It's a match – who gets what and why

by Craig D. Hafer, President

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The King of Prussia Mall, situated in southeastern Pennsylvania, is the second largest mall in the United States. With over 400 stores, it offers something for just about everyone. Although the mall has outgrown its humble origins, opening in 1963 with open-air shopping and Gimbels as an anchor store, its evolution is a prime example of economics' simple yet seldom-known principle of "matching." The theory of matching attempts to explain how certain relationships are formed. At the mall, it helps explain how buyers and sellers are matched, or in the case of Gimbels, which went out of business in 1987, mismatched.

Matching is the principle of who gets what and why. It was the subject of one of economics' more straightforward books of the year, *Who Gets What – and Why*, written by Alvin E. Roth. Roth knows a few things about matching and markets; he won the Nobel Prize in 2012 for his work on the topic. With over 30 years of experience, Roth has helped design several markets, ranging from which children are accepted into various Boston public schools to how liver transplant recipients are selected.

From the mattress that we sleep on, to the college we attend, to whom we choose as friends, we are always matching. There are rules even when there appear to be no rules at all, and within each market, standards are applied that we as a society deem acceptable. When markets fail (which often happens), new rules are created with the hope that *this time* things will work in an orderly manner.

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Matching theory is often applied in behavioral economics and game theory. Behavioral economics differs from traditional economics in that it takes a more realistic approach to human behavior in the economy. As we wrote in our fall 2014 letter, traditional economic theory assumes that the consumer is rational, which is not always the case. Behavioral economists, such as Dan Ariely, go to great lengths to show us how irrational we can be at times. If we indeed act as irrationally as Ariely claims, then many traditional economic theories become suspect, and what may matter more than the price of an item is the market we are in at the time.

For investors, understanding matching is the key to realizing how markets work. Each market is as unique as the products, services and people involved. The size of a market can determine whether it is thick (consisting of many buyers and sellers), or thin (having few buyers and sellers). As modern consumers, we live in a world with many thick markets. However, this was not always the case

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In 1848, the Chicago Board of Trade (CBOT) was founded at what would become one of the world's largest rail terminals. Before its formation, crops of wheat were sold on an individual basis. This required buyers to know the particular farmer and the condition of each crop, which was not feasible for most consumers on the east coast. As the United States expanded to the west, boxcars full of grain would arrive in Chicago to be shipped eastward. To help streamline things, the CBOT created a grading system, allowing consumers to buy grains based on quality and not the specific crops or farmers. This commoditization changed the market from thin to thick. When there are many buyers and sellers for a commodity, it is much easier to negotiate price. One of the main reasons that food prices are so low in North America is commoditization.

The grading of products illustrates an important element of any market. For a market to be effective, the two parties must trust each other. In each transaction there is an element of risk; markets survive by reducing, or at least identifying, the risks involved. It is impossible for someone to know the quality of every product coming from every farm in America, but we all know what Grade A beef is. Understanding matching can be a powerful tool for investors, since companies which make markets safer, faster, and/or offer a superior product or service can be investment opportunities. Before companies such as VISA existed, for example, sellers were leery of accepting personal checks. Much of VISA's success came from its ability to remove a seller's risk of not getting paid. By making transactions safer, credit card companies enabled the growth of an entirely new industry; Internet sales rely heavily on buyers' ability to use credit and debit cards.

Yet, not all markets have products or services that are as easy to match. How do organ donors find a match? How does a medical student get offered an internship? As a market designer, Roth provides insight into the uniqueness of these markets and how they have certain influences that cause buyers and sellers to go outside of the rules in an effort to gain an advantage over others. As it turns out, when we are buyers, we like to be the *only* buyer with many sellers, and when we are sellers, we want to be the *only* seller with many buyers. It is no surprise that we only like competition when it works to our advantage! This is why many markets have rules. For example, the stock market is open Monday through Friday, 9:30 a.m. – 4:00 p.m. E.T. The 2016 NFL draft will occur from April 28-30, with each team picking players in an agreed upon order. However, even when there appear to be rules, market participants seek ways to gain an advantage.

Most stores at the King of Prussia Mall have big sales on Black Friday. It was there that I found myself the weekend before Thanksgiving, and to my surprise, the shoes that I was purchasing were 50% off! To try to gain an advantage, many retailers had already begun offering deep discounts a week before Black Friday. Was it rational of me to then buy *two* pairs of shoes? Maybe not. But in doing so, I was reminded of how important matching is when it comes to who gets what and why.