

The Origin of the Regulatory Agencies in the United States: A Case of Institutional Change

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Abstract

The institutional model of regulatory agencies emerged in 1873 in the state of Illinois in the United States due to the conflict between farmers and railroads around rail fares. In the framework of institutional theory, the creation of the regulatory agencies was the result of an institutional change process and Douglass North (1990) developed one of the most known theories of institutional change. This paper aims at describing the context that led to the creation of the first regulatory agencies and seeks to ascertain the suitability of North's (1990) theory of institutional change for explaining this process.

Keywords: regulatory agencies, institutional change, Douglass North

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Introduction

The institutional model of regulatory agencies had its origin in the United States in the nineteenth century. The first agencies only acted at the state level and emerged in the midst of the conflict between farmers and railways around rail fares. The state of Illinois was the first to establish, in 1873, a regulatory agency with the power to regulate railroad rates. This solution adopted in Illinois to the conflict over the rail fares gave rise to the model of regulatory agencies, which was initially exported to other states and subsequently, in 1887, to the federal level with the creation of the “Interstate Commerce Commission”, which had the purpose of regulating interstate rail fares.

In the framework of institutional theory, the regulatory agencies are a model of a formal institutional arrangement - that is, a set of formal rules that apply to specific activities - and its appearance was the result of a institutional change process.

In this context, this work aims at two objectives. The first is to detail the process that culminated in the creation of the first state agencies in the United States given that this period of state regulation is largely neglected in the literature on regulation, which usually starts the history of the regulatory agencies from the setting of the federal agency. Under this purpose, historical research was conducted based on secondary sources, especially American publications of the late nineteenth century and early twentieth century. The intention of using such historical sources was to obtain more detailed information and to capture the discussions in the period that followed the emergence of the agencies.

The second objective involves the theoretical interpretation of the institutional change process that gave rise to the agencies. Under this purpose, Douglass North’s theory of institutional change is presented in order to analyze its suitability for explaining the emergence of the model of regulatory agencies.

The article contains three sections. The first presents the theory of institutional change developed by Douglass North. The second section describes the historical context that led to the creation of the first regulatory agencies. Finally, the third section analyzes the creation of the regulatory agencies according to North’s theory.

1. Douglass North's Approach¹

According to North (1990), institutions are humanly devised constraints that structure human interactions. Thus, institutions serve as a guide to human interactions, reducing uncertainty and providing incentives for exchanges between people (North, 1990, p.3).

However, while stating that the main role of institutions in a society is to reduce uncertainty in human interactions (North, 1990, p.6), North points out that they are not created to be socially efficient. According to him, institutions are largely devised on the basis of private welfare interests rather than social welfare (North, 1990, p.48).

Institutions are not necessarily or even usually created to be socially efficient; rather they, or at least the formal rules, are created to serve the interests of those with the bargaining power to devise new rules. (North, 1990, p.16)

Therefore, according to North, such not necessarily efficient institutions provide the incentive structure for the development of organizations, since these are "purposive entities designed by their creators to maximize wealth, income, or other objectives defined by the opportunities afforded by the institutional structure of the society" (North, 1990, p.73). In other words, organizations are created to take advantage of the opportunities provided by a given institutional structure. This relationship between organizations and institutional structure explains why some organizations develop in a society instead of others.

To the extent, however, that organizations evolve in the search for maximizing their goals, they promote changes in the institutional structure. Accordingly, in North's (1990) approach, entrepreneurs and their organizations are the main agents of institutional change and the interaction between institutions and organizations shapes the direction of institutional change (North, 1990, p.7).

To explain the behavior of individuals and provide microfundaments to his theory, North (1990) adopts the assumptions of bounded rationality and incomplete information. He refutes the behavioral assumptions of the rational choice theory for considering that this theory shows deficiencies in treating two aspects of human behavior: the motivation for individuals' choices and the way they decipher the environment. On the question of motivation, deficiency occurs because, in addition to the wealth maximization embodied in neoclassical models, individuals' choices may also be motivated by altruism, self-imposed standards of conduct and

¹ As North's thinking changed over time, this section considers the institutional change theory presented in his best known work, the book "Institutions, Institutional Change and Economic Performance" (North, 1990). For more details about the evolution of North's view regarding institutional change see Carvalho (2012). Fiani (2003) and Gala (2003) report the evolution of North's thinking more generally.

ideologies. In relation to environmental deciphering, this theory does not take into account that cognitive limitations and complexity of the problems cause individuals to decipher the environment by processing information through pre-existing mental constructs (North, 1990, p.20). Thus, North opposes to the idea that individuals have cognitive systems that provide true models of the universes in which they make their choices. Furthermore, as the information received by individuals is very incomplete, these models neither tend to converge to the true models.

Based on these assumptions, North emphasizes the crucial role of the subjective perception of the agents. According to him, the sources of action of the institutional change process are the opportunities perceived by the entrepreneurs, which result from both external changes in the environment as well as internal changes to entrepreneurs. Among the external sources, there are the objective changes in relative prices and the changes in taste. The internal sources, in turn, would be the acquisition of learning and skills that lead entrepreneurs to develop new mental models to decipher the environment, altering the perceived relative prices of potential choices (North, 1993, p.4-5)².

The excerpt below, taken from North (1993), provides an excellent summary of his reasoning:

Thus entrepreneurs who perceive themselves and their organizations as relative (or absolute) losers in economic exchange as a consequence of the existing structure of relative prices can turn to the political process to right their perceived wrongs by altering that relative price structure. In any case it is the perceptions of the entrepreneur - correct or incorrect - that are the sources of action. (North, 1993, p.37)

It is clear, therefore, that, in North's view, the process of institutional change is motivated by the perception of entrepreneurs, regardless of objective facts. Consequently, objective changes in relative prices only induce institutional change if they are perceived as such by entrepreneurs. Similarly, institutional changes could occur without an objective change in relative prices if learning processes make entrepreneurs view otherwise the relative prices of their potential choices.

When referring to institutional changes, North notes that they may occur as a result of changes in informal institutions, changes in formal institutions or changes in the enforcement mechanisms (North, 1990, p.6).

² In the article "Institutional Change: A Framework of Analysis" 1993, which according to North himself is based on the book "Institutions, Institutional Change and Economic Performance" from 1990, North exposes more clearly his reasoning about the sources of institutional change, undoing the ambiguities shown in the book. For further details on these ambiguities, see Carvalho (2012).

To North, informal institutions are codes of conduct, norms of behavior and conventions that are socially transmitted and are part of the culture of a society (North, 1990, p.37). The change of informal institutions is not necessarily intentional, given that informal rules may evolve without any specific purposeful activity on the part of individuals and organizations (North, 1990, p.87). In this case, a change in relative prices or in tastes leads to the gradual erosion of the rule and its replacement by another.

On the other hand, formal institutions are rules created intentionally by human beings (North, 1990, p.4) and count on the coercive power of the state to enforce them. The need for this type of rule is found in more complex societies, in which the fact that trade is impersonal and non-repetitive increases the return for opportunistic behavior, making the support of State essential to enable trade (North, 1990, p.35). It should be noted here that while formal institutions may arise to replace the informal institutions, North emphasizes the complementarity being the two types of institutions. According to him, the main role of informal constraints is to modify, supplement or extend the formal rules (North, 1990, p.87).

In the case of formal institutions, changes occur through the political process and, therefore, require a considerable application of resources. In this case, the perception of changes in relative prices does not necessarily lead to institutional changes and may simply lead to a reformulation of contracts within the framework of existing rules. Everything depends on the estimated costs and benefits of promoting change (North, 1990, p.87). Organizations with sufficient bargaining power will strive to change formal rules when the estimated return from maximizing in that direction exceeds the return from investing within the existing restrictions (North, 1990, p.79).

North (1990, p.87) also notes that, insofar as the act to influence rules and their enforcement bring great rewards, it will pay to create intermediary organizations between economic organizations and government agencies - such as trade associations, lobby groups and political action committees - in order to realize the potential gains of political change. The higher the percentage of resources affected by government decisions, the more resources will be devoted to this type of organization that, on the one hand, seeks to promote institutional changes that benefit its members and, on the other, to avoid those that may harm them.

Hence, according to North (1990), changes in informal institutions are not necessarily intentional and occur at a slower pace. Changes in formal institutions, in turn, occur when the subjective perception of an organization about the change benefits leads it to dedicate resources for this purpose. Thus, the initiative to change the rules depends on the agents' estimation of costs and benefits. The greater the rewards envisioned, the greater the resources dedicated.

Furthermore, the author highlights two points involving the interaction between formal and informal rules in the institutional change processes. The first point is that, given the complementarity between formal and informal institutions, changes in formal rules trigger changes in informal rules. This happens because a change in formal rules or in their enforcement causes a disequilibrium in the set of constraints in force until then. More specifically, changes in the formal sphere of constraints affect transaction costs leading to the development of new conventions or standards, so that a new informal equilibrium will evolve gradually after a change in the formal rules (North, 1990, p.87).

Second, North highlights the persistent nature of informal rules, which makes it not always possible to adopt formal rules under the deliberate intention of replacing informal rules in force. The attempt to replace informal rules by formal rules does not always succeed because the informal constraints contain persistent cultural traits and change at a different pace from the formal rules (North, 1990, p.87). As an example, the author cites the fact that revolutionary acts manage to change the formal rules but not the informal ones, causing a tension between the informal constraints and the new formal rules as many are inconsistent with each other (North, 1990, p. 91).

Thus, in view of this persistent nature of informal rules, North (1990, p.89) emphasizes the incremental nature of the institutional change process. According to this author, although wars, revolutions, conquests and natural disasters are sources of radical changes in the formal rules, the process of institutional change is predominantly incremental.

At last, North (1990, p.10) notes that the incremental nature of the process of institutional change and the imperfect way in which the actors interpret the environment are responsible for making institutional change path dependent. In this context, the choices of the present and the future are shaped by the past and consequently, historical analysis becomes relevant.

This theory of institutional change developed by North (1990) will be used as a theoretical framework for the analysis of the rise of regulatory agencies presented in the next section.

2. The Rise of the Regulatory Agencies in the United States

To understand the process that resulted in the creation of the regulatory agencies in the United States one must keep in mind that the American federalist system gives autonomy to the

states in setting policies and creating statewide laws. This section is divided into two subsections. The first describes the process of development of the railway network in the United States while the second describes the evolution of the railroad regulation in the state level until the passage of the regulation to the federal level.

2.1 The Development of the Railway Network in the United States

An outstanding feature of the development of the US railway network is that it occurred mostly under private ownership. However, this does not mean that the principle of *laissez faire* predominated. Indeed, US railroads emerged and expanded under a system involving the public capitalization of private companies (Dowd and Dobbin, 2001).

The construction of the North American railway network began around 1830 and had different phases. Clark (1891) distinguishes three stages: the period of "enthusiastic construction", from 1830 to 1850, the period of "bitter competition", from 1850 to 1870, and the period of "extensive combination", from 1870 to 1890.

In the first period, between 1830 and 1850, the State on all its levels actively participated in the expansion of the railway network with actions that included from donations of federal lands to the granting of subsidies by local governments. The main purpose was to promote the development of the interior of the United States given that the colonization of land in the Midwest³ of the country depended on a reliable and inexpensive transportation to take the primary products there produced to the cities in the East Coast (Kanazawa and Noll, 1994, p.19).

The engagement of state and local governments, however, was higher than that of the federal government. First, because as in this early stage most railways were intrastate it was delegated to the state legislatures the task of granting operating licenses to railway companies (McLean, 1900, p.151). Second, this marginal role played by the federal government was related to the notion of democracy, since it was feared that the involvement of the federal government in commercial activities would lead to a power concentration that would weaken the democratic system (Dowd and Dobbin, 2001, p.65). In this context, the states had the task of managing the land grants from the federal government to the railroads and gathering rights of way (Kanazawa and Noll, 1994, p.19).

³ The Midwest comprises the states of Michigan, Ohio, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas.

Given the enthusiasm with the construction of railways, their construction under direct public administration came to be implemented in states like Pennsylvania, Ohio, Illinois and Michigan. The motivation for these ventures was the belief that states could obtain capital on better terms than private enterprises. The results of this experiment, however, were disastrous and a time of failure came around 1850. The states then passed to the other extreme with the insertion of clauses in the constitutions subsequent to 1850 that limited their power of indebtedness (McLean, 1900, p.352). The Michigan constitution of 1850, in particular, went further and banned all future connection of this state with the construction of railways or any other system of internal improvement (Clark, 1891, p.15). According to McLean (1900, p.352), after this disastrous experience with public railroads, one started to think that it was more advantageous to leave the construction of railways to the private companies.

The second period, from 1850 to 1870, was marked by the emergence of competition between railways. Until the 1860s most of the rail traffic was local and had little or no competition, prevailing the charge of high consumer fares. However, as from 1863 several short distance lines were interconnected giving rise to parallel long-distance lines. Competition for traffic on long-haul routes between major cities intensified, leading to price wars between the railroads (Sanders, 1999 p.183). In addition, with the binding of New York City to the Great Lakes there began a fierce competition between rail and waterway transportation, which, until then, enjoyed an uninterrupted prosperity (Clark, 1891, p.16).

These price wars, however, did not reach small and remote users as it was the case of most farmers. They were not favored by the discount rates available to large senders, found themselves far away from the main terminals, did not have access to water transportation and usually were served by only one line, remaining at the mercy of the railroads monopoly. Indeed, the emergence of competition in long distance lines worsened the situation of farmers, once the "captive" users had to subsidize the price cuts offered to users in an advantaged competitive situation (Sanders, 1999 p.183). This was a major reason for the conflict between farmers and railroads that culminated in the creation of the regulatory agencies and will be resumed later.

Finally, in the period from 1870 to 1890, the railroads responded to the growing competition for long distance consumers through the formation of cartels. The first and perhaps most successful of these projects was the alliance of Iowa. Three railroads competing for traffic between Chicago and Omaha formally agreed in 1870 to share the business in order to end the competition. Informally their monopoly territories were, in general, respected (Sanders, 1999 p.183).

These periods that Clark (1891) distinguished for the construction and operation of railways corresponded to different stages of regulation to be treated in the next section.

2.2 The State Regulation of Railroads

Clark (1891) divides the state regulatory policy of railroads in three phases corresponding to the railway construction stages: the period of "freedom from interference", from 1830 to 1850, the period of "general laws and statutes", from 1850 to 1870, and the period of "state interference or control through commissions", from 1870 to 1890.

In the years of "freedom from interference", both in the US and in England, it was believed that the railroad company would be under the control of universal competition and the limitations of the competitive principle arising from large investment in fixed assets were not perceived (McLean, 1900, p.352). In the words of Adams (1878, p.125-6): "Competition made the price of flour and cloth and shoes equal and reasonable: why should it make fares and freights unequal and unreasonable?"

Thus, considering this belief that competition between railroads would solve all the problems, especially those related to the charge of abusive prices, the pursuit at this time was for the construction of more railways. Any proposed legislation for the regulation of railroads was declared harmful and unfair. Consequently, in this period there were little or no restrictive legislation. In fact, laws passed at the time aimed at encouraging construction as there were fears that the railways would not be built rapidly enough (Clark, 1891).

It was only in the 1850s, the beginning of the second period, that there began to appear changes in the legislation of various states in order to establish rules for the concession and operation of railways. Among the factors that motivated the change from the deregulation adopted in the previous period are the excessive indebtedness of states and the corruption scandals (Kanazawa and Noll, 1994, p.20). These latter involved from the granting of free tickets to legislators, judges and their families so as to influence decisions to a more subtle form of bribery where valuable actions were transferred to legislators at prices far below their market value (Buck, 1913, p. 13).

At this time, there also emerged bureaucratic bodies considered precursors of regulatory agencies. One of these bodies was the Michigan Board of Control created in 1857, which was composed of the governor and six appointed members. Although this council was created with

the purpose of negotiating the terms of land grants, its structure and procedures were clear precursors of economic regulation bodies (Kanazawa and Noll, 1994, p.20).

Other precursors of regulatory bodies that emerged at this time were the commissions set up in the eastern states in order to ensure the safety of the population. These commissions were administrative bodies subordinated to state legislatures that had the function of overseeing the railroad companies under the interest with public safety. The movement began in 1844 with the law that established such a commission in New Hampshire and continued with the establishment of this type of commissions in Connecticut in 1853, Vermont in 1855 and Maine in 1858 (McLean, 1900, p.356).

A more direct interference of the states in the railway business, however, found legal obstacles because the courts saw the agreements between the railroads and the states as contracts, which could not be changed unilaterally by the state through the passing of new laws. This argument was grounded on the Supreme Court's Dartmouth College decision in 1819, which determined that a corporate license was a contract between the corporation and the state, and its weakening violated the US Constitution. The only situation in which the courts authorized laws that changed the initial agreements was when either the operating licenses granted to the railroad companies or the state constitutions contained a clause that explicitly allowed the review of the licences. For this reason, several states decided to include clauses that reserved to their legislatures the power to regulate corporations (Kanazawa and Noll, 1994, p.16-17).

Clark (1891) points out that, overall, as the system of railways that started to be built in the previous period become operational, which primarily occurred on the east coast, one soon realized that competition would not limit the power of railroad corporations. Indeed, the fact that several states had declared in their constitutions that state legislatures should have full power to act in matters relating to railroads clearly shows that the need for somehow constraining the railroads had increased.

The 1870s mark the beginning of the period of "states interference or control through commissions". The popular pressure especially from farmers through the Granger movement was emblematic of this change on the policy of railroad regulation. The Granger movement consisted of an alliance of American farmers created in 1867 and, although it has acted in other areas in support of farmers⁴, the best known of its causes was the fight against monopoly abuses

⁴ For example, the movement sought to introduce cooperation schemes among farmers for the purchase of inputs, marketing of agricultural products, insurance, and even for the manufacture of agricultural tools (Buck, 1913, p.52).

exercised by the railroad companies, attempting to subjugate them to the control of the State (Buck, 1913, p.123). Among the complaints of farmers were the previously mentioned cases of corruption involving the railroads, the charging of abusive rates and the practice of brutal discrimination in setting tariffs.

This issue of rate discrimination was particularly relevant because it favored only the largest and most urban consumers. Farmers in rural communities paid relatively more to transport its production to the nearest large city than in the longer part of the trip to the port. As already mentioned, this was because at the end of the 1860s grain transportation between major cities in the Midwest and the East Coast ports was competitive. Yet, most rural communities had no access to water transportation and were served by only one railway, which allowed the railroads to exercise their monopoly power in these secondary routes. At the time, the only alternative for farmers who felt harmed by monopolistic practices as this was to resort to the regular courts, opening proceedings against the railroads by the price differential between short haul and long haul that could not be justified on the basis of costs (Kanazawa and Noll, 1994).

Although there were complaints throughout the United States, dissatisfaction with the monopoly abuses exercised by the railroads took a more active form in the Midwestern states (McLean, 1900, p.354). As a consequence of the effort of the organized agricultural class, in the early 1870s the states of Illinois, Minnesota, Wisconsin and Iowa passed laws to regulate railroads. Such laws became known as "Granger laws".

It is important to highlight that the organized agricultural class was not restricted to the Granger movement. As in Buck (1913, p.158), in this paper the term "Granger laws" refers to the laws adopted in the early 1870s that sought to constrain the railroads as a result of the effort of the organized agricultural class. Thus, this term does not limit itself to the laws of 1873 and 1874, which were approved by the direct influence of the Granger movement, but also covers the previous laws, which were approved under the effort of other forms of farmers' organization. As an example, we can mention the influence of the Legislative Farmers' Club in the adoption of the 1871 laws in the state of Illinois (Buck, 1913, p.144). Indeed, the campaign for the regulation of railroads began before the Granger movement gained importance. This evidence, however, does not minimize the importance of this movement.

The main laws passed at this time in order to constrain the rail - the Granger laws - as well as the reaction of the railroad companies are described in the subsections that follow.

2.2.1 The Granger Laws⁵

In 1870, the population of the state of Illinois, under the influence of farmers' claims, approved a new constitution that declared railways and warehouses as public goods subject to the rules and regulations prescribed by the law. In its provisions, the new constitution determined that the state legislature approved laws fixing maximum tariffs, corrected abuses and prevented unjust tariff discrimination in passengers and cargo transportation in the various state railways.

Thus, in order to meet the resolutions of the Constitution and under the influence of the Legislative Farmers' Club in 1871, the state legislature of Illinois passed laws regulating the railroads and grain warehouses. Among the laws passed there were a law that established maximum tariffs for passenger transportation within the state, a law that prevented the unfair price discrimination and the charge of abusive prices in freight rates, a law which established maximum prices for grain storage and a law creating the Railroad and Warehouse Commission. This commission was composed of three delegates appointed by the Governor for a two-year term. Its function was to supervise railroads and warehouses, being among its tasks to determine the format of the reports that the railroad companies should deliver annually and examine the conditions and the management of the railroads regarding security and public accommodation. The information collected by the commission was to be presented to the governor in an annual report.

Although these laws passed in 1871 responded to the farmers' demands, the provisions for the enforcement of the various acts differed considerably from each other and were, in general, inadequate and sometimes inexistent. Thus, in 1873, with the agricultural class much better organized due to the expansion of the Granger movement and of farmers' clubs throughout the state, there was a strong demand for the enforcement of the legislation of 1871 as well as for the enactment of additional and more rigorous laws.

In February 1873, however, the 1871 law that condemned the charging of abusive prices and the practice of unfair price discrimination was declared unconstitutional due to specification problems. In fact, this law condemned all forms of discrimination and not just the unfair ones, not allowing the railroads to practice price discrimination under any circumstances. This fact mobilized farmers and culminated in the adoption of another law to control the railroads in May 1873. The new law, which repealed and superseded the laws of 1871, corrected several

⁵ The account of these laws presented here is based on a comprehensive description of that legislation reported in Buck (1913).

inaccuracies of its predecessors, such as the case for specification of unfair discrimination and the assignment of punishments in case of disobedience. However, the most important change introduced by the law of 1873 was to assign to the state commission the task of establishing a schedule of maximum fares to be charged by each railroad, giving rise to the first regulatory agency with power to regulate rates.

In Minnesota, the trajectory was similar. In this state, given the demand to protect local producers, a law was passed in 1871 setting maximum tariffs for passengers and cargo transportation within the state. This law, however, was not put in place, which increased the demand for effective control of the state over the railroads. In 1874, with the triumph of the Granger movement in the elections to the state legislature, a new law was passed based on the Illinois law of 1873 and established a state commission responsible for the determination of maximum rates.

In Wisconsin, the Granger movement pressure resulted in the passage in 1874 of two laws that sought to constrain the railroads. The first law, called Potter law⁶, fixed maximum tariffs for rail fares. This law was much contested because the rates established by it were far below those that had prevailed hitherto in this state. The Potter law divided the railway lines in the state into classes and fixed for each class a ceiling in passenger fares. Regarding the freight, the products being carried were divided into classes and the fixing of maximum tariffs took into account the railway class and the product class. In addition, this law created a state commission that had the power to reduce tariffs and reclassify freight products. The second law, which became known as the antipass law, prohibited unfair price discriminations, the merger of parallel or competing railroads and the issuing of free passes to state officials, judges and members of the legislative assembly.

Finally, the state of Iowa, under the influence of Granger movement, also passed in 1874 a law which set tariff ceilings for rail fares. The Iowa law of railroads contained detailed and elaborated schedules for the establishment of maximum fares.

2.2.2 The Reaction of the Railroad Companies and the Move to the Federal Regulation

In general, all the laws described above, both those that directly fixed tariff ceilings as those that established commissions with the task of doing so, faced strong opposition from the railroad companies. They resorted to the courts to challenge the laws under the argument that

⁶ The law was so named because its bill was initially introduced by Senator Potter.

the regulation expropriated its invested capital. In addition, they sought to make the legislation unpopular making it seem contrary to state interests. The main argument in this regard was that the laws would have the effect of halting the expansion of the rail network (Buck, 1913).

The lawsuits filed by the railroads were carried to the Supreme Court. The first case to be tried involved the firm of warehouses Chicago Munn and Scott and the state of Illinois, and arose from the refusal of the first to comply with the law that regulated the warehouses passed in 1871 (Buck, 1913, p.143) . In its decision in 1877, the court ruled constitutional the law of warehouses of 1871, validating then the regulation of grain producers and warehouses tariffs by the state of Illinois.

This Munn vs. Illinois decision in 1877 was a milestone for the economic regulation by the State (Viscusi et ali, 2005, p.363). This was so because, as already mentioned, hitherto the main argument against the state economic regulation was based on the provisions of both state and federal constitutions that protected the sanctity of contracts. In addition, in the Munn case companies also argued that the state regulation violated the Fourteenth Amendment to the federal constitution, which prevented the states from depriving any person of life, liberty or property without due process of law. However, the court ruled that restrictions on the use of the property covered in public interest were not prohibited by the Fourteenth Amendment and therefore could be regulated by state statutes (Kanazawa and Noll, 1994, p.17).

As the law that regulated grain warehouses was part of the "package" of laws passed in 1871 which included laws regulating railroads, the legal challenge to the constitutionality of the regulation of railways was rejected by the court immediately after the Munn case. In the case of railroads, the court declared that the regulation was acceptable unless in cases where the operating license explicitly exempted it, which proved not to occur in any case (Kitch and Bowler, 1979, p.343). Therefore, these decisions also reversed the precedent that the states should reserve in their licenses the right to change them or they would have to live with them forever (Kanazawa and Noll, 1994, p.17)

However, despite this final legitimation by the Supreme Court, the political power of the railroads and their complaint that the Granger laws contributed to the difficult situation in which they found themselves after the depression of 1873 severely weakened the efforts to regulate the railroads in the late 1870 (Sanders, 1999 p.183). At this time, in three of the Granger states - Minnesota, Wisconsin and Iowa - the laws were already repealed or weakened. In Minnesota, the state legislature replaced the law of 1874 that created a commission with power to establish maximum rates by a decree, in 1875, that established the figure of a single official in charge of supervising the railroads and merely forbade price discrimination and the charging

of exorbitant prices in passengers and cargo transportation. Similarly, the Potter law in Wisconsin, passed in 1874 and known to be the most severe of Granger laws, was repealed in 1876 (Detrick, 1903). In Iowa, the law passed in 1874 that established maximum tariffs for rail fares remained in force longer than similar laws passed in other states, but was repealed in 1878 with the creation of the first regulatory commission in this state, which had only supervision powers (Buck, 1913, p.178).

The Granger laws of the state of Illinois, however, although also challenged by the railroads were not revoked and became an example for many states west of the Mississippi. Thus, through the law passed in 1873, Illinois became the first state to establish a permanent economic regulatory agency (Kanazawa and Noll, 1994). This law was considered an advance in the regulation of tariffs for providing a more flexible solution than the attempts to establish maximum rates through direct legislation (Buck, 1913, p.149).

From the above, it follows that the institutional change process that gave rise to the model of regulatory agencies can be divided into two stages. The first step was the adoption of the 1871 laws in the state of Illinois, which fixed tariff ceilings and created a commission to oversee the railroads and warehouses. The second stage occurred when the laws of 1871 were replaced by the law of 1873, which assigned to the commission the task of establishing the maximum charges.

Finally, it is worth highlighting the coexistence of two models of agencies in the late nineteenth century in the United States. As mentioned earlier, before the creation of the Illinois commission, in some eastern states there existed agencies monitoring the railroads in order to ensure the safety of the population. Among these agencies, stood out the Massachusetts commission created in 1869 which, in addition to supervising, had the power to arbitrate disputes involving the railroads. This commission was to become a standard for the eastern states. Similarly, the Illinois commission became a standard among the midwestern and southern states (Clark, 1891, p.39). Besides the supervisory and arbitration⁷ functions, this commission had the power to regulate rates (McLean, 1900, p.368). Thus, the main difference between the typical agencies in the Midwest, such as the one from Illinois, and those typical in the east, such as the one in Massachusetts, is that the first had power to regulate rates.

McLean (1900) refers to the eastern agencies as "advisory" or "weak" and Clark (1891) calls them "supervisory". The western agencies, in turn, are called "strong" agencies by McLean (1900) and "regulative" agencies by Clark (1891). The table below, which is based in Clark

⁷ The arbitration function was spontaneously incorporated in 1877 as a result of a more comprehensive appreciation of the commission's responsibilities to the railroads and the public (McLean, 1900, p.368).

(1891), groups the states based on the functions of the state agency in the year 1891. The numbers in brackets indicate the year of creation of the first agency in that state.

TABLE 1

GROUP 1	GROUP 2	GROUP 3	GROUP 4
Supervision and Advice	Supervision, Advice and Regulation	Assessment for Taxation	No Railroad Commission
Massachusetts (1869)	Illinois (1871)	Arkansas (1881)	Virginia
Connecticut (1853)	Iowa (1878)	Nova Jersey (1873)	Maryland
Vermont (1855 ⁸)	Minnesota (1874)	Indiana (1881)	Delaware
Maine (1858)	Kansas (1883)		Louisiana
Nova York (1882)	Missouri (1875)		Nevada
Ohio (1867)	Califórnia (1876)		Montana
Rhode Island (1872)	Alabama (1881)		Washington
Michigan (1873)	Geórgia (1879)		Idaho
Wisconsin (1874 ⁹)	Carolina do Sul (1881)		Wyoming
Virginia (1877)	Mississippi (1884)		Utah
Kentucky (1882)	New Hampshire (1844)		Novo México
Arizona (1891)	Dakota do Norte (1885 ¹⁰)		Indiana
Colorado (1885)	Dakota do Sul (1885 ¹¹)		Oklahoma
	Oregon (1887)		Flórida ¹²
	Texas (1891)		Tennessee ¹³
	Nebraska (1885)		
	Carolina do Norte (1891)		

Source: Clark (1891)

The state of Pennsylvania had, in 1891, a commission with the function of collecting statistics. Its first commission was established in 1874.

Despite the difference between eastern and western models of commission¹⁴, both had in common the objection of the railroads. Nevertheless, this feeling of hostility by the railroads was gradually moderated after the Supreme Court decision that certified the constitutionality of the regulation of tariffs (Buck, 1913, p.152). In this sense, according to McLean (1900, p.368), slowly, the commissions that performed continuous policies settled themselves as impartial tribunals concerned with the interests of both parties and, through the mediating power exercised through agreements, were able to prevent the aggravation of disputes. Indeed, by

⁸ Composed of only one commissioner.

⁹ Created under the Potter law.

¹⁰ Territorial Commission.

¹¹ Territorial Commission.

¹² Abolished in 1891.

¹³ Abolished in 1885.

¹⁴ For more details about the differences between the two models of commission, see Carvalho (2012).

performing these functions and providing information on the railroad business to the public, the commissions brought about a more harmonious relationship between the public and the railroads. To McLean, one of the most important services provided by the commissions was the enforcing to the public of the limits of the competitive principle in the railroad business.

The tariff regulation exerted by the Illinois commission, however, came to be weakened with the Supreme Court *Wabash, St. Louis and Pacific Railroad Co. v Illinois* decision in 1886. Based on this decision, the state of Illinois could not regulate the rates of a commercial activity going beyond its borders because this would violate the constitutional prohibition of state interference in interstate commerce. Therefore, this decision prevented the states of correcting the price differential between short and long haul, as they could no longer regulate the prices in long-distance paths. Accordingly, the *Wabash* decision, as it became known, provided an additional political incentive to the beginning of the federal regulation some months later, with the passage of the Interstate Commerce Act (Kanazawa and Noll, 1994, p.18) and the creation of the Interstate Commerce Commission the following year.

3. Analysis and Conclusion

From the historical survey presented above, it follows that the distributional conflict between farmers and railroads is key to explaining the process of institutional change that led to the creation of regulatory agencies.

In the early 1870s, farmers unsatisfied with monopoly abuses by the railroads claimed for government intervention in order to contain them. This vindication gained force with the rise of farmers' organizations, particularly the Granger movement, leading several states in the Midwest to adopt measures that sought to constrain the railroads. Amidst this context, the state of Illinois adopted in 1871 laws that fixed tariff ceilings and created a commission in charge of supervising railroads and warehouses. However, since the enforcement provisions in these laws were inadequate, the mobilization of farmers went on and culminated in the adoption of a new law to control the railroads in 1873. By assigning to the commission the task of fixing maximum prices, this law of 1873 gave rise to the institutional model of regulatory agencies.

Hence, the process of institutional change that led to the regulatory agencies can be divided into two stages. The first step took place with the adoption of the laws of 1871 in the state of Illinois, which fixed tariff ceilings and created a commission to supervise railroads and warehouses. The second stage occurred when these laws of 1871 were replaced by the law of 1873, which assigned to the commission the task of establishing maximum charges.

In the framework of North's (1990) theory, one has that both stages of the institutional change process that led to the rise of the agencies consisted of formal processes of institutional change, since in these cases the agents turned to the political process to change the rules in force. Thus, such steps required a considerable investment of resources.

The main motivation for the mobilization of farmers was their perception as losers in the economic exchanges with the railroads given the existing relative price structure. While this perception would not have necessarily to be related to objective facts, certainly the price discrimination practices employed by the railroads were fundamental to endorse it. So, under this perception, the farmers based on estimates of costs and benefits decided to use the political process to change the rules in force. Furthermore, they also considered advantageous to devote resources to an intermediary organization, in this case the Granger movement, in order to realize the potential gains of the political change.

North himself in a brief illustrative comment supports this analysis. According to him:

[the legislative enactments of Greenback, Granger and Populist movements of the U.S. farmers] reflects farmers' persistent beliefs that they were being wronged by monetary policies, railroads, grain elevators, bankers, and others. They acted on these convictions by forming organizations with the objective of enacting corrective legislation first in state legislatures, then through the Populist party and the Democratic party in the U.S. Congress. (North, 1990, p.44)

Thereby, from the foregoing, it appears that North's (1990) theory seems to explain the institutional change process that gave rise to the regulatory agencies. This, however, is not surprising since the perception on relative prices highlighted by this author as the main motivation for institutional change was effectively the major factor behind the emergence of these agencies.

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