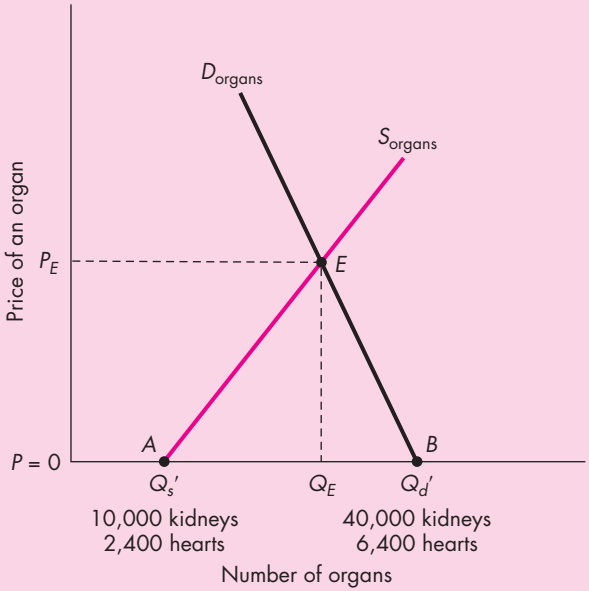
ILLUSTRATION 2.2

For Sale by Owner: One Kidney, Like-New Condition . . .

An acute shortage of human organs for transplantation has recently focused international attention on what appears to be an urgent need to increase charitable organ donations worldwide. The root of the current crisis can be traced, at least in part, to the development in 1986 of cyclosporine, a drug designed to inhibit organ and tissue rejection. Combined with increasing sophistication in tissue matching and advances in surgical techniques, the introduction of cyclosporine dramatically increased the success rates for many kinds of organ transplants. As survival rates increased and prices for transplants began to fall, demand for donated organs increased to levels that greatly exceeded the number of organs supplied through voluntary organ donations.

In 1995, U.S. doctors performed 2,400 heart transplant operations while 4,000 patients waited for hearts to be donated, 731 of whom died waiting. The situation was worse for kidneys: 10,000 kidney transplants were performed, 30,000 patients waited, and 1,375 died waiting for a kidney donation. For lung and liver transplants, 290 and 674 patients, respectively, died waiting for organs. In the United States and in most western European nations, the shortage of organs has placed the tremendous ethical burden of deciding who most deserves transplants squarely on the shoulders of the medical profession. The futile liver transplant for baseball legend Mickey Mantle highlighted the ethical dilemma in the United States.

Until recently, most medical professionals believed the best solution to the worsening shortage of organs was to encourage governments to promote vigorously an increase in the supply of organ donations. Educating citizens about the need to carry donor cards, strengthening laws to enforce the donation wishes of the deceased (families frequently overrule a deceased family member's organ donation decision), legalizing elective ventilation to increase organ-harvest rates (keeping brain-dead people alive with respirator machines), and even using animal organs are some of the options doctors hope will increase the supply of organs for transplantation. Unfortunately, the supply of organs appears stuck at inadequate levels while demand for organs continues to rise rapidly, and the shortage worsens each year.



As we explained in this chapter, shortages of any good arise when the price of the good is not allowed to rise to the market clearing level. Try not to squirm as we treat human organs as economic goods no different from wheat. This Illustration shows how the laws of demand and supply can explain why there is a shortage of human organs and how to eliminate the shortage. Gary Becker, the 1992 Nobel laureate in economics, proposed in a recent *BusinessWeek* column, "There aren't enough livers, hearts, and kidneys to go around, so why not increase the [quantity] suppl[ied] by offering money to donors?" In the United States, the Transplant Act of 1984 makes it a felony to buy or sell organs. America's medical policy makers are now ready to consider relaxing the law to allow some form of financial incentives for organ donation. Despite this new willingness to try financial incentives, doctors remain fearful that cash payments for organs could backfire and decrease the quantity of organs supplied. *The Wall Street Journal* reports that physicians who in the past refused to consider financial reimbursement are now having second thoughts. One doctor is quoted: "Frankly, I'm against financial incentives. But I'm for

saving lives, and therefore I'm for whatever it takes to save lives."

The accompanying figure shows an upward-sloping supply of donated organs, reflecting the observation that as the financial incentives for organ donation rise, so too does the number of organs donated. At a price of zero, the quantity of organs donated is Q_s' (point *A*) and the quantity demanded is Q_d' (point *B*). The shortage of human organs is measured by the distance between points *A* and *B* in the figure. In 1995, as noted above, "conscientious" citizens donated 10,000 kidneys as 30,000 patients waited for organs, and a shortage of 20,000 kidneys resulted. For heart transplants, a shortage of 1,600 hearts existed in 1995. As organ demand continues to shift rightward and organ supply remains stagnant, the shortage of organs (as measured by the distance between *A* and *B*) will only get much larger.

If millions of people die each year, why isn't point *A* located to the *right* of point *B* instead of to the *left* of it? In every country where citizens have been polled, surveys find an overwhelming willingness to donate organs. But as Kurtz and Saks report in their 1996 study, "The public has yet to put its 'organs' where its mouth is." Efforts to encourage organ donation as the "right thing to do" have so far caused only minimal rightward shifts in the organ supply curve. People's reluctance to designate themselves legally as organ donors can be attributed partly to procrastination and partly to anxiety harbored by some potential donors that, in the event of an accident, emergency room medical treatment might be less aggressive for accident victims whose driver's licenses are stamped "organ donor." In matters of one's own life, most people tend to be quite reluctant to take risks for free. As we show in a later chapter, people who have an aversion to risk require compensation in order to accept voluntarily a risky proposition. The higher the price offered for donated organs, the greater the number of people willing to stamp "organ donor" on their drivers' licenses.

At a price of P_E in the figure, the market for organs clears. Anyone willing and able to pay the market clearing price P_E will get an organ without a lengthy wait. When the price of donated organs rises to P_E, doctors and health care administrators no longer must make the dreadful decision of which patients get organs and which patients remain on the waiting list. The impersonal forces of the market allocate the scarce organs to the recipients most willing and able to pay for a donated organ. In the figure, those patients with demand prices—the maximum price a consumer would be willing and able to pay for a donated organ—at or above P_E choose to buy an organ at the market-determined price. Those patients between Q_E and point *B* with demand prices below P_E will not choose to buy an organ.

Many doctors, and indeed all compassionate citizens, are concerned that relying on market prices to allocate scarce organs leaves some patients without organs. Some patients choose not to pay for a new organ because even with a new organ, they judge their posttransplant life expectancy to be too short and tenuous to justify the price and discomfort of the transplant operation. Some patients between Q_E and *B* would have higher demand prices, and thus purchase an organ, if only their incomes were higher. Not all these people are poverty cases; some are simply people unwilling to strap their families with large medical bills. For potential recipients who truly represent poverty cases, compassionate donors could be allowed to designate that their organs go to the pool of indigent patients, where organs are allocated by a lottery system.

As long as the number of desired organs exceeds the number of donated organs—the quantity demanded exceeds the quantity supplied at a price of zero—the shortage of organs can be eliminated by letting the price of donated organs rise to the market clearing price. While not everyone who wants an organ for nothing will get one, at the market clearing price, more people get organs than would be the case if no financial incentives were offered (Q_E is greater than Q_s').

Sources: Gary Becker, "How Uncle Sam Could Ease the Organ Shortage," *BusinessWeek*, Jan. 20, 1997, p. 18; "Buddy Can You Spare a Lung?" *The Economist*, Jan. 25, 1997, p. 19; Prerna Mona Khanna, "Scarcity of Organs for Transplant Sparks a Move to Legalize Financial Incentives," *The Wall Street Journal*, Sept. 8, 1992, p. B1; Sheldon F. Kurtz and Michael J. Saks, "The Transplant Paradox: Overwhelming Public Support for Organ Donation v. Under-Supply of Organs," *The Journal of Corporation Law*, Summer 1996, pp. 768–803.