The economist's perspective

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1 Introduction

As noted, the economist's approach to international economics is often confusing to non-economists. There are, though, some pivotal characteristics of economists that help one understand their different perspective. First, mainstream economists view themselves as members of a scientific community. Viewing themselves as members of a scientific community restricts the kinds of arguments and explanations that economists find persuasive. This tends to separate

their perspective from those of non-social-scientists such as politicians and from those of some scholars in the humanities.

Second, economists, in contrast to other social scientists, tend to attack problems by constructing formal models, that is, models amenable to representation as lists of equations and consisting of very explicit premises and chains of deductive logic. For good reasons that will be explained later, this tendency is especially pronounced among economists who specialize in international economics. The concept of an economic model is so important that we devote an entire chapter to it.

Third, even though economists build many distinct models, they almost all embody a few key, overarching ideas. Knowing these few key concepts helps orient the reader to the economist's approach.

One more key feature also helps orient one to the economists' perspective on international economics. This feature is the economics profession's frame of reference for their analyses. These analyses are meant, by and large, to apply to societies in which take place vast numbers of interrelated economic exchanges. Even though the models economists use frequently abstract from this characteristic of modern societies, an appreciation of these complexities and the role of the price system in coordinating this system informs their thinking about many of the more contentious policy issues that arise in international economics.

2 Economists as Scientists

Economics is frequently defined as the study of how people and societies deal with scarcity. Two important implications follow from this definition. First, by virtue of the ubiquitousness of the subject, many people believe themselves knowledgeable. Consequently, many non-economists also study this problem, or aspects of this problem, including political scientists, historians, sociologists, psychologists, anthropologists, philosophers, priests, and laypersons from various walks of life. As demonstrated by the protests at the WTO meetings in Seattle and by commentary from a number of public intellectuals such as James Fallows and politicians such as Patrick Buchanan and Ross Perot, the study of international economic issues by non-economists is at least, if not more, widespread than other economic issues.

Second, answers to the basic questions that arise from the existence of scarcity, namely what gets produced, how it gets produced, and who gets to consume what is produced, have obvious ethical and political implications. Consequently, a concern might be that one's conviction about what the answers to these questions *should* be can cloud judgement about the soundness of explanations for the underlying economic phenomena that give rise to the actual answers. For an example of a non-economist's doubts about economists' abilities to separate conviction from analysis, consider what the erstwhile presidential candidate Patrick J. Buchanan had to say about the motivation of economists in their embrace of a central pillar of international economic theory. In his

book *The Great Betrayal: How American Sovereignty and Social Justice Are Being Sacrificed to the Gods of the Global Economy,* he wrote:

> Ricardo's theory is at root not about economics or excellence or more-efficient producers capturing markets. It is globalist dogma. (Buchanan 1998 p. 67).

"Ricardo's theory," first promulgated by Ricardo in the early 1800's, is thought insightful to this day by most economists, regardless of political persuasion. Buchanan's use of "dogma," meaning "a doctrine or body of doctrines concerning faith or morals," in conjunction with "globalist," makes clear his view of economists as purveyors of a type of faith, albeit a secular one.

Given that mainstream economists are as diverse in their views about ethical questions as are members of the general population, why do economists exhibit such solidarity about their methodology and about such a potentially ethically contentious issue as the desirability of free trade? Part of the explanation comes from economists' view of themselves as members of a scientific community, and the constraints that this view imposes on what qualifies to them as an acceptable explanation for an economic phenomenon. To understand this point, one must first understand what it means to be a member of a scientific community.

At some point in their lives, many readers probably learned about the "scientific method." Broadly put, the scientific method as commonly understood is a reliance on dispassionate, objective observation and on the rules of logic to provide explanations of the nature of reality. What distinguishes scientific knowledge from other forms of knowledge, such as mystical insight, is that it is obtained via the scientific method.

For economics as a discipline, there are two issues associated with the idea of scientific knowledge. First, there is the question of whether economics is a science in the same sense as is a natural science such as physics. For the natural sciences, observation frequently takes the form of precise measurement, oftentimes generated from controlled experiments. For the social sciences in general and economics in particular, controlled experimentation is difficult, and measurement is seldom precise. As a consequence, philosophers of science and some introspective economists have debated the status of economics as a science. If economists cannot confirm their explanations of economic phenomena by use of the same criteria as used in the natural sciences, namely accurate prediction and control, then what makes their view of the world different, and perhaps "better" than, say, the view of turtle-costumed environmentalists who protested at the Seattle WTO?

Most economists have little doubt that their discipline qualifies as a science in terms of prediction. Despite the existence of a debate about whether economists' predictions are sufficiently "accurate" to qualify as "science," economics as a discipline has generated a multitude of *qualitative* predictions that have been confirmed again and again. In this respect, economics is much like geology, which as a discipline uses its tectonic plate theory to predict where most earthquakes will occur but has yet to "usefully" predict a single particular

earthquake. A representative statement about the economics profession's view of economics as a predictive science like a natural science is given by McCloskey in his book *The Rhetoric of Economics*:

> For another, economics *is* a science, a successful sort at that. Economics explains as much about business people and resources as evolution explains about animals and plants, and for identical reasons. No one who knows the subject will deny it, those who do not know it can become persuaded by reading Mancur Olson's *Logic of Collective Action* or Thomas Schelling's *Micromotives and Macrobehavior* or another of the accessible jewels of the discipline (McCloskey, 1985, p.56)

Thus, one explanation for economists' consensus about their methodology comes from their belief in the success this approach has produced in terms of producing explanations that have been verified again and again.

The second issue associated with the idea of scientific knowledge concerns a clash over the general nature and status of science. For readers not familiar with philosophy of science or not up-to-date with recent thought in the humanities, it may come as a surprise that a number of scholars have a different conception of scientific knowledge (and presumably of knowledge in general). As a rough description, these scholars hold the following beliefs about science:

1. If there is an objective reality, all that people can know is their perceptions of it, and these perceptions are always influenced by ideology.

2. Consequently, all knowledge is "culturally constructed"; "facts" are ideologically influenced perceptions.

3. Hence, science is simply a culture-bound view of the world, and scientific explanations are just a way to maintain the existing power structure.

Adherents to this view of science are sometimes referred to as social constructivists, and the slogan that summarizes their views is: "Science is the social construction of reality." Some of the claims of these social constructionists about the validity of natural science knowledge are so outlandish that many thoughtful people dismiss the whole approach. Nonetheless, the view seems perhaps less bizarre when applied to social science. After all, the subject matter of social science *is* at least in part culture and ideology. Scholars who base their criticism of mainstream economics on this view of science accuse mainstream economics of being the handmaiden of capitalism and the market system, not of being a discipline devoted to uncovering fundamental truths (which don't exist, in their view).[1]

Given these concerns, is there any other view of science that is useful in explaining the solidarity of the economics profession in their views on what constitutes a good argument? One approach to answering the "is it science" question

[1] This view of economics as part and parcel of a culture that supports rather than explains market systems has a history that predates the current philosophical disputes. Karl Polanyi, an economic historian, developed a similar critique in 1944 in his treatise on the rise of markets and capitalism, *The Geat Transformation.*

and the question of the objectivity of scientific knowledge moves away from only questions of prediction and control and focuses on the shared "metavalues" of a scholarly community. This approach defines a scientific community as a group that share "epistemic values" about what it means to understand something. Epistomology, according to Webster, is "the study or the theory of the nature and grounds of knowledge especially with reference to its limits and validity". For scientists, epistemic values are presumed to promote the "truth-like character of science, its character as the most secure knowledge available to us of the world we seek to understand"(Ernan McMillan, 1983, p.180). Following Ruse (1999) a short list of these values would contain the following:

1. Predictive accuracy. Prediction is a logical inference from the known to the unknown. This covers not merely prediction of future events or phenomena, but also prediction of events or phenomena unknown to the investigator at the time the explanation is formulated. Note the implication here: a scientist must **observe!**

2. Internal coherence and external consistency. The parts of an explanation must hang together and not appear "ad hoc," that is, pulled together simply to provide just **any** explanation. In addition, an explanation must fit in with other knowledge about the subject at hand.

3. Unifying power. An explanation should cover or explain previously disparate observations.

4. Fertility. An explanation should open up new avenues of research.

5. Simplicity or elegance. This virtue, though, should always be qualified by Albert Einstein's quote: "Everything should be as simple as possible, **but no simpler!"** As a student of economics will come to understand, some explanations are just hard (but not impossible) to understand!

While not every explanation that economists provide about economic phenomena embody all of these virtues, the goal of having explanations that satisfy these virtues limits the types of arguments that economists find persuasive. Furthermore, the validity of such explanations can be argued about and compared with each other in terms of these virtues. Perhaps the most important implication of adherence to these virtues is that economists' reserve their passion for the search for what they perceive as the truth of an explanation, not for a particular policy outcome that they might favor for some other reason.

Notice that prediction remains an important virtue, albeit not the only one, to be sought in any proffered explanation of an economic phenomenon. Adherence to this virtue has implications for the value that scientists place on different types of evidence. In particular, scientists place higher value on representative rather than anecdotal or non-representative evidence. Thus, when former speechwriter and presidential candidate Patrick Buchanan argues that protectionism is verified as a successful policy because the United States grew rapidly during a protectionist era, economists respond with, among other things, the

question: what happened during other time periods, what happened to other countries in similar circumstances? That is, is Buchanan's anecdote representative, or a special case with no predictive value about a general conclusion concerning trade protection and economic well-being?

The upshot of the above discussion is that, notwithstanding the criticism of social constructivists, the consensus of the economics profession about how to analyze international trade issues is based on:

1. Knowledge that many of the implications of the basic theoretical system used by economists to provide understanding of economic phenomenon have been tested and confirmed by many observations of actual economies.

2. A metavalue that requires evaluation of explanations in terms of how well they adhere to the epistemic virtues of science.

Hence, economists believe that even if a *particular* economist, losing for a moment his or her scientific compass (that points towards truth), proposes a particular policy prescription or economic explanation that merely reflects an axe to grind or a philosophical or ethical point of view, then this proposal or explanation is scrutinized, tested and measured by the economics *profession* in terms of adherence to epistemic virtues.

3 Economists as Modelers

While politicians, concerned citizens, and other people not trained as social scientists might provide explanations that don't attempt to satisfy the epistemic virtues, surely some, if not most, anthropologists, historians, political scientists, and sociologists analyze economic phenomena with arguments that strive to satisfy these virtues. What, then, distinguishes the explanations of economists from these other investigators?

Upon a quick perusal of books and articles by international economists, e.g. *International Economics* by Paul Krugman and Maurice Obstfeldt, and non-economists, e.g., *Dilemmas of International Trade* by the political scientist Bruce E. Moon or *Trade and Trade-offs* by the anthropologist M. Estelle Smith, one is struck by one startling contrast: the economics texts bristle with equations and graphs, while the other texts seldom have any! This graphically illustrates that the type of modeling done by mainstream international economists separates their explanations from those provided by these other social sciences. This modeling is so distinctive and so important to an understanding of the economist's method that an entire chapter is devoted to a full explication of its structure. Some of the overarching features, though, are spelled out below.

3.1 Why Models?

The economy is an enormously complex system. In a modern economy, there are millions of firms, households, prices and products, not to mention various government agencies. These entities are linked together by millions of individual decision-making units. Furthermore, the decision-makers are human beings

or organizations made up of human beings, and are themselves enormously complex. To understand even parts of or aspects of the economy is a daunting task. To make progress, economists, as well as other scholars, use models, that is, "simplified descriptions of aspects of economics phenomena" (Katz and Rosen 1998).

3.2 Why Formal Models?

A formal model consists of very explicit premises and chains of deductive logic that lead to conclusions. Such models are frequently amenable to representation as lists of equations, even though **any** model can be expressed in terms of sentences written in plain language. The reason most international economic models are expressed in terms of graphs and equations is that the complexity of the models makes them difficult to understand without use of a more symbolic system. It is nearly impossible to think through a complex problem without using some symbolic notation system. Furthermore, the language of graphs and equations is well suited for constructing the long chains of deductive reasoning that lead to the conclusions of interest to an economist.

3.3 Understanding Models

Hence, to understand the economist's perspective, one must understand economists' models. The problems in this endeavor for many non-economists are two-fold: First, as the above quotes emphasize, models are tailored to problems. Hence, there appear to be as many different economic models as there are problems. In virtually any international economics textbook, for example, there are a long list of different models: the Ricardian model, the specific factors model, the Heckscher-Ohlin model, the product-cycle model, and more. Learning them all appears to be a daunting task. Furthermore, knowing which model to use to address which problem is, as the famous economist John Maynard Keynes emphasized, an art. Consequently, learning which model to apply to which question is not something like learning to paint a picture by the numbers, but rather something like engaging in a long apprenticeship with a master painter.

Second, economists' models tend to be formulated in terms of equations and graphs. How economists manipulate these abstract systems to come up with conclusions can appear, to the uninitiated, as mysterious. Many non-economists appear to believe all economics texts should be introduced with a statement that "all who enter here without an advanced math degree should abandon all hope."

One key to understanding models is to learn that there is a common structure that runs through most economic models. Knowing this structure allows one to classify and keep track of the common elements that run through the various different models

Another key is to learn that economists manipulate their models in order to answer a very few canonical questions. This knowledge provides both a starting

point and a destination, thus helping to keep the details of manipulation in perspective.

4 Some Key Distinctions and Concepts

Along with the more formal structure of economists' models that will be elucidated later, there are a few key features that help organize thought about economic models. First is the distinction between microeconomics and macroeconomics, and the associated distinction between "real" and "monetary" theory. Second, within microeconomics, there are some overarching features and some "big ideas" that inform and undergird the otherwise disparate analyses of particular problems. Two of these key features sometimes strike non-economists as unusual. The first of these is economists' parsimonious assumptions about the mainsprings of human behavior. The second is economists' focus on the individual as the unit of analysis.

First we take up the distinctions between micro and macro. Second, we discuss the economists' model of human behavior and link it to the few big ideas that help us understand virtually all of microeconomic analysis. Finally we elaborate on the differences between the economist's focus on the individual and other social science traditions.

4.1 Microeconomics and Macroeconomics

Economists tend to classify economic problems as either microeconomic or macroeconomic. As we have and will see, real-world problems frequently have some parts that economists would classify as microeconomic, and some as macroeconomic. Despite this commingling of micro and macro elements in real world problems, relegating particular parts of problems to microeconomics and others to macroeconomics has proven to be a powerful engine of analysis. In what follows we identify the key distinctions between micro and macro.

4.1.1 The level of abstraction

There are a number of distinctions between microeconomics and macroeconomics. One is a level of abstraction. Microeconomic analysis tends to divide the economy into relatively smaller units of analysis than does macroeconomics. For example, much of macroeconomics abstracts from the multitude of different commodities we observe, e.g., beer, clothing, toothpaste, and so on, and treats them all as a homogenous good bought and sold in "the" goods market. Likewise, macroeconomics abstracts from all the different types of labor, e.g., doctors, construction workers, auto mechanics and treats all workers as members of "the" labor market. It also frequently abstracts from the thousands of distinct types of financial assets and treats them all as if they are homogenous parts of "the" bond market. As a consequence, macroeconomics assumes it makes sense to be concerned about the determination of "the" aggregate level of output and unemployment, "the" interest rate, and "the" price level.

4.1.2 The pioneering spirit

Much of modern macroeconomics also differs from micro because of its relative youthfulness as a field and its wellsprings in the experience of the Great Depression. The experience of the Great Depression, with its deep decade-long reduction in economic activity across a broad spectrum of industries, provided, and continues to provide, questions about how the aggregate economy behaves. Fundamentally, it was, and continues to be, hard to believe that the basic, standard microeconomic theory that was in use at the start of the Great Depression (and still makes up the bulk of what is found in most intermediate textbooks today), can provide the answers to these questions. Hence, macroeconomic theories tend to have parts with behavioral assumptions that are less grounded in the standard microeconomic paradigm and that are motivated more by a rough-and-ready pioneer spirit of "let's try this and see how it works." There also tends to be less consensus on what are the "right" foundations for a macroeconomic model than there is on what are the "right" foundations for microeconomic models. Still, macroeconomic models of all stripes retain some of the same key distinctions and the same logical structure as do all economic models.

4.1.3 Money

Perhaps the most striking distinction between macro and micro is the total exclusion from micro analysis of any discussion of perhaps the most ubiquitous feature of modern economic life: money. This distinction is best explained in terms of what economists call the neoclassical tradition.

The Neoclassical Tradition To orient oneself in the economic landscape, one needs to know some of the salient features of what economists call "the neoclassical paradigm." The neoclassical paradigm is a revision and expansion of the early, classical development of economic science associated with Adam Smith and David Ricardo, and it is adhered to today by the mainstream of the economics profession. Of particular interest to us here is that the bulk of economic analysis, and particularly that part of economic analysis taught to undergraduates, can be dichotomized into a so-called "real" part and a so-called "monetary" or "nominal" part. The real part, sometimes referred to in an old-fashioned lexicon as "The Theory of Value," concerns itself with the determination of things measured in units of real commodities, such as "the quantity of wine produced and consumed" or "the relative price of wine in terms of cloth", that is, how many units of cloth exchange for one unit of wine. The building blocks of these type of models are specifications of people's tastes for various commodities, specifications of technology, that is, specifications of how inputs in a productive process are transformed into outputs, and specifications of the amount of resources (measured in units of goods and services) available.

Students sometimes find it difficult to grasp that this part of economics has nothing to say about the most ubiquitous feature of modern economic life, money, and about the monetary value of commodities. While many expositions

of microeconomics express prices in terms of currency values, e.g., dollars per unit of wine, this "dollar price" is meant to represent a composite value of other goods and services.

What does economics have to say about money, then? More importantly, how do we interpret microeconomics in light of its abstraction away from the obviously important presence of money in the everyday economy, the economy that economic analysis is designed to help us understand? To understand the appropriate interpretation, one needs to have at least a rudimentary understanding of the neoclassical analysis of money.

The neoclassical tradition deals with two main issues. First, what are the economic services of money? This analysis is generally developed in terms of a contrast between an economy in which money is used and an economy where all transactions are carried out by barter of one good for another. The advantages of use of money for transactions as opposed to barter are summarized as "the services of money." Without money, trade between parties would require such things as a "double coincidence of wants", usually depicted as the hungry tailor meeting the shivering butcher.

Part of the interpretation of microeconomics is that the services of money allow us to model the economy as a barter economy in which all the transactions costs associated with barter are zero. That is, we can model all transactions *as if* they are zero-transaction-cost barter exchanges. In a barter economy, all prices are relative prices, that is, prices expressed as how much of some commodity (wine, for example) exchanges for a unit of some other good (cloth, for example). Money is assumed to work so well in mitigating the transactions costs of barter that we can model the economy as if these costs didn't exist.

The other branch of the analysis of money concerns understanding the level of prices, that is understanding what determines the price of a particular good or commodity expressed in units of a currency, such as dollars (the U.S. currency) or pounds (the United Kingdom currency). One aspect of this understanding concerns the behavior over time of prices of goods and services measured in units of currency: why, for example, was the price of whiskey £.18 (eighteen hundredths of a pound sterling, the unit of currency in Great Britain) in 1900, while it was £8.80 in 1990? The answer to this question comes both from macroeconomic and microeconomic analysis. The key component of the macroeconomic analysis is the demand and supply of money. What is different and somewhat difficult for students is that, because money is not a commodity like wine, the usual theories that underlie demand and supply analysis don't apply. A full treatment of this goes beyond the scope of an introduction, but forms an important part of the macroeconomic analysis of international economics.

The key differences between relative prices and currency prices are perhaps best seen with examples of the two. First consider the following sequence over time of the pound sterling price of whiskey in the United Kingdom:

Date	1900	1930	1960	1990
Bottle of whiskey	.18	.71	1.95	8.80

When students are presented this data and asked to provide an explanation

of why the price of whiskey rose over time, they usually suggest explanations such as "demand grew because income increased" or "the things used to produce whiskey became scarce." That is, they usually provide *microeconomic* reasons for why a partial-equilibrium demand or supply curve might have shifted over time. Only occasionally would a student suggest *inflation* as a cause.

But when presented with the following table of prices collected by *The Economist,* they usually recognize that these microeconomic explanations would be hard-pressed to support the data for the many different goods included in the table, which revealed that almost every commodity showed the same type of increase in the pound price over time. These prices are listed in ordinary type.

The Economist is a British magazine noted for its coverage of economics. The table presented here is drawn from the December 22, 1990 issue.

Also in the table are bold-faced numbers that reflect pound sterling prices "revalued to 1990 sterling prices." We use parentheses around the "revalued" phrase to highlight that this means the earlier prices are multiplied by the *average* pound price increase over all commodities, and thus are a proxy for the *relative* price of the good vis a vis a basket, or equivalently, a weighted average, of all the other goods. Thus, changes in the boldface numbers of a particular commodity across time reflect changes in the *relative* price of the good vis a vis a weighted average of all other goods and services.

Unless noted, £ prices	1900	1930	1960	1990
Rail fare, London to Glascow	1.66	5.00	8.40	59.00
In 1990 prices	**66.40**	**156.25**	**84.00**	**59.00**
Atlantic crossing, by ship	12.33(a)	16.00	67.00	970.00
In 1990 prices	**674.00**	**516.80**	**670.00**	**970.00**
Atlantic crossing, by air	n/a	n/a	154.35	323.00
In 1990 prices	n/a	n/a	**1543.50**	**323.00**
Bottle of whiskey	.18(c)	.71(d)	1.95(e)	8.80
In 1990 prices	**6.74**	**20.31**	**19.31**	**8.80**
Car, Ford cheapest model	225	170	494	6180
In 1990 prices	**10,238**	**5313**	**4940**	**6180**
Monet's *Waterloo Bridge*	793	1744	20,000	4,000,000
In 1990 prices	**34,496**	**67,144**	**200,000**	**4,000,000**
Dinner at the Savoy	.38	.78	2.38	28.75
In 1990 prices	**15.20**	**24.38**	**23.80**	**28.75**
Top of the range camera	20.00	18.60	145.00	1,200
In 1990 prices	**800.00**	**581.25**	**1,450**	**1,200**
Phone call, London-Glascow	.25(j)	.33	.13	.41
In 1990 prices	**8.93**	**10.31**	**1.30**	**.41**
Opera ticket, least expensive	.13	.33	.18	3.00
In 1990 prices	**5.20**	**10.31**	**1.80**	**3.00**
Opera ticket, most expensive	1.50	1.40	2.10	101.00
In 1990 prices	**60.00**	**43.75**	**21.00**	**101.00**
Hotel room, Hyde Park Hotel	n/a	1.50	6.00	189.00
In 1990 prices	**n/a**	**46.88**	**60.00**	**189.00**

Men's suite, Daks 2-piece	n/a	4.20(g)	30.00	269.00
In 1990 prices	**n/a**	**99.62**	**300.00**	**269.00**
Potatoes per 7 lbs.	.02	.02	.08	.91
In 1990 prices	**.71**	**.77**	**.80**	**.91**
Bread, unsliced loaf per 400g	0.5 pence	0.7 pence	2.4 pence	42 pence
In 1990 prices	**18**	**27**	**24**	**42**
Milk per pint	0.7 pence	1.2 pence	3.3 pence	30 pence
In 1990 prices	**26**	**38**	**33**	**30**
Gold per oz.	4.24	4.25	12.56	209.16
In 1990 prices	**169.60**	**132.81**	**125.60**	**209.16**
The Economist	.03	.05	.08	1.60
In 1990 prices	**1.20**	**1.56**	**.75**	**1.60**

Note that relative prices, in contrast to prices measured in units of pounds sterling, display no obvious upward pattern for every commodity. The explanation of changes over time in these relative prices is indeed the purview of microeconomics, and thus are explained by changes in tastes, resources, and technology.

4.1.4 Dynamic analysis

Finally, another distinction between micro and macro economics is the focus of macroeconomics on dynamic issues, that is, on economic phenomenon that involve links across time. The relegation of dynamic problems to macroeconomics reflects no deep basic differences in the types of analysis required for dynamic as oppossed to *static*, or timeless, problems, but rather is in some ways a historical artifact. Whatever the reason, the analysis of problems involving *intertemporal* allocations of resources is usually part of macroeconomics.

Fortunately, the same basic tools of microeconomic analysis can be used to analyze these intertemporal problems. We exploit this fact and use the same analytic apparatus to analyze the simplest models of trade *within* the same time period but across geographical regions and the simplest models of trade *across* time periods.

As noted earlier, though, dynamic problems have some features that provide challenges not found in static problems. In particular, dynamic problems inherently involve the *expectations* that economic agents hold about an uncertain future. Understanding how people form expectations, and how these expectations affect the unfolding over time of economic phenomenon, is an area of economic analysis not as well-developed as the analyses used in static models.

4.2 Microeconomic Features

4.2.1 The Parsimonious Model of Human Behavior

Two Key Assumptions: Self-interested Behavior and Substitution Possibilities Adam Smith, the founder of modern economics, assumed economic behavior could be understood on the basis of two key assumptions. The

first assumption is that individuals rationally pursue their own self-interest. The second is that, in pursuit of their self-interest, people will, in Smith's words from his famous book *Wealth of Nations* , "...truck, barter and exchange one thing for another." Smith noted this propensity "is common to all men, and to be found in no other race of animals...Nobody ever saw a dog make a fair and deliberate exchange of one bone for another with another dog." These two assumptions remain the foundation of economists' model of individual economic behavior.

The first assumption is, if not obviously true, at least straightforward. The second assumption, though, embodies an *observation* that people actually trade one thing for another. It must be, then, that peoples' desires can be satisfied with varying quantities of different goods, and that varying quantities of goods can be produced. In the jargon of economists, the existence of trading implies that there must exist *substitution possibilities* within the economy. Unlike the assumption that people trade in pursuit of their self-interest, the statement that there are substitution possibilities is an empirical observation.

The simplicity of the model, or as Krugman (1995, p.74) puts it, the "startling crudeness in the way [economics] thinks about individuals and their motivations" generates skepticism among non-economists about the whole field. For example, when writing about the potential application of sociobiology to economics, the philosopher of science and student of biology Michael Ruse says the following about this model:

> Clearly, all of these assumptions and ones like them are highly suspect. Human beings just do not always act in the way that classical economic theory supposes. (Ruse, 1979, p.190)

For economists, though, the combination of these two assumptions yields predictions about human behavior that are validated again and again by observation. One prediction is that people change their behavior by "exchanging one thing for another" in response to incentives. That people do this might seem an obvious observation of human behavior. Time and again, though, economists are surprised at how non-economists fail to appreciate this fact, and then overlook what seem to economists obvious consequences of a particular policy. In an article titled "Economists and Public Policy" (Coase 1975), the economist Ronald Coase points out numerous examples of public policy consequences easily foreseen by economists, based only on their appreciation of self-interested behavior, and unforeseen by the policy makers themselves. Coase considers, for example, the issue of price controls. Economists have time and again predicted that price controls will lead to shortages because self-interested individuals will substitute production of non-controlled goods, the price of which is relatively higher, for the controlled good. Coase identifies Edward Cannon as one of the many economists who have marveled at the repeated public surprise at the unintended consequences of price controls. Writing about price controls established in Britain in World War I , the economist Edward Cannon pointed out that if there is an unusual rise in prices, people

> are perfectly convinced that the rise with which they have to contend for the moment is unnatural, artificial, and wholly unjustifiable, being merely the wicked work of people who want to enrich themselves, and who are given the power to do so not by the economic conditions...but apparently by some absolutely direct and inexplicable interference of the Devil. This has been so since the dawn of history...but no amount of historical retrospect seems to be of much use. The same absurdity crops up generation after generation.(Cannon 1927)

Things appear not to have changed much in recent times. Consider the lament of the economist Michael Salemi in an article titled "How Economists Can Improve Economic Education" (Salemi 1998). In that article, Salemi noted that, during the Summer of 1999, the Research Triangle, an area of North Carolina, would be preparing to host the 1999 Special Olympics World Games. Salemi gives an account of a Research Triangle newspaper columnist who railed against "price gouging" by area hoteliers. According to Salemi, the columnist noted that one area hotel had raised its Summer 1999 rates by a hefty $100 per night (average area hotel rates were probably well under $100 per night at that time). The columnist wrote:

> "...(T)he hoteliers are embracing diversity by sticking it to the Special Olympians...don't bother telling me that raising prices is business as usual for the hotel trade. Of course it is, but that doesn't make it go down any easier. It was that mind set–supply and demand–that jacked up prices for everything from ice to chain saws to generators after Hurricane Fran came through. Remember how it felt to be gouged...Don't think our visitors won't feel the same way..."

Salemi points out that the newspaper columnist fails to note, much less appreciate, the benefits from higher, market-determined prices. These benefits, obvious to an economist, are an increase in supply that allows more people to attend the Special Olympics. As Salemi states:

> "The increase creates an incentive for visitors with flexible schedules to avoid the Triangle during the Special Olympics. It creates an incentive for hotels in Greensboro, about a hundred miles away, to offer room-and-shuttle-bus packages as alternatives to staying in the Triangle and for home owners to rent their houses to visitors. Higher prices will mean more lodging available for Special Olympic visitors."

What informed Salemi's prediction about higher prices leading to more lodging being available for visitors? Partly it was his economist's belief that people would attempt to respond to the incentives given by the higher prices. There is, though, also an empirical leap of faith implied by Salemi's prediction. For his

prediction to be correct, not only would people want to respond, but the substitution possibilities ("flexible schedules," "shuttle-bus packages") would have to be sufficient that people *would* respond.

Why was Salemi so confident that the substitution possibilities were sufficient? He may have remembered what happened in North Carolina in the aftermath of Hurricane Fran. Remember, the journalist viewed the "jacked up prices for everything from ice to chain saws to generators" as an example of the "price gouging" he foresaw coming during the then-upcoming Special Olympics. In fact, in the aftermath of Hurricane Fran, those "jacked-up" prices on chain saws and generators brought to North Carolina a veritable convoy of pickup trucks, loaded with generators and chain saws and workers to use them, from states not hit by the hurricane. This increase in supply helped some people recover from the hurricane damage more quickly than they otherwise would have.

More likely, Salemi's confidence came from knowledge of the vast number of observations, going back at least as far as Adam Smith, of high substitutability within economies. Some of the best evidence of the remarkable degree of production substitutability in economies is found in Mancur Olson's *The Economics of the Wartime Shortages,* a study of economic response to wartime blockades and shortages (Olson 1963). Olson documents the ability in the World Wars, during which both Great Britain and Germany faced serious disruptions to normal supplies of good and services, of the economies of Great Britain and Germany to produce everything from oil to gun barrels without any of once-thought "essential" inputs.

The Kaiser's failed WWI submarine campaign

In WWI, the German navy was certain that an unrestricted submarine campaign that targeted all ships (neutral as well as enemy) attempting to dock in Britain, would lead to a British surrender within six months. Such a belief was based on a German naval memorandum that outlined how the destruction of shipping would starve England into submission. The memorandum noted the total shipping available for Britain to use to supply its domestic needs and the estimated destruction of shipping by an unrestricted U-boat campaign. It concluded that within six months British imports would be cut by two-fifths and force Britain to sue for peace.

August 1917, six months after the beginning of the unrestricted U-boat campaign, came and went and Britain remained in the war. What went wrong with the German plan?

What is interesting is that the German plan worked perfectly in that they destroyed the targeted amount of shipping. The answer to why it failed is, in Olson's words, that "the British ... undertook a series of economic countermeasures that enabled them to get along very well without the merchant tonnage lost to the German submarines."

All of these countermeasures were to some extent *substitutions*. For example, the British used more men in the loading and unloading of ships, minimizing the time ships spent in port. They also substituted home production of bulky items for smaller items, thus increasing the gross weight of cargo carried per gross ton of shipping. They also substituted *across time* by reducing imports of products used to add to and maintain the capital stock. Thus, building and factory repair and replacement was delayed, imposing a future cost on the country but reducing the required imports during the war. To maximize the caloric value of the food produced from primary ingredients, they stopped using grain to produce whiskey (and to a lesser degree ale), and stopped making "white" bread, which wasted part of the grain.

These are only representative of the many types of substitutions made in the face of the u-boat disruption. They dramatically emphasize how these possibilities exist and can be used even though non-economists (such as the WWI German naval command, and the WWII Allied Bomber Command that overestimated the damage done to Axis war-making capabilities by their targeting of what they thought were "indispensable" supplies such as oil and certain minerals) fail to appreciate them.

On the consumer side, a fascinating vignette of the both the resistance of non-economists to understanding the power of incentives and of the willingness of consumers to substitute in response to different prices is found in Edward Zajac's history of the implementation of charges for telephone directory assistance (Zajac 1995, p. 29). Briefly, directory assistance was "free" before the 1970's (the strategic use of quotation marks indicates that, to an economist, *free*

means something that uses no resources, obviously not the case with directory assistance, which relied on employees to answer questions). Rising costs of providing directory assistance pushed telephone company executives to lobby for a per-call charge for directory assistance. Consumer groups and regulators opposed the proposed charge, arguing that it was just an underhanded way for the telephone company to earn extraordinary profits. In a trial demonstration in Cincinnati, a charge of $0.20 per call after the third call per month reduced directory assistance calls from 80,000 per month to 20,000 per month. Furthermore, because only 6% of subscribers made more than three directory assistance calls per month, the average direct savings per month from passed-on cost savings by the phone company was $0.65 for residential users and $1.25 for commercial users.

The point here is not that the price system allocates resources "efficiently", but that there is vast evidence of this sort that confirms the economists "crude" model of behavior.

A second prediction yielded by Adam Smith's two pillars of economic behavior is that people take advantage of opportunities for gain. As Krugman puts it, "$20 bills don't lie in plain view for very long" (Krugman 1995, pp.74-5). In pursuit of their self-interest, people both engage in exchange with others to exploit opportunities for mutual advantage, and they apply their talents to avail themselves of opportunities presented by nature. For economists, this prediction means that, within an economy where these exchanges are permitted and protected, extraordinary gains for any individual or firm are likely to be a short-term phenomenon, whatever the source of these gains. Again, this prediction might seem obvious, but is apparently not so to non-economists. For example, few economists believe that average citizens can reap unusually large returns on a regular basis from a simple, or even not-so-simple, study of the stock market. Their belief is that if it were simple, everyone would do it, driving down the return. For someone with a rudimentary knowledge of statistics and an open mind, the evidence that this is so is overwhelming (see, for example, *A Random Walk Down Wall Street* by Burton Malkiel). Despite this confluence of theoretical presumption and empirical evidence, many non-economists continue to believe a little study of past stock-market history will yield fantastic rewards.

This belief in the usefulness of an assumption of relentless pursuit of self-interest also sustains economists' faith in the usefulness of the implications of models of perfect competition. In international economics, this is particularly important because much of the argument in favor of free trade is built upon implications of models of perfect competition. The assumptions underlying these models are obviously false: many industries are characterized by only a few large producers, for example. For mainstream economists, though, such deviations are not considered as important as one might otherwise think because they believe the pursuit of self-interest acts like a universal solvent, dissolving barriers to competition and leading to behavior that mimics that brought about by perfect competition.

An interesting historical example of the power of the competitive impulse is

the case of the ice trust.[2] Briefly, in 1899, a small group of people successfully monopolized the supply of ice in New York City, thus forming a "Trust." In April of 1900, the Trust doubled the price of ice, from $0.25 per hundred pounds to $0.60 per hundred pounds for small customers. Within a few months, prices were back to $0.25 per hundred pounds, and by November of that year, "the ice market was glutted." (Hemenway, p. 238.) The major cause, as reported by Hemenway, was the entry of new firms lured by the high prices and profits caused by the trust.

To be sure, the speedy response of competition to the high prices brought about by the ice trust is not representative of all industries. Still, it highlights why economists place so much emphasis on the implications of models of perfect competition as useful benchmarks for evaluating long-run effects of various economic policies.

4.2.2 The Individual as the Focus of Analysis

A final key feature that distinguishes economists' approach to understanding social behavior is their assumption that *individuals* are the basic unit of analysis. This is not to say that economists don't try to understand behavior of groups, but rather that such understanding is built up from an understanding of individual behavior.

Non-economists, especially some other social scientists such as some anthropologists, some political scientists, and some sociologists, tend to have a very different starting point for their analyses. By and large they assume that the *group* is the basic unit of analysis. In its most stark form, this perspective can be thought of as one in which individual motives don't exist: Individuals may themselves think they are making choices, but in fact they are simply responding in a predetermined way to group social norms and influences. In this view, people's choices simply reflect attitudes and beliefs instilled in them from the group.

Of course, even economists recognize the element of truth embodied in the idea that individuals are influenced deeply by group norms, and sometimes make choices based on subliminal suggestions or unconscious motives. Economists' adherence to a methodological approach that starts with the individual as a purposeful entity that makes rational choices based on his or her perception of self-interest reflects their belief that this approach has been successful and more fruitful than other approaches in opening up further avenues of research.

5 An Emphasis on Analysis of a Commercial Society

The focus on the individual as a self-interested purposeful entity sometimes leads non-economists to believe the results of economic analysis are at best a

[2] A full account of this episode is found in Hemenway 1988, chapter 20, pp. 229-246.

description of a morally flawed society and at worst an apologia for such a society. They assume that the assumption of pursuit of self-interest implies an analysis that ignores or belittles the charitable impulses and religious beliefs of many people.

This focus on self-interested individuals may or may not be appropriate for analysis of interactions among members of relatively small groups such as families, teams, and small churches, or among friends deciding upon how finely to allocate a bill among themselves after having dinner at a restaurant. Whether appropriate or not, it has fewer ethical implications when used for analysis of what economists have called a "commercial society." A commercial society is one in which production is highly specialized, and in which people freely exchange things between themselves, i.e., "truck and barter," in order to live.

Specialization in production implies that people must engage in exchange. That is, if people spend all day on an assembly line making cars, they will not have the time to make all the other things they need to survive, such as food, shelter and clothing. Hence, they must exchange the wages they earn from car-making for these items, which are also likely produced by other people who specialize in production of one of these goods.

Specialization in production is also accompanied by a high degree of complexity among production units and processes. In "I, Pencil," a famous description of this complexity, the author Leonard Read traced the genealogy of a common wood pencil. His account emphasized the myriad specialized processes, from shipping cedar trees and mining graphite to making steel and using it to build saws and motors, needed to turn many raw materials into the finished product.

Read also emphasized how none of the thousands of people involved in these enterprises knew more than a few of the other people involved in this complex endeavor involving thousands of specialized activities. Furthermore, he emphasized that few or none of these people knew or cared that the final product, the pencil, was desired by the consumer who bought it.

What, then, coordinates all of these complex processes and delivers the pencil to the final user? Read emphasized that this coordination is done by markets, in which mostly anonymous exchanges take place based solely on knowledge of the few relevant prices important for each one of the many production processes. The prices determined in these markets convey in summary form all the information about the relevant scarcity and desirability of the thousands of intermediate products and raw materials used in the pencil manufacturing process.

In a commercial economy, then, what are the ethical implications of a person's pursuit of self-interest? The complexity of the society means that it is impossible for any one person to know the impact, however small, of his or her marketplace decisions on the well-being of more than a few individuals, if any at all.

Consider, for example, the environmental activist who, out of concern for all of humankind, exhorts people to buy cotton grocery bags instead of using the plastic or paper bags provided by the store. This activist's belief may be that non-biodegradable plastic bags will use up scarce landfill space, and that use of paper bags made from trees reduces the amount of forested acreage. What he

or she may not realize, though, is that production of cotton is itself what might be considered an environmental-unfriendly activity, requiring use of fertilizer (which pollutes streams and lakes and even large bodies of water such as the Chesapeake Bay), pesticides, and the burning of fossil fuels in tractors. The complexity of a commercial society makes it nearly impossible to sort out easily the relative effects on the environment of one's choices among paper, plastic, or cloth bags. One can argue that the most ethical decision in such a complex situation may be to simply respond to the incentives of the price system, which summarizes at least some of the relevant information.

William Baumol (2000) noted an actual example of this type of problem. In the early 1970's, sharp increases in the price of energy led to advocacy of energy conservation by numerous well-intentioned non-economists. For one example among many, activists promoted the use of solar power as a replacement for traditional power-generating sources such as oil-fired electricity generation. As Baumol noted, some non-activists noted that the production of things like solar generating power used up energy as well as providing energy. That is, production of solar energy required production of glass panels, or production of water-filled metal cylinders, production of trucks necessary to transport these smaller devices to the homes and businesses in which they were to be placed, production of the power tools (and use of power to run them) necessary to install the devices, production of the machine tools used to make the power tools, and so on and so forth ad infinitum. Eventually, in light of this observation, engineers came up with the concept of "net energy," in which the amount of energy used up in producing final energy output was subtracted from the amount actually produced.

Much as in the processes described in "I, Pencil," a full accounting of energy used in the production of energy producing devices requires knowledge of many intermediate processes. When the net energy of these alternative power producers was carefully calculated, it turned out that most of them used up more energy in their production than they generated.

Economists, while not engineers, were not surprised. What they observed was that the cost of these alternative devices (as conventionally measured in units of dollars, not in energy units) was greater than the reduction in energy costs (measured in dollars) derived from using these alternative devices. Knowledge of the role of prices as conveyors of information about relative scarcity allowed economists to be confident that the profitability of these newer energy sources was all that was needed to assess their "efficiency."

In 2006, the same issues arose again. In the face of high oil prices and political dependence on foreign oil suppliers, much attention was focused on whether the United States should further subsidize the production and demand for ethanol, which can be produced from corn, sugar, and some other plants, and can be used as a substitute for gasoline. On the demand side, for example, the city of Portland Oregon passed legislation requiring that by July 2007 all gasoline sold in the city must be 10% ethanol. On the supply side, sugar beet producers negotiated an increase in subsidies for ethanol production from sugar in exchange for political support for sugar import quota reductions.

Unfortunately, production of ethanol from corn uses a lot of scarce resources, including petroleum. As in the 1970's, studies that took account of the *net* use of petroleum in ethanol production from corn led to questions about whether there was net loss or gain.[3] Again, economists are not surprised: even with high oil prices, ethanol is not profitable without subsidies.

Or consider the concern by environmental groups with "food miles"–how far food travels before it is bought for final consumption. As recounted in the August 6, 2007 *New York Times* Op-Ed column "Food that travels well," by James E. McWilliams, environmentalists are pushing the idea that eating food produced close to home reduces fossil fuel consumption and thus greenhouse gas emissions. This is very similar to the issue addressed by Baumol (2000) concerning energy. Not surprising to economists, careful study shows that calculating the "carbon footprint" of food is a complex problem with unanticipated results. According to McWilliams' research, it is "four times more energy-efficient for Londoners to buy lamb imported form the other side of the world than to buy it form a producer in their backyard..."

In international economic analyses, this issue is often not appreciated by non-economists. For example, when President Bush imposed higher tariffs on imports of a certain type of steel in 2003, he argued that his decision was based on concern for U.S. jobs. But the U.S. Senator from Tennessee, Lamar Alexander, pointed out that the higher prices that occurred because of these tariffs reduced employment in the auto plants located in Tennessee. This in turn would affect employment in myriad other industries that supplied these auto industries, all the way down to the local Dairy Queen ice-cream store that depended on the business of the auto workers.

What is also true but less apparent to anyone but an economist is that a reduction in imports such as caused by these higher tariffs hurts employment by U.S. exporters. The causation here is not as direct as that between producers of steel and users of steel, but is just as inescapable. Briefly, imports ultimately have to be paid for by exports, so any reduction in imports implies a reduction in exports. Thus, workers in an export sector such as the potato fields of Idaho may bear the indirect and hard-to-trace consequences of fewer steel imports.

Much of what economists bring to policy discussions is this appreciation for the indirect consequences of any particular policy action. These consequences, while often difficult to directly trace, are undeniably real and important.

6 Summary and Conclusion

A few key ideas can put the economist's approach to international economic issues in perspective. First, economists view themselves as members of a scien-

[3] Knowledge of these studies is seeping into general awareness, as evidenced by the column by Nicholas Kristof on p. 13 of the OpEd section (4) of the July 30, 2006 New York Times. In th ecolumn, Kristof writes:

"The benefit of the 10 per cent ethanol requirement is less clear because U.S. ethanol sometimes takes nearly as much petroleum to make (in fuel to run tractors ..., for example0 as it saves."

tific community. This influences the kinds of arguments that economists make, and the kind of arguments to which they pay attention. This also helps inoculate them against the impulse to tailor analysis to further preconceived notions of right and wrong about international policy issues. To be sure, individual economists and economists as a group are socialized like any other group and may wear blinders in regards to some issues, but this effect is mitigated by their pursuit of the epistemic virtues of a scientific community.

Second, economists, more so than other social scientists and commentators on international economic issues, build and analyze formal models. This is sometimes off-putting to non-economists. But to understand the economist's perspective, one must understand their models.

Third, economic analysis is better understood when one keeps in mind a few key distinctions. First, most analysis is broken into two parts: a microeconomic part and a macroeconomic part. Of the two, the microeconomic paradigm has a longer history and has a broad and deep consensus as to its usefulness and applicability. The macroeconomic paradigm, on the other hand, is younger and generates more controversy, even among economists. Even with macroeconomics, though, the controversies are less about a fundamental approach to the analysis of economic issues and more about what might be the more fruitful approach.

Within microeconomic analysis, two distinguishing features are a focus on the self-interested behavior of the individual as the fundamental unit of analysis and an appreciation of substitution possibilities within the economy.

Finally, economists, especially in the arena of international issues, focus on an analysis of *commercial* societies, in which specialization in production, relatively anonymous exchanges, and complexity interact to make the ethics of "getting and spending" difficult to disentangle in terms of what is right or wrong. What economic analysis of such societies rightly emphasizes is the unintended and hard-to-trace consequences of any particular policy or decision.

7 References

Baumol, William J., "What Marshall *didn't* know: on the twentieth century's contributions to economics," *The Quarterly Journal of Economics*, vol. CXV, issue 1, (February 2000), pp. 1-44.

Buchanan, Patrick J. (1998), *The Great Betrayal*, Boston, MA: Little, Brown, and Company

Coase Ronald H. (1999), "Economists and Public Policy," in Daniel B. Klein, (ed.), *What Do Economists Contribute?*, London, UK: McMillan.

Fallows James. (1989), *More Like Us: Making America Great Again*, Boston, MA: Houghton Mifflin.

Hemenway, David. (1988), *Prices and Choices: Microeconomic Vignettes*, second edition, Cambridge, MA: Ballinger.

Hutt, William B. (1999), "On the Decline of the Authority of Economists, reprinted in Daniel B. Klein, ed., *What Do Economists Contribute?,* London,

UK: McMillan Press Ltd.

Katz, Michael, and H. Rosen, *Microeconomics* (Third Edition), New York, New York: Irwin/McGraw - Hill.

Knight, Frank A. (1951), "The Role of Principles in Economics and Politics," *American Economic Review,* (March), pp.2-4.

Krugman, P., (1995), *Development, Geography, and Trade*, Cambridge, MA: MIT Press.

McClosky, D.N. (1999), "The Common Weal and Economic Stories," in Daniel b. Klein (ed.), *What Do Economists Contribute?*, London, UK: MacMillan Press Ltd.

Moon, Bruce E. (2000), *Dilemmas of International Trade* Second Edition, Boulder, CO: Westview Press

Olson, Mancur Jr. 1963, *The Economics of the Wartime Shortage*, Durham, NC: Duke University Press.

Ruse, Michael. (1979), *Sociobiology: Sense or Nonsense?*, Dordrecht, Holland: D. Reidel Co.

Ruse, Michael. (1999), *Mystery of Mysteries: Is Evolution a Social Construct?*, Cambridge, MA: Harvard University Press

Schelling, Thomas C., ( ), *Macromotives and Microbehavior.*

Schelling, Thomas C. (1999), "What do economists Know?" in Daniel b. Klein (ed.), *What Do Economists Contribute?*, London, UK: MacMillan Press Ltd.

Zajac, Edward E. (1995), *Political Economy of Fairness*, Cambridge, MA: MIT Press.