Basic Economics and Real World Important Decisions*

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The general perception is that when push comes to shove economists are not very useful (some would say useless) for real world important decisions. This state is partially caused by economists’ view of themselves and also by the extent to which economists forget simple economic concepts when combating economic sin. However, there are cases where economists, when pushed, have been extremely helpful and relevant in important decisions. Examples include Robbins, Kuznets, Waugh, and others.

What Do Economists Do?

In terms of how economists see themselves, Dan Bromley sees Lionel Robbins as the antithesis of someone who would contribute usefully to public policy decisions. “Economics, under the spell of Robbins, and aided by the ordinalist revolution led by Hicks and Kaldor, became transformed into a discipline that was preoccupied with individual choice as consumers. The individual became the focus of analysis, and the outcomes of individual actions, aggregated again in markets, became the truth rule by which all actions – including collective action in the realm of public policy – were to be judged.” (Bromley, 1998, p. 5). This view that is held of Robbins flows from his 1932 An Essay on the Nature and Significance of Economic Science.

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I first knew Robbins not as a theorist but as an historian of economic thought and
the author of the Robbins Report on Education. If you look at Robbins in the post
Depression era, he had been one of the leading economic planners for Britain during the
war, was chairman of the Financial Times, and headed the crown commission that did the
first comprehensive analysis of Britain’s educational system. His lectures on the history
of economic thought – especially those on Malthus – were wide ranging excursions into
broad economic, social and political concerns – not just the narrow disciplinary part of
economics. What Robbins sets forth in the American Economics Association Ely lecture,
“Economics and Political Economy” is for me the premium conceptualization of how an
applied economist might be effective and useful in important decisions (Robbins, 1981).
(This lecture by Robbins is also an ideal counterpoint to Friedman’s positive economics.)

Policy economists are often criticized on the basis that neutrality in such analysis
is unobtainable. Robbins deals with this in a pragmatic way. His suggestion is that “in the
application of Economic Science to problems of policy, I urge that we must acknowledge
the introduction of assumptions of value essentially incapable of scientific proof . . . I
recommend what I call political economy which, at each relevant point, declares all
relevant non-scientific assumptions”, i.e. values (Robbins, 1981, p.9). Robbins believed
that welfare economics didn’t necessarily add much to our understanding that would help
in real world decisions. His insistence that the losers actually be compensated if we are to
achieve what Pareto optimality is purported to achieve gives evidence of a real world
approach to distributional issues. This is the implication taken up as well by Schmitz and
Seckler in their classic article on the tomato harvester (Schmitz & Seckler, 1970). Among
other things, Robbins calls for more study of politics and history by economists to prepare themselves for a role in political economy.

From an historical context, the Depression and the Second World War produced a generation of economists who had to deal with things as they were and develop approaches and techniques to deal with severe national problems. There were two institutions that were path breaking in their applications of economics to the problems of the day. One was the Bureau of Labor Statistics in the Department of Labor and the other was the Bureau of Agricultural Economics in the Department of Agriculture where Henry Wallace was Secretary of Agriculture. The group at the Bureau of Labor statistics, including Kuznets and Leonteif, who labored to find ways to represent the economy and help inform about possible policy directions is one example. An example on the agricultural side is Waugh, exemplified by his long running discussion over price stability with Samuelson which was a cover for Waugh’s concern over high stable support prices for agricultural commodities and what this would do to expand production and increase the burdensome cost of agricultural surpluses (Waugh, 1944).

**Do Useful Economists Just Follow the Theory?**

In the real world, *judgment is important*. I have spent some time with people in the public utility industry and, as expected, there is a lot of discussion today of brownouts and blackouts. One effort is to improve control software so that when something begins to cascade controls will automatically shut part of the system down or adjust in other ways to isolate or solve the problem. The other source of control for such events is the skilled control room operator. These individuals, who have years of experience watching a system perform and misbehave over several decades have developed a sixth sense about
what the system is actually doing when the dials move in certain ways. Practiced econometricians (especially in the days when running a regression was a tedious exercise in calculations) could look at an economic issue and the data available and have a strong gut feeling about where relationships might be found and where the analysis would run into problems threatening validity. My bias is that we ought to try to use this judgment more and encourage its development in beginning economists. Maybe we should be encouraging hypothesis development before we dredge the data – maybe we should even be plotting the data for visual inspection more often.

Some years ago, I was involved in a project with the developers of the first spreadsheet software. I remembered those trained by Fred Waugh at ERS, like Herb Brown, who would look at data and extensively graph what seemed to be anomalies or just interesting relationships. These pictographs often stimulated better understanding of what was going on and what was important. My immediate thought on seeing early spreadsheet software was that this would be an incredible tool for visualizing data with more power and flexibility than possible when done traditionally by price analysts. Today, I’m afraid it is used less to discover what lies behind data than it is to push unknown data into mini-models. However, these mini-models can be critically important.

To be useful, economists must be able and willing to distinguish between elephants and breadbaskets. I learned this lesson from a highly skilled and very expensive consultant. The question was one of economic dispatch of electric generating units across a state. The northern part of the state had high cost electricity, the rest of the state less so. A big piece of the nation’s steel industry was in the northern part and under cost pressure exacerbated by the rates. If one allowed south/north transfer to move some
of the cheap electricity north, would it be worth doing given the costly system changes and compensation necessary to the southern consumer. We put the question out to bids with consultants and the comprehensive studies to assess this and plan its implementation would have cost about a million dollars. One consultant proposed using a short hand mini-modeling approach that would not give much detailed information about how to do it, but would give a good ballpark figure of whether it was worth doing at all - this study cost a hundred thousand dollars. By spending a hundred thousand, we found it was just not going to be worth making the change in dispatch. Once the system was re-jiggered and compensation made there was not much leeway left over to lower prices very much in the northern part of the state. Had it been worth doing, we still would have had to spend the million dollars to get the dispatch order, precise estimates on compensation, etc. Very often, in real world decision making, the decision maker has to know whether he/she is dealing with an elephant or a breadbasket. The economist usually wants to provide the equivalent of the precise dispatch order and the precise optimization of the situation. Less can be more in the early decision phase.

*Mini-models, pilot projects and similar tentative approaches can be most useful and generally are underutilized.* The negative income tax experimental pilots of the 1960s became a basis for some cost effective social policy (Bawden, 1970). Conservation pilot programs on the land help us determine how to get the most impact for the dollar spent. Today’s government budgeting procedures and a “rush to decision” mentality make these difficult to do. Economists have a role demonstrating the usefulness of such approaches. Often this can be done through a simple costing and/or risk analysis. Modest
expenditures on such efforts not only can illustrate the potential success of an action, but can also give critical information to lead one to the best action or program.

*The concept of opportunity cost, practiced by many in their personal lives, is often abandoned when important policy decisions are made.* Economists have amazingly important opportunities today to shape policy through hammering the message of opportunity costs. Energy policy is a primary candidate for using this straightforward and logical concept to try and bring economic sanity to what we do. The recognition that there is a demand as well as a supply for energy is an essential starting point. It amazes me that the “Better Economics Strike Force” has not defeated those dominating public policy information on this debate who refuse to recognize that there is a demand curve for energy that is not completely inelastic – both technically and economically.

At the time of the first oil embargo in the 1970s most prominent economists and many in the Nixon and Carter administration initially believed that demand was relatively inflexible and were proven wrong, on both technical and economic grounds (Peck & Doering, 1976). There is a point at which spending marginal public resources to reduce demand is cheaper per unit of energy created (saved) than stimulating domestic production. I believe that we are at that point for both liquid fuels and for gas fuels today.

In 1981, a study was undertaken for the U.S. Department of Transportation that opened both supply-increasing and demand-reducing options for analysis and asked what the costs of creating/saving liquid fuels were across both the supply and demand sides. Table 1 gives the results that were obtained.
Table 1. Resource Cost of Transportation Petroleum Equivalents in 1981

<table>
<thead>
<tr>
<th>Area of Development</th>
<th>Cost (US$/Barrel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shale Oil</td>
<td>32.21 – 36.73</td>
</tr>
<tr>
<td>Coal Liquids</td>
<td>40.69 – 46.08</td>
</tr>
<tr>
<td>Car Fuel Economy</td>
<td>25.37 – 38.23</td>
</tr>
<tr>
<td>Biomass</td>
<td>59.00 – 52.10</td>
</tr>
<tr>
<td>Railroad Electrification</td>
<td>22.82 – 24.88</td>
</tr>
</tbody>
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Whitford et. al. (1981)

Since 1981 there have been many changes in technology and in price levels. However, the interesting thing to note is that improving automobile economy and electrifying the railroads were the least expensive options to increase our available supply of petroleum through savings equivalent. My guess is that many of the same relative positions hold today. We need to recognize the obligation of the applied economics profession to march on Washington and insist that opportunity cost is important and that for liquid (and gas) fuels both public (and private) expenditure may be more effectively applied in demand reduction rather than supply enhancement? (Note: the Department of Transportation has not commissioned an update of their original study that I know of.)

We are in a similar position with respect to natural gas except the supply curve for the United States is even more fixed technologically than it is for U.S. oil availability. Several years ago the North American Continent lost its self sufficiency in Natural Gas (National Petroleum Council, 2003, p.7). From that point on, marginal increases in natural gas use have to be supplied by new productive capacity beyond current well production and by imports of liquefied natural gas (LNG) from overseas. The import of LNG is constrained by the greater difficulty of transporting and off-loading LNG as
compared with oil – something that is not likely to be remedied soon. Natural gas demand has increased over the last several decades in both absolute and logistical terms by allowing natural gas for the generation of electricity. This winter, in those cases where peak electricity demands are driven by winter heating and where natural gas generators supply the peak loads, we will be using natural gas heat to generate electricity to provide heat with the attendant loss of efficiency through the conversion process. Unlike coal, it would be equally possible to burn the natural gas directly in homes to provide heat.

The logistical concern with using natural gas to generate electricity is because summer peak electricity generation has become a significant summer draw on natural gas storage reserves that would previously have been accumulating and stored for the winter heating season. I.e. the summer excess production of natural gas was stored traditionally to meet winter heating needs that were beyond the capacity of the gas production flow during the winter. In the early 1980s, during a gas shortage, natural gas was not allowed for new electricity generation. Excess natural gas and the price collapse that followed the shortage resulted in rescinding this rule and the increased use of natural gas for electricity generation began for both environmental and financial (deregulation) reasons. The only way the natural gas supply/demand balance can be changed very much over the short term is by limiting the growth of demand or reducing it. A warm fall or winter does this. Prices in double digit dollars will certainly do this, but few want to talk about the equity or strategic impacts of this. Finally, the investments that will be made today in gas and petroleum supplies (or in substitutes like ethanol and bio-diesel) may be in jeopardy if prices fall again as they did in the 1980s. This specter haunts those who might invest more in increased supply today. The opportunity cost of these supply investments is high.
Making the horse drink when led to water is something economists have been concerned about from the beginning of economics. Whether we consider the Corn Laws or farm programs, governments have been creating ways to get people to behave and invest in certain ways through policy tools like trade restrictions, incentives, regulations and other means. Part of an economist’s stock in trade is supposed to be the ability to evaluate alternative cost effective ways to modify behavior when it is desired for public good (or private gain). The traditional way to do this in American agriculture is through incentives. I’m afraid that today we are preconditioned to think narrowly about this. Incentives are particularly important for conservation programs when considering things like effectiveness, cost and participation. The problem with having led horses to drink over many years is that one gets set on one way of doing this and the horse becomes conditioned as well. Take Figure 1, which could be a cumulative adoption curve by farmers for a conservation activity (Spinelli, 2005).
As you can see, some individuals perceive a return to the activity. This is the first 20% in the figure. This may be because they have their discount factor wrong (or right) or are just “greenies”. Beyond this group that perceives benefits, the remaining farmers see real costs in doing what needs to be done, and increasingly so. Thus, if farmers follow only economics, nothing happens beyond the point (approximately 20%) where the marginal returns to conservation go negative. The wise economist knows that, at a minimum, you have to offset the perceived costs to get those beyond the 20% to participate. So, traditionally we have put together programs that compensate those having perceived losses with offsetting cost payments, as in Figure 2. These compensation payments are the perceived cost curve’s mirror image.

![Figure 2: Perceived Marginal Return to Conservation](image)

However, there are other ways to think about this state of the world. We could change the perception of the marginal return to conservation or the perceived cost to the
farmer in ways other than through cost compensating incentive payments. Figure 3 shows an upward shift in the perceived marginal return to conservation.

![Figure 3: Perceived Marginal Return to Conservation](image)

This could be through information, technical assistance, or changing attitudes – because what is important here is *perceived* returns to conservation. We have a rich sociological literature from the Depression and post World War II period about the behavior of people on issues like conservation of resources that has not been revisited or redone recently. Kenneth Boulding, in his poem “The Old Agricultural Lag” reflected on it this way:

“For Anthropologists Tradition
Remains the major inhibition.
And peasants, oftener than we think,
When led to water do not drink.”

In whatever way a possible shift in the perceived marginal return to conservation might occur, that shift should be equally in our mind’s eye and our economists’ tool box to ameliorate the original perception of largely negative returns to conservation. After all, such a shift upward in perceived marginal returns to conservation allows traditional
incentives to be reduced to only having to equalize costs for the last 25% of the adopters (Figure 4).

![Figure 4: Perceived Marginal Return to Conservation](image)

Our history has resulted in our being hooked on cash compensating incentives. There was a strong rationale for this when farm programs were introduced in the 1930s because a primary objective was to get cash to rural areas. Today, in contrast, we need to look carefully at examples like the Australian experience with very sophisticated bidding systems that have farmers providing significant environmental amenities at a fraction of the cost of incentives (Eigenraam, et al, 2005).

Beyond getting the horse to drink, we have the question of what kind of drink? Strong arguments were made for the 1990 and 1996 Farm Bills to write cost effectiveness into the law with respect to the administration of conservation programs. Note; this was “cost effective” not benefit/cost. The rules for the 1996 new environmental quality incentive program (EQIP) involved scoring of environmental benefits and took costs into
consideration in awarding contracts. One result of this was very definite targeting that had geopolitical impacts. After several years of a targeted EQIP program, Congress expressed the concern that “not all our good folks can get money under the program”. Congress fixed this in the 2002 Farm Bill by specifically denying aspects of program administration that increased targeting and by expanding the program beyond the administrative capacity to target very effectively. The first question is whether we can accomplish more and/or more effective conservation through changing the perceived marginal return to conservation rather than just the traditional incentive payment? The second question is whether perception changing activity could also be targeted to increase cost effectiveness where it is not feasible to target incentive payments themselves to increase program efficiency?

*Should we punish the public for going beyond economic efficiency?* Economists calculate the point at which expenditure on pollution control equals the value of the damage from pollution and hail this as the efficient level of expenditure. If one continues to spend on pollution control beyond this point and damage declines you are foolish because you are spending more on control than the damage you might suffer. If you reduce your expenditure on pollution control so that the potential damage increases beyond the cost of prevention, you would have done better to spend more on control.

While this is a worthy goal, in reality it doesn’t always help us very much. At the beginning of the Reagan administration the acid rain issue became increasingly important politically. The pressure became great enough that to delay “precipitous” action a broad well funded research program was launched to both identify the smoking gun(s) and to estimate the extent of the damage and the costs to reduce the pollution. The research
community received resources to take this on and Congress was able to put off any
decision for a while. By the late 1980s public pressure to do something was getting
intense and Congress ultimately passed the clean air act amendments of 1990 - before the
research was fully done.

When the research was finally completed a few years later, it could be argued that
the public had forced Congress to clean up too much. On a marginal analysis basis, it
looked as though the public was spending more to clean up damage than the cost of the
damage. Should this worry applied economists? I think not. (Though, given my values, I
might have thought so if the public elected to spend less than the damage.)

The expenditure decision is a political decision. Thus, the operative question
becomes what might an economist do to inform rather than determine the debate? Seldom
can we calculate costs of damage and control that enumerate the full current and future
costs and damages very accurately. However, providing some rough estimate of the
potential marginal cost of damage and marginal cost of control can be most helpful. The
critical question may be; how far from an efficient pollution control and damage
reduction point do you get if you go more to one side or another on the expenditure
range? We must inform about the cost of straying from the efficient solution, but
recognize this may not be the determining factor in a political context. I use “political”
here in a non-pejorative way as a necessary civic process (Crick, 1963).

Another way to describe the essential task for applied economists is that of
informing decision makers and the public about cost effective ways to do the job, when
the public determines how much of the job it wants done, in spite of the fact it might not
be most efficient. The National Hypoxia Assessment was a classical example of this
(Doering, et al, 1999). Damages that might be monetized in the Gulf of Mexico were modest at best and not amenable to estimation. Costs of control (as with many marginal cost curves) stayed moderate at the outset and then accelerated quickly as increasing amounts of nitrogen losses were controlled. Environmental groups were calling for an 80% reduction in nitrogen losses into the Mississippi River. Our analysis showed that costs of control were relatively moderate up to nitrogen loss reductions of 20-30%. Beyond that, costs rose steeply. This is not a question of balancing costs of prevention (hard to calculate but able to ballpark) with costs of damage (almost impossible to calculate). For the moment, this makes the decision one that is likely to focus on cost effectiveness trade-offs. How does one trade-off the steeply increasing cost to the agricultural sector (and to food consumers) of controlling nitrogen losses in amounts beyond 30%?

*Is saying the simple truth something professionals are supposed to do?* Books on the Enron scandal point to the number of lawyers and accountants who didn’t want to be the ones to rain on the parade as a major cause of the debacle. What is really being asked is; when do economists need to stand up and speak out clearly and forcefully on important economic issues? One answer is when basic economic principals clearly support the statement of a position or a concern. But, this should also be tempered with the notion of full truth. As an example, it is clear that our current fiscal deficit is not as high, as a proportion of GDP, as we have gotten through in the past. The same can be said for the trade deficit. However, never have we had the combination of the two so large at the same time. They also reinforce each other. A partial reporting of truth inclines one not to worry while a reporting of the full truth should keep economists awake at
night. It is not unrelated to our economic policies that we now receive less international remittances than we pay out, that China has the dollar resources and the desire to buy our premium oil firms outright, and that if we really believe in free trade we must allow it.

There is always the question of how much truth can we stand? The recent report that Congress will set a 2009 date for television to go digital, but make the transition easy with a three billion dollar subsidy for those still on analog, is a case in point. In its defense, Congress points out that by going digital it will be able to auction off more broadcast spectrum, raising ten billion dollars – thus a net budget gain. But, if we consider opportunity cost, might it be better to require that the broadcast industry carry a certain amount of free political advertising during elections instead of auctioning off the spectrum for quick cash? The US is the only developed democratic country where politicians have to raise vast sums to pay for basic air time. This alternative was suggested at the last spectrum auction, but it was defeated with the strong lobbying of the broadcast industry which wanted the revenue. Finally, should we even be subsidizing the owners of analog televisions, or more accurately, the makers of the conversion boxes?

Farm subsidies are also a fertile ground for challenging what we do on economic and social grounds. Do economists have a role, at times, to stand up, as my colleague Lyle Schertz has done, and challenge the economic soundness of the current tendency of our political system to want to socialize losses and privatize gains?

There is also an important long term policy trend that is occurring without any real debate on the basic economic issues involved. What we are witnessing is a re-definition of public and private goods that has been taking place over the last two decades. In general, public goods are being redefined as private goods. Education is one
example of this, conservation programs are another. Education has moved from the days of the “GI Bill”, when it was considered the ultimate public good, to being increasingly thought of as a private good where students are the primary beneficiaries and therefore should pay the cost. The definition of public and private goods and the assignment of goods to these categories is a pre-determinant of national policy. If the nation gives up manufacturing, but expects to maintain prosperity through world leadership as a knowledge economy, there may be a public stake in fostering superior education. Economists should have something to contribute to this debate and need to begin to participate in it.

_Economists should be passionate in their convictions._ (Or are we just accountants, but without the charisma?) If one reads the literature of the 1930s and 1940s there was passion in the desire to try to make the world a better place, first economically in terms of the depression, and then politically in terms of defeating totalitarianism. One sees this whether reading Churchill or Keynes; Galbraith or Roosevelt. I would like to see more passion displayed today on real world important issues. This passion should be buttressed by data and by what simple economic concepts can bring to inform such discussions.

**Rules to Practice By**

Doctors and Lawyers practice medicine and law respectively. One perception is that economists just theorize about Economics. I am convinced that the basic economic theory we learn along with good applied analytical tools gives us the ability to practice economics and inform decisions in ways that others cannot. If we look at the careers of economists involved in the decision process, from Adam Smith to Robbins and Charles Schultz, they provide examples of individuals who successfully played such roles. In our
current era, economists are either doing less of this or are doing it less skillfully than in the past. There are a number of considerations for playing this practicing economist role:

- Good economic judgment and judgment about the world and issues at hand is key to successful influence on important issues.
- Perspective about what is important and where advice will make a difference is essential. When is something an elephant when is it a bread box? Some of the ability to discern this depends upon judgment and the willingness to do basic back of the envelope economic analysis.
- Opportunity cost can be extremely powerful in informing debates about policy that involves trade-offs.
- Traditional incentives need to be reconsidered and we must think broadly to find other vehicles for accomplishing public (and private) goals.
- Economic efficiency as economists define it may be irrelevant to or, at the least, foreign to public perception. We can best inform the debate by helping inform about the cost effectiveness of alternative ways to achieve the desired goal as well as bracketing the efficiency point and demonstrating the costs of straying too far from an economically efficient solution.
- At times economists need to stand up and inform the debate with sound economics that does not evade or provide only partial truths. A certain amount of passion (and sometimes personal security) is required to do this.
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