehousing	230	366	151	180	16,692	315
information	218	221	175	117	95	100
finance, insurance, real estate, rental, and leasing	203	846	309	282	244	224
professional and business services	1,748	1,361	1,237	1,380	1,102	1,059
educational services, health care, and social assistance	166	2,148	14,515	9,364	10	10
arts, entertainment, recreation, accommo-dation, and food services	171	1,364	147	325	92	115
other services, except government	172	870	201	179	262	247
government	3,902	151	141	165	114	77

Sources: See Appendix

We see in Table 2 that, with defense, by far the largest number of jobs created will be with the government—3,902 out of a total of 8,555 jobs (46 percent). The next largest area of job creation with defense is professional and business services, with 1,748 (20 percent).

Of the alternative spending areas, personal consumption has the largest dispersion of jobs created—with large numbers in retail, health care, education, professional services, and accommo-dations/food services. Education, health care, mass transit, and construction for home weather-ization/infrastructure are all heavily concentrated in a few areas—education itself, health care itself, construction itself, and transportation/warehousing.

What about the distribution of wages in the various job areas? It is difficult to obtain a precise sense of this, because the detailed data on wages aren't categorized in the same ways as the input-output industry categories. Moreover, to obtain a clear sense of the wages in various activities, one needs a more detailed breakdown of industries than the 15-industry categories.

In Table 3, we present some relevant figures that draw selectively on the more detailed 65-industry occupational categories. Though we still do not have exact matching between the employment categories for wages and the industry categories for the input-output model, this table nevertheless provides some relatively accurate perspective on job quality related to the various spending priorities.

Table 3. Percentage of Low- and High-Paying Jobs in Activities Linked to Spending Targets

	percent of new employment	percent below $20,000/year	percent below $32,000/year	percent between $32,000 and $64,000/year	percent above $80,000/year
defense					
federal government	44.1	5.3	28.0	61.3	4.7
professional/business services	20.4	4.5	22.9	62.2	14.6
manufacturing	14.5	4.0	7.3	85.8	5.8
personal consumption expenditures					
retail trade	12.9	40.0	70.6	27.3	1.4
food services	8.9	68.1	95.3	4.3	0.3
hospitals and nursing care	8.2	15.3	46.3	43.2	4.8
education					
educational services	82.1	11.7	31.8	59.1	1.2
professional/business services	7.0	4.5	22.9	62.2	14.6
health care					
hospitals/nursing care/ambulatory care	72.5	15.3	46.3	43.2	4.3
professional/business services	7.0	4.5	22.9	62.2	4.8
mass transit					
transportation	76.4	5.8	36.5	60.2	1.0
professional/business services	10.6	4.5	22.9	62.2	4.8
weatherization and infrastructure repair					
construction	66.8	8.6	26.9	60.1	1.8
professional/business services	9.6	4.5	22.9	62.2	4.8

Sources: See Appendix

As the table shows, we present data for each of the job categories on the percentage of jobs paying annual incomes below $20,000 per year, below $32,000, between $32,000 and $64,000, and above $80,000. A wage below $20,000 would mean, on an hourly basis, less than $10 per hour for a full-time, year-round worker. This would be below any reasonable definition of

a "living wage" in any community in the U.S.[1] The $32,000/ year would correspond to a $16 per hour wage for a full-time worker. This is a reasonable threshold wage for defining a minimally decent basic needs income standard. The $32,000 - $64,000 category incorporates a broad range of middle-class jobs. We finally present figures on the proportions earning above $80,000 per year. This will enable us to see the proportion of well-paying jobs in the different categories, and will therefore help address the issue of whether, if resources are moved out of the military, there would be a significant loss of good professional and technical job opportunities.

As the table shows, personal consumption spending is the only area where there are a sub-stantially higher proportion of low-paying jobs relative to defense. In the cases of health care, mass transit, and construction for weatherization/infrastructure, our rough figures show about 5 – 10 percent more jobs paying below both $20,000 and $32,000 than with the military. Still, if we consider all the main categories of job expansion through spending on health care, mass transit and weather-ization/infrastructure, a substantial majority of the jobs pay more than $32,000 per year, our thresh-old figure for a minimally decent income for a full-time worker. With education, the differences are smaller, reflecting the fact that, overall, education as a spending target will generate a higher average increase in compensation than defense in addition to creating more jobs.

How can spending on education generate both higher average wages as well as more new jobs per $1 billion in spending? The answer is straightforward. For one thing, the high average wage reflects the fact that a large proportion of people in the sector operate with relatively high credentials and skills, and their incomes reflect this. In addition, education is a relatively labor-intensive industry. This means that, compared with the other industries we are examining, for every $1 billion in new spending in education, proportionally more money is spent on hiring new people into the industry and relatively less is spent on supplies, equipment, buildings.

By contrast with respect to personal consumption, health care, mass transit or home weatherization/infrastructure, what is clear again in Table 3 is that part of the way that more jobs are created per dollar of spending in these industries is that a higher proportion of low-paying jobs will be created than through military spending. This situation is most serious with respect to personal consumption. This is a good reason for avoiding tax cuts as a means of promoting job creation. For example, using the savings from a reduction in the military budget to lower taxes primarily for the wealthy—which has been a major domestic policy priority under the Bush Administration—would primarily produce more consumption for the well off along with a relatively weak payoff in terms of promoting decent jobs.

The situation is different with health care, mass transit and construction for home weather-ization/infrastructure. All of these should be high public priorities independent of their employment effects. In all three areas, unlike personal consumption, shifting funds from the military will create both more jobs and an increase in overall income for workers. The overall level of compensation per job will fall, and a higher proportion of low-paying jobs will increase. But these effects can be counterbalanced through combining these spending priorities with education,

[1] See the discussions on living wage standards in Pollin 2007 and Pollin et al. 2008.

where, as we have seen, the general level of pay is high. It will also be the case that wages are likely to rise somewhat in the areas that become targets for increased spending. For example, a rising demand for construction workers to work on home weatherization projects should lead to rising wages in that industry.

Conclusion

The U.S. government now operates with a military budget of nearly $600 billion per year. This is a 66 percent increase (in real dollars) relative to the level of spending in 2000. It amounts to 4.4 percent of GDP. An expenditure level of this magnitude will necessarily have a major impact in establishing the country's policy priorities and overall economic trajectory.

We have shown what are the employment effects of spending on the military in contrast with five domestic spending categories. Specifically, we have shown that spending on personal consumption, health care, education, mass transit, and construction for home weatherization and infrastructure repair all create more jobs per $1 billon in expenditures relative to military spending.

It is true that jobs generated by military spending tend to pay relatively well, which is part of the reason that fewer jobs are created per dollar of expenditure than through alternative spending targets. However, we have also seen that $1 billion in spending on education, on average, generates more than twice the number of jobs as does military spending, and higher-paying jobs. Spending on health care, mass transit, and home weatherization/infrastructure creates jobs at a lower average level of pay than military spending. But these three spending targets do create substantially more jobs than military spending, with an overall level of pay, combining all workers' paychecks and benefits, higher than the military. Moreover, a substantial majority of the jobs generated through a health care, mass transit or construction expansion pay more than $32,000 per year, our rough threshold for a minimally decent income level. The majority of jobs pay between $32,000 - $64,000, a rough middle-income pay range. Health care, mass transit, weatherization, and infrastructure repair are all also high priority areas for social spending. More spending in these areas could be combined with improving the average level of pay, while still creating more jobs per dollar of expenditure than the military.

Increased personal consumption resulting from tax cuts is the only alternative spending target that we examined that is inferior to military spending along two dimensions—both the average pay and the total amount of compensation per $1 billion in expenditures are lower. There is also no reason why expanding personal consumption expenditures—particularly of the already affluent, whose level of expenditures have risen sharply since the early 1990s—should be considered as a primary focus of social policy.

Overall then, there is a great deal at stake as policy makers and voters establish public policy spending priorities. As we have seen, by addressing social needs in the areas of health care, education, education, mass transit, home weatherization and infrastructure repairs, we would also create more jobs and, depending on the specifics of how such a reallocation is pursued, both an overall higher level of compensation for working people in the U.S. and a better average quality of jobs.

Appendix: Data Sources

Source	Table Name/Number		Location of Data Source
input-output tables	BEA	2005 Annual Industry Tables, Summary Level (65 industry)	http://www.bea.gov/industry/iotables/prod/table_list.cfm?anon=1650
employment	BEA	NIPA Table 6.8D, 2005	http://www.bea.gov/national/nipaweb/TableView.asp?SelectedTable=198&FirstYear=2004&LastYear=2005&Freq=Year
output	BEA	GDP by Industry: Gross Output by Industry, 2005	http://www.bea.gov/industry/gdpbyind_data.htm
wages and benefits	BLS	Employer Cost for Employee Compensation	http://data.bls.gov/cgi-bin/dsrv?cm
	Census Bureau	Federal Government Employment and Payroll data	http://ftp2.census.gov/govs/apes/05fedfun.pdf
	BLS	Current Employment Statistics	http://www.bls.gov/ces/home.htm
occupational data	BLS	May 2005 National Industry-Specific Occupational Employment and Wage Estimates	http://www.bls.gov/oes/2005/may/oessrci.htm

References

Adams, F. Gerard, ed. (1992) *The Macroeconomic Dimensions of Arms Reduction*, Boulder, CO: Westview Press.

Anderson, Marion and Greg Bischak (1990) “A Shift in Federal Spending: What the Peace Dividend Can Mean to Maine,” A Report for the Peace Economy Project, Lansing, MI: Employment Research Associates.

Anderson, Marion, Greg Bischak and Michael Oden (1991) “Converting the American Economy, The Economic Effects of an Alternative Security Policy,” Lansing, MI: Employment Research Associates.

Bureau of Economic Analysis (2005) “Government Transactions,” BEA Methodology Papers: U.S. National Income and Product Accounts, MP-5.

Carter, Anne P. (1974) “Applications of Input-Output Analysis to Energy Problems,” *Science*, New Series, Vol. 184, No. 4134, Apr. 19, pp. 325-329.

Chentrens, Carl (2005) “Employment Outlook: 2004-2014,” Washington, D.C.: Bureau of Economic Analysis.

Doggett, Ralph M. (1992) "Defense Expenditures in the 1980s: A Macroeconomic, Interindustry and Regional Analysis," in *The Macroeconomic Dimensions of Arms Reduction*, F. Gerard Adams, ed., Boulder, CO: Westview Press.

Guo, Jiemin, Ann M. Lawson, and Mark A. Planting (2002) "From Make-Use to Symmetric I-O Tables: An Assessment of Alternative Technology Assumptions," BEA Working Paper 2002-03, Washington, D.C.: Bureau of Economic Analysis.

MacroSys Research and Technology (2003) "Highway Operations Spending as a Catalyst for Job Growth," prepared for the Federal Highway Administration, Dept. of Transportation, Washington, D.C.

Melman, Seymour (1988) *The Demilitarized Society: Disarmament and Conversion*, Montreal: Harvest House.

Horowitz, Karen J. and Mark A. Planting (2006) "Concepts and Methods of the Input-Output Accounts," Bureau of Economic Analysis,

Leontief, Wassily (1986) *Input Output Economics, 2nd ed.* New York: Oxford University Press.

Medoff, James L. (1993) "Smart Stimulus: More Good Jobs," Washington, D.C.: Center for National Policy.

Miller, Ronald E. and Peter D. Blair (1985) *Input-Output Analysis: Foundations and Extensions*, New Jersey: Prentice-Hall, Inc.

Moulton, Brent R. and Eugene P. Seskin (2003) "Preview of the 2003 Comprehensive Revision of the National Income and Product Accounts: Changes in Definitions and Classifications," Bureau of Economic Analysis.

Pollin, Robert (2007) "Making the Federal Minimum Wage a Living Wage," *New Labor Forum*, 16(2), Spring 2007, pp. 103-07.

Pollin, Robert, Mark Brenner, Jeannette Wicks-Lim, and Stephanie Luce (2008) *A Measure of Fairness: The Economics of Living Wages and Minimum Wages in the United States*, Ithaca, NY: Cornell University Press.

Richardson, Harry W. (1972) *Input-Output and Regional Economics*, New York: John Wiley and Sons.

Sohn, Ira, ed. (1986) *Readings in Input-Output Analysis: Theory and Applications*, New York: Oxford University Press.

Stone, Richard (1961) *Input-Output and National Accounts*, Paris: Organisation for Economic Co-operation and Development.

"The 1997 Washington State Input-Output Model" (2004) Office of Financial Management, State of Washington. Access online April 2007 from http://www.ofm.wa.gov/economy/io/

United Nations (1999) *Handbook of Input-Output Table Compilation and Analysis*, Dept. of Economic and Social Affairs, Statistics Division, New York: United Nations.

The Authors

Robert Pollin is Professor of Economics and Co-Director of the Political Economy Research Institute (PERI) at U Mass Amherst. Heidi Garrett-Peltier is an Economics Ph.D. student and Research Assistant at PERI.

Acknowledgements

We have received extremely helpful comments and technical assistance on this paper from Greg Bischak, Anita Dancs, Jerry Epstein, James Heintz, Michael Oden, Miriam Pemberton, and Jeannette Wicks-Lim.

The study was underwritten by The Melman Fund at the Institute for Policy Studies and a generous grant from the Colombe Foundation secured by Women's Action for New Directions (WAND).

SUGGESTED CITATION:

Robert Pollin and Heidi Garrett-Peltier, “The U.S. Employment Effects of Military and Domestic Spending Priorities”, *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 59-72,
http://www.paecon.net/PAEReview/issue44/Pollin44.pdf

World Too Complex For One-Size-Fits-All Models[1]

Dani Rodrik [Harvard University, USA]

Development "big think" has always been dominated by comprehensive visions about transforming poor societies. From the so-called "Big Push" to "Balanced Growth", from the "Washington Consensus" to "Second Generation Reforms", the emphasis has been on wholesale change. Today's fashion in development is no different. The prevailing obsession with the "governance" agenda entails a broad-based effort to remould institutions in developing societies as a prerequisite for economic growth. The United Nations Millennium Project involves a large-scale, co-ordinated push of investment in human capital, public infrastructure and agricultural technologies. But there have also been iconoclastic dissenters from such comprehensive approaches, among whom Albert Hirschman was without doubt the most distinguished. Indeed, Hirschman's seminal contributions have now been recognised by the US Social Science Research Council, which this year established a prize in his honour. When Hirschman was still involved in development debates, he would frequently remind his contemporaries that any country that had the capacity to undertake comprehensive programmes would not be underdeveloped to begin with.

Hirschman believed that the possibilities for economic development are not nearly as constrained as comprehensive theories lead us to believe. The imbalances specific to underdevelopment create opportunities that policy makers can seize on. Instead of relying on fads emanating from abroad, we need to experiment and look for the unique solutions that will allow us to circumvent ingrained social structures that inhibit growth.

Hirschman's central insights on development have held up extremely well. The key lesson of the past half-century is that policy makers must be strategic, rather than comprehensive. They have to do the best with what they have instead of wishing they could transform their society wholesale. They need to identify priorities and opportunities, and work on them. They must seek sequential, cumulative change rather than a single, all-inclusive breakthrough.

Successful countries do share some common features. They all provide some degree of effective property rights protection and contract enforcement, maintain macroeconomic stability, seek to integrate into the world economy, and ensure an appropriate environment for productive diversification and innovation.

But how these ends are achieved differs. For example, greater integration with world markets can be achieved via export subsidies (South Korea), export-processing zones (Malaysia), investment incentives for multinational enterprises (Singapore), special economic zones (China), regional free trade agreements (Mexico), or import liberalisation (Chile).

[1]This article appears here with the kind permission of Project Syndicate, www.project-syndicate.org.

The best-designed policies are always contingent on local conditions, making use of pre-existing advantages and seeking to overcome domestic constraints. That is why successful reforms often do not travel well.

Moreover, generating economic growth requires hitting the right targets, not doing everything at once. What matters at any point is to alleviate a society's immediate binding constraints. China was constrained by poor supply incentives in agriculture in the late 1970s. Today's Brazil is constrained by inadequate supply of credit. El Salvador is constrained by inadequate production incentives in tradable goods. Zimbabwe is constrained by poor governance. These problems all require different methods for unlocking growth. What we need is selective, well-targeted reforms, not a laundry list.

Countries run into trouble when they do not use high-growth periods to strengthen their institutional underpinnings. Two kinds of institutions in particular need shoring up: conflict management institutions to enhance economies' resilience to external shocks, and institutions that promote productive diversification.

This line of thinking has vast implications for the design of appropriate global economic arrangements. Hirschman would be aghast at the extent of intrusion into domestic policy-making that the World Trade Organisation or the International Monetary Fund engage in nowadays. As international bureaucracies with a penchant for "best practices" and common standards, these institutions are poorly suited to the task of seeking innovative, unique pathways suited to each country's particular circumstances.

Many economists were sceptical about Hirschman's approach because they could not quite fit it into the economics they had been trained to practice. But, over the years, economics has become richer, too. Dynamic models have become much more common, an economics of the "second-best" has flourished, political economy has become mainstream, and behavioural economics has thrown the "rational actor" into doubt. As a result, Hirschman looks less and less the maverick that he fancied himself to be. Conventional wisdom may finally be catching up with him.

SUGGESTED CITATION:
Dani Rodrik, "World Too Complex for One-Size-Fits-All Models", *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 73-74, http://www.paecon.net/PAEReview/issue44/Rodrik44.pdf

What Is The Right Size?

Margaret Legum [SANE, South Africa]

Popes are not necessarily the clearest communicators; but they can be worth the effort. Take Pope Pius XII: *'It is an injustice, and at the same time a grave evil and disturbance of right order, to assign to a greater and higher association what lesser and subordinate organisations can do.'*

That principle of 'subsidiarity' – that everything is best decided and effected closest to the people who will be affected – is widely accepted in politics: it is central to the EU principle.

The New Economic Foundation in London has a series of research documents around the appropriate size for different kinds of economic activity and sector. They make startlingly good reading – perfectly obvious in some ways and counter-culture in those where mega-size is assumed to be best. '*Return to Scale'* is followed by *'Public Spending for Public Benefit'* and '*Who'se the Entrepreneur?'* about social entrepreneurship in local economic development. All offer practical, implementable tools for supplementing or replacing the global scale, based on markets that serve humanity rather than oppressing us. (Ref: www.neweconomics.org)

In recent times, 'right-sizing' has been the business euphemism for sacking people - succeeding 'down-sizing', which sounded somehow nastier and also unsuccessful. So it seems odd that we do not debate what would be the optimum scale for different sectors of the world's economy. It is assumed that global is best. If you make something, you have really arrived if you export it; if you sell something, you are congratulated if it is good quality, cheap and imported.

Obviously things like ship-building must have a world market and operate on a huge scale, as would mining for minerals: it would be silly for every nation to establish its own shipyards or uranium mines.

The same is not obviously true of food, footwear, furniture or practically anything you see around you on a daily basis. The advantage of the global stage for consumers is that it encourages competition on price. And for producers it means employees must compete globally to keep their jobs; and that means higher profits. For those reasons – the influence of business and organised consumers - it is actually illegal under the rules of the World Trade Organisation, to interfere with global trade. You may not ask, effectively, what is the right scale of operation for this sector in this country.

But are there disadvantages to large size? The global scale carries a high price if it is applied to everything. The global capital market is dangerous, because anybody's business is everybody's business: the rand's level is beyond our control. If the financial sector over-reaches in one powerful country, it threatens a global disruption to the whole money system. Every nation dreads a fall in the price of the dollar, because it would affect their own economy.

The global emphasis is especially expensive for developing countries because it discourages employment through import-substitution, and encourages exporting through specialisation. So when the price of a raw material or commodity falls, the whole economy is

affected. There is nothing to fall back on if diversity has been sacrificed to exports. And 'economies of scale' – which are assumed to cheapen everything – ignore the economies of localisation.

What are those? Localised food, for instance, is cheaper in a number of respects that are ignored if we concentrate only on the price in the global supermarket. Food grown locally contributes to feeding the people who grow it: and that avoids the variety of costs associated with hungry people – from disease to crime to poor economic performance. It costs less to transport: no small advantage when fossil fuel problems are considered. It is healthier, more likely to nourish than deplete the soil, more likely to use less harsh and expensive chemicals: in other words cheaper in the wider scheme of things.

Currently the way we grow food contributes to hunger and poverty. When the price of oil really bites, those who can grow their own, and the localities', food will be the aristocrats – not, as now, looked down upon as subsistence peasants with dirty hands.

In opting for the largest scale we have not related the question of scale to the overall objective of policy. For instance, it is by now accepted that poverty, inequality and unemployment are an unsustainable world condition, and must be diminished. We also know that growing food on an industrial, single-crop model, and selling it in supermarkets, increases poverty – by replacing a large number of small farmers with a small number of waged labourers, and replacing small retailers with hypermarkets.

But throughout the world governments still encourage world food trade in a variety of ways from tax incentives to capital and export subsidies. This, together with an emphasis on low inflation, actually discourages development that would lead to less poverty, more employment and more self-sufficiency.

Similarly ecological sustainability is usually more easily reached when economic activity is more local. Energy generation and distribution, recycling and small business are often more efficient for the planet when they are local. Local democracy can regenerate local economies. And so on. As a slogan 'local' is this season's 'global'. We need national and international policies to effect it.

SUGGESTED CITATION:
Margaret Legum, "What Is The Right Size?", *post-autistic economics review*, issue no. 44, 9 December 2007, pp. 75-76, http://www.paecon.net/PAEReview/issue44/Legum44.pdf

ISSN 1755-9472

Articles, comments on and proposals for should be sent to the editor at
pae_news@btinternet.com

Subscriptions to this email journal are free.

Back issues of this journal and other material related to the PAE movement are available at www.paecon.net.

To subscribe to this journal go **here** (http://www.feedblitz.com/f/f.fbz?Sub=332386)

To unsubscribe to this journal go to
http://www.feedblitz.com/f/f.fbz?EmailRemove=_NDUzNDkzMHwzMzIzODZ8cGFlX25ld3NAYnRpbnRlcm5ldC5jb218MTA5OTU4_