Choosing Priorities To Balance Economic Growth And Environmental Protection

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Introduction

It is a simple truth that we cannot solve every problem at once, therefore the key to prosperity is learning to set priorities wisely. At any one time we face unlimited wants and needs, and we only have scarce resources for achieving them. Much of western economic theory has been devoted to the question of how to use the price system and market mechanisms to guide investment, production, and the distribution of goods and services across members of society, so as to make optimal use of resources, and align priorities in production with the values and desires of ordinary people. The material prosperity of western countries shows that economic theory has been successful in setting priorities to promote technology and wealth creation.

But today there are two areas of concern that have lead to questions about whether the western economic model is still valid. The first is the ongoing global financial crisis that threatens people, industries and whole nations with bankruptcy. Second, many people are concerned about ecological and environmental threats arising from economic growth. Both problems have roots in the same underlying cause: economic systems can be distorted to allow one group of people to push the costs of their actions onto other groups of people. Is it possible to resolve the global financial crisis, return to economic prosperity, and achieve

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Notes on sources for the information presented herein are at the end of the paper.

harmony between the pursuit of wealth and environmental protection? The answer is yes, as long as we follow the principle that people should, as much as possible, pay the full costs of their own actions. In this way we will be in a better position to set priorities according to logical and scientific principles and achieve balanced prosperity.

US Financial Crisis

The US financial crisis arose in 2007 and 2008 when property values suddenly dropped, causing a large collapse in the value of leveraged instruments. The bubble in US housing prices was caused by several factors.

- The creation of Government Sponsored Enterprises (GSE's) called Fannie Mae and Freddie Mac, and their expansion in recent decades, allowed banks to originate large volumes of mortgages with inadequate due diligence, on the expectation that they would sell the mortgages to the GSE's and thus offload the risk of default onto someone else.
- Revisions to the 1977 Community Reinvestment Act under both the Clinton and Bush administrations set requirements on banks to make larger and large portions of their housing loans to low-income groups, even those with a high risk of defaulting. Banks were able to shield themselves from the risk by re-selling the mortgages either to GSE's or to investors in the form of Mortgage-Backed Securities.
- The failure of US regulators in the 1980s and 1990s to control the shadow banking system, even as it grew to be larger than the conventional banking system, allowed unscrupulous dealmakers to sell low quality commercial paper to retail investors without properly disclosing the risks, and allowed firms like AIG to profit from selling insurance on such investments (in the form of credit default swaps) without setting aside adequate capital to honour the contracts.

In each of these cases, problems arose when one group got to profit by passing the costs of their actions onto others. The operation of GSE's allowed banks to pass onto taxpayers the costs associated with their failure to do due diligence. Government revisions to the Community Reinvestment Act, by setting quotas for the portfolio of loans that had to go to low-income households, offloaded the government's cost of achieving its social goal of widespread home ownership onto banks, who offloaded it onto taxpayers. And the failure of regulators to control the sale of credit default swaps as if they were insurance allowed investment dealers to offload the cost of insuring risky assets onto investors who did not know what they were buying.

When large numbers of Americans realized they were in mortgages they could not pay and their homes could not sell at a profit, mass defaults began and trillions of dollars of leveraged assets collapsed. The US economy has never recovered. The Federal reserve sought to keep the banks afloat by tripling the monetary base, from about $900 billion to $2,700 billion. Much of that new money was used to buy toxic assets from banks, which the Fed will now have considerable difficulty selling. If it cannot sell it at the right time, the result will be inflation, thus transferring the costs on to households in the form of higher consumer prices. Meanwhile the banks are not lending the new money out, they are largely holding it on reserve at the Fed in order to preserve their capital balances.

European Sovereign Debt Crisis

In the EU, rather than leveraged real estate being the cause of financial stress, the source of the problem is the volume of short term sovereign debt held by private banks. The European Central Bank (ECB) relies on repurchase agreements for government bonds to conduct much

of its monetary policy. Banks can buy sovereign debt of any EU member state and present it to the ECB as collateral for loans. The ECB set rules that favoured short-term sovereign debt over long-term (Boone and Johnson 2011) which led banks to purchase such instruments aggressively in order to build up their long term loan portfolio, a profitable trade for banks that in turn encouraged EU governments to issue short term paper in large quantities. Smaller EU member states were thus shielded from market signals regarding the risk of the debt load they were accumulating, and investors came to believe there was an implicit guarantee that the ECB would never allow a sovereign state to fail. Thus the cost of paying for expansion of government services in smaller EU states was transferred onto taxpayers in larger EU states, who unwittingly became the guarantors of high risk debt, thereby allowing small EU governments to pass on much of the risk-related cost of financing their operations to others. The current sovereign debt crisis in Europe has arisen as those "others" (namely German and French taxpayers) are now resisting paying bills as they come due.

Internalizing costs and setting priorities

Each crisis arose when one group of people were able to profit from shifting their costs onto another group. Economists call this an "externality". It distorts the outcome for both groups, since the ones avoiding paying the costs are encouraged to undertake excessive amounts of the activity, and the ones who shoulder the cost are unable to signal the proper prices for risk and resource consumption. The result was an economic bubble. In the US, real estate was the bubble asset, while in Europe, sovereign debt of smaller states was the bubble asset.

The bubble bursts when buyers disappear at current values, and a sudden write-down in valuation occurs. In the case of bonds, this takes the form of a jump in the total interest rate,

including the risk premium (implied in the price of credit default swaps) which forces down the principal value of the existing bond.

A drop in an asset's price means wealth vanishes for the owner of the instrument. US real estate values plunged in 2008 and 2009, and European banks are currently surveying the collapse of short term sovereign paper from some EU states. In the US case the problem was compounded when the revalued housing stock was not properly written off, instead bank liabilities were transferred onto the Federal Reserve balance sheet at face value as the Fed undertook two large rounds of so-called Quantitive Easing. This shielded banks from facing the consequences of their own bad lending decisions, and shielded governments from the consequences of their own bad policy decisions, but it also means nobody is required to start setting priorities and resolving the underlying problems. Banks have also held off liquidating non-performing real estate portfolios, and many questions remain about how accurately their capital assets are valued even today. Because of the risk to their own balance sheets of underperforming loans, US banks are not expanding credit, and the economy is stalled.

Setting priorities for financial reform

To resolve the US and European crises will require two painful reforms. First, the principle must be enshrined that people who profit from an action must bear the costs of that action. Rules must be set so that private sector firms and banks that profit from financial transactions cannot secretly transfer risk onto taxpayers or other investors, and it also means that politicians who gain popularity by promising generous spending programs must not be allowed to deceive their citizens by secretly transferring the costs onto other countries or onto future governments. Second, when a bubble has popped, decision-makers must realistically face up to the task of writing off over-valued assets and revising downward some income

estimates. This, in turn, will mean re-doing operating budgets and setting priorities so that revenue and spending come back into balance. A decision not to do this in response to a crisis will merely set the stage for another crisis later on. Finding permanent solutions requires setting priorities and living within our means, and it is at this that western economic theory is best suited.

External costs and environmental stress

The financial crisis arose because people believed we had more wealth and income than was actually the case, in other words, we believed we were better off than we actually were. With regard to natural and environmental resources, there is also a concern that firms and consumers are not paying the full costs of their actions and natural wealth is being dissipated. But pollution and resource extraction have been heavily regulated in western countries for the past few decades, so people are paying the full costs to a considerable extent, even if they don't realize it. The tendency historically has been opposite to the financial crisis: namely we keep thinking we are worse off than we really are. Historically, there is a tendency to believe that things are getting much worse, when they are in fact getting better. In the 1970s the "Limits to Growth" school predicted we would be almost out of food, land and minerals by the year 2000, even though we were on the verge of technological breakthroughs that led to large increases in food productivity and resource abundance. In the mid-20th century prominent American writers warned that humans were a "cancer" destroying the earth and all its resources, but the nations that have done the best since then at preserving the environment have also been the ones whose economies grew quickest. In the early 1900s the "Conservation Movement" in the USA, of which then-President Teddy Roosevelt was a member, warned that the world would soon run out of wood, oil and coal, yet new discoveries and careful management led to abundance of all these resources. Nearly 2,000 years ago the

philosopher Tertullian wrote that the world was already overcrowded and resources were too scarce to support the population.

With regard to pollution, the UN Brundtland Report in the 1980s, like many others at the time, warned of ecological breakdown and the unsustainability of economic growth due to damage to the air and water and land from industrial activities. Yet in the US, Canada and Europe, new technologies were already being introduced that have led to clear reductions in pollution levels even while the economies have grown.

So while we must listen to warnings of environmental damage and resource scarcity, we must not panic, instead we should look at the issues objectively and scientifically.

Sustainability and non-renewable resources

Economic theory tells us that when we use non-renewable resources like oil and minerals, as long as we invest some of the proceeds in new forms of capital and technology, we can maintain sustainable economic growth and leave the next generation as well off or better off than we were. The specific principle is called the "Hartwick Rule", named after my Canadian colleague John Hartwick, who derived it in 1977. It is a formula that explains how much of the profits from using non-renewable resources need to be invested in alternative market assets in order to ensure a sustainable consumption path. The key is that the people who profit from resource development must pay for the investment in replacement assets. This internalizes the cost of maintaining sustainability and prevents over-exploitation of our natural wealth at the expense of future generations.

Economic growth and air pollution

Technology is available to reduce emissions of particulates, sulfur dioxide, carbon monoxide, many volatile organic compounds and, to a lesser extent, nitrogen oxides. Research has shown that, in the United States, passage of the Clean Air Act in 1970 and its amendments in the 1980s and 1990s helped stop pollution from growing as the economy grew, but the development of new pollution control technology was necessary to allow air pollution to actually fall in the post-1970 period. Once again the key is to make sure that the people who profit from the industrial and consumer activity that generates pollution also pay the cost of controlling the pollution. Economic principles have been derived to show how policies can be implemented that minimize the cost of achieving environmental goals while still allowing for healthy economic growth. In the case of environmental policy, there are unfortunately many policy initiatives that cost a lot but do not accomplish much. This is an area where a more scientific approach to the economic and policy analysis is needed, and more economists need to be trained in the kinds of analysis that lead to efficient outcomes in environmental protection that provide a proper balance with priorities for economic development.

Global climate change and fossil fuel consumption

When we turn to the specific case of carbon dioxide, we must note that it is not a harmful gas like sulfur dioxide, instead it is a natural part of the air, like oxygen and water vapour. We only talk about reducing carbon dioxide emissions because of concerns they affect the climate, and even then the issue only matters if it is a big enough effect and the changes are harmful. But if we are going to reduce carbon dioxide emissions, we face the problem that the technology does not exist yet to reduce them without reducing fossil fuel consumption and economic growth, which is very costly. We also face the dilemma that the same computer models that say carbon dioxide emissions may cause harm to the people of the Earth due to

climate change, also say that most of the emission reduction steps we could afford will have so little effect that they are not worth doing.

There is a parallel here to the development of agriculture in North America. When settlers arrived in the US and Canada in the 1700s and 1800s they destroyed the forests and grasslands of most of the eastern and central parts of the continent, plowed the soil and converted the land to irrigated agriculture. In doing this they changed the climate of the continent. But they also grew enough food to feed all the people and export it around the world. Even though the climate of North America was changed by introducing agriculture, nobody is proposing that Canada and the US should abandon its agriculture in order to undo the small climate changes it caused. The benefits of abundant, inexpensive food outweigh whatever costs we incurred from the climatic changes, and in any case it is hard to say whether the climatic changes were not in themselves beneficial in some respects.

The same reasoning applies to energy. Current discussion over global warming needs to keep in focus the benefits of abundant, inexpensive energy, especially for developing economies. I believe these benefits outweigh whatever costs are associated with climate change caused by the growth of energy consumption, and it is hard to say whether those climatic changes are entirely harmful in the first place.

Warnings in the 1980s about runaway global warming were based on climate model projections that turned out to be too pessimistic: recent comparisons between model forecasts and actual observations show that the climate does not appear to be as sensitive to greenhouse gases as was earlier feared. Data from weather balloons indicates that the troposphere over the tropics has not warmed significantly since the late 1950s, and the discrepancy with

climate models, which predict much more warming is statistically very significant. Likewise since 1979 data from weather satellites shows only weakly significant warming in the lower layer and none in the middle layer. Here also the climate models are significantly over-predicting warming. The tropical troposphere is a key region in climate models for identifying the sensitivity of the climate to carbon dioxide emissions.

This evidence suggests that priorities should focus on reducing air pollution, supporting economic growth, and waiting until new technology is available that can reduce carbon dioxide emissions at low cost without harming economic development. In this way we will achieve a sound and responsible balance between environmental protection and economic prosperity.

Source Notes by Section

Introduction

Western economic theory as it relates to resource allocation and scarcity is set out in standard introductory microeconomics textbooks.

US Financial Crisis

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US Monetary Policy: See St Louis Federal Reserve; Adjusted Monetary Base and Excess Reserves charts.

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Sustainability and non-renewable resources

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Global climate change and fossil fuel consumption

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