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*Economic Insights* is an idea publication of the Colorado Council for Economic Education, a not-for-profit 501(c)(3) organization founded in 1971 to promote and improve economic literacy in Colorado schools.

We feel that an understanding of key economic concepts is vital for all citizens in order to live, work and make informed decisions in our modern economy. We present high-quality graduate courses designed to provide an understanding of important economic concepts to Colorado K-12 teachers, so they can then bring these concepts to their classrooms. CCEE also presents The Stock Market Game™ in Colorado (please see page 3).

## Where Do Prices Come From?

By Russell Roberts

My three sons, ages seven to twelve, suffer from a chronic condition I've heard described by economist John Baden as *ironitis*—the love of anything made of metal. They are fascinated by cars, trucks, backhoes, tractors and—well, you get the idea. The other day, my middle son suggested that my next car should be a convertible. They're expensive, said his brother and mentioned that the convertible of a particular model was \$10,000 more than the more staid version. Why is it more expensive, his brother asked.

A good question. Why are convertibles more expensive than non-convertibles? Why are red peppers more expensive than green peppers? Why is gasoline more expensive in the summer than the winter? Why is gasoline more expensive in Europe than in the United States? Why are roses more expensive on February 14? Why isn't beer more expensive on Super Bowl Sunday? Why are houses in the suburbs of Washington, D.C. more expensive than houses in the suburbs of Richmond, Virginia?

The answers to these questions often turn out to be a little trickier than they first appear. But ignore the answers for now. Just notice that you can ask the questions. There's a certain predictability to prices. An orderliness. It needn't be that way. Prices could be a random jumble, high one day low the next. On some days, movie tickets could cost more than oxford button down shirts, oranges more than a quart of milk. What is the source of that order? Where do prices come from?

The answer at first seems obvious. The seller sets the price. But if you've ever tried to sell anything, you know that it's not really true. If you want to sell your house, yes, you're free to write whatever number you want on the

listing. After all, every house is unique. So you just have to find one person who loves your house, the one who loves the deck you've added or the way you re-did the kitchen or your garden or the hundreds of other things that make a house special. According to this mindset, you can ask a really high price for your house because all you need is one person willing to pay that high price.

But you'll quickly find that if you choose a price that's too high, you won't sell it, even if the person who happens to love your all-purple kitchen happens to walk through the door. That person who loves your house, the one who is willing to pay \$500,000, still won't buy it if there's a house that's almost as nice as yours but that's selling for \$300,000. As long as the extra value of your house over the alternative to the potential buyer is less than \$200,000, you're cooked. Your house won't sell. People don't pay what they're willing to pay unless they have to. When they have choices, they don't have to. Competition protects the buyer. And it protects the seller. You might be willing to sell your house for \$100,000. But you won't have to if there are similar houses selling for \$300,000.

Sellers and real estate agents understand a house is in competition with other houses, even ones that aren't as nice as yours and even ones that are nicer. So sellers and real estate agents look at the price of "comparables," houses in the same neighborhood with the same number of bedrooms, roughly the same-sized lot, roughly the same square footage of floor space, roughly the same amount of charm, a subjective but real attribute.

But if the price of your house is set by the prices of comparable houses, then what sets the prices of those comparable houses? The whole thing seems circular. The

### ABOUT THE AUTHOR

Russell Roberts is Professor of Economics at George Mason University, a research fellow at Stanford University's Hoover Institution and the host of the weekly podcast, *EconTalk.org*. This essay is an abridged version of "Where Do Prices Come From?" published by the Library of Economics and Liberty and included as part of *Ten Key Ideas: Opening the Door to the Economic Way of Thinking*, available online at <http://www.econlib.org/library/Topics/Guides/TenKeyIdeas.html>. Roberts holds a Ph.D. in economics from the University of Chicago and is the author of numerous publications. His latest book is *The Price of Everything: A Parable of Possibility and Prosperity* (2008, Princeton University Press).



whole thing's a house of cards! What's holding the housing market together?

One answer is that for a particular good of a particular quality—say, a four bedroom house in a leafy suburb of Washington, D.C. in a good school district on a quiet street on a third of an acre, prices adjust to equate the number of houses like this that people want to buy with the number of houses that are up for sale.

And if people want to buy more than they did before, prices rise. If people want to sell more than they did before, prices fall.

Supply and demand. Buyers are competing with each other. Sellers are competing with each other.

The prices we observe emerge from this competition.

The simple answer of supply and demand is a strange answer, for it presumes you can talk about a good of a particular quality. In the real world, every good has a unique mix of attributes. Even when two goods are physically identical, they almost always come bundled with differing levels of service attached to them.

It's a strange answer because people's desires and situations and income and alternatives are constantly changing, so the amount that people want to buy and sell of something can never be pinned down instantaneously. Even if you can talk about "the" price, it's constantly changing.

It's a strange answer because it seems to require lots of information. Otherwise, how could you know how to set the price if you are the seller or whether to pay the price a seller is asking if you are the buyer?

Supply and demand is a way to see the relationship that strips away everything except

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the fact that what people are willing to pay and what they have to pay depends on the alternatives. Supply and demand is a way to organize our thinking about this peculiar thing economists call markets and competition. Let's put it to work without using a graph and see what we can see.

### Both Blades of the Scissors

One of the most important virtues of supply and demand is that it forces you to remember what Alfred Marshall called both blades of the scissors. With few exceptions, both buyers and sellers play a role in determining prices. That's surprisingly easy to forget. When my son asked why convertibles are so expensive, his brother explained that people really like them, the demand side of the equation. But that can't be the whole story or even most of it. Surely there are many people in colder rainier climates or even too-hot climates where driving a convertible is unpleasant. So why are they expensive? They're more costly to make because of the mechanism that allows the convertible to retract the roof. Convertibles only exist if the price that sellers can charge is greater than non-convertibles. If people liked cars without any kind of roof, they'd be cheaper, not more expensive, than cars with roofs.

A similar logic applies to red and green peppers. Why are red peppers consistently more expensive than green peppers? Why should there be any relationship between the two prices? Green peppers are used in a lot of industrial cooking for their intense flavor. Shouldn't they be more expensive? It turns out that a red pepper is a ripe green pepper. A seller always prefers money today to money tomorrow because money today can be invested in the meanwhile to earn interest. So if green peppers and red peppers sell for the same price, no seller would be willing to supply a red pepper. So red peppers must sell for more. They only exist in the marketplace because some people prefer them to green ones. But if they're going to be available, if sellers are going to be willing to provide them, they're going to have to sell for a higher price.

### Prices Adjust

Prices adjust. They're not fixed. Supply and demand helps us remember this.

Consider the payroll tax. It's currently structured in the United States to be shared equally between employee and employer. What would happen if all of the tax were paid by the employer? That would seem to benefit employees. But that assumes wages don't change when the legislative burden of the tax changes. But wages are the price of labor. And the price of labor adjusts to equate the amount of labor workers want to sell with the amount that employers want to buy.

Every tax has an impact on both buyers and sellers but the impact isn't described by the legislation. A tax on buyers of labor is going to cause wages to fall. So employees pay part of the tax even if the legislation decrees that half or all of it is on employers. A tax on sellers of cars raises the price of cars. Consumers of cars pay part of the tax in the form of higher prices even if the legislation places all of the tax on the seller.

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If legislation were to place the entire payroll tax on employers, then the increased cost to employers would reduce the amount of labor they want to hire. That lowers wages. In fact wages have to fall by the exact reduction in tax to the employees. Similarly, if the tax were to be put entirely on the workers, less labor would be supplied and wages would rise to offset the increase in the tax.

## Emergence is a Different Way of Seeing

Finally, supply and demand helps us see things in a totally different way. How bizarre it is that partisans credit or blame the president for the average level of wages or inequality in the United States. If wages are rising, the president will brag about all the good jobs the economy is creating. If wages are falling, then the critics of the president fault the president. But the wage level in the United States isn't under the president's control. It's an emergent phenomenon that comes from the choices people make about how much education to get, how many hours to work, and the mix of monetary and non-monetary satisfaction that people choose in various jobs.

The president no more controls wages in the United States than he does the average weight of Americans. He can influence them through various policies that affect the incentives facing workers and employers. But his hand is not on a dial that sets wages any more than he can control how much Americans weigh. As the examples from the previous section show, many of the policies that a president or legislators might propose to improve something, are often offset by market forces.

## Available at a Price

One of the simplest insights that comes from supply and demand is the *availability* of goods in the marketplace. When people want more of something, the crowd of more enthusiastic buyers rarely exhausts the supply. Prices adjust to equate how much people want to buy with how much people want to sell. So if people suddenly want more of something, it doesn't just disappear. The price rises inducing an increase in what is available.

Because prices can adjust, the shelves are rarely empty in a market economy. As long as you are willing to pay for it, you can have it. Sometimes, you have to pay a little more. Sometimes, a little less, as circumstances change. But you can find it. That not only makes life easier for those of us who enjoy red peppers, it also means that you can special-

ize and rely on others for much of what you want, knowing that the market will make it available.

## A Caveat

Not all prices are set in what the textbooks call perfectly competitive markets. Supply and demand is a poor tool for predicting precisely the exact level of a price. Any individual transaction may deviate from "the" price because of mistakes or emotions. In many markets, an unusually large seller or buyer can affect the market price in significant ways. But just because a market isn't a textbook example of perfect competition doesn't mean supply and demand can't capture enough of the competition that remains. To take an extreme example, the gasoline market in the United States is full of regulations and market power that exist in various parts of the supply chain. But there is still competition throughout that market, even if it does not conform to the textbook definitions. And price controls, as the supply and demand model predicts, lead to shortages, lines and reductions in quality. The government in recent years has done a lot to distort the price of housing. The full story is a topic for another time.

## Truck, Barter, and Exchange

Adam Smith talked about man's propensity to truck, barter, and exchange. People are always buying and selling stuff. Always looking for a deal. Always looking for a better deal. Always considering the alternatives. The search for a good deal by both buyers and sellers considering alternatives is what economists call competition. The result is that transactions in a market are not independent of one another.

Where do prices come from? The prices that we observe in the world around us emerge from the interaction between buyers and sellers and their alternatives. How can we capture the strange fact that no transaction takes place in a vacuum? How can we capture the order that emerges from all those transactions?

Supply and demand is a simple and powerful way to describe the ways that transactions across time and space are not independent of one another. It is a powerful way to organize our thinking about the complexity that emerges out of the propensity to truck, barter and exchange, a complexity that is the result of human action but not of human design.

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