Chapter 4

Enabling Choice and Competition in Healthcare Markets

America is unique in both the extent to which it employs private markets to deliver and fund healthcare and in the quality of care provided. While there is substantial government involvement in healthcare regulation and funding, government payers often utilize private market mechanisms in their programs, and most Americans obtain their healthcare through private markets. The delivery of high-quality, innovative care in the United States is the result of market forces that enhance patients' welfare by allowing parties to act in accord with their own, self-determined interests. Nevertheless, the ability of markets to provide affordable, high-quality care for the entire population and the value of government interventions in healthcare markets have been debated for decades.

This chapter discusses the rationales commonly offered for the government's intervention in healthcare and explains why such interventions often, unnecessarily, restrict choice and competition. The resulting government failures are frequently more costly than the market failures they attempt to correct. Though some features of healthcare—such as uncertainty, third-party financing through insurance, information asymmetry, barriers to entry, and inelastic demand—interfere with efficient market function, we argue that these features are neither unique to healthcare markets nor so disruptive that they mandate extensive government interventions. We contend that competitive markets for healthcare services and insurance can and do work to generate affordable care for all.

Current proposals to increase government involvement in healthcare, like "Medicare for All", are motivated by the view that competition and free choice cannot work in this sector. These proposals, though well-intentioned, mandate a decrease or elimination of choice and competition. We find that these proposals would be inefficiently costly and would likely reduce, as opposed to increase, the U.S. population's health. We show that funding them would create large distortions in the economy. Finally, we argue that the universal nature of "Medicare for All" would be a particularly inefficient and untargeted way to serve lower- and middle-income people.

We contrast such proposals with the Trump Administration's actions that are increasing choice and competition in healthcare. In the health insurance arena, we focus on the elimination of the Affordable Care Act's individual mandate penalty, which will enable consumers to decide for themselves what value they attach to purchasing insurance and generate $204 billion in value over 10 years. Expanding the availability of two types of health insurance—association health plans; and short-term, limited-duration health plans—will increase consumers' choices and insurance affordability. We find that, taken together, these three sets of actions will generate a value of $453 billion over the next decade. For biopharmaceuticals, the Food and Drug Administration has increased price competition by streamlining the process for drug application and review. Record numbers of generic drugs have been approved, price growth has fallen, and consumers have already saved $26 billion during the first year and a half of the Administration. In addition, the influx of new, brand name drugs resulted in an estimated $43 billion in annual benefits for consumers in 2018. Data through the end of 2018 show that, for the first time in 46 years, the Consumer Price Index for prescription drugs fell in nominal terms—and even more in real terms—during a calendar year.

The dominant theory in economics for centuries in the Western world has been the efficiency of the free market system. For a free market to be efficient, free choice and competition must exist in the market

to allow consumer demand to be met by suppliers. In markets, prices reveal economically important information about costs and consumers' needs, and send signals to both sides of the market to facilitate an efficient allocation of resources. Centrally set prices undermine the important allocative role of prices in the economy.

Of course, many markets deviate in substantial ways from the conditions under which markets are perfectly efficient. Market failures occur to a greater or lesser extent throughout the economy. The important question is what to do about them. Market failures may be less damaging than the distortions and costs introduced by various interventions intended to correct them.

Following the research of Kenneth Arrow (1963), many economists and policymakers have argued that unique features of healthcare make it impossible for competition and markets to work. They claim that uncertainty in the incidence of disease and in the effectiveness of treatment, information asymmetry between providers and consumers of healthcare, barriers to provider entry, and the critical importance of and inelastic demand for health services all interfere with market function and justify government intervention in—or even its takeover of—healthcare markets. Some members of Congress have proposed nationalizing payments for the healthcare sector (which makes up more than a sixth of the U.S. economy) through the recent "Medicare for All" proposal. This policy would distribute healthcare for "free" (i.e., without cost sharing) through a monopoly government health insurer that would centrally set all prices paid to suppliers such as doctors and hospitals. Private insurance would be banned for the services covered by the "Medicare for All" program.

This chapter begins by critically examining the rationales offered for the government's intervention in healthcare. We find that though some characteristics of healthcare may present obstacles to a perfectly functioning market, these are not insurmountable problems that mandate the government's intervention in healthcare and can be overcome by market and nonmarket institutions. Moreover, these problems also occur in markets for many other goods without calls for government takeovers and the suppression of consumer choice and competition. Government intervention in healthcare is only clearly warranted where the political process has made a determination that some level of healthcare for low-income people is a merit good—a beneficial good that would be underconsumed, justifying replacing consumer sovereignty with another norm—so that government redistribution programs to provide healthcare in kind for low-income people might enhance efficiency.

We next critique the "Medicare for All" proposal. This plan would eliminate choice and competition—everyone would be forced to participate in the same insurance, with mandatory premiums set through tax policy and without the option of choosing an alternate insurance if they dislike the government's plan. Our analysis shows that the proposal would reduce longevity and health in the U.S., decrease long-run global health by reducing medical innovation,

and adversely affect the economy through the large tax burden required to fund the program.

In contrast to proposals that diminish health and damage the economy by curtailing market forces, the next section of this chapter details the Trump Administration's efforts to improve choice and competition in health insurance markets so as to help them better serve low- and middle-income people. The Administration has reduced the penalty associated with the Affordable Care Act's (ACA's) individual mandate to zero, so consumers can decide for themselves the value of purchasing health insurance. We analyze this deregulatory reform and find that it will generate $204 billion in value over 10 years. In addition, the administration has increased the choices and affordability of available health insurance plans by expanding association health plans and extending the available terms and renewability of short-term, limited-duration insurance plans. As opposed to sabotaging healthcare markets, conventional incidence analysis by the CEA implies that these three deregulations of health insurance markets together will benefit Americans by $453 billion during the next decade.

Finally, the last section discusses the Administration's reforms to enhance choice and competition in biopharmaceutical markets by streamlining the drug application and review process in a way that effectively lowers barriers to entry while ensuring a supply of safe and effective drugs. This deregulatory effort is contributing to a record number of generic drug approvals since January 2017, resulting in slower price growth and savings of $26 billion over the first year and a half of the Administration. In addition, the influx of new, brand name drugs since January 2017 has induced price reductions, resulting in an estimated $43 billion in annual benefits for consumers in 2018, even though the methods currently being used to estimate changes in drug prices do not reflect this. For the first time in 46 years, the Consumer Price Index for prescription drugs fell in both nominal and real terms during a calendar year.

We conclude that the market for health insurance and healthcare should be supported through increased choice and competition, not hampered by increased government intervention. Competitive markets for healthcare services and insurance—whether privately or publicly funded—can and do work to provide high-quality care for people at all income levels.[1]

[1] The CEA previously released research on topics covered in this chapter. The text that follows builds on the following research papers produced by the CEA: *The Opportunity Costs of Socialism* (CEA 2018c), *The Administration's FDA Reforms and Reduced Biopharmaceutical Drug Prices* (CEA 2018a), and *Deregulating Health Insurance Markets: Value to Market Participants* (CEA 2019).

Rationales for the Government's Healthcare Interventions That Restrict Competition and Choice

This section reviews the specific rationales for the government's intervention in healthcare markets and argues that they are often exaggerated; are not unique to healthcare; and, when present in markets for other types of goods and services, have not been used to call for government control.

In a market economy, free choice among competing suppliers generally leads to an efficient allocation of resources and maximizes consumer welfare. In the market system that predominates in the United States, people are mostly free to spend their own money and are therefore more careful in deciding how much to spend and on what the money is spent compared with when money is spent by governments on their behalf. Fiscal and regulatory policies that limit choice and competition distort allocations and reduce consumer welfare from what it would be in the absence of these policies.

Unfortunately, every market has features that deviate from it working perfectly, and healthcare is no exception. Some argue that specific features of healthcare make it unsuitable for the market mechanisms that we employ in the rest of the economy. Fifty-six years ago, the economist Kenneth Arrow published a seminal article identifying ways in which healthcare deviates from perfectly competitive markets and thus could generate an inefficient allocation of resources (Arrow 1963). The primary factors he identified included:

1. Uncertainty in the incidence of disease and in the effectiveness of treatment, and hence the likelihood of recovery.
2. Information asymmetry between providers of medical services and patients who lack an understanding of disease processes and treatments.
3. Barriers to entry that limit the supply of providers, including the need to attend selective medical schools and state licensing standards that include educational and training requirements. These barriers can be imposed by the government (licensing) or by private parties who often have a financial interest in limiting the supply of their service (limited admission to medical school, residency and fellowship training programs and specialty board society certification which is often needed to obtain hospital privileges).

Arrow (1963, 947) pointed out that these features lead to inefficient markets, and "when the market fails to achieve an optimal state, society will, to some extent at least, recognize the gap, and nonmarket social institutions will arise attempting to bridge it. . . . The medical-care industry, with its variety of special institutions, some ancient, some modern, exemplifies this tendency."

This section discusses the healthcare features that Arrow pointed out, the adaptations to them that can create problems of their own, and additional factors that some claim justify government intervention, either through public financing or public production in healthcare. We find that many of the arguments for the value of intervention have been exaggerated and that the costs of market failures in healthcare are often lower than the costs of government interventions undertaken to remedy them.

Uncertainty, Third-Party Payments, and the Problem of Moral Hazard

The primary institution that has arisen in response to the uncertainty inherent in healthcare is private healthcare insurance or third-party payments. Insurance mitigates the financial risk of getting sick and allows risk-averse individuals to pool the risk. This pooling of risk across the population enhances welfare by reducing the financial risk of uncertain illness events for each individual. Nevertheless, some have argued that the widespread adoption of third-party insurance in healthcare creates its own problems that warrant government intervention.

It has long been recognized that there is a trade-off between risk reduction through insurance and appropriate incentives at the time of care (Zeckhauser 1970). Payment after the time of service via third parties, such as private or public insurance plans, mutes the incentives of patients to shop based on quality and price, and therefore negates market mechanisms, which leads to the problem of overconsumption relative to production costs or moral hazard.

Normally, the risk against which insurance is purchased should be out of the individual's control. In healthcare, costs largely depend on the choice of a doctor and the willingness of this doctor and the patient to use medical services. Health insurance can increase the risk that is insured against: medical costs. Moreover, because medical insurance limits considerations of cost as services are consumed, "widespread medical insurance increases the demand for medical care" (Arrow 1963, 961). By inserting third-party control over payments, "insurance removes the incentive on the part of individuals, patients, and physicians to shop around for better prices for hospitalization and surgical care" (Arrow 1963, 962). Healthcare insurance reduces the price that an individual faces to zero or, if there is a copay or coinsurance, to greater than zero, but still less than the cost of the service as reflected by the market price. This is a recipe for wasteful spending and a welfare loss to society.

The primary way insurers deal with moral hazard is through cost sharing—deductibles, copayments, and coinsurance—to discourage overutilization by moving consumers up the demand curve. The Rand Health Insurance Experiment of the 1970s and early 1980s randomly assigned patients to health plans with different levels of cost sharing. It showed that higher consumer

cost-sharing leads to lower utilization, with little discernible impact on health (Newhouse 1993). Cost-sharing provisions have become far more common and burdensome for patients over the past few years. Nevertheless, unless cost sharing is quite high, it cannot eliminate moral hazard.

However, moral hazard is less of a problem than it at first appears to be, and it has important lessons to impart about the proper role of health-care insurance. Although seeking extra medical care because of insurance is rational economic behavior for an insured individual who gets to spread the cost over all other insured people, the presence of moral hazard suggests that "some uncertain medical care expenses will not and should not be insured in an optimal situation" (Pauly 1968, 537). The problem presented by moral hazard only clearly applies to items where we would expect zero (or very low) prices to lead to overuse—things like "routine physician's visits, prescriptions, dental care, and the like"—but not necessarily to serious illnesses (Pauly 1983, 83). In the case of invasive surgeries, painful treatments and tests, and medications with serious side effects, patients would be unlikely to overutilize them, regardless of how low the costs were (Nyman 2004). No one would have their gallbladder or pancreas removed, undergo chemotherapy, or endure a bowel preparation for a colonoscopy simply because the services were free—they would only utilize these services to treat or diagnose serious illnesses.[2] In other words, moral hazard is predominantly a problem when insurance covers routine or nonessential, discretionary services (e.g., cosmetic surgery) that most economists think should not be covered by insurance. It is not a problem for medical expenditures for the serious, costly, and unpredictable illnesses and treatments that most economists would agree should be covered by health insurance. For serious illnesses, insurance may promote additional spending that is likely to enhance welfare because the patient would have purchased it himself or herself if insurance had given them cash instead of directly paying for the service (Nyman 2004).

The interposition of third-party payment seems less problematic when we consider that insurers must compete to attract enrollees. In the process, they will act as agents for those enrollees in selecting and contracting with high-quality providers through networks or other means and negotiating favorable prices with these providers. The rigors of the market, perforce, help align private, third-party payers' actions with buyers' preferences. But the same cannot be said for third-party public payers. Unlike private insurers, which must compete on price, public payers do not need to compete. This makes private payers more likely than public payers to act as agents for patients.

[2] The incidence of disease may respond to costs in the long run (see the comparisons of short- and long-run factors below). For example, the price of treating a disease may affect people's behaviors or treatment of antecedent conditions so that the incidence of the disease ultimately changes.

Asymmetric Information

A common argument for the government's intervention in healthcare markets is that there is asymmetric information—that is, sellers know more than buyers about the nature and quality of the service that is being sold. Although this is true in virtually any market, in industries ranging from legal services to automobile repair, academics and policymakers often single out healthcare for government intervention. This is despite the fact that market and nonmarket mechanisms have developed to deal with such information issues, usually at far lower costs than government alternatives.

A nonmarket institution that Arrow (1963) identified as developing to deal with information asymmetry was professional medical ethics and the trust that physicians would be more motivated by fiduciary obligations to their patients than by profits. Trust is particularly important because patients are prone to rely on their physician's advice regarding what care is needed and where to obtain it (Chernew et al. 2018). Whether ethical and professional standards always succeed is a matter of debate, but it is likely that they—in combination with legal obligations to the patient—do alleviate the problem of information asymmetry. The advent of the Internet as a readily available information source—and the push for healthcare providers to provide medical information to patients through the now-universal legal requirement for informed consent—has decreased the asymmetry problem since Arrow (1963) wrote 56 years ago.

In addition, because 90 percent of healthcare spending is on patients with chronic conditions (Buttorff, Ruder, and Bauman 2017), these patients have the opportunity to gain knowledge from experience and to be highly informed relative to other markets. They learn which treatments work best for them and which have intolerable side effects, which providers are most knowledgeable and responsive, and where care can be most readily and cheaply obtained. Moreover, most people care deeply about healthcare. They are far more likely to seek out and utilize knowledge about healthcare than about, for instance, buying a vacuum cleaner.

The information asymmetry problem has also been mitigated by the fact that third-party payers, rather than patients, are often the real buyers of healthcare. Employers in their roles as insurers and purchasers of healthcare and third-party insurers pay for most of the care received, and they are far more informed than buyers in most markets. Indeed, they often know as much as the sellers about the set of products or services they are considering buying. Many payers explicitly quantify the costs and benefits of what they buy before actually paying for it—for example, through so called cost-effectiveness analysis. These buyers act as agents for patients by excluding providers or products that do not meet quantitative cost-benefit criteria from networks or

formularies. The utilization of quantitative purchasing metrics creates a more informed demand side in healthcare.

Barriers to Market Entry

Arrow (1963, 966) posited that though trust and delegation "are the social institutions designed to obviate the problems of informational inequality," licensing and educational certification standards were developed to reduce consumers' uncertainty "as to the quality of the product insofar as this is possible." Arrow acknowledged that this adaptation to market imperfection creates its own problems for the efficient function of the healthcare market—barriers to entry, which, among other problems, inefficiently limit the supply of healthcare providers.

Licensing and educational certification standards are not unique to healthcare; our society is awash in licensing and education requirements, from those for lawyers to those for hairdressers, that restrict market entry. What makes healthcare unique is the pervasiveness of these requirements and the fact that they are imposed by both public (licensing) and private parties, which often have a financial interest in limiting the supply of their service. Medical schools and residency training programs, run by physicians and medical institutions, select their enrollees; and graduation is a prerequisite for licensing. Moreover, certification by privately run, specialty board societies is often needed to obtain hospital privileges.

Licensing and minimum-quality standards can control entry, can assure quality in markets where there is information asymmetry between providers that know the quality of their service and consumers who do not, or can entail some combination of both (Stigler 1971; Leland 1979). Although they undoubtedly interfere with market efficiency, licensing and quality standards seem far more reasonable in medicine than they do for hairdressers. The reason is that trial and error works well when you can recover from the errors, but not when the provider's errors can result in irrevocable harm. Arrow (1963) suggested that there are three approaches to dealing with uncertainty about a provider's qualifications and licensing: (1) Allow licensing and exclude nonqualified entrants; (2) certify or label entrants as qualified without compulsory exclusion; and (3) do nothing and allow consumers to make their own choices. In an often–incorrectly cited statement about these alternatives for licensing—not, as some have mistakenly maintained (Reinhardt 2010), a statement about the need for government-provided health insurance—Arrow (1963, 967) wrote, "It is the general social consensus, clearly, that the *laissez-faire* solution for medicine is intolerable."

The Inelastic Demand for Healthcare

Some argue that the importance of medical care and the often-emergent nature of the care make it impossible for healthcare markets to work efficiently. Patients have neither the time nor the inclination to shop on the basis of price and quality. In circumstances like a trip to the emergency room after a car accident or a heart attack, choice is often impossible. Patients may also have little choice when, after their initial choice of hospital and physician for elective procedures, they become captive to a host of other services and providers that they cannot effectively choose. Thus, the context in which the service is provided, rather than the nature of the service itself, often determines whether consumers have the opportunity to make choices. For example, a computerized axial tomography (CT) scan of the head as part of a workup for an ongoing neurological problem allows making a choice between different service providers, but a similar CT scan for an acute head trauma does not. Or patients considering surgery for an aortic aneurysm can consider which surgeon and hospital best suits their needs but do not have the luxury of choice when their aneurysm is rupturing.

This issue is reflected in the price elasticity of demand for healthcare services—how much the quantity demanded changes in response to changes in price. Although the range of estimates for the price elasticity of demand for healthcare is relatively wide, it tends to center on –0.17, meaning that it is relatively price inelastic (Ringel et al. 2002). Studies of the price elasticity of demand for medical services, however, suggest that cheaper, more routine purchases—for example, preventive care and pharmacy benefits—have larger price elasticities than expensive, emergent care. Similarly, the demand for outpatient services is more price sensitive than the demand for hospital stays (elasticities, respectively, of –0.31 and –0.14); and unlike the situation for adults, price changes have no effect on the quantity of inpatient services demanded for children. It is reasonable to assume that treatment for serious or emergency care—for example, treatment for a trauma or for newly diagnosed cancer—is very inelastic. This is consistent with the basic economic observation that the price elasticity of demand becomes more elastic over time. In the short run (e.g., in an emergency), demand may be relatively inelastic because there may be few substitutes and consumers do not have time to look for alternatives. But elasticity increases in the longer term, as substitutes become available and consumers have time to shop.

A related way to assess the possibility of healthcare choice and competition is to determine whether healthcare services are "shoppable"—that is, whether patients can schedule when they will receive care, compare and choose between multiple providers based on price and quality, and determine where they will receive services.

Despite the issues presented by emergency care, people can shop for most healthcare services. A study of people under 65 with employer-provided

insurance found that 43 percent of healthcare services are potentially shoppable by consumers (Frost and Newman 2016). But the study failed to include spending on prescription drugs, which are generally shoppable as well. When the 11 percent of healthcare spending that goes to prescription drugs is added in, a majority of healthcare spending (43 + 11 = 54 percent) is shoppable.

In a study of 2011 claims by auto workers, shoppable services were reported as accounting for 35 percent of total healthcare spending, with inpatient shoppable services accounting for 8 percent of total spending and outpatient shoppable services accounting for 27 percent of total costs (White and Eguchi 2014). Yet this study, like the one cited above, also counted prescription drugs as part of total spending but did not include them in the shoppable category. When drugs are added in, shoppable goods and services accounted for 56 percent of healthcare spending. The study found that shoppable services are common and constitute a high percentage of the inpatient services provided, even though inpatient care is considered less shoppable than outpatient care. Of the 100 highest-spending diagnosis-related groups (i.e., categories of medical problems that determine payment for hospital stays) for inpatient care, 73 percent were shoppable; of the 300 highest-spending diagnosis-related groups for outpatient care, 90 percent were shoppable. The implication is that nonshoppable services, though a minority of services provided, are much more expensive and therefore represent a larger percentage of spending.

The literature is mixed on whether patients consider information on price and quality in making healthcare choices. Many reports find that patients do not utilize current price information tools to shop for healthcare. In a recent study of one shoppable service (lower-limb magnetic resonance imaging scans, MRIs), few patients consulted a free price transparency guide (less than 1 percent), and they did not select their provider based on overall prices or their out-of-pocket costs (Chernew et al. 2018). This is consistent with other studies showing that though a majority of plans now provide pricing information to their enrollees, only 2 to 3.5 percent of enrollees look at it (Frakt 2016). A study of employee behavior in the year before and after an online price transparency toll was introduced at two large companies operating in multiple market areas found that only a small percentage of employees used the tool, and it was not associated with a decrease in healthcare spending (Desai et al. 2016). Nevertheless, a study of enrollees in Medicare Part D prescription drug plans indicates that they will respond to a choice of low-cost options by switching from expensive to less expensive plans (Ketchum, Lucarelli, and Powers 2015). Experiments with reference pricing—a system of payment where an employer or insurer pays with usual coinsurance and copay provisions up to a maximum "reference" price for a nonemergency health service, and patients are responsible for all costs above that price—have found that consumers will shift to lower-price providers (Robinson, Brown, and Whaley 2017).

Similarly, a systematic review of the literature found limited evidence about the effect of quality information on patient choice and concluded that current attempts to provide comparative data have a limited impact (Faber et al. 2009). Nevertheless, there is evidence—based on a study of three conditions (heart attacks, heart failure, and pneumonia) and two common surgical procedures (hip and knee replacements) that together account for a fifth of Medicare hospitalizations and hospital spending—that higher-quality hospitals (as measured by rates of risk-adjusted survival, readmissions, and adherence to practice guidelines), attract a greater market share at a point in time and also grow more over time (Chandra et al. 2016a). This positive correlation between hospital quality and market share was strongest for patients who were not emergency admissions and therefore had more scope for choice. The reported failure of patients to consider available price and quality information may reflect the quality and ease of access of the information tools assessed rather than the willingness of patients to shop based on price and quality.

A confounding factor in assessing healthcare shoppability is the way healthcare consumers shop. After selecting their physician, they are prone to rely on his or her advice regarding what care is needed and where to obtain it. In the study of lower-limb MRIs described above, the referring physician was the primary determinant of where patients received their MRI, and most physicians referred to a narrow group of providers—each orthopedist sent, on average, 79 percent of their referrals to a single radiologist (Chernew et al. 2018). This referral pattern could be problematic in the current wave of health system consolidation, particularly in vertical integration. Referring physicians who work for hospitals within vertically integrated networks were far more likely to refer to providers within that hospital network, and the MRIs performed by hospital-based providers are generally more expensive than MRIs performed by out-of-hospital providers. Having a vertically integrated referring physician raised the cost of an MRI by 36.5 percent and the amount paid by the patient by 31.9 percent.

Concentration in provider markets leads to market power that interferes with patients' ability to shop for insurance and medical services. It is standard economic theory that monopolies and oligopolies lead to an inefficient allocation of resources and to waste. But the government has standard approaches for dealing with this problem, like antitrust enforcement and regulatory changes, that encourage competition and discourage unfair business advantages. These methods are the appropriate solution for the concentration of market power in healthcare markets, not government financing or a takeover. The Administration's report, *Reforming America's Healthcare System Through Choice and Competition* (HHS 2018), discusses the important role played by the antitrust divisions of the Federal Trade Commission and the Department of Justice.

Healthcare Is Not Exceptional

Healthcare is not unique in having features that lead to the departures from market efficiency that Arrow outlined 56 years ago, or that others have since espoused. Most people know far less about the workings of their car than their auto mechanic does. And there is uncertainty about when a person will have an accident or suffer a car breakdown and whether the mechanic's intervention will successfully restore the car's functions. Barriers to market entry in the form of licensing and education requirements cover hundreds of different professions and service providers, often with little demonstrable gain. And healthcare is not the only market where there is relatively inelastic demand.

The question for healthcare, as well as for every sector of the economy, is: What is the optimal way to deal with market inefficiencies? Government intervention is not the only, or even an obvious, answer, and it can be as inefficient and costly as private market failures—often even more so. Market failure is ubiquitous, in the sense that all the conditions for perfect competition are rarely achieved, so failure occurs to a greater or lesser extent throughout the economy. Various types of failures can be thought of as externalities—that is, as "nonmonetary effects not taken into account in the decisionmaking process"—when parties engage in transactions (Zerbe and McCurdy 1999, 561). The question then becomes how to minimize the transaction costs to eliminate or minimize the externalities.

The relationship between hospital quality and market share described above suggests that competition and market forces—which would normally exert pressure on low-productivity firms to become more efficient, shrink, or exit the market—are playing a role in healthcare services (Chandra et al. 2016a). Another study found that, despite the conventional wisdom that idiosyncratic features of the healthcare sector—like consumer ignorance of quality, and the lack of price sensitivity resulting from health insurance—would lead to wide variation in healthcare productivity, the dispersion of productivity across hospitals treating heart attacks is similar to or smaller than the productivity dispersion across a large number of U.S. manufacturing industries (Chandra et al. 2016b). Because productivity dispersion has been shown both theoretically and empirically to decrease with greater competition, this suggests that healthcare may not be more insulated from demand-side competitive pressures than other sectors. Taken together, these studies "suggest that, contrary to the long tradition of 'healthcare exceptionalism' in health economics, the healthcare sector may have more in common with 'traditional' sectors subject to standard market forces than is often assumed" (Chandra et al. 2016b, 102).

Redistribution and Merit Goods

Although less often discussed by economists, a legitimate justification for the government's intervention in healthcare is that healthcare is a merit good

whose consumption is not only valued by patients who consume it but also by the third parties that finance this consumption. Broadly speaking, a merit good is one for which society has made a judgment that the merits (or demerits) of a particular good or service require superseding consumer sovereignty with an alternative norm (Durlauf and Blume 2008). This occurs when society makes a judgment that the good will be underconsumed in a free market economy because of a divergence between the private benefits individuals take into account and the actual benefits to the public. Such goods should be subsidized so that consumption does not entirely depend on ability and willingness to pay.[3]

Virtually every high-income country, including the United States, has made a collective judgment that healthcare and health insurance provide greater utility than some consumers can afford. American society, through the political process, has therefore been willing to redistribute income to subsidize healthcare for low-income people, with the efficient level of distribution determined by the preferences of the population. Under such merit motives, providing healthcare in kind through programs like Medicaid, rather than through cash transfers to people who make purchases based on their own preferences, is optimal and efficiency enhancing. This creates the reverse situation from the moral hazard problem, where pricing below cost decreases efficiency by inducing beneficiaries to consume more healthcare than they normally would. "Under merit motives such pricing below cost does not create moral hazard and, indeed, enhances efficiency" (Mulligan and Philipson 2000, 22). However, this sort of paternalistically motivated merit good transfer program may be far less progressive than a conventional analysis of lump sum income transfers would suggest.

Despite international agreement that governments have a role in funding, to a greater or lesser extent, health insurance, few countries (the United Kingdom being the notable exception) actually pay for and provide healthcare for all. And a survey of 19 countries, including both developed and developing ones (i.e., China and India), shows that they all allow private funding and provisions of healthcare and private health insurance (Mossialos et al. 2017). Budgetary constraints and societal priorities and preferences for how to utilize limited resources impose a practical limit on merit motives. Several States—after enacting legislation (Vermont, in 2014), having failed ballot initiatives

[3] Merit goods should not be confused with public goods, which must be provided by the government because the private market will not supply them. Public goods differ from private goods (including merit goods) because they are nonexcludable—i.e., the supplier of the good cannot prevent people who do not pay for it from consuming it—and they are nonrival—i.e., consumption by one person does not make the good unavailable to others (Durlauf and Blume 2008). The classic example is national defense. In protecting the Nation from attack for one person, we cannot easily exclude others from being protected, even if they are unwilling to pay. One person's consumption of protection does not lessen the amount of protection others can consume. Healthcare, in contrast, is both excludable and rival.

(Colorado, in 2016), or experiencing stalled legislation (California, in 2017)—have not followed through on single-payer healthcare initiatives because of financing concerns (Weiner, Rosenquist, Hartman 2018).

Current Proposals That Decrease Choice and Competition

This section discusses current proposals to increase the government's involvement in healthcare that are partly motivated by the view that competition and free choice cannot work in healthcare. Here, we assess the proposals by many members of Congress for "Medicare for All" that would nationalize payments for the healthcare sector, which makes up more than a sixth of the U.S. economy.

Some claim that only the government can take advantage of economies of scale in healthcare and that a government healthcare monopoly will be more productive by avoiding "waste" on administrative costs, advertising costs, and profits and by using its bargaining power to obtain (i.e., dictate) better deals from healthcare providers. A recent proposal sponsored or cosponsored by 141 members of Congress (S. 1804; H.R. 676), titled "Medicare for All" (M4A), would distribute healthcare for "free" (i.e., without cost sharing) through a monopoly government health insurer that would centrally set all prices paid to suppliers such as doctors and hospitals. This proposal would make it unlawful for a private business to sell health insurance or for a private employer to offer health insurance to its employees. Although President Obama promised, contrary to fact, that consumers could keep their health insurance plan under the ACA, M4A takes the opposite approach: All private health insurance plans will be prohibited after a four-year transition period.

Instead of relying on competition and individual choice to control prices, M4A would lower them by fiat. M4A's ban on private competition would be even more restrictive than healthcare plans in other countries and other government programs in the United States. For example, the government does not ban private schools, even though it collects taxes to run a public school system. Education providers—a.k.a. teachers—can still work at private schools, and parents can forgo free public education and pay private school tuition. Under the M4A bill, patients would have no insurance alternatives. Health providers, though not government employees, would have no choice but to receive their income and instructions from the Federal government or from the relatively few people who could afford to purchase expensive medical services without insurance.

A major issue for M4A is the low productivity of government programs in translating tax revenues into outputs valued by participants, such as improved health. This problem is common with in-kind programs like government-provided healthcare, where beneficiaries often do not value the healthcare that is

provided as much as the money that is spent on it. According to the Centers for Medicare & Medicaid Services (CMS 2017), in 2016 about $7,590 was spent per U.S. Medicaid beneficiary. If Medicaid beneficiaries were given this spending to allocate as they see best, most would not spend it all on health insurance. In the Oregon Medicaid expansion experiment, Finkelstein, Hendren, and Luttmer (2015) found that Medicaid enrollees only valued each additional $1 of government Medicaid spending at $0.20 to $0.40 (also see Gallen 2015). Similarly, a study of Medicaid-like coverage provided through Massachusetts' low-income health insurance exchange found that most enrollees valued their coverage at less than half its cost (Finkelstein, Mahoney, and Notowidigdo 2017).

A second issue is inefficient financing. The price paid to this government monopoly in health insurance, the analogue to the revenue received by private plans, would be determined through tax policy.

M4A will be neither more efficient nor cheaper than the current system, and it could adversely affect health. As we show below, evidence on the productivity and effectiveness of single-payer systems suggests that M4A would reduce longevity and health, particularly among the elderly, while only minimally increasing the fraction of the population with health insurance. In the near term, it would lead to shortages and decreased access to care. And in the long-run, M4A could decrease quality by decreasing innovation. A smaller economy would be another likely adverse effect, due to M4A's disincentives to work and earn. The CEA has calculated that if M4A were financed solely through higher taxes, it would reduce long-run gross domestic product (GDP) by 9 percent and household incomes after taxes and health expenditures by 19 percent (see chapter 8 of this *Report* for further discussion).

Implications for the Value of the Program and Health Outcomes

M4A would replace the existing private and public system for financing healthcare insurance—which includes private, group insurance for about half the population; government insurance for lower-income households, with essentially zero out-of-pocket expenses, in the Medicaid program covering 21 percent of the population; Medicare for the elderly and nonelderly disabled covering 14 percent of the population, including traditional Medicare that has cost sharing in the form of deductibles and coinsurance, privately run Medicare Advantage plans that compete against other advantage plans and traditional Medicare for enrollees and insure about a third of Medicare recipients, and privately run Medicare Part D plans for prescription drug coverage; and the individual, nongroup market covering 7 percent of the population, consisting of the ACA exchanges and nonexchange plans (Kaiser Family Foundation 2017a, 2017b). The existing system also provides uncompensated emergency care—because the 1986 Emergency Medical Treatment and Labor Act requires hospitals to treat anyone coming to their emergency departments, regardless

of their insurance status or ability to pay—and uncompensated nonemergency care delivered by various providers. Therefore, changing the financing of health would leave limited room to improve health among U.S. citizens by expanding insurance coverage. The current system includes some non–Medicaid eligible citizens who remain uninsured, but by all estimates they are healthy people, which is why they choose not to purchase an ACA plan (CBO 2017).

M4A would determine quality and productivity through centrally planned rules and regulations. As opposed to a market with competition, if a patient did not like the tax charged or the quality of the care provided by the government monopoly, he or she would have no other insurance options. In addition, price competition in healthcare itself, as opposed to health insurance, would be eliminated because all the prices paid to providers and suppliers of healthcare would be set centrally by the single payer.

Despite its name of "Medicare for All", the proposed plan differs from the currently popular Medicare program by eliminating cost sharing; by preventing private health plans from competing, as in the Medicare Advantage and Part D programs; by preventing private markets from supplementing the public program; and, according to the bill in the House of Representatives, by prohibiting provider institutions from participating in the program unless they are public or not-for-profit entities. Moreover, even if M4A made no changes to Medicare operations, it still would have the problem of taking a program that functions reasonably well for about a sixth of the population and making it work on a vastly larger scale.

Under the existing system, the primary financial limits on healthcare utilization are copayments, coinsurance, and deductibles, which keep premiums lower by discouraging overconsumption of free healthcare at the time of service. M4A would eliminate these out-of-pocket expenses for everyone. If the aggregate supply of healthcare were held unchanged, M4A would reduce health and longevity by reallocating healthcare from high-value uses to lower-value ones. In addition, M4A would reduce the aggregate supply of healthcare by reducing payments to providers, by discouraging innovation, and by using a centralized bureaucracy to allocate resources. We expect that healthcare for the elderly people who are currently covered by Medicare would be especially adversely affected by decreased access to care and decreased longevity.

Here, we illustrate the evidence for the relationship between single-payer programs, healthcare, and health outcomes, including short-run effects, assuming that it has no impact on medical innovation, as well as long-run effects that incorporate changes in incentives for innovation and the resulting impact on future health.

Economies of Scale and Administrative Costs in Insurance

Many M4A advocates argue that the major benefit of adopting single-payer healthcare would be that the costs of producing health insurance by a state

monopoly would be lower than under competition. Some evidence on this comes from the literature on the so-called administrative costs of health insurance that do not directly go toward paying for care for beneficiaries. In order to hold regulation constant, Sood and others (2008) analyzed administrative costs within a single State, California. They considered administrative costs and profit levels as the residual of the premium revenue spent directly on beneficiaries' healthcare. They found that in 2006, private plans spent about 12 percent on administrative costs and had profit levels that were significantly below the average for all Standard & Poor's 500 companies (5 vs. 7.5 percent), which, given the existence of government plans, makes profits of only 2 or 3 percent of overall health spending. The CBO (2016) found that private plans spent 13 percent of their premium revenues on administrative expenses and that 2 percent were profits. In contrast, Sood and others (2008) found that Medicare costs were 5 percent, plus the administrative costs of intermediaries that collect premiums and process Medicare claims.

However, the putative efficiency of Medicare administration by the CMS compared with private insurers may simply be a product of inadequate accounting. Medicare patients—the elderly, the disabled, and patients with end-stage renal disease—are sicker and costlier than the younger enrollees in private plans. Medicare's administrative costs as a share of medical spending are smaller mainly because medical spending is higher for the Medicare population compared with the population below 65 that is privately insured—nearly two and a half times higher per person (Book 2009). In addition, insurers' administrative costs do not rise proportionally with total health claim costs—most administrative expenses are fixed per program or are incurred on a per-beneficiary basis, and claims processing costs represent a very small share of administrative costs. If we look at administrative costs *per enrollee*, we find that Medicare is more *inefficient* than private insurers (Kessler 2017). Sood and others (2008) found that Medicare spends $471 per enrollee on administrative costs, close to the $493 in for-profit plans, and actually above the $427 spent across all California health plans. Similarly, Book (2009) found that as a proportion of total costs in 2005, Medicare's administrative costs were 5.8 percent, compared with 13.2 percent for private insurance; but Medicare's administrative costs per person were $509, compared with $453 for private insurance. An additional reason that administrative spending by private insurers artificially appears higher than that by the CMS for Medicare is that private insurers' administrative costs include State premium taxes, from which the CMS is exempt, and directly provided medical services—such as disease management services and nurse consultation telephone lines—that are not counted as paid medical claims (Book 2009).

Philipson (2013) found that the focus on administrative costs omits other important costs, and forgone opportunities, of the state monopoly approach. Under a government monopoly health insurer, the plan is financed with taxes

rather than voluntarily paid premiums. As is discussed below, the economic cost of taxes is not merely the revenue that arrives in the Treasury but also the distortions of household and business decisions induced by taxes. This applies to administrative costs as well, so that $1.00 in administrative costs in the private sector is equivalent to about $1.50 in administrative costs in the public sector.

In addition, claims of Medicare superiority ignore the vital role that private "administrative" expenses—such as marketing, profits, and utilization controls—play in driving competition and innovation in the marketplace. Administrative costs also help prevent fraud and improper payments, which are estimated to be about 8 and 10 percent of Medicare and Medicaid spending, respectively (HHS 2018).[4] Furthermore, private plans reduce overall costs by aggressively reviewing healthcare utilization. As a result of competition among plans, lower overall expenses are passed on to consumers as lower premiums, even though a greater percentage of those expenses may be administrative. In contrast, a public program does not engage in premium competition. Beneficiaries, workers, and shareholders of private plans would not tolerate the higher premiums or lower wages or dividends that would be the result of lax utilization controls or high levels of fraud.

Healthcare providers, as distinct from health plans, also spend significant time and resources on administrative costs (Woolhandler, Campbell, and Himmelstein 2003; Himmelstein 2014). Some of these costs serve the economic functions noted above, such as controlling fraud and overutilization; but others are specifically related to billing. It has been asserted (Weisbart 2012) that a single-payer system would eliminate many billing-related expenses, but these savings may not materialize, because providers would likely need to struggle with voluminous new Federal regulations issued to deal with the myriad different circumstances that could arise among the 325 million people who would be on the single government plan.

It is unlikely that a government-run monopoly's efforts to lower healthcare costs by eliminating profits and marketing would be any more effective than government monopoly efforts in other sectors of the economy. In many other industries, economists have generally found that production costs under a monopoly are higher than with competition. Monopolies that are owned in whole or in part by the government incur higher costs than private corporations that operate competitively. The seminal research by Boardman and Vining (1989) found robust evidence that government-owned and mixed enterprises are less efficient than private corporations. More recent work has examined the inefficiencies and higher costs incurred by public monopolies in the education

[4] Overpayments were about $32 billion in Medicare Fee-for-Service and $36 billion in Medicaid. Underpayments only accounted for 3 percent and 1 percent respectively of the programs. The Medicaid Fraud Control Unit reports (Murrin 2018) that over the last five years, fraud has accounted for nearly 75 percent of all its convictions.

and corrections sectors (Hoxby 2014; Gaes 2008). Once these factors are taken into account, Medicare's efficiency advantage becomes illusory, even if abnormal profits and marketing were eliminated from the private sector.

Cross-Country Evidence on the Effects of Universal Healthcare on Health Outcomes and the Elderly

Proponents of M4A often refer to European-style programs of socialized medicine as their role model, but the European programs appear to deliver less healthcare to the elderly and result in worse health outcomes for them.[5] Many of these programs ration older patients' access to expensive procedures directly or through waiting times (Cullis, Jones, and Propper 2000). Such age discrimination in coverage occurs because there is no competition between plans under a monopoly. If there were, presumably private plans—which would be outlawed under M4A—would emerge to offer the care not adequately covered by the government monopoly.

Current Medicare beneficiaries would likely be hurt by M4A's expansion of the size of the eligible program population. The evidence for a trade-off between universal and senior healthcare is supported by both the European single-payer experience that limits care for the elderly compared with the U.S., along with the recent domestic U.S. reforms under the ACA that reduced projected Medicare spending by $802 billion to help fund expansions for younger age groups (CBO 2015).

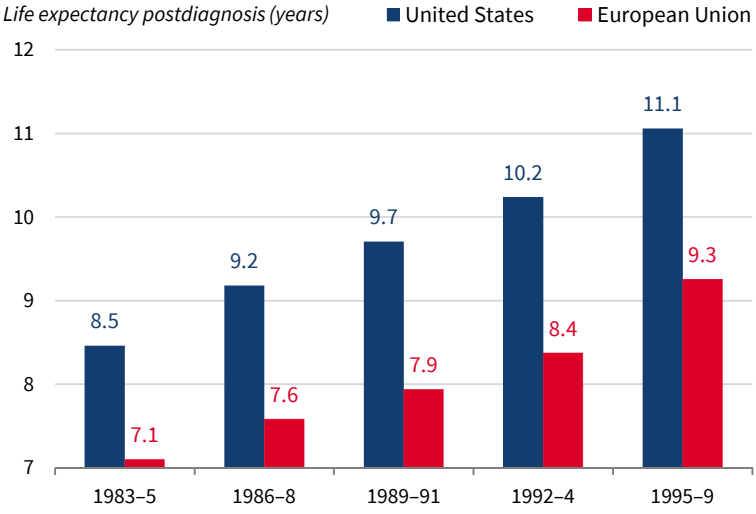
The United States' all-cause mortality rates relative to those of other developed countries improve dramatically after the age of 75 years. In 1960—before Medicare—the U.S. ranked below most EU countries for longevity among those age 50–74, yet above them among for those age 75 and higher. This pattern persists today. Ho and Preston (2010) argue that a higher deployment of life-saving technologies for older patients in the U.S. compared with other developed countries leads to better diagnosis and treatment of diseases of older people and greater longevity.

The availability and utilization of healthcare are particularly important for cancer longevity. Cancer is the leading cause of death in many developed countries, especially among older individuals, and it constitutes an important component of overall U.S. healthcare spending. Philipson and others (2012) found that U.S. cancer patients live longer than cancer patients in 10 EU countries, after the same diagnosis, due to the additional spending on higher-quality cancer care in the U.S. Figure 4-1 shows the results for life expectancy after diagnosis.[6] Ho and Preston (2010) point out that in Europe, where the proportion of surgically treated patients declines with age, five-year survival

[5] Note that a number of European countries—including Belgium, Germany, and Switzerland—have universal healthcare without having a single-payer system.

[6] Between the two continents, difference not attributable to a different propensity to screen for cancer in the U.S.

Figure 4-1. Average Survival from a Cancer Diagnosis, 1983–99



Source: Philipson et al. (2012).
Note: The results are standardized by age, gender, and cancer site. EU countries for which survival data were consistently available over the analysis period are included: Finland, France, Germany, Iceland, Norway, Slovakia, Slovenia, Scotland, Sweden, and Wales.

rates for colorectal cancer are lower for elderly patients than younger patients. But in the United States, where utilization of surgery does not decline with age, colorectal cancer survival rates do not decline for elderly patients.

This effect is not confined to cancer treatment. For ischemic heart disease—the world's leading cause of death—the use of cardiac catheterization, percutaneous coronary angioplasty, and coronary artery bypass grafting declines with patients' age, but declines more steeply in other developed countries than in the United States. Compared with these developed countries, the U.S. has a lower case fatality rate for acute myocardial infarction (the acute manifestation of ischemic disease) for older persons but not for younger persons age 40 to 64 (Ho and Preston 2010).

This disease-specific evidence is more informative about the benefits of healthcare than often-discussed cross-country comparisons of nationally aggregated outcomes, such as overall population longevity and aggregate healthcare spending. There are many determinants of overall population health other than healthcare—such as diet, exercise, genes, and violence—that differ across countries (CEA 2018b). These factors may lead to lower U.S. longevity even while U.S. healthcare is of higher quality. The fact that many wealthy foreigners who could afford to obtain care anywhere in the world come to the U.S. for specialized care is perhaps the strongest indication of its superior quality. The general pattern of medical tourism is that the United States exports high-quality care while importing low-cost care (Woodman 2015).

The Lower Quality of Universal Coverage, in Terms of Reduced Availability

Another major quality attribute of healthcare is how long one must wait to receive it. The highest-quality care may be ineffective if there are delays in diagnosis or treatment. For example, delays in diagnosing or treating cancer will cause decreased survival and increased suffering, regardless of how good the care is. This major dimension of the quality of care may fall with government expansions of care as they generate excess demand, and thereby may induce queues with waiting times to access care.

Because it is "free" at the time of service, the single-payer, universal-coverage system gives consumers more reason to consume healthcare (Arrow 1963; Pauly 1968). The Rand Health Insurance Experiment documented that as the amount of coinsurance decreased, utilization of medical care rose (Newhouse 1993; Brook et. al. 2006). M4A cuts the out-of-pocket expenses that people in private insurance and the current Medicare system pay (about 70 percent of the insured population) to zero (Kaiser Family Foundation 2017a). In addition, when it cuts provider reimbursement rates, a single-payer system gives the healthcare industry less reason to supply it.[7] Something must determine who gets the scarce provider resources, and quality degradation is the typical way that markets make this determination when prices are unable to do so (Mulligan and Tsui 2016). The quality degradation may take the form of shorter appointment times, longer patient travel times, or longer waiting times to receive care.

Waiting times for nonemergency or elective surgery were shorter for adults (18 and older) in the U.S. than in 10 other developed countries, especially those with a single-payer system. Table 4-1 shows that 61 percent of Americans waited less than 1 month after being advised that they needed surgery. The comparable figures for Canada and the United Kingdom, two countries frequently cited as models by M4A advocates, were 34.8 percent and 43.4 percent, respectively. Similarly, table 4-2 shows that only two countries (Germany, at 71.2 percent; and Switzerland, at 73.2 percent) had a slightly higher percentage of patients able to see a specialist within 4 weeks of referral than the U.S. (69.9 percent), and neither of these countries has a single-payer system (Mossialos et al. 2017). The figure for Canada was 38.0 percent, and that for the U.K. was 48.6 percent.

In a recent report, the CEA (2018c) pointed out that waiting times for seniors to see a specialist in the U.S. were shorter than in single-payer countries (figure 4-2). Some argue that this shows that Medicare, and thus its distant cousin "Medicare for All", works and should be extended to everyone. This is a misinterpretation.

[7] M4A reduces payments to providers (subtitle B of Title VI of the Senate "Medicare for All" Act of 2017).

Table 4-1. Adult Waiting Times for Nonemergency or Elective Surgery, 2016

Country	Less than one month (percent)	Between one and four months (percent)	Four or more months (percent)	Do not know or decline to answer (percent)	Total (count)
Australia	56.8	28.3	8.4	6.6	683
Canada	34.8	44.0	18.2	3.0	557
France	51.4	47.0	1.6	0.0	173
Germany	39.0	58.1	0.0	2.9	124
Netherlands	48.9	39.8	4.5	6.9	99
New Zealand	43.3	38.6	14.9	3.2	141
Norway	37.0	41.9	15.3	5.8	208
Sweden	37.3	46.8	11.8	4.1	1,015
Switzerland	59.3	32.8	6.5	1.5	219
United Kingdom	43.4	31.8	12.0	12.8	87
United States	61.0	31.7	3.6	3.7	268

Source: Commonwealth Fund Survey.

Note: Respondents answered the survey question, "After you were advised that you needed surgery, how many weeks did you have to wait for the non-emergency or elective surgery?"

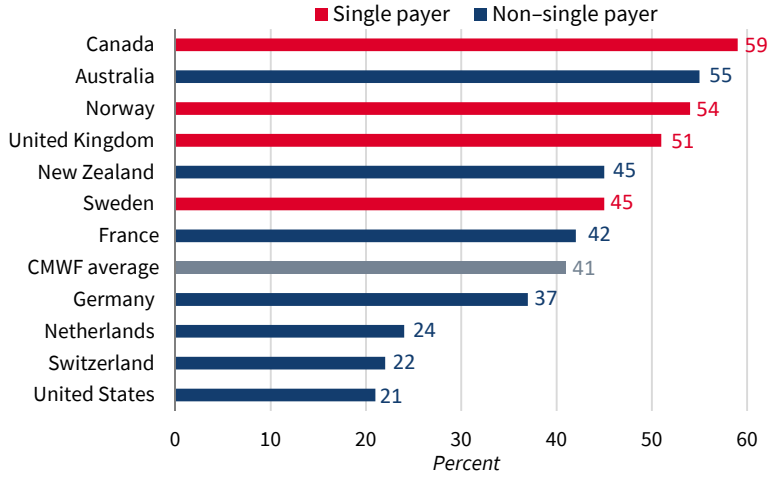
Table 4-2. Adult Waiting Times for Specialist Appointments, 2016

Country	Less than four weeks (percent)	At least four weeks (percent)	Do not know or decline to answer (percent)	Total (count)
Australia	54.7	39.3	6.1	2,156
Canada	38.0	58.5	3.5	2,228
France	60.2	39.8	0.0	639
Germany	71.2	27.4	1.4	459
Netherlands	64.0	28.9	7.1	580
New Zealand	49.3	47.3	3.3	404
Norway	36.9	55.5	7.7	605
Sweden	48.1	44.7	7.2	3,251
Switzerland	73.2	25.9	0.9	810
United Kingdom	48.6	42.5	8.9	371
United States	69.9	25.3	4.8	1,019

Source: Commonwealth Fund Survey.

Note: Respondents answered the survey question, "After you were advised to see or decided to see a doctor in specialist health care/specialist (or consultant), how many weeks did you have to wait for an appointment?"

Figure 4-2. Seniors Who Waited at Least Four Weeks to See a Specialist during the Past Two Years, 2017



Sources: Canadian Institute for Health Information; Ghanta (2013); Commonwealth Fund survey.
Note: Single-payer systems were compiled by Ghanta (2013) from World Health Organization sources. CMWF average refers to the average of the 11 countries in the Commonwealth Fund survey. Results exclude respondents who never attempted to get an appointment.

All that figure 4-2 shows is that the current Medicare system, which mixes public and private elements—including competition between hundreds of Medicare Advantage plans and between hundreds of Medicare Part D drug plans and public and private financing—is superior to foreign, single-payer systems (see chapter 8 for more discussion). It does not indicate that Medicare is superior to the insurance currently available for the non-Medicare U.S. population. And it has little bearing on what to expect from M4A. M4A is not simply an expansion of Medicare. It is a completely different program that bans private insurance and competition, and that anticipates a system-wide lowering of reimbursement levels below private insurance rates. According to the CMS Actuary, lowering private provider rates to current Medicare rates would lead to a drop of about 40 percent for hospitals' reimbursements and 30 percent for physicians' reimbursements by 2022, decreases that are scheduled to grow even greater over time, due to statutory Medicare payment restraints enacted as part of the ACA and the Medicare Access and CHIP Reauthorization Act of 2015 (CMS 2018; Blahous 2018b). These lower reimbursement rates will undoubtedly prolong waiting times and worsen access to care because providers respond to reimbursement levels. In a study of Medicaid fees, every $10 change up or down led to a 1.7 percent change in the same direction in the proportion of patients who could secure an appointment with a new doctor (Candon et al. 2017). Even more worrisome, Medicare's hospital payment rates are, on average, so far below hospitals' reported costs of providing services

that the CMS Actuary projects that by 2019, over 80 percent of hospitals will lose money treating Medicare patients. If this projection is correct, M4A would force 80 percent of hospitals to lose money when treating *all* their patients (Blahous 2018b).

One does not need to go abroad to see the problems with single-payer medicine. The Veterans Health Administration (VHA) is a publicly funded, single-payer system to provide care to military veterans. Its government-employed providers, particularly medical specialists, are underpaid compared with the private market and lack the motivation to provide the care that market competition to produce profits generates. In 2014, it was widely reported that the Phoenix VHA facility, along with several other facilities, had kept large numbers of veterans waiting inordinate amounts of time to receive treatment and that some had died while waiting (Farmer, Hosek, and Adamson 2016). Many of the facilities had falsified records in order to meet the VHA's target of providing appointments within 14 days. Using the VHA's own data, outside researchers found tremendous variation in waiting times across VHA facilities. Although most veterans get care within 2 weeks of their preferred appointment dates, a significant number wait more than 60 days, and only half reported getting care "as soon as needed" (Farmer, Hosek, and Adamson 2016, 9). The Veterans Access, Choice, and Accountability Act of 2014 created a temporary plan—the Choice Program—to give veterans the option of receiving care from a private, community-based provider when timely care is unavailable from a VHA facility. Unfortunately, the program had limited success—veterans were still experiencing lengthy actual waiting times for appointments in 2016 (GAO 2018). In June 2018, President Trump signed the VA MISSION Act of 2018 to extend funding for the Choice Program and to improve it by consolidating it over the next year with six other programs offering community-based care into the single Veterans Community Care program. This statute aims to minimize the inconsistent experience that veterans receive by requiring the VHA to standardize access to care, assess the system's capacity to provide the care required, establish a high-performing national network of providers to offset capability gaps, and transition the VHA to an integrated healthcare system.

A U.S. Single-Payer System Would Have Adverse Long-Run Effects on Global Health through Reduced Innovation

There has been much theoretical and empirical economic analysis concluding that lowering prices for innovative industries often has short-run benefits that are dominated by long-run costs. Lowering prices by having a single payer for innovative healthcare technologies is analogous to reducing patent terms, for both reduce the return to medical research-and-development (R&D) investments. Both have short-term benefits, lowering prices for *existing* technologies—but at the cost of reducing the flow of *new* technologies that ultimately lower the real price of healthcare.

The value of healthcare generated by innovation over time exceeds its additional costs (Cutler 2004). The lower premiums of the 1970s bought lower-quality care than is available today—no one today would settle for a 1970s level of care. Forty years of innovations have raised prices, but they have raised the value of healthcare even more. Some innovations are very expensive—for example, today's specialty drugs—and others are relative bargains—such as antibiotics, new treatments for heart attacks that cost $10,000 in real terms but add a year of life expectancy (Cutler and McClellan 2001), and new cancer treatments in the 1980s and 1990s that cost an average of only $8,670 per year of life gained (Philipson et al. 2012). Other innovations add little value. Though it is often impossible to know in advance which innovation will be a good value, it is imperative to preserve the incentive to innovate so there will continue to be new, high-value innovations.

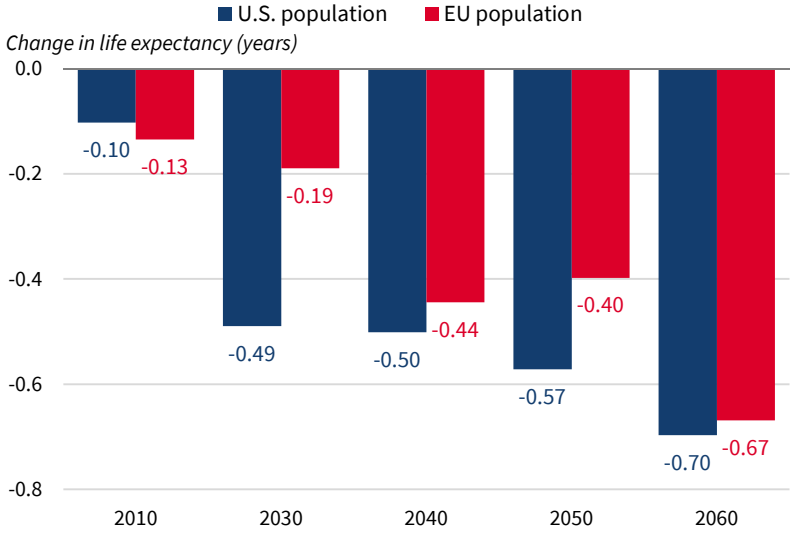
Because worldwide innovation relies so heavily on the U.S. market to support it, adopting an M4A program would likely adversely affect innovation because the global market for new innovations would shrink. A large body of literature looks at the effects of market size on innovation. For example, using the passage of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 as a source of variation, Blume-Kohout and Sood (2013) find an elasticity with respect to market size of between 2.4 to 4.7 for Phase 1 clinical trials. These estimates are well within the range of the work of Acemoglu and Linn (2004), who find an elasticity of 3.5 for approved new molecular entities. Moreover, these results are consistent with evidence on the impact of public policy on market size.[8] Although these long-run effects on a reduced pace of innovation are more difficult to quantify, they may well be more important than the short-run effects of spending less on elder care.

U.S. patients and taxpayers alike have financed the returns on R&D investments to innovators. Unlike other developed countries with single-payer systems, which nearly all impose some sort of price controls, the U.S. market has less public sector financing and is therefore more open to market forces. In a free market, prices of products reflect their value, as opposed to prices in government-controlled markets, which reflect political trade-offs. Among the nations that belong to the Organization for Economic Cooperation and Development, more than 70 percent of patented pharmaceutical profits come from sales to U.S. patients, even though the United States only represents 34 percent of the organization's GDP at purchasing power parity (CEA 2018a).

Empirical research on pharmaceutical innovation and other industries has shown that R&D investments are positively related to market size. For

[8] For example, Finkelstein (2004) finds a 2.5-fold increase in the number of new vaccine clinical trials for affected diseases following the adoption of three public health policies aimed at raising vaccination rates, and Yin (2008) finds that the introduction of the Orphan Drug Act raised the flow of new clinical trials for rare diseases by 182 percent in the three years following the passage of the policy.

Figure 4-3. Effect of U.S. Drug Price Controls on Global Longevity, Among Those Age 55–59, 2010–60



Source: Lakdawalla et al. (2009).
Note: Data were estimated by the author based on the Global Pharmaceutical Policy Model.

the case of medical innovation, evidence suggests that a 1 percent reduction in market size reduces innovation—defined as the number of new drugs launched—by as much as 4 percent (Acemoglu and Linn 2004).

Given that future profitability drives investment in this way, Lakdawalla and others (2009) examined the impact on medical innovation of the U.S. adopting European-style price controls. The study examined patients over the age of 55 and considered the reduction in R&D and new drugs approved that these price controls would cause. The paper found resulting increases in mortality due to heart disease, hypertension, diabetes, cancer, lung disease, stroke, and mental illness. Given that innovations are financed by world returns that are mostly earned in the U.S., the mortality effects on health were substantial, both in the U.S. and in Europe (figure 4-3).

If M4A would lead to the same below-market pharmaceutical prices that other countries have imposed through government price controls, it would reduce the world market size and thereby medical innovation, and ultimately mean that future patients would forgo the health gains that would have come from these forgone innovations.

Financing "Medicare for All"

Apart from M4A's effects on the amount and quality of healthcare provided, there is the issue of how it would be financed and what impact this decision would have on the overall economy. The CMS, which administers most

government-financed healthcare, projects that in 2022 the private sector will spend $1.47 trillion on private health insurance and $0.46 trillion in out-of-pocket health expenses, in an economy with a total GDP of $24.35 trillion (National Health Expenditure Accounts projections; CEA 2018c).

Because healthcare is free at the time of service to users under M4A, and otherwise would not be "free" for those not enrolled in government programs, M4A would increase healthcare utilization at the Federal government's expense. Blahous (2018a) predicts that there would be extra utilization of $0.44 trillion in 2022. Adding this figure to the private health insurance and out-of-pocket expenses it would replace would lead to a total addition to Federal spending of $2.37 trillion in 2022. Without M4A, $2.37 trillion would be 9.7 percent of GDP, or 11.7 percent of consumption, or an average about $18,000 per household (CEA 2018c). An even larger amount of Federal health spending would occur if the most comprehensive list of covered services were adopted in reconciling the Senate and House M4A bills.

The CEA (2018c) found that paying for M4A solely with uniform spending cuts across all existing Federal programs would require 53 percent across-the-board cuts in 2022. Without additional taxes, all other Federal programs would need to be cut by more than half. This would imply cuts to Social Security of about $0.7 trillion, to (the existing part of) Medicare of about $0.4 trillion, and to the Defense Department's budget of about $0.4 trillion. If Medicare were exempted, 79 percent of Social Security (about $1.0 trillion per year) would need to be cut, and annual Defense cuts would need to be about $0.6 trillion.

Alternatively, M4A could be financed solely with taxes. Some argue that the population would be no worse off because these new taxes would simply replace the cost of premiums paid to private sector insurers. This argument ignores the fact that taxation distorts economic activity so that the cost of tax revenues is larger than the revenues. The excess burden, or "deadweight loss," reflects the decreased economic efficiency and product output that exceeds the tax revenue collected. To illustrate, if the government imposed a per-passenger tax of $100,000 on air travel, it would collect virtually no revenue because almost no one would fly, but it would impose a large burden on the population in excess of the revenue collected by replacing air travel with less efficient cars and other types of ground transportation. The existing empirical literature finds that this burden is about 50 cents on the dollar, so that the cost of collecting the taxes to fund M4A in a year would be about 1.5 times the additional revenue needed to fund the larger program (Feldstein 1999; Saez, Slemrod, and Giertz 2012; Weber 2014).[9]

Between the two extreme funding scenarios—funding M4A entirely by cuts in spending or entirely by tax increases—lies a middle ground of using

[9] The excess burden rate is larger, and potentially infinite, when considered particularly large increases in revenue, as with M4A. Also see chapter 8 of this *Report* for additional perspective on the excess burden of M4A.

a combination of both spending cuts and tax increases. This approach was followed in the recent Federal healthcare expansion under the ACA, whereby funding was split between tax increases and spending cuts to Federal healthcare programs (CBO 2009). It is unclear whether sufficient tax revenue could be collected for the much larger proposed M4A program, given the existence of tax avoidance behavior, particularly by the higher-income populations that provide the largest share of total Federal tax revenues. If the amount of maximum revenue collected, the height of the so-called Laffer curve, were below what would be required in new funding, then spending cuts would be required, regardless of whether lawmakers would prefer to finance the entire program with taxes.

The Administration's Actions to Increase Choice and Competition in Health Insurance

In contrast to policies curtailing market forces advocated in "Medicare for All" proposals, this section details the Trump Administration's efforts so far to improve choice and competition in health insurance markets in order to help them better serve lower- and middle-income people.

As part of its broader policy agenda to deregulate markets, the Trump Administration has completed three deregulatory reforms that expand consumers' health insurance options: (1) reducing, through the Tax Cuts and Jobs Act of 2017, the ACA's individual mandate penalty to zero; (2) a June 2018 rule expanding the ability of small businesses to form association health plans (AHPs) to provide low-cost group health insurance to their employees; and (3) an August 2018 rule expanding the term, renewability, and usefulness of short-term, limited duration insurance (STLDI) plans. As discussed above, several market failures are relevant to health insurance. Taking the relevant market failures into account, we use the standard methods of welfare economics to assess the potential efficiency gains to affected consumers and taxpayers. We find that these deregulatory actions will generate benefits to Americans worth about $453 billion over the next 10 years (CEA 2019). The reforms will benefit lower- and middle income consumers and all taxpayers, but leave small premium increases on some middle- and higher-income consumers. The benefits of giving a large group of consumers more insurance options far outweighs the projected costs imposed on the smaller group that will pay higher premiums. These reforms do not sabotage the ACA; they provide a more efficient focus of tax-funded care to those in need.

In this section, we examine in depth the most productive of the reforms, elimination of the individual mandate penalty, which will benefit Americans by $19 billion, including the deadweight cost of taxation in 2021 (when the markets will have largely adjusted to the reform) and $204 billion between

2019 and 2029. Though we will briefly mention the other two reforms, AHPs and STLDIs, they are discussed at length in chapter 2.

The Stability of the Nongroup Health Insurance Market

The ACA's proponents argued that three key components of the statute were essential and had to work together for the act to be economically viable—the so-called three-legged stool (see Gruber 2010). The first leg of the stool is guaranteed issue and community rating, whereby consumers must be offered coverage without the premium varying because of preexisting condition or health status.[10] The second leg of the stool is the individual mandate penalty on the remaining uninsured population, so that healthy consumers do not wait until they are ill to sign up. The third leg of the stool is a system of subsidies, so that lower- and middle-income consumers can afford coverage. Under this view, deregulatory reforms that expand health insurance options beyond the ACA's insurance markets risk destabilizing the ACA insurance markets. The relatively healthy consumers who might best respond to expanded options are seen as critical sources of ACA insurance-market revenue because their premiums are expected to exceed their healthcare claims.[11]

However, several features of the insurance market undermine this argument. Most important, the claim that the individual mandate is indispensable is flawed, due to the large ACA premium subsidies that most ACA exchange enrollees receive. The view that deregulation sabotages the ACA is based on the assumption that the premiums paid by unsubsidized healthy consumers are a critical source of exchange revenue.[12] Federal subsidies are far more important. Figure 4-4 displays the annual premiums on the exchanges as a function of family income and composition. Only consumers who are ineligible for premium subsidies—those with incomes above 400 percent of the Federal poverty line on the exchanges and everyone with ACA-compliant coverage off the exchanges—actually pay the entire premium. There were 14.4 million people in the nongroup market in the first quarter of 2018, 10.6 million on the exchanges, and only 3.8 off the exchanges in both ACA-compliant and noncompliant plans (Kaiser Family Foundation 2018). In 2018, only 13 percent of consumers (1.4 million) who purchased insurance on the ACA exchanges

[10] Premiums are allowed to vary within a narrow range based upon age (3:1 adjustment) and smoking status.

[11] When it adopted the ACA, Congress itself evidently believed that the individual mandate was necessary to a regulatory system that included guaranteed issue and community rating. Congress expressly found that the individual mandate was "essential to creating effective health insurance markets in which improved health insurance products that are guaranteed issue and do not exclude coverage of preexisting conditions can be sold" and that "the absence of the [individual mandate] would undercut Federal regulation of the health insurance market" (42 U.S.C. § 18091).

[12] This is closely related to "adverse selection": The departure of a healthy person from a risk pool is purported to be adverse in terms of reducing plan premium revenue more than it reduces claims. Due to the ACA subsidies, adverse selection will operate differently, in that subsidized healthy persons will have less incentive to leave the ACA exchanges.

did not receive subsidies and therefore paid the full premium.[13] The other 87 percent of exchange consumers (9.2 million) received subsidies through the ACA's premium tax credits and so paid just a fraction of the full premium. Many of these subsidized people also received cost-sharing reduction subsidies to reduce their out-of-pocket costs if their income was between 100 and 250 percent of the Federal poverty line and they purchased a Silver exchange plan. ACA-compliant coverage is sold both on and off the ACA's exchanges, but subsidies are only available for coverage purchased on the exchanges. Including the two types of ACA-compliant individual market coverage (on and off exchanges) that share a common risk pool and have the same premiums, about 38 percent of consumers who purchased ACA-compliant, individual insurance paid the full premium in 2017. The percentage of unsubsidized consumers in the individual market has fallen every year from 2015 to the present as premiums have risen.

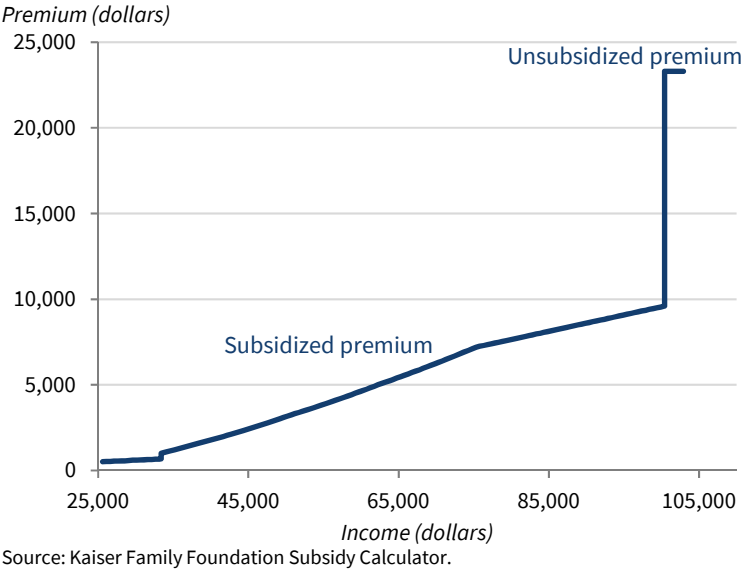
The regulatory reforms expand insurance options. To the extent that the consumers who leave the ACA exchanges for these options are healthier than average, their departure will somewhat raise gross premiums for those who remain on the exchanges. But for subsidized consumers who remain on the exchanges, the premium increases will be mainly paid by taxpayers, not the consumers themselves. Although the CBO projects that setting the individual mandate tax penalty to zero will encourage healthier-than-average enrollees to leave the ACA exchanges, the CBO also projects that their departure will reduce Federal expenditures on ACA premium subsidies from 2018 through 2027 by $185 billion (CBO 2017; Gruber 2010).[14] Of course, the CBO's projections of Federal expenditures are uncertain. But figure 4-4 shows the origin of these projections: For consumers with family incomes less than 400 percent of the Federal poverty line, the individual mandate penalty taxes them for turning down large amounts of government assistance.

The role of the ACA premium subsidies in stabilizing the exchanges has been acknowledged by others, including the previous Administration (CEA 2017; Sacks 2018; Collins and Gunja 2018). The premium subsidies' stabilizing role is consistent with the experience of the past few years, in which rising premiums did not curtail demand. ACA exchange premiums have almost doubled in just a few years (figure 4-5), though there has been hardly any change in

[13] "Grandfathered" plans that were in effect when the ACA was passed are exempt from some of the ACA's provisions. The fraction of workers with employer-sponsored insurance enrolled in grandfathered plans decreased from 56 percent in 2011 to 16 percent in 2018 (Kaiser Family Foundation 2018). During the transitional period, another set of "grandmothered" plans have also been exempt from certain ACA provisions.

[14] Taking into account all the effects of setting the individual mandate penalty to zero, the CBO projects a $338 billion reduction in Federal expenditures from 2018 through 2027, $179 billion of which will be a reduction in Federal expenditures on Medicaid (CBO 2017).

Figure 4-4. Premium Costs as a Function of Household Income, 2018



Source: Kaiser Family Foundation Subsidy Calculator.
Note: Data represent the national average premium for a family of four with two 50-year-old adults and two teenagers with no tobacco use.

exchange enrollment.[15] Figure 4-5 demonstrates that the U.S. Treasury (i.e., taxpayers) shouldered almost the entire premium increase for ACA plans.

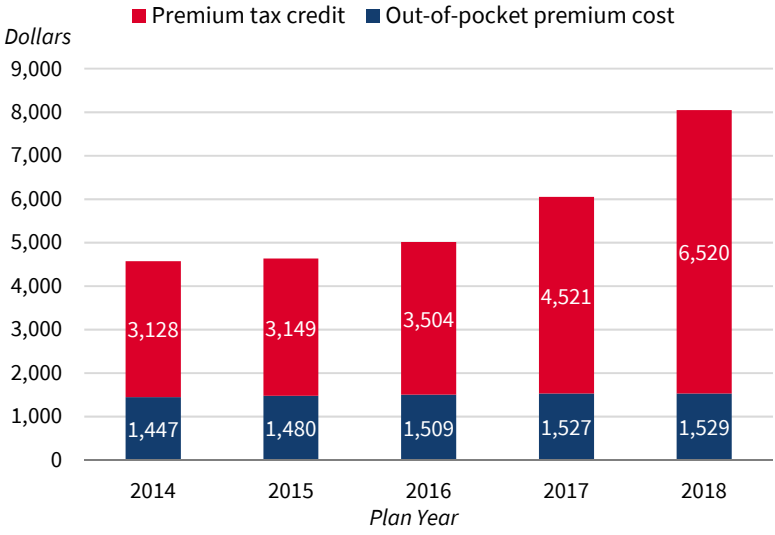
Even though gross premiums almost doubled between 2014 and 2018, lower- and some middle-income consumers were insulated from the effects of these increases by the subsidies. Although there may also have been other factors at work, these trends are consistent with the CBO's (2017, 2018) projections that further increases in the full exchange premiums (usually referred to as "gross" premiums) will not destabilize the ACA exchange markets. Between 2018 and 2019, benchmark ACA premiums dropped by 1.5 percent.

The individual mandate penalty adds an unnecessary leg to the ACA stool, resulting in economic inefficiencies. Comprehensive insurance, particularly with extremely low cost sharing, could cause patients to overconsume healthcare that provides little benefit relative to the cost—the moral hazard problem discussed above.[16] The significant decline in premium subsidies as income rises also distorts labor markets by taxing income and some types of

[15] Figure 4-5 does not include cost-sharing reduction payments or reinsurance payments. Fiedler (2018) calculates that cost-sharing reduction payments were equivalent to about 9 percent of average exchange premiums in 2017. Part of the premium increase between 2017 and 2018 was attributable to the nonpayment of cost-sharing reduction payments in 2018.

[16] The 2018 *Economic Report of the President* (CEA 2018b) discusses the large body of evidence that health insurance coverage, and presumably the additional healthcare consumed by consumers as a result of it, provides little health benefit.

Figure 4-5. Nominal Gross Premiums per Member per Year for Subsidized Enrollees, 2014–18



Source: Kaiser Family Foundation Subsidy Calculator.
Note: Data represent the average national premium for a single, nonsmoking 50-year-old at 200 percent of the Federal poverty line with no children.

full-time employment and introduces another marriage penalty in the tax code (Mulligan 2015). Consumers have heterogeneous preferences for risk, smooth cash flow, and range of coverage. As such, it is wasteful to use a tax penalty to coerce people to purchase insurance that does not meet their needs (Mulligan and Philipson 2004). Many "health insurance simulation models" ignore moral hazard and any effect of health insurance policy on labor market equilibrium. Those simulations therefore rule out by assumption many of the benefits of allowing consumers to voluntarily leave ACA-compliant plans (Gallen and Mulligan 2018).

In sum, the three-legged-stool justification for the individual mandate tax penalty is not consistent with the basic facts of how the ACA works in practice. The penalty and other restrictions on consumer choice are not needed to support the guaranteed issue of community-rated health insurance to all consumers, including those with preexisting conditions. The ACA premium subsidies stabilize the exchanges.

Setting the Individual Tax Mandate Penalty to Zero

The ACA's individual mandate imposed a monetary penalty on nonexempt consumers who did not have ACA-compliant coverage. The Tax Cuts and Jobs Act of 2017 involved a tax cut on the uninsured as well as on people purchasing noncompliant ACA coverage by setting the individual mandate penalty to zero,

Table 4-3. IRS Reporting of Individual Mandate Payments, 2014–16

Tax year	Returns paying IM penalty (millions)	IM revenue (billions of dollars)	Mean penalty paid (dollars)	Minimum penalty (dollars)	Exemptions (millions)
2014	8.1	1.69	210	95	12.4
2015	6.7	3.11	465	325	12.7
2016	4.0	2.83	708	695	10.7

Sources: Internal Revenue Service (IRS); Busch and Houchens (2018); CEA calculations.

Note: IM = individual mandate. The minimum penalty is the minimum statutory penalty per person-year. The uninsured per penalty paid is the uninsured person-years per return paying penalty.

effective in the 2019 tax year (131 Stat. 2054). Part of our analysis is the amount of penalty revenue that would have been collected over the next 10 years if the act had not set the penalty to zero. We took the revenue projections from the CBO, and noted their consistency with the actual collections for tax year 2016, which was the first year when the ACA put the full penalty in place. In that year, about 4 million Federal tax returns included individual mandate payments, down from 6.7 million for tax year 2015 (table 4-3). The average 2016 penalty paid per household return was $708. The mandate tax penalty is a regressive tax that falls more heavily on relatively low-income people—the majority of those who paid the tax penalty in 2015 were lower- and middle-income consumers with incomes less than 400 percent of the Federal poverty line.

Analyses of removing the individual mandate penalty provided a range of estimates of the impact on the number of insured consumers and on gross ACA premiums. The estimates refer to increases in the full ACA premiums (gross of subsidies), not the out-of-pocket (net) premiums enrollees pay after taking into account the premium subsidies they receive. The CBO (2017) has projected that setting the mandate tax penalty to zero will result in 3 million fewer consumers with ACA-compliant nongroup insurance coverage in 2019, 4 million fewer in 2020, and 5 million fewer each year from 2021 through 2027.[17] Because the enrollees who leave ACA-compliant individual coverage are projected to be healthier than those remaining, the CBO has also projected that gross premiums would rise by an average of 10 percent.

Nevertheless, the CBO (2017) projects that the 2018–27 budgetary impact of setting the mandate penalty to zero will be to reduce the Federal deficit by $338 billion, which includes a $185 billion reduction in Federal expenditures on ACA premium subsidies. A Commonwealth Fund study analyzed the impact of setting the individual mandate penalty to zero under 10 scenarios (Eibner and Nowak 2018). Each scenario reflected different assumptions about how people respond to financial and nonfinancial factors. In this study's baseline scenario,

[17] The CBO also projects voluntary reductions in Medicaid enrollment and enrollment in employment-based coverage. The CEA is still studying these effects, which were not included in the analysis.

setting the mandate penalty to zero was estimated to reduce enrollment in the nongroup market by 3.4 million in 2020 and increase the gross premium for bronze plans on the ACA exchanges by 7 percent. We use the CBO's estimates, which involve a larger change in enrollment (5 million fewer enrollees) and a larger increase in premiums (10 percent) than the baseline scenario that the Commonwealth Fund estimates.

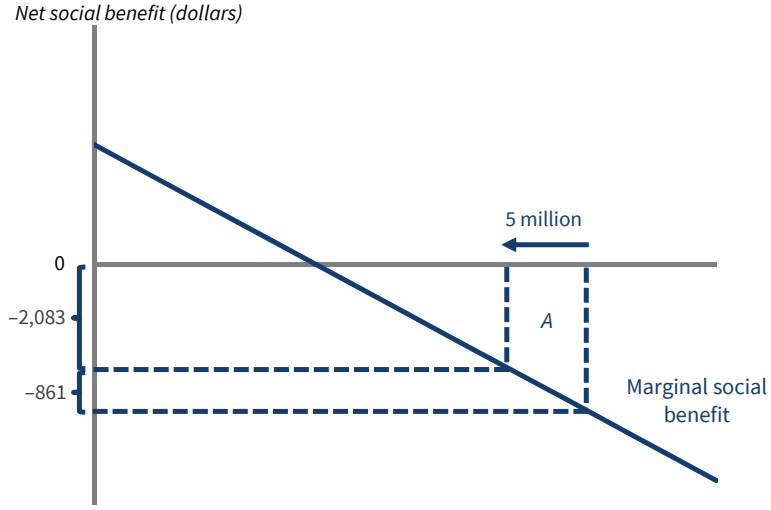
A Cost–Benefit Analysis of Setting the Individual Mandate Tax Penalty to Zero

Setting the ACA's individual mandate penalty to zero benefits society by allowing people to choose not to have ACA-compliant health coverage without facing a tax penalty, and by saving taxpayers money if fewer consumers purchase subsidized ACA coverage. We estimate that in 2021, when the CBO (2017, 2018) projects that markets will have largely adjusted to the changes, setting the mandate penalty to zero will yield net benefits worth $19 billion, including the excess burdens of taxation. The total net benefit of the reform over the period 2019 through 2029 comes to $204 billion. The benefits grow over time, so the benefits in 2021 are estimated to be lower than average annual benefits over the 10-year horizon.

Without the tax penalty, consumers will likely reduce their ACA-compliant coverage, which refers in this section to coverage purchased on the ACA exchanges and coverage obtained outside the exchanges as long as it complies with the provisions of the ACA. Our analysis recognized that consumers place some value on the ACA-compliant coverage they give up.[18] To the extent that these consumers are healthier than average, including them in the insurance pool also benefits others in the pool by reducing the premium needed to cover the pool's average healthcare expenditures. At the same time, society incurs costs to provide health insurance coverage. Providing insurance to those who value it most highly nets large social benefits. Insuring more and more of the population nets progressively smaller social benefits, because it covers enrollees who do not value the coverage as highly. When insuring even more of the population requires providing insurance to enrollees who value the insurance at less than what it costs society, on net the social benefits become negative. This is captured in figure 4-6 by the downward-sloping net marginal social benefits (MSB) schedule, which shows that as enrollment increases, net social benefits decline and eventually become negative. The MSB schedule is the

[18] In keeping with much of the cost-benefit literature, the CEA used the Kaldor-Hicks criterion, which means that all citizens' benefits and costs are measured in dollars, with all citizens' totals getting the same weight. In accord with this focus on Kaldor-Hicks economic efficiency, our analysis estimated the value of health insurance coverage to the consumers themselves.

Figure 4-6. Benefits of Setting the Individual Mandate Penalty to Zero



cumulative distribution of net social benefits; for illustrative purposes only, the MSB schedule in figure 4-6 is linear.[19]

Our cost-benefit analysis, summarized by the MSB schedule portrayed in figure 4-6, uses the standard methods of welfare economics. Consumers' decisions about whether to have ACA-compliant coverage reveal the value consumers place on this coverage. The value consumers place on insurance reflects their expected healthcare expenditures and the value they place on reducing their financial risk. Some consumers who choose not to have ACA-compliant coverage might have higher healthcare expenditures than they expected and lack coverage. This would not necessarily mean that these consumers were unwise in their choice of insurance; they were unfortunate.

Although the MSB schedule shown in figure 4-6 reflects the value that consumers place on their own health insurance, our analysis took into account all the benefits and costs, including the costs imposed on third parties. First, some consumers who lack insurance coverage and then fall ill or have an accident receive uncompensated care from providers. The providers might bear some or all of the costs of uncompensated care; or they might pass some costs along to third parties, such as privately insured patients, through higher prices. Garthwaite, Gross, and Notowidigdo (2018) analyzed confidential hospital

[19] As noted below, our triangle analysis assumes that the MSB schedule is approximately linear in the portion of the distribution that responds to the removal of the tax penalty. We also assume zero economic profits for insurers, in that premium revenues are exhausted by claims and loads. Loads, in turn, reflect competitive payments to labor and capital employed in the insurance industry.

financial data and concluded that, on average, each additional uninsured person costs hospitals about $800 each year. We use this result to estimate the third-party effects of uncompensated care provided to consumers who do not have ACA-compliant coverage. Second, to the extent that the enrollees who leave the market are healthier than average, their health insurance decisions will increase insurance premiums charged to those who remain in ACA-compliant coverage. The CBO (2017) projects the zero tax penalty will increase premiums in the nongroup market by about 10 percent. This 10 percent forecast is likely to be too high, because the CBO did not expect the decline in benchmark premiums that occurred from 2018 to 2019.

Nevertheless, our analysis used the 10 percent estimate and accounts for the third-party effects on Federal expenditures for premium subsidies and on premiums paid by nonsubsidized enrollees. Most of the enrollees who remain in ACA-compliant coverage receive premium subsidies, which means that the increased premiums will be largely financed by increased Federal subsidy expenditures. A subset of enrollees who do not receive subsidies will pay higher premiums. Our empirical implementation of the MSB schedule incorporates the third-party effects on uncompensated care, on Federal expenditures for premium subsidies, and on premiums paid by nonsubsidized enrollees.

We concluded that setting the individual mandate penalty to zero benefits society by reducing inefficient coverage in the market for ACA-compliant health insurance. The ACA premium subsidies are the first source of inefficiency. The premium subsidies make health coverage more affordable to lower- and middle-income consumers; but on net, the subsidies reduce the social benefits from health insurance because they result in many enrollees who value the insurance at less than its cost. Pauly, Leive, and Harrington (2018) also estimated that many uninsured consumers experience financial losses due to ACA coverage.[20] The tax penalties that enforced the individual mandate are the second source of inefficiency and exacerbate the inefficiency due to the premium subsidies.

Setting the individual mandate penalty to zero may reduce some ACA premium subsidy payments and, if it does, will generate a social gain. In cost-benefit analyses, a reduction in subsidy payments is often merely a transfer that leaves social benefits unchanged—the benefits to taxpayers are exactly offset by the costs to the recipients who lose the subsidy. When comparing the ACA with premium subsidies to a hypothetical ACA without subsidies, the ACA premium subsidy is properly treated as a transfer. But the purpose of this analysis is to evaluate the effect of relaxing restrictions on consumer choice,

[20]Some might question the judgment of consumers for whom a large subsidy is not enough by itself to induce them to purchase ACA-compliant insurance. Features of the ACA exchanges—administrative loading fees, price controls, moral hazard, premium subsidies that distort labor markets, and heterogeneous preferences—make it reasonable, and consistent with economic efficiency, for a risk-averse person to remain uninsured when his or her risk is low enough.

not changing the ACA premium subsidy rules. The subset of individuals who may only have subsidized ACA coverage due to the mandate penalty is shown in figure 4-6. To illustrate: If (as we calculate below) the average net subsidy in 2021 would be about $2,083 and the average penalty about $861, an individual who voluntarily gives up his or her $2,083 subsidy when the $861 penalty is removed is not harmed by losing the Treasury subsidy. Instead, the individual has received a benefit by no longer being constrained by a penalty at the same time that taxpayers benefit by no longer having to finance the subsidy. The CEA's application of standard welfare economics to this situation is proper but unfamiliar because of the complicated design of the ACA and its related regulations.[21]

The CBO (2017, 2018) projected that setting the tax penalty to zero would decrease enrollment in ACA-compliant coverage in 2021 by 5 million enrollees. We estimated that after accounting for the average premium assistance received and the other third-party effects, each of these 5 million enrollees reduces third-party expenditures by $2,083 (CEA 2019). If it had not been set to zero, the average tax penalty would have been $861 in 2021.[22] As a result of these two market frictions, we estimated that each of these enrollees valued their coverage by $2,514 less than what it cost society, a figure arrived at by adding the deadweight loss per person induced to take coverage by the penalty to the subsidy amount (CEA 2019).[23] In figure 4-6, the social benefits of repealing the mandate are given by the base of area A (5 million) multiplied by its average height, which measures the value gap ($2,514). Aggregated over the 5 million enrollees, setting the individual mandate tax penalty to zero will yield social benefits of about $13 billion in 2021, plus reducing the excess burden of taxation by another $6 billion.[24] (See box 4-1 for overviews of two important additional deregulatory healthcare reforms.)

[21] Following Goulder and Williams (2003), our analysis accounts for important general equilibrium interactions between the deregulatory reforms and preexisting distortions created by the premium subsidies and labor market taxation. The reduction in the subsidy payments are part of the social benefits created by the tax penalty repeal.

[22] From table 4-1, the average tax penalty paid in 2016 was $708. We assume that the tax penalty would have grown at an annual rate of 4 percent.

[23] The tax penalty averages $861 per enrollee, so the triangular area of deadweight loss per person induced to take compliant coverage equals half of $861, which is $431. This is added to the $2,083 net subsidy to arrive at an average gap of $2,514.

[24] One aspect of the projected benefits of the Administration's deregulatory reforms is that they reduce Federal expenditures on ACA premium subsidies and reduce the deficit. Generally, eliminating taxes and subsidies has larger welfare effects beyond government revenues due to the excess burden of such measures.

Box 4-1. Additional Regulatory Reforms

The Trump administration published new rules establishing two important deregulatory healthcare reforms that will generate tens of billions in benefits to Americans over the next 10 years. The deregulatory reforms expand options in health insurance markets within the existing statutory frameworks, including the ACA. These are more fully discussed in chapter 2 of this *Report* and are briefly described here.

Association health plans. Most uninsured Americans today are nonelderly, employed adults (U.S. Census Bureau 2017). Many work for small businesses or are self-employed in unincorporated businesses where the uninsured rate has historically been and remains high, double the uninsured rate of the general population (Chase and Arensmeyer 2018). The ACA subjected health coverage by small businesses to mandated coverage of essential health benefits and price controls that are not required for large businesses.

The June 21, 2018, association health plan rule expands small businesses' ability to group together to form AHPs to offer their employees more affordable health insurance. AHPs can self-insure or purchase large group insurance, free of the ACA benefit and pricing mandates, thereby lowering premiums and decreasing administrative costs through economies of scale. The AHP rule also broadens plan participation eligibility to sole proprietors without other employees. New AHPs can form by industry or geographic area (e.g., metropolitan area, state).

This rule is still too new to be sure about its impact. The CBO (2018) has projected that after the rule is fully phased in, there will be 4 million additional enrollees in AHPs, including 400,000 people who were previously uninsured. Based on the CBO's projections, we estimate that the AHP rule will cause premiums in the ACA-compliant individual market to increase by slightly more than 1 percent (see chapter 2). We estimate that taking into account both the benefits and costs, the AHP rule will yield $7.4 billion in net benefits in 2021, plus an additional reduction in excess burden worth $3.7 billion.

Short-term, limited-duration insurance. In late 2016, shortly before leaving office, the Obama Administration issued a rule shortened the allowed total duration of short-term, limited-duration insurance contracts from 12 to 3 months, thereby limiting the appeal and utility of these STLDI plans. The 2016 rule was not required by the ACA or other laws. The Trump Administration's August 3, 2018, STLDI rule extends the allowed term length of initial STLDI contracts from 3 to 12 months and allows for the renewal of the initial insurance contract for up to 36 months, which is the same as the maximum coverage term required under COBRA continuation coverage (U.S. Congress 1985). (The 1985 Consolidated Omnibus Budget Reconciliation Act, COBRA, provides for the continuation of employer health coverage that would be otherwise canceled due to job separation or other qualifying events.)

Because STLDI plans are not considered to be individual health insurance coverage under the Health Insurance Portability and Accountability

Act and the Public Health Service Act, STLDI coverage is exempt from all ACA restrictions on insurance plan design and pricing. This allows STLDI plans to offer a form of alternative coverage for those who do not choose ACA-compliant individual coverage. The STLDI rule requires that STLDI policies must provide a notice to consumers that these plans may differ from ACA-compliant plans in the individual market and, among other differences, may have limits on preexisting conditions and health benefits, and have annual or lifetime limits.

The STLDI rule is also too new to be sure of its impact. The CBO (2018) has projected that the STLDI regulatory reform will result in an additional 2 million consumers in STLDI plans by 2023. Based on CBO projections, we estimate that the STLDI rule will increase gross premiums in the ACA-compliant individual market by slightly more than 1 percent in the same time frame (see chapter 2). Taking into account both benefits and costs, we estimate that the rule will yield benefits worth $7.3 billion in 2021, plus an additional reduction in excess burden worth $3.7 billion.

Improving Competition to Lower Prescription Drug Prices

High pharmaceutical drug prices are a major concern of many Americans and the Trump Administration. Part of the problem results from the U.S. system of patent law, in which, in exchange for innovation, inventors are granted exclusive rights to market and distribute their inventions—in this case, drugs—for a period of time during which they can collect monopoly profits. But high prices also stem from Federal statutes and the regulations of the Food and Drug Administration (FDA), which are intended to guarantee safety and efficacy, but which create barriers to market entry and hinder price competition. Under the current regulatory regime, researching, developing and gaining the FDA approval needed to bring a new drug to market can take about a decade and cost an estimated $2.6 billion (DiMasi, Grabowski, and Hansen 2016).

The evidence suggests that patients' improved health and savings resulting from faster FDA regulatory processes and earlier access to drugs exceed potential associated safety risks (Philipson and Sun 2008; Philipson et al. 2008). The approval and entry of new generic drugs into the market to compete with brand name drugs lowers drug prices. Similarly, the approval and entry of new branded drugs creates competition with other drugs in the same therapeutic class and enhances patients' and their physicians' choices of treatment options.

Under the Trump Administration, the FDA has launched a series of reforms to facilitate new pharmaceutical drug entry while ensuring the efficacy and safety of the drug supply. These reforms are already helping consumers

by speeding up generic drug approvals, resulting in savings from new generic entrants totaling $26 billion over the first year and a half of the Administration

Price inflation for prescription drugs has slowed. Figure 4-7 shows that the price of drugs relative to other goods decreased during the Trump Administration compared with the trend of the previous Administration (dotted line). After 20 months of zero or slightly negative relative inflation, as of August 2018 the relative price of prescription drugs was lower than it was in December 2016. In addition, due to the way price inflation for drugs is measured, the actual reduction in inflation after January 2017 may be larger.[25] As of August 2018, the slower price inflation for prescription drugs under President Trump implies annual savings of $20.1 billion.[26] Even if the relative price inflation of prescription drugs were to return to the higher trend that prevailed before this Administration, the 2017–18 level effect would yield savings of $170 to $191 billion over 10 years.[27] Data from the Bureau of Labor Statistics through the end of 2018 show that, for the first time in 46 years, the Consumer Price Index for prescription drugs fell in nominal terms—and even more in real terms—during a calendar year.[28]

This section first discusses how the approval and market entry of new drugs leads to price competition and lower prices. Then, it outlines the Administration's FDA reforms to safely speed drug approvals. It subsequently outlines our estimates of the value generated by faster generic drug market entry. Finally, it discusses the value of the increased entry of new, innovative drugs.

Lowering Prices through Competition

Brand name drugs can command high prices because the drugmaker's exclusive sales right confers market power over prices. Once the brand name drug's patent expires, however, generic versions of the drug can enter the market, and the resulting competition drives down market prices and leads to substantial savings for patients and the healthcare system. Roughly 9 out of every 10 prescriptions in the United States are for generic drugs; but because they are so much cheaper than their brand name counterparts, they constitute only about

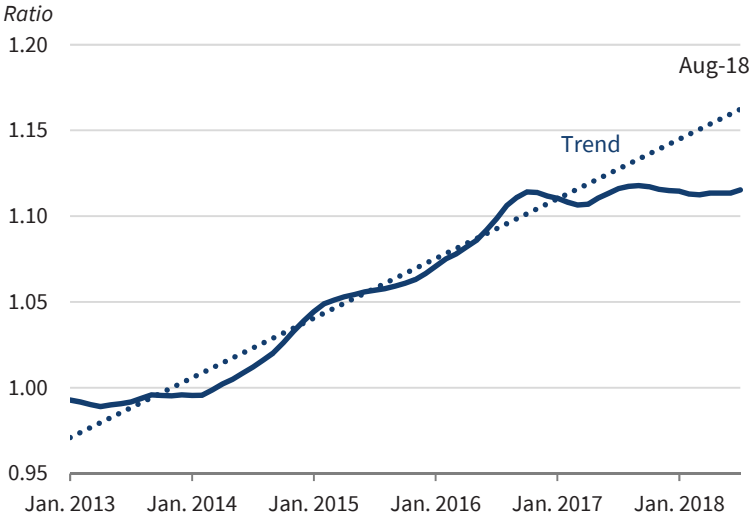
[25] Two factors contribute to this. First, the Bureau of Labor Statistics has a six-month lag for incorporating generics, so any generic entry since March 2018 is not included. Second, in 2016 the bureau changed its index from geometric to Laspeyres, and the latter has higher inflation.

[26] This was calculated by multiplying actual nominal personal consumption expenditures on prescription drugs (at a seasonally adjusted annual rate) in August 2018 by the percentage difference between the actual three-month, centered moving average relative price ratio in August 2018 and that projected by the linear trend estimated over January 2013 through December 2016.

[27] This is dependent on a real discount rate between 0.9 and 3.2 percent. The lower bound is implied by the rate on 20-year Treasury Inflation-Protected Securities and the upper bound by Shiller's cyclically adjusted earnings-to-price ratio for the Standard & Poor's 500, respectively.

[28] The Consumer Price Index for prescription drugs is the primary series used by the Bureau of Economic Analysis to construct the Personal Consumption Expenditures price index for prescription drugs that appears in figure 4-7.

Figure 4-7. Price of Prescription Drugs Relative to PCE, 2013–18



Sources: Bureau of Economic Analysis, CEA calculations.
Note: PCE = Personal Consumption Expenditures Price Index. The relative price ratio of prescription drugs is computed as the index for prescription drug prices relative to the index of overall consumption prices, as measured in the National Income and Product Accounts for the PCE. Data represent a centered 3-month centered moving average. The trend is calculated from 2013 to 2017.

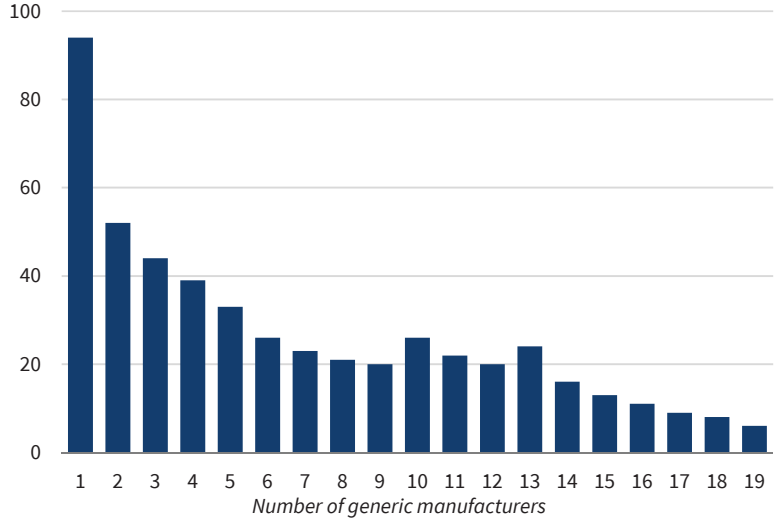
23 percent of prescription drug spending (AAM 2018), reflecting the enormous savings made available to consumers.

Generic drugs. Substantial evidence shows that pharmaceutical drug prices fall dramatically when a generic drug enters the market, offering great savings to consumers (Aitken et al. 2013; Berndt, McGuire, and Newhouse 2011; Caves et al. 1991). Prices continue to decline substantially as the number of generic competitors increases. One analysis of the effect of generic entry on drug prices in the 1980s found that generic drug prices were 70 percent of brand name drug prices after the first generic entrant, 50 percent of the brand name price when four generic drugs were on the market, and 30 percent of the brand name price with 12 generic drugs (Frank and Salkever 1997). A more recent analysis using data from 2005 to 2009 found price reductions following a similar pattern (Berndt and Aitken 2011). Other analyses have confirmed this general finding. The estimates shown in figure 4-8 illustrate prices declining substantially as the number of generic market competitors increases. (For further discussion, see HHS 2010.) The brand name drug market share, in addition to prices, falls dramatically with generic competition.

Brand name drugs. Market entry of new branded drugs can also reduce the prices of other branded drugs through increased price competition. In many cases, a particular condition is treatable with several different brand

Figure 4-8. Generic Drug Price Relative to Brand Name Price, 1999–2004

Average relative price per dose (percent)



Sources: Food and Drug Administration; IMS Health.

name drugs, which are partial but not perfect substitutes for one another, and are known as a therapeutic class or category (FDA 2018c). Some of these drugs will have similar pharmacologic modes of actions. Others will have different mechanisms of action but will also be effective for the same condition. When the market evolves from a monopoly with one unique brand name product to a new stage of therapeutic competition, or oligopoly, market pricing will improve with one or more brand name competitors. Though these brand name products are not perfect substitutes for one another the way generics are, the evidence suggests that therapeutic competition between brand name drugs affects innovative drugmakers' returns at least as much as competition from generic entry (Lichtenberg and Philipson 2002). New drugs often enter the market at lower prices than the dominant existing drug in a particular therapeutic class, putting pressure on the dominant drug to lower prices to maintain market share (DeMasi 2000; Lee 2004).

Although the literature is limited on the systematic effect that therapeutic competition has on prices, there are numerous therapeutic classes in which new brand name drugs have led to vigorous price competition. A recent notable example was the introduction of new, highly effective treatments for the liver infection hepatitis C. A major breakthrough brand name drug was approved for sale in the United States in 2013. Unlike previously available therapies, it essentially offered a cure for many hepatitis C patients, albeit at an $84,000 price for a course of treatment. Within a few years, competing drugs from

multiple companies came to market and drove down prices (Toich 2017).[29] The most recently approved drug covers all six genotypes of the hepatitis C virus, which not all previous drugs did; has a shorter course of treatment; and had a list price of $26,400 for a course of treatment (Andrews 2017), less than the discounted prices of the earlier drugs. It quickly outpaced other hepatitis C drugs and has captured a 50 percent market share (Pagliarulo 2018).

Another example of price competition within a therapeutic class is the case of the cholesterol-lowering drugs known as statins. The first statin was introduced in 1987. Since then, multiple new statins with higher potency and fewer side effects have come to market. Each new introduction has led to price competition with new drugs, which are often priced at a discount relative to the old ones (Alpert 2004). Prices have tumbled as these drugs have gone off patent and cheaper generic competition has entered the market (Aitken, Berndt, and Cutler 2008).

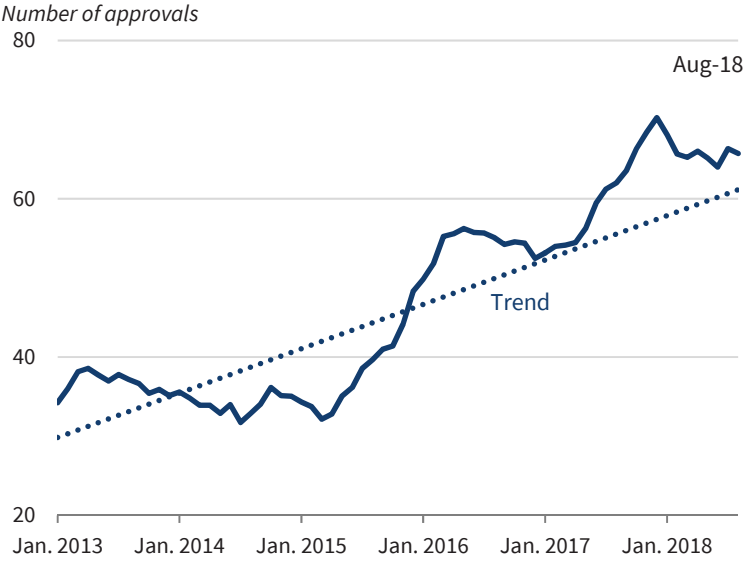
The Administration's Efforts to Enhance Generic and Innovator Competition

The Administration's deregulatory agenda includes streamlining the FDA's review process to facilitate price competition by reducing market entry barriers while securing a supply of safe and effective drugs. This includes prioritizing the approval of more generic drugs (FDA 2018b). In August 2017, the President signed into law the Food and Drug Administration Reauthorization Act, a five-year reauthorization of the Generic Drug User Fee Amendments, which empower the FDA to collect user fees for generic drug applications and to process applications in a timely manner. Last year, the FDA announced the Drug Competition Action Plan to expand access to safe and effective generic drugs. This plan's efforts focus on three key priorities to encourage generic drug competition: (1) preventing branded companies from keeping generics out of the market, (2) mitigating scientific and regulatory obstacles to approval, and (3) streamlining the generic review process. The FDA has already released guidance for companies and FDA staff members that outlines specific steps to reduce the number of review cycles and shorten the approval process.

These reforms have successfully increased the number of generics approved and have slowed drug price growth. In fiscal year (FY) 2018, the FDA approved a record 971 generic drug approvals and tentative approvals—exceeding the 937 in FY 2017 and the 835 in FY 2016 (FDA 2016, 2017, 2018a). The FDA approves generics based on a determination that they are bioequivalent to an approved innovator drug for which exclusive sales rights have expired. Generic drug entry is quicker to respond to regulatory changes than brand name drug entry, which involves a longer process for review and development. Figure 4-9 shows the 12-month moving average number of generic drug final and tentative approvals starting in January 2013. The dotted blue

[29] For a brief discussion of recent price competition in this market, see Walker (2018).

Figure 4-9. New Generic Drug Applications Approved, 2013–18



Sources: Food and Drug Administration; CEA calculations.
Note: The data include final generic drug approvals, and represent a 12-month moving average. Data preceding October 2013 are a truncated moving average, with data beginning in October 2012. The trend is calculated from 2013 to 2017.

line represents an estimated time trend from January 2013 through December 2016 projected through August 2018, the most recent observation available. Since December 2016, the number of generic drug approvals has outpaced the trend. We found that 17 percent more generic drugs have been approved each month (a monthly average of 81), during the first 20 months of the Trump Administration than were approved during the previous 20-month period (a monthly average of 69). This increase in approvals occurred despite the fact that the number of brand name drug patent expirations—necessary precursors for generic entry—declined during this period.

The FDA's 2018 Strategic Policy Roadmap addresses the entire spectrum of FDA-regulated pharmaceutical products—from small molecules to complex products and biologics—given each of their critical roles in advancing the health of patients (FDA 2018b). The roadmap includes the launch of the Medical Innovation Access Plan, Drug Competition Action Plan, Biosimilars Action Plan, and Advanced Manufacturing Strategy Roadmap. These plans are designed to:

1. Modernize the FDA's programs and increase administrative efficiencies for reviewing applications for brand name and generic products.
2. Provide product- and technology-specific guidance to increase regulatory and scientific clarity for sponsors to ensure efficient product development programs.

3. Reduce anticompetitive behavior by firms attempting to game FDA regulations or statutory authorities to delay competition from generic or biosimilar products.

The increase in new drug approvals has been as impressive as the improvement in generics. In the first 20 months of the Trump Administration, there were 11 drug approvals per month, on average, compared with 8.5 drug approvals per month during the preceding 20 month period.

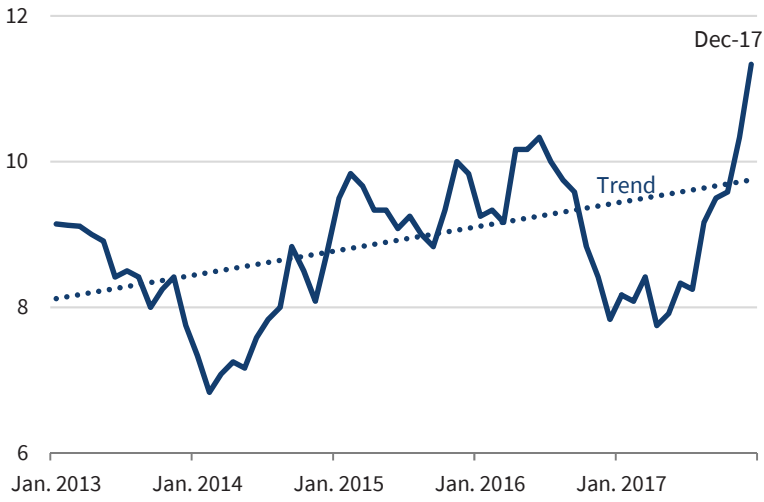
A new, brand name drug can be marketed only after its New Drug Application (NDA) has been approved; for biologic drug products, the corresponding approval is for a Biologic License Application (BLA). Figure 4-10 shows the number of approved NDAs and BLAs since January 2013, reported as a 12-month moving average to smooth intermonth volatility. Notably, the 12-month average line shows a substantial and sustained rise in approvals starting in about January 2017. These new approvals reflect the emergence of many valuable new drug therapies that will add to competitive market pressures on prices for existing drugs and bring new benefits to patients.

During the sample period from January 2013 through December 2016, we estimated a linear time trend for the 12-month, moving-average sum of NDAs and BLAs approved. We then projected this trend through December 2017, the most recent observation available. As reported in figure 4-10, after falling below the trend in 2016, in 2017 actual applications approved climbed above the trend, and by the end of 2017 were 15 percent above the trend projection.[30] It is noteworthy that the approval rate began to rise rapidly a few months into the Trump Administration.

Although the FDA approves a wide array of biological products and new drugs, only some are novel, innovative products that are being introduced into clinical practice for the first time. Novel drugs can be classified as new molecular entities (NMEs), as an active molecule with no prior FDA approval, or as novel biologics. These new entities are the most meaningful NDAs and BLAs approved because they provide previously unavailable options to patients seeking therapies. Approvals of new molecular entities and novel biologics, meanwhile, more than doubled in the years 2017–18, relative to 2015–16. In 2015 and 2016, NMEs and novel biologics approvals averaged just 1.8 per month. From January 2017 through October 2018, approvals averaged 4.1 per month, with 9 approved in August 2018 alone. Given the lengthy clinical development process for new drugs, these trends do not solely reflect the actions of the Administration, but they are nevertheless influenced by this Administration's emphasis on accelerating the NDA and BLA processes.

[30] To test whether this outperformance of the trend was statistically significant, we regressed NDAs and BLAs approved on a linear time trend fully interacted with a post–December 2016 binary variable. The estimated coefficient on the interaction term was positive and significant at the 0.01 level, meaning that we can reject the null hypothesis of no trend break with 99 percent confidence.

Figure 4-10. New Drug Applications and Biologics License Applications Approved, 2013–17



Sources: Food and Drug Administration, CEA calculations.
Note: The data represent a 12-month moving average, and data preceding July 2013 are a truncated moving average, with data beginning in July 2012. The trend is calculated from 2013 to 2017.

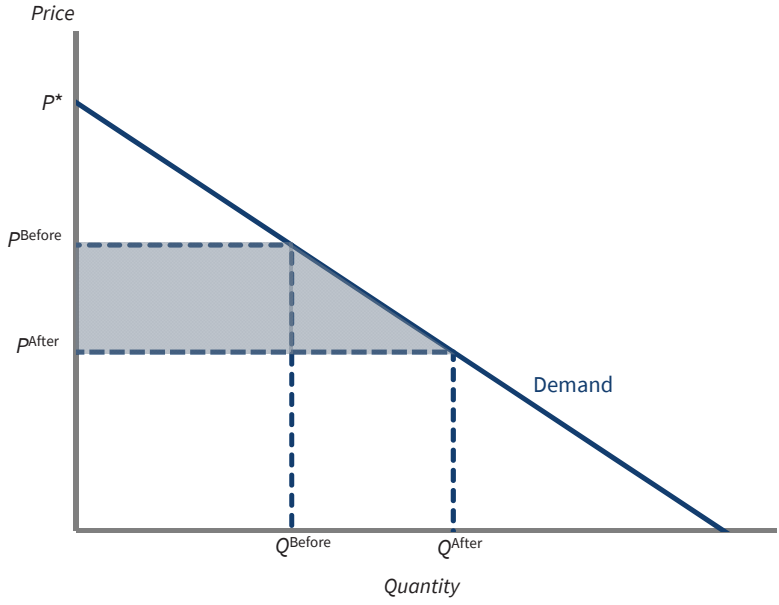
Estimated Reductions in Pharmaceutical Drug Costs from Generic Drug Entry

The effects of increased competition through patent expirations and generic drug entry reflect not just a fall in market prices but also a drop in overall quantity consumed, because brand name drug manufacturers often stop advertising their product, which reduces overall demand for the chemical entity (Lakdawalla and Philipson 2012). Therefore, the change in consumer welfare resulting from a patent expiration does not just involve a movement downward along a demand curve, but also an inward shift in the demand curve. The analysis that follows represents a lower bound on the value of generic entry focusing on savings alone.

We estimated the savings made available to consumers from generic drugs entering the market from January 2017 through June 2018 (CEA 2018a). The analysis represents an update of a similar analysis published by the FDA (Conrad et al. 2018). We found that generic drug approvals generated savings of about $26 billion through July 2018.[31]

[31] The data on generic drug approvals represent the period from January 2017 through June 2018; these are the most recent approvals data available. Estimates of savings from this set of generic entrants represent sales through July 2018, based on the most recent available sales data.

Figure 4-11. Price Decline Due to Generic Drug Entry



The baseline price before an entry (P^{Before}) used in this analysis is determined for each compound by aggregating sales across all drug products with the same active ingredient and dosage form for up to six months before the 2017 approval of abbreviated new drug applications, and dividing by the quantity of all drug products with the same active ingredient and dosage form that were sold (Q^{Before}). In some cases, a generic entrant is the first to compete with its brand name counterpart; in others, a generic entrant follows one or more other generic entrants. Determination of baseline prices addresses this as follows: When a brand name drug is facing its first generic entrant, the baseline price is determined using solely the brand name drug's sales; when a brand name drug already faces one or more generic competitors, the baseline price reflects both brand name and generic sales, weighted accordingly. The market price following entry of the generic drug (P^{After}) is estimated by dividing the aggregate sales volume in the market by the aggregate quantity sold, per month. Monthly savings from generic entry are then estimated for the period as

$$Monthly\ Savings = (P^{Before} - P^{After}) * Q^{Before}$$

Total savings are the sum of all monthly savings estimates.

Figure 4-11 shows the consumer benefit from the lower prices enabled by generic entry. Note that the savings estimate does not reflect the full trapezoid shown in figure 4-11. This is because the onset of generic competition, as mentioned above, is often accompanied by a cessation of marketing by

the innovator drugmaker, which causes the demand curve to shift inward. We therefore limit the savings estimated to the preentry quantities observed.

We estimate that the total savings from the generic drugs that entered the market from January 2017 through June 2018 was $26 billion, in January 2018 dollars. We expect consumers to benefit further from lower drug prices in the years to come as more generic drugs are approved for sale and price competition becomes even more robust.

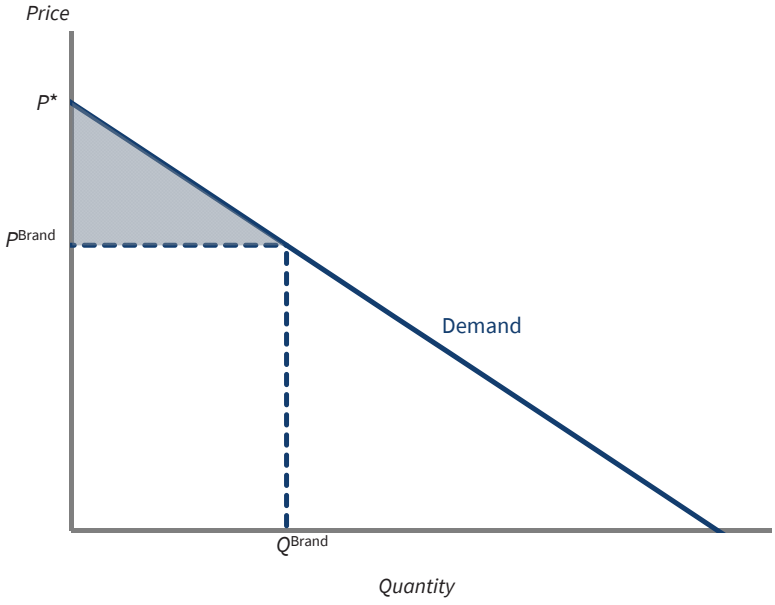
Estimates of the Value of Price Reductions from New Drugs

For new, innovator pharmaceutical drugs, high initial market prices give a misleading picture that overstates price growth. This is because before a new drug enters the market, it is unavailable at any price, making such a drug equivalent to one with a price so high that there is no demand for it. Economists generally interpret innovations as price reductions from the price at which the product would not sell at all due to its observed price when marketed. For instance, before the development of drugs to treat HIV in the mid-1990s, the price of a longer life for an HIV-positive individual was inaccessibly high—it could not be bought at any price anywhere in the world. But once new HIV drugs were approved, the price of a longer and healthier life for HIV-positive individuals decreased dramatically, falling from prohibitively expensive to the finite market price of the new, brand name, patented drugs. Prices fell further when these brand name drugs faced therapeutic competitors and further still when the brand name drugs lost their sales exclusivity and faced generic competition. Using the appropriate empirical methodology to measure such price declines for new drugs marketed since January 2017, we find that they have generated annualized gains to consumers of $43 billion in 2018, though lower-bound estimates of the price elasticity of demand for brand name drugs suggest that the gains could be much larger.

This way of conceptualizing the initial price change of a newly approved innovation is illustrated in figure 4-12. The price, P^*, is the prohibitively high price at which there is zero demand for the drug because it is too expensive. However, if no one is buying the drug, this is equivalent to its not yet having been discovered; in both cases, no one uses it. An innovation can be interpreted as simply reducing the price from this high level to the price at which it is marketed, P^{Brand} in the figure, resulting in quantity Q^{Brand} of drugs being bought. Therefore, the value of the new innovation to patients is simply the consumer surplus generated when the price is lowered from P^* to P^{Brand}, indicated by the shaded area in figure 4-12.

We used two methods to calculate this consumer surplus. The first applied empirical estimates of the producer surplus (profits) as a share of the social surplus arising from new NDA and BLA drugs approved since January 2017. Grabowski and others (2012), Goldman and others (2010), Jena and Philipson (2008), and Philipson and Jena (2006) estimated that the producer

Figure 4-12. Price Reductions from Brand Name Entry



surplus is generally between 5 and 25 percent of the social surplus, with Jena and Philipson (2008) observing a median level of 15 percent, which implies that the consumer surplus is about 5.7 times the producer surplus. We applied these estimates to 2018 revenue data for the new NDAs and BLAs that were approved by netting out the variable costs of production from sales. These costs were assumed to be 16 percent of sales for brand name drugs, based on estimated differences in drug prices before and after patent expiration (Caves et al. 1991; Grabowski and Vernon 1992; Berndt and Aitken 2011; CEA 2018a).

The second approach used price and quantity data along with empirical estimates of the price elasticity of demand for pharmaceutical drug products to generate a demand schedule and to calculate the consumer surplus that arises from lowering the price from P^* to P^{Brand}, as shown in figure 4-12—in other words, calculating the shaded area of the figure as the integral of the demand curve above P^{Brand} from $Q = 0$ to $Q = Q^{Brand}$. Across 150 common drugs, Einav, Finkelstein, and Polyakova (2018) estimated an average elasticity of demand of –0.24; and across 100 common therapeutic classes, they estimated an average elasticity of –0.15. Goldman and others (2006, 2010), meanwhile, estimated elasticities of between –0.01 and –0.21.

For price and quantity in both methods, we used IQVIA National Sales Perspectives data on pharmacy and hospital acquisition costs, based on invoice prices, for new molecule entities and novel biologics approved from January 2017 through July 2018. We then averaged the estimated consumer surplus gain—calculated, first, assuming the median estimate of the producer

appropriation from Jena and Philipson (2008); and, second, assuming the mean elasticity of demand for common therapeutic classes of –0.15 from Einav, Finkelstein, and Polyakova (2018).[32] Averaging the results of the two approaches indicates that the price reductions induced by the new drugs approved after January 2017 increased the total consumer surplus in 2018 by $43 billion.

Conclusion

The U.S. economy generally relies on free markets to maximize benefits for U.S. citizens. The hallmarks of any free market are consumer choice and competition. Although some have claimed that healthcare is an exceptional case that cannot be produced and allocated through the market, we argue that these claims are exaggerated and that the costs of market failure are often lower than the costs of government failure. Deviations from perfect market conditions are present in healthcare and many other markets, but promoting choice and competition is the appropriate way to maximize efficiency and consumer welfare.

The recent push in Congress to enact a highly restrictive "Medicare for All" proposal would have the opposite effect—it would decrease competition and choice. The CEA's analysis finds that, if enacted, this legislation would reduce longevity and health in the United States, decrease long-run global health by reducing medical innovation, and adversely affect the U.S. economy through the tax burden involved.

The Trump Administration has instead concentrated on deregulatory reforms that will increase choice and competition in the health insurance markets and pharmaceutical drug markets. Bringing the ACA's individual mandate penalty down to zero will allow consumers to choose how much health insurance they desire. Expanding the availability of association health plans and the duration and renewability of short-term, limited-duration health plans will increase consumers' options and spur competition. Finally, the FDA's initiatives to speed drug approvals have already had tangible benefits in record numbers of drug approvals and increased pharmaceutical competition. All these reforms are expected to bring down prices, encourage continuing innovation, and maximize consumer welfare.

[32] Because the Goldman et al. (2006) upper-bound estimated elasticity of –0.01 generates implausibly large consumer surplus gains when applied to all newly approved drugs, for the second method we assume an upper bound of –0.15.