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# Effect of Certificate of Need Law on the intensity of competition: The market for emergency care

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## ABSTRACT

*Purpose:* This article aims to contribute to the academic literature in better understanding the impact of Certificate of Need (CON) Law on Emergency Department (ED) care. Impact of CON Law on ED competition remains an unanswered empirical question.

*Methods:* We examine the impact of CON Law and its stringency on the intensity of competition (rivalry among competitors) between EDs measured by the Herfindahl-Hirschman Index (HHI). We then estimate the effects of CON Law on HHI by treating CON as an exogenous (endogenous) variable.

*Findings:* On average the CON legislation enhances ED competition. A possible reason is that the law hinders predatory behavior, and therefore acts as an effective anti-trust tool. Other findings indicate that competition is found to be positively related to a state's population size and median income and negatively related with the prevalence of employer provided insurance and magnitude of illegal immigration in a state.

*Practical implications:* This article sheds some light on how political regulations could affect healthcare market and hence may provide public policy makers some insights on reducing healthcare cost.

*Originality:* Our analysis of the impact of CON regulation on ED competition significantly contributes to the healthcare and strategy literature. The law potentially serves as an anti-trust tool in the hands of the government. We extend the empirical literature by treating CON Law and its stringency as exogenous (endogenous). Our comprehensive analysis considers a host of control variables such as population demographics, their health status and access to health care, healthcare facilities, political environment, in addition to the CON features.

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## 1. Introduction

Health care spending in the United States has increased considerably over the years far exceeding that of other developed nations. According to the Centers of Disease Control and Prevention in 2010, the U.S. spent approximately \$2.6 trillion or 17.9% of Gross Domestic Product (GDP) on health care [37]. This is a dramatic increase considering it was 7.1% of GDP in 1970 [33]. The federal government has been taking steps to curtail such exorbitant cost increases and unnecessary growth of healthcare facilities and acquisition of expensive equipment for more than 60 years. For example, the 1946 federal Hill-Burton program was put into effect to provide funds for new hospital construction contingent on the

adoption of a state health plan that detailed the process by which proposed projects would be evaluated [32]. Similarly, Certificate of Need (CON) Law in its significant version was passed by the National Health Planning and Resource Development Act (NHPA) in 1974 to constrain unnecessary health expenditure, capacity (supply), improve access and quality of care and make healthcare market more competitive [11]. As of now, 36 states retain the CON Law.<sup>1</sup>

In states with CON Law, health care providers seeking to enter a market, expand their facilities, or offer new services must submit an application to the state's health planning agency for approval. CON application assessment criteria are generally specified in regulations promulgated by a state's planning agency [9]. For instance, the Virginia state code mandates that the State Health

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<sup>1</sup> A detailed overview of CON Law trajectory in each state over the years since its enactment can be found in a recent study by Hellinger [23].

Commissioner must consider eight factors when determining whether a new project is necessary for the public. This includes assessing whether the project will provide or increase access to health services; the extent to which the project encourages beneficial competition; its impact on the utilization and efficiency of existing healthcare facilities and the extent to which the project provides improvements in the financing and delivery of services among others [10]. Further, beyond their role of monitoring and managing applications for proposed health care projects, state CON programs also typically set highly specific standards and criteria that govern the use of the facilities and procedures [9].

In this study we investigate the impact of CON Law specifically on Emergency Department (ED) market competition. The primary motivation for focusing on ED, CON Law and competition is as follows: i) ED plays a very important role in care delivery of hospitals since it is generally the front end of the hospital for a large segment of the population especially the uninsured<sup>2</sup> [3,22]; ii) A considerable proportion of the revenue of other departments such as the intensive care units comes from the ED patient population that gets admitted [40]; iii) Overcrowding [15] and insufficient capacity [2] have been often reported as issues plaguing ED care quality in hospitals across United States; iv) A close relationship has been reported in literature between competition, efficiency and health care quality and v) The procedural aspects mentioned above that are designed to foster competition and quality of care. The last two factors are especially important from a firm's strategic decision making standpoint in a regulated environment. A review of literature that discusses these important aspects in detail follows next.

## 2. Literature review

Studying the effect of regulation on firms or on industry structure has a long tradition in the Strategy literature. Rugman and Verke (1998) examine the effect of environmental regulations on firms' strategic decisions [46]. Gruca and Nath (1994) examine the "impact of changes in the way that hospitals are reimbursed for providing services to Medicare recipients" (p. 346) under the Medicare Prospective Payment System (1983) [21]. In the same spirit, we examine the effect of the CON Law on the Emergency Department (ED) Market. Before we discuss the details of the CON Law, it will be helpful to provide a description of the nature of the healthcare market in the United States.

In general, the health care market is a highly regulated industry [50]. According to White, one feature of the healthcare market is that there is a major degree of uncertainty about when health care will be needed and by whom. This has led to an increase in the demand for health insurance, which in turn means that consumers are insulated from the price of the treatment. Further, there is a lot of uncertainty about the kind of treatment that is needed along with its outcome. Hence, healthcare providers have a significant say in determining the quantity of care and passing on healthcare costs to the insurers. One strategy that the government could potentially adopt was a takeover of healthcare. However, such an approach was never favored in the United States. Instead the method used was regulatory oversight, one of which is the CON Law.

Under the CON Law, a healthcare provider needs approval of the

government before undertaking a major capacity expansion or before purchasing a major piece of equipment. The applicant therefore incurs substantial legal costs in obtaining such an approval. One of the primary motivations of the CON Law is the so-called Roemer Effect [14] or the Supplier-Induced Demand hypothesis [13]. Healthcare is an example of a credence good whose quality cannot be determined by the consumer even *ex post* [16]. Therefore, the buyer (the patient) has to rely on the opinion of an expert (the healthcare provider) to select a treatment and as a result, healthcare providers might have an incentive to provide unnecessary treatment to maximize their bottom line. Proponents of the CON Law therefore argue that if hospitals are allowed to expand capacity unhindered, then they will find a way to use such excessive capacity that ultimately increases the cost of treatment [14,36].

Opponents of the law claim that the CON Law imposes high compliance costs and interferes with normal business decisions such as expansion in capacity. Since it is hard for a potential entrant to demonstrate need for a new facility, therefore the CON Law effectively acts as a barrier to entry. Additionally, the approval process is also susceptible to lobbying by competing hospitals. From this perspective, the CON Law is anti-competitive [17–19,52]. It is argued that less competition in healthcare markets can lead to an increase in treatment costs.

The fact that the CON Law requires regulatory approval before major capacity expansion (or before the purchase of an expensive equipment) can also be used as an argument in its favor. Under the law, incumbents also require regulatory approval before they expand capacity or purchase expensive equipment. It follows from the Industrial Economics literature that one method of deterring entry (or alternatively, forcing other firms out of the industry) in an Oligopoly is by investing in excess capacity [7]. By doing so, incumbents signal their intent to prey on an entrant and thus discourages a potential entrant from entering the market. In the absence of the entry deterrence motive, a large capacity is consistent with more competition. However, this result flips if the entry deterrence motive is present and is strong enough. In that case, more capacity is consistent with less competition.

In a relatively recent study on competition in surgical procedures [12], examined if there is empirical evidence to indicate that hospitals invest in capacity to deter entry. In that study, he focused on the case of electrophysiological studies and found evidence of strategic investment by hospitals that were designed to deter entry. Under the CON Law, regulators have the opportunity for reviewing major expansions by incumbent hospitals. Consequently, regulators can block an investment if they suspect it to be predatory in nature. Judging from this perspective, the CON Law also has some pro-competitive elements. The negative impact of excess capacity on the healthcare markets is well demonstrated by an analysis of hospital industry's technical efficiency by Ozcan [38] featuring acute care hospitals in 319 U.S. metropolitan areas. The findings revealed that 3% of health care costs in the gross domestic product (GDP) could be attributed to inefficiencies created by the excessive buildup of providers.

In theory, CON Law may have both beneficial and harmful effects on competition. Specifically, on one hand, CON Law could prevent hospitals from excessive expansion and hence hinder the existence of monopoly and promote competition. On the other hand, CON Law might also impede new entrant into the market since providing new service sometimes require approval. Which side of CON Law effects on competition dominates remains an open empirical question, and we examine it in this paper. There are at least two main motivations behind our study. First, one would expect that enhanced competition would reduce treatment costs, and this has been empirically confirmed in some studies [29,34].

<sup>2</sup> There might be a concern that EDs are not always profitable and therefore competition among EDs is somehow irrelevant. Some EDs can be loss-making units, particularly if they have to serve a lot of uninsured population. However, that by itself does not mean that competition between EDs is less intense or less important to the hospitals. The ED helps in attracting patients to the other units of the hospital and therefore has a huge positive spillover effect on the other units. If the gain from the spillover is more than the loss from the ED, then the ED will be a valuable part of the hospital.

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