

*From the Desks of Matthew D. Mitchell and Anne Philpot*

February 28, 2019

Chairman Lamar Alexander  
United States Senate  
455 Dirksen Office Building  
Washington, DC 20510

Chairman Alexander,

In response to your request for healthcare cost solutions, we encourage the Senate HELP Committee to consider the adverse effects of state certificate-of-need (CON) laws. Decades of research suggest that these laws not only restrict access to care and worsen health outcomes but also make healthcare more expensive.

In 35 states and the District of Columbia, healthcare providers planning to offer or expand certain services must first prove to a state regulator that their community “needs” the particular service in question. CON laws are controversial. Many experts question their effectiveness and worry that they undermine competition to the detriment of patients.

### **The History of CON Laws**

In 1974, Congress passed the National Health Planning and Resources Development Act. It required states to implement CON programs in order to receive funding through certain federal programs. One rationale for CON was that it would curb excessive growth of healthcare costs stemming from the government’s “cost-plus” reimbursement structure for hospitals. Under cost-plus reimbursement, the government paid hospitals for whatever they spent with no incentive to control costs.

Following the abandonment of cost-plus reimbursement in the mid-1980s, Congress repealed its CON mandate. Today, CON survives in all but 15 states. These non-CON states—rich, poor, rural, and urban—are home to 38 percent of the US population and the experience of this population demonstrates the benefits of less restrictive access to care. Using rigorous econometric techniques, economists have been able to compare outcomes in CON and non-CON states in order to assess the effect of CON on access, quality, and cost. These estimates draw from real-world experiences, incorporate years’ worth of data, and control for other factors that might affect these outcomes, such as economic conditions and local demographics.

While Dr. Stratmann’s letter will focus on the effects of CON on access and quality, we’d like to focus in this letter on the effects of CON on cost. While an initial goal of CON was to reduce healthcare spending, the weight of evidence suggests that it has had the opposite effect.

In the attached study, Matthew D. Mitchell provides a comprehensive review of the theoretical and empirical research on the relationship between CON laws and spending. In it, he reviews 20 academic studies spanning 40 years. We briefly summarize that literature here.

### **CON Laws Are Associated with Higher Healthcare Costs**

Cost per unit refers to the amount of money that must be paid to producers to compensate them for producing one unit of a product or service. Economic theory predicts that a supply restriction such as CON regulation will increase per-unit costs by reducing supply.

The empirical evidence on how CON regulation affects cost has been consistent with this economic theory. It shows that CON regulation tends to increase the cost of healthcare services by limiting supply. Conversely, “redundant” facilities and services tend to decrease costs by increasing competition. The empirical evidence also shows the following specific effects:

- *Per-unit costs.* As predicted by economic theory, the bulk of empirical evidence suggests that CON laws are associated with higher per-unit healthcare costs. No studies to date find that CON is associated with lower per-unit costs.
- *Total patient expenditures.* None of the published studies find that CON is directly associated with lower total patient expenditures, and seven of these studies find evidence that CON increases expenditures.
- *Hospital efficiency.* The literature is mixed on the question of hospital efficiency, with two studies finding that CON laws increase some measures of hospital efficiency, one study finding no effect, and one study finding that CON laws reduce efficiency.
- *Hospital investment.* Studies suggest that CON has failed to reduce unnecessary investments. One study found that CON failed to reduce investment, while another found that CON actually backfired, causing hospitals to increase investment before CON implementation in anticipation that future investments would be more difficult.

If the goal of CON regulation is to discourage excessive spending caused by the third-party-payer problem and other distortions in the healthcare market that divorce consumers from cost considerations, then CON regulations are a poorly targeted method of achieving this end. As many healthcare experts have suggested, the best way to deal with this problem is to reform the policies that divorce consumers from cost. In contrast, CON regulations restrict the ability of everybody—including customers who pay out of pocket—to access healthcare services.

As the experience of the 15 non-CON states has shown, repealing CON tends to be associated with lower barriers to care and reduced costs. States must carefully weigh the past four decades of research and consider CON’s detrimental effects on healthcare costs. The federal government can play an important role in encouraging states to do this. The evidence suggests that repealing CON would increase access to high-quality care while lowering costs.

Sincerely,

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### **Attachment**

Matthew D. Mitchell, “Do Certificate-of-Need Laws Limit Spending?” (Mercatus Working Paper)

# Do Certificate-of-Need Laws Limit Spending?

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Matthew D. Mitchell

*September 2016*

MERCATUS WORKING PAPER



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*Matthew D. Mitchell. "Do Certificate-of-Need Laws Limit Spending?" Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, September 2016.*

## **Abstract**

In 35 states, certificate-of-need (CON) laws in health care restrict the supply of medical services. These regulations require providers hoping to open a new healthcare facility, expand an existing facility, or purchase certain medical equipment such as an MRI machine or a hospital bed to first prove to a regulatory body that their community needs the service in question. The approval process can be time consuming and expensive, and it offers incumbent providers an opportunity to oppose the entrance of new competitors. However, it was originally hoped that these laws would, among other things, reduce healthcare price inflation. In this brief, I review the basic economic theory of a supply restriction like CON, then summarize four decades of empirical research on the effect of CON on healthcare spending. There is no evidence that CON regulations limit healthcare price inflation and little evidence that they reduce healthcare spending. In fact, the balance of evidence suggests that CON laws are associated with higher per unit costs and higher total healthcare spending.

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## Do Certificate-of-Need Laws Limit Spending?

Matthew D. Mitchell

### **Economic Theory and the Original Rationale for Certificate of Need**

Thirty-five states and the District of Columbia currently impose certificate-of-need (CON) restrictions on the provision of health care.<sup>1</sup> These rules require those hoping to open or expand specific types of healthcare facilities to first prove to a state regulator that their community “needs” the particular service. For example, Virginia providers wishing to open a neonatal intensive care unit, start a rehabilitation center, or even purchase a new CT scanner for an existing practice must first prove to the state health commissioner that their community needs the service in question.<sup>2</sup> Providers wait years and spend tens or even hundreds of thousands of dollars convincing CON authorities to approve their projects.<sup>3</sup> In the process, incumbent providers are often invited to testify against their would-be competitors. It was originally hoped that the CON process would reduce healthcare price inflation, though over the years, the rationale in favor of CON has shifted a number of times.

In 1964, New York implemented the first CON program.<sup>4</sup> A decade later, Congress enacted the National Health Planning and Resources Development Act, thereby withholding

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<sup>1</sup> In some states, such as Virginia, these restrictions are known as a Certificate of Public Convenience and Necessity. In July 2016, New Hampshire eliminated its CON program. For more details about the history of CON programs in the states, see Matthew Mitchell and Christopher Koopman, “40 Years of Certificate-of-Need Laws across America,” Mercatus Center at George Mason University, Arlington, VA, October 14, 2014.

<sup>2</sup> “CON—Certificate of Need State Laws” (Washington, DC: National Conference of State Legislatures, August 2016), <http://www.ncsl.org/research/health/con-certificate-of-need-state-laws.aspx>.

<sup>3</sup> Virginia’s Dr. Mark Monteferrante spent five years and \$175,000 seeking permission to add a second MRI machine to his practice. Kent Hoover, “Doctors Challenge Virginia’s Certificate-of-Need Requirement,” *Washington Bureau, Business Journals*, June 5, 2012.

<sup>4</sup> Mitchell and Koopman, “40 Years of Certificate-of-Need Laws across America.”

federal healthcare dollars from any state that failed to implement its own CON program.<sup>5</sup> By 1979, every state except Louisiana had responded to this incentive and implemented a CON program.<sup>6</sup> The federal incentive was repealed in 1987 following a change in Medicare reimbursement practices, and more than a dozen states have since repealed their CON programs. But in 35 states and the District of Columbia, CON laws still restrict the supply of some healthcare services.

The rationale behind the 1974 federal legislation was clear. Under a section titled “Findings and Purpose,” Congress declared,

The massive infusion of Federal funds into the existing health care system has contributed to inflationary increases in the *cost* of health care and failed to produce an adequate supply or distribution of health resources, and consequently has not made possible equal access for everyone to such resources.<sup>7</sup>

Note the emphasis on cost. From the beginning, a primary goal of CON programs was to rein in the excessive growth of healthcare costs.<sup>8</sup> Then, as now, healthcare price inflation was a perennial concern. Note also that the authors of this legislation believed healthcare price inflation to be a result of other federal policies. In what way might a law restricting supply reduce cost? I begin with a simple economic model of supply and demand and then consider three slightly more elaborate models.

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<sup>5</sup> National Health Planning and Resources Development Act of 1974, Pub. L. No. 93-641 (1975).

<sup>6</sup> Mitchell and Koopman, “40 Years of Certificate-of-Need Laws across America.”

<sup>7</sup> Pub. L. No. 93-641, emphasis added.

<sup>8</sup> For research testing CON’s ability to meet the other goals of the National Health Planning and Resources Development Act, see Thomas Stratmann and Jacob Russ, “Do Certificate-of-Need Laws Increase Indigent Care?,” Mercatus Working Paper No. 14-20, Mercatus Center at George Mason University, Arlington, VA, July 2014; Thomas Stratmann and Matthew C. Baker, “Are Certificate-of-Need Laws Barriers to Entry? How They Affect Access to MRI, CT, and PET Scans,” Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, January 2016; Thomas Stratmann and Christopher Koopman, “Entry Regulation and Rural Health Care: Certificate-of-Need Laws, Ambulatory Surgical Centers, and Community Hospitals,” Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, February 2016.

### *The Simple Model of Supply and Demand*

In everyday language, we speak of cost in *per unit* terms: How much does one slice of pizza cost? What is the going rate for a gallon of unleaded gasoline? Simple economic theory offers a straightforward answer to the question of how a supply restriction might reduce this sort of cost: it can't. In a supply-and-demand model, there is no way that a supply restriction can reduce per unit cost. It *might* reduce overall healthcare expenditures—the total amount that people spend on health care in a given time period. But although reducing per unit cost is a worthy goal, it is far from obvious that reducing overall expenditures is desirable. Figure 1 explains why.

Panel A of figure 1 shows a demand curve intersected by three different supply curves. The market supply of health care without a CON law is indicated by Supply 1. The restricted supply of health care with a CON law is indicated by *either* Supply 2 or Supply 3, with the difference depending on how restrictive the CON process is. Consistent with standard practice, the supply restriction is modeled as a leftward shift in the supply curve; by limiting entry, CON laws ensure that a smaller quantity of services is available at any given price.

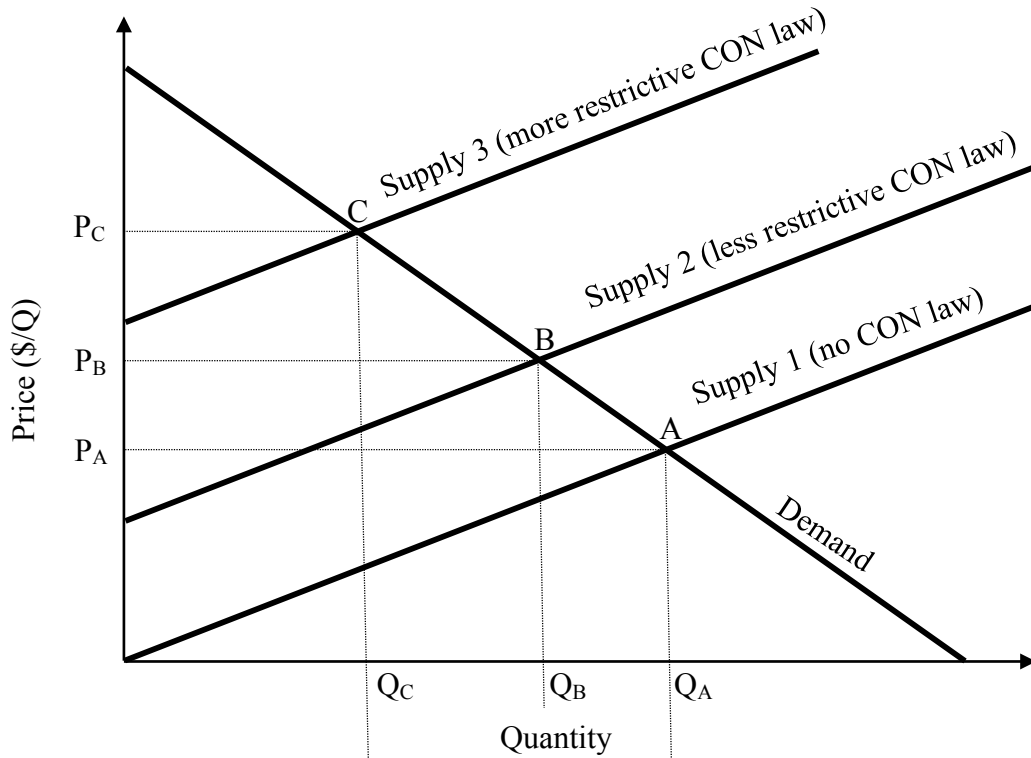
Note that as supply is restricted, the per unit price unambiguously rises, and the quantity consumed unambiguously falls. Because the supply restriction causes consumers to pay more and consume less, it unambiguously reduces what economists call “consumer surplus,” which is the value that consumers derive from a product in excess of its price.<sup>9</sup>

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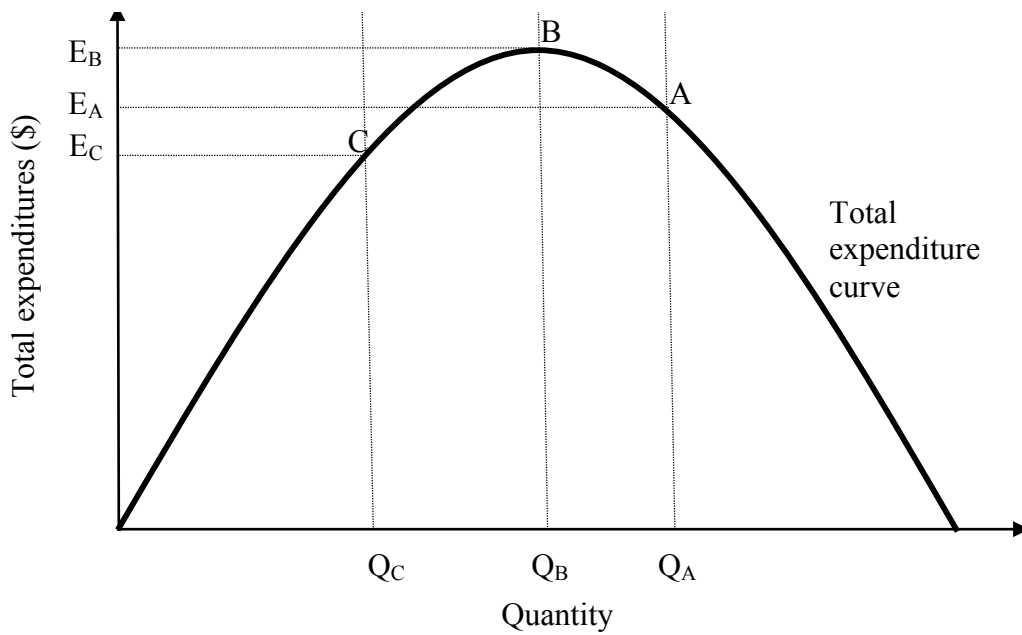
<sup>9</sup> Consumer surplus is measured by the area above the price line and below the demand curve. It gets smaller as supply decreases (shifts leftward). Total producer surplus, measured by the area below the price line and above the supply curve, is also reduced. However, a supply restriction may make a few firms better off by allowing them to capture a larger *portion* of the producer surplus at the expense of other producers. This artificially large portion of producer surplus is known as rent.

**Figure 1. A Supply Restriction**

*Panel A. The Effect of a Supply Restriction on Price*



*Panel B. The Effect of a Supply Restriction on Total Expenditures*





However, because of the third-party-payer problem in health care, patients may not directly pay the higher prices. They and others will indirectly pay higher prices through higher insurance premiums, higher taxes, or both. Patients will, of course, be directly affected by the diminished quantity of healthcare services available to them. That is, they will experience a reduction in welfare resulting from the leftward shift in the quantity of services.

Note, however, that the supply restriction has an *ambiguous* effect on total expenditures. This is because total expenditures—depicted in panel B of figure 1—are equal to the price per unit multiplied by the number of units sold. Because the supply restriction raises the price per unit but lowers the number of units sold, it has an ambiguous effect on total expenditure.

As shown in panel B, total expenditures might rise to  $E_B$  or fall to  $E_C$ , depending on whether the price increase or the quantity decrease dominates.<sup>10</sup> Note also that if consumers are less price sensitive and the demand curve is steeper (less elastic), the price-increasing effect is likely to dominate, and the supply restriction is likely to increase total expenditures.

Despite the stated objective of the federal legislation promoting CON, this simple model suggests that CON laws cannot reduce cost in the per unit sense in which most people think of it. Instead, CON laws are expected to increase the per unit cost of healthcare services, although they *might* reduce total expenditures if they restrict consumption enough to outweigh the higher per unit cost. It is important to note, however, that if CON laws do succeed in reducing overall expenditures, they do so only by restricting the availability of services, limiting consumer choice, and reducing consumer welfare.

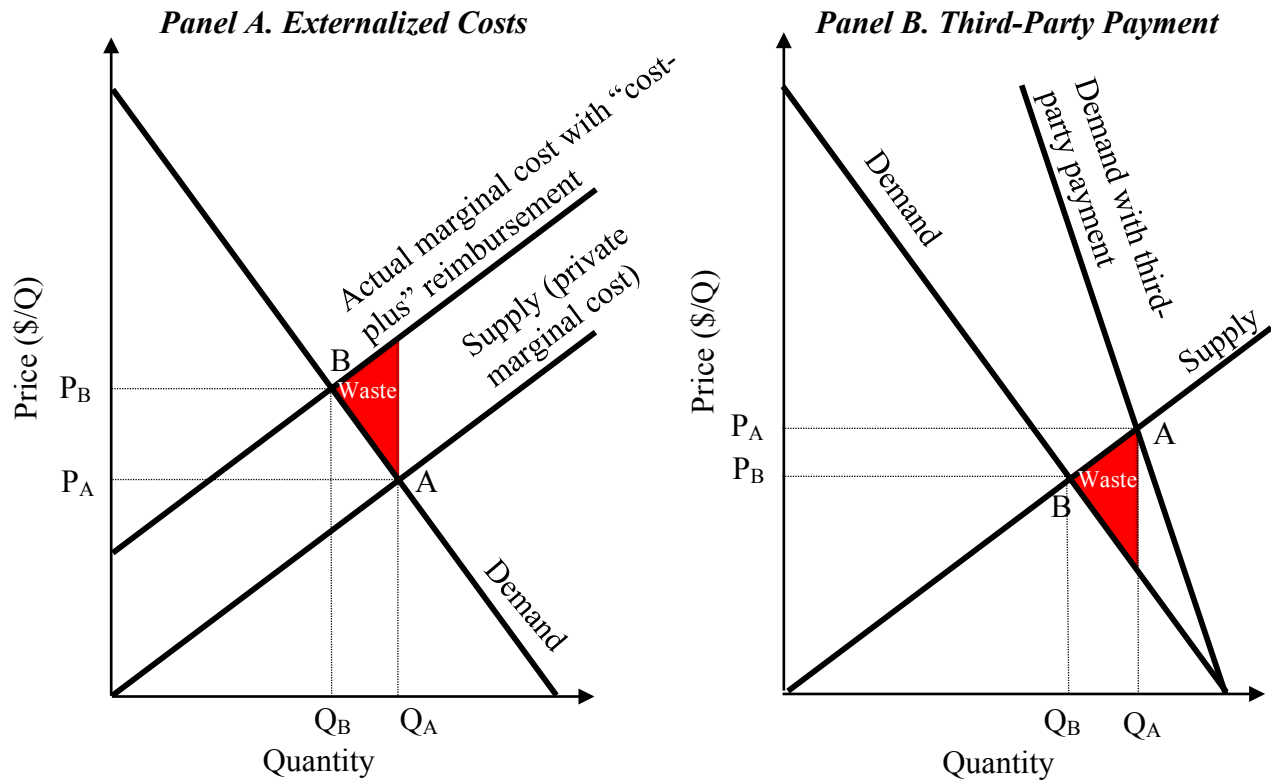
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<sup>10</sup> The answer depends on whether the original, nonrestricted supply curve intersects the demand curve in the elastic portion, above and to the left of B, or in the inelastic portion, below and to the right of B.

## Externalities

A more complex model might account for the fact that other public policies have distorted the healthcare market so that market participants are divorced from the true marginal costs of their decisions. In this case, a CON regulation might counteract the harm of such policies, but as we will see, it is hardly the most efficient means of doing so. Figure 2 depicts two ways that public policies might distort the healthcare market by creating an externality. I will consider each in turn.

Figure 2. Externalities



*Cost-plus reimbursement.* In panel A of figure 2, the equilibrium is at point A, where supply and demand intersect. If providers internalized all their costs, this equilibrium would be efficient because marginal cost would equal marginal benefit. But at the time that many states adopted

CON, Medicare reimbursed hospitals for their costs on a “retrospective” basis. Healthcare researchers Stuart Guterman and Allen Dobson described this reimbursement practice in 1986: “Under this system, hospitals were paid whatever they spent; there was little incentive to control costs, because higher costs brought about higher levels of reimbursement.”<sup>11</sup>

This reimbursement method was often referred to as a “cost-plus” system because it encouraged hospitals to overinvest in certain inputs. In other words, hospitals were able to externalize some of their costs of care and to pass them on to taxpayers. As a result, *actual* marginal costs were higher than the private marginal costs of hospitals.

These actual marginal costs are indicated by the marginal cost curve that sits above the supply curve in the left panel of figure 2. With this sort of reimbursement system, the efficient production point would be at point B, where true marginal cost equals marginal benefit. But because firms fail to internalize all costs, the actual equilibrium is at point A, resulting in what economists call a “deadweight loss.” This deadweight loss is depicted by the red triangle and is labeled “Waste.” It indicates that for the quantity of units of health care between  $Q_B$  and  $Q_A$ , marginal cost exceeds marginal benefit.

Under this type of reimbursement system, CON laws—by restricting supply—might be one way to move the market toward the more efficient outcome ( $Q_B$ ). A more straightforward solution, however, would be to change the way Medicare reimburses hospitals. Indeed, Congress pursued this straightforward solution more than 30 years ago with the adoption of Public Law 98-21.<sup>12</sup>

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<sup>11</sup> Stuart Guterman and Allen Dobson, “Impact of the Medicare Prospective Payment System for Hospitals,” *Health Care Financing Review* 7, no. 3 (Spring 1986): 97–114.

<sup>12</sup> Social Security Amendments of 1983, Pub. L. No. 98-21, 97 Stat. 65 (1983).

That legislation phased in Medicare’s Prospective Payment System, thus ending retrospective, cost-plus reimbursement. Therefore, the externalized-costs rationale for CON has not been relevant for decades. As Mark Botti, an official in the Antitrust Division of the Department of Justice, noted in 2007 testimony before the Georgia State Assembly,

We [antitrust officials at the Department of Justice and the Federal Trade Commission] made that recommendation [that states rethink their CON laws] in part because the original reason for the adoption of CON laws is no longer valid. Many CON programs trace their origins to a repealed federal mandate, the National Health Planning and Resources Development Act of 1974, which offered incentives for states to implement CON programs. At the time, the federal government and private insurance reimbursed healthcare expenses predominantly on a “cost-plus basis.” This is a very important point. The original reason for CON laws was not, as some have argued, that competition inherently does not work in healthcare or that market forces promote over-investment. Instead, CON laws were desired because the reimbursement mechanism, i.e., cost-plus reimbursement, incentivized over-investment. The hope was that CON laws would compensate for that skewed incentive. . . . CON laws appear not to have served well even their intended purpose of containing costs. Several studies examined the effectiveness of CONs in controlling costs. The empirical evidence on the economic effects of CON programs demonstrated near-universal agreement among health economists that CON laws were unsuccessful in containing healthcare costs.

In addition to the fact that CON laws have been ineffective in serving their original purpose, CON laws should be reexamined because the reimbursement methodologies that may in theory have justified them initially have changed significantly since the 1970s. The federal government no longer reimburses on a cost-plus basis.<sup>13</sup>

Indeed, it is instructive to note that Congress eliminated the incentive for states to implement CON regulations in 1987, one year after Medicare’s new reimbursement practice was fully phased in.

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<sup>13</sup> Mark J. Botti, “Competition in Healthcare and Certificates of Need” (Testimony before a Joint Session of the Health and Human Services Committee of the State Senate and the CON Special Committee of the State House of Representatives of the General Assembly of the State of Georgia, US Department of Justice Antitrust Division, Washington, DC, February 23, 2007). In support of his claim that economists were in “near-universal agreement” that CON laws failed to contain healthcare costs, Botti cites David S. Salkever, “Regulation of Prices and Investment in Hospitals in the United States,” in *Handbook of Health Economics*, ed. A. J. Culyer and J. P. Newhouse, vol. 1B (New York: Elsevier, 2000), 1489–1535.

*The third-party-payer problem.* Although policymakers long ago addressed the problem of externalized costs by abandoning cost-plus reimbursement, market participants might be divorced from true marginal cost in another way. Third parties such as governments and insurance companies cover some or all of the costs of decisions made by patients and their providers, and because patients fail to pay the full costs of their decisions, their demand for healthcare services is greater and less price sensitive than it otherwise would be.

Governments currently pay about 64 cents out of every healthcare dollar spent in the United States.<sup>14</sup> But even when taxpayers don't pick up the bill, public policy encourages third-party payment through private insurance. During World War II, wage and price controls prevented employers from paying their employees the prevailing market wage. To attract talented workers, some employers offered fringe benefits such as health insurance because those benefits were not limited by the wage controls. After the controls were lifted, Congress found it difficult to remove the favorable tax treatment of health insurance, and it has remained untaxed ever since.<sup>15</sup>

This favorable tax treatment of health insurance encourages employers to compensate their employees with more (untaxed) benefits and less (taxed) cash. And this arrangement has long been blamed for introducing various distortions to the healthcare market.<sup>16</sup> Among other things, this policy has exacerbated the third-party-payer problem by changing the nature of health insurance. Traditionally, insurance covers low-probability, high-cost events such as death,

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<sup>14</sup> David U. Himmelstein and Steffie Woolhandler, "The Current and Projected Taxpayer Shares of US Health Costs," *American Journal of Public Health* 106, no. 3 (March 1, 2016): 449–52.

<sup>15</sup> Rexford E. Santerre and Stephen P. Neun, *Health Economics: Theory, Insights, and Industry Studies*, 5th ed. (Mason, OH: South-Western Publishing, 2010), 316; Milton Friedman, "Pricing Health Care: The Folly of Buying Health Care at the Company Store," *Wall Street Journal*, February 3, 1993.

<sup>16</sup> Martin Feldstein and Bernard Friedman, "Tax Subsidies, the Rational Demand for Insurance and the Health Care Crisis," *Journal of Public Economics* 7, no. 2 (April 1, 1977): 155–78; Jonathan Gruber, "The Tax Exclusion for Employer-Sponsored Health Insurance," *National Tax Journal* 64, no. 2 (2011): 511–30; Jeremy Horpedahl and Harrison Searles, "The Tax Exemption of Employer-Provided Health Insurance," Mercatus on Policy, Mercatus Center at George Mason University, Arlington, VA, September 2013.

accidents, or disease. But in the case of health insurance, favorable tax treatment and various regulatory mandates have caused health insurers to cover entirely predictable expenses such as checkups, screenings, immunizations, diet counseling, breastfeeding consultation, nutritional supplements, and much more.<sup>17</sup>

As a result, patients are able to purchase routine and entirely foreseeable health services while pushing some portion of the cost off onto others who pay insurance premiums. This arrangement has caused the effective demand for healthcare services to be greater and less price sensitive than it otherwise would be, thereby pivoting the demand curve out to the right.<sup>18</sup> This situation is depicted in panel B of figure 2. Here, the equilibrium is at point A, where the “Supply” curve intersects the “Demand with Third-Party Payment” curve. As in the case of externalized costs, the equilibrium is inefficient because marginal cost exceeds the marginal benefit, as indicated by the demand curve.

As in the case of externalized costs, policymakers *might* be able to correct this problem by restricting supply through CON programs, thus raising the price and getting consumers to internalize more of the cost. Note, however, that if this is the goal of CON regulation, it contradicts the *named* goal of reducing cost. Moreover, to do this properly, policymakers would need to estimate how much of the cost is externalized, as well as the degree to which private arrangements such as cost-sharing already correct for this problem.<sup>19</sup> Then they would need to shift the supply curve up by the exact amount of the externalized cost; if the shift were too little or too great, wasteful inefficiencies would remain.

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<sup>17</sup> Maureen Buff and Timothy Terrell, “The Role of Third-Party Payers in Medical Cost Increases,” *Journal of American Physicians and Surgeons* 19, no. 2 (Summer 2014): 75–79.

<sup>18</sup> Santerre and Neun, *Health Economics: Theory, Insights, and Industry Studies*, 115–35.

<sup>19</sup> John V. C. Nye, “The Pigou Problem: It Is Difficult to Calculate the Right Tax in a World of Imperfect Coasian Bargains,” *Regulation* 31, no. 2 (Summer 2008).

It is not clear that policymakers have the knowledge or the expertise to make this assessment—especially because their decisions are unguided by market signals.<sup>20</sup> Nor is it clear that CON is a precise enough tool to allow them to shift the supply curve the proper amount.

Those considerations aside, CON is hardly the most efficient or equitable way to address the third-party-payer problem. A far more direct approach would be to address the policies that encourage third-party payment in the first place, just as Congress once addressed the externalized cost problem by changing Medicare reimbursement practices.

If, for example, policymakers are concerned that patients are spending too much on health care, a straightforward approach would be to eliminate the tax privilege for employer-provided health insurance and to repeal the insurance mandates that require insurers to cover routine and foreseeable procedures. Doing so would cause the effective demand for health care to more closely resemble patients' actual marginal benefits.

In contrast, CON regulations restrict the ability of everybody to access medical services such as psychiatric care (regulated by CON procedures in 26 states), neonatal intensive care (regulated by 23 states), and MRI scans (regulated by 16 states).<sup>21</sup> This restriction means that all patients—even those who pay out of pocket and don't push costs onto third parties—have less access to valuable medical services.

Before I move on to the third theoretical model, one more point is worth emphasizing. Recall that in the previous section, I noted that a supply restriction would be more likely to increase total expenditures when demand was less elastic. Because the third-party-payer problem

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<sup>20</sup> F. A. Hayek, "The Use of Knowledge in Society," *American Economic Review* 35, no. 4 (September 1, 1945): 519–30; F. A. Hayek, "Competition as a Discovery Procedure," trans. Marcellus Snow, *Quarterly Journal of Austrian Economics* 5, no. 3 (Fall 2002): 9–23.

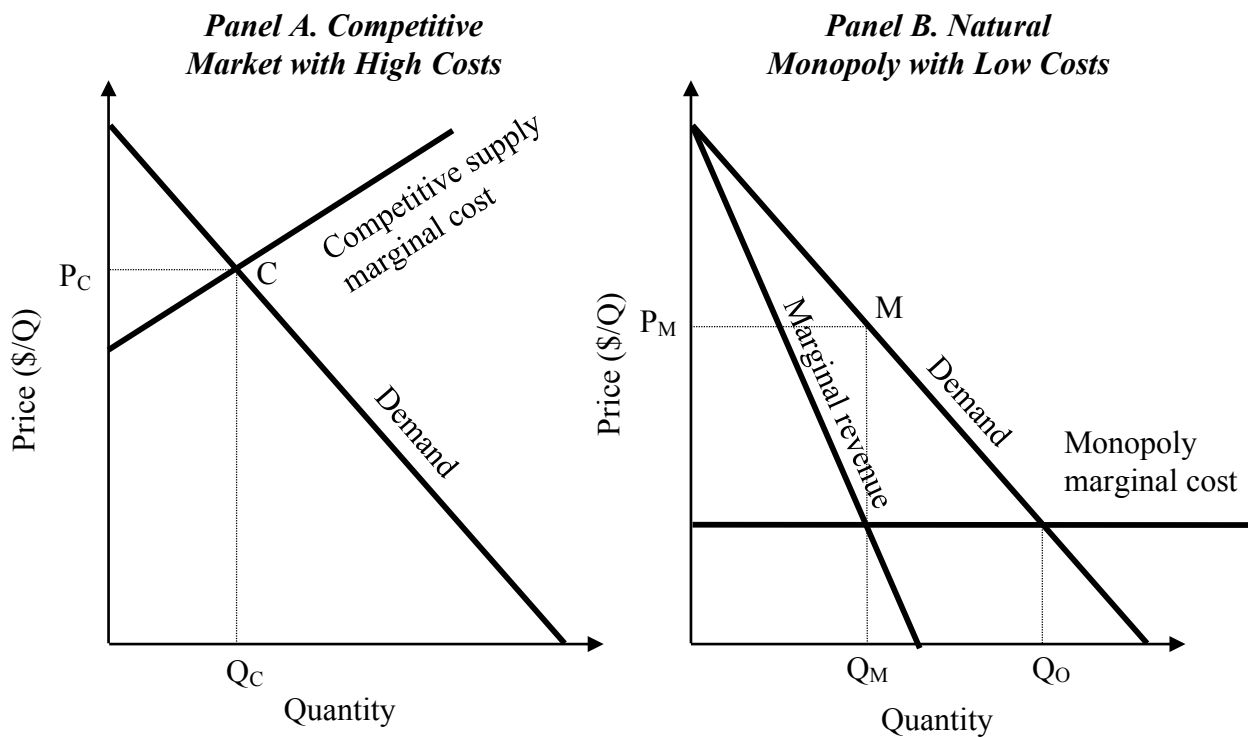
<sup>21</sup> For state CON regulations, see "CON—Certificate of Need State Laws."

tends to cause the effective demand curve to be less elastic than it otherwise would be, this model suggests that CON is likely to increase rather than decrease total expenditures.

***Economies of Scale***

Another slightly more complex model might posit that there are economies of scale in the provision of medical services and that a few hospitals or even one large hospital might be able to deliver care with a lower cost than can many smaller ones. This situation is depicted in figure 3.

**Figure 3. Competition vs. Natural Monopoly**



Panel A shows a competitive industry with comparatively high production costs. Because the industry is competitive, firms are unable to mark up the price. Therefore, they set the price at marginal cost  $P_C$ .



Panel B shows a monopolist with comparatively low production costs. The monopolist uses its pricing power to set price above marginal cost, at  $P_M$ , but even this marked-up price is lower than that charged by the competitive firms, because the monopolist enjoys economies of scale in production.

It is possible that policymakers have this sort of model in mind. Perhaps by channeling more patients to a few hospitals, regulators may allow these individual hospitals to achieve some economies of scale. Relatedly, some policymakers have recently begun to argue that CON might allow these hospitals to increase the quality of their care by becoming more proficient in certain procedures.<sup>22</sup>

As health economists Robert Ohsfeldt and John Schneider observe, however, CON “is an unacceptably blunt instrument for quality enhancement in a sector as innovative and dynamic as health care,” especially when there are more direct and effective ways to achieve the same end.<sup>23</sup> In any case, the most recent evidence suggests that, if anything, CON is associated with lower, not higher, quality.<sup>24</sup>

This natural monopoly theory has problems. For one thing, the model is most appropriate in industries such as power production that require large fixed-cost investments in plant but have low marginal costs of operation. This model is only somewhat descriptive of the healthcare

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<sup>22</sup> Mary S. Vaughan-Sarrazin et al., “Mortality in Medicare Beneficiaries Following Coronary Artery Bypass Graft Surgery in States with and without Certificate of Need Regulation,” *Journal of the American Medical Association* 288, no. 15 (October 16, 2002): 1859–66.

<sup>23</sup> Robert L. Ohsfeldt and John E. Schneider, *The Business of Health: The Role of Competition, Markets, and Regulation* (Washington, DC: AEI Press, 2006), 39.

<sup>24</sup> More recent work, using better data and methods, fails to find a link between CON and quality. See Iona Popescu, Mary S. Vaughan-Sarrazin, and Gary E. Rosenthal, “Certificate of Need Regulations and Use of Coronary Revascularization after Acute Myocardial Infarction,” *Journal of the American Medical Association* 295, no. 18 (May 10, 2006): 2141–47. For an overview, see Vivian Ho, Meei-Hsiang Ku-Goto, and James G. Jollis, “Certificate of Need (CON) for Cardiac Care: Controversy over the Contributions of CON,” *Health Services Research* 44, no. 2, pt. 1 (April 2009): 483–500. Finally, for one of the best attempts to get at causation, see Thomas Stratmann and David Wille, “Certificate-of-Need Laws and Hospital Quality,” Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, September 2016. They find that CON is associated with lower-quality care.

industry, where the marginal cost of healthcare providers' salaries is significant. Additionally, there is reason to believe that when firms are protected from competition, they will have higher, not lower, production costs because administrators will tend to be less disciplined about cost minimization.<sup>25</sup> These factors explain why hospital prices in monopoly markets are more than 15 percent higher than those in markets with four or more competitors.<sup>26</sup>

Most important, however, even if the natural monopoly model did describe the healthcare market, artificial restrictions on entry would be unlikely to improve conditions. The economist David Henderson explains why:

Economists tend to oppose regulating entry. The reason is as follows: If the industry really is a natural monopoly, then preventing new competitors from entering is unnecessary because no competitor would want to enter anyway. If, on the other hand, the industry is not a natural monopoly, then preventing competition is undesirable. Either way, preventing entry does not make sense.<sup>27</sup>

In other words, as the name implies, a natural monopoly occurs naturally. If the market will bear only one firm, then policymakers need not artificially restrict entry.

### ***The Interest-Group Model for CON***

The preceding models have all been normative: they've focused on whether or not CON laws are desirable in the sense that they increase consumer welfare and efficiency. But perhaps the most informative models of CON are positive in the sense that they explain why CON programs exist irrespective of their desirability.

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<sup>25</sup> This finding is known as x-inefficiency. For more details, see Harvey Leibenstein, "Allocative Efficiency vs. 'X-Efficiency,'" *American Economic Review* 56, no. 3 (June 1, 1966): 392–415.

<sup>26</sup> Zack Cooper, Stuart V. Craig, Martin Gaynor, and John Van Reenen, "The Price Ain't Right? Hospital Prices and Health Spending on the Privately Insured," NBER working paper, National Bureau of Economic Research, Cambridge, MA, December 2015.

<sup>27</sup> David R. Henderson, "Natural Monopoly," ed. David R. Henderson, *The Concise Encyclopedia of Economics* (Indianapolis, IN: Liberty Fund Inc., 2008).

Positive models stress that a CON law is a special privilege afforded to a particular interest group, namely the incumbent provider who benefits from a lack of competition. A large body of literature suggests that interest groups seeking special privileges through the political process have an advantage over the consumers and taxpayers who bear the costs of those privileges.

First, it takes time, money, and effort to get politically engaged. But, being few in number, the members of a special interest group typically find it easier than large, diffuse interests to organize for political action.<sup>28</sup>

Second, such groups tend to be well informed about their industry. Often, they are able to capitalize on voter ignorance and irrationality<sup>29</sup> or to use their superior knowledge of the industry to dominate the regulatory process, or both.<sup>30</sup>

Third, concentrated interest groups are often able to control the agenda, thus allowing them to steer committee outcomes to their benefit.<sup>31</sup>

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<sup>28</sup> Mancur Olson, *The Logic of Collective Action: Public Goods and the Theory of Groups*, Second Printing with New Preface and Appendix, Revised (Cambridge, MA: Harvard University Press, 1965); Jonathan Rauch, *Government's End: Why Washington Stopped Working* (New York: PublicAffairs, 1999).

<sup>29</sup> On voter ignorance, see Anthony Downs, *An Economic Theory of Democracy* (New York: Harper & Row, 1957); Geoffrey Brennan and Loren E. Lomasky, *Democracy and Decision: The Pure Theory of Electoral Preference* (Cambridge, UK: Cambridge University Press, 1997). On voter irrationality, see Bryan Caplan, *The Myth of the Rational Voter: Why Democracies Choose Bad Policies* (Princeton, NJ: Princeton University Press, 2008).

<sup>30</sup> George J. Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science* 2, no. 1 (April 1, 1971): 3–21; Richard A. Posner, "Theories of Economic Regulation," *Bell Journal of Economics and Management Science* 5, no. 2 (October 1, 1974): 335–58; Sam Peltzman, "Toward a More General Theory of Regulation," *Journal of Law and Economics* 19, no. 2 (August 1, 1976): 211–40; Ernesto Dal Bó, "Regulatory Capture: A Review," *Oxford Review of Economic Policy* 22, no. 2 (June 20, 2006): 203–25; Patrick A. McLaughlin, Matthew Mitchell, and Ethan Roberts, "When Regulation Becomes Privilege," Mercatus Center at George Mason University, Arlington, VA, forthcoming.

<sup>31</sup> On using control of the agenda to determine the outcome, see Duncan Black, "On the Rationale of Group Decision-Making," *Journal of Political Economy* 56, no. 1 (February 1, 1948): 23–34; Kenneth Joseph Arrow, *Social Choice and Individual Values* (New Haven: Yale University Press, 1951); Richard D McKelvey, "Intransitivities in Multidimensional Voting Models and Some Implications for Agenda Control," *Journal of Economic Theory* 12, no. 3 (June 1976): 472–82. On keeping certain items off the agenda, see Peter Bachrach and Morton S. Baratz, "Two Faces of Power," *American Political Science Review* 56, no. 4 (December 1, 1962): 947–52.

Fourth and finally, firms tend to get better at political activity the more they engage in it, giving incumbents a marked advantage over new entrants.<sup>32</sup>

All these factors explain why the CON process seems to favor incumbent firms through features such as steep application fees, long wait periods, and a notice-and-comment process that allows incumbents to argue against competition. They also explain why hospital lobbies typically support CON laws while federal antitrust authorities at the Justice Department and the Federal Trade Commission have long opposed them.<sup>33</sup>

If, as the interest group models imply, CON laws exist to serve special interests rather than the general interest, then those laws are especially costly. Figure 4 demonstrates why. The model assumes, for simplicity, that marginal costs are identical under competitive and monopolistic conditions. (This assumption is made for ease of explanation; it does not drive the analysis.)

Without CON, the market equilibrium would be at A, where marginal cost equals marginal benefit. If an incumbent provider is able to obtain a monopoly privilege through CON, however, then the provider will limit the quantity supplied and will charge a higher price. Standard economic theory predicts that the monopolist will charge price  $P_B$  because at that price, marginal revenue is equal to marginal cost, thus maximizing profit. This pricing results in a traditional monopoly deadweight loss, indicated by the red triangle.<sup>34</sup>

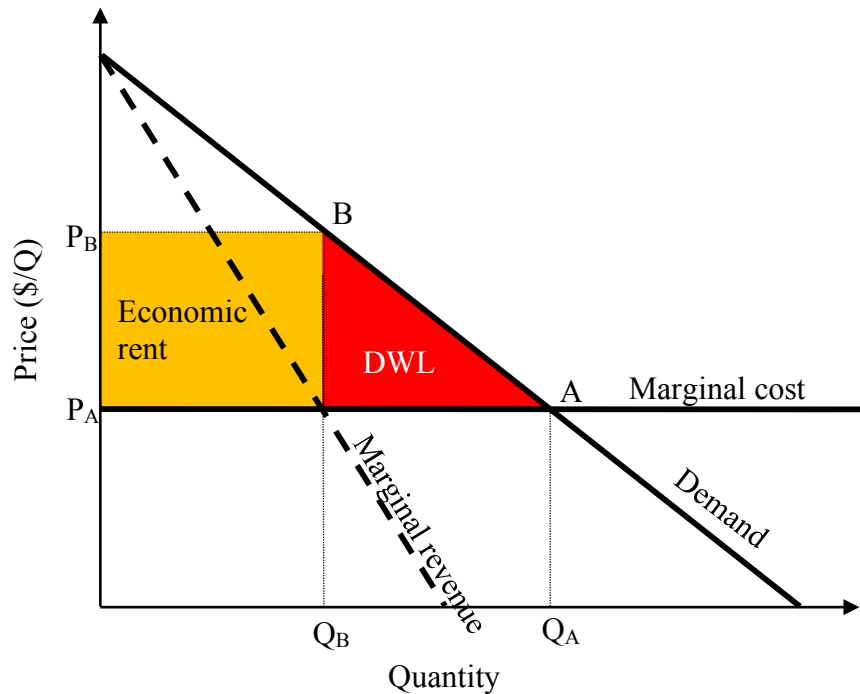
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<sup>32</sup> Lee Drutman, *The Business of America Is Lobbying: How Corporations Became Politicized and Politics Became More Corporate* (New York: Oxford University Press, 2015).

<sup>33</sup> For one recent example, see Federal Trade Commission and US Department of Justice, “Joint Statement of the Federal Trade Commission and the Antitrust Division of the U.S. Department of Justice on Certificate-of-Need Laws and South Carolina House Bill 3250,” January 2016, <https://www.ftc.gov/policy/policy-actions/advocacy-filings/2016/01/joint-statement-federal-trade-commission-antitrust>.

<sup>34</sup> Economists consider this an economic loss because consumers and would-be competitors lose more than the monopolist gains. For more details, see James R. Hines, “Three Sides of Harberger Triangles,” NBER Working Paper 6852, National Bureau of Economic Research, Cambridge, MA, December 1998.

**Figure 4. CON as a Special Interest**



But there is a potential for further social losses. The monopolist’s profit—which comes at the expense of consumers and would-be competitors—is indicated by the yellow rectangle and is known as “economic rent.” Because this rent can represent a substantial economic profit, firms will be willing to invest scarce resources seeking it.<sup>35</sup> They will lobby, donate to political action committees, and alter their business models to satisfy political preferences. Not all those activities are legal. For example, according to federal prosecutors, former HealthSouth CEO Richard Scrushy paid former Alabama Governor Don Siegelman more than \$500,000 for a seat

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<sup>35</sup> Gordon Tullock, “The Welfare Costs of Tariffs, Monopolies, and Theft,” *Western Economic Journal [Economic Inquiry]* 5, no. 3 (June 1, 1967): 224–32; Anne O. Krueger, “The Political Economy of the Rent-Seeking Society,” *American Economic Review* 64, no. 3 (1974): 291–303.

on the state's certificate-of-need board. Both men were convicted of bribery (among other crimes) in June 2006.<sup>36</sup>

Illegal or not, this activity has an opportunity cost. This cost is known as “rent-seeking,” and it can be enormously wasteful. Indeed, under the right circumstances, firms might be willing to invest more resources in rent-seeking than the rent is even worth.<sup>37</sup>

But this is only one of several costs of special-interest privilege.<sup>38</sup> For example, when firms can obtain anticompetitive privileges, entrepreneurial talents will be directed at seeking those privileges rather than developing new ways to please customers, resulting in what economists call “unproductive entrepreneurship.”<sup>39</sup> This practice is especially costly over the long run because it robs an industry of the sort of entrepreneurial dynamism that characterizes healthy growth and because it locks in outdated business models.<sup>40</sup>

For these reasons, the special-interest theory of CON regulation suggests that CON laws will result in higher costs, lower quality, and less innovation.

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<sup>36</sup> Kyle Whitmire, “Ex-Governor and Executive Convicted of Bribery,” *New York Times*, June 30, 2006.

<sup>37</sup> Known as “overdissipation,” this outcome is possible when there are many rent-seekers and when there are increasing returns to political activity. Gordon Tullock, “Efficient Rent Seeking,” in *Toward a Theory of the Rent-Seeking Society*, ed. James M. Buchanan, Robert D. Tollison, and Gordon Tullock (College Station: Texas A&M University Press, 1980), 97–112; Dennis C. Mueller, *Public Choice III*, 3rd ed. (Cambridge, UK: Cambridge University Press, 2003), 331–37. For evidence that there are increasing returns to political activity, see Drutman, *The Business of America Is Lobbying*; Matthew Mitchell, “Of Rent-Seekers and Rent-Givers,” review of *The Business of America Is Lobbying*, by Lee Drutman, Library of Law and Liberty, December 14, 2015.

<sup>38</sup> Matthew Mitchell, *The Pathology of Privilege: The Economic Consequences of Government Favoritism* (Arlington, VA: Mercatus Center at George Mason University, 2012).

<sup>39</sup> William J. Baumol, “Entrepreneurship: Productive, Unproductive, and Destructive,” *Journal of Political Economy* 98, no. 5 (October 1, 1990): 893–921.

<sup>40</sup> Kevin M. Murphy, Andrei Shleifer, and Robert W. Vishny, “The Allocation of Talent: Implications for Growth,” *Quarterly Journal of Economics* 106, no. 2 (May 1, 1991): 503–30; Kevin Murphy, Andrei Shleifer, and Robert Vishny, “Why Is Rent-Seeking So Costly to Growth?,” *American Economic Review Papers and Proceedings* 83, no. 2 (1993): 409–14; Stephen L. Parente and Edward C. Prescott, *Barriers to Riches*, repr. ed. (Cambridge, MA: MIT Press, 2002); Adam Thierer, *Permissionless Innovation: The Continuing Case for Comprehensive Technological Freedom* (Arlington, VA: Mercatus Center at George Mason University, 2014).

## ***Summary of the Economic Theory***

In this section, I have reviewed several economic models of a supply restriction such as CON. None of those theories suggest that a CON regulation will decrease healthcare prices. Instead, theory predicts that a CON regulation will raise per unit cost, limit the supply of healthcare services, reduce consumer welfare, and lead to the misallocation of resources in rent-seeking activity.

Theory suggests that CON laws might reduce healthcare expenditures if the effects of the quantity reduction outweigh the effects of the price increases. But this theory would only hold if the demand for health care were relatively elastic, which is unlikely given the third-party-payer problem. CON regulations might mitigate a policy-induced externality, but they are hardly the most efficient or equitable means of doing so.

In the next section, I turn to the data and examine 40 years of empirical studies on the effects of CON on spending.

## **What Do the Data Show?**

Table 1 reports the empirical literature assessing the effect of CON on various spending outcomes. For ease of reference, the studies are divided into four categories: (1) the effect of CON on cost per procedure, price, or charge; (2) the effect of CON on total expenditures; (3) the effect of CON on efficiency; and (4) the effect of CON on investment. Studies that assess CON along multiple spending outcomes appear more than once in the table. The scope of the analysis is limited to only published, peer-reviewed papers, and it encompasses 20 studies spanning the course of 40 years.<sup>41</sup>

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<sup>41</sup> Being focused on published, peer-reviewed papers, the table omits some high-quality government reports that were prepared by academics. Those reports are consistent with the findings reported in the table. See, for example, Daniel Sherman, “The Effect of State Certificate-of-Need Laws on Hospital Costs: An Economic Policy Analysis,” Staff Report of the Bureau of Economics, Federal Trade Commission, Washington, DC, January 1988; Christopher J. Conover and Frank A. Sloan, “Evaluation of Certificate of Need in Michigan,” Report to the Michigan Department of Community Health (Durham, NC: Duke University Center for Health Policy, Law, and Management, May 2003), <http://ushealthpolicygateway.com/wp-content/uploads/2009/07/mi-con-intro-iii.pdf>.

**Table 1. Empirical Studies of CON and Spending**

Author(s)	Year	Title	Publication	Effect of CON on cost/price/investment/efficiency	Quotes
<b>Effect of CON on per unit costs, prices, or charges</b>					
Noether	1988	“Competition among Hospitals”	<i>Journal of Health Economics</i>	CON increases the average price for specific disease categories such as congestive heart failure and pneumonia.	“CON’s strongest effect is that it creates cost-raising inefficiencies which are passed on in higher prices.”
Grabowski, Ohsfeldt, and Morrisey	2003	“The Effects of CON Repeal on Medicaid Nursing Home and Long-Term Care Expenditures”	<i>Inquiry: The Journal of Medical Care Organization, Provision, and Financing</i>	CON repeal has no statistically significant effect on per diem Medicaid nursing home charges or per diem Medicaid long-term-care charges.	“The results . . . show that regulatory change did not have a statistically significant effect on either Medicaid payment rates or overall days.”
Ho and Ku-Goto	2013	“State Deregulation and Medicare Costs for Acute Cardiac Care”	<i>Medical Care Research and Review</i>	Removing CON decreases the cost of some procedures.	“We found that states that dropped CON experienced lower costs per patient for coronary artery bypass grafts (CABG) but not for percutaneous coronary intervention (PCI).”
Bailey	2016	“Can Health Spending Be Reined In through Supply Constraints? An Evaluation of Certificate of Need Laws”	Mercatus Working Paper, Mercatus Center at George Mason University	Removing CON reduces hospital charges by 5.5% five years after repeal.	“CON repeal . . . is associated with . . . a statistically significant 1.1% reduction in average hospital charges per year (a 5.5% reduction for a mature CON repeal).”
<b>Effect of CON on expenditures</b>					
Sloan and Steinwald	1980	“Effects of Regulation on Hospital Costs and Input Use”	<i>Journal of Law and Economics</i>	Comprehensive CON programs have no effect on hospital expenditures per patient day, while noncomprehensive programs increase hospital expenditures per patient day.	“The short-run effect of a mature, noncomprehensive program is to raise total expense per adjusted patient day by nearly 5 percent; the long-run effect is over twice this.”
Sloan	1981	“Regulation and the Rising Cost of Hospital Care”	<i>Review of Economics and Statistics</i>	CON has no effect on hospital expenditures per admission, per patient day, or per adjusted patient day.	“The certificate-of-need coefficients imply CON has had no impact on costs.”
Lanning, Morrisey, and Ohsfeldt	1991	“Endogenous Hospital Regulation and Its Effects on Hospital and Non-Hospital Expenditures”	<i>Journal of Regulatory Economics</i>	CON increases per capita hospital, nonhospital, and total health expenditures.	“. . . the coefficient of CON is positive and statistically significant in all three expenditure equations. The most pronounced effect is on hospital expenditures, where CON appears to add 20.6 percent to per capita hospital expenditures in the long run. This is consistent with the view that CON programs act to protect inefficient hospitals from competition.”



Antel, Ohsfeldt, and Becker	1995	"State Regulation and Hospital Costs"	<i>Review of Economics and Statistics</i>	CON increases per-day and per-admission hospital expenditures but has no relationship to per capita hospital expenditures.	"CON investment controls imply higher per day and per admission costs, but have no statistically significant effect on per capita cost."
Conover and Sloan	1998	"Does Removing Certificate-of-Need Regulations Lead to a Surge in Health Care Spending?"	<i>Journal of Health Politics, Policy, and Law</i>	CON has no effect on total per capita health expenditures; there is no evidence of a surge in spending after repeal.	"Mature CON programs are associated with a modest (5 percent) long-term reduction in acute care spending per capita, but not with a significant reduction in total per capita spending. There is no evidence of a surge in acquisition of facilities or in costs following removal of CON regulations."
Miller, Harrington, and Goldstein	2002	"Access to Community-Based Long-Term Care: Medicaid's Role"	<i>Journal of Aging and Health</i>	CON increases per capita Medicaid community-based care expenditures.	"Use of a nursing home CON or combined CON/moratorium was associated with increased community-based care expenditures."
Grabowski, Ohsfeldt, and Morrisey	2003	"The Effects of CON Repeal on Medicaid Nursing Home and Long-Term Care Expenditures"	<i>Inquiry: The Journal of Medical Care Organization, Provision, and Financing</i>	CON repeal has no statistically significant effect on either aggregate Medicaid nursing-home or aggregate Medicaid long-term-care expenditures.	"Using aggregate state-level data from 1981 through 1998, this study found that states that repealed their CON and moratorium laws had no significant growth in either nursing home or long-term care Medicaid expenditures"
Rivers, Fottler, and Younis	2007	"Does Certificate of Need Really Contain Hospital Costs in the United States?"	<i>Health Education Journal</i>	CON laws increase hospital expenditures per adjusted admission.	"The results indicate that CON laws had a positive, statistically significant relationship to hospital costs per adjusted admission. . . .These findings suggest not only that CON do not really contain hospital costs, but may actually increase them by reducing competition."
Hellinger	2009	"The Effect of Certificate-of-Need Laws on Hospital Beds and Healthcare Expenditures: An Empirical Analysis"	<i>American Journal of Managed Care</i>	CON is associated with fewer hospital beds, which in turn are associated with slower growth in aggregate health expenditures per capita. But there is no direct relationship between CON and health expenditures per capita.	"Certificate-of-need programs did not have a direct effect on healthcare expenditures. . . . Certificate-of-need programs have limited the growth in the supply of hospital beds, and this has led to a slight reduction in the growth of healthcare expenditures."
Rivers, Fottler, and Frimpong	2010	"The Effects of Certificate of Need Regulation on Hospital Costs"	<i>Journal of Health Care Finance</i>	Stringent CON programs increase hospital expenditures per admission.	"Implications from these results include the inability of CNR [CON] to contain HC [hospital costs] as assumed or expected, and the possibility that CNR [CON] may actually increase HC [hospital costs], while reducing competition."
Rahman et al.	2016	"The Impact of Certificate-of-Need Laws on Nursing Home and Home Health Care Expenditures"	<i>Medical Care Research and Review: MCRR</i>	CON increases the growth in Medicare and Medicaid expenditures on nursing home care but decreases growth in home healthcare expenditures.	"Compared with states without CON laws, Medicare and Medicaid spending in states with CON laws grew faster for nursing home care and more slowly for home health care."

Bailey	2016	“Can Health Spending Be Reined In through Supply Constraints? An Evaluation of Certificate of Need Laws”	Mercatus Working Paper, Mercatus Center at George Mason University	CON is associated with higher overall per capita healthcare expenditures and with higher per capita Medicare expenditures.	“CON increases total health spending [per capita] by a statistically significant 3.1%. Increases are especially high for spending on physician care—a statistically significant 5.0%. . . . CON is estimated to increase overall Medicare spending [per capita] by a statistically significant 6.9%.”
<b>Effect of CON on Hospital Efficiency</b>					
Eakin	1991	“Allocative Inefficiency in the Production of Hospital Services”	<i>Southern Economic Journal</i>	CON hospitals are less efficient than non-CON hospitals.	“. . . hospitals subject to CON regulations have a greater measure of allocative inefficiency by .88 to 1.03 percentage points.”
Bates, Mukherjee, and Santerre	2006	“Market Structure and Technical Efficiency in the Hospital Services Industry: A DEA Approach”	<i>Medical Care Research and Review</i>	CON hospitals are not any less efficient than non-CON hospitals.	“Evidence also implies that the presence of a state certificate-of-need law was not associated with a greater degree of inefficiency in the typical metropolitan hospital services industry.”
Ferrier, Leleu, and Valdmanis	2010	“The Impact of CON Regulation on Hospital Efficiency”	<i>Health Care Management Science</i>	CON hospitals are more efficient than non-CON hospitals.	“In general, we found that the hospital sector in states with active CON regulations performed better in terms of aggregate technical and mix efficiency, irrespective of the stringency or laxness of this oversight.”
Rosko and Mutter	2014	“The Association of Hospital Cost-Inefficiency with Certificate-of-Need Regulation”	<i>Medical Care Research and Review</i>	CON hospitals are more efficient than non-CON hospitals.	“Average estimated cost-inefficiency was less in CON states (8.10%) than in non-CON states (12.46%).”
<b>Effect of CON on Investment</b>					
Salkever and Bice	1976	“The Impact of Certificate of Need Controls on Hospital Investment”	<i>Milbank Memorial Fund Quarterly: Health and Society</i>	CON does not decrease investment but does change its composition.	“CON did not reduce the total dollar volume of investment but altered its composition, retarding expansion in bed supplies but increasing investment in new services and equipment.”
Hellinger	1976	“The Effect of Certificate-of-Need Legislation on Hospital Investment”	<i>Inquiry: The Journal of Medical Care Organization, Provision, and Financing</i>	CON legislation induced hospitals to increase investments.	“The empirical results support the hypotheses that [CON] legislation has not significantly lowered hospital investment and that hospitals anticipated the effect of [CON] legislation by increasing investment in the period preceding the enactment of the legislation.”

### *Per Unit Costs, Prices, and Charges*

The first four studies summarized in table 1 address the idea of cost as it is commonly used in everyday language.<sup>42</sup> Those studies assess the effect of CON on *per unit* costs, prices, or charges (a charge is the initial amount that the payer is billed, whereas a price is the amount that the payer actually pays after negotiation).<sup>43</sup>

As noted in the previous section, economic theory suggests that a supply restriction is likely to increase per unit costs and prices. And, indeed, the empirical evidence is consistent with this prediction. Three of these four studies found CON to be associated with higher per unit prices, costs, or charges, while the fourth—which focused only on per diem Medicaid charges for nursing-home and long-term care—found that repeal of CON had no statistically significant effect on those charges.<sup>44</sup>

One study found that “CON’s strongest effect is that it creates cost-raising inefficiencies which are passed on in higher prices.”<sup>45</sup> Another found that removing CON decreased the per unit cost of coronary artery bypass grafts, though not the cost of percutaneous coronary intervention.<sup>46</sup> The most recent study found that average hospital charges fell 1.1 percent per

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<sup>42</sup> Monica Noether, “Competition among Hospitals,” *Journal of Health Economics* 7, no. 3 (September 1988): 259–84; David C. Grabowski, Robert L. Ohsfeldt, and Michael A. Morrisey, “The Effects of CON Repeal on Medicaid Nursing Home and Long-Term Care Expenditures,” *Inquiry: The Journal of Medical Care Organization, Provision, and Financing* 40, no. 2 (2003): 146–57; Vivian Ho and Meei-Hsiang Ku-Goto, “State Deregulation and Medicare Costs for Acute Cardiac Care,” *Medical Care Research and Review* 70, no. 2 (April 2013): 185–205; James Bailey, “Can Health Spending Be Reined In through Supply Constraints? An Evaluation of Certificate-of-Need Laws,” Mercatus Working Paper, Mercatus Center at George Mason University, Arlington, VA, July 2016.

<sup>43</sup> Although prices are more important, economically, charges are easier to observe. For more details, see Bailey, “Can Health Spending Be Reined In through Supply Constraints?”

<sup>44</sup> The three studies that found CON increases prices, charges, or per unit costs were Noether, “Competition among Hospitals”; Ho and Ku-Goto, “State Deregulation and Medicare Costs for Acute Cardiac Care”; and Bailey, “Can Health Spending Be Reined In through Supply Constraints?” The study that failed to find any statistically significant effect was Grabowski, Ohsfeldt, and Morrisey, “The Effects of CON Repeal on Medicaid Nursing Home and Long-Term Care Expenditures.”

<sup>45</sup> Noether, “Competition among Hospitals.”

<sup>46</sup> Ho and Ku-Goto, “State Deregulation and Medicare Costs for Acute Cardiac Care.”

year for each of the five years following repeal of CON; in other words, five years following repeal, the charges were 5.5 percent lower than they would otherwise have been.<sup>47</sup>

### ***Expenditures***

The next 12 studies in table 1 assess the effect of CON on healthcare expenditures or on the growth of those expenditures, usually measured on a per capita basis.<sup>48</sup> In other words, the studies assess the effect of CON on the total amount that is spent on a patient or state resident, rather than on the price per unit of service. In this sense, those studies are comparable to the effect described in panel B of figure 1.<sup>49</sup> As noted previously, that theoretical framework shows that a supply restriction such as CON might lead to either more spending or less spending, depending on whether the price-raising effect or quantity-reducing effect of the supply restriction dominates.

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<sup>47</sup> Bailey, “Can Health Spending Be Reined In through Supply Constraints?”

<sup>48</sup> Frank A. Sloan and Bruce Steinwald, “Effects of Regulation on Hospital Costs and Input Use,” *Journal of Law and Economics* 23, no. 1 (1980): 81–109; Frank A. Sloan, “Regulation and the Rising Cost of Hospital Care,” *Review of Economics and Statistics* 63, no. 4 (1981): 479–87; Joyce A. Lanning, Michael A. Morrissey, and Robert L. Ohsfeldt, “Endogenous Hospital Regulation and Its Effects on Hospital and Non-Hospital Expenditures,” *Journal of Regulatory Economics* 3, no. 2 (June 1991): 137–54; John J. Antel, Robert L. Ohsfeldt, and Edmund R. Becker, “State Regulation and Hospital Costs,” *Review of Economics and Statistics* 77, no. 3 (1995): 416–22; Christopher J. Conover and Frank A. Sloan, “Does Removing Certificate-of-Need Regulations Lead to a Surge in Health Care Spending?,” *Journal of Health Politics, Policy, and Law* 23, no. 3 (June 1, 1998): 455–81; Nancy A. Miller, Charlene Harrington, and Elizabeth Goldstein, “Access to Community-Based Long-Term Care: Medicaid’s Role,” *Journal of Aging and Health* 14, no. 1 (February 2002): 138–59; Grabowski, Ohsfeldt, and Morrissey, “The Effects of CON Repeal on Medicaid Nursing Home and Long-Term Care Expenditures”; Patrick A. Rivers, Myron D. Fottler, and Mustafa Zeedan Younis, “Does Certificate of Need Really Contain Hospital Costs in the United States?,” *Health Education Journal* 66, no. 3 (September 1, 2007): 229–44; Fred J. Hellinger, “The Effect of Certificate-of-Need Laws on Hospital Beds and Healthcare Expenditures: An Empirical Analysis,” *American Journal of Managed Care* 15, no. 10 (October 2009): 737–44; Patrick A. Rivers, Myron D. Fottler, and Jemima A. Frimpong, “The Effects of Certificate of Need Regulation on Hospital Costs,” *Journal of Health Care Finance* 36, no. 4 (2010): 1–16; Momotazur Rahman et al., “The Impact of Certificate-of-Need Laws on Nursing Home and Home Health Care Expenditures,” *Medical Care Research and Review: MCRR* 73, no. 1 (February 2016): 85–105; Bailey, “Can Health Spending Be Reined In through Supply Constraints?”

<sup>49</sup> It is not uncommon for such papers to use the term *cost*, but their focus is on expenditure in the sense that they are looking at total spending and not at the cost per service.

Of those 12 studies, only one suggests that CON is associated with reduced expenditures.<sup>50</sup> And even in that case, the connection was tenuous. The author found CON to be associated with fewer hospital beds, and he found that fewer hospital beds were associated with slightly slower growth in aggregate healthcare expenditures per capita. Importantly, however, he found that “certificate-of-need programs did not have a direct effect on healthcare expenditures.”<sup>51</sup>

Of the remaining 11 studies that assess the effect of CON on expenditures, 7 found evidence that CON increases expenditures,<sup>52</sup> 2 found no statistically significant effect,<sup>53</sup> and 2 found that CON increased some expenditures while reducing others.<sup>54</sup>

### ***Hospital Efficiency***

The next four studies in table 1 assess the effect of CON on hospital efficiency.<sup>55</sup> Essentially, those studies examine how cost-effectively hospitals transform inputs into outputs.<sup>56</sup> Economic theory offers no clear prediction for how CON might affect an individual hospital’s efficiency.

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<sup>50</sup> Hellinger, “The Effect of Certificate-of-Need Laws on Hospital Beds and Healthcare Expenditures.”

<sup>51</sup> *Ibid.*, 737.

<sup>52</sup> Sloan and Steinwald, “Effects of Regulation on Hospital Costs and Input Use”; Lanning, Morrisey, and Ohsfeldt, “Endogenous Hospital Regulation and Its Effects on Hospital and Non-Hospital Expenditures”; Antel, Ohsfeldt, and Becker, “State Regulation and Hospital Costs”; Miller, Harrington, and Goldstein, “Access to Community-Based Long-Term Care”; Rivers, Fottler, and Younis, “Does Certificate of Need Really Contain Hospital Costs in the United States?”; Rivers, Fottler, and Frimpong, “The Effects of Certificate of Need Regulation on Hospital Costs”; Bailey, “Can Health Spending Be Reined In through Supply Constraints?”

<sup>53</sup> Sloan, “Regulation and the Rising Cost of Hospital Care”; Grabowski, Ohsfeldt, and Morrisey, “The Effects of CON Repeal on Medicaid Nursing Home and Long-Term Care Expenditures.”

<sup>54</sup> Conover and Sloan, “Does Removing Certificate-of-Need Regulations Lead to a Surge in Health Care Spending?”; Rahman et al., “The Impact of Certificate-of-Need Laws on Nursing Home and Home Health Care Expenditures.”

<sup>55</sup> B. Kelly Eakin, “Allocative Inefficiency in the Production of Hospital Services,” *Southern Economic Journal* 58, no. 1 (1991): 240–48; Laurie J. Bates, Kankana Mukherjee, and Rexford E. Santerre, “Market Structure and Technical Efficiency in the Hospital Services Industry: A DEA Approach,” *Medical Care Research and Review* 63, no. 4 (August 2006): 499–524; Gary D. Ferrier, Hervé Leleu, and Vivian Valdmanis, “The Impact of CON Regulation on Hospital Efficiency,” *Health Care Management Science* 13, no. 1 (March 2010): 84–100; Michael D. Rosko and Ryan L. Mutter, “The Association of Hospital Cost-Inefficiency with Certificate-of-Need Regulation,” *Medical Care Research and Review* 71, no. 3 (January 22, 2014): 280–298.

<sup>56</sup> For more details see Bates, Mukherjee, and Santerre, “Market Structure and Technical Efficiency in the Hospital Services Industry.”

Although most of the theoretical models reviewed in the previous section suggest that CON will increase per unit prices and reduce the quantity of healthcare services, it is possible that by forcing more services to take place in a few large hospitals, CON might allow those hospitals to achieve economies of scale, even if this reduction comes at the price of reduced services elsewhere. Indeed, the empirical literature is mixed on CON and particular hospital efficiency. Two studies find that CON increases some measures of hospital efficiency,<sup>57</sup> one study finds no effect,<sup>58</sup> and one study finds that CON reduces hospital efficiency.<sup>59</sup>

### ***Hospital Investment***

Two early studies assessed the effect of CON on investment. Those studies reflect the goal of reducing unnecessary capital expenditures. One of the studies found that CON failed to reduce investment, though it did change the composition of the investment.<sup>60</sup> The other study found that CON backfired, causing hospitals to increase investment immediately before CON was implemented in anticipation that it would make future investments more difficult.<sup>61</sup>

### **Conclusion**

In most industries, the economic viability of a new product or service is determined by the market signals of prices, profit, and loss. These signals are governed by the values of consumers and producers. If market participants do not deem a product or service to be worth

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<sup>57</sup> Ferrier, Leleu, and Valdmanis, “The Impact of CON Regulation on Hospital Efficiency”; Rosko and Mutter, “The Association of Hospital Cost-Inefficiency with Certificate-of-Need Regulation.”

<sup>58</sup> Bates, Mukherjee, and Santerre, “Market Structure and Technical Efficiency in the Hospital Services Industry.”

<sup>59</sup> Eakin, “Allocative Inefficiency in the Production of Hospital Services.”

<sup>60</sup> David S. Salkever and Thomas W. Bice, “The Impact of Certificate-of-Need Controls on Hospital Investment,” *Milbank Memorial Fund Quarterly: Health and Society* 54, no. 2 (1976): 185–214.

<sup>61</sup> Fred J. Hellinger, “The Effect of Certificate-of-Need Legislation on Hospital Investment,” *Inquiry: The Journal of Medical Care Organization, Provision, and Financing* 13, no. 2 (1976): 187–93.

the opportunity cost of producing it, the product or service will not be economically viable and will soon disappear.

In the healthcare markets of 35 states and the District of Columbia, however, many of the decisions are not left to market participants. Instead, they are governed by regulators empowered to permit—or refuse to permit—new and expanded services. Those laws are called certificate-of-need laws because regulators are supposed to determine whether or not consumers need the services in question.

Providers seeking permission to operate can spend years and tens or even thousands of dollars attempting to obtain permission. During this process, incumbent providers are often invited to offer their own opinion about the desirability of competition.

Although CON regulations were once promoted by the federal government as a way to limit healthcare costs, economic theory offers little reason to suppose they work as intended. Instead, economic theory predicts that a supply restriction such as CON will increase per unit costs and decrease the quantity of services. Furthermore, it predicts that CON laws may lead to either increases or decreases in total healthcare spending, depending on whether the price-increasing or the quantity-reducing effects of CON dominate.

Although CON laws may help internalize externalities created by other public policies such as insurance mandates and public funding, a more efficient and equitable way to address these externalities would be to reform the policies that cause them. Even though CON laws might allow individual hospitals to increase efficiency by channeling more patients to one location, thus achieving economies of scale, these laws might alternatively decrease hospital efficiency by making administrators less cost conscious. Finally, economic theory predicts that

CON laws will allow small but concentrated special interests to profit at the expense of consumers and other providers.

A review of 20 peer-reviewed academic studies finds that CON laws have worked largely as economic theory predicts and that they have failed to achieve their stated goal of cost reduction. The overwhelming weight of evidence suggests that CON laws are associated with both higher per unit costs and higher total expenditures. The evidence is mixed on whether CON laws have increased the efficiency of particular hospitals by channeling more patients through fewer facilities, and there is no evidence that CON decreased overall investment as its proponents had hoped. The weight of evidence suggests that CON regulations persist because they protect politically potent special interests from competition.