Adjusting GDP as a Measure for Economic Growth and Public Wellbeing:

How Environmental Politics Can Benefit from Economic Policy Change

Arianna Harding

Graduate Student in Public Administration

Bowling Green State University

Bowling Green, OH

**Stuck in Outdated Economic Institutions**:

The current economic theory paradigm is based on an outdated model from the eighteenth century. Mainstream economic theory is not adequate to describe or model the ever-growing, modern world of today. Ecological economics has become a new trend in viewing not just the human aspect of the world, but also how nature fits in to economic development. The consensus for ecological economists is that “the future of our present economic system seems to be predicated on the false assumption that throughput (how nature limits growth) can grow indefinitely” (Speth 2011:6). The two most distinct differences between the mainstream economic paradigm and the emerging ecological economic paradigm are 1.) their views on the world as being either empty or full and 2.) the measurement of economic production without consideration for human welfare by Gross Domestic Product (GDP).

American citizens often like to consider themselves as political and economic activists. The public seems to abhor government interference with the free market, yet the government interference within the economic system provides regulation of businesses and ensures that they uphold certain standards. One component of government intervention not seen by the people is how government action promotes producers to cover up external costs which are ultimately burdens upon the public. James Galbraith, an economist, is often mentioned to advocate for fair prices in the market; prices that include negative environmental externalities. He has a “message on standards…’do it directly…You want cleaner air, fewer carbon emissions? Pass laws, staff the agencies, give them budgets and the mandates that they require to make the changes that we need’” (Speth: 2012:106). Galbraith’s argument for viewing the broad concept of environmental fair prices falls under one of the major differences between mainstream economics and ecological economics. Mainstream economics view the world as “empty” because the traditional economic approach is to exclude “potentially problematic relations between human economic activity and the natural environment in the aggregate” (Hahnel:2011:4). Mainstream, or traditional, economics do not factor in how the environment responds to growth. To them, the natural world is linear.

On the other side of the argument, ecological economists believe that the world is full. Instead of not considering the wastes and the pollution from production of goods and services, ecological economists study how such harmful byproducts affect the environment. This new way of economics utilizes the concept known as systems thinking. Systems thinking views the world as a closed system and ecological economists use this type of thinking to learn “the interactions among the components of a system”, specifically the inputs of energy and the outputs of waste within that system (Chapin:2009:9). The systems thinking concept also highlights the second difference between traditional economics and ecological economics, how ecological economics uses the laws of thermodynamics and other scientific notions to understand economic theory. Thermodynamics is important to economics because it gives theorists, economists, and scientists an understanding of what is physically possible. Cato believes that “much of subsequent economic theory has consistently failed to keep up with…our constantly improving scientific understanding of the physical universe within which economic activity takes place” (Cato 2011:1239). From an economics perspective, applying the laws of thermodynamics to any process where energy is utilized (for example, using machines to build cars) shows economists that energy will not end up in the goods that are being produced and ultimately, the waste products of industry need to be taken more seriously.

**An Example of Current Economic Policy Failure**

In 2004 Hurricane Katrina devastated New Orleans, killings thousands and leaving millions homeless. The government is often criticized for the disastrous efforts put forth to clean the city up and to protect the people from succumbing to such dangers in the first place. Hurricane Katrina is an example of how ecological economics could have been a better economic tool to solve the policy dilemmas that occurred during that time. “The traditional economic approach neoclassical definition of the economic problem as choice under conditions of scarcity in the presence of unlimited wants – which is from their perspective solely an efficiency problem” (Farley 2007:348). The problem with how Hurricane Katrina was handled by the traditional economic paradigm was that the problem of the natural disaster was not viewed in the global systems approach; they did not include systems thinking into their policy decision making. The whole approach of solving the Hurricane Katrina issue was unsustainable from the unjust distribution, all the way down to the inefficient allocation of resources. The traditional economic model also believed that the “benefits of wetland loss exceed costs” (Farley 2007:347) and wasn’t a sufficient economic policy tool to solve the crisis in the aftermath of Katrina.

Using the ecological economic approach, many factors that were ignored during the traditional economic model’s calculations are included. “Loss of wetlands and the services they provide (such as storm protection) received some media coverage (e.g. Hirsch, 2005), as did oil depletion and the excessive waste emissions behind the ‘toxic gumbo’, though coverage of the role of natural capital depletion in the Katrina tragedy left much to be desired” (Farley:2007: 348). Overall, the relationship between hurricane intensity and global warming was also studied through the lens of ecological economics, which provided evidence that more governmental investment in human capital and public goods would have helped assuage the effects of Hurricane Katrina. The ecological economic perspective is certainly a paradigm to consider in the broad scope of economics. In the case of Hurricane Katrina, evidence of the public’s outrage to the inadequate economic policy response of the government shows that a change is indeed necessary in the economic world.

**Macroeconomics and Microeconomics: Where GDP Fails the Most**

Macroeconomic performance is measured by GDP and is calculated in monetary units. The flaw of GDP in how macroeconomic performance is measured, by monetary units, is the most important weakness of this highly utilized measurement tool. “It has often been treated as if it were a measure of economic well-being” (Stiglitz et al. 2009: 13). The idea of GDP is to measure economic production, when really it should shift to focus on measuring human wellbeing. Human wellbeing goes hand in hand with sustainability; therefore GDP should be modified to incorporate sustainability within its scope.

GDP has been deemed an unfit metric to measure wellbeing on economic, social, and environmental levels. An example of how GDP fails to calculate and measure the important sustainability topic of human well-being is living standards, as well as the distribution of wealth, are not imperative. Average income and consumer consumption are important parts to GDP, yet they leave out necessary information regarding distribution of wealth. “Median consumption (income, wealth) provides a better measure of what is happening to the ‘typical’ individual or household than average consumption (income or wealth)…it is also important to know what is happening at the bottom of the income/wealth or at the top” (Stiglitz et al 2009: 14). This information should be connected to the different levels of “material living standards: income, consumption and wealth” (Stiglitz et al 2009: 15). This means that providing information on wealth distribution and other factors can help guide economists and policy makers to a better understanding of the quality of life. For public policymakers to create a greener economy while using GDP , they must factor in human welfare and the distribution of wealth to create successful sustainable policies (Barbier et Markandya: 2013). Currently, GDP is lacking in such an area and the whole picture of human wellbeing in terms of distribution of wealth is unfinished.

Human welfare is only dependent upon a healthy environment. Without clean air, water, or soil, people would be worse off in terms of their wellbeing. In the microeconomic context, a type of market failure that potentially could adversely affect human welfare and wellbeing is the concept of environmental pollution. Currently markets, nor GDP, do not account for externalities, negative or positive, which are “called ‘third party effects’ because they affect individuals or groups other than the market participants” (Harris et Roach 2013:35). The more that humans produce and reduce natural resources, the higher GDP rises. This is not a sustainable metric! Environmental pollution is a key market failure that ultimately leads to harmful impacts on human health, welfare, and the overall environment.

Environmental pollution is a market failure that many environmental economists discuss. “While pollution is a by-product of industrial production, when it reaches the level at which causes unacceptable social consequences it is an example of market failure…while markets may be an efficient way of allocating goods between individual consumers, they can face problems with negative impacts at the level of society as a whole” (Cato 2011: 2662). The negative externality of pollution is not factored in to the production cost of a good because of a concept from Barbier and Markandya known as “institutional inertia”, where existing social order is abided by fixed economic rules and policies (Barbier et Markandya 2013). This concept makes it difficult for environmental economists to introduce new methods and policies aimed at integrating externalities into the market. Another reason why externalities have not been added to the market theory model, or in the measurement criteria for GDP, is the long held assumption that externalities are rare, which is currently being tested by environmental economic theorists (Hahnel 2011). Adding externalities to the price of goods would mean that “sellers can reasonably hope to sell more and/or sell at a higher price…and competitive pressures will drive producers to do both” (Hahnel 2011: 56). An essential characteristic of markets is that markets are competitive; which means having a competitive and sustainable market from internalizing negative externalities would allow for a new market model without societal imbalances and the lack of competition (Ikerd 2012). Having the market failure of negative externalities, such as pollution, addressed will benefit society as a whole and allow producers to still maintain a profit.

**Alternative Answers to GDP?**

Since GDP is flawed in the area of only measuring economic production rather than human welfare, there are multiple types of solutions to GDP. Some, like the Commission on the Measurement of Economic Performance and Social Progress, offer various potential adjustments towards improving how GDP is measured. Others, like Herman Daly, provide an alternative measurement to GDP. Daly advocates incorporating measures of natural capital and using a measurement known as Net Domestic Product NDP. “Natural capital should be treated in the same way that produced capital has been traditionally treated…we should account for the fact that when we produce economic goods and services we often produce as joint products economic bads, pollution, as well” (Hahnel 2011: 38). While GDP may be superior to NDP as a metric for overall production and as forecasting mechanism for economic activity (as it calculates depreciation as part of value added), NDP is “often used as a measure of sustainable growth, in the sense that it subtracts depreciation from GDP to indicate the amount of current product/income that should be set aside for the using up of capital stock in production for the current period (Spant 2003: 40). NDP is crucial to the economic endeavors of humans because it calculates depreciation in natural capital in the same way that produced capital is treated.

NDP allows economists to account for the fact that producing goods and services within the market creates “joint products” like economics bads (pollution) and that the damage from pollution should result in a reduction in NDP. For example, the Exxon Valdez oil spill which occurred in Alaska in March 1989 was a joint product of

“transporting much of the oil consumed globally in large tankers that always pose a risk of a shipping accident…not only was no estimate of the noncommercial damaged caused by the Valdez spill subtracted from Alaska GDP that year because we do not subtract for bads, but the defensive expenditures of paying people to wash otters, seals…and clean up beaches was added to Alaskan GDP which ironically enjoyed quite a boom in 1989 due to the Valdez Spill!” (Hahnel 2011: 39)

NDP would be a better way to determine human welfare if externalities like pollution are measured in economic production. NDP also requires a straightforward calculations process, making it a difficult metric for governments to fudge the numbers. NDP could potentially be combined with the upcoming governmental approach to push the economy towards green and sustainable ideals “in which material wealth is not delivered perforce at the expense of growing environmental risks, ecological scarcities, and social disparities” ( Barbier et Markandya 2013: 137). Thus, the human welfare and public wellbeing would easily be accounted for from a NDP metric and the economy would also be in the path to becoming more environmentally conscious.

However, NDP is not a perfect solution. NDP needs to grow as fast as the population grows and if it fails then the average person is not progressing. One solution to this scenario is to simply divide NDP by population which would result in the per capita NDP (average). But if NDP is measured accurately and the depreciation of produced and natural capital, as well as the economic bads (i.e pollution) have been accounted for, there’s still the question of whether NDP truly accomplishes the goal of accounting for sustainability for future generations.

Another alternative to GDP that is being discussed in ecological economics is the Genuine Progress Indicator (GPI) which is “designed to measure the economic welfare generated by economic activity, essentially counting the depreciation of community capital as an economic cost” (Kubiszewski et al 2013: 57). GPI begins with Personal Consumption Expenditures (part of GDP as well) yet adjusts this by utilizing 24 various components, such as income distribution and environmental costs, and also separates activities that reduce welfare from those who improve it resulting in a better metric to approximate sustainable economic welfare.

GPI as an economic metric has been studied in various countries which all indicate that GDP is failing to correlate with economic welfare increases. Red flags have been made by numerous international leaders due to this concern “on July 19th, 2011, the United Nations (UN) passed a resolution urging governments across the globe to start measuring happiness and well-being ‘with a view to guiding public policy’. The UN recognizes that GDP is an insufficient guide for safeguarding the well-being of people or our future” (Musikanski et al. 2013). This policy change sparked a U.S. movement known as the ‘Happiness Initiative’ which is built upon many of the sustainability indictors found within GPI and derived from a similar movement of Bhutan’s, who was the creator of a happiness index for the U.N. The Happiness Initiative surveys every state in America and found surprising results. For example a report from Seattle showed that “youth, ages 19–24, were the least satisfied age group. They scored low in effect, satisfaction with life, time balance, the environment, and material well-being. This differs from previous results in well-being research…environmental decline and unemployment rates may play a role in the gloomier outlook among young people” (Musikanski et al. 2013). GPI’s aim to measure economic welfare produced by economic activity is built upon key factors, such as happiness, that many global leaders are beginning to find crucial as a social measurement of their people.

Nevertheless GPI does have its fallbacks. There have been many criticisms of GPI that mostly involve the valuation methods to estimate GPI indicators and that it assumes to much about natural and human capital. GPI advocates respond to such criticisms with proof that GPI is a viable alternative to GDP. On the account of GPI’s valuation methods, critics are wary of the use of cumulative costs on environmental items such as lost wetlands and long-term damage. GPI researchers use a “cumulative cost approach when calculating some environmental costs relates to their ‘strong sustainability’ stance on GPI adjustments” (Kubiszewski et al 2013: 58). For example, GPI measures economic welfare from economic activity. Economic activity is meant to create more economic welfare than what natural capital can provide, which concludes that GPI needs to subtract permanent losses of natural capital to incorporate GPI’s strong sustainability stance.

Another criticism of GPI is the assumption that human capital and natural capital are substitutes for each other. GPI advocates believe that one can be substituted for the other from a welfare perspective. But this does not conclude that total economic welfare is sustainable because GPI was not created as a strict sustainability measure. Ecological economists suggest including ecological footprint indicators within GPI to better understand if current economic welfare is sustainable. While GPI is a promising option when compared to GDP, this metric does require much improvement and more research to become a more practical alternative.

**Adjusting GDP: Another Possible Alternative**

While NDP is a favorable model, there are those who believe that GDP shouldn’t be completely ousted as a metric for economic production; it just needs some tweaking. This metric was never designed to measure economic or social welfare. The environmental crisis that the public faces today is looming over society like a dark, polluted cloud. While this paper has discussed the multiple areas of environmental and ecological economics in regards to economic policy, GDP can be used to create change in other policy areas as well, namely sustainability policies. Adjusting GDP to measure sustainability will ultimately help human wellbeing and public welfare, as well as push the economy towards a more “green” state. “Sustainability involves the future and its assessment involving many assumptions and normative choices” (Stiglitz et all 2009: 16). The issue of integrating sustainability within GDP is very complex. Incorporating sustainability and environmental initiatives within GDP will ultimately lead to a board of sustainable indicators, the indicators being either social indicators (raised social benefit of wellbeing) or physical indicators (a decrease in environmental degradation).

The indicators used to assess sustainability under the GDP metric will only be successful as long as the list of indicators is not too large. Just as in economics there are trade- offs:

“Larger number of indicators may better reflect the diversity of issues and individual situations, but an excessively large number may provide a confused picture of the overall situation. On the other hand, a single figure mixing a large number of socio-economic phenomena provides an inadequate basis for appropriate policy measures” (Stiglitz et al 2009)

The Commission on the Measurement of Economic Growth and Social Progress is one of the first groups to address the necessity for an adjusted GDP, since the current GDP fails to integrate human wellbeing and sustainability within the factors of economic production. The Commission made many recommendations in their report, involving various solutions to adjusting the GDP metric. They recommended that the two issues of sustainability and human welfare, while complementary, should be examined separately. This allows the two topics to be looked at critically without any potential overlap. Another recommendation is that the indicators should inform economists about the status of wellbeing. Currently, human welfare and wellbeing are not taken into account which destroys the picture of the global economy of necessary societal images. For example “GDP classifies ecological catastrophes as blessings for the economy, because of the additional economic activity generated by repairs” (Stiglitz et al 2009: 78). Such a disconnect provides an inaccurate account of human wellbeing and the environmental degradation from a natural disaster.

Another recommendation was for a monetary index of sustainability that should focus on economic aspects from sustainability. This goes along with including natural resources and externalities within the market model. Having the GDP include this in its overall economic measurement would be a necessary metric. This is also known as “greening” and could potential push the global economy towards a greener perspective. Finally, the Commission recommends that physical indicators deserve a follow-up to ensure that those indicators are being calculated and that public policies are created to ensure that the indicators are monitored. One example of a follow-up would be the ecological footprint concept, in which a nation’s ecological and environmental impact is measured in terms of consumption, degradation, pollution, and many others. The Commission did an immensely detailed job in their 2009 report to adjust the GDP to include human wellbeing and sustainability within the economic production analysis. Such strides towards a greener economy will only lead to a more sustainably conscious outlook by the public.

**Environmental Politics Change from GDP Adjustments**

The current GDP metric is a poor measure of economic and public welfare. The whole concept of measuring economic production and omitting factors such as sustainability and human wellbeing is strictly outdated. The notion that countries that are wealthier and produce more are inherently better off than countries who produce less, needs to be addressed. The fact is that “the data indicates that money can’t buy happiness or satisfaction in life among the more affluent…income is now a weak surrogate for well-being in wealthy nations” (Speth 2011: 54). The notion of money and happiness is also mentioned within the Commission’s report on adjusting GDP because this is another obsolete economic concept from a different time.

The problem no longer is, how can our nation get wealthier, the problem now is how can our nation survive with scarce resources? Having the GDP include human welfare, sustainability, and environmental indicators, will allow the global economy to face this issue head on. The government needs to play a stronger role in creating a more sustainable economy, “in which material wealth is not delivered perforce at the expense of growing environmental risks, ecological scarcities, and social disparities” ( Barbier et Markandya 2013: 137). America is deep within the way of thinking that money can buy happiness and that goods are limitless. But sadly, resources to produce those goods are dwindling and happiness is not so easily bought. Environmental politics can very well change how the future economy, and society, operates.

Environmental policies take focus away from consumption and focus more on conservation. Environmental policies would also place more accountability on the government, as well as the businesses that the government regulates. With a revamped GDP and a global economy pursuing a more sustainable institutional design, environmental politics’ role will change drastically, becoming a leader in policy decision-making, rather than an afterthought (as seen in today’s society). Democracy can allow for sustainable initiatives to be incorporated within its organization. This will come about from direct democracy- citizen lead rather than interest group lead-which will stem from a more sustainably accepting society. Ecological environmentalists believe that transforming the measure of progress to include a fuller, more precise vision of where a nation is currently and where it is heading will be accomplished with a set of indictors. These indicators are efforts to “develop measures of true economic progress that correct and adjust GDP so that we can gauge sustainable economic welfare in society…indexes of environmental conditions and trends…measures of subjective well-being such as happiness” (Speth 2012: 132-133). These efforts to incorporate sustainable indicators within GDP and other economic metrics show a promising model for future generations.

The issue with environmental politics is that all these constructive and beneficial ideals needs to come together to form such a green society. One cannot be accomplished without the other. Environmental politics needs to have a strong movement behind it in order to persuade the American public, as well as the global public, that a change needs to be made. Environmental economists and their ideals are necessary in order to pursue an environmentally conscious society. The adjustments to GDP, the overhaul of outdated economic ideals, and the use of environmental policies from the Federal government are all key solutions to the environmental crisis facing the planet.

Bibliography:

1. Barbier, Edward, and Markandya, Anil. A New Blueprint for a Green Economy. London and New York: Routledge, May 2013.
2. Cato, Molly Scott. Environment and Economy. London and New York: Routledge, 2011.
3. Chapin, F. Stuart, III; Folke, Carl; and Kofinas, Gary P. “A Framework for Understanding Change.” In Principles of Ecosystem Stewardship: Resilience-Based Natural Resource Management in a Changing World, pp. 3-28. Edited by F. Stuart Chapin, III, Gary P. Kofinas, and Carl Folke. New York: Springer, 2009.
4. Farley, Joshua, Daniel Baker, David Batker, Christopher Koliba, Richard Matteson, Russell Mills, and James Pittman. "Opening the Policy Window for Ecological Economics: Katrina as a Focusing Event." *Ecological Economics* 63.2-3 (2007): 344-54. *Sciencedirect*. Web. 5 Feb. 2015.
5. Hahnel, Robin. Green Economics: Confronting the Ecological Crisis. Armonk, NY: M.E. Sharpe, 2011. Meadows, Donella. “Leverage Points: Places to Intervene in a System.” Hartland, VT: The Sustainability Institute, 1999
6. Harris, Jonathan M., and Roach, Brian. Environmental and Natural Resource Economics: A Contemporary Approach. 3rd ed. Armonk, NY: M.E. Sharpe, 2013.
7. Kubiszewski, Ida; Costanza, Robert; Franco, Carol; Lawn, Philip; Talberth, John; Jackson, Tim; and Aylmer, Camille. “Beyond GDP: Measuring and Achieving Global Genuine Progress.” Ecological Economics 93 (2013): 57-68.
8. Musikanski, Laura, and de Graaf, John. “The Happiness Initiative: The Serious Business of Well-being.” Solutions 4 (February 2013): <http://www.thesolutionsjournal.com/node/1221>
9. Spant, Roland. "Why Net Domestic Product Should Replace Gross Domestic Product as a Measure of Economic Growth." *International Productivity Monitor* 7 (2003): 39-43. *Researchgate.net*. Web. 31 Mar. 2015. <www.csls.ca/ipm/7/spant-e.pdf>.
10. Speth, James Gustave. America the Possible: Manifesto for a New Economy. New Haven, CT: Yale University Press, 2012.
11. Stiglitz, Joseph E.; Sen, Amartya; and Fitoussi, Jean-Paul. “Report by the Commission on the Measurement of Economic Performance and Social Progress.” 2009.