

edited by Dan Rockmore

# What ARE THE Arts AND Sciences?

[a guide for the curious]

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## WHAT IS Economics?

Christopher Snyder

### Economics Is about More Than the Stock Market

When people I meet learn I am an economist, often one of the first questions they ask is, "What's the stock market going to do?" That's a great question. If on the day I was born my parents had invested \$100 for me in Altria, the stock that has turned out to be the top performer since then, I would be a millionaire today (see figure 1). "What's the stock market going to do?" is a million-dollar question we would all like to know the answer to. The people I meet are often surprised to learn that I—and most other economists—spend very little time thinking about the stock market. This article will give you a glimpse into the diverse set of topics we do think about and, just as important, a glimpse into *how* we think about them.

All that said, I do have some wisdom to share about the stock market, but I am not going to simply blurt it out. One general area of study in economics is incentives—what drives people to make the choices they do—so I know that if I give away the answer to the million-dollar question here, you won't have an incentive to read the rest of the article. If you want my wisdom on the stock market, you will have to read through to the end of the article. Maybe you will find the other topics just as rewarding.

### Fitting Economics among the Sciences

Economics is one of the social sciences, along with sociology, political science, psychology, and others, devoted to the study of human behavior. Some scientists in the "hard" sciences like physics and chemistry consider economics and the other social sciences "soft" sciences, if indeed they consider them sciences at

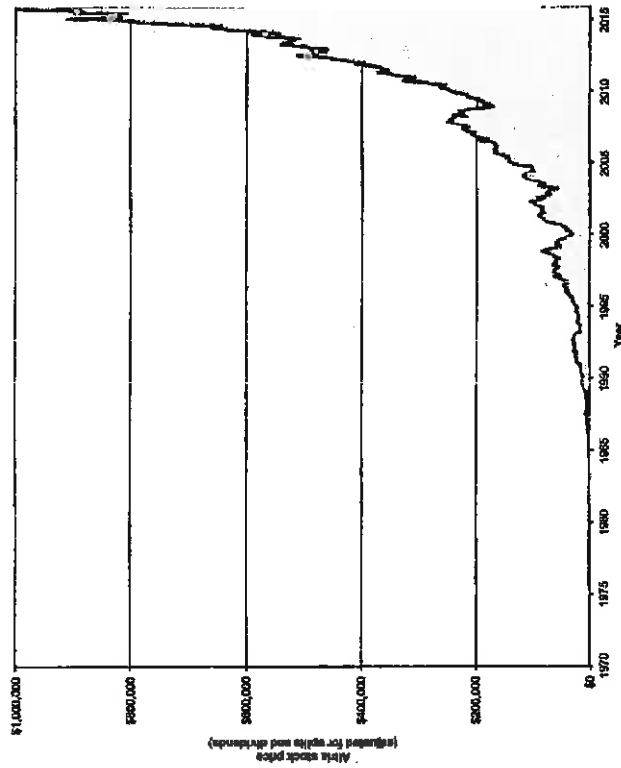


FIGURE 1: Huge gains from Altria stock investment. Author's calculations using historical stock-return data from the Center for Research in Security Prices

all. I won't argue with that view. Humans are complex; they sometimes act on whims; they certainly don't behave as systematically as particles. Organizations of individuals such as companies, universities, or a country's whole economy are yet more complex. Devising simple theories to explain their operation is hard, and conducting experiments on them to test these theories is even harder. Economists and other social scientists sometimes have to be content with looser theories than they would like, or less-than-perfect tests. So, yes, they are "soft" sciences. But social scientists are trying harder than ever to be rigorous both in the theories they propose and the statistical analysis of these theories.

Economics is distinct in its focus on aspects of behavior related to people's material well-being. Other social sciences, some covered in other chapters of this book, might study what groups people join, how they vote, what spiritual beliefs they hold, how they form a thought. Economics asks a different set of questions. How do people earn a living? What do they buy with the money they earn? These questions are not to everyone's taste. Some noneconomists might

find such questions about the “business side” of life pedestrian. For some reason, economists find them fascinating. Perhaps the fascination lies in the opportunity for concrete measurement: hard data on income and spending may be easier to come by than ideas or religious beliefs. Perhaps the fascination lies in the opportunity to make material improvements in people’s lives with a good answer to an economic question. Perhaps the fascination lies in the opportunity to tease out philosophical issues buried in pedestrian questions. Take the question of what people buy with the money they earn. Behind that question is the more fundamental question of what determines an object’s value. Why are diamonds, mere decorations, perfectly easy to live without, so prized, while water, essential for human life, can be drunk for free from public water fountains? (Give this philosophical question some thought yourself; we will revisit it when we discuss some broad economic principles below.)

Although I have dwelled on the distinction between economics and other social sciences, the dividing lines have blurred over time. For example, crime was once the exclusive purview of sociologists and corruption of political scientists. But economists realized that fines and jail time can be thought of as different prices placed on these forms of antisocial behavior. With that, they naturally started to think about how these prices could be fine-tuned to get better deterrence while saving on enforcement costs. More directly, crime intersects with economics in a disruptive way, as any hope of enjoying the fruits of a productive economy could be summarily wiped out by a crime wave or corrupt administration. This has led some economists to suggest that the main determinant of a nation’s wealth is not the richness of its natural resources or the productivity of its machines but the lawfulness of its leaders and citizens.

### Art Auctions

Art provides another good example of blurred lines between disciplines. While one might think nothing could be further from the “business side” of life than art, even this has come to be a subject of economists’ study. In 2015, the Picasso painting shown in figure 2 broke the record for the highest price paid at an art auction (\$80 million). While economists may have few insights about the quality of the imagery or brushstrokes, they have deeper insights about the design of the auction, run by the famous New York auction house, Christie’s.

For this extraordinary and important painting, the opening bid (called the “reserve price”) was set at \$100 million. Why was that chosen instead of some

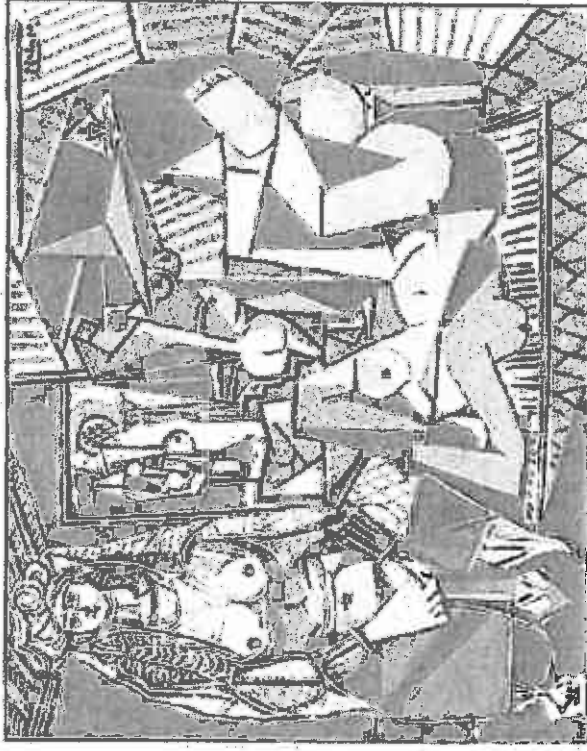


FIGURE 2 Picasso's *Women of Algiers* sells for record \$80 million at auction. Painting credit: Pablo Picasso (1881–1973). *Les Femmes d'Alger* version “O” (after Eugène Delacroix's *Femmes d'Alger dans leur appartement*). © 2016 Estate of Pablo Picasso/ Artists Rights Society (ARS), New York. Photo credit: Private Collection / Bridgeman Images

lower or higher amount? Stating the obvious, the current owner should never sell a painting she values at \$80 million for only \$50 million, so the opening price should be set at least at \$80 million (or whatever her personal valuation is). But there is a reason to set the reserve price higher than the seller’s personal valuation, which is particularly important in auctions in which only limited bidder interest in the painting materializes. In such cases, an increase in the reserve price can boost the amount the highest (and presumably winning) bidder has to pay. Now this is not obvious—if there is a “winning price,” then presumably it could be reached no matter where you started. But let’s see if that is right.

Suppose for concreteness that only two bidders are interested in the Picasso: bidder A, who values it at \$120 million, and bidder B, who values it at \$90 million. Without a reserve price (in other words, starting the bidding at \$0), B drops out of the auction when the bid reaches \$90 million, leaving A as the winner. With a reserve price of \$100 million, however, A must bid that much or lose

the painting. Even if A's is the only bid the seller receives, she earns \$10 million more than without a reserve price. Still better would be a reserve price close to A's valuation of \$20 million; but unless the seller can somehow read the bidders' minds to determine the most each is willing to pay, the danger in setting too high a reserve price is it risks pricing even the highest-value bidder out of the market. The optimal reserve price is set so that the increased revenue when a sale is made balances the reduced chance of selling the painting.

Although bidder interest is difficult to predict in advance, in the Picasso auction it turned out to be intense. Heated competition among a pack of them drove the price to \$80 million in about ten minutes. So in this particular case the reserve price may not have contributed much to the seller's revenue. Other features of the auction may have had more of an impact. Though allowed to bid in \$1 million increments, at several points in the auction bidders jumped over the previous offer by \$10 million. Such "jump bidding" is puzzling because it wastes the chance of winning the painting for less if other bidders drop out with incremental bidding before the price rises the full \$10 million. Understanding puzzles like jump bidding is an active area of auction research. Some economists speculate that bidders learn something about the market value of the painting by looking at the number of bidders remaining active as the price goes up; a jump bid may scare other bidders off by destroying some of this market information. For now, this is just speculation, awaiting further testing using data from the Picasso and other auctions.

Of course, auctions are not restricted to art objects. Ad prices that accompany search returns on Google are set by a kind of online auction. Maybe you have engaged in an auction yourself when you bought something on eBay. The growth of online marketplaces has made the study of auctions increasingly relevant, revealing all kinds of interesting questions for economists (in collaboration with computer scientists and other scholars) to think about.

## Economic Principles

Although economists study a diverse set of topics, ranging from jobs to crime to art, there are some shared some core concepts underlying their thinking. Perhaps the most central of these is the idea of *scarcity*. Scarcity means one cannot have everything; instead one has to make choices. Devoting money, property, time, or other resources to one project—say, an important project like preventing diabetes—means that some other significant project—like finding

a cure for cancer—goes unserved. In determining whether a project, an action, or any other choice should be undertaken, its benefits should not be considered in isolation but weighed against its *cost*. Costs put a dollar value on what has to be given up when one choice is made over another.

One can be forgiven for thinking of economists as a "dismal" bunch, fixated on scarcity, costs, and the quantification of trade-offs when choosing between one thing and another. Economics isn't called the "dismal science" for nothing. The label dates back hundreds of years, to an appraisal of Thomas Malthus's theory of economic growth. Malthus, an eighteenth-century parson, regarded as one of the founders of economic thought, theorized that improvements in food production would not help the population rise very far above the subsistence level because any increase in food supply would just lead them to breed more, like rabbits. Commenting on this theory, Thomas Carlyle wrote, "Nowhere, in that quarter of his intellectual world, is there light; nothing but a grim shadow of hunger." A look at the currently high standard of living in Malthus's England and much of the rest of the Western world, along with the shrinking family size, suggests a problem with Malthus's theory. In any event, the label "dismal science" has stuck.

Another core economic concept is *value*. People have been thinking about value for a long time. In the Middle Ages, scholastic philosophers propounded the *just-price theory*, the idea that value is an inherent property of an object. On this view, diamonds are expensive because of their inherent quality; water is not. But this theory is not completely satisfactory. It does not explain where this inherent value comes from (if not divinely decreed), nor is it consistent with variation in prices observed across cultures and over time. Karl Marx, the father of communism, ascribed to *the labor theory of value*, holding that the value of an object is constituted by the effort workers put into its production. (Incidentally, one can see how this would have led him to advocate a worker revolution to wrest the value they create from business owners, who steal this value.) The labor theory has its own drawbacks, for example leading to the awkward conclusion that a tooth extraction taking an hour would be sixty times more valuable than one taking a minute. If you were sitting in the dentist's chair, you might disagree.

The prevailing view among economists these days is that value is neither inherent in an object nor determined by a single factor such as labor but is the result of the interaction of a number of impersonal market forces, which for a simple approximation we can reduce to those of *supply* and *demand*. Figure 3 provides a graphical representation of a market, called the "Marshallian cross" in

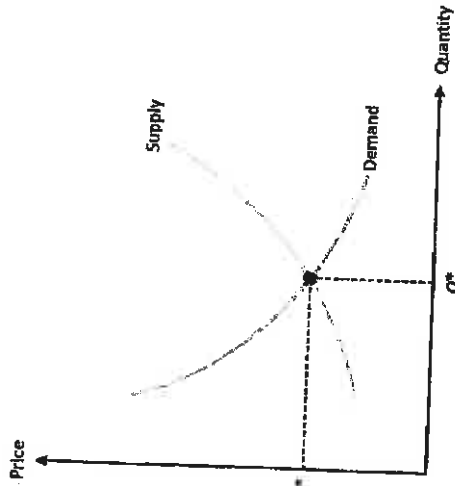


FIGURE 3 Market supply and demand.  
Drawing by the author

honor of Alfred Marshall, author of the granddaddy of economics texts, *Principles of Economics*, published in 1890. On the vertical axis is "price" and on the horizontal axis is "quantity." Seller behavior is represented by the supply curve. Its upward slope (aiming toward high prices and larger quantities) indicates that at higher prices, more of the stuff is supplied as existing suppliers expand their operations and new suppliers are drawn into the market looking to make money. Buyer behavior is represented by the demand curve. Its downward slope (aiming toward low prices and larger quantities) indicates buyers are willing to purchase more at lower prices.

In our simplified market with these two "forces" affecting the price, an *equilibrium* price (value) is reached, meaning that there is no tendency for the price to move up or down, when supply intersects demand. At other points, either supply exceeds demand, in which case the price would tend to fall as sellers accepted lower prices to offload their excess inventory; or demand exceeds supply, in which case the price would tend to rise as buyers would still line up to buy at higher prices rather than do without the good. Equilibrium price determines the object's value. If mention of "forces" and "equilibrium" reminds you of what you might learn in a physics or chemistry class, you are not too far off. The work of Isaac Newton in physics and Robert Boyle in chemistry in the mid-seventeenth

century influenced subsequent Enlightenment thinkers in virtually every field, including the early economists.

With this in mind, let's now go back to our water/diamond paradox. Water is in abundant supply, intersecting demand at a price near zero. At this price water is used not just to prevent one from dying of thirst but also to water lawns and wash cars. Diamonds, by contrast, are mined in only a few places in the world. The restricted supply intersects demand at an extraordinarily high price. At this price, diamonds are only put to extraordinarily high-value uses, such as sealing an engagement promise. The relative prices of water and diamonds depend not on something inherent or just one factor such as labor but on both supply and demand and everything that goes into them.

The principles discussed so far regarding costs and value, although experienced in the real world, are at heart theoretical. Early on, economics was quite theoretical, beginning as a branch of philosophy. More recently, economics research has shifted in an empirical direction, spurred perhaps by advances in information technology, allowing for the collection of rich economic data, analyzed on high-powered computers using sophisticated statistical methods.

If I had to come up with a single core principle behind modern empirical research in economics, I would say it is the push to uncover *causality* in economic phenomena—that is, to determine true causal relationships rather than to overinterpret apparent correlations as causation. Correlation is the observation of a relation between two phenomena. For example, suppose I found that graduates from Dartmouth, the college where I teach, have much higher salaries than the average college graduate. We might say that a Dartmouth degree is *correlated* with a high starting salary. But would I be justified in saying that this difference is *caused* by the purported excellence of a Dartmouth education? Or is the difference due to the higher skill of students who enroll in Dartmouth, skill that would translate into higher salaries regardless of where they went to college? The correlation between a Dartmouth education and high salaries may not be causal. Uncovering true causal relationships is difficult in economics because the opportunity to run controlled experiments is limited (although these opportunities are growing: there has been an explosion of interest in laboratory and field experiments in economics). No one has run the experiment of taking a group of students with similar profiles, randomly sending some to Dartmouth and some to other colleges, and then seeing who ends up with higher salaries. How, then, can one go about measuring how much of the salary difference is due to the college?

Economists have to think of clever ways to establish causation in nonexperimental data. To get an idea of how this is done, the rest of this essay covers two case studies. The first case study starts big, with a crisis that threatened to bring down the whole US economy: the Great Depression. The second case study explores in more depth the issue raised in the previous paragraph about whether a college like Dartmouth causes graduates to earn more, making the extra tuition worth the investment. The scope of the issues covered in the two case studies mirrors the division of economics into two broad fields: the first case study falls into *macroeconomics*, the study of the dynamics of entire economies; the second falls into *microeconomics*, the narrower focus on individual markets or decision makers.

### Case Study from Macroeconomics

The Great Depression was a terrible downturn in the global economy between World War I and World War II, falling particularly hard on the United States. At the worst point of the Great Depression in 1932 and 1933, US industries were only producing half of what they did before its start. More than a quarter of the working population could not find jobs. John Steinbeck's novel *The Grapes of Wrath* famously gives a deep sense of the human suffering behind these abstract numbers. With no stable jobs in their hometowns, the novel's protagonists, the Joads, travel from place to place in search of better opportunities, but no matter where they go, they find squalid living conditions and long lines of unemployed workers queuing up for the few available low-paying jobs.

The Great Depression might seem like ancient history, but history has a way of repeating itself. In 2007, the world experienced a deep financial crisis that precipitated the worst economic slowdown since the Great Depression, which has come to be called the "Great Recession" and from which the world has yet to fully recover. Economists—particularly those concerned with large-scale changes such as the rise and fall of an entire country or world economy, called *macroeconomists*—are keen to study the Great Depression carefully to understand the measures that can be taken to prevent small downturns from turning into full-blown depressions in the future.

Among measures proposed to stimulate a national economy and thereby reverse a downturn, two have received the most attention. One general policy is to encourage banks to lend more. The thinking is that loans can stimulate an economy by financing business investment and consumer purchases of houses,

cars, and other big-ticket items. The government has several ways to encourage lending. It can relax regulations on how much banks have to put aside in reserve to cover bad loans and bank runs (depositors all trying to withdraw their money at once). More directly, the government could just print more money, giving it to the banks to lend out. Either way, the policy of encouraging more lending is called *expanding the money supply*.

Another stimulus policy is to increase government spending. This is sometimes called a "Keynesian" approach after John Maynard Keynes, a British economist who had wide policy influence during and after the Great Depression and celebrity status. Here the idea is for the government to boost employment by undertaking public projects such as roads, bridges, and parks. However, there is a catch: funding for increased spending cannot come from increased taxes; otherwise the people paying the higher tax, with less money to spend, would cut back their purchases, shrinking the economy. Instead, the boost comes from *deficit spending*—spending funded by borrowing rather than taxes. Borrowing from whom? you might ask. Foreign sources are an option. Domestic citizens whose savings sit idly in bank accounts due to the stagnating economy are another possibility (this kind of borrowing can take the form of a government bond—like a US Savings Bond). Regardless of the source, the borrowed funds will have to be paid back in the future, but the hope is that an improving economy will help make repayment relatively easy by then. While it would be better for the government to direct deficit spending toward valuable projects (the roads, bridges, and parks mentioned), Keynes was so committed to this idea that he suggested that hiring people to dig holes and fill them back in would be better than doing nothing.

Both policies were tried during the Great Depression. President Franklin Roosevelt tried to spend the country's way out through government jobs programs such as the Works Progress Administration and the Civilian Conservation Corps. The money supply also expanded. Interestingly, the expansion of the money supply was less a conscious policy decision by the US government than a by-product of political unrest in Europe. Worried about the events that ultimately led to World War II, in the late 1930s Europeans shipped their money and gold to the United States for safekeeping, adding to and vastly expanding the US money supply.

Which policy deserves more credit for getting the United States out of the Great Depression? This is a tough question to answer because in the middle of a downturn, even a milder one than the Great Depression, countries do not bother

to run controlled experiments, separately changing each policy in isolation, first one then the other, to determine its effects. Instead countries are inclined to use all available avenues to escape the mess. The bigger measurement problem is that cause and effect are all muddled up.

Suppose, for example, that the government increases deficit spending to stem a downturn in the economy. Suppose the policy turns out to work—say, turning a huge 10 percent decline into a smaller 5 percent decline. If, as in this example, the decline is too severe to be completely reversed by the policy, all that an outside observer would be able to see is that the policy was implemented and a 5 percent decline resulted. What is not seen is that the downturn would have been worse without the policy. Furthermore, a bad economy can feed back to make a beneficial policy look damaging. A downturn in the economy naturally reduces the taxes the government earns from businesses and workers, increasing the deficit even if the government does not change spending on roads, bridges, or parks by one penny. This feedback effect can make it look like deficits, rather than stimulating the economy, cause downturns when in fact the reverse is true.

While governments may be loath to run economic experiments on their citizens (with a few, mostly lamentable, historical exceptions) economists have come up with some clever methodologies to tease out policy effects. In this case, Christina Romer (an expert on the Great Depression who served as the chair of the US president's Council of Economic Advisors, holding that position during the recent Great Recession) hit on the idea of looking at recessions outside the span of the Great Depression. To help separate cause and effect, she looked at the association between the decline in the economy in the year of the recession and policies undertaken *the year before*. If one change takes place before another, it is easier to argue that the first caused the second than the second caused the first (although this by no means *proves* that the first caused the second).

In every recession she examined, the depth of the recession corresponded to the decline in the money supply the year before, not the deficit. For example, the severe (8 percent) recession in 1938 followed a drastic (9 percent) decline in the money supply the previous year (a misguided Federal Reserve policy to redirect bank operations), a year in which the deficit hardly changed. On the basis of this evidence, Romer concluded that the expansion of the money supply during the Great Depression was the biggest contributor to its end, more important than Roosevelt's deficit spending on jobs programs such as the Works Progress Administration and the Civilian Conservation Corps. Further supporting her conclusion, despite the renown of Roosevelt's spending programs, the budget deficits that he ended up running were just not big enough to affect the economy

much one way or the other. On the other hand, the flood of money and gold from an anxious Europe prior to World War II was big enough that, given the causal effects estimated by Romer, it could by itself have ended the Great Depression. The lessons from the Great Depression are more than an interesting historical footnote, for they suggest the appropriate policy response to the current decade's Great Recession as well as perhaps any future crises.

### Case Study from Microeconomics

That completes the first empirical case study, from *macroeconomics*, the branch of economics devoted to the "big picture" (that's what the prefix "macro-" indicates) of the whole economy at once. We next turn to the case study from *microeconomics*, the branch of economics with a narrower focus ("micro-") on individual markets or decision makers. We will use some economic thinking to tackle a problem that is familiar to current (and former) students: deciding which college to attend.

There are many personal reasons for students to prefer one college over another. Some prefer a bigger college in a city; others prefer a smaller one in the setting of a college town. Some look for nationally competitive sports teams; others want excellence in performing arts. Most students would agree that if two colleges were the same on all of these dimensions, they would prefer to enroll in the more prestigious one. But what is *prestige*? If prestige is measured by the number of applications per slot, then this statement is tautological, in essence saying that more students prefer the more popular choice. Those of us who teach at highly rated colleges hope that prestige captures dimensions of quality beyond popularity. We hope that a "better" college is more effective in developing the student's mind, leading to a broader, wiser person, with the side effect of affording the student better career opportunities on graduation. Understandably, students may regard better career opportunities and higher associated pay as more than a mere side effect. If we just focus on this point, is there any way of measuring the contribution of college to career opportunities and pay? Put bluntly, is spending more to attend a better college worth the investment?

To provide a concrete example, suppose you have the choice of attending either Dartmouth College, the private Ivy League college in New Hampshire where the authors of this book teach, or UMass Dartmouth, one of the campuses of the University of Massachusetts public system. A year at Dartmouth College costs about \$50,000 in tuition and fees, but a year at UMass Dartmouth costs less than half that, about \$20,000 (and Massachusetts residents pay even less). Is

the extra \$30,000 a year for Dartmouth College—\$20,000 over the four years needed for a bachelor's degree—a smart investment?

Let's put aside all of the aspects of the college experience—the vibrancy of student life, the enrichment of the student mind, and so on—and focus on the narrow question of monetary returns. By doing so I do not mean to say that the monetary return is the only reason to go to a college or even the most important reason. But it is an issue worth some thought. The company PayScale compiles salary information from a comprehensive survey of college graduates (available on the website [www.payscale.com](http://www.payscale.com)). Based on the average salaries earned by graduates in mid-career, Dartmouth College ranks 13th in the country (\$19,000 average salary), while UMass Dartmouth ranks 204th (\$86,000). The average salary difference of \$33,000 per year adds up over the typical forty-year career to \$1.3 million. This seems like a huge amount, more than ten times the \$20,000 tuition difference over four years. The benefit-cost ratio is a bit overstated because the cost of the extra tuition comes up front but the benefit from the extra salary comes later, forty or more years later for salary earned close to retirement. There should be a way to give more heft to the immediate costs relative to benefits realized in the distant future. In fact, we can do that using formulas for compound interest. Sparing you the details, one can calculate that the implicit return on the Dartmouth College tuition investment is 18 percent. This is a fantastic return relative to other investments, for example, the 5 percent average return on the US stock market or the 4 percent return on Treasury bonds over the past decade.

There is a more fundamental reason, beyond formulas for compound interest, that the fantastic returns on a Dartmouth College education we just calculated may be overstated. The PayScale data tells us that the average Dartmouth College graduate earns \$33,000 more than the average UMass Dartmouth graduate. Does this mean that given the choice between the two colleges, enrolling in Dartmouth College would *cause* you to earn \$33,000 more on average? Not necessarily. If Dartmouth College is able to attract higher-caliber students, it may be the caliber of the student that generates high salaries, not any special contribution of Dartmouth College. Perhaps Dartmouth College students are not higher-caliber but just come from more privileged backgrounds and are able to exploit family connections to find high-paying jobs. A student facing the choice between the two colleges wants to know the causal effect of Dartmouth College on salary for a student of his or her fixed characteristics, which one cannot say using just the PayScale survey data.

Just as in the example from the Great Depression, separating true causal

effects from apparent associations requires more careful work. Stacy Dale and Alan Krueger, two economists working in Princeton, New Jersey, took a clever approach to estimating the causal effect of prestigious colleges on salaries. Rather than comparing average salaries of all Dartmouth College and UMass Dartmouth grads, the authors suggest concentrating only on students who were admitted to both and compares the average salary for them. This method holds constant the nature of the student (after all, the student could have gone to either college) and better isolates the effect coming from the college. What they find is surprising: the big differences that showed up using the PayScale survey data largely disappear!

Dale and Krueger's method is not perfect. The set of students accepted at both Dartmouth College and UMass Dartmouth (or any two schools differing a lot in selectivity) may be too small to allow an accurate comparison. The decision to attend one over the other may itself be related to some unobservable student characteristic (family wealth? striving?) that drives salary differences rather than the colleges themselves. Nonetheless, the study suggests caution in basing a college investment decision on available salary data. Although it is hard for me to admit as a Dartmouth College professor, it may be an overstatement to say that Dartmouth College *causes* a \$33,000 salary boost relative to UMass Dartmouth. The economic approach is a piece of the picture, but not the whole picture. Perhaps Dartmouth College has other benefits in terms of the vibrancy of student life or intellectual atmosphere that will continue to attract students so I will be able to keep my job.

### Back to the Stock Market

Having patiently waded through the intervening discussion of economic principles and case studies, you are owed my promised wisdom (!) about the stock market, an answer to the million-dollar question "What's the stock market going to do?" Go back to the Altria stock chart in figure 1, showing how my parents could have made me a millionaire by now. Are you curious what Altria makes? A good guess might be something high-tech: computers, communications equipment, pharmaceuticals? No. Altria makes cigarettes. Until a recent spinoff, Altria was the parent company of Phillip Morris, manufacturer of Marlboro and other brands of cigarettes. With cigarette smoking on the decline in the United States due to high taxes and restrictions on indoor smoking, it is hard to imagine that cigarette manufacturing would be a good investment. However, cigarette smoking



is on the rise in poor countries. Cigarettes are simple to manufacture, keeping production costs low. The advertising ban impedes potential competitors from entering the market, leaving the few established manufacturers to divide up the market and keep prices high. Because of these and other factors, cigarettes have been an incredibly profitable industry over the past half century.

The surprising performance of cigarettes provides a useful lesson about stock picking. It is tempting for nonprofessionals to think that careful analysis and good intuition can help them pick stocks that will provide a better return than the market average. Study after study shows this is generally not true. The current price of a stock on the market reflects the accumulated "wisdom of crowds" about its proper value, and the crowd of investors is generally much wiser than any individual. As soon as information comes out that a particular company or industry has attractive prospects, investors try to scoop up the stock at its current bargain price. With lots of people all trying to buy the stock, its price jumps up. So any positive information about a stock quickly gets reflected in the price. By the time the average investor gets the information, it is already too late to profit from it. From that point on, the stock price is likely to be quite unpredictable. An investor may as well throw darts at a list of stocks and invest in the ones randomly hit rather than try to outwit the market with his or her own picks. In study after study such "dartboard portfolios" are shown to beat the personal picks of investors, whether nonprofessional or professional. Making money picking stocks is about as easy as making money picking up the hundred-dollar bills one finds lying on the sidewalk.

What strategy should the average person, someone who is not a company insider or high-speed trader, use to invest in the stock market? For every big winner like Altria there are big losers that could destroy the investors' nest egg. Rather than picking one or a few stocks, one should reduce risk by diversifying across many stocks. Mutual funds have put together market indexes that in effect allow the investor to hold a tiny share of every stock available on the market. Such indexes are a good investment, especially if they can be purchased from a mutual fund that charges investors very low markups (over the cost of acquiring the stocks in the index). Trying to time the market, buying before an expected run up and selling before a downturn, is also a generally bad idea. Instead, buying and holding a market index for a long period allows the investor to smooth out the ups and downs of the market. That's the wisdom I promised about the stock market: diversification and buying and holding. It won't turn \$100 into \$1 million over a short span, but it does employ economic reasoning to help the average investor earn a solid return while cutting down on risk.

So, while economics can provide useful guidance on investing in the stock market, it is about much more. The topics mentioned in this article—art auctions, corruption, overpopulation, the value of a diamond, the return on a college education, the ups and downs of national and global economies—just scratch the surface of the broad range that economists study. Economics dares the practitioner to find something fascinating in what others might find pedestrian—the business side of life—and provides a set of core principles (this article mentioned some important ones: cost, market value, careful empirical measurement separating causation from mere correlation) that can help us understand that side of life.

- Page 6 *Demonstrating his . . . body and mind.* Thomas Jefferson, *Notes on the State of Virginia* (Boston: Bedford/St. Martin's, 2002), 175–180.
- Page 9 *Banneker's deliberate . . . African Americans.* Benjamin Banneker, "I Freely and Cheerfully Acknowledge, That I Am of the African Race," in *The African American Experience: Black History and Culture through Speeches, Letters, Editorial, Poems, Songs, and Stories*, ed. Kai Wright (New York: Black Dog and Leventhal, 2009), 109–111.
- Page 9 *The expansion . . . if necessary.* David Walker, *Appeal, in Four Articles: Together with a Preamble, to the Colored Citizens of the World, but in Particular, and Very Especially, to Those of the United States of America* (1830; Baltimore: Black Classic Press, 1993), 34.
- Page 10 *"African American novelist . . . white man's dilemma"* Ralph Ellison, "An American Dilemma: A Review," in *Shadow and Act* (New York: Vintage Books, 1995), 315–316.
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- WHAT IS ECONOMICS?
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