

IMPORTANT, AND OFTEN OVERLOOKED, ASPECTS OF MARKET EQUILIBRIUM

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ABSTRACT

This paper considers an explicitly normative aspect of market equilibrium often overlooked in principles-level instruction: the notion that market equilibrium makes more people “better off” than market disequilibrium. Students are taught the similarities between market equilibrium and the equilibrium of physical science, but usually not the crucial differences. Unlike the equilibrium of a pendulum at rest, which is the result of physical forces acting upon it, market equilibrium is the result of individuals acting with purpose, in mutually beneficial cooperation. The result is that market participants can be said to make themselves “better off” in a way that finds no useful analogue in comparisons with physical equilibrium.

INTRODUCTION

“It is only the implicit value judgments underlying positive theories which make these theories important.”

L.E. Hill, 1968:264

Gary Becker specifies *market equilibrium* as one of the three foundational assumptions of economic analysis. (The other two being maximizing behavior and stability of preferences. See Becker, 1976.) Most economists would agree with Becker, and would expect the topic of equilibrium to be adequately covered in the principles-level class. We contend that, while the typical textbook presentation of this important topic is not incorrect, important insights regarding the nature of equilibrium are usually omitted. The purpose of this brief essay is to suggest additional content for standard textbook discussions of equilibrium. We are not claiming to add to what economists already understand about market equilibrium. Rather, we intend to highlight characteristics of this equilibrium that textbooks – and perhaps instructors – sometimes ignore.

THE TYPICAL PRESENTATION

A sampling of principles of economics textbooks (see Table 1) reveals a high degree of homogeneity among their presentations of market equilibrium. Typically, the presentation begins with a thorough discussion of the characteristics of supply and demand, including the

determinants of each, the distinction between shifts in each and changes in quantity brought about by changes in price, and so on. Authors then turn their attention to defining markets and market equilibrium. Most books correctly point out that markets have a tendency to self-correct. That is, if the supply and demand curves are static, prices will gravitate towards and come to rest at the point of equilibrium. The mechanisms that bring about this result are presented in simple, intuitive terms, generally appropriate to introductory-level courses. (For a more sophisticated analysis of the market clearing process, see Heath and Foshee, 2003.)

Table 1
SAMPLED ECONOMICS TEXTBOOKS
(See References for full citation.)

Arnold (2008)
Boyes and Melvin (2009)
Frank and Bernanke (2011)
Gwartney, Stroup, Sobel, and Macpherson (2006)
O'Sullivan, Sheffrin, and Perez (2010)
Bade and Parkin (2011)
Case, Fare, and Oster (2009)
Hubbard and O'brien (2010)
Mankiw (2007)
McConnell, Brue, and Flynn (2009)
McEachern (2006)
Miller (2011)
Slavin (2011)
Stiglitz and Walsh (2006)
Tucker (2006)

The usual narrative starts with a description of the market out of equilibrium: When price is above equilibrium, a surplus or excess supply ensues. Such a surplus sends information (and provides an incentive) to the seller to lower price. Likewise, a price below equilibrium results in a shortage or excess demand. A seller realizes that raising the price diminishes the severity of the shortage. Thus, every price other than the equilibrium price encourages the seller to adjust price towards the equilibrium price. Upon arrival at this price, the market clears and all pressure to change price disappears.

Such a narrative is typically supplemented with graphs and/or tables which enumerate the severity of the surplus or shortage when the seller charges a price outside of equilibrium. For example, Table 2 indicates that at a price of \$3, the quantity supplied is 40 units and the quantity demanded is 100 units. Thus, the resulting shortage of 60 units is said to frustrate buyers and puts upward pressure on price. At a price of \$7 the quantity supplied is 130 units and the quantity demanded is 55. The surplus of 75 units pressures sellers to lower price. Again, all textbooks we examined contain a presentation such as this. Differences across the books we

sampled were limited to issues of phrasing and usage of “excess supply/demand” or “surplus/shortage.”

Table 2		
Price	Quantity Supplied	Quantity Demanded
\$ 0	0	1000
\$ 1	20	270
\$ 2	30	160
\$ 3	40	100
\$ 4	60	90
\$ 5	80	80
\$ 6	100	70
\$ 7	130	55
\$ 8	170	20

The notion of equilibrium as a situation to which a system tends to move, and from which there are no forces for further movement, is common to many sciences. In the typical economics discussion, the market achieves equilibrium by a process that is analogous to the action of a pendulum. The law of gravity dictates that a pendulum will tend to hang vertically in a stable equilibrium. If someone nudges the pendulum to one side or the other, it swings back. Likewise, if the price of a good or service is above or below equilibrium, market forces move it in the direction of equilibrium. Both the pendulum and the market tend to move to a stable equilibrium.

WHAT’S MISSING

The concept of equilibrium as described above is useful as far as it goes, but it does not go far enough. The pendulum analogy is incomplete, for there is no sense in which the pendulum is “better off” in equilibrium. But we can describe participants in economic markets as being “better off “ when markets are in equilibrium. Economists are well aware of the welfare implications of the market clearing solution; particularly, that the sum of consumer and producer surplus is maximized at the point of market equilibrium. While some textbooks get into a discussion of consumer and producer surplus when discussing equilibrium, most assign the topic to a different section or chapter. Consequently, students fail to see the connection between equilibrium and consumer/producer surplus. Moreover, many students will find this concept of surplus so abstract that it has little meaning for them in the real world of market exchange.

Instructors can cast the discussion in very concrete terms, and begin to explain how market participants are “better off” at equilibrium, by emphasizing a simple truth: *At the equilibrium price, the quantity of the good or service that changes hands from seller to buyer is maximized.* When students see that trade is maximized at the equilibrium price, they can then

begin to understand the sense in which participants are “better off.” Instructors should point out that because trade comprises a series of voluntary transactions among rational and informed individuals, we may presume that each transaction results in a welfare improvement for both the buyer and the seller. The most improvement occurs when the number of these voluntary transactions is maximized; and that occurs at the equilibrium price. Referring again to Table 2, at the equilibrium price of \$5, 80 units change hands from sellers to buyers. Prices below or above \$5 decreases the amount of voluntary – and therefore welfare enhancing – exchange.

It is easy to demonstrate that the self-adjusting market will yield the maximum number of voluntary transactions, which results in social welfare being maximized. Yet, *none* of the textbooks we sampled make this point. We believe this should be corrected given the relative ease of doing so, and the fact that this point provides the foundation of the superiority – in one importance sense – of market outcomes.

OBJECTIONS

Thoughtful students might question the presumption that voluntary trade leaves market participants “better off.” If trade is good, then why do governments deliberately restrict trade in a variety of situations, from minimum wages to rent control to laws forbidding trade in drugs and more? Such questions should not be dismissed out of hand, but neither should they lead the discussion too far afield. The introductory principles class is hardly the place for a lengthy foray into the literature of welfare economics. Based on years of classroom experience, we offer the following suggestions.

First, it is helpful to review the underlying analytical (as opposed to moral) assumptions. The typical textbook discussion of equilibrium *implicitly* assumes that individuals are able to acquire useful information, to act rationally on that information, and to do so without generating significant externalities. Instructors should state these assumptions *explicitly*, and point out that when they are seriously compromised, interventionist policies might be warranted to achieve efficiency. Further discussion of corrective policies is usually better left for a separate discussion. A few additional remarks are germane at this point, however.

Regarding information and rationality, instructors should emphasize that the process of achieving equilibrium is a process of *learning*. Buyers and sellers do not initially possess complete information; they *acquire and exchange* information. They then act rationally on the basis of what they have learned, and in the process they discover mutually advantageous terms of trade. Instructors should also point out that intervention based on the inadequacy of information, or the inability to act rationally, implies that the regulatory authorities have superior knowledge or are more rational than individuals in the market – implications that college students (being college students) will typically resist.

Externalities present a somewhat different kind of issue. Students are increasingly aware of the existence of externalities in the context of environmental issues, and this awareness

sometimes engenders a generalized skepticism about “the free market.” Instructors need not go deeply into the issue of externalities in the simple analysis of equilibrium, especially if the topic is covered elsewhere, as is typical among the textbooks we reviewed. We suggest that instructors acknowledge the validity of the spillover problem, and then point out that in all cases the costs (bureaucratic and other) of interventionist policies must be compared with the cost of the externalities for an accurate overall assessment of efficiency.

Finally, some students – especially those who have been taught the importance of distinguishing between positive and normative statements – will point out that “better off” is a value-laden term. It is a valid point. Clearing away ethically neutral points of analysis does lay bare fundamental value premises. The conclusion that maximizing trade maximizes welfare rests on the premise that individuals should be allowed to define for themselves what makes them “better off,” and to pursue their own ends through voluntary exchange, mindful of others’ right to do the same. (Students may agree with this premise or not; in our experience, most do accept it.) Instructors should be willing to identify underlying value judgments, including those that support the conclusion that free trade promotes wellbeing. But it is neither necessary nor appropriate, in a simple discussion of equilibrium, to undertake a lengthy discussion of values. The relevant point, for those who are concerned with the imposition of value judgments, is that regulatory market intervention (minimum wages, blue laws, rent control, among others) implies that market regulators have the right to impose *their* values on others – hardly a values-neutral position, either.

CONCLUSION

In conclusion, we believe that students should be taught not just the similarities between market equilibrium and the equilibrium of physical science, but also the crucial differences. Unlike the equilibrium of a pendulum at rest, which is the result of physical forces acting upon it, market equilibrium is the result of individuals acting with purpose, in mutually beneficial cooperation. The result is that market participants can be said to make themselves “better off” in a way that finds no useful analogue in comparisons with physical equilibrium. Presenting a fuller discussion of market equilibrium along these lines would cost little in terms of pages in a textbook and time in a classroom. Students, and their instructors, deserve no less.

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