

THE ECO-NOMICS OF *EARTH IN THE BALANCE*

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Introduction

U.S. presidents and presidential aspirants as far back as Richard Nixon have claimed to be champions of the environment, but Vice President Al Gore can back his claim with a book, *Earth in the Balance*. My talk provides analysis of the economic portions of Mr. Gore's 400-page book—specifically his recommendation for "A New Global Eco-Nomics."

The hyphen between "eco" and "nomics" is Mr. Gore's way of indicating the emphasis on ecology that he believes needs to be added to classical (market) economic theory and practice. His stinging criticism of classical economics and classical economists is contained primarily in Chapter 10: "Eco-nomics: Truth or Consequences" and in the third section of Chapter 15: "A Global Marshall Plan."

Earth in the Balance often reads as though its author has intuitive knowledge of the true state of the planet and that his policy recommendations are original, influenced only subtly by others. With regard to his views on economics, Mr. Gore does briefly acknowledge the influence of Drs. Herman Daly, Robert Costanza, and Robert Reppeto, proponents of a school of thought known as "ecological economics." Gore's "New Global Eco-Nomics" is less encompassing than ecological economics but it plants the seeds that could sprout into this broader vision.

A New Global Eco-Nomics

A Key Element of Al Gore's "Global Marshall Plan"

By and large, I intend to present Al Gore's views on global eco-nomics by using his own words—excerpting from *Earth in the Balance*. Though we will not take an extensive look at Gore's "Global Marshall Plan," a brief review is necessary in order to place his economic proposals in a context. The author of *Earth in the Balance* explains his view that a global Marshall Plan is needed to prevent global environmental catastrophe as follows:

Human civilization is now so complex and diverse, so sprawling and massive, that it is difficult to see how we can respond in a coordinated, collective way to the global environmental crisis. But circumstances are forcing just such a response; if we cannot embrace the *preservation of the earth as our new organizing principle*, the very

survival of our civilization will be in doubt.

. . . While it is true that there are no real precedents for the kind of global response now required, history does provide us with at least one powerful model of cooperative effort: the Marshall Plan. In a brilliant collaboration that was itself unprecedented, several relatively wealthy nations and several relatively poor nations—empowered by a common purpose—joined to reorganize an entire region of the world and change its way of life. (Emphasis added.)

Having laid down his goal of establishing a “new organizing principle”—preservation of the earth—Vice President Gore cites the post-World War II Marshall Plan as a precedent for reorganizing economic and political institutions to meet a global crisis. He does acknowledge that the Marshall Plan is not a perfect model for what he proposes to be necessary actions to save the planet, writing:

The Marshall Plan, however, depended in part for its success on some special circumstances that prevailed in postwar Europe yet do not prevail in various parts of the world today. For example, the nations of Europe had developed advanced economies before World War II, and they retained a large number of skilled workers, raw materials, and the shared experience of modernity.

. . . In contrast, the diversity among nations involved in a Global Marshall Plan is simply fantastic, with all kinds of political entities representing radically different stages of economic and political development.

But Gore ignores these caveats and provides a thumbnail sketch of what he has in mind for the Global Marshall Plan:

Improbable or not, something like the Marshall Plan—a Global Marshall Plan, if you will—is now urgently needed. The scope and complexity of this plan will far exceed those of the original; what’s required now is a plan that combines large-scale, long-term, carefully targeted financial aid to developing nations, massive efforts to design and then transfer to poor nations the new technologies needed for sustained economic progress, a worldwide program to stabilize world population, and binding commitments by the industrial nations to accelerate their own transition to an environmentally responsible pattern of life.

The essence of this Global Marshall Plan is contained in five strategic goals to “direct and inform our efforts to save the global environment.” We will concern ourselves with only one of these, namely a strategic goal to bring about “a comprehensive and ubiquitous change in the economic rules of the road by which we measure the impact of our decisions on the environment.” According to Al Gore: “We must establish—by global agreement—a system of economic accounting that assigns appropriate values to the ecological consequences of both routine choices in the marketplace by individuals and companies and larger, macroeconomic choices by nations.”

Criticism of Classical Economics and Proposals for Change

In Gore's view, the triumph of capitalism over communism "imposes upon us a new and even deeper obligation to address the shortcomings of capitalist economics as it is now practiced." He warns:

The hard truth is that our economic system is partially blind. It "sees" some things and not others. It carefully measures and keeps track of the value of those things most important to buyers and sellers, such as food, clothing, manufactured goods, work, and indeed, money itself. But its intricate calculations often completely ignore the value of other things that are harder to buy and sell: fresh water, clean air, the beauty of the mountains, the rich diversity of life in the forest, just to name a few. In fact, *the partial blindness of our current economic system is the single most powerful force behind what seem to be irrational decisions about the global environment.* (Emphasis added.)

Table 1 summarizes the twelve proposals that make up the complete set of Gore's new economic rules. His suggestions are a mixture of the mundane and the majestic. Point #7, for example, "Government should adopt programs to assist companies in the study of the costs and benefits of environmental efficiency," would fall in the mundane category. This is a task already performed within environmental health and safety units at large firms and by similar experts within trade associations whose member firms are too small to employ such experts themselves. Why would business firms need government bureaucrats to help them calculate costs and benefits of more environmentally friendly processes?

Point #12, essentially the Kyoto Treaty with a stronger emissions trading emphasis, is the most ambitious or majestic. Gore is correct that emissions trading would reduce the costs of limiting greenhouse gas emissions among the developed nations that are to be participants. But he fails to mention that the levels of emission reductions called for still will be extremely costly while producing virtually no benefit in reduced global warming. He further underestimates the difficulty (if not impossibility) of forcing the parties who sell emissions credits to uphold their pledges if in the future it is not in their best interests to do so.

Earth in the Balance focuses primarily, however, on changes in economic accounting—especially the first three items from Table 1. I would like to discuss points 1, 3, and 4: a new calculation of GNP, discontinuing discounting and eliminating subsidies for environmentally destructive activities.

Shortcomings of Current Measures of Gross National Product. According to Vice President Gore, the way in which we calculate gross national product (GNP) is a major shortcoming in our capitalist economic system. He writes:

Table 1

Al Gore's New Set of Economic Rules of the Road

1. The definition of GNP should be changed to include environmental costs and benefits.
2. The definition of productivity should be changed to reflect calculations of environmental improvement or decline.
3. Governments should agree to eliminate the use of inappropriate discount rates and adopt better ways to quantify the effects of our decisions on future generations.
4. Governments should eliminate public expenditures that subsidize and encourage environmentally destructive activities.
5. Governments should improve the amount and accuracy of information on the environmental impacts of products and provide it to consumers.
6. Governments should adopt measures to encourage full disclosure of companies' responsibility for environmental damage.
7. Governments should adopt programs to assist companies in the study of the costs and benefits of environmental efficiency.
8. Nations should revise their antitrust laws to encompass environmental harm.
9. Governments should require the incorporation of standards to protect the environment in treaties and international agreements, including trade agreements.
10. Environmental concerns should be integrated into the criteria used by international finance institutions for the evaluation of all proposed grants of development funds.
11. Governments should make accelerated use of debt-for-nature swaps to encourage environmental stewardship in return for debt relief.
12. Governments should develop an international treaty establishing limits on CO₂ emissions by country and a market for the trading of emission rights among countries that need more and countries that have an excess amount.

Source: Al Gore, Earth in the Balance: Ecology and the Human Spirit (New York: Houghton Mifflin Company, 1992), pp. 346, 347.

. . . [T]he current method for calculating gross national product (GNP) completely excludes any measurement for depletion of natural resources. Everything in nature is simply assumed to be limitless and free. A developing nation that clear-cuts its rain forest may add the money from the sale of the lumber to its income, but is not required to place a value on the depreciation of its natural resources or in any way reflect in its calculations of GNP the fact that next year it will not be able to sell its rain forest because it is gone.

Gore admits that this proposal may seem a bit “theoretical” but he defends this notion as follows:

Though this task may seem theoretical, I am convinced that it is among the most important and far-reaching changes we can hope to accomplish. For every large decision by a national authority, there are billions of small choices by individuals that add up to an aggregate force completely dwarfing most policy decisions by governments. It follows, then, that influencing the criteria and values used to inform and guide these billions of everyday choices represents the real key to changing the direction of human civilization.

Many environmental groups and ecological economists share this view. But Vice President Gore and ecological economists are expecting too much from this measure. GNP and GDP are imperfect calculations of the output of an economy, not measures of the quality of life within an economy. If these metrics were to be adjusted to capture quality of life concerns, there would be no end to adjustments—subtractions for crime and family breakup, additions for improved medical care and longer life spans, etc. Moreover, there would be no way to interpret the meaning of the new GNP or GDP number when we were finished with the calculations.

Even if for some reason we were to limit the adjustments to just environmental costs, what would the new GNP mean? If subjective estimates of the costs of species loss due to cutting rain forests in Brazil amounted to a significant portion of that nation's GNP, what should policymakers in Brazil do differently? And how would Brazil's GNP compare to that of the United States or Russia or Japan where environmental adjustments to GNP would have little to do with species loss?

For the purposes of setting national environmental policies, it is just as meaningful, if not more so, to make these environmental cost calculations explicitly when a particular policy is being considered. Nothing is gained by distorting the measurement of GNP as far as setting national environmental policy is concerned. Likewise, global investments—private and public—would not be effected by a new calculation of GNP that includes environmental costs and natural resource depletion.

But the most fundamental error in the Vice President's thinking is his belief that the calculation of GNP has a major impact on "billions of small choices by individuals." When is the last time that you or I made a consumer choice based on the rate of GNP growth in our nation or a foreign country's GNP growth? We typically decide how we wish to spend our income based on the value we believe we will receive from our purchasing decisions. Likewise, business decisions are based upon the return that can be expected from making a specific choice compared to alternative ways of deploying the firm's capital and human resources. Revising the calculation of GNP will do nothing to affect "the billions of small choices made by individuals" and, hence, will not alter the environmental impacts of these choices.

Does Discounting Undervalue the Future? Vice President Gore's second target for changing the eco-

nomics of policymaking is the standard practice of discounting flows of future benefits and costs. He says, “We must change our current use of discount rates, the device by which we systematically undervalue the future consequences of our decisions.” This is also a favorite criticism offered by ecological economists.

Gore expands on this imperative, writing:

. . . The accepted formulas of conventional economic analysis contain *short-sighted and arguably illogical assumptions* about what is valuable in the future as opposed to the present; specifically, the standard “discount rate” that assesses cost and benefit flows resulting from the use or development of natural resources routinely assumes that all resources belong totally to the present generation. As a result, any value that they may have to future generations is heavily “discounted” when compared to the value of using them up now or destroying them to make way for something else. The effect is to magnify the power of one generation to compromise all future generations. In the words of Herman Daly, “There is something fundamentally wrong in treating the earth as if it were a business in liquidation.” (Emphasis added.)

What do economists offer as the justification for applying a discount rate to future flows of costs and benefits of a particular project or activity? In business decision making, as opposed to policymaking, this practice is far less controversial. If a business is going to allocate its financial resources among a set of possible investments where income and expenses are going to be spread over a number of years, its management wants to know the “present value” of these competing projects. If the firm can typically receive a 10 percent return from its investments, then management will want to apply this 10 percent factor to future cash flows—\$1 million today is equivalent to \$1.1 million a year from now, \$1.21 million two years from now, and so on.

It would be irresponsible for a business decision maker to consider Project A, which incurs costs of \$1 million in the first year and returns \$2 million ten years hence, to be equivalent to Project B also with costs of \$1 million in the first year but returning \$1 million two years from now and another \$1 million in the third year. Applying a zero discount rate to the calculation would be “short-sighted and arguably illogical.”

The notion that decision making in the public realm is totally different than in the private sector is similarly illogical. While there can be honest debate about the appropriate discount rate to be used, it certainly should not be zero.

There are at least two reasons why there should be a positive discount rate applied in public policymaking. The first is that individuals do not behave as though they are indifferent between current and close-in benefits compared to those same levels of benefits realized in a more distant future. We would prefer to see \$1 billion spent to develop a far more effective treatment for breast cancer that can produce that benefit in two years, say,

than a different project with the same costs that could produce this benefit in five years.

Secondly, a non-zero discount rate for public policy decision making is consistent with advances in scientific knowledge. If today's public resources are invested in ways that maximize their present value, greater financial resources will be available each year that can be invested in projects that utilize technology that was not available just a year earlier.

Projects that protect the environment are no different in this regard. If the present value (the total discounted costs and benefits) of addressing global climate change today is less than the present value of delaying that investment for another decade, then delay is warranted not only in the interest of the present generation but also in the best interest of future generations.

A Point of (Near) Agreement on Subsidies. I share Vice President Gore's criticism of government subsidies for activities that harm the environment. He writes:

A number of specific steps can be taken to accelerate the shift toward economic rules that promote sustainability. The first and most obvious changes involve the elimination of those public expenditures—both national and international—that encourage and subsidize environmentally destructive economic activity.

Gore puts his finger on the source of this problem as he shares from his own experiences as a congressman and a senator:

. . . In Florida, the destruction of the Everglades is being actively subsidized by taxpayers and consumers through artificial price supports for sugarcane—a crop that otherwise would never be grown in that area. In fact, I myself have supported sugar price supports and—until now—have always voted for them without appreciating the full consequences of my vote.

. . . As a member of the Southern “farm bloc” in Congress, I have followed the general rule that I will vote for the established farm programs of others in farm states—especially the ones important to my region—in return for their votes on behalf of the ones important to my state.

I leave it to the members of Congress to explain their participation in the practice of “logrolling”—trading votes to get programs passed that favor specific geographic interests.

Subsidies typically are justified in a fashion similar to those advanced for trade barriers (tariffs and quotas) against imports—protection of “infant” industries or of declining industries. Subsidies to any industry—agriculture, forestry, mining or even renewable energy—are difficult to justify given today's robust capital markets, however. If the activity makes economic sense, then it probably doesn't need a subsidy and, if it does not make economic sense, why subsidize it?

The Broader Context of the New Global Eco-Nomics:

Ecological Economics

As mentioned previously, the Vice President's ideas for revamping economics and economies are not merely the result of his own thought processes. Many of these notions have been put forth in a more extended fashion by ecological economists such as Herman Daly, Robert Costanza, and Robert Reppeto who are mentioned specifically in *Earth in the Balance*. The ultimate end result sought by ecological economists and Al Gore is the concept of sustainable development.

What is Sustainable Development?

Concerns about global environmental problems grew during the 1970s and 1980s, culminating in the 1992 Earth Summit in Rio de Janeiro. The report providing the springboard for Earth Summit was the United Nations Commission on Environment and Development's *Our Common Future*, also known as the Brundtland Report. The UN report defined sustainable development as the ability of humanity "to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs." This definition has been widely embraced but is not easily put into practice. Taken to the extreme, it could be interpreted to mean that no non-renewable resource can be used by this generation or, for that matter, any succeeding generation.

Two leading ecological economists, Herman Daly and Robert Goodland, offer an alternative definition of sustainable development as "development without growth in throughput of matter and energy beyond regenerative and absorptive capacities." Daly and Goodland elaborate that "environmental sustainability seeks to improve human welfare and social sustainability by protecting the sources of raw materials used for human needs and ensuring that the sinks for human wastes are not exceeded."

This principle of holding the use of resources to their regenerative capacity and the wastes from human activities to the capacities of ecological sinks (air, water, and land) to absorb them leads to the concept of carrying capacity. The ecological economist's definition of carrying capacity is "the maximal population size of a given species that an area can support without reducing its ability to support the same species in the future." The species in question is *Homo sapiens* and the area of concern is Earth. Will we humans so foul our own nest that we threaten our very survival?

Is Economic Growth the Enemy of the Environment?

Ecological economists see mainstream economics as unresponsive to the environmental and social spheres of life. They (as does Al Gore) criticize mainstream economics for its unrealistic assumptions of perfect compe-

tition, perfect information, free trade, and individual rationality.

Economic growth (at least in developed nations) is anathema to ecological economists. In their view, economic growth—producing greater amounts of products and services by increased use of resources—threatens the environment and humanity’s future prospects. Economic *development* is considered a more neutral term. It is defined by ecological economists as an expansion in the qualitative value added by economic activity that does not increase the use of resources.

According to Goodland and Daly, “Poor, small, developing economies need both growth and development. Therefore, the rich countries, which are responsible for most of today’s global environmental damage. . . and whose material well being can sustain halting or even reversing throughput growth, must take the lead . . . [M]ore growth for the South must be balanced by negative throughput growth for the North if environmental sustainability is to be achieved.” Thus, not only intergenerational equity with regard to access to natural resources is in view, but also contemporaneous equity between developed and developing nations.

Gore is more reticent in his calls for wealth transfers from the “haves” to the “have nots.” But he does call for “large-scale, long-term, carefully targeted aid to developing nations [and] massive efforts to design and then transfer to poor nations the new technologies needed for sustained economic progress.” Gore’s scaled-back version of “negative throughput growth” for developed nations is his vague call for “binding commitments by the industrial nations to accelerate their own transition to an environmentally responsible pattern of life.”

Mainstream economics focuses first and foremost on attempting to describe how a market economy works. The emphasis is on how scarce resources are efficiently allocated to meet consumer desires through market-determined prices and private property rights.

The criticism leveled at mainstream economics regarding its simplistic assumptions would not ruffle the feathers of such an economist. These assumptions keep the market model simple, allowing the implications of the model to be analyzed. Of course, the proof of the pudding is in the tasting—does this stylized depiction of consumers and markets lead to useful predictions about how the real economy works?

Regardless of the assumptions of perfect competition, perfect information, free trade, and individual rationality in the idealized model, a capitalistic economy does efficiently allocate scarce resources to the goods and services most desired by consumers. The price system sends signals on the strength of consumer demands and on the scarcity of resources—throughputs, as Goodland and Daly call them—needed to address those demands.

High-priced throughputs will flow to those applications most highly valued by the marketplace. Furthermore, private property protections afforded in a capitalistic system are critical to furnish the rewards necessary to motivate individuals to employ their resources—intelligence, skills, finances—to create new products and services or to improve on processes that produce current economic outputs.

Market economists are not oblivious to the idea that the marketplace does not capture all environmental costs that result from production of goods and services. Indeed, pollution is one form of “externality” widely discussed in mainstream economics literature. Because no one owns the rights to the air, for example, air polluters do not have to pay for the privilege of using this “sink.” As a result, air pollution could reach levels that might harm public health and the environment.

Al Gore asserts that this is an almost fatal flaw of classical economics. He writes: “The bad things economists want to ignore while they measure the good things are often said to be too difficult to integrate into their calculations. . . . Therefore, since the effort to keep track of the bad things would complicate the valuations of the good things, the bad things are simply defined away as external to the process and called *externalities*.” (Emphasis added.)

But the activities of actors in real economies are proscribed by rules set down by political agents. For example, air quality in nearly all democratic political systems is protected, to one degree or another, by regulatory action or by redress through common law.

The idea is to make polluters *internalize* the external costs of pollution. Whether regulations require companies to install pollution abatement equipment explicitly or whether the threat of injunctions or damage payments causes such investments, pollution sources begin to include their costs for purchasing and operating such equipment in the prices they charge for their products.

Market Economists Are More Optimistic

Ecological economists and environmental activists view capitalism as the enemy of the environment. To the critics of capitalism, consumption conjures up visions of depleting spaceship earth’s provisions, thus, it is presumed to be detrimental to the future of all those on board. This is not a view that is necessarily informed by the facts, however.

Those who look at the data on the progress of mankind reach a more upbeat conclusion than ecological economists and Vice President Gore. Capitalism delivers the material goods and services that consumers want.

At the same time, profit maximization requires cost minimization, which means that resources are *conserved*, not wasted, in a market economy.

Several analyses support the contention that democratic capitalism is not the enemy of the environment. One of the best known of these studies is an examination of cross-national data of 14 environmental indicators by Princeton University economists Gene Grossman and Alan Krueger. Their analysis concluded:

Contrary to the alarmist cries of some environmental groups, we find no evidence that economic growth does unavoidable harm to natural habitat. Instead we find that while increases in GDP may be associated with worsening environmental conditions in very poor countries, air and water quality appears to benefit from economic growth once some critical level of income has been reached. The turning points in these inverted u-shaped relationships vary for the different pollutants, but in almost every case they occur at an income of less than \$8,000 [1995 dollars].

Indur Goklany refers to these inverted U-shaped relationships between economic growth and environmental impact as “environmental transitions.” He suggests that society is on a continual quest to improve its quality of life. But quality of life is determined by a number of social, economic, and environmental factors.

In the early stages of economic and technological development, a society attempts to improve its overall quality of life by placing a higher priority on increasing affluence. Some environmental degradation will be tolerated because greater affluence provides the means for obtaining basic needs and amenities (e.g., food, shelter, water, and electricity) and thus reduces the most significant risks to public health and safety (e.g., infectious and parasitic diseases, child and maternal mortality).

Eventually, environmental problems move up to a higher priority on the public’s list of unmet needs, i.e., environmental quality becomes a more important determinant of the quality of life. Moreover, affluence makes it possible to support additional research and development of new or improved technologies and to purchase these technologies. Technological change and affluence reinforce each other, i.e., they co-evolve.

Conclusion

Vice President Gore presents his “New Global Eco-Nomics” to right what he perceives is wrong with mainstream economics and market economies. By and large, the principles he proposes would have little impact on any shortcomings of actors in market economies to incorporate environmental harms into their decision making calculus. But his proposals, if acted upon, could result in slower global economic growth and reduced opportunities for people to improve their lot in life.

The coherent set of beliefs and principles behind the New Global Eco-Nomics is supplied by ecological economics. This set of principles is clearly at odds with mainstream market economics. The ecocentric, ecology-first viewpoint of ecological economists leads them to look upon economic activity as the enemy of nature.

Market economists acknowledge that unbridled capitalism could cause significant environmental damage. Their prescription, however, isn't to destroy the incentives to innovate and to take risks, but rather to politically alter the rules of the game to incorporate concerns for the environment into economic decision making.

Democratic capitalism has advanced around the globe during the past two decades, proving to be a boon, not a bane, to the societies fortunate enough to have embraced this system. Humanity is not the only winner as a result of the global spread of democratic capitalism—many nations have reached the point in wealth creation that enables them to provide environmental protection through technological developments that can, in turn, benefit people and their natural surroundings worldwide.

The institutions embodied in democratic capitalism appear to provide the best mechanisms for meeting the challenge of providing greater material well-being for people and better protections for nature. Instituting a “New Global Eco-Nomics” would be an impediment to both of these paramount objectives.

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